

NQF-Endorsed Measures for Cardiovascular Conditions, 2015-2016

FINAL REPORT

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**NATIONAL
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Executive Summary

Cardiovascular disease (CVD) is the leading cause of death for men and women in the United States. Although death rates attributable to cardiovascular disease have declined by 31% from 2000 to 2010, CVD still accounts for 1 in 3 deaths in Americans.¹ Reducing the high toll of cardiovascular disease requires measures that assess the performance of clinical care and patient outcomes.

NQF's cardiovascular measures portfolio is one of the largest, but despite the large number of endorsed measures, gaps remain in patient-reported outcomes and patient-centric composite measures.

In phase 3 of this project, the Cardiovascular Standing Committee evaluated a total of 26 measures, 13 maintenance measures and 13 new measures, against NQF's standard evaluation criteria. The Committee evaluated 3 new eMeasure versions of endorsed measures that were evaluated as separate measures from their registry-based counterparts. Seventeen measures were recommended for endorsement by the Committee, and one eMeasure was recommended for approval for trial use. The Committee did not recommend 7 measures for endorsement, and 1 measure recommendation was deferred to phase 4. Each of the measures reviewed during this phase is listed below by endorsement status.

NQF received requests for reconsideration for 5 measures developed by Healthcare Incentives Improvement Institute (HCl3) that were not recommended by the Standing Committee. The Committee reconvened on January 28, 2016, to reconsider the 5 measures that were not recommended (#2740, #2749, #2747, #2748, and #2752) and the 1 measure where consensus was not reached for overall suitability (#2751). The Committee did not recommend the 6 measures. The level of analysis was a major issue during Committee review. The developer submitted a request for reconsideration to the Consensus Standards Approval Committee (CSAC). After discussion with the CSAC co-chairs, the developer agreed to re-specify the 4 condition-specific measures from the provider-level of analysis to the facility-level of analysis. Following this, the Committee co-chairs recommended that the 6 measures be deferred for review by the Patient Safety Committee.

The Cardiovascular Standing Committee also conducted an ad hoc review of 1 measure to evaluate updates made to the evidence for the measure. The Committee did not agree with the changes to the measure evidence and decided not to recommend the endorsement of the updated measure. After discussion with the developer following the in-person meeting, the ad hoc review of the revised specifications for NQF #0018: Controlling High Blood Pressure has been deferred pending availability of new evidence. The measure will retain endorsement with the existing specifications.

Measures Endorsed:

Coronary Artery Disease (CAD)/Ischemic Vascular Disease (IVD)

- 0067: Chronic Stable Coronary Artery Disease: Antiplatelet Therapy
- 0068: Ischemic Vascular Disease (IVD): Use of Aspirin or Another Antiplatelet
- 0070: Coronary Artery Disease (CAD): Beta-Blocker Therapy-Prior Myocardial Infarction (MI) or Left Ventricular Systolic Dysfunction (LVEF <40%)
- 2712: Statin Use in Persons with Diabetes

Cardiac Imaging

- 0669: Cardiac Imaging for Preoperative Risk Assessment for Non-Cardiac, Low Risk Surgery

Heart Failure

- 0079: Heart Failure: Left Ventricular Ejection Fraction Assessment (Outpatient Setting)
- 0081: Heart Failure (HF): Angiotensin-Converting Enzyme (ACE) Inhibitor or Angiotensin Receptor Blocker (ARB) Therapy for Left Ventricular Systolic Dysfunction (LVSD)
- 2907: Heart Failure (HF): Angiotensin-Converting Enzyme (ACE) Inhibitor or Angiotensin Receptor Blocker (ARB) Therapy for Left Ventricular Systolic Dysfunction (LVSD) (eMeasure paired with 0081)
- 0083: Heart Failure (HF): Beta-Blocker Therapy for Left Ventricular Systolic Dysfunction (LVSD) (claims-based measure paired with 2908)
- 2908: Heart Failure (HF): Beta-Blocker Therapy for Left Ventricular Systolic Dysfunction (LVSD) (eMeasure paired with 0083)
- 0229: Hospital 30-day, All-Cause, Risk-Standardized Mortality Rate (RSMR) Following Heart Failure (HF) Hospitalization for Patients 18 and Older

Cardiac Catheterization/PCI/Vascular Procedures

- 2396: Carotid Artery Stenting: Evaluation of Vital Status and NIH Stroke Scale at Follow Up

Acute Myocardial Infarction (AMI)

- 0071: Persistence of Beta-Blocker Treatment After a Heart Attack
- 0230: Hospital 30-day, All-Cause, Risk-Standardized Mortality Rate (RSMR) Following Acute Myocardial Infarction (AMI) Hospitalization for Patients 18 and Older
- 0730: Acute Myocardial Infarction (AMI) Mortality Rate

Devices

- 0694: Hospital Risk-Standardized Complication Rate following Implantation of Implantable Cardioverter-Defibrillator (ICD)
- 0965: Discharge Medications (ACE/ARB and beta blockers) in Eligible ICD Implant Patients

One new eMeasure Approved for Trial Use:

- 2764: Fixed-Dose Combination Of Hydralazine and Isosorbide Dinitrate Therapy for Self-Identified Black or African American Patients with Heart Failure and LVEF <40% on ACEI or ARB and Beta-Blocker Therapy

One new measure recommendation deferred to phase 4:

- 2763: Ischemic Vascular Disease Care: All or None Outcome Measure-Optimal Control

Measures Not Recommended:

- 2906: Coronary Artery Disease (CAD): Beta-Blocker Therapy-Prior Myocardial Infarction (MI) or Left Ventricular Systolic Dysfunction (LVEF <40%) (eMeasure paired with 0070)
- 2740: Proportion of Patients with Coronary Artery Disease (CAD) that have a Potentially Avoidable Complication (during the episode time window)
- 2747: Proportion of Patients with Heart Failure (HF) that have a Potentially Avoidable Complication (during the episode time window)

- 2748: Proportion of Patients with Hypertension (HTN) that have a Potentially Avoidable Complication (during the episode time window)
- 2749: Proportion of Patients with Arrhythmias (ARR) that have a Potentially Avoidable Complication (during the episode time window)
- 2751: Proportion of Patients Undergoing an Angioplasty Procedure (Percutaneous Coronary Intervention - PCI) that have a Potentially Avoidable Complication (during the episode time window)
- 2752: Proportion of Patients Undergoing Pacemaker/Defibrillator Implantation (PCMDFR) that have a Potentially Avoidable Complication (during the episode time window)

During the review of the measures, several overarching issues and themes were discussed:

- The lack of performance data available from NQF-endorsed measures that have been re-specified as eMeasures and are currently used in federal quality programs
- Recommending a measure for endorsement and/or Approval for Trial Use that requires a specific brand name medication
- The lack of harmonization in the cardiovascular portfolio due to similar measures at different levels of analysis (e.g., individual clinician vs. inpatient facility) or similar measures specified for different settings of care (e.g., ambulatory vs. hospital)

Brief summaries for each measure are included in the body of the report; detailed summaries of the Committee's discussion and ratings of the criteria for each measure are in [Appendix A](#).

Introduction

Cardiovascular disease (CVD) is the leading cause of death for men and women in the United States. Although death rates attributable to cardiovascular disease have declined by 31% from 2000 to 2010, CVD still accounts for 1 in 3 deaths in Americans.¹ Reducing the high toll of cardiovascular disease requires measures that assess the performance of clinical care and patient outcomes.

Due to the large number of cardiovascular (CV) measures, maintenance review of endorsed measures and consideration of new measures is taking place over multiple phases of work spanning several years. This report presents measure evaluations performed in 2015. A description of the previous cardiovascular projects can be found in the [phase 1](#) (2013-2014) and [phase 2](#) (2014-2015) reports detailing the measure evaluation process for the measures under review. In phase 4 (2016-2017) evaluation of 4 measures scheduled for maintenance review will begin in spring of 2016.

The measures in the CV portfolio have been grouped into various topic areas based on the specific condition, disease, or procedure related to cardiovascular health. These topic areas include primary prevention and screening, coronary artery disease (CAD), ischemic vascular disease (IVD), acute myocardial infarction (AMI), cardiac catheterization, percutaneous catheterization intervention (PCI), heart failure (HF), rhythm disorders, implantable cardioverter-defibrillators (ICDs), cardiac imaging, cardiac rehabilitation, and high blood pressure. A brief description of the topic areas addressed by measures under review during this phase follows.

Coronary Artery Disease (CAD)/ Acute Myocardial Infarction (AMI)

Acute myocardial infarctions (AMI), or heart attacks, occur when blood flow in the arteries of the heart is blocked. When blood is not able to reach parts of the heart muscle, it begins to die—with greater damage occurring the longer the arteries remain blocked.²

Heart Failure (HF)

Damage to the heart muscle affects the heart's ability to pump blood effectively throughout the body. Heart failure is a chronic, progressive disease that affects more than 5.8 million Americans and is the leading cause of hospitalization in patients over age 65.³

Rhythm Disorders/ Implantable Cardioverter Devices (ICD)/Pacemakers

The heart beats in a regular, rhythmic fashion due to natural pacemakers in the heart. Damage to the heart can affect these pacemakers and cause abnormal heart rhythms, or arrhythmias. Atrial fibrillation (AF) is the most common heart rhythm disorder and affects 2.7 million people. Some serious rhythm disorders cause the heart to fibrillate (i.e., beat very fast and irregularly) or even stop beating. Devices such as pacemakers and implantable cardioverter devices (ICDs) may be used to treat severe rhythm abnormalities.⁴

Percutaneous Coronary Intervention (PCI)/Carotid Artery Stenting

Percutaneous coronary intervention (PCI), commonly known as coronary angioplasty, is a nonsurgical procedure used to open narrow or blocked coronary arteries. The procedure is done by inserting a

deflated balloon or other device on a thin flexible tube (catheter) in the inguinal femoral artery or radial artery up through blood vessels until it reaches the blockage at the heart. X-ray imaging guides the catheter threading. At the blockage, the balloon is inflated to open the artery, allowing blood to flow. A stent is often placed at the site of blockage to keep the artery open. The procedure restores blood flow to the heart muscle.⁵

Carotid artery stenting is a procedure that opens clogged arteries to prevent or treat stroke. The carotid arteries are located on each side of the neck and are the main arteries supplying blood to the brain. The procedure involves temporarily inserting and inflating a tiny balloon combined with the placement of a small metal coil called a stent in the clogged artery. The stent helps keep the artery open and decreases the chance of it narrowing again. Carotid stenting may be used when traditional carotid surgery is not feasible or is too risky.⁶

Hypertension

Hypertension, or high blood pressure (HBP), is a major risk factor for CVD and stroke. One in three Americans has HBP. Data from 2007 to 2010 showed that of those with HBP who were ≥ 20 years of age, 81.5% were aware of their condition, 74.9% were under current treatment, 52.5% had their blood pressure under control, and 47.5% did not have it controlled. The estimated direct and indirect cost of HBP for 2010 was \$46.4 billion.⁷

Cardiac Imaging

Cardiac imaging refers to noninvasive tests or scans of cardiac anatomy and function.

Statin Use

High cholesterol is a risk factor for stroke and heart attacks that affects 1 in 3 American adults. Two-thirds of those affected do not have the condition under control, and about half of adults with high cholesterol do not get treatment. Measures that assess the control of this risk factor, including the use of statin medications for high cholesterol, could reduce risk of heart attack or stroke by more than 80%.⁸

Trends and Performance

The National Healthcare Quality and Disparities Report⁹ provides an overview of progress toward the National Quality Strategy goals and priorities. The most recent report demonstrates that while progress has been made in improving the health of Americans affected by cardiovascular disease, there is still more work to do. For example, blood pressure control among people diagnosed with high blood pressure remains a problem. From 1999-2002 to 2011-2012, the percentage of adults with hypertension who had their blood pressure under control improved from 29.4% to 51.8%. Although progress has been made in raising awareness of blood pressure screening and monitoring, only half of people with high blood pressure have it controlled.

The inpatient risk-adjusted mortality rate for hospital admissions with an acute myocardial infarction (AMI) decreased significantly from nearly 120 in 2000 to 47.6 in 2012 (deaths per 1,000 hospital admissions with AMI). The mortality rates also decreased significantly for all racial and ethnic groups;

however, disparities in inpatient mortality still exist. Uninsured patients had higher mortality rates than insured patients, and patients in rural areas had higher mortality rates than patients in urban areas.

Hospital admission rates for congestive heart failure among adults decreased overall from more than 500 in 2000 to less than 400 in 2012 (per 100,000). Additionally, the rate of admission for congestive heart failure decreased significantly for all racial and ethnic groups during this period. The cost of treating congestive heart failure, one of the most costly conditions treated in hospitals, has also decreased to \$7.2 billion in 2012 after peaking at \$9.0 billion in 2002 and 2003.

NQF Portfolio of Performance Measures for Cardiovascular Conditions

The Cardiovascular Standing Committee (see [Appendix D](#)) oversees NQF's portfolio ([Appendix B](#)) of cardiovascular measures that includes measures for *primary prevention* ("specific practices for the prevention of disease or mental disorders in susceptible individuals or populations"); *screening* ("organized periodic procedures performed on large groups of people for the purpose of detecting disease"); and *secondary prevention* ("the prevention of recurrences or exacerbations of a disease or complications of its therapy").¹⁰ The portfolio also contains measures for the evaluation, on-going management, acute care, hospitalization, and cost and resource use in cardiovascular diseases and conditions. This portfolio contains 53 measures: 35 process measures, 16 outcome and resource use measures, and 2 composite measures (see Table 1). Thirteen endorsed measures were evaluated for maintenance of endorsement by the Cardiovascular Standing Committee during this phase of the project.

Table 1. NQF Cardiovascular Portfolio of Measures

	Process	Outcome/Resource Use	Composite
Primary prevention and screening	2		
CAD/IVD	5	2	
AMI	8	3	
Cardiac catheterization/PCI	4	6	2
Heart failure	8	2	
Rhythm disorders	1	1	
ICDs	1	1	
Cardiac imaging		4	
Cardiac rehab	2		
High blood pressure		1	
Total	35	16	2

Additional measures related to cardiovascular conditions are assigned to other projects. These include readmissions for AMI and HF (readmissions project), measures for coronary artery bypass graft (CABG) (surgery project), cost and resource use measures (resource use project), and primary prevention (health and well-being project).

National Quality Strategy

NQF-endorsed measures for cardiovascular care support the [National Quality Strategy \(NQS\)](#). NQS serves as the overarching framework for guiding and aligning public and private efforts across all levels (local, state, and national) to improve the quality of healthcare in the U.S. The NQS establishes the "triple aim" of better care, affordable care, and healthy people/communities, focusing on 6 priorities to achieve those aims: *Safety, Person and Family Centered Care, Communication and Care Coordination, Effective Prevention and Treatment of Illness, Best Practices for Healthy Living, and Affordable Care*.

NQF's cardiovascular portfolio supports the NQS triple aim and aligns with many of the NQS priorities, including:

- **Effective Prevention and Treatment of Illness** – Beginning with cardiovascular conditions.
- **Communication and Care Coordination** – Care coordination is a priority because the prevention, diagnosis, and treatment of cardiovascular disease occurs across providers (e.g., primary care, cardiologists, imaging, interventionalists), and often requires communication across both acute and post-acute settings (e.g., emergency department, inpatient facilities, rehabilitation facilities). Improving communication and care coordination for patients with cardiovascular disease may reduce complications, hospital admissions, readmissions, and healthcare costs.
- **Best Practices for Healthy Living** – Engaging Americans in healthy behaviors (e.g., healthy diet to achieve normal cholesterol levels) and accessing preventive services are critical for the prevention and management of cardiovascular conditions.
- **Person- and Family-Centered Care** – Ensuring that persons and families are engaged as partners in care improves the quality of healthcare and health outcomes, while lowering costs.
- **Safety** – Making care safer and reducing the harm caused by healthcare delivery is a priority.
- **Affordable Care** – Making healthcare more affordable and encouraging the appropriate use of healthcare resources is a priority for individuals, families, employers, and governments.

Use of Measures in the Portfolio

Endorsement of measures by NQF is valued not only because the evaluation process itself is both rigorous and transparent, but also because evaluations are conducted by multistakeholder committees comprised of clinicians and other experts from the full range of healthcare providers, employers, health plans, public agencies, community coalitions, and patients—many of whom use measures on a daily basis to ensure better care. Moreover, NQF-endorsed measures undergo routine "maintenance" (i.e., re-evaluation) to ensure that they are still the best-available measures and reflect the current science. Importantly, federal law requires that preference be given to NQF-endorsed measures for use in federal public reporting and performance-based payment programs. NQF-endorsed measures are also used by a variety of stakeholders in the private sector, including hospitals, health plans, and communities.

Many of the measures in the CV portfolio are among NQF's most long-standing measures; several have been endorsed since 2007. Many are in use in at least one federal program. Also, several of the cardiovascular measures have been included in the Cardiovascular Family of Measures by the NQF-convened Measure Applications Partnership (MAP). See [Appendix C](#) for details of federal program use for the measures in the portfolio.

Improving NQF's Cardiovascular Portfolio

Committee Input on Gaps in the Portfolio

Although new measure submissions are evaluated with each project phase, significant gaps still remain within the cardiovascular portfolio, and opportunities also exist within the measures to harmonize related measures across sites and settings of care. Given the large number of measures that the Committee reviewed during this phase, Committee members were unable to discuss measure gaps in detail.

Cardiovascular Measure Evaluation

On September 9-10, 2015, the Cardiovascular Standing Committee evaluated 13 new measures and 13 measures undergoing maintenance review against [NQF's standard evaluation criteria](#). The Committee also conducted an ad hoc review of one measure to evaluate updates made to the evidence of the measure. On December 7, 2015, the Standing Committee met to review comments and discussed 1 measure (#0965) where consensus was not reached during the in-person meeting. The Committee's discussion and rating of the criteria are summarized in [Appendix A](#). The Standing Committee reconvened on January 28, 2016, to reconsider the 5 measures that were not recommended (#2740, #2749, #2747, #2748, and #2752) and the 1 measure where consensus was not reached for overall suitability (#2751). The level of analysis was a major issue during Committee review. The developer submitted a request for reconsideration to the Consensus Standards Approval Committee (CSAC). After discussion with the CSAC co-chairs, the developer agreed to re-specify the 4 condition-specific measures from the provider-level of analysis to the facility-level of analysis. Following this, the Committee co-chairs recommended that the 6 measures be deferred for review by the Patient Safety Committee.

Table 2. Cardiovascular Measure Evaluation Summary

	Maintenance	New	Total
Measures under consideration	13	13	26
Measures endorsed	13	4	17
Measures approved for trial use	0	1	1
Measures not recommended for endorsement	0	7	7
Measure recommendation deferred	0	1	1
Measures withdrawn from consideration	7	0	7
Reasons for not recommending	Importance – 0 Scientific Acceptability – 0 Overall – 0 Competing Measure – 0	Importance – 3 Scientific Acceptability – 3 Overall – 1 Competing Measure – 0	

Evaluation of eMeasures for Trial Use

The Standing Committee evaluated one new eMeasure for NQF approval for trial use. NQF approval for trial use is intended for eMeasures that are ready for implementation but cannot yet be adequately tested to meet NQF endorsement criteria. NQF uses the multistakeholder consensus process to evaluate and approve eMeasures for trial use that address important areas for performance measurement and quality improvement, though they may not have the requisite testing needed for NQF endorsement. These eMeasures must be assessed to be technically acceptable for implementation. The goal for approving eMeasures for trial use is to promote implementation and the ability to conduct more robust reliability and validity testing that can take advantage of clinical data in EHRs.

Comments Received Prior to Committee Evaluation

NQF solicits comments on endorsed measures on an ongoing basis through the [Quality Positioning System \(QPS\)](#). In addition, NQF solicits comments prior to the evaluation of the measures via an online tool located on the project webpage. For this evaluation cycle, the pre-evaluation comment period was open from July 29 to August 12, 2015, for 25 of the 26 measures under review.^a A total of 27 pre-evaluation comments were received ([Appendix G](#)).

All submitted comments were provided to the Committee prior to its initial deliberations during the in-person meeting.

Overarching Issues

During the Standing Committee's discussion of the measures, several overarching issues emerged that were factored into the Committee's ratings and recommendations for multiple measures and are not repeated in detail with each individual measure.

New eMeasure Versions of Endorsed Measures

Three of the measures evaluated in this project were submitted for endorsement as re-specified eMeasures. NQF now considers eMeasures to be distinct from previously endorsed measures and is moving toward assigning different NQF measure numbers. However, some older, "legacy" eMeasures that are used in federal programs retain their existing NQF measure number. The eMeasures were evaluated separately from the original measures for all criteria except evidence.

Although these eMeasures are used in the federal EHR Incentive Programs ("Meaningful Use"), these programs do not generate a dataset that can be tested for reliability and validity—the majority of participants report by attestation rather than submitting data. Current NQF criteria require testing eMeasures in more than one EHR system; however, during this evolution toward greater use of

^a Pre-evaluation comments on measure 0694: Hospital Risk-Standardized Complication Rate following Implantation of Implantable Cardioverter-Defibrillator (ICD) (American College of Cardiology) were not requested because measure submission materials could not be posted during this period.

eMeasures, NQF accepts testing in a simulated data set (e.g., use of the [Bonnie tool](#)) as an alternative approach for re-specified measures in use in federal programs.

Harmonization

Because many cardiovascular measures are in use, harmonization of measures is a critical aspect of the evaluation, particularly for similar measures at different levels of analysis or similar measures specified for different settings of care. The Committee raised the issue of harmonization within the cardiovascular portfolio as well as harmonization with measures in other topic areas as a major priority.

Eight measures were identified as related or competing to other measures in the CV portfolio. The Committee recommended that developers harmonize their specifications wherever possible. One measure identified as competing is scheduled for maintenance review in phase 4 of this project. In an effort to foster parsimony and harmony within the CV portfolio and enable the Committee to consider competing measures simultaneously, the Committee agreed to defer their recommendation for a competing measure until phase 4 so that a best-in-class determination can be made at that time.

The Committee stated that additional criteria should be considered when discussing related or competing measures. Determining the burden of competing measures for end users should be considered prior to recommending one measure over another. Often, related measures are used for various purposes, such as different accountability and payment programs, therefore there may not be an overlap in data collection and undue burden.

Summary of Measure Evaluation

The following brief summaries of the measure evaluation highlight the major issues that the Committee considered. Details of the Committee's discussion and ratings of the criteria for each measure are included in [Appendix A](#).

Endorsed Measures

CORONARY ARTERY DISEASE (CAD)/ISCHEMIC VASCULAR DISEASE (IVD)

Three previously NQF endorsed measures and 3 newly submitted measures addressing CAD and IVD were reviewed.

0067 Chronic Stable Coronary Artery Disease: Antiplatelet Therapy (American College of Cardiology): Endorsed [Maintenance]

Description: Percentage of patients aged 18 years and older with a diagnosis of coronary artery disease seen within a 12 month period who were prescribed aspirin or clopidogrel; **Measure Type:** Process; **Level of Analysis:** Clinician: Individual; **Setting of Care:** Ambulatory Care: Clinician Office/Clinic; **Data Source:** Electronic Clinical Data: Registry

This clinician-level measure, originally endorsed in 2009, calculates the percentage of patients with coronary artery disease (CAD) who were prescribed aspirin or clopidogrel. The evidence for this measure is based on several guidelines. There was overall agreement that although the data suggest performance is unchanged, a performance gap still exists in certain regions for this measure based on the PINNACLE

Registry data provided by the developer. Reliability, validity, and usability were all agreed to be very strong by the Committee, and the measure was recommended for continued endorsement. This measure was identified as related to NQF #0068: Ischemic Vascular Disease (IVD): Use of Aspirin or Another Antithrombotic (National Committee for Quality Assurance). The Committee agreed that the different data sources, conditions, and medications justify maintaining both measures in the CV portfolio. Commenters suggested including additional antiplatelet agents besides aspirin or clopidogrel during measure updates. The developer responded that plans to revise its entire CAD measure set are expected, and the developer will share the recommendations with the writing committee while considering all guideline recommendations that may impact medications included in the measure.

0068 Ischemic Vascular Disease (IVD): Use of Aspirin or Another Antithrombotic (National Committee for Quality Assurance): Endorsed [Maintenance]

Description: The percentage of patients 18 years of age and older who were discharged from an inpatient setting with an acute myocardial infarction (AMI), coronary artery bypass graft (CABG) or percutaneous coronary intervention (PCI) during the 12 months prior to the measurement year, or who had a diagnosis of ischemic vascular disease (IVD) during the measurement year and the year prior to the measurement year and who had documentation of routine use of aspirin or another antiplatelet during the measurement year; **Measure Type:** Process; **Level of Analysis:** Clinician: Group/Practice, Clinician: Individual; **Setting of Care:** Ambulatory Care: Clinician Office/Clinic; **Data Source:** Administrative claims, Electronic Clinical Data, Electronic Clinical Data: Electronic Health Record, Paper Medical Records

This process measure, first endorsed in 2009 and again in 2012, calculates the ratio of adult patients discharged from an inpatient setting with established cardiovascular disease who were prescribed aspirin or another antiplatelet therapy. The developer provided evidence to support the measure concept using 4 separate guidelines for the use of aspirin or other antiplatelet therapy in patients with cardiovascular disease; the Committee agreed this evidence was adequate. The developer provided data from their own Stroke Recognition Program and the CMS PQRS program to demonstrate a performance gap. The Committee agreed that data are easily collected and that the measure is usable, as it is currently in use in several public reporting programs. Overall, the Committee agreed that this measure meets the NQF criteria for continued endorsement. This measure was identified as related to NQF #0067: Chronic Stable Coronary Artery Disease: Antiplatelet Therapy (American College of Cardiology). The Committee agreed that the different data sources, conditions, and medications justify maintaining both measures in the CV portfolio. Commenters recommended that the developer exclude patients at risk for bleeding and patients with allergies. The developer responded that it has received similar recommendations and will review the matter with its Cardiovascular Measurement Advisory Panel. The Committee agreed with the developer's response and maintains its decision to recommend this measure for endorsement.

0070 Coronary Artery Disease (CAD): Beta-Blocker Therapy—Prior Myocardial Infarction (MI) or Left Ventricular Systolic Dysfunction (LVEF <40%) (AMA-Physician Consortium for Performance Improvement): Endorsed [Maintenance]

Description: 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; **Measure Type:** Process; **Level of Analysis:** Clinician: Group/Practice, Clinician: Individual; **Setting of Care:** Ambulatory Care: Clinician Office/Clinic, Home Health, Post Acute/Long Term Care Facility: Long Term Acute Care Hospital, Post Acute/Long Term Care Facility: Nursing Home/Skilled Nursing Facility, Other; **Data Source:** Electronic Clinical Data, Electronic Clinical Data: Registry

This measure was first endorsed in 2009 and again in 2012. This clinician-level process measure calculates the percentage of patients with coronary artery disease who also have had a prior MI and a current or prior LVEF <40% who were prescribed a beta-blocker. The Committee agreed that a performance gap persists for eligible patients not receiving beta-blocker therapy. The Committee expressed no concerns regarding the reliability, validity, or feasibility of this measure. This measure is currently used in several programs including PQRS and the PINNACLE Registry. The Committee agreed that this measure meets the NQF criteria for continued NQF endorsement.

2712 Statin Use in Persons with Diabetes (Pharmacy Quality Alliance): Endorsed [New]

Description: This is a process measure that assesses the percentage of patients ages 40-75 years who were dispensed a medication for diabetes that receive a statin medication; **Measure Type:** Process; **Level of Analysis:** Health Plan, Population: National; **Setting of Care:** Pharmacy; **Data Source:** Administrative claims

This new process measure calculates the proportion of patients age 40- 75 years who were dispensed a medication for diabetes who also receive a statin medication. The Committee noted that while the measure intends to determine whether a prescription is filled, it does not indicate medication compliance. The developer acknowledged this limitation and explained that because the measure is based on claims data, determining compliance is not currently possible. The Committee noted that this measure does not capture all diabetic patients but instead captures a subset of diabetic patients—those taking prescription medications. The Committee agreed that availability of the health plan level prescription and enrollment data necessary for this measure is feasible. The measure is currently in use and is reported by CMS to all Medicare Part D health plan sponsors in the monthly Patient Safety Reports for quality improvement. The Committee agreed that the measure meets the criteria for NQF endorsement. One commenter suggested including non-statin therapy and other lipid-lowering drugs such as the new FDA-approved PCSK-9 therapies. The developer responded that the ACC/AHA guidelines currently do not include non-statin therapy; therefore, the measure does not include these medications. The developer also noted that the new PCSK-9 medications are intended for adjunct therapy with a statin so diabetic patients receiving combination therapy with both a statin and PCSK-9 medication would be compliant with the measure. In addition, the developer reviews the measure annually to determine if there is new evidence or new medications that affect the intent of the measure and considers revisions to the measure. Several comments focused on the appropriate intensity of statin

treatment, which is a key element in the ACC/AHA guidelines, and including pregnancy, allergy, and previous intolerance as an exclusion. The developer responded that since the measure is intended for use by Prescription Drug Plans and uses only prescription claims as the data source, it is not possible to identify patients with an allergy or previous intolerance. In addition, due to the limited data source, it is not possible to determine whether a patient is receiving the appropriate level of statin intensity. The developer also stated that during the development of the measure, it tested the measure excluding patients with polycystic ovarian syndrome, gestational diabetes, and liver insufficiency and found that less than 0.4% of the total population had these conditions. The Committee agreed with the developer response and maintained its decision to recommend this measure for endorsement.

CARDIAC IMAGING

One previously NQF-endorsed measure addressing the use of cardiac imaging was reviewed.

0669 Cardiac Imaging for Preoperative Risk Assessment for Non-Cardiac Low-Risk Surgery (Centers for Medicare & Medicaid Services): Endorsed [Maintenance]

Description: This measure calculates the percentage of stress echocardiography, single photon emission computed tomography myocardial perfusion imaging (SPECT MPI), or stress magnetic resonance (MR) imaging studies performed at each facility in the 30 days prior to an ambulatory non-cardiac, low-risk surgery performed at any location. The measure is calculated based on a one-year window of Medicare claims data. The measure has been publicly reported, annually, by the Centers for Medicare & Medicaid Services (CMS), since 2011, as a component of its Hospital Outpatient Quality Reporting (HOQR) Program. **Measure Type:** Efficiency; **Level of Analysis:** Facility, Population: National, Population: State; **Setting of Care:** Ambulatory Care: Clinician Office/Clinic, Hospital/Acute Care Facility, Imaging Facility; **Data Source:** Administrative claims

This imaging facility-level process measure was originally endorsed in 2011 and assesses whether cardiac stress imaging was performed preoperatively in patients undergoing low-risk surgery. The developer referenced several studies supporting the need to reduce the overuse of preoperative cardiac imaging. The developer provided data based on the Medicare FFS demonstrating performance rates ranging from 14.5% to 18%. In addition, the data suggests that race/ethnicity and facility characteristics had an effect on the appropriate use of preoperative imaging. The developers provided a signal-to-noise analysis with a score of 43% to demonstrate reliability and face validity using an expert panel. The Committee agreed that the developers adequately demonstrated reliability and validity. The Committee raised concerns over physicians being penalized for ordering precautionary tests. The Committee agreed that the collection of administrative claims data for this measure is feasible, and that the programs for which the measure is currently reported would provide a significant amount of data going forward. Overall, the Committee agreed that the measure meets the criteria for continued NQF endorsement. This measure was identified as related to NQF #0670: Cardiac stress imaging not meeting appropriate use criteria: Preoperative evaluation in low risk surgery patients (ACC). The developers stated that it is difficult to harmonize these measures because they have different data sources and different target populations. The developers agreed that as EHRs continue to evolve and data collection burden decreases they will continue to discuss ways to harmonize these measures over the next couple of years. In the meantime, the Committee encouraged the developers to harmonize the cardiac imaging

procedures in the measures. Harmonization of #0669 and #0670 should be completed prior to the measures' next annual update. Commenters agreed with the Committee's suggestion to harmonize this measure with NQF #0670.

HEART FAILURE

Four previously NQF-endorsed measures and 4 newly submitted measures addressing heart failure were reviewed.

0079 Heart Failure: Left Ventricular Ejection Fraction Assessment (Outpatient Setting) (American College of Cardiology): Endorsed [Maintenance]

Description: Percentage of patients aged 18 years and older with a diagnosis of heart failure for whom the quantitative or qualitative results of a recent or prior (any time in the past) LVEF assessment is documented within a 12 month period; **Measure Type:** Process; **Level of Analysis:** Clinician: Individual; **Setting of Care:** Ambulatory Care: Clinician Office/Clinic; **Data Source:** Electronic Clinical Data: Registry

This clinician-level process measure, originally endorsed in 2009 and again in 2012, calculates the percentage of heart failure patients with documentation of a recent or prior LVEF assessment. Although this measure topped out in hospitals, the Committee agreed that the outpatient setting still has use for the measure. The evidence submitted to support the measure concept was based on expert opinion derived from the heart failure guidelines. Evidence based on expert opinion is inadequate based on NQF criteria. However, the Committee believed this was an important measure, and ultimately voted to pass the measure on evidence by voting "insufficient evidence with exception." The Committee agreed that reliability, validity, and feasibility were adequate. This measure has been in use since its creation in 2003 and is currently in use in the PINNACLE registry. However, there was concern that the measure was not being publicly reported after 6 years of endorsement. While NQF requires that developers demonstrate that the measure is in use after 6 years of endorsement, public reporting is not specifically required as an indication of use. Ultimately, the Committee recommended the measure for continued NQF endorsement.

0081 Heart Failure (HF): Angiotensin-Converting Enzyme (ACE) Inhibitor or Angiotensin Receptor Blocker (ARB) Therapy for Left Ventricular Systolic Dysfunction (LVSD) (AMA-Physician Consortium for Performance Improvement): Endorsed [Maintenance]

Description: Percentage of patients aged 18 years and older with a diagnosis of heart failure with a current or prior LVEF < 40% who were prescribed ACE inhibitor or ARB therapy either within a 12 month period when seen in the outpatient setting or at hospital discharge; **Measure Type:** Process; **Level of Analysis:** Clinician: Group/Practice, Clinician: Individual; **Setting of Care:** Ambulatory Care: Clinician Office/Clinic, Home Health, Hospital/Acute Care Facility, Post Acute/Long Term Care Facility: Long Term Acute Care Hospital, Post Acute/Long Term Care Facility: Nursing Home/Skilled Nursing Facility, Other; **Data Source:** Electronic Clinical Data, Electronic Clinical Data: Registry

This measure was first endorsed in 2009 and again in 2012. This process measure calculates the percentage of heart failure patients with a current or prior LVEF <40% who were prescribed ACE inhibitor or ARB therapy. The evidence for this measure is based on the guidelines for the management of heart failure. The Committee agreed that a performance gap persists with approximately 80% of

eligible patients receiving ACEI/ARB therapy but questioned if this measure has topped out since performance has remained about the same since 2010. The Committee expressed no concerns regarding the reliability, validity, or feasibility of this measure. This measure is currently used in several programs including PQRS and the PINNACLE Registry. The Committee agreed that this measure meets the criteria for continued NQF endorsement. This measure was identified as related to NQF #0066: Coronary Artery Disease (CAD): Angiotensin-Converting Enzyme (ACE) Inhibitor or Angiotensin Receptor Blocker (ARB) Therapy – Diabetes or Left Ventricular Systolic Dysfunction (LVEF<40%) (American College of Cardiology). These measures both focus on ACE/ARB therapy for patients with heart failure; however, #0066 includes patients with diabetes in the denominator. The Committee will discuss harmonization of these two measures in phase 4 when #0066 is scheduled for maintenance review.

2907 Heart Failure (HF): Angiotensin-Converting Enzyme (ACE) Inhibitor or Angiotensin Receptor Blocker (ARB) Therapy for Left Ventricular Systolic Dysfunction (LVSD) (AMA-Physician Consortium for Performance Improvement): Endorsed [New eMeasure]

Description: Percentage of patients aged 18 years and older with a diagnosis of heart failure with a current or prior LVEF <40% who were prescribed ACE inhibitor or ARB therapy either within a 12 month period when seen in the outpatient setting or at hospital discharge; **Measure Type:** Process; **Level of Analysis:** Clinician: Group/Practice, Clinician: Individual; **Setting of Care:** Ambulatory Care: Clinician Office/Clinic, Home Health, Hospital/Acute Care Facility, Post Acute/Long Term Care Facility: Long Term Acute Care Hospital, Post Acute/Long Term Care Facility: Nursing Home/Skilled Nursing Facility, Other; **Data Source:** Electronic Clinical Data: Electronic Health Record

The technical review found this eMeasure to have appropriate specifications and value sets, and an adequate feasibility assessment that addressed the data elements and measure logic. This eMeasure met NQF testing requirements with data element validity testing conducted using an EHR from a clinic with 40 physicians and a simulated data set using the Bonnie tool. The Committee agreed that 93.9% agreement adequately supports validity and recommended this measure for endorsement.

0083 Heart Failure (HF): Beta-Blocker Therapy for Left Ventricular Systolic Dysfunction (LVSD) (AMA-Physician Consortium for Performance Improvement): Endorsed [Maintenance]

Description: Percentage of patients aged 18 years and older with a diagnosis of heart failure with a current or prior LVEF < 40% who were prescribed beta-blocker therapy either within a 12 month period when seen in the outpatient setting or at hospital discharge; **Measure Type:** Process; **Level of Analysis:** Clinician: Group/Practice, Clinician: Individual; **Setting of Care:** Ambulatory Care: Clinician Office/Clinic, Home Health, Hospital/Acute Care Facility, Post Acute/Long Term Care Facility: Long Term Acute Care Hospital, Post Acute/Long Term Care Facility: Nursing Home/Skilled Nursing Facility, Other; **Data Source:** Electronic Clinical Data, Electronic Clinical Data: Registry

This measure was first endorsed in 2009 and again in 2012. This clinician-level process measure calculates the percentage of heart failure patients with a current or prior LVEF <40% who were prescribed beta-blocker therapy. The evidence for this measure is based on the guidelines for the management of heart failure. The Committee agreed a performance gap persists with approximately 86% of eligible patients receiving ACEI/ARB therapy. The Committee expressed no concerns regarding the reliability, validity, or feasibility of this measure. This measure is currently used in several programs

including PQRS and the PINNACLE Registry. The Committee agreed that this measure meets the criteria for continued NQF endorsement. This measure was identified as related to NQF #2438: Beta-Blocker Therapy (i.e. bisoprolol, carvedilol, or sustained-release metoprolol succinate) for LVSD Prescribed at Discharge (The Joint Commission). The measure focus is the same, but the level of analysis is different. The Committee did not make any additional recommendations regarding harmonization.

2908 Heart Failure (HF): Beta-Blocker Therapy for Left Ventricular Systolic Dysfunction (LVSD) (AMA-Physician Consortium for Performance Improvement): Endorsed [New eMeasure]

Description: Percentage of patients aged 18 years and older with a diagnosis of heart failure with a current or prior LVEF <40% who were prescribed beta-blocker therapy either within a 12 month period when seen in the outpatient setting or at hospital discharge; **Measure Type:** Process; **Level of Analysis:** Clinician: Group/Practice, Clinician: Individual; **Setting of Care:** Ambulatory Care: Clinician Office/Clinic, Home Health, Hospital/Acute Care Facility, Post Acute/Long Term Care Facility: Long Term Acute Care Hospital, Post Acute/Long Term Care Facility: Nursing Home/Skilled Nursing Facility, Other; **Data Source:** Electronic Clinical Data: Electronic Health Record

The technical review found this eMeasure to have appropriate specifications and value sets, and an adequate feasibility assessment that addressed the data elements and measure logic. This eMeasure met NQF testing requirements with data element validity testing conducted using an EHR from a clinic with 40 physicians and a simulated data set using the Bonnie tool. The Committee agreed that 90.9% agreement adequately supports validity and recommended this measure for endorsement.

0229 Hospital 30-day, All-Cause, Risk-Standardized Mortality Rate (RSMR) Following Heart Failure (HF) Hospitalization for Patients 18 and Older (Centers for Medicare & Medicaid Services): Endorsed [Maintenance]

Description: The measure estimates a hospital-level 30-day risk-standardized mortality rate (RSMR). Mortality is defined as death for any cause within 30 days after the date of admission for the index admission, for patients 18 and older discharged from the hospital with a principal diagnosis of heart failure (HF). CMS annually reports the measure for patients who are 65 years or older and are either Medicare fee-for-service (FFS) beneficiaries and hospitalized in non-federal hospitals or patients hospitalized in Veterans Health Administration (VA) facilities. **Measure Type:** Outcome; **Level of Analysis:** Facility; **Setting of Care:** Hospital/Acute Care Facility; **Data Source:** Administrative claims, Other, Paper Medical Records

This outcome measure, originally endorsed in 2007 and most recently endorsed in 2012, calculates the risk-standardized mortality rates following hospitalization for heart failure. The developer included numerous studies to support the link between the health outcome of a decreased risk of mortality to the processes, interventions, or services that influence patient outcomes. The Committee agreed that the developers provided sound rationale to support the relationship of the health outcome to processes or structures of care. While the Committee questioned the developer's correlation coefficient for the sample provided, based upon the data submitted, the Committee noted that the testing results demonstrate an adequate level of reliability. The Committee also expressed concern over hospice patient exclusions and whether the measure penalizes physicians for patients discharged to hospice care with the understanding that those patients would mostly likely expire within the reporting period. The

Committee agreed with the developer's rationale for not including SDS factors in the risk-adjustment model. This measure's results are incorporated into the calculation of hospital payment rates through CMS's Hospital Value-Based Purchasing (HVBP) Program, and the Committee noted that the measure is usable, as it is currently reported through CMS's Hospital Inpatient Quality Reporting (IQR) Program. The Committee agreed that the measure meets the criteria for continued NQF endorsement.

CARDIAC CATHETERIZATION/PCI/VASCULAR PROCEDURES

One newly submitted measure addressing vascular procedures was reviewed.

2396 Evaluation of Vital Status and NIH Stroke Scale at Follow-Up (American College of Cardiology): Endorsed [New]

Description: Proportion of patients with carotid artery stenting procedures who had follow up performed for evaluation of Vital Status and neurological assessment with an NIH Stroke Scale (by an examiner who is certified by the American Stroke Association) occurring between day 21 and the end of day 60 after the procedure. (Days 21-60 inclusive); **Measure Type:** Process; **Level of Analysis:** Facility, Population: National; **Setting of Care:** Hospital/Acute Care Facility; **Data Source:** Electronic Clinical Data: Registry

This new facility-level process measure calculates the proportion of patients who have undergone carotid artery stenting and have documentation of vital status and a neurological assessment with the NIH Stroke Scale between 21 and 60 days after the procedure. The Committee questioned the linkage between performing a neurological assessment with the NIH Stroke Scale and improved outcomes after carotid stenting. The Committee also questioned the evidence supporting the 30-day follow-up timeframe. The developer clarified that this measure intends to determine whether patients undergoing a carotid artery stenting procedure receive follow-up in the short term. The developer provided performance rates that varied from 0 to 100% for 18,212 patients. The Committee agreed that there is an opportunity for improvement and that this measure is reliable, valid, and feasible. This measure is currently used in the CARE Registry of the National Cardiovascular Data Registry of the American College of Cardiology. Overall, the Committee agreed this measure meets NQF criteria and recommended it for endorsement. While commenters agreed with the Committee recommendations, they encouraged the developer to update the measure to be an outcome measure. The developer responded that it intends to set up a standard process of capturing data for a future outcome measure. The Committee also noted that while outcome measures are preferred, measuring the process or structure may still be useful for quality improvement.

ACUTE MYOCARDIAL INFARCTION

Three previously NQF-endorsed measures addressing acute myocardial infarction were reviewed.

0071 Persistence of Beta-Blocker Treatment after a Heart Attack (National Committee for Quality Assurance): Endorsed [Maintenance]

Description: The percentage of patients 18 years of age and older during the measurement year who were hospitalized and discharged from July 1 of the year prior to the measurement year to June 30 of the measurement year with a diagnosis of acute myocardial infarction (AMI) and who received persistent beta-blocker treatment for six months after discharge; **Measure Type:** Intermediate Clinical

Outcome; **Level of Analysis:** Health Plan, Integrated Delivery System; **Setting of Care:** Ambulatory Care: Clinician Office/Clinic; **Data Source:** Administrative claims, Electronic Clinical Data, Electronic Clinical Data: Pharmacy

This intermediate clinical outcome measure, originally endorsed in 2009 and most recently in 2012, assesses beta-blocker adherence for 6 months after an AMI hospital discharge. The data sources for this measure include administrative claims, EHRs, and pharmacy claims. This measure is currently reported through NCQA Health Plan Rankings, Accreditation, and Quality Compass. Although high to moderate results of reliability testing were reported, there was concern about whether the denominator could properly capture all AMIs or if some would go undetected if patients with a stent implanted were diagnosed as having a stent rather than an AMI. The developer clarified that this measure includes those who were discharged with an AMI, but not those who were discharged with a CABG. The Committee ultimately agreed this scenario would only affect a small number of AMI patients since most are subject to diagnostic angiography or revascularization. Overall, the Committee agreed that this measure meets the NQF criteria for continued endorsement. One commenter noted issues concerning the accuracy of primary care providers identifying patients who have been discharged from a hospital setting due to untimely information sent from the hospital to the primary care provider. The developer recognized the burden of data collection that this measure presents for individual practices and providers, which is why it is specified for health plan accountability. The developer noted that health plans have access to discharge information and pharmacy claims, therefore are in a good position to work with hospitals and practices to ensure data are shared in a timely manner. The commenter also suggested that an exclusion for pregnancy be considered. The developer responded that an exclusion for pregnancy is not appropriate for this measure and although not all beta-blockers are recommended for pregnant women, they are generally considered safe in this population.

0230 Hospital 30-Day, all-Cause, Risk-Standardized Mortality Rate (RSMR) Following Acute Myocardial Infarction (AMI) Hospitalization for Patients 18 and Older (Centers for Medicare & Medicaid Services): Endorsed [Maintenance]

Description: The measure estimates a hospital-level 30-day risk-standardized mortality rate (RSMR). Mortality is defined as death for any cause within 30 days after the date of admission for the index admission, for patients 18 and older discharged from the hospital with a principal diagnosis of acute myocardial infarction (AMI). CMS annually reports the measure for patients who are 65 years or older and are either Medicare fee-for-service (FFS) beneficiaries and hospitalized in nonfederal hospitals or are hospitalized in Veterans Health Administration (VA) facilities; **Measure Type:** Outcome; **Level of Analysis:** Facility; **Setting of Care:** Hospital/Acute Care Facility; **Data Source:** Administrative claims, Other, Paper Medical Records

This outcome measure, originally endorsed in 2007 and most recently endorsed in 2012, calculates the estimated hospital-level mortality rate within 30 days after the date of admission for adults discharged with a diagnosis of acute myocardial infarction. The developer provided a thorough rationale to support the relationship of the health outcome to processes or structures of care indicating that hospitals are able to influence mortality rates using a broad range of clinical activities. In addition, the Committee agreed that a large gap in performance exists, with AMI mortality rates ranging from 9.9% to 20.6%. The

Committee agreed that the measure demonstrated sufficient reliability, validity, and feasibility. The Committee agreed with the developer's rationale for not including SDS factors in the risk-adjustment model. The measure is reported through the CMS Hospital Inpatient Quality Reporting Program and results are also incorporated into hospital payments through the CMS Hospital Value-Based Purchasing Program. Overall, the Committee agreed that the measure meets the criteria for continued NQF endorsement. This measure was identified as related to NQF #0730: Acute Myocardial Infarction (AMI) Mortality Rate (Agency for Healthcare Research and Quality). The Committee agreed to maintain both mortality measures in the CV portfolio because this measure captures mortality following hospitalization, and #0730 assesses inpatient mortality, and both measures are widely used in federal programs. Commenters generally supported the Committee's recommendation and 1 commenter stressed the importance of considering sociodemographic factors in the developer's conceptual framework. The Committee agreed that the conceptual framework and empirical analysis provided by the developer in the measure submission were sufficient.

0730 Acute Myocardial Infarction (AMI) Mortality Rate (Agency for Healthcare Research and Quality): Endorsed [Maintenance]

Description: In-hospital deaths per 1,000 hospital discharges with acute myocardial infarction (AMI) as a principal diagnosis for patients ages 18 years and older; **Measure Type:** Outcome; **Level of Analysis:** Facility; **Setting of Care:** Hospital/Acute Care Facility; **Data Source:** Administrative claims

This risk-adjusted outcome measure, initially endorsed in 2011, assesses the occurrence of in-hospital deaths per 1,000 hospital discharges with AMI as a principal diagnosis. The Committee agreed that morbidity and mortality may result from delayed, inappropriate, or low-quality treatment. A literature review of potential SDS factors indicated that race, ethnicity, and income are associated with in-hospital mortality after AMI. However, the literature also suggests that these relationships may be mediated by the quality of care. Accordingly, the developer did not include these factors in the risk-adjustment model. The Committee expressed no concerns regarding the reliability, validity, and feasibility of this measure. This measure is broadly used in public and private accountability and quality improvement programs and is publicly reported. The Committee agreed that this measure meets the NQF criteria for continued endorsement. This measure was identified as related to NQF #0230: Hospital 30-Day, All-Cause, Risk-Standardized Mortality Rate (RSMR) Following Acute Myocardial Infarction (AMI) Hospitalization for Patients 18 and Older (CMS). The Committee agreed to maintain both mortality measures in the CV portfolio because this measure captures inpatient mortality, and #0230 assesses mortality after hospital discharge, and both measures are widely used in federal programs.

DEVICES

Two previously NQF-endorsed measures and 1 newly submitted measure addressing cardiac devices were reviewed.

0694 Hospital Risk-Standardized Complication Rate following Implantation of Implantable Cardioverter-Defibrillator (ICD) (American College of Cardiology): Endorsed [Maintenance]

Description: This measure provides hospital specific risk-standardized rates of procedural complications following the implantation of an ICD in patients at least 65 years of age. The measure uses clinical data available in the National Cardiovascular Data Registry (NCDR) ICD Registry for risk adjustment linked

with administrative claims data using indirect patient identifiers to identify procedural complications; **Measure Type:** Composite; **Level of Analysis:** Facility; Population: National; **Setting of Care:** Hospital/Acute Care Facility, Ambulatory Care; Urgent Care; **Data Source:** Administrative claims, Electronic Clinical Data: Registry

This composite outcome measure, originally endorsed in 2011, assesses hospital-level rates of complications following the implantation of an implantable cardioverter-defibrillator (ICD) in patients over the age of 65. The developer provided sufficient data demonstrating a wide range of complications among hospitals. The Committee agreed that the reliability and validity testing results were sufficient. This measure is not currently in use. Overall, the Committee agreed that the measure meets the criteria for continued NQF endorsement. Commenters generally supported the Committee's recommendation; however, one commenter suggested that death should be included as a complication, but the cause of death should be related to the implantation of the ICD. The developer responded that causes of death are not available in the data sources used in the measure and that deaths comprise a very small proportion of the overall events (1.38% in 2011).

0965 Patients with an ICD Implant Who receive ACE-I/ARB and Beta Blocker Therapy at Discharge (American College of Cardiology): Endorsed [Maintenance]

Description: Proportion of patients undergoing ICD implant who received prescriptions for all medications (ACE/ARB and beta blockers) for which they are eligible for at discharge; **Measure Type:** Composite; **Level of Analysis:** Facility; **Setting of Care:** Hospital/Acute Care Facility; **Data Source:** Electronic Clinical Data: Registry

This all-or-none facility-level composite measure, initially endorsed in 2012, measures the proportion of patients with an ICD who were discharged from the hospital with a prescription for an ACE/ARB and beta-blocker. The Committee agreed that the evidence provided supports medical therapy in patients with heart failure or a previous MI but is not specific to patients with an ICD. The Committee agreed that a correlation coefficient of 0.87 demonstrated sufficient reliability. At both the patient and hospital level, performance on this measure was associated with better outcomes 6 months following hospital discharge. The empirical analysis to support the composite construction in order to meet the must-pass criterion of Scientific Acceptability was reviewed on the post-meeting call on September 25. The Committee questioned why the volume of the composite exceeded the volume of the individual measures, because based on the construction of the composite (all-or-none), the volume of the composite should be less than the lowest volume of the individual measures. The Committee re-voted on criterion 2d. composite construct via SurveyMonkey after the post-meeting call and did not reach consensus. Due to the previous consensus not reached status, the Committee discussed #0965 during the post-comment call on December 7, 2015. The Committee concluded that due to the intent of the measure (i.e., a patient only needs to be eligible for either an ACEI/ARB or a beta-blocker) the data in the "Value" columns for the composite and the individual components are accurate. The developer confirmed the intent of the measure. The Committee re-voted on criterion 2d. composite construct after the post-comment call. The Committee came to consensus and passed the 2d. criterion.

Measure Approved for Trial Use

HEART FAILURE

2764 Fixed Dose Combination of Hydralazine and Isosorbide Dinitrate Therapy for Self-identified Black or African American Patients with Heart Failure with LVEF <40% on ACE/ARB or Beta-blocker Therapy (National Minority Quality Forum): Recommended for Approval for Trial Use [New]

Description: Percentage of patients aged 18 years and older with a diagnosis of heart failure (HF) and a current or prior ejection fraction (EF) <40% who are self-identified Black or African Americans and receiving ACEI or ARB and Beta-blocker therapy who were prescribed a fixed-dose combination of hydralazine and isosorbide dinitrate seen for an office visit in the measurement period in the outpatient setting or at each hospital discharge; **Measure Type:** Process; **Level of Analysis:** Clinician: Group/Practice, Clinician: Individual; **Setting of Care:** Ambulatory Care: Clinician Office/Clinic, Hospital/Acute Care Facility; **Data Source:** Electronic Clinical Data: Electronic Health Record

This new eMeasure calculates the percentage of self-identified Black or African American patients with heart failure and a current or prior LVEF <40% receiving ACEI or ARB and beta-blocker therapy who were also prescribed a fixed-dose combination of hydralazine and isosorbide dinitrate. This eMeasure was considered for approval for trial use which requires that the developer demonstrate importance, use and usability, and feasibility, however, does not require the measure to have testing for reliability and validity. The evidence provided for this measure included the 2013 ACCF/AHA Guideline for the Management of Heart Failure and the Heart Failure Society of America (HFSA) 2010 Comprehensive Heart Failure Practice Guideline. The Committee expressed concern that the guidelines do not solely recommend the fixed-dose combination as indicated in the measure, but recommend the use of both fixed-dose or combination therapy (separate pills for hydralazine and isosorbide dinitrate). The developer clarified that the guideline recommendation is based on evidence from the African-American Heart Failure Trial (A-HeFT) in which the efficacy of only the fixed-dose medication was tested and demonstrated a 43% reduction in mortality compared to the placebo. The Committee agreed this evidence was sufficient. Because this is a newly developed measure, there are no performance data available, but the developer provided a summary of data from the literature demonstrating an opportunity for improvement. The Committee agreed that there is an opportunity for improvement but was concerned about compliance by clinicians in practice who may be limited by formulary restrictions and about recommending a measure that requires the use of a specific and sometimes costly medication. The Committee did not express any concerns regarding feasibility. A similar measure that does not require the fixed-dose combination is currently used in the American Heart Association's Get with the Guidelines. The developer provided plans for future accountability and quality improvement use for this new eMeasure. Ultimately, the Committee recommended this measure for approval for trial use. Many public comments supported measure #2764.

Three comments referenced the 2013 ACCF/AHA Heart Failure Guideline recommendations that encourage treatment of African American heart failure patients with the isosorbide dinitrate and hydralazine hydrochloride combination therapy, but do not explicitly recommend the fixed-dose combination. The commenters noted that the guidelines permit the use of the fixed-dose combination or separate therapies. The developer responded that the 2013 ACCF/AHA guideline appears to use

evidence to support a determination of equivalence that supports only the fixed-dose combination. Additionally, the ACCF/AHA guidelines recommend off label use of isosorbide dinitrate (a generic of Isordil Titrados) and hydralazine hydrochloride (a generic of Apresoline Hydrochloride), 2 drugs with indications, labeling, dose, and administration that differ from those of the fixed dose approved by FDA.

The same commenters expressed concerns that the measure could penalize providers who prescribe the separate therapies and that the cost of the fixed-dose combination therapy would financially burden many patients, increasing the likelihood of medical non-compliance. The developer noted that the issue of cost and affordability was discussed during the September 9 meeting of the NQF Cardiovascular Measures Committee. It was noted during that meeting that "costly" medications are linked to performance measures for cancer therapies and other "costly" diseases. The developer also noted that there were assumptions articulated during the September 9 meeting about the ability of the specified patient population to afford the medication, and the extent to which the potentially unaffordable cost would compromise the ability of these patients to fill prescriptions. The developer clarified that the measure would not penalize physicians who write prescriptions that are not filled.

The 3 commenters asked the Committee to reconsider its decision to recommend this measure for approval for trial use. The Committee considered the ACCF/AHA Heart Failure Guidelines during the measure evaluation discussion and determined that a gap in appropriate treatment persists in the African-American subpopulation of heart failure patients warranting a need for this measure. Studies show a significant reduction in mortality of this specific subpopulation with the use of the fixed-dosed combination therapy; therefore, the Committee did not change its recommendation of this measure for approval for trial use.

Measure Deferred

CORONARY ARTERY DISEASE (CAD)/ISCHEMIC VASCULAR DISEASE (IVD)

2763 Ischemic Vascular Disease Care: All or None Outcome Measure-Optimal Control (Wisconsin Collaborative for Healthcare Quality): Recommendation Deferred [New]

Description: The percentage of patients age 18 through 75 with one of the following conditions: (1) Two diagnoses related visits with Coronary Artery Disease (CAD) or a CAD risk-equivalent condition, or (2) Acute Coronary Event consisting of an acute myocardial infarction (AMI), coronary artery bypass graft (CABG), or percutaneous coronary intervention (PCI) from a hospital visit, who had each of the following during the 1-year measurement year: documentation in the medical record of daily aspirin or daily other antiplatelet medication usage, unless contraindicated, most recent blood pressure controlled to a level of less than 140/90 mmHg; most recent Tobacco Status is Tobacco-Free, documentation in the medical record of Statin Use, All or None Outcome Measure (Optimal Control) composite of BP <140/90, Tobacco Non-User, Daily Aspirin or Other Antiplatelet and Statin Use. Patients are classified uniquely to one of the three condition subgroups in the order of Coronary Artery Disease, Coronary Artery Disease Risk-Equivalent condition, or Acute Coronary Event; **Measure Type:** Composite; **Level of Analysis:** Clinician: Group/Practice; **Setting of Care:** Ambulatory Care: Clinician Office/Clinic; **Data Source:** Administrative claims, Electronic Clinical Data, Electronic Clinical Data: Electronic Health Record, Electronic Clinical Data: Registry

This new all-or-none composite measure requires patients with CAD, AMI, CABG, or PCI to have documentation of daily aspirin or another antiplatelet (unless contraindicated), blood pressure less than 140/90 mmHg, tobacco free status, and statin use. The Committee agreed that the multiple guidelines supporting the individual components of this measure were appropriate. The Committee agreed that the measure specifications aligned with the practice guidelines but questioned the rationale for excluding statin intolerance. The developer explained that it is not possible to capture statin intolerance with ICD-9 and ICD-10 codes. The Committee expressed no other concerns regarding reliability and validity. The Committee agreed that the measure is feasible but argued that certain data elements cannot be captured by administrative claims such as blood pressure or tobacco free status; therefore, additional data sources are needed and should be considered in future versions of the measure. This measure is currently used by the Wisconsin Collaborative for Healthcare Quality (WCHQ) for quality improvement and public reporting. This measure was identified as related to NQF #0076: Optimal Vascular Care (MN Community Measurement). In 2014 MN Community Measurement (MNCM) removed the LDL target component of #0076 due to the recent changes in the lipid guidelines. MNCM has informed NQF that it will update its measure to include the statin component for maintenance review in spring 2016 (phase 4) based on the latest guidelines. With the addition of the statin component pending for #0076, this measure will directly compete with it. In an effort to foster parsimony and harmony within the CV portfolio and enable the Committee to consider competing measures simultaneously, the Committee agreed to defer its recommendation for this measure until phase 4 so that a best-in-class determination can be made at that time.

Measures Not Recommended

CORONARY ARTERY DISEASE (CAD)/ISCHEMIC VASCULAR DISEASE (IVD)

2906 Coronary Artery Disease (CAD): Beta-Blocker Therapy—Prior Myocardial Infarction (MI) or Left Ventricular Systolic Dysfunction (LVEF <40%) (AMA-Physician Consortium for Performance Improvement): Not Recommended [New eMeasure]

Description: 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; **Measure Type:** Process; **Level of Analysis:** Clinician: Group/Practice, Clinician: Individual; **Setting of Care:** Ambulatory Care: Clinician Office/Clinic, Home Health, Post Acute/Long Term Care Facility: Long Term Acute Care Hospital, Post Acute/Long Term Care Facility: Nursing Home/Skilled Nursing Facility, Other; **Data Source:** Electronic Clinical Data: Electronic Health Record

The technical review found this eMeasure to have appropriate specifications and value sets, and an adequate feasibility assessment that addressed the data elements and measure logic. This eMeasure met NQF testing requirements with data element validity testing conducted using an EHR from a clinic with 40 physicians and a simulated data set using the Bonnie tool. The Committee determined that 82.8% agreement does not adequately reflect validity and did not recommend this measure.

2740 Proportion of Patients with Coronary Artery Disease (CAD) That Have a Potentially Avoidable Complication (during the episode time window) (Bridges to Excellence): Not Recommended [New]

Description: Percent of adult population aged 18+ years who triggered an episode of coronary artery disease (CAD), are followed for at least one year, and have one or more potentially avoidable complications (PACs). PACs may occur any time during the episode time window. **Measure Type:** Composite; **Level of Analysis:** Clinician: Group/Practice, Clinician: Individual, Clinician: Team; **Setting of Care:** Ambulatory Care Ambulatory Surgery Center (ASC), Ambulatory Care: Clinician Office/Clinic, Hospital/Acute Care Facility, Other; **Data Source:** Administrative claims

The purpose of this measure is to identify the magnitude of PACs and the cause of the most frequent and costly complications in order to focus on reducing those PACS and ultimately improve patient outcomes. This new clinician-level composite measure calculates the proportion of patients with CAD that have 1 or more potentially avoidable complications (PAC) within a year. PACs are defined as type 1 PACs and type 2 PACs. Type 1 PACS are complications directly related to CAD such as hypotension, cardiac arrest, and fluid and electrolyte disturbances. Type 2 PACS are considered patient safety failures such as sepsis, infections, phlebitis, DVT, pressure ulcers, etc. The Committee agreed the type 1 PACs were more directly related to CAD but expressed a great deal of concern that the type 2 PACs were too broad and that the clinician would be held responsible for PACs unrelated to the management of CAD. The Committee also expressed concern that there was no evidence or rationale provided to support the selection of the type 2 PACs or the 1-year time frame. The Committee's greatest concern was that this measure is specified at the clinician level, rather than the facility level, which it believed would be more appropriate. Overall, the Committee agreed that the rationale provided for the PAC outcomes did not meet the evidence criterion. The Committee reconvened on January 28, 2016, to reconsider this measure as requested by the measure developer. The Committee ultimately agreed to not recommend the measure for NQF endorsement. The developer submitted a request for reconsideration to CSAC. After discussion with the CSAC co-chairs, the developer agreed to re-specify the measure from the provider-level of analysis to the facility-level of analysis. Following this, the Committee co-chairs recommended that the measure be deferred for review by the Patient Safety Committee.

RHYTHM DISORDERS

One newly submitted measure addressing heart rhythm disorders was reviewed.

2749 Proportion of Patients with Arrhythmias (ARR) That Have a Potentially Avoidable Complication (during the episode time window) (Bridges to Excellence): Not Recommended [New]

Description: Percent of adult population aged 18+ years who triggered an episode of arrhythmias (ARR), are followed for at least one year, and have one or more potentially avoidable complications (PACs). PACs may occur any time during the episode time window. **Measure Type:** Composite; **Level of Analysis:** Clinician: Group/Practice, Clinician: Individual, Clinician: Team; **Setting of Care:** Ambulatory Care: Ambulatory Surgery Center (ASC), Ambulatory Care: Clinician Office/Clinic, Other; **Data Source:** Administrative claims

The purpose of this measure is to identify the magnitude of PACs and the cause of the most frequent and costly complications in order to focus on reducing those PACS and ultimately improve patient outcomes. This new clinician-level composite measure calculates the proportion of patients with

arrhythmias that have 1 or more potentially avoidable complications (PAC) within a year. PACs are defined as type 1 PACs and type 2 PACs. Type 1 PACs are complications directly related to arrhythmias such as hypotension, cardiac arrest, and fluid and electrolyte disturbances. Type 2 PACs are considered patient safety failures such as sepsis, infections, phlebitis, DVT, pressure ulcers, etc. The Committee agreed the type 1 PACs were more directly related to arrhythmias but expressed a great deal of concern that the type 2 PACs were too broad and that the clinician would be held responsible for PACs unrelated to the management of arrhythmias. The Committee also expressed concern that there was no evidence or rationale provided to support the selection of the type 2 PACs or the 1-year time frame. The Committee's greatest concern was that this measure is specified at the clinician level, rather than the facility level, which they believed would be more appropriate. Overall, the Committee agreed that the rationale provided for the PAC outcomes did not meet the evidence criterion. The Committee reconvened on January 28, 2016, to reconsider this measure as requested by the measure developer. The Committee ultimately agreed to not recommend the measure for NQF endorsement. The developer submitted a request for reconsideration to CSAC. After discussion with the CSAC co-chairs, the developer agreed to re-specify the measure from the provider-level of analysis to the facility-level of analysis. Following this, the Committee co-chairs recommended that the measure be deferred for review by the Patient Safety Committee.

HEART FAILURE

2747 Proportion of Patients with Heart Failure (HF) That Have a Potentially Avoidable Complication (during the episode time window) (Bridges to Excellence): Not Recommended [New]

Description: Percent of adult population aged 18+ years who triggered an episode of heart failure (HF), are followed for at least one year, and have one or more potentially avoidable complications (PACs). PACs may occur any time during the episode time window. **Measure Type:** Composite; **Level of Analysis:** Clinician: Group/Practice, Clinician: Individual, Clinician: Team; **Setting of Care:** Ambulatory Care: Ambulatory Surgery Center (ASC), Ambulatory Care: Clinician Office/Clinic, Other; **Data Source:** Administrative claims

The purpose of this measure is to identify the magnitude of PACs and the cause of the most frequent and costly complications in order to focus on reducing those PACs and ultimately improve patient outcomes. This new clinician-level composite measure calculates the proportion of patients with heart failure that have 1 or more potentially avoidable complication (PAC) within a year. PACs are defined as type 1 PACs and type 2 PACs. Type 1 PACs are complications directly related to heart failure such as hypotension, acute heart failure, and fluid and electrolyte disturbances. Type 2 PACs are considered patient safety failures such as sepsis, infections, phlebitis, DVT, pressure ulcers, etc. The Committee agreed the type 1 PACs were more directly related to heart failure but expressed a great deal of concern that the type 2 PACs were too broad and that the clinician would be held responsible for PACs unrelated to the management of heart failure. The Committee also expressed concern that there was no evidence or rationale provided to support the selection of the type 2 PACs or the 1-year time frame. The Committee's greatest concern was that this measure is specified at the clinician level, rather than the facility level, which it believed would be more appropriate. Overall, the Committee agreed that the rationale provided for the PAC outcomes did not meet the evidence criterion. The Committee reconvened on January 28, 2016, to reconsider this measure as requested by the measure developer.

The Committee ultimately agreed to not recommend the measure for NQF endorsement. The developer submitted a request for reconsideration to CSAC. After discussion with the CSAC co-chairs, the developer agreed to re-specify the measure from the provider-level of analysis to the facility-level of analysis. Following this, the Committee co-chairs recommended that the measure be deferred for review by the Patient Safety Committee.

HYPERTENSION

One newly submitted measure addressing hypertension was reviewed.

2748 Proportion of Patients with Hypertension (HTN) That Have a Potentially Avoidable Complication (during the episode time window) (Bridges to Excellence): Not Recommended [New]

Description: Percent of adult population aged 18+ years who triggered an episode of hypertension (HTN), are followed for at least one year, and have one or more potentially avoidable complications (PACs). PACs may occur any time during the episode time window. **Measure Type:** Composite; **Level of Analysis:** Clinician: Group/Practice, Clinician: Individual, Clinician: Team; **Setting of Care:** Ambulatory Care: Ambulatory Surgery Center (ASC), Ambulatory Care: Clinician Office/Clinic, Other; **Data Source:** Administrative claims

The purpose of this measure is to identify the magnitude of PACs and the cause of the most frequent and costly complications in order to focus on reducing those PACs and ultimately improve patient outcomes. This new clinician-level composite measure calculates the proportion of patients with hypertension that have 1 or more potentially avoidable complications (PAC) within a year. PACs are defined as type 1 PACs and Type 2 PACs. type 1 PACs are complications directly related to hypertension such as malignant hypertension, blurred vision, and acute congestive heart failure. Type 2 PACs are considered patient safety failures such as sepsis, infections, phlebitis, DVT, pressure ulcers, etc. The Committee agreed the type 1 PACs were more directly related to hypertension but expressed a great deal of concern that the type 2 PACs were too broad and that the clinician would be held responsible for PACs unrelated to the management of hypertension. The Committee also expressed concern that there was no evidence or rationale provided to support the selection of the type 2 PACs or the 1-year time frame. The Committee's greatest concern was that this measure is specified at the clinician level, rather than the facility level, which it believed would be more appropriate. Overall, the Committee agreed that the rationale provided for the PAC outcomes did not meet the evidence criterion. The Committee reconvened on January 28, 2016, to reconsider this measure as requested by the measure developer. The Committee ultimately agreed to not recommend the measure for NQF endorsement. The developer submitted a request for reconsideration to CSAC. After discussion with the CSAC co-chairs, the developer agreed to re-specify the measure from the provider-level of analysis to the facility-level of analysis. Following this, the Committee co-chairs recommended that the measure be deferred for review by the Patient Safety Committee.

PERCUTANEOUS CORONARY INTERVENTION

One new measure was reviewed addressing percutaneous coronary intervention (PCI)

2751 Proportion of Patients Undergoing an Angioplasty Procedure (Percutaneous Coronary Intervention - PCI) That Have a Potentially Avoidable Complication (during the episode time window) (Bridges to Excellence): Not Recommended [New]

Description: Percent of adult population aged 18+ years who had a percutaneous coronary intervention (PCI) procedure, are followed for at least 90 days, and have one or more potentially avoidable complications (PACs); **Measure Type:** Composite; **Level of Analysis:** Facility; **Setting of Care:** Ambulatory Care: Ambulatory Surgery Center (ASC), Hospital/Acute Care Facility, Other; **Data Source:** Administrative claims

The purpose of this measure is to identify the magnitude of PACs and the cause of the most frequent and costly complications in order to focus on reducing those PACs and ultimately improve patient outcomes. This new facility-level composite measure calculates the proportion of patients with undergoing a PCI that have one or more potentially avoidable complications (PAC) within a year. PACs are defined as type 1 PACs and type 2 PACs. Type 1 PACs are complications directly related to PCI such as hypotension, cardiac arrest, and fluid and electrolyte disturbances. Type 2 PACs are considered patient safety failures such as sepsis, infections, phlebitis, DVT, pressure ulcers, etc. The Committee agreed the type 1 PACs were more directly related to PCI but expressed a great deal of concern that the type 2 PACs were too broad and that the facility would be held responsible for PACs unrelated to a PCI. The Committee agreed that the 90-day time frame is reasonable for this type of procedure and that the measure is appropriately specified at the facility level, rather than the clinician level. The Committee agreed that the reliability, validity, and feasibility testing results were adequate. The Committee did not reach consensus on the overall suitability of this measure for NQF endorsement. The Committee reconvened on January 28, 2016, to reconsider this measure as requested by the measure developer. The Committee ultimately agreed to not recommend the measure for NQF endorsement. The developer submitted a request for reconsideration to CSAC. After discussion with the CSAC co-chairs, the developer agreed to re-specify the four condition-specific measures from the provider-level of analysis to the facility-level of analysis. Following this, the Committee co-chairs recommended that the measure be deferred for review by the Patient Safety Committee.

DEVICES

2752 Proportion of Patients Undergoing Pacemaker / Defibrillator Implantation (PCMDFR) That Have a Potentially Avoidable Complication (during the episode time window) (Bridges to Excellence): Not Recommended [New]

Description: Percent of adult population aged 18+ years who had a pacemaker/defibrillator implantation (PCMDFR), are followed for at least 30 days, and have one or more potentially avoidable complications (PACs); **Measure Type:** Composite; **Level of Analysis:** Facility; **Setting of Care:** Ambulatory Care: Ambulatory Surgery Center (ASC), Hospital/Acute Care Facility, Other; **Data Source:** Administrative claims

This new composite measure calculates the percent of the adult population age 18 and over who had a pacemaker/defibrillator implantation (PCMDFR) and have 1 or more potentially avoidable complications

(PACs) within the 30 days following. Evidence submitted by the developers defined a broad composite measure of potential avoidable complications (PACs) regarding any complications directly related to PCMDFR, such as wound infection, hypotension, and cardiac arrest, as well as patient safety failures such as sepsis, infections, phlebitis, deep vein thrombosis, or pressure sores. The Committee questioned whether the 30-day period was too limited and whether some infections would be missed, but the developer clarified that its empirical tests revealed a strong link between the procedure and infections through 30 days, but the relationship was significantly weaker past that point. The Committee also discussed the type 2 PACs and their relevance to the procedure and agreed the rationale for selecting some of these PACs was not clear. The Committee stated that this measure is appropriate at the facility level rather than at the clinician level. The Committee did not reach consensus on the evidence, composite construct, and reliability criteria. The Committee questioned the 170 risk factors in the risk model and agreed that the measure did not meet the validity criterion. The Committee reconvened on January 28, 2016, to reconsider this measure as requested by the measure developer. The Committee ultimately agreed to not recommend the measure for NQF endorsement. The developer submitted a request for reconsideration to CSAC. After discussion with the CSAC co-chairs, the developer agreed to re-specify the four condition-specific measures from the provider-level of analysis to the facility-level of analysis. Following this, the Committee co-chairs recommended that the measure be deferred for review by the Patient Safety Committee.

Ad Hoc Review

An ad hoc review is a formal measure evaluation and endorsement reconsideration outside of the scheduled maintenance of endorsement process. An ad hoc review is limited and focuses on a specific issue regarding an evaluation criterion and is not the same as a maintenance of endorsement evaluation.

0018 Controlling High Blood Pressure (National Committee for Quality Assurance): Changes Not Accepted for Continued Endorsement

Description: The percentage of patients 18-85 years of age who had a diagnosis of hypertension (HTN) and whose blood pressure was adequately controlled during the measurement year based on the following criteria: - Patients 18-59 years of age whose blood pressure was <140/90 mm Hg. - Patients 60-85 years of age with a diagnosis of diabetes whose blood pressure was <140/90 mm Hg. - Patients 60-85 years of age without a diagnosis of diabetes whose blood pressure was <150/90 mm Hg.;

Measure Type: Intermediate Clinical Outcome; **Level of Analysis:** Health Plan, Integrated Delivery System; **Setting of Care:** Ambulatory Care: Clinician Office/Clinic; **Data Source:** Administrative claims, Electronic Clinical Data, Paper Medical Records

This intermediate outcome measure, originally endorsed in 2009 and most recently in 2012, aims to improve the quality of care for patients with hypertension by assessing whether their blood pressure is adequately controlled. The measure is used in several public reporting programs, including the CMS Electronic Health Records Incentive Program and Physician Quality Reporting System (PQRS). An ad hoc review was generated due to a material change submitted as part of an annual update relating to the underlying evidence of the measure. The material changes included modifications to the measure population age and diagnosis and blood pressure targets for the numerator. The developer based this

change on the definition of adequate control to include 2 different blood pressure thresholds based on age and diagnosis (diabetes) in order to align with the 2014 Evidence-Based Guidelines for the Management of High Blood Pressure in Adults, Report from the Panel Members Appointment to the Eighth Joint National Committee (JNC 8). The Committee had concerns about the studies referenced in the evidence for the >70 population as not representative of the U.S. population and underpowered. The Committee also noted the lack of rigorous randomized controlled trials (RCTs) provided in the submission. In addition, the Committee discussed the forthcoming results of the Systolic Blood Pressure Intervention Trial (SPRINT) as a reason not to recommend the changes to the measure. New ACC/AHA blood pressure guidelines are expected in 2016 that may or may not be similar to the 2014 guidelines. The Committee debated over whether the measure's recommendation should wait for these pending guidelines, but also noted the importance of keeping a blood pressure measure as part of a comprehensive CV portfolio. Ultimately, the Committee agreed that the evidence provided to support the changes to the measure did not meet the NQF criteria and did not recommend the measure for continued endorsement.

After discussion with the developer following the in-person meeting, the ad hoc review of the revised specifications for the measure has been deferred pending availability of new evidence. The measure will retain endorsement with the existing specifications.

Comments Received After Committee Evaluation

The draft report was posted for public and member comment October 23 through November 23, 2015. During this commenting period, NQF received 99 comments from 11 member organizations. NQF received an additional 24 comments from the public.

The majority of post-evaluation comments supported the Cardiovascular Standing Committee's recommendations. Three major themes were identified: harmonization, measure specific requests for changes, and preference of outcome measures versus process and structure measures. The Standing Committee discussed the comments during a webinar on December 7, 2015. Comments received for the 5 measures reconsidered and 1 measure where consensus was not reached were discussed during the Standing Committee webinar on January 28, 2016. The Committee responses to the comments are noted in the measure-specific summaries above and in the [Comment Table](#) provided on the Cardiovascular 2015 [project page](#).

References

- ¹ Go AS, Mozaffarian D, Roger VL, et al. Heart disease and stroke statistics—2014 update: a report from the American Heart Association. *Circulation*. 2014;129(3):e28-e292.
- ² American Heart Association. About heart attacks website. http://www.heart.org/HEARTORG/Conditions/HeartAttack/AboutHeartAttacks/About-Heart-Attacks_UCM_002038_Article.jsp. Last accessed August 2015.
- ³ Hall MJ, DeFrances CJ, Williams SN, et al. National Hospital Discharge Survey: 2007 summary. *Nat/ Health Stat Report*. 2010;Oct 26(29):1-20,24.
- ⁴ American Heart Association. Implantable cardioverter defibrillator (ICD) website. http://www.heart.org/HEARTORG/Conditions/Arrhythmia/PreventionTreatmentofArrhythmia/Implantable-Cardioverter-Defibrillator-ICD_UCM_448478_Article.jsp. Last accessed October 2015.
- ⁵ American Heart Association. Cardiac procedures and surgeries website. http://www.heart.org/HEARTORG/Conditions/HeartAttack/PreventionTreatmentofHeartAttack/Cardiac-Procedures-and-Surgeries_UCM_303939_Article.jsp. Last accessed October 2015.
- ⁶ Mayo Clinic. Tests and procedures carotid angioplasty and stenting website. <http://www.mayoclinic.org/tests-procedures/carotid-angioplasty/basics/definition/prc-20005580>. Last accessed October 2015.
- ⁷ Go AS, Mozaffarian D, Roger VL, et al. Heart disease and stroke statistics—2014 update: a report from the American Heart Association. *Circulation*. 2014;129(3):e28-e292
- ⁸ Centers for Disease Control and Prevention (CDC). Million Hearts®. About heart disease & stroke website. <http://millionhearts.hhs.gov/abouthds/cost-consequences.html>. Last accessed January 2015.
- ⁹ Agency for Healthcare Research and Quality (AHRQ). *2014 National Healthcare Quality and Disparities Report*. Rockville, MD: AHRQ; 2015. AHRQ Pub. No. 15-0007. Available at <http://www.ahrq.gov/research/findings/nhqrdr/index.html>. Last accessed October 2015.
- ¹⁰ National Library of Medicine. NCBI MeSH definitions website. <http://www.ncbi.nlm.nih.gov/mesh>. Last accessed January 2015.

Appendix A: Details of Measure Evaluation

Endorsed Measures

Rating Scale: H=High; M=Moderate; L=Low; I=Insufficient; NA=Not Applicable; Y=Yes; N=No

0067 Chronic Stable Coronary Artery Disease: Antiplatelet Therapy

[Submission](#) | [Specifications](#)

Description: Percentage of patients aged 18 years and older with a diagnosis of coronary artery disease seen within a 12 month period who were prescribed aspirin or clopidogrel.

Numerator Statement: Patients who were prescribed* aspirin or clopidogrel within a 12 month period.

*Prescribed may include prescription given to the patient for aspirin or clopidogrel at one or more visits in the measurement period OR patient already taking aspirin or clopidogrel as documented in current medication list.

Denominator Statement: All patients aged 18 years and older with a diagnosis of coronary artery disease seen within a 12 month period.

Exclusions: Documentation of medical reason(s) for not prescribing aspirin or clopidogrel (e.g., allergy, intolerance, receiving other thienopyridine therapy, receiving warfarin therapy, bleeding coagulation disorders, other medical reasons)

Documentation of patient reason(s) for not prescribing aspirin or clopidogrel (e.g., patient declined, other patient reasons)

Documentation of system reason(s) for not prescribing aspirin or clopidogrel (e.g., lack of drug availability, other reasons attributable to the health care system)

Adjustment/Stratification:

Level of Analysis: Clinician : Individual

Setting of Care: Ambulatory Care : Clinician Office/Clinic

Type of Measure: Process

Data Source: Electronic Clinical Data : Registry

Measure Steward: American College of Cardiology

STANDING COMMITTEE MEETING [09/09/2015-09/10/2015]

1. Importance to Measure and Report: The measure meets the Importance criteria

(1a. Evidence, 1b. Performance Gap)

1a. Evidence: **H-12; M-0; L-0; I-0; IE-0**; 1b. Performance Gap: **H-5; M-7; L-0; I-0**

Rationale:

- Based on the guideline recommendations and correlating statements provided by the developer, the Committee agreed that the evidence supports the use of aspirin or clopidogrel in patients with CAD.
- Although there was general agreement that a performance gap existed, the Committee debated whether the measure was topped out since the performance rates from the PINNACLE Registry remained at 86% in 2013 and 2014. Additional literature provided by the developer

demonstrated a performance rate of 84% from the PINNACLE Registry from 2008 to 2009. Since performance rates were still sub-optimal in certain regions, the Committee ultimately agreed an opportunity for improvement still existed.

2. Scientific Acceptability of Measure Properties: The measure meets the Scientific Acceptability criteria

(2a. Reliability - precise specifications, testing; 2b. Validity - testing, threats to validity)

2a. Reliability: **H-8; M-4; L-0; I-0** 2b. Validity: **H-8; M-4; L-0; I-0**

Rationale:

- The developer conducted a signal-to-noise analysis using the beta-binomial model to assess the reliability of the measure. The Committee agreed that a score of 0.994 demonstrated high reliability.
- The developers provided content, construct and face validity results for this measure. The Committee agreed that the results adequately demonstrate validity.

3. Feasibility: H-10; M-2; L-0; I-0

(3a. Clinical data generated during care delivery; 3b. Electronic sources; 3c. Susceptibility to inaccuracies/unintended consequences identified 3d. Data collection strategy can be implemented)

Rationale:

- The Committee agreed that the measure is feasible to implement, as the measure has already been in use and collected via the PINNACLE registry since 2003.

4. Use and Usability: H-12; M-0; L-0; I-0

(Meaningful, understandable, and useful to the intended audiences for 4a. Public Reporting/Accountability and 4b. Quality Improvement)

Rationale:

- The measure is currently used in the PINNACLE Registry and PQRS.

5. Related and Competing Measures

- This measure is related to:
 - NQF #0068: Ischemic Vascular Disease (IVD): Use of Aspirin or Another Antiplatelet (NCQA)
 - The Committee agreed that the different data sources, conditions and medications justify maintaining both measures in the Cardiovascular portfolio.
- No competing measures noted.

Standing Committee Recommendation for Endorsement: Y-12; N-0

6. Public and Member Comment

- Four commenters were generally in support of this measure. Two commenters suggested the measure capture additional antiplatelet therapies besides aspirin and clopidogrel.

- Developer response: Thank you for your comment and interest in endorsing this measure. The ACC/AHA Taskforce on Performance Measures has plans to revise our entire CAD measure set. At that time will share your recommendation with the writing committee and consider all guideline recommendations that may impact the types of medications (including other antiplatelets) that should be included in this measure when it is updated.
- Committee response: The Committee agrees with the developer response and maintains their decision to recommend this measure for endorsement.

7. Consensus Standards Approval Committee (CSAC) Vote (January 21, 2016): Y-15; N-0

8. Consensus Standards Approval Committee (CSAC) Decision: Approved for continued endorsement

9. Board of Directors Vote: Ratified for continued endorsement on February 18, 2016

0068 Ischemic Vascular Disease (IVD): Use of Aspirin or Another Antiplatelet

[Submission](#) | [Specifications](#)

Description: The percentage of patients 18 years of age and older who were discharged from an inpatient setting with an acute myocardial infarction (AMI), coronary artery bypass graft (CABG) or percutaneous coronary intervention (PCI) during the 12 months prior to the measurement year, or who had a diagnosis of ischemic vascular disease (IVD) during the measurement year and the year prior to the measurement year and who had documentation of routine use of aspirin or another antiplatelet during the measurement year.

Numerator Statement: Patients who had documentation of routine use of aspirin or another antiplatelet during the measurement year.

Denominator Statement: Patients 18 years or older by the end of the measurement year discharged from an inpatient setting with an AMI, CABG, or PCI during the 12 months prior to the measurement year or who had a diagnosis of IVD during both the measurement year and the year prior to the measurement year.

Exclusions: Patients who had documentation of use of anticoagulant medications during the measurement year.

Adjustment/Stratification:

Level of Analysis: Clinician : Group/Practice, Clinician : Individual

Setting of Care: Ambulatory Care : Clinician Office/Clinic

Type of Measure: Process

Data Source: Administrative claims, Electronic Clinical Data, Electronic Clinical Data : Electronic Health Record, Paper Medical Records

Measure Steward: National Committee for Quality Assurance

STANDING COMMITTEE MEETING [09/09/2015-09/10/2015]

1. Importance to Measure and Report: The measure meets the Importance criteria

(1a. Evidence, 1b. Performance Gap)

1a. Evidence: **H-14; M-1; L-0; I-0; IE-0**; 1b. Performance Gap: **H-8; M-8; L-0; I-0**;

Rationale:

- The Committee agreed that the developer provided sufficient evidence to support the routine use of aspirin or another antiplatelet in patients with IVD.
- The developer provided performance data from NCQA's Heart/Stroke Recognition Program and CMS' PQRS. The Committee agreed that a performance gap existed but noted that as volume increased in the PQRS data set, performance rates decreased. The developer explained that this was most likely due to the rapid increase of participating clinicians in the program and it was possible some of them did not have the systems in place to implement the measure.

2. Scientific Acceptability of Measure Properties: The measure meets the Scientific Acceptability criteria

(2a. Reliability - precise specifications, testing; 2b. Validity - testing, threats to validity)

2a. Reliability: **H-11; M-5; L-0; I-0** 2b. Validity: **H-1; M-14; L-0; I-0**

Rationale:

- The Committee agreed that the measure specifications were precise.
- The Committee questioned whether excluding patients on anticoagulation medication from the denominator, a change to the measure, would affect reliability.
- Reliability testing for this measure was conducted at the performance measure score level using a signal-to-noise test; the overall score was 0.88. The Committee agreed that the results demonstrated high reliability.
- Face validity was systematically assessed through two expert panels that "concluded with good agreement that the measure, as specified, accurately differentiates quality across clinicians and group practices." The Committee noted a preference for numerical results from the systematic assessment rather than the general statement provided.

3. Feasibility: **H-9; M-7; L-0; I-0**

(3a. Clinical data generated during care delivery; 3b. Electronic sources; 3c. Susceptibility to inaccuracies/unintended consequences identified 3d. Data collection strategy can be implemented)

Rationale:

- The Committee noted that the data can be collected from multiple data sources without any barriers and agreed that this measure is feasible.

4. Use and Usability: **H-12; M-4; L-0; I-0**

(Meaningful, understandable, and useful to the intended audiences for 4a. Public Reporting/Accountability and 4b. Quality Improvement)

Rationale:

- This measure is publicly reported in the PQRS program, the CMS Meaningful Use program, the ACO Shared Savings Program, and the NCQA Stroke Recognition Program.

5. Related and Competing Measures

- This measure is related to:
 - NQF #0067: Chronic Stable Coronary Artery Disease: Antiplatelet Therapy (ACC)
 - The Committee agreed that the different data sources, conditions and medications justify maintaining both measures in the Cardiovascular portfolio.
- No competing measures noted.

Standing Committee Recommendation for Endorsement: Y-16; N-0

6. Public and Member Comment

- Three commenters generally agreed with this measure. Two commenters suggested the developer add a measure exclusion for those at risk of bleeding.
 - Developer response: Thank you for your review of the changes to NQF 0068 and this recommendation. NCQA has recently received similar recommendations and we will be reviewing this with our Cardiovascular Measurement Advisory Panel. We will update NQF on our progress.
 - Committee Response: The Committee agrees with the developer response and maintains its decision to recommend this measure for endorsement.

7. Consensus Standards Approval Committee (CSAC) Vote (January 21, 2016): Y-15; N-0

8. Consensus Standards Approval Committee (CSAC) Decision: Approved for continued endorsement

9. Board of Directors Vote: Ratified for continued endorsement on February 18, 2016

0070 Coronary Artery Disease (CAD): Beta-Blocker Therapy-Prior Myocardial Infarction (MI) or Left Ventricular Systolic Dysfunction (LVEF <40%)

[Submission](#) | [Specifications](#)

Description: 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

Numerator Statement: Patients who were prescribed beta-blocker therapy

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 MI (within the past 3 years) or a current or prior LVEF <40%

Exclusions: Documentation of medical reason(s) for not prescribing beta-blocker therapy (eg, allergy, intolerance, other medical reasons)

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

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

Adjustment/Stratification:

Level of Analysis: Clinician : Group/Practice, Clinician : Individual

Setting of Care: Ambulatory Care : Clinician Office/Clinic, Home Health, Post Acute/Long Term Care Facility : Long Term Acute Care Hospital, Post Acute/Long Term Care Facility : Nursing Home/Skilled Nursing Facility, Other

Type of Measure: Process

Data Source: Electronic Clinical Data, Electronic Clinical Data : Registry

Measure Steward: AMA-convened Physician Consortium for Performance Improvement

STANDING COMMITTEE MEETING [09/09/2015-09/10/2015]

1. Importance to Measure and Report: The measure meets the Importance criteria

(1a. Evidence, 1b. Performance Gap)

1a. Evidence: **H-16; M-0; L-0; I-0; IE-0**; 1b. Performance Gap: **H-11; M-6; L-0; I-0**

Rationale:

- Note: The Committee's discussion and voting on evidence for the eMeasure version of #0070 (#2906) applies to the Claims/Registry version.
- The developer provided performance data from the PQRS Experience Report from 2010 to 2013. The performance rates ranged from 69.9% to 82.1%. The Committee questioned the variation in performance rates from year to year. The developers explained that variation in performance rates was due to the rate of participating professionals in PQRS that changes from year to year. The Committee agreed that a performance gap persists, with approximately 20-30% of eligible patients not receiving beta-blocker therapy.

2. Scientific Acceptability of Measure Properties: The measure meets the Scientific Acceptability criteria

(2a. Reliability - precise specifications, testing; 2b. Validity - testing, threats to validity)

2a. Reliability: **H-7; M-10; L-0; I-0** 2b. Validity: **H-5; M-11; L-0; I-1**

Rationale:

- The measure assessed 1,724 physicians from the PQRS GPRO database and was tested for reliability at the measure score level, using the beta binomial method. Reliability at the minimum level of quality reporting events (10) was 0.65. Reliability at the average number of quality reporting events (61.0) was 0.92. Overall the Committee concluded that the results indicated high reliability.
- The measure was tested for validity at the measure score level using a systematic assessment of face validity by 12 members of the PCPI Measure Advisory Committee. The Committee agreed that the results indicated sufficient face validity.

3. Feasibility: H-13; M-4; L-0; I-0

(3a. Clinical data generated during care delivery; 3b. Electronic sources; 3c. Susceptibility to inaccuracies/unintended consequences identified 3d. Data collection strategy can be implemented)

Rationale:

- The Committee did not express any concerns with the measure's feasibility.

4. Use and Usability: H-7; M-8; L-2; I-0

(Meaningful, understandable, and useful to the intended audiences for 4a. Public Reporting/Accountability and 4b. Quality Improvement)

Rationale:

- The Committee noted that this measure is used in PQRS, PINNACLE Registry, and Meaningful Use Stage II.

5. Related and Competing Measures

- No related or competing measures noted.

Standing Committee Recommendation for Endorsement: Y-16; N-0

6. Public and Member Comment

- Three commenters were generally in support of the measure. No additional comments were submitted

7. Consensus Standards Approval Committee (CSAC) Vote (January 21, 2016): Y-15; N-0

8. Consensus Standards Approval Committee (CSAC) Decision: Approved for continued endorsement

9. Board of Directors Vote: Ratified for continued endorsement on February 18, 2016

0071 Persistence of Beta-Blocker Treatment After a Heart Attack

[Submission](#) | [Specifications](#)

Description: The percentage of patients 18 years of age and older during the measurement year who were hospitalized and discharged from July 1 of the year prior to the measurement year to June 30 of the measurement year with a diagnosis of acute myocardial infarction (AMI) and who received persistent beta-blocker treatment for six months after discharge.

Numerator Statement: Patients who had a 180-day course of treatment with beta-blockers post discharge.

Denominator Statement: Patients 18 years of age and older as of December 31 of the measurement year who were hospitalized and discharged from July 1 of the year prior to the measurement year to June 30 of the measurement year with diagnosis of AMI. See question S.9 Denominator Details for methods to identify patients who qualify for the denominator.

Exclusions: Exclude from the denominator, hospitalizations in which the patient was transferred directly to a nonacute care facility for any diagnosis.

Exclude patients who are identified as having an intolerance or allergy to beta-blocker therapy. Any of the following anytime during the patient's history through the end of the continuous enrollment period meet criteria:

- Asthma (Asthma Value Set).
- COPD (COPD Value Set).
- Obstructive chronic bronchitis (Obstructive Chronic Bronchitis Value Set).
- Chronic respiratory conditions due to fumes and vapors (Chronic Respiratory Conditions Due to Fumes/Vapors Value Set).
- Hypotension, heart block >1 degree or sinus bradycardia (Beta-Blocker Contraindications Value Set).
- A medication dispensing event indicative of a history of asthma (Table PBH-D).
- Intolerance or allergy to beta-blocker therapy.

Adjustment/Stratification:

Level of Analysis: Health Plan, Integrated Delivery System

Setting of Care: Ambulatory Care : Clinician Office/Clinic

Type of Measure: Process

Data Source: Administrative claims, Electronic Clinical Data, Electronic Clinical Data : Pharmacy

Measure Steward: National Committee for Quality Assurance

STANDING COMMITTEE MEETING [09/09/2015-09/10/2015]

1. Importance to Measure and Report: The measure meets the Importance criteria

(1a. Evidence, 1b. Performance Gap)

1a. Evidence: **H-4; M-10; L-2; I-0; IE-0**; 1b. Performance Gap: **H-3; M-13; L-0; I-0**;

Rationale:

- Evidence provided by the developer included one clinical guideline for ST-elevation myocardial infarction (STEMI) and one clinical guideline for non-ST Elevation myocardial infarction (NSTEMI). A Committee member noted that the non-STEMI guidelines were graded Level C, based on expert opinion, and stated that the 1999 systematic review raised concern. The developer explained that while the review was dated, the seminal work cited in the measure submission provided more comprehensive evidence in support of the measure. Other Committee members were aware of stronger, more recent data on the use of beta blockers post MI that the developers did not provide.
- The developer provided data from commercial health plans, Medicare, and Medicaid from 2012-2014 that showed that approximately 15% of commercial and Medicaid patients did not receive beta blockers for six months after an MI. Ten percent of Medicare patients did not receive the appropriate treatment. The Committee agreed that there continues to be a performance gap.

2. Scientific Acceptability of Measure Properties: The measure meets the Scientific Acceptability criteria

(2a. Reliability - precise specifications, testing; 2b. Validity - testing, threats to validity)

2a. Reliability: **H-2; M-13; L-1; I-0** 2b. Validity: **H-0; M-15; L-1; I-0**

Rationale:

- The Committee asked the developer to explain the rationale for the 75% (135 days) of six months (180 days) “persistence threshold.” The developer responded that the threshold was the best way to assign consistent use at the time the measure was developed. The developer is aware, however, that the Pharmacy Quality Alliance (PQA) uses 80% of days covered as a threshold and will consider aligning this measure with other PQA adherence measures.
- The developer clarified that all patients discharged with a diagnosis of AMI, regardless of undergoing a revascularization procedure, will be included in this measure.
- Reliability testing for this measure was conducted at the measure score level using signal-to-noise testing; overall reliability at the health plan level was between 0.78 and 0.81. The Committee agreed this measure is reliable.
- The developer conducted construct validity and a systematic assessment of face validity with three expert panels but did not provide statistical results from the expert panels’ review; therefore the Committee determined that validity was moderate.

3. Feasibility: H-9; M-7; L-0; I-0

(3a. Clinical data generated during care delivery; 3b. Electronic sources; 3c. Susceptibility to inaccuracies/unintended consequences identified 3d. Data collection strategy can be implemented)

Rationale:

- The Committee agreed that this measure is feasible.

4. Use and Usability: H-10; M-5; L-1; I-0

(Meaningful, understandable, and useful to the intended audiences for 4a. Public Reporting/Accountability and 4b. Quality Improvement)

Rationale:

- This measure is currently reported through NCQA’s Health Plan Rankings, Accreditation, and Quality Compass.

5. Related and Competing Measures

- No related or competing measures noted.

Standing Committee Recommendation for Endorsement: Y-15; N-1

6. Public and Member Comment

- Four commenters were generally in support of this measure. One commenter noted the feasibility of data may be an issue due to untimely information and data limitations. The same commenter also suggested the developer include an exclusion for pregnancy in the denominator.
 - Developer Response: Thank you for your review of the update to NQF 0071 and this set of recommendations.
NCQA recognizes the data collection burden this measure presents for individual practices and providers, which is why it is specified for health plan level accountability. Health plans have access to discharge information and pharmacy data, and are in a good position to influence performance on this measure by working with hospitals and

practices to ensure data is shared in a timely manner, supporting needed care coordination for these vulnerable patients.

With regard to an exclusion for pregnancy, we do not believe this would be appropriate because beta blockers are generally considered safe and although not all beta-blockers are recommended for pregnant women, there are alternatives to choose from. The FDA currently recommends that “women who are pregnant or nursing should talk to their doctor before they start using Beta-Blockers.”

- <http://www.clevelandclinicmeded.com/medicalpubs/diseasemanagement/cardiology/pregnancy-and-heart-disease/>
- <http://www.fda.gov/forconsumers/byaudience/forwomen/ucm118594.htm>
- Committee Response: The Committee agrees with the developer response and maintains their decision to recommend this measure for endorsement.

7. Consensus Standards Approval Committee (CSAC) Vote (January 21, 2016): Y-15; N-0

8. Consensus Standards Approval Committee (CSAC) Decision: Approved for continued endorsement

9. Board of Directors Vote: Ratified for continued endorsement on February 18, 2016

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

[Submission](#) | [Specifications](#)

Description: Percentage of patients aged 18 years and older with a diagnosis of heart failure for whom the quantitative or qualitative results of a recent or prior (any time in the past) LVEF assessment is documented within a 12 month period.

Numerator Statement: Patients for whom the quantitative or qualitative results of a recent or prior (any time in the past) LVEF assessment is documented* within a 12 month period.

*Documentation must include documentation in a progress note of the results of an LVEF assessment, regardless of when the evaluation of ejection fraction was performed. Qualitative results correspond to numeric equivalents as follows:

Hyperdynamic: corresponds to LVEF greater than 70%

Normal: corresponds to LVEF 50% to 70% (midpoint 60%)

Mild dysfunction: corresponds to LVEF 40% to 49% (midpoint 45%)

Moderate dysfunction: corresponds to LVEF 30% to 39% (midpoint 35%)

Severe dysfunction: corresponds to LVEF less than 30%

Denominator Statement: All patients aged 18 years and older with a diagnosis of heart failure.

Exclusions: None.

Adjustment/Stratification:

Level of Analysis: Clinician : Individual

Setting of Care: Ambulatory Care : Clinician Office/Clinic

Type of Measure: Process

Data Source: Electronic Clinical Data : Registry

Measure Steward: American College of Cardiology

STANDING COMMITTEE MEETING [09/09/2015-09/10/2015]

1. Importance to Measure and Report: The measure meets the Importance criteria

(1a. Evidence, 1b. Performance Gap)

1a. Evidence: **H-1; M-0; L-0; I-11; IE-12**; 1b. Performance Gap: **H-11; M-1; L-0; I-0**

Rationale:

- The evidence provided for this measure was a heart failure guideline graded Class I: Level of Evidence C (expert opinion). The Committee agreed that although the evidence was insufficient based on NQF's criterion, the measure should move forward with the exception to the evidence because it is unlikely that any higher level of evidence will be reached for this process of care.
- In 2013, the mean compliance rate for this measure was 67% with an increase to 72.5% in 2014. The data also suggest differences in performance based on insurance type.

2. Scientific Acceptability of Measure Properties: The measure meets the Scientific Acceptability criteria

(2a. Reliability - precise specifications, testing; 2b. Validity - testing, threats to validity)

2a. Reliability: **H-12; M-0; L-0; I-0**; 2b. Validity: **H-10; M-2; L-0; I-0**

Rationale:

- Reliability testing for this measure was conducted at the measure score level using a signal-to-noise analysis, with an overall reliability score of 0.988 for 2013 and 0.989 for 2014. The Committee agreed this measure is reliable.
- Validity testing was conducted at the measure score level. Face validity was systematically assessed using two expert panels that provided a mean importance rating of 4.24 out of 5.0. The developer also assessed content validity during measure development. The Committee did not express any concerns regarding the validity of this measure.

3. Feasibility: **H-10; M-2; L-0; I-0**

(3a. Clinical data generated during care delivery; 3b. Electronic sources; 3c. Susceptibility to inaccuracies/unintended consequences identified 3d. Data collection strategy can be implemented)

Rationale:

- The Committee did not identify any concerns with the feasibility of this measure.

4. Use and Usability: **H-6; M-4; L-1; I-1**

(Meaningful, understandable, and useful to the intended audiences for 4a. Public Reporting/Accountability and 4b. Quality Improvement)

Rationale:

- The Committee requested clarification on NQF's policy on use and usability and noted that this measure has been endorsed for six years and is currently being used in the PINNALE Registry for quality improvement only. The developer stated that they are continuously seeking

opportunities to advocate for expanded use of this measure in government or other programs, including those intended for accountability or public reporting.

- NQF policy states that performance measures be used in at least one accountability application within three years after initial endorsement and be publicly reported within six years after initial endorsement; however, this criterion is not a must-pass criterion. Ultimately the Committee voted in favor of this criterion.

5. Related and Competing Measures

- No related or competing measures noted.

Standing Committee Recommendation for Endorsement: Y-12; N-0

6. Public and Member Comment

- Three commenters were generally in support of the measure. One commenter recommended harmonizing this measure with #0081: Heart Failure (HF): Angiotensin-Converting Enzyme (ACE) Inhibitor or Angiotensin Receptor Blocker (ARB) Therapy for Left Ventricular Systolic Dysfunction (LVSD) (AMA-PCPI) and #0083: Heart Failure (HF): Beta-Blocker Therapy for Left Ventricular Systolic Dysfunction (LVSD) (AMA-PCPI).
 - Committee Response: During the second post In-Person Meeting webinar on October 9, 2015 the Committee considered harmonization of measures within the cardiovascular portfolio. The Committee urged developers to work together in the future to further harmonize measures where possible. However, measures #0081, #0083, and #0079 were not identified as related or competing based on NQF criteria.

7. Consensus Standards Approval Committee (CSAC) Vote (January 21, 2016): Y-15; N-0

8. Consensus Standards Approval Committee (CSAC) Decision: Approved for continued endorsement

9. Board of Directors Vote: Ratified for continued endorsement on February 18, 2016

0081 Heart Failure (HF): Angiotensin-Converting Enzyme (ACE) Inhibitor or Angiotensin Receptor Blocker (ARB) Therapy for Left Ventricular Systolic Dysfunction (LVSD)

[Submission](#) | [Specifications](#)

Description: Percentage of patients aged 18 years and older with a diagnosis of heart failure with a current or prior LVEF < 40% who were prescribed ACE Inhibitor or ARB therapy either within a 12 month period when seen in the outpatient setting or at hospital discharge

Numerator Statement: Patients who were prescribed* ACE inhibitor or ARB therapy either within a 12 month period when seen in the outpatient setting or at hospital discharge

*Prescribed may include:

Outpatient setting: prescription given to the patient for ACE inhibitor or ARB therapy at one or more visits in the measurement period OR patient already taking ACE inhibitor or ARB therapy as documented in current medication list

Inpatient setting: prescription given to the patient for ACE inhibitor or ARB therapy at discharge OR ACE inhibitor or ARB therapy to be continued after discharge as documented in the discharge medication list

Denominator Statement: All patients aged 18 years and older with a diagnosis of heart failure with a current or prior LVEF < 40%

Exclusions: Documentation of medical reason(s) for not prescribing ACE inhibitor or ARB therapy (eg, hypotensive patients who are at immediate risk of cardiogenic shock, hospitalized patients who have experienced marked azotemia, allergy, intolerance, other medical reasons)

Documentation of patient reason(s) for not prescribing ACE inhibitor or ARB therapy (eg, patient declined, other patient reasons)

Documentation of system reason(s) for not prescribing ACE inhibitor or ARB therapy (eg, other system reasons)

Adjustment/Stratification:

Level of Analysis: Clinician : Group/Practice, Clinician : Individual

Setting of Care: Ambulatory Care : Clinician Office/Clinic, Home Health, Hospital/Acute Care Facility, Post Acute/Long Term Care Facility : Long Term Acute Care Hospital, Post Acute/Long Term Care Facility : Nursing Home/Skilled Nursing Facility, Other

Type of Measure: Process

Data Source: Electronic Clinical Data, Electronic Clinical Data : Registry

Measure Steward: AMA-PCPI

STANDING COMMITTEE MEETING [09/09/2015-09/10/2015]

1. Importance to Measure and Report: The measure meets the Importance criteria

(1a. Evidence, 1b. Performance Gap)

1a. Evidence: **H-14; M-2; L-0; I-0; IE-0**; 1b. Performance Gap: **H-4; M-11; L-1; I-0**

Rationale:

- Note: The discussion and voting on evidence for the eMeasure version of measure #0081(#2907) applies to the Claims/Registry version.
- The developer provided performance data from the PQRS Experience Report from 2010 to 2013; performance rates ranged from 79.9% to 85.6%, respectively. The 2013 Small Group Practice Exception Rate was 1.3%. The Committee agreed that a performance gap persists, with approximately 80% of eligible patients receiving ACEI/ARB therapy, but questioned if this measure has topped out since performance has remained about the same since 2010.

2. Scientific Acceptability of Measure Properties: The measure meets the Scientific Acceptability criteria

(2a. Reliability - precise specifications, testing; 2b. Validity - testing, threats to validity)

2a. Reliability: **H-7; M-9; L-0; I-1** 2b. Validity: **H-3; M-14; L-0; I-0**

Rationale:

- The measure assessed 1,244 physicians from the PQRS GPRO database and was tested for reliability at the measure score level using the beta binomial method. The reliability at the minimum level of quality reporting events (10) was 0.83. The reliability at the average number of quality reporting events was 0.94. Overall the Committee concluded that the results indicated high reliability.
- The measure was tested for validity at the measure score level by systematic assessment of face validity by 12 members of the PCPI Measure Advisory Committee of. The Committee questioned why the developers were unable to determine the type of exception reported in the PQRS registry. The developers responded that CMS reports exceptions as an overall valid exception rather than breaking down the exceptions into medical, patient, or system reason. The Committee agreed that the validity testing is sufficient.

3. Feasibility: H-10; M-7; L-0; I-0

(3a. Clinical data generated during care delivery; 3b. Electronic sources; 3c. Susceptibility to inaccuracies/unintended consequences identified 3d. Data collection strategy can be implemented)

Rationale:

- The Committee expressed no concerns regarding the feasibility of this measure.

4. Use and Usability: H-9; M-8; L-0; I-0

(Meaningful, understandable, and useful to the intended audiences for 4a. Public Reporting/Accountability and 4b. Quality Improvement)

Rationale:

- The Committee noted this measure is used in PQRS, PINNACLE Registry, and Meaningful Use Stage II.

5. Related and Competing Measures

- This measure is related to:
 - NQF #0066: Coronary Artery Disease (CAD): Angiotensin-Converting Enzyme (ACE) Inhibitor or Angiotensin Receptor Blocker (ARB) Therapy - Diabetes or Left Ventricular Systolic Dysfunction (LVEF < 40%) (American College of Cardiology).
 - These measures both focus on ACE/ARB therapy for patients with heart failure; however, #0066 includes patients with diabetes in the denominator. The Committee will discuss harmonization of these two measures in Phase 4 when #0066 is scheduled for maintenance review.
- No competing measures noted.

Standing Committee Recommendation for Endorsement: Y-17; N-0

6. Public and Member Comment

- Three commenters were generally in support of this measure. One commenter suggested measure #0081 should be harmonized with measure #0066: Coronary Artery Disease (CAD): Angiotensin-Converting Enzyme (ACE) Inhibitor or Angiotensin Receptor Blocker (ARB) Therapy - Diabetes or Left Ventricular Systolic Dysfunction (LVEF < 40%). The other commenters noted

that measure #0083: Heart Failure (HF): Beta-Blocker Therapy for Left Ventricular Systolic Dysfunction (LVSD) (AMA-PCPI) and measure #0079: Heart Failure: Left Ventricular Ejection Fraction Assessment (Outpatient Setting) (ACC) should be considered for harmonization with measure #0081. This prompted two separate Committee responses to the commenters:

- Committee Response: During the second post In-Person Meeting webinar on October 9, 2015 the Committee considered harmonization of measures within the cardiovascular portfolio. The Committee urged developers to work together in the future to further harmonize measures where possible. Additionally, the Committee will revisit the harmonization discussion of several measures during the next Cardiovascular measure endorsement project in 2016.
- Committee Response: During the second post In-Person Meeting webinar on October 9, 2015 the Committee considered harmonization of measures within the cardiovascular portfolio. The Committee urged developers to work together in the future to further harmonize measures where possible. However, measures #0081, #0083, and #0079 were not identified as related or competing based on NQF criteria.

7. Consensus Standards Approval Committee (CSAC) Vote (January 21, 2016): Y-15; N-0

8. Consensus Standards Approval Committee (CSAC) Decision: Approved for continued endorsement

9. Board of Directors Vote: Ratified for continued endorsement on February 18, 2016

2907 Heart Failure (HF): Angiotensin-Converting Enzyme (ACE) Inhibitor or Angiotensin Receptor Blocker (ARB) Therapy for Left Ventricular Systolic Dysfunction (LVSD) (eMeasure paired with 0081)

[Submission](#) | [Specifications](#)

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

Numerator Statement: Patients who were prescribed* ACE inhibitor or ARB therapy either within a 12 month period when seen in the outpatient setting or at hospital discharge

*Prescribed may include:

Outpatient setting: prescription given to the patient for ACE inhibitor or ARB therapy at one or more visits in the measurement period OR patient already taking ACE inhibitor or ARB therapy as documented in current medication list

Inpatient setting: prescription given to the patient for ACE inhibitor or ARB therapy at discharge OR ACE inhibitor or ARB therapy to be continued after discharge as documented in the discharge medication list

Denominator Statement: All patients aged 18 years and older with a diagnosis of heart failure with a current or prior LVEF < 40%

Exclusions: Documentation of medical reason(s) for not prescribing ACE inhibitor or ARB therapy (eg, hypotensive patients who are at immediate risk of cardiogenic shock, hospitalized patients who have experienced marked azotemia, allergy, intolerance, other medical reasons)

Documentation of patient reason(s) for not prescribing ACE inhibitor or ARB therapy (eg, patient declined, other patient reasons)

Documentation of system reason(s) for not prescribing ACE inhibitor or ARB therapy (eg, other system reasons)

Adjustment/Stratification:

Level of Analysis: Clinician : Group/Practice, Clinician : Individual

Setting of Care: Ambulatory Care : Clinician Office/Clinic, Home Health, Hospital/Acute Care Facility, Post Acute/Long Term Care Facility : Long Term Acute Care Hospital, Post Acute/Long Term Care Facility : Nursing Home/Skilled Nursing Facility, Other

Type of Measure: Process

Data Source: Electronic Clinical Data : Electronic Health Record

Measure Steward: AMA-PCPI

STANDING COMMITTEE MEETING [09/09/2015-09/10/2015]

1. Importance to Measure and Report: The measure meets the Importance criteria

(1a. Evidence, 1b. Performance Gap)

1a. Evidence: **H-14; M-2; L-0; I-0; IE-0**; 1b. Performance Gap: **H-4; M-11; L-1; I-0**

Rationale:

- The evidence base for angiotensin-converting enzyme (ACE) inhibitor or angiotensin receptor blocker (ARB) therapy prescribed for patients with left ventricular systolic dysfunction (LVSD) is derived from the 2013 ACCF/AHA Guideline for the Management of Heart Failure. The Committee agreed that the evidence provided demonstrates that initiation of ACE/ARB therapy for patients with a diagnosis of heart failure (HF) with a current or prior left ventricular ejection fraction (LVEF) <40% reduces the risk of death and hospitalization.
- The developers explained that performance data for the eMeasure were not provided because the Meaningful Use Federal Program does not currently provide performance data. The developer provided performance data from the PQRS Experience Report from 2010 to 2013; performance rates ranged from 79.9% to 85.6%, respectively. The 2013 Small Group Practice Exception Rate was 1.3%. The Committee agreed that there was an opportunity for improvement based on the data provided from the registry measure, but expressed the importance of obtaining similar performance data for the eMeasure to adequately evaluate it against this criterion in the future.

2. Scientific Acceptability of Measure Properties: The measure meets the Scientific Acceptability criteria

(2a. Reliability - precise specifications, testing; 2b. Validity - testing, threats to validity)

2a. Reliability: **H-3; M-14; L-0; I-0** 2b. Validity: **H-1; M-15; L-1; I-0**

Rationale:

- The Committee questioned the time frames for the numerator (ACEI/ARB in a 12 month period) and the denominator (documentation of current or history of LVEF <40%). The developer clarified that the denominator is documentation of any historical ejection fraction because

ACEI/ARB therapy can normalize a patient's ejection fraction, therefore, this measure focuses on current or prior LVEF <40%.

- Data element validity testing was conducted for the eMeasure. (Note: This testing also counts for data element reliability.)
- Validity testing for the eMeasure was conducted with data element validity testing at one test site, with the percent agreement at 93.9%. Percent agreement increased to 98.7% through comparison of automated and manual EHR review.
- The developer provided an analysis of 127 exceptions that came from five physician offices using five different EHR systems. The data showed that 99.5% of exceptions were classified as medical reasons for not prescribing ACE inhibitor or ARB therapy. Medical reason exceptions included clinical contraindications, drug allergy, and drug intolerance.
- The Committee observed similar challenges with this eMeasure review as with #0070, including evaluating eMeasures in use with minimal performance data; the use of broad exceptions; and the inability to demonstrate validity and reliability based on NQF's current criteria. The Committee ultimately concluded that testing provided for this measure adequately reflects reliability and variability. Finally, the Committee noted that the percent agreement for this eMeasure was 93.9% in comparison to 82.8% for eMeasure #0070, which did not pass on validity.

3. Feasibility: H-4; M-14; L-0; I-0

(3a. Clinical data generated during care delivery; 3b. Electronic sources; 3c. Susceptibility to inaccuracies/unintended consequences identified 3d. Data collection strategy can be implemented)

Rationale:

- The Committee agreed that this measure is feasible. It is specified for several data sources. A feasibility score card was submitted for the eMeasure; it included all data elements in defined fields, in a combination of electronic sources.

4. Use and Usability: H-9; M-8; L-1; I-0

(Meaningful, understandable, and useful to the intended audiences for 4a. Public Reporting/Accountability and 4b. Quality Improvement)

Rationale:

- The Committee noted that this eMeasure is used in the EHR Incentive Program (Meaningful Use).

5. Related and Competing Measures

- This measure is related to:
 - NQF #0066: Coronary Artery Disease (CAD): Angiotensin-Converting Enzyme (ACE) Inhibitor or Angiotensin Receptor Blocker (ARB) Therapy - Diabetes or Left Ventricular Systolic Dysfunction (LVEF < 40%) (American College of Cardiology).
 - These measures both focus on ACE/ARB therapy for patients with heart failure; however, #0066 includes patients with diabetes in the denominator. The Committee will discuss harmonization of these two measures in Phase 4 when #0066 is scheduled for maintenance review.
- No competing measures noted.

Standing Committee Recommendation for Endorsement: Y-17; N-1

6. Public and Member Comment

- No public comments were received specific to this eMeasure.

7. Consensus Standards Approval Committee (CSAC) Vote (January 21, 2016): Y-15; N-0

8. Consensus Standards Approval Committee (CSAC) Decision: Approved for endorsement

9. Board of Directors Vote: Ratified for endorsement on February 18, 2016

0083 Heart Failure (HF): Beta-Blocker Therapy for Left Ventricular Systolic Dysfunction (LVSD)

[Submission](#) | [Specifications](#)

Description: Percentage of patients aged 18 years and older with a diagnosis of heart failure with a current or prior LVEF < 40% who were prescribed beta-blocker therapy either within a 12 month period when seen in the outpatient setting or at hospital discharge

Numerator Statement: Patients who were prescribed* beta-blocker therapy** either within a 12 month period when seen in the outpatient setting or at hospital discharge

*Prescribed may include:

Outpatient setting: 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

Inpatient setting: prescription given to the patient for beta-blocker therapy at discharge OR beta-blocker therapy to be continued after discharge as documented in the discharge medication list

**Beta-blocker therapy should include bisoprolol, carvedilol, or sustained release metoprolol succinate. (see technical specifications for additional information on medications)

Denominator Statement: All patients aged 18 years and older with a diagnosis of heart failure with a current or prior LVEF < 40%

LVEF < 40% corresponds to qualitative documentation of moderate dysfunction or severe dysfunction

Exclusions: Documentation of medical reason(s) for not prescribing beta-blocker therapy (eg, low blood pressure, fluid overload, asthma, patients recently treated with an intravenous positive inotropic agent)

Documentation of patient reason(s) for not prescribing beta-blocker therapy

Documentation of system reason(s) for not prescribing beta-blocker therapy

Adjustment/Stratification:

Level of Analysis: Clinician : Group/Practice, Clinician : Individual

Setting of Care: Ambulatory Care : Clinician Office/Clinic, Home Health, Hospital/Acute Care Facility, Post Acute/Long Term Care Facility : Long Term Acute Care Hospital, Post Acute/Long Term Care Facility : Nursing Home/Skilled Nursing Facility, Other

Type of Measure: Process

Data Source: Electronic Clinical Data, Electronic Clinical Data : Registry

Measure Steward: AMA-PCPI

STANDING COMMITTEE MEETING [09/09/2015-09/10/2015]

1. Importance to Measure and Report: The measure meets the Importance criteria

(1a. Evidence, 1b. Performance Gap)

1a. Evidence: **H-14; M-2; L-0; I-0; IE-0**; 1b. Performance Gap: **H-6; M-11; L-0; I-0**

Rationale:

- Note: The discussion and voting on evidence for the eMeasure version of measure #0083 (#2908) applies to the Claims/Registry version.
- The developer provided performance data from the PQRS Experience Report from 2010 to 2013; performance rates ranged from 75.8% to 86.8%, respectively. The 2013 Small Group Practice Exception Rate was 1.04%. The Committee agreed that a performance gap of eligible patients receiving beta-blocker therapy persists.

2. Scientific Acceptability of Measure Properties: The measure meets the Scientific Acceptability criteria

(2a. Reliability - precise specifications, testing; 2b. Validity - testing, threats to validity)

2a. Reliability: **H-9; M-8; L-0; I-0** 2b. Validity: **H-4; M-12; L-1; I-0**

Rationale:

- The Committee agreed that the measure is precisely specified. The measure assessed 684 physicians from the PQRS GPRO database and was tested for reliability at the measure score level using the beta binomial method and. The reliability at the minimum level of quality reporting events (10) was 0.86. The reliability at the average number of quality reporting events was 0.96. Overall the Committee concluded that the results indicated high reliability.
- The measure was tested for validity at the measure score level using a systematic assessment of face validity by 12 members of the PCPI Measure Advisory Committee.
- Of the 684 physicians with the minimum (10) number of quality reporting events, there were a total of 1,203 exceptions reported. The average number of exceptions per physician in this sample is 1.8. The overall exception rate is 4.9%. As previously discussed with measure #0081, CMS reports exceptions as an overall valid exception rather than breaking down the exceptions into medical, patient, or system reason. The Committee agreed that the validity testing is sufficient.

3. Feasibility: **H-11; M-6; L-0; I-0**

(3a. Clinical data generated during care delivery; 3b. Electronic sources; 3c. Susceptibility to inaccuracies/unintended consequences identified 3d. Data collection strategy can be implemented)

Rationale:

- The Committee expressed no concerns regarding the feasibility of this measure.

4. Use and Usability: **H-10; M-6; L-0; I-0**

(Meaningful, understandable, and useful to the intended audiences for 4a. Public Reporting/Accountability and 4b. Quality Improvement)

Rationale:

- The Committee noted that this measure is used in PQRS, PINNACLE Registry, and Meaningful Use Stage II.

5. Related and Competing Measures

- This measure is related to:
 - NQF #2438: Beta-Blocker Therapy (i.e., bisoprolol, carvedilol, or sustained-release metoprolol succinate) for LVSD Prescribed at Discharge (The Joint Commission).
 - The measure focus is the same but the level of analysis is different. The Committee did not make any additional recommendations regarding harmonization.
- No competing measures noted.

Standing Committee Recommendation for Endorsement: Y-17; N-0

6. Public and Member Comment

- Three commenters were generally in support of this measure. Two commenters suggested this measure be harmonized with measures #0079 and #0081.
 - Committee Response: During the second post In-Person Meeting webinar on October 9, 2015 the Committee considered harmonization of measures within the cardiovascular portfolio. The Committee urged developers to work together in the future to further harmonize measures where possible. However, measures #0081, #0083, and #0079 were not identified as related or competing based on NQF criteria.

7. Consensus Standards Approval Committee (CSAC) Vote (January 21, 2016): Y-15; N-0

8. Consensus Standards Approval Committee (CSAC) Decision: Approved for continued endorsement

9. Board of Directors Vote: Ratified for continued endorsement on February 18, 2016

2908 Heart Failure (HF): Beta-Blocker Therapy for Left Ventricular Systolic Dysfunction (LVSD) (eMeasure paired with 0083)

[Submission](#) | [Specifications](#)

Description: Percentage of patients aged 18 years and older with a diagnosis of heart failure with a current or prior LVEF < 40% who were prescribed beta-blocker therapy either within a 12 month period when seen in the outpatient setting or at hospital discharge

Numerator Statement: Patients who were prescribed* beta-blocker therapy** either within a 12 month period when seen in the outpatient setting or at hospital discharge

*Prescribed may include:

Outpatient setting: 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

Inpatient setting: prescription given to the patient for beta-blocker therapy at discharge OR beta-blocker therapy to be continued after discharge as documented in the discharge medication list

**Beta-blocker therapy should include bisoprolol, carvedilol, or sustained release metoprolol succinate. (see technical specifications for additional information on medications)

Denominator Statement: All patients aged 18 years and older with a diagnosis of heart failure with a current or prior LVEF < 40%

LVEF < 40% corresponds to qualitative documentation of moderate dysfunction or severe dysfunction

Exclusions: Documentation of medical reason(s) for not prescribing beta-blocker therapy (eg, low blood pressure, fluid overload, asthma, patients recently treated with an intravenous positive inotropic agent)

Documentation of patient reason(s) for not prescribing beta-blocker therapy

Documentation of system reason(s) for not prescribing beta-blocker therapy

Adjustment/Stratification:

Level of Analysis: Clinician : Group/Practice, Clinician : Individual

Setting of Care: Ambulatory Care : Clinician Office/Clinic, Home Health, Hospital/Acute Care Facility, Post Acute/Long Term Care Facility : Long Term Acute Care Hospital, Post Acute/Long Term Care Facility : Nursing Home/Skilled Nursing Facility, Other

Type of Measure: Process

Data Source: Electronic Clinical Data : Electronic Health Record

Measure Steward: AMA-PCPI

STANDING COMMITTEE MEETING [09/09/2015-09/10/2015]

1. Importance to Measure and Report: The measure meets the Importance criteria

(1a. Evidence, 1b. Performance Gap)

1a. Evidence: **H-14; M-2; L-0; I-0; IE-0**; 1b. Performance Gap: **H-4; M-12; L-0; I-1**

Rationale:

- The evidence base for beta-blocker therapy prescribed for patients with a diagnosis of heart failure (HF) with a current or prior LVEF <40% is derived from the 2013 ACCF/AHA Guideline for the Management of Heart Failure. One Committee member commented that the guideline supporting this measure recommends long-term treatment with beta-blockers while this measure captures documentation (prescription or discharge medication list) of beta-blockers once during the measurement period. The developer clarified that this measure is designed to capture a point in time (hospital discharge or physician office visit) that the patient is on beta-blocker therapy rather than over a period of time.
- The Committee agreed that initiation of beta-blocker therapy for patients with a diagnosis of heart failure (HF) with a current or prior LVEF <40% lessens the symptoms of heart failure, improves the clinical status of patients, reduces future clinical deterioration, and decreases the risk of mortality and the combined risk of mortality and hospitalization.
- Similar to eMeasures #0070 and #0081, the developer explained that performance data for the eMeasure was not provided because the Meaningful Use Federal Program does not currently provide performance data. The developer provided performance data from the PQRS Experience Report from 2010 to 2013, showing the performance rates ranged from 75.8% to 86.8%. The 2013 Small Group Practice Exception Rate was 1.04%. The Committee agreed that there was an opportunity for improvement based on the data provided from the registry measure, but expressed the importance of obtaining performance data from the eMeasure to adequately evaluate the measure against this criterion in the future.

2. Scientific Acceptability of Measure Properties: The measure meets the Scientific Acceptability criteria

(2a. Reliability - precise specifications, testing; 2b. Validity - testing, threats to validity)

2a. Reliability: **H-0; M-17; L-0; I-0** 2b. Validity: **H-1; M-16; L-0; I-0**

Rationale:

- Data element validity testing was conducted for this eMeasure. (This also counts for data element reliability.)
- Validity testing for the eMeasure was conducted with data element validity testing at one test site, with the percent agreement at 90.9%. Performance on the measure increased to 92.8% through comparison of automated and manual EHR review.
- The developer provided an analysis of 118 exceptions that came from five physician offices using five different EHR systems. The data showed that 98.0% of exceptions were classified as medical reasons for not prescribing beta-blocker therapy. Medical reason exceptions included clinical contraindications, drug allergy, and drug intolerance.
- The same challenges discussed with eMeasure 0070 and 0081 apply to this measure; however, the Committee agreed that the testing provided adequately reflects reliability and variability.

3. Feasibility: **H-8; M-9; L-0; I-0**

(3a. Clinical data generated during care delivery; 3b. Electronic sources; 3c. Susceptibility to inaccuracies/unintended consequences identified 3d. Data collection strategy can be implemented)

Rationale:

- The Committee agreed that this measure is feasible. It is specified for several data sources. A feasibility score card was submitted for the eMeasure, with all data elements in defined fields in a combination of electronic sources.

4. Use and Usability: H-9; M-8; L-0; I-0

(Meaningful, understandable, and useful to the intended audiences for 4a. Public Reporting/Accountability and 4b. Quality Improvement)

Rationale:

- The Committee noted that this eMeasure is used in the EHR Incentive Program (Meaningful Use).

5. Related and Competing Measures

- This measure is related to:
 - NQF #2438: Beta-Blocker Therapy (i.e., bisoprolol, carvedilol, or sustained-release metoprolol succinate) for LVSD Prescribed at Discharge (The Joint Commission).
 - The measure focus is the same but the level of analysis is different. The Committee did not make any additional recommendations regarding harmonization.
- No competing measures noted.

Standing Committee Recommendation for Endorsement: Y-17; N-0

6. Public and Member Comment

- No public comments were received specific to this eMeasure.

7. Consensus Standards Approval Committee (CSAC) Vote (January 21, 2016): Y-15; N-0

8. Consensus Standards Approval Committee (CSAC) Decision: Approved for endorsement

9. Board of Directors Vote: Ratified for endorsement on February 18, 2016

0229 Hospital 30-day, all-cause, risk-standardized mortality rate (RSMR) following heart failure (HF) hospitalization for patients 18 and older

[Submission](#) | [Specifications](#)

Description: The measure estimates a hospital-level 30-day risk-standardized mortality rate (RSMR). Mortality is defined as death for any cause within 30 days after the date of admission for the index admission, for patients 18 and older discharged from the hospital with a principal diagnosis of heart failure (HF). CMS annually reports the measure for patients who are 65 years or older and are either Medicare fee-for-service (FFS) beneficiaries and hospitalized in non-federal hospitals or patients hospitalized in Veterans Health Administration (VA) facilities.

Numerator Statement: The outcome for this measure is 30-day all-cause mortality. We define mortality as death from any cause within 30 days of the index admission date for patients 18 and older discharged from the hospital with a principal diagnosis of HF.

Denominator Statement: This claims-based measure can be used in either of two patient cohorts: (1) patients aged 65 years or older or (2) patients aged 18 years or older. We have explicitly tested the measure in both age groups. The cohort includes admissions for patients aged 18 years and older discharged from the hospital with a principal discharge diagnosis of HF and with a complete claims history for the 12 months prior to admission. The measure is currently publicly reported by CMS for those patients 65 years and older who are either Medicare FFS beneficiaries admitted to non-federal hospitals or patients admitted to VA hospitals. Additional details are provided in S.9 Denominator Details.

Exclusions: The mortality measures exclude index admissions for patients:

1. Discharged alive on the day of admission or the following day who were not transferred to another acute care facility.
2. With inconsistent or unknown vital status or other unreliable demographic (age and gender) data;
3. Enrolled in the Medicare hospice program or used VA hospice services any time in the 12 months prior to the index admission, including the first day of the index admission;
4. Discharged against medical advice (AMA); or
5. Patients undergoing LVAD implantation or heart transplantation during an index admission or who have a history of LVAD or heart transplant in the preceding year.

For patients with more than one admission for a given condition in a given year, only one index admission for that condition is randomly selected for inclusion in the cohort.

For Medicare FFS patients, the measure additionally excludes admissions for patients without at least 30 days post-discharge enrollment in FFS Medicare (because the 30-day mortality outcome cannot be assessed in this group).

Adjustment/Stratification:

Level of Analysis: Facility

Setting of Care: Hospital/Acute Care Facility

Type of Measure: Outcome

Data Source: Administrative claims, Other, Paper Medical Records

Measure Steward: Centers for Medicare & Medicaid Services (CMS)

STANDING COMMITTEE MEETING [09/09/2015-09/10/2015]

1. Importance to Measure and Report: The measure meets the Importance criteria

(1. Importance, 1b. Performance Gap)

1. Importance: **Y-17; N-0** 1b. Performance Gap: **H-13; M-4; L-0**

Rationale:

- The developer included numerous studies that demonstrate that appropriate and timely treatment for heart failure patients can reduce the risk of mortality within 30 days of hospital admission.
- The performance data provided by the developer showed that the average 30-day risk-standardized heart failure mortality rate was 11.7 percent during the measurement period of July 2011-June 2014.

2. Scientific Acceptability of Measure Properties: The measure meets the Scientific Acceptability criteria

(2a. Reliability - precise specifications, testing; 2b. Validity - testing, threats to validity)

2a. Reliability: **H-3; M-13; L-1; I-0** 2b. Validity: **H-5; M-11; L-1; I-0**

Rationale:

- The reliability and validity discussion and vote for NQF #0230 was applied to this measure since the measures have the same construct but focus on different conditions.

3. Feasibility: H-15; M-2; L-0; I-0

(3a. Clinical data generated during care delivery; 3b. Electronic sources; 3c. Susceptibility to inaccuracies/unintended consequences identified 3d. Data collection strategy can be implemented)

Rationale:

- The discussion and vote for NQF #0230 was applied to this measure for the reasons stated earlier.

4. Use and Usability: H-15; M-2; L-0; I-0

(Meaningful, understandable, and useful to the intended audiences for 4a. Public Reporting/Accountability and 4b. Quality Improvement)

Rationale:

- The discussion and vote for NQF #0230 was applied to this measure for the reasons stated earlier.

5. Related and Competing Measures

- No related or competing measures noted.

Standing Committee Recommendation for Endorsement: Y-17; N-0**6. Public and Member Comment**

- Three commenters were generally in support of this measure. No additional comments were submitted.

7. Consensus Standards Approval Committee (CSAC) Vote (January 21, 2016): Y-15; N-0

8. Consensus Standards Approval Committee (CSAC) Decision: Approved for continued endorsement

9. Board of Directors Vote: Ratified for continued endorsement on February 18, 2016

0230 Hospital 30-day, all-cause, risk-standardized mortality rate (RSMR) following acute myocardial infarction (AMI) hospitalization for patients 18 and older

[Submission](#) | [Specifications](#)

Description: The measure estimates a hospital-level 30-day risk-standardized mortality rate (RSMR). Mortality is defined as death for any cause within 30 days after the date of admission for the index admission, for patients 18 and older discharged from the hospital with a principal diagnosis of acute myocardial infarction (AMI). CMS annually reports the measure for patients who are 65 years or older and are either Medicare fee-for-service (FFS) beneficiaries and hospitalized in non-federal hospitals or are hospitalized in Veterans Health Administration (VA) facilities.

Numerator Statement: The outcome for this measure is 30-day all-cause mortality. We define mortality as death from any cause within 30 days of the index admission date for patients 18 and older discharged from the hospital with a principal diagnosis of AMI.

Denominator Statement: This claims-based measure can be used in either of two patient cohorts: (1) patients aged 65 years or older or (2) patients aged 18 years or older. The cohort includes admissions for patients discharged from the hospital with a principal discharge diagnosis of AMI and with a complete claims history for the 12 months prior to admission. Currently, the measure is publicly reported by CMS for those patients 65 years and older who are either Medicare FFS beneficiaries admitted to non-federal hospitals or patients admitted to VA hospitals. Additional details are provided in S.9 Denominator Details.

Exclusions: The mortality measures exclude index admissions for patients:

1. Discharged alive on the day of admission or the following day who were not transferred to another acute care facility.
2. With inconsistent or unknown vital status or other unreliable demographic (age and gender) data;
3. Enrolled in the Medicare hospice program or used VA hospice services any time in the 12 months prior to the index admission, including the first day of the index admission; or
4. Discharged against medical advice (AMA).

For patients with more than one admission for a given condition in a given year, only one index admission for that condition is randomly selected for inclusion in the cohort.

For Medicare FFS patients, the measure additionally excludes admissions for patients without at least 30 days post-discharge enrollment in FFS Medicare (because the 30-day mortality outcome cannot be assessed in this group).

Adjustment/Stratification:

Level of Analysis: Facility

Setting of Care: Hospital/Acute Care Facility

Type of Measure: Outcome

Data Source: Administrative claims, Other, Paper Medical Records

Measure Steward: Centers for Medicare & Medicaid Services (CMS)

STANDING COMMITTEE MEETING [09/09/2015-09/10/2015]

1. Importance to Measure and Report: The measure meets the Importance criteria

(1. Importance, 1b. Performance Gap)

1. Importance: **Y-15; N-1** 1b. Performance Gap: **H-11; M-5; L-0**

Rationale:

- The Committee agreed that the developer provided sufficient evidence that suggests that hospitals are able to influence AMI mortality rates through a broad range of clinical activities, including prevention of complications, use of appropriate medications, timely percutaneous coronary interventions, discharge planning, management of care transitions, medication reconciliation, and patient education.
- The performance data provided by the developer showed that the average 30-day risk-standardized AMI mortality rates ranged from a minimum of 9.9 percent to a maximum of 20.6 percent during the measurement period of July 2011-June 2014.

2. Scientific Acceptability of Measure Properties: The measure meets the Scientific Acceptability criteria

(2a. Reliability - precise specifications, testing; 2b. Validity - testing, threats to validity)

2a. Reliability: **H-3; M-13; L-1; I-0** 2b. Validity: **H-5; M-11; L-1; I-0**

Rationale:

- Performance score reliability was assessed using a “test-retest” approach, also called a “split-half” method. A total of 991,007 admissions over a 3-year period were examined, with 494,297 in one sample and 496,710 in the other randomly-selected sample; two risk-standardized mortality rates (RSMR) were calculated for each hospital, one from each of the two samples.
- The agreement between the two RSMRs for each hospital (as measured by intra-class correlation coefficient (ICC)) was 0.55; the developer stated that according to the conventional interpretation, this is considered a “moderate” level of agreement.
- One Committee member asked if patients discharged to hospice were excluded because these patients would likely expire within the reporting period. There has been concern that a preventable complication may lead to further deterioration of a patient’s condition and ultimate admission into hospice. The developer responded that they do not want to risk adjust or exclude patients based on outcomes that occurred while a patient received clinical care.
- The developer conducted a conceptual analysis of sociodemographic status (SDS) factors and found that income, education, and occupational level are the most commonly examined variables linked to worse health status and higher mortality over a lifetime. The literature directly related to 30-day mortality after admission for cardiovascular disease is much more limited. The empirical analysis conducted by the developer found that race (black vs. non-black) and Medicare and Medicaid dual-eligible status to be the only two patient-level SDS variables available for direct examination. Also considered were a number of neighborhood-level variables that could serve as a proxy for patient-level SDS such as five-digit zip code. Patients were identified as low SDS if they lived in a neighborhood in the lowest quartile of the AHRQ SDS index. The empirical analysis found that the difference between mortality for dual-eligible patients (16.1%) and all other patients (14.0%) was small; the mortality rate for black patients was lower (12.6%) compared to patients of all other races (14.4%), and the mortality rate for patients in the lowest SDS quartile by AHRQ Index was slightly higher (14.4%) compared to patients in the highest SDS quartile (13.9%).
- The developer did not incorporate the SDS factors into the risk adjustment model because the relationship with mortality was small; the relative effect of black race was stronger than the other factors but in the opposite direction than what has been the expressed concern of stakeholders interested in adding such adjustment to risk models. The developer also compared

hospital performance with and without the addition of each SDS variable and found that they had little to no effect on hospital performance. The Committee agreed with the developer's rationale for not risk adjusting this measure for SDS factors.

- The developer conducted empirical validity testing of the measure score. To assess validity, the developer compared scores from the administrative claims-based measure to scores derived from medical record review in the same patient cohort. The Committee agreed that correlation between the claims-based RSMRs and the record-based RSMRs, which was 0.95, indicated high reliability.

3. Feasibility: H-15; M-2; L-0; I-0

(3a. Clinical data generated during care delivery; 3b. Electronic sources; 3c. Susceptibility to inaccuracies/unintended consequences identified 3d. Data collection strategy can be implemented)

Rationale:

- Because the measure is specified for administrative claims data, the Committee identified no concerns regarding the feasibility of this measure.

4. Use and Usability: H-15; M-2; L-0; I-0

(Meaningful, understandable, and useful to the intended audiences for 4a. Public Reporting/Accountability and 4b. Quality Improvement)

Rationale:

- The Committee noted that the measure is currently reported through CMS's Hospital Inpatient Quality Reporting (IQR) Program.
- In addition, measure results are incorporated into the calculation of hospital payment rates through CMS's Hospital Value Based Purchasing (HVBP) Program.

5. Related and Competing Measures

- This measure is related to:
 - NQF #0730: Acute Myocardial Infarction (AMI) Mortality Rate. In-hospital deaths per 1,000 hospital discharges with acute myocardial infarction (AMI) as a principal diagnosis for patients ages 18 years and older. (Agency for Healthcare Research and Quality).
 - The Committee encouraged the developer to harmonize this measure with #0730, to the extent possible, and include the pregnancy exclusion that is currently in #0730.
 - The Committee agreed to maintain both mortality measures in the Cardiovascular portfolio because this measure captures mortality following hospitalization and #0730 assesses inpatient mortality; both measures are widely used in federal programs.
 - NQF #2473: Hospital 30-Day Risk-Standardized Acute Myocardial Infarction (AMI) Mortality eMeasure. This measure estimates hospital 30-day risk-standardized mortality rates following admission for AMI using clinical information collected at presentation in an electronic health record (EHR). Mortality is defined as death from any cause within 30 days of the index admission date (CMS)

- This is the eMeasure version of #0230: Hospital 30-day, all-cause, risk-standardized mortality rate (RSMR) following acute myocardial infarction (AMI) hospitalization for patients 18 and older (CMS/Yale CORE) that was endorsed in Phase 2 of this project. The Committee agreed that the claims-based measure remain in the Cardiovascular portfolio until the eMeasure is fully implemented. The developer plan to test this eMeasure in the all payer population and include the hospice exclusion currently in #0230 once it is possible to obtain the data element. The developer also plan to further harmonize with #0730 and include the pregnancy exclusion after concluding all-payer testing.

Standing Committee Recommendation for Endorsement: Y-17; N-0

6. Public and Member Comment

- Three commenters were generally in support of this measure. One commenter believed the SDS factors considered in the developer's conceptual analysis does not have a large effect on hospital performance.
 - Committee Response: The Committee reviewed the developer's measure submission information and agreed that the SDS conceptual framework and empirical analysis provided by the developer was sufficient and agreed that SDS factors should not be included in the risk adjustment model.

7. Consensus Standards Approval Committee (CSAC) Vote (January 21, 2016): Y-15; N-0

8. Consensus Standards Approval Committee (CSAC) Decision: Approved for continued endorsement

9. Board of Directors Vote: Ratified for continued endorsement on February 18, 2016

0669 Cardiac Imaging for Preoperative Risk Assessment for Non-Cardiac, Low Risk Surgery

[Submission](#) | [Specifications](#)

Description: This measure calculates the percentage of stress echocardiography, single photon emission computed tomography myocardial perfusion imaging (SPECT MPI), or stress magnetic resonance (MR) imaging studies performed at each facility in the 30 days prior to an ambulatory non-cardiac, low-risk surgery performed at any location. The measure is calculated based on a one-year window of Medicare claims data. The measure has been publicly reported, annually, by the Centers for Medicare & Medicaid Services (CMS), since 2011, as a component of its Hospital Outpatient Quality Reporting (HOQR) Program.

Numerator Statement: The number of stress echocardiography, SPECT MPI, and stress MR studies performed in a hospital outpatient department within 30 days of an ambulatory non-cardiac, low-risk surgery performed at any location (e.g., same hospital, other hospital, or physician office).

Denominator Statement: The number of stress echocardiography, SPECT MPI, and stress MR studies performed in a hospital outpatient department on Medicare beneficiaries within a 12-month time window.

Exclusions: Studies are excluded for any patients with diagnosis codes in at least three of the following categories: diabetes mellitus, renal insufficiency, stroke or transient ischemic attack, prior heart failure, or ischemic heart disease.

Adjustment/Stratification:

Level of Analysis: Facility, Population : National, Population : State

Setting of Care: Ambulatory Care : Clinician Office/Clinic, Hospital/Acute Care Facility, Imaging Facility

Type of Measure: Efficiency

Data Source: Administrative claims

Measure Steward: Centers for Medicare & Medicaid Services

STANDING COMMITTEE MEETING [09/09/2015-09/10/2015]

1. Importance to Measure and Report: The measure meets the Importance criteria

(1a. Evidence, 1b. Performance Gap)

1a. Evidence: **H-12; M-4; L-1; I-0; IE-0**; 1b. Performance Gap: **H-14; M-3; L-0; I-0**

Rationale:

- The evidence provided for this measure included two separate guidelines with nine guideline statements that recommend that patients undergoing low-risk, non-cardiac surgery should not have stress image testing.
- Medicare FFS data that the developer provided demonstrate performance rates ranging from 14.5% in 2009 to 18% in 2013. In addition, the data suggest that race/ethnicity and facility characteristics had an effect on the appropriate use of preoperative imaging.

2. Scientific Acceptability of Measure Properties: The measure meets the Scientific Acceptability criteria

(2a. Reliability - precise specifications, testing; 2b. Validity - testing, threats to validity)

2a. Reliability: **H-6; M-11; L-0; I-0** 2b. Validity: **H-1; M-16; L-0; I-0**

Rationale:

- The Committee agreed that the measure specifications are clearly defined.
- The developer conducted a signal-to-noise analysis at the measure score level. The primary analysis was conducted at the facility level using 2013 Medicare FFS data from 2,759 facilities. Reliability was conducted using two tests to identify statistical outliers and a signal-to-noise analysis. Of the 2,759 facilities, 137 reflected statistically significant rates of overuse. The beta-binomial model determined moderate reliability with a mean score of 43.0%.
- The developer clarified that a patient must have three or more of the clinical conditions to be excluded from this measure.
- Face validity of the measure score and data elements was systematically assessed through a seven member technical expert panel (TEP), where 75% agreed that the 30-day window to look forward for a low-risk, non-cardiac surgery from the date of the imaging procedure accurately captures preoperative testing. The developer noted that the TEP was not able to reach consensus on the exclusions. The exclusions are based on the AHA/ACC guidelines. The Committee ultimately voted in favor of the measure's validity.

3. Feasibility: H-12; M-5; L-0; I-0

(3a. Clinical data generated during care delivery; 3b. Electronic sources; 3c. Susceptibility to inaccuracies/unintended consequences identified 3d. Data collection strategy can be implemented)

Rationale:

- The Committee agreed that the collection of administrative claims data for this measure is feasible.

4. Use and Usability: H-15; M-2; L-0; I-0

(Meaningful, understandable, and useful to the intended audiences for 4a. Public Reporting/Accountability and 4b. Quality Improvement)

Rationale:

- The measure is currently reported in CMS' Hospital Outpatient Quality Reporting program.

5. Related and Competing Measures

- This measure directly competes with:
 - NQF #0670: Cardiac stress imaging not meeting appropriate use criteria: Preoperative evaluation in low risk surgery patients. Percentage of stress SPECT MPI, stress echo, CCTA, or CMR performed in low risk surgery patients for preoperative evaluation. (American College of Cardiologists)
 - The developer articulated the difficulty in harmonizing these measures – each using different data sources and focusing on different target populations. The developer agreed that as EHRs continue to evolve and the data collection burden decreases, it will become easier to harmonize these measures – possibly in the next couple of years. In the meantime, the Committee encouraged the developer to harmonize and include the cardiac imaging procedures, cardiac computed tomography angiography (CCTA) and cardiac magnetic resonance (CMR) that are included in #0670.

Standing Committee Recommendation for Endorsement: Y-17; N-0

6. Public and Member Comment

- Four commenters were generally in support of this measure. Two commenters believed this measure should be harmonized with measure #0670.
 - Committee Response: During the second post In-Person Meeting webinar on October 9, 2015 the Committee considered harmonization of measures within the cardiovascular portfolio. The Committee encouraged the developers of two competing measures to harmonize the measure specifications. Harmonization of #0669 and #0670 should be completed prior to the measures' next annual update. The Committee also urged developers to work together in the future to further harmonize measures where possible. Additionally, the Committee will revisit the harmonization discussion of several measures during the next Cardiovascular measure endorsement project in 2016.

7. Consensus Standards Approval Committee (CSAC) Vote (January 21, 2016): Y-15; N-0

8. Consensus Standards Approval Committee (CSAC) Decision: Approved for continued endorsement

9. Board of Directors Vote: Ratified for continued endorsement on February 18, 2016

0694 Hospital Risk-Standardized Complication Rate following Implantation of Implantable Cardioverter-Defibrillator (ICD)

[Submission](#) | [Specifications](#)

Description: This measure provides hospital specific risk-standardized rates of procedural complications following the implantation of an ICD in patients at least 65 years of age. The measure uses clinical data available in the National Cardiovascular Data Registry (NCDR) ICD Registry for risk adjustment linked with administrative claims data using indirect patient identifiers to identify procedural complications.

Numerator Statement: The outcome for this measure is one or more complications within 30 or 90 days (depending on the complication) following initial ICD implantation. The measure treats complications as a dichotomous (yes/no) variable; we are interested in whether or not a complication has occurred and not how many complications occurred in each hospital.

Denominator Statement: The target population for this measure includes inpatient and outpatient hospital stays with ICD implants for patients at least 65 years of age who have matching information in the National Cardiovascular Disease Registry (NCDR) ICD Registry. The time window can be specified from one to three years. This measure was developed with Medicare claims and CathPCI Registry data from one calendar year (2007).

Exclusions: (1) Previous ICD placement. Hospital stays in which the patient had an ICD implanted prior to the index hospital stay are excluded.

Rationale: Ideally, the measure would include patients with a prior ICD, as this is a population known to be at high risk of adverse outcomes. However, for these patients it is difficult to distinguish in the administrative data whether adverse events such as infection were present on admission or complications of the second ICD placement. In order to avoid misclassification, we exclude these patients from the measure.

(2) Previous pacemaker placement, Hospital stays in which the patient had a previous pacemaker placement prior to the index hospital stay are excluded.

Rationale: Some complications (infection or mechanical complication) may be related to a pacemaker that was removed prior to placement of an ICD. Ideally, the measure would include patients with a prior pacemaker, as this is a population known to be at higher risk of adverse outcomes. However, for these patients it is difficult to distinguish in the administrative data whether adverse events such as infection were present on admission or complications of the ICD placement. In order to avoid misclassification, we exclude these patients from the measure.

(3) Not Medicare FFS patient on admission. Patient admissions in which the patient is not enrolled in Medicare FFS at the time of the ICD procedure.

Rationale: Outcome data are being derived only for Medicare fee-for-service patients.

(4) Lack 90-day follow-up in Medicare FFS post-discharge. Patients who cannot be tracked for 90 days following discharge are excluded.

Rationale: There will not be adequate follow-up data to assess complications

(5) Not the first claim in the same claim bundle. There are cases when several claims in the same hospital representing a single episode of care exist in the data together. These claims are bundled together and any claim other than the first is excluded.

Rationale: Inclusion of additional claims could lead to double counting of an index ICD procedure.

Adjustment/Stratification:

Level of Analysis: Facility, Population : National

Setting of Care: Hospital/Acute Care Facility, Ambulatory Care : Urgent Care

Type of Measure: Composite

Data Source: Administrative claims, Electronic Clinical Data : Registry

Measure Steward: American College of Cardiology

STANDING COMMITTEE MEETING [09/09/2015-09/10/2015]

1. Importance to Measure and Report: The measure meets the Importance criteria

(1a. Evidence, 1b. Performance Gap, 1c. High Impact, 1d. Composite- Quality Construct and Rationale)

1a. Evidence: **Y-17, N-0**; 1b. Performance Gap: **H-13; M-4; L-0; I-0**; 1d. Composite: **H-10; M-7; L-0; I-0**

Rationale:

- The Committee agreed that a complication following placement of an implantable cardioverter defibrillator (ICD) is an undesirable outcome and that a comprehensive, personalized risk assessment and competency of the physician and hospital treating the patient can lead to decreased complications.
- As part of this composite measure's development, the developer analyzed unadjusted rates of ICD-related complications in 2007 Medicare Inpatient claims data, which included 67,652 ICD admissions for 67,080 patients at 1,792 hospitals. In these preliminary analyses, complications were seen in 5.7% of ICD admissions and the median complication rate following ICD implantation ranged from 0% to 17.8% across deciles of hospitals grouped by their all-cause complication rate. The Committee agreed that there was a performance gap but questioned if it was possible for a hospital to have zero complications. The developer clarified that the complications are not self-reported but calculated using Medicare claims data and include only serious complications such as pneumothorax or hemothorax requiring a chest tube.
- Overall the Committee agreed with the quality construct and rationale for this any-or-none composite measure but questioned why death was weighted equally to the other complications. The developer responded that death was a relatively low frequency event; therefore they decided to include it in the measure but weight it equally.

2. Scientific Acceptability of Measure Properties: The measure meets the Scientific Acceptability criteria

(2a. Reliability - precise specifications, testing; 2b. Validity - testing, threats to validity, 2d. Composite construction)

2a. Reliability: **H-4; M-12; L-0; I-0** 2b. Validity: **H-2; M-15; L-0; I-0** 2d. Composite: **H-4; M-12; L-0, I-1**

Rationale:

- Reliability testing was conducted of the critical data elements and the measure score level. Data element reliability was assessed by comparing model variable frequencies and odds ratios in

two years of data to determine their degree of consistency over time; the combined two-year sample included a total of 43,711 admissions to 1,279 hospitals. Data were drawn from the National Cardiovascular Data Registry (NCDR) ICD Registry and from Medicare Part A claims over the time period 2010Q2-2011Q4. Specific frequencies and odds ratios for each data element were not provided but the developer stated that risk factor frequencies did not change much across the years and there were no notable differences in the odds ratios across years of data.

- To assess measure score-level reliability the developer performed a “test-retest” approach on the same data set used to assess the critical data elements. The developer randomly split this sample into two groups and calculated the measure for each hospital in the first sample, and then repeated the calculation using the second sample; thus, each hospital was measured twice, but each measurement was made using an entirely different distinct set of patients. Agreement was calculated using an intra-class correlation coefficient (ICC). The agreement between the two risk-standardized complication rates for each hospital was 0.1494. The Committee questioned the low level of agreement between the two hospitals but the developer responded that it was due to the sample size and the frequency of events.
- To assess validity the developer conducted a chart validation study to determine whether ICD-9 diagnosis and procedure codes reported on Medicare claims and used in the measure specifications accurately identify patients experiencing ICD complications within 30 or 90 days of ICD implantation as reported in the medical charts. The developer provided an analysis of 411 medical records from eight hospitals to report the degree of agreement of 91.5%, with a kappa coefficient of 0.83.
- The developer clarified that no mathematical analysis was provided for the quality construct and they rely on the literature for support in this measure submission, with the intent that results from empirical analysis will be provided for the next maintenance review. The Committee agreed that although mathematical scores were not provided, the rationale was sufficient to support the quality construct. After the in-person meeting the developer provided the Committee with the distribution of various complications at 30 and 90 days.

3. Feasibility: H-6; M-11; L-0; I-0

(3a. Clinical data generated during care delivery; 3b. Electronic sources; 3c. Susceptibility to inaccuracies/unintended consequences identified 3d. Data collection strategy can be implemented)

Rationale:

- The data sources for this measure are ICD-9 diagnosis and procedure codes, HCPCS/CPT procedure codes, and vital status data from the Medicare Enrollment Database. The Committee agreed that this measure is feasible.

4. Use and Usability: H-6; M-10; L-1; I-0

(Meaningful, understandable, and useful to the intended audiences for 4a. Public Reporting/Accountability and 4b. Quality Improvement)

Rationale:

- The Committee raised concern about the inaccessibility to CMS data necessary for this measure.

5. Related and Competing Measures

- No related or competing measures noted.

Standing Committee Recommendation for Endorsement: Y-17; N-0**6. Public and Member Comment**

- Three commenters were generally in support of this measure. One commenter suggested that death be included but the cause of death should be elucidated.
 - Developer Response: Causes of death are not available in the data sources used to ascertain this endpoint in large populations. This approach is consistent with other post-procedural measures (e.g. STS). Finally, deaths comprise a very small proportion of the overall events (2011 - 1.38%).
 - Committee Response: The Committee agrees with the developer response and maintains their decision to recommend this measure for endorsement.
- One commenter stated that NQF should note the expense of registry data and the lack of availability of electronic clinical data from smaller facilities.
 - NQF Response: NQF has reviewed your comment and appreciates your input. Your comment has been shared with the Standing Committee and the Developer for consideration.
 - Committee Response: The Committee agrees that feasibility of data collection is an important component of measurement performance and considers this when evaluating measure recommendations.

7. Consensus Standards Approval Committee (CSAC) Vote (January 21, 2016): Y-15; N-0

8. Consensus Standards Approval Committee (CSAC) Decision: Approved for continued endorsement

9. Board of Directors Vote: Ratified for continued endorsement on February 18, 2016

0730 Acute Myocardial Infarction (AMI) Mortality Rate

[Submission](#) | [Specifications](#)

Description: In-hospital deaths per 1,000 hospital discharges with acute myocardial infarction (AMI) as a principal diagnosis for patients ages 18 years and older.

Numerator Statement: Number of in-hospital deaths among cases meeting the inclusion and exclusion rules for the denominator.

Denominator Statement: Discharges, for patients ages 18 years and older, with a principal ICD-9-CM diagnosis code for AMI.

Exclusions: Exclude cases:

- transferred to another short-term hospital, for whom the outcome at hospital discharge was unknown
- admitted for treatment of pregnancy, childbirth, and puerperium
- with missing discharge disposition, gender, age, quarter, year, or principal diagnosis

Adjustment/Stratification:

Level of Analysis: Facility

Setting of Care: Hospital/Acute Care Facility

Type of Measure: Outcome

Data Source: Administrative claims

Measure Steward: Agency for Healthcare Research and Quality

STANDING COMMITTEE MEETING [09/09/2015-09/10/2015]

1. Importance to Measure and Report: The measure meets the Importance criteria

(1. Importance, 1b. Performance Gap)

1. Importance: **Y-17; N-0** 1b. Performance Gap: **H-14; M-3; L-0**

Rationale:

- In support of the evidence for the measure, the developer provided numerous clinical practice guidelines for the evaluation, management and treatment of AMI, and noted that this measure is a component of the Inpatient Quality Indicators #91 (IQI #91) Mortality for Selected Conditions measure. The Committee agreed that the developer provided sufficient evidence in support of a well-established process of care that impacts performance and outcome.
- Using the Healthcare Cost and Utilization Project (HCUP) State Inpatient Databases (SID), the developer cited several large databases of overall AMI inpatient mortalities per 1,000 discharges for over 2,800 hospitals with declining mortality rates of 68.94 in 2008 to 56.37 in 2012.
- The Committee also noted that the developer provided disparities data for several factors; data show disparities increasing with age; gender- showing association with an increased rate in mortality; zip codes in low income areas; large central metropolitan hospitals; and Medicare payers.

2. Scientific Acceptability of Measure Properties: The measure meets the Scientific Acceptability criteria

(2a. Reliability - precise specifications, testing; 2b. Validity - testing, threats to validity)

2a. Reliability: **H-14; M-3; L-0; I-0** 2b. Validity: **H-10; M-6; L-0; I-0**

Rationale:

- The Committee agreed that the measure is accurately specified at the facility level with clearly defined measure specifications.
- Reliability testing was conducted at the e performance score level. The developer assessed 2,664 hospitals in a hospital network, with an average of 165.6 discharges per year; the overall signal-to-noise ratio was 0.75.
- The developer conducted critical data element testing that included a systematic review of Canadian inpatients records, resulting in a positive predictive value of 84.0% and sensitivity of 81.1%.
- Empirical validity testing was performed between hospital-level Spearman rank correlation between IQI 15 risk-adjusted rates and adherence for six process measures. The analyses found that hospitals with higher risk-adjusted inpatient mortality, according to IQI 15, reported poorer adherence on most process measures.
- The developer conducted a conceptual analysis of SDS factors and noted that observed disparities such as race, ethnicity, and income appeared to be attributed to differences in access to care and utilization of specific hospital services, including early intervention with PCI for

patients with a STEMI. As a result the developer opted not to include those additional factors or provide any additional empirical analysis.

- The Committee requested that the developer consider stratifying this measure by education level and other SDS factors. The developer responded that they are open to further discussion.

3. Feasibility: H-16; M-1; L-0; I-0

(3a. Clinical data generated during care delivery; 3b. Electronic sources; 3c. Susceptibility to inaccuracies/unintended consequences identified 3d. Data collection strategy can be implemented)

Rationale:

- The Committee agreed that this measure is feasible.

4. Use and Usability: H-17; M-0; L-0; I-0

(Meaningful, understandable, and useful to the intended audiences for 4a. Public Reporting/Accountability and 4b. Quality Improvement)

Rationale:

- The Committee agreed that the measure is usable and noted that it was first implemented in 2003 and is publically reported and broadly used in public and private accountability and quality improvement programs.

5. Related and Competing Measures

- This measure is related to:
 - 0230: Hospital 30-day, all-cause, risk-standardized mortality rate (RSMR) following acute myocardial infarction (AMI) hospitalization for patients 18 and older
 - The Committee agreed to maintain both mortality measures in the Cardiovascular portfolio since this measure captures in-patient mortality and measure #0230 assesses mortality after hospital discharge; both measures are widely used in federal programs.
- No competing measures noted.

Standing Committee Recommendation for Endorsement: Y-17; N-0

6. Public and Member Comment

- Three commenters were generally in support of this measure.

7. Consensus Standards Approval Committee (CSAC) Vote (January 21, 2016): Y-15; N-0

8. Consensus Standards Approval Committee (CSAC) Decision: Approved for continued endorsement

9. Board of Directors Vote: Ratified for continued endorsement on February 18, 2016

0965 Discharge Medications (ACE/ARB and beta blockers) in Eligible ICD Implant Patients

[Submission](#) | [Specifications](#)

Description: Proportion of patients undergoing ICD implant who received prescriptions for all medications (ACE/ARB and beta blockers) for which they are eligible for at discharge.

Numerator Statement: Patients who receive ACE/ARB and Beta blockers for which they are eligible.

1. ACE/ARB prescribed at discharge (if eligible for ACE/ARB as described in denominator)
AND
2. Beta blockers prescribed at discharge (if eligible for beta blockers as described in denominator)

Denominator Statement: All patients with an ICD implant surviving hospitalization who are eligible to receive any one of the two medication classes:

- 1) Eligibility for ACE/ARB: Patients who have an ejection fraction (EF) of <40% AND do not have a documented contraindication to ACE/ARB documented
OR
- 2) Eligibility for beta blockers: Patients who do not have a documented contraindication to beta blocker therapy and have either:
 - a. EF of <40% OR
 - b. a previous myocardial infarction (MI)

Exclusions: Discharge status of expired; not eligible for either ACE/ARB or beta blockers

Adjustment/Stratification:

Level of Analysis: Facility

Setting of Care: Hospital/Acute Care Facility

Type of Measure: Composite

Data Source: Electronic Clinical Data : Registry

Measure Steward: American College of Cardiology

STANDING COMMITTEE MEETING [09/09/2015-09/10/2015]

1. Importance to Measure and Report: The measure meets the Importance criteria

(1a. Evidence, 1b. Performance Gap, 1c. Composite – Quality Construct and Rationale)

1a. Evidence: **H-6; M-9; L-2; I-0; IE-0**; 1b. Performance Gap: **H-12; M-5; L-0; I-0**; 1c. Composite: **H-11; M-6; L-0; I-0**

Rationale:

- The evidence base for this composite measure is constructed of two process measures that are derived from multiple clinical practice guidelines. The 2014 AHA/ACA, 2013 ACCF/AHA, 2011 AHA/ACCF update and the 2012 ACCF/AHA/ACP/AATS/PCNA/SCAI/STS Guidelines recommend beta-blocker therapy for patients with a prior myocardial infarction (MI). The 2013 ACCF/AHA and 2011 AHA/ACCF update also recommends beta-blocker and angiotensin-converting enzyme (ACE) inhibitor or angiotensin receptor blocker (ARB) therapy for patients with heart failure (HF).
- While the Committee acknowledged that the evidence provided by the developer sufficiently supports medical therapy for patients with heart failure or a previous MI, the evidence does not support medical therapy for patients who have undergone implantable cardioverter-defibrillator

(ICD) implantation. The developer responded that this measure applies to patients with heart failure or a previous MI, as recommended by the guidelines, who have also undergone ICD implantation. The developer also stated that patients with these medical conditions that are undergoing ICD implantation are not receiving the appropriate medical therapy.

- The developer provided performance data from the NCDR ICD Registry from 2011-2012 and 2013-2014. In 2011-2012 a total of 243,186 patients from 1,552 hospitals were analyzed. The mean (average) compliance rate was 74% with a standard deviation (SD) of 16%. The 50th percentile (median) was 76%. In 2013-2014 a 195,563 patients from 1,606 hospitals were analyzed. The mean (average) compliance rate was 78% with a standard deviation (SD) of 17%. The 50th percentile (median) was 79%. The Committee agreed that there is an opportunity for improvement due to the considerable variation in performance scores.
- The Committee did not express any concerns with the quality construct and rationale for this composite measure.

2. Scientific Acceptability of Measure Properties: The measure meets the Scientific Acceptability criteria

(2a. Reliability - precise specifications, testing; 2b. Validity - testing, threats to validity; 2d. Composite construction)

2a. Reliability: **H-12; M-5; L-0; I-0** 2b. Validity: **H-9; M-8; L-0; I-0** 2d. **Composite: H-30, M-107, L-013, I-07**

Rationale:

- The Committee agreed that the measure is precisely specified.
- The measure assessed records from 1,606 hospitals from January 2013 – June 2014 and was tested for reliability at the measure score level using the split sample method. The cohort was randomly split into two samples and restricted to hospitals that had a minimum of 50 cases in each split sample. After splitting the cohort into the two random samples, the developers compared measure scores calculated for the hospitals with at least 50 cases in both random samples. The Committee concluded that a correlation coefficient of 0.87 indicates high reliability.
- The measure was tested for validity at the measure score level. In addition, various ACC committee members involved in the development or approval of the measure conducted a systematic assessment of face validity Empirical validity testing was conducted to assess the association of patient and hospital performance on the composite measure with adverse outcomes, specifically mortality and readmission at six months following hospital discharge. At both the patient and hospital level, performance on the measure was associated with better outcomes at six months following hospital discharge.
- One Committee member questioned why this measure does not take into account the sociodemographic status of patients. Although generic medications are available, there may be patients that cannot afford the ACE/ARB and beta-blocker medications that might be prescribed at discharge.
- The empirical analysis needed to support the composite construction was reviewed on September 25 2015 during the post-meeting call. The volume (N) of the composite exceeded the volume (N) of the individual measures. Based on the construction of the measure (all-or-none), the volume of the composite should be less than the lowest volume of the individual measures. The Committee questioned the accuracy of the data provided for the distribution of the composite measure and its medication components. The Committee re-voted on the NQF measure evaluation criterion addressing the empirical analysis to support the composite

construction (2d) via SurveyMonkey after the post-meeting call and did not reach consensus. The voting results from the post-meeting call are listed above.

- Due to the previous consensus not reached status, the Committee discussed 0965 during the post-comment call convened on December 7, 2015. The Committee concluded that due to the intent of the measure (i.e. a patient only needs to be eligible for either an ACEI/ARB or a beta blocker) the data in the “Value” columns for the composite and the individual components are accurate. The measure developer confirmed the intent of the measure. The results of a post-call survey are noted in the vote count above. The Committee reached consensus on Criterion 2d.

3. Feasibility: H-15; M-2; L-0; I-0

(3a. Clinical data generated during care delivery; 3b. Electronic sources; 3c. Susceptibility to inaccuracies/unintended consequences identified 3d. Data collection strategy can be implemented)

Rationale:

- The Committee had no questions or comments on the feasibility of this measure.

4. Use and Usability: H-16; M-1; L-0; I-0

(Meaningful, understandable, and useful to the intended audiences for 4a. Public Reporting/Accountability and 4b. Quality Improvement)

Rationale:

- The measure is not publically reported but the individual component measures are used in ACC’s NCDR Registry.

5. Related and Competing Measures

- No related or competing measures noted.

Standing Committee Recommendation for Endorsement: Y-17; N-0

6. Public and Member Comment

- Two commenters generally did not support this measure. Both believed that the receipt of a prescription should not be considered a quality measure.
 - Committee Response: Generally, the Committee would prefer to recommend the endorsement of outcome measures rather than process or structural measures. However, measuring the process or structure may still be useful for quality improvement or other purposes; these measure types may still be useful where outcomes may be difficult to measure. During the in-person meeting the Committee questioned the evidence to support medication therapy for patients undergoing ICD implantation; however, the developer reiterated that the guidelines support medication therapy following this procedure in heart failure patients or who have had an MI, and that a gap in patients receiving this therapy still exists.

7. Consensus Standards Approval Committee (CSAC) Vote (January 21, 2016): Y-15; N-0

8. Consensus Standards Approval Committee (CSAC) Decision: Approved for continued endorsement

9. Board of Directors Vote: Ratified for continued endorsement on February 18, 2016

2396 Carotid artery stenting: Evaluation of Vital Status and NIH Stroke Scale at Follow Up

[Submission](#) | [Specifications](#)

Description: Proportion of patients with carotid artery stenting procedures who had follow up performed for evaluation of Vital Status and neurological assessment with an NIH Stroke Scale (by an examiner who is certified by the American Stroke Association) Occurring between day 21 and the end of day 60 after the procedure. (Days 21-60 inclusive)

Numerator Statement: Patient Status (alive or Deceased) at follow-up AND Neurologic status with an assessment using the NIH Stroke Scale (by an examiner who is certified by the American Stroke Association)

Denominator Statement: Count of CARE Registry patients that had a carotid artery stenting procedure

Exclusions: Patients deceased at discharge, Patients with an acute, evolving stroke and dissection

Adjustment/Stratification:

Level of Analysis: Facility, Population : National

Setting of Care: Hospital/Acute Care Facility

Type of Measure: Process

Data Source: Electronic Clinical Data : Registry

Measure Steward: American College of Cardiology

STANDING COMMITTEE MEETING [09/09/2015-09/10/2015]

1. Importance to Measure and Report: The measure meets the Importance criteria

(1a. Evidence, 1b. Performance Gap)

1a. Evidence: **H-0; M-9; L-6; I-1; IE-0**; 1b. Performance Gap: **H-8; M-6; L-1; I-1**

Rationale:

- The Committee questioned the evidence linking a neurological assessment with the NIH Stroke Scale and improved outcomes after carotid stenting. The Committee also questioned the evidence supporting the 30-day follow up timeframe. The evidence provided by the developer included a consensus recommendation categorized as a guideline with no grading assigned. The developer responded that although this is not an outcome measure, documentation of the patient's vital status and neurological assessment is a meaningful way to assess neurologic outcomes after carotid revascularization. The developer also clarified that the intent of this process measure is to determine whether patients undergoing a carotid artery stenting procedure are followed-up in the short-term (21 to 60 days).
 - During pilot testing, which included a total of 18,212 patients, the performance rates varied from 0 – 100%, indicating an opportunity for improvement.
-

2. Scientific Acceptability of Measure Properties: The measure meets the Scientific Acceptability criteria

(2a. Reliability - precise specifications, testing; 2b. Validity - testing, threats to validity)

2a. Reliability: **H-1; M-15; L-1; I-0** 2b. Validity: **H-1; M-11; L-4; I-1**

Rationale:

- The Committee questioned the precision of some of the specifications. The age range of patients included in the measure is not provided in the specifications, though the narrative in section 3c.1 states adult patients 18 years and older. The specifications also do not indicate that the NIH Stroke Scale should be completed by a certified examiner, who did not perform the procedure as stated in the evidence in the measure submission. The developer clarified that the age range for patients to be included in the measure and specific information about the NIH Stroke Scale should be included in the specifications. It was also not clear to the Committee if a patient with a documented NIH Stroke Scale assessment died prior to the 21 day timeframe, would the facility be credited for completing the assessment prior to the timeframe start. The developer confirmed that if a patient dies before 21 days and it is documented that they have died during this period, they are counted as having satisfied the measure. Another Committee member had concerns with the collection tool, which allows patient reasons as a cause for not following up.
- The developer provided two types of reliability testing, including the signal-to-noise facility-level testing of the measure score for facilities who completed neurological function testing, and a test-retest methodology to test data element reliability of patient characteristics only.
- The developer provided face validity and content validity. The Committee identified no concerns with the validity of this measure.

3. Feasibility: H-3; M-11; L-3; I-0

(3a. Clinical data generated during care delivery; 3b. Electronic sources; 3c. Susceptibility to inaccuracies/unintended consequences identified 3d. Data collection strategy can be implemented)

Rationale:

- The data source used to collect and calculate measure performance is the NCDR Care Registry. The developer states that ALL data elements are in defined fields in electronic clinical data, and may be collected via third-party vendors. The specifications are available in the public domain; therefore a provider does not need to participate in the registry to collect these data. The Committee did not identify any concerns with the feasibility of this measure.

4. Use and Usability: H-2; M-13; L-2; I-0

(Meaningful, understandable, and useful to the intended audiences for 4a. Public Reporting/Accountability and 4b. Quality Improvement)

Rationale:

- The developer stated that the measure is used in the CARE Registry of the National Cardiovascular Data Registry of the American College of Cardiology.

5. Related and Competing Measures

- No related or competing measures noted.

Standing Committee Recommendation for Endorsement: Y-13; N-3

6. Public and Member Comment

- Two commenters were generally in support of this measure. Both commenters suggested the developer revise the measure into an outcome-based measure.
 - Developer response: Yes, the intent of the process measure is to set up a standard process of capturing data for a future outcome measure to detect complications in a standardized manner.
 - Committee Response: Generally, the Committee would prefer to recommend the endorsement of outcome measures rather than process or structural measures. However, measuring the process or structure may still be useful for quality improvement or other purposes; these measure types may still be useful where outcomes may be difficult to measure.

7. Consensus Standards Approval Committee (CSAC) Vote (January 21, 2016): Y-14; N-1

8. Consensus Standards Approval Committee (CSAC) Decision: Approved for endorsement

9. Board of Directors Vote: Ratified for endorsement on February 18, 2016

2712 Statin Use in Persons with Diabetes

[Submission](#) | [Specifications](#)

Description: The percentage of patients ages 40 – 75 years who were dispensed a medication for diabetes that receive a statin medication.

Numerator Statement: The number of patients in the denominator who received a prescription fill for a statin or statin combination during the measurement year.

Denominator Statement: The denominator includes subjects aged 41 years – 75 years as of the last day of the measurement year who are continuously enrolled during the measurement period. Subjects include patients who were dispensed two or more prescription fills for a hypoglycemic agent during the measurement year.

Exclusions: Patients in Hospice (Medicare Part D) are excluded from this measure. Medicare prescription claims for persons in hospice are not covered by Part D.

Adjustment/Stratification:

Level of Analysis: Health Plan, Population : National

Setting of Care: Pharmacy

Type of Measure: Process

Data Source: Administrative claims

Measure Steward: Pharmacy Quality Alliance (PQA, Inc.)

STANDING COMMITTEE MEETING [09/09/2015-09/10/2015]

1. Importance to Measure and Report: The measure meets the Importance criteria

(1a. Evidence, 1b. Performance Gap)

1a. Evidence: **H-4; M-11; L-2; I-0; IE-0**; 1b. Performance Gap: **H-4; M-12; L-1; I-0**

Rationale:

- The evidence for this measure is based on an ACA/AHA Guideline for the Primary Prevention in Individuals with Diabetes. The Committee agreed that the evidence was strong but noted that this measure only focuses on diabetics receiving diabetic medication therapy.
- The developer provided 2012 Medicare, commercial, and Medicaid data showing a mean performance rate of 62.8% and 2013 Medicare Part D health plan data with a mean performance rate of 66.1%. The Committee recognized the gap in medication adherence. Because this measure focuses on diabetics who were dispensed a medication for diabetes, minority women have a higher risk for diabetes, may be overlooked with this measure.
- A Committee member noted that the measure assesses whether a prescription is filled, and not patient medication adherence. The developer acknowledged the difficulties in discerning adherence through health plan level claims data.

2. Scientific Acceptability of Measure Properties: The measure meets the Scientific Acceptability criteria

(2a. Reliability - precise specifications, testing; 2b. Validity - testing, threats to validity)

2a. Reliability: **H-2; M-14; L-1; I-0** 2b. Validity: **H-2; M-15; L-0; I-0**

Rationale:

- The developer provided signal to noise analysis with a mixed effect logistic regression model to examine variability in performance measure scores. A likelihood-ratio (LR) test was also performed to determine if a model with random effects would fit the data better than a standard logistic regression model without random effects. The developer did not provide statistical results but stated that there were significant differences in performance measure scores between plans, which allows for discrimination between high performing plans and low performing plans. The Committee articulated their desire to see these data with the measure submission.
- The developer provided validity testing via a seven-step consensus based measure development and testing process, and stated that 89.5% of the PQA workgroup members agreed that the measure could differentiate the quality of care.
- Exclusions for this measure include persons receiving hospice care at any point during the measurement year, but no testing was performed on this exclusion due to the lack of available prescription claims data for non-Medicare health plans. The Committee did not identify any concerns with face validity.

3. Feasibility: **H-16; M-1; L-0; I-0**

(3a. Clinical data generated during care delivery; 3b. Electronic sources; 3c. Susceptibility to inaccuracies/unintended consequences identified 3d. Data collection strategy can be implemented)

Rationale:

- The Committee agreed that this measure is feasible based on the electronically abstracted administrative claims that are readily available from health plan prescription and enrollment data and require no extra burden or cost to collect the data for this measure.

4. Use and Usability: H-10; M-6; L-1; I-0

(Meaningful, understandable, and useful to the intended audiences for 4a. Public Reporting/Accountability and 4b. Quality Improvement)

Rationale:

- The measure is currently reported by CMS to all Medicare Part D health plan sponsors in the monthly patient safety reports for quality improvement.

5. Related and Competing Measures

- No related or competing measures noted.

Standing Committee Recommendation for Endorsement: Y-16; N-1

6. Public and Member Comment

- One commenter suggested including non-statin therapy and other lipid-lowering drugs such as the new FDA approved PCSK-9 therapies.
 - Developer response: The measure is based on a specific section of the ACC/AHA guidelines, page 31: 4.5. Primary Prevention in Individuals with Diabetes: A high level of evidence supports the use of moderate-intensity statin therapy in persons with diabetes 40 to 75 years of age. Since the guideline only addresses the use of statin therapy for diabetics, the measure only includes those medications. The new PCSK-9 medications are intended for adjunct therapy with a statin. Diabetic patients receiving combination therapy with both a statin and PCSK-9 medication will be compliant with the measure. Each PQA measure is reviewed annually to determine if there is new evidence or new medications that affect the intent of the measure, and revisions to the measure would be considered, as appropriate.
 - Committee response: During the in-person meeting, the Committee discussed evaluating the intensity of statins prescribed as recommended in the ACC/AHA guidelines and including contraindications and/or intolerance to statin therapy as an exclusion. The developer noted that due to the limited data source, pharmacy claims, it is not possible to determine if patients received the appropriate level of statin intensity or if they have contraindications to statin therapy. Additionally, updates to the list of acceptable medications should be submitted by the developer to NQF during the annual update of the measure.
- Several comments focused on the appropriate intensity of statin treatment, which is a key element in the ACC/AHA guidelines, and suggested including pregnancy, allergy, and previous intolerance as exclusions.
 - Developer response: During the development of the measure, PQA considered whether the measure criteria could specify moderate to high intensity statin therapy. Since the measure is intended for use by Prescription Drug Plans and uses only prescription claims as a source of data, we are not able to identify individuals with side effects to statin therapy who require a lower intensity of statin therapy. The language in the ACC/AHA guideline states to use moderate to high intensity statin therapy, where appropriate. Due to the limitations of the data source, we cannot determine the appropriate level of statin intensity for each person in the denominator.

Each PQA measure is reviewed annually to determine if there is new evidence that affects the intent of the measure, and revisions to the measure would be considered, as appropriate. During the development of the measure, side effects of statin therapy were discussed. Currently, statin therapy appears to cause only a slight increased risk of side effects compared with placebo, and no increased risk of discontinuation of therapy compared with placebo. So, numbers of intolerant patients is low. Patients with muscle pain and elevated creatine kinase (CK) levels and even patients with rhabdomyolysis can have different statins reintroduced at low doses.

The measure is intended for use by Prescription Drug Plans that do not have access to diagnosis or other medical data. The measure uses only prescription claims as a source of data resulting in the inability to identify individuals with contraindications to statin therapy or other medical exceptions.

During the testing of the measure, medical claims data was used to confirm the validity of the inclusion criteria. PQA tested the measure excluding patients with polycystic ovarian syndrome, gestational diabetes and liver insufficiency, and found very little difference in the measure rate when these exclusions were applied. The number of persons with these conditions was less than 0.4% of the total population. Since the limitation of the data source results in the inability to identify individuals with contraindications to statin therapy or other medical exceptions, the performance rate goal for this measure is not intended to reach 100%.

- Committee Response: The Committee agrees with the developer response and maintains their decision to recommend this measure for endorsement.

7. Consensus Standards Approval Committee (CSAC) Vote (January 21, 2016): Y-15; N-0

8. Consensus Standards Approval Committee (CSAC) Decision: Approved for endorsement

9. Board of Directors Vote: Ratified for endorsement on February 18, 2016

2764 Fixed-dose Combination of Hydralazine and Isosorbide Dinitrate Therapy for Self-identified Black or African American Patients with Heart Failure and LVEF <40% on ACEI or ARB and Beta-blocker Therapy

[Submission](#) | [Specifications](#)

Description: Percentage of patients aged 18 years and older with a diagnosis of heart failure (HF) and a current or prior ejection fraction (EF) <40% who are self-identified Black or African Americans and receiving ACEI or ARB and Beta-blocker therapy who were prescribed a fixed-dose combination of hydralazine and isosorbide dinitrate seen for an office visit in the measurement period in the outpatient setting or at each hospital discharge

Numerator Statement: Patients prescribed a fixed-dose combination of hydralazine and isosorbide dinitrate seen for an office visit in the measurement period in the outpatient setting or at each hospital discharge

Denominator Statement: All patients aged 18 years and older with a diagnosis of heart failure with a current or prior EF <40% who are self-identified Black or African Americans and receiving ACEI or ARB and Beta-blocker therapy

Exclusions: Denominator exclusions include:

- Hypotension (severe or symptomatic)
- Severe lupus erythematosus
- Unstable angina
- Peripheral neuritis
- Patient actively taking Phosphodiesterase Type 5 (PDE5) Inhibitors

Adjustment/Stratification:

Level of Analysis: Clinician : Group/Practice, Clinician : Individual

Setting of Care: Ambulatory Care : Clinician Office/Clinic, Hospital/Acute Care Facility

Type of Measure: Process

Data Source: Electronic Clinical Data : Electronic Health Record

Measure Steward: National Minority Quality Forum

STANDING COMMITTEE MEETING [09/09/2015-09/10/2015]

1. Importance to Measure and Report: The measure meets the Importance criteria

(1a. Evidence, 1b. Performance Gap)

1a. Evidence: **H-6; M-10; L-1; I-0; IE-0**; 1b. Performance Gap: **H-6; M-10; L-1; I-0**;

Rationale:

- The evidence base the developer provided for prescribing a fixed-dose combination of hydralazine and isosorbide dinitrate to self-identified Black or African American patients with heart failure who are also receiving ACEI or ARB and beta-blocker therapy is derived from the

2013 ACCF/AHA Guideline for the Management of Heart Failure and the HFSA 2010 Comprehensive Heart Failure Practice Guideline.

- The Committee expressed concern about the use of a fixed-dose combination of hydralazine and isosorbide dinitrate in this measure because the guidelines do not explicitly recommend a fixed-dose combination. The developer responded that the guideline recommendation is based on the African-American Heart Failure Trial (A-HeFT). A-HeFT examined the use of the fixed-dose combination therapy (BiDil) added to standard heart failure therapy in blacks with New York Association functional class III and IV heart failure. BiDil demonstrated a 43% reduction in mortality when compared with the placebo.
- Given the data presented by the developer, the Committee agreed that there is opportunity for improvement. Because this is a newly-developed eMeasure the developers did not have overall performance data from the measure as specified but provided a summary of data from the literature that demonstrates the existence of a significant opportunity for improvement, especially when eligible patients receive the hydralazine/isosorbide dinitrate combination therapy in the ambulatory setting and at hospital discharge. According to one study cited by the developer, more than 85% of African-American patients are not receiving the hydralazine/isosorbide dinitrate combination therapy.

2. Specifications and Evidence: The measure meets the Specifications criteria

(2b1. Specifications – specifications are consistent with evidence)

2bi. Specifications: **H-3; M-12; L-2; I-0**

Rationale:

- The Committee acknowledged that this eMeasure is currently being considered for Approval for Trial Use, which does not require the measure to have testing for reliability and validity. (If approved for Trial Use, the developer will have up to three years to implement and test the measure. The testing data will then be assessed by the Committee.)
- The Committee agreed that the measure is precisely specified but questioned some of the exclusions. The Committee asked about the feasibility of capturing “severe lupus erythematosus” in an EHR. The developer responded that most ICD-10 codes do not include severity but there is a SNOMED code that can be used instead. Testing will determine if this SNOMED code is accurately identifying “severe lupus erythematosus.”
- One of the Committee members asked if the developer considered patient reasons for not prescribing the medication (i.e. patient inability to afford the medication) as an exclusion/exception. The developer responded that they discussed an exception where the patient was not on the drug and there was documentation that the patient could not afford the medication, but due to the significant underuse of the recommended combination therapy, the developer chose not to include additional exclusions. The developer clarified that if an eligible patient does not receive a prescription then the provider will not get credit for prescribing the recommended drug therapy.

3. Feasibility: H-1; M-14; L-2; I-0

(3a. Clinical data generated during care delivery; 3b. Electronic sources; 3c. Susceptibility to inaccuracies/unintended consequences identified 3d. Data collection strategy can be implemented)

Rationale:

- The developer provided an eMeasure Feasibility Scorecard of two EHRs (hospital and outpatient), testing all data elements required to calculate this measure. The Committee agreed that this measure is feasible for implementation with EHR systems.
- Some Committee members voiced concerns with the cost of the fixed-dose combination therapy, the availability of the medication in hospital formularies, and the burden of cost to the patients.

4. Use and Usability: H-2; M-9; L-6; I-0

(Meaningful, understandable, and useful to the intended audiences for 4a. Public Reporting/Accountability and 4b. Quality Improvement)

Rationale:

- The developer noted that a similar measure that does not require a fixed-dose is currently used in the American Heart Association's Get with the Guidelines.
- The developer provided plans for future accountability and quality improvement use.

5. Related and Competing Measures

- No related or competing measures noted.

Standing Committee Recommendation for Endorsement: Y-14; N-3

6. Public and Member Comment

- NQF received a large number of supportive comments for measure #2764. Three comments received referenced the 2013 ACCF/AHA Heart Failure Guideline recommendations that encourage treating African-American heart failure patients with the isosorbide dinitrate and hydralazine hydrochloride combination therapy, but do not explicitly recommend the fixed-dose combination. The commenters noted that the guidelines permit the use of the fixed-dose combination or separate therapies. The commenters' concerns are that the measure could penalize providers who prescribe the separate therapies and the financial burden the fixed-dose combination therapy could place on many patients, increasing the likelihood of medical non-compliance. The three commenters asked the Committee to reconsider the decision to recommend this measure for Approval for Trial Use.
 - Developer response: The developer responded to each comment regarding the ACCF/AHA guidelines. A summary response is provided below. Full responses can be accessed via the excel comment table at this [link](#).
The National Minority Quality Forum (NMQF) believes this measure is consistent with the 2013 ACCF/AHA guidelines. While the guidelines provide for the two drugs to be administered separately, it is suggested that the two separate drugs constitutes the generic fixed-dose. However, there is a difference between the off-label use of approved drugs, both brand and generic, and the indicated use of an approved generic drug. FDA approval requires a generic drug to contain the same active ingredients, be identical in strength, dose and routes of administration, have the same indications, be bioequivalent, and meet the same batch quality and manufacturing requirements, but there is currently no FDA-approved generic fixed-dose drug.

While the ACCF/AHA guidelines recommend off label use of isosorbide dinitrate (a generic of Isordil Titrados) and hydralazine hydrochloride (a generic of Apresoline Hydrochloride), two drugs with indications, labeling, dose and administration that are different from those of the fixed-dose approved by FDA, pros and cons of off-label prescribing should be transparent, such as prescription insurance coverage for off-label use.

The evidence-based science supporting the use of the fixed-dose drug is the strongest and is the basis for how NMQF specified the measure. According to the A-HeFT trial, the 2010 Heart Failure Society of America guidelines, and other peer reviewed resources, specifying the measure to include the separate drugs as equivalent therapy to the fixed-dose would not be consistent with the evidence and would not meet the high NQF quality measure standards. Moreover, transparency of measure development is important and NMQF addressed this during the September 9 meeting, stating that recommending the use of the two component drugs as a “generic” is inconsistent with FDA approvals since a generic fixed-dose drug is currently not available. It is also important to note that neither component drug is indicated for heart failure, and since the ACCF/AHA guideline recommendations appear to be based on professional opinion, NMQF believes measure 2764 is an appropriate performance measure.

Commenters have not offered additional supportive evidence to uphold the ACCF/AHA guideline recommendations for the generic component use for heart failure patients. While the ACCF/AHA guideline writing committee notes the importance of availability and cost of the generic components, NMQF believe the reason why patients are not receiving the fixed-dose therapy is because it is not being prescribed.

Neither separately nor taken together do the separate compounds meet the definition of a generic or an equivalent substitute for the FDA-approved fixed-dose combination. NMQF is concerned about arbitrary and flexible definitions of the components of quality healthcare that may create confusion within both the provider and patient communities and believe that measure 2764 is a step in the right direction.

Committee response: The Committee considered the ACC/AHA Heart Failure Guidelines during the measure evaluation discussion and determined that a gap in appropriate treatment persists in the African-American subpopulation of heart failure patients.

Studies show a significant reduction in mortality of this subpopulation with the use of the fixed-dosed combination therapy; for this reason, the Committee decided to uphold their decision to approval this measure for Trial Use.

7. Consensus Standards Approval Committee (CSAC) Vote (January 21, 2016): Y-13; N-2

8. Consensus Standards Approval Committee (CSAC) Decision: Recommended for trial-use

9. Board of Directors Vote: Approved for trial use on February 18, 2016

Measure with Endorsement Decision Deferred

The following measure submitted for the Standing Committee's review during the project has been deferred for future consideration.

2763 Ischemic Vascular Disease Care: All or None Outcome Measure-Optimal Control

[Submission](#) | [Specifications](#)

Description: The percentage of patients age 18 through 75 with one of the following conditions:

- 1) Two diagnoses related visits with Coronary Artery Disease (CAD) or a CAD risk-equivalent condition, or
- 2) Acute Coronary Event consisting of an acute myocardial infarction (AMI), coronary artery bypass graft (CABG), or percutaneous coronary intervention (PCI) from a hospital visit, who had each of the following during the one year measurement year:
 - Documentation in the medical record of daily Aspirin or daily other antiplatelet medication usage, unless contraindicated.
 - Most recent Blood pressure controlled to a level of less than 140/90 mm Hg
 - Most recent Tobacco Status is Tobacco-Free
 - Documentation in the medical record of Statin Use
 - All or None Outcome Measure (Optimal Control) composite of BP <140/90, Tobacco Non-User, Daily Aspirin or Other Antiplatelet and Statin Use.

Patients are classified uniquely to one of the three condition subgroups in the order of Coronary Artery Disease, Coronary Artery Disease Risk-Equivalent condition, or Acute Coronary Event.

Numerator Statement: All-or-None Outcome Measure (Optimal Control) - Using the IVD denominator optimal results include:

- Most recent blood pressure measurement is less than 140/90 mm Hg

And

- Most recent tobacco status is Tobacco Free

NOTE: If there is No Documentation of Tobacco Status the patient is not compliant for this measure.

And

- Daily Aspirin or Other Antiplatelet Unless Contraindicated

And

- Statin Use

Denominator Statement: Patients with CAD or a CAD Risk-Equivalent Condition 18-75 years of age and alive as of the last day of the MP.

Exclusions: There are no denominator exclusions

Adjustment/Stratification:

Level of Analysis: Clinician : Group/Practice

Setting of Care: Ambulatory Care : Clinician Office/Clinic

Type of Measure: Composite

Data Source: Administrative claims, Electronic Clinical Data, Electronic Clinical Data : Electronic Health Record, Electronic Clinical Data : Registry

Measure Steward: Wisconsin Collaborative for Healthcare Quality

STANDING COMMITTEE MEETING [09/09/2015-09/10/2015]

1. Importance to Measure and Report: The measure meets the Importance criteria

(1a. Evidence, 1b. Performance Gap, 1c. Composite – Quality Construct and Rationale)

1a. Evidence: **H-12; M-0; L-0; I-0**; 1b. Performance Gap: **H-12; M-0; L-0; I-0**; 1c. Composite: **H-9; M-3; L-0; I-0**

Rationale:

- The evidence base for the aspirin/antiplatelet therapy, blood pressure control component in this composite measure is derived from the AHA/ACC Guidelines for Preventing Heart Attack and Death in Patients with Atherosclerotic Cardiovascular Disease: 2011 Update. The statin use component is derived from the 2013 ACC/AHA Guideline on the Treatment of Blood Cholesterol to Reduce Atherosclerotic Cardiovascular Risk in Adults. The tobacco status component is derived from a 2008 clinical practice guideline from the U.S. Department of Health and Human Services – Public Health Service. The Committee agreed that the evidence for each of the components in the composite assesses whether patients with Ischemic Vascular Disease (IVD) are receiving optimal care.
- The developer provided 2014 performance data for 121 clinics, covering a total of 42,290 patients. The average clinic performance on the measure was .5862 (meaning that on average, clinics achieved all four goals for approximately 59 %of eligible patients). Performance scores ranged from a minimum of .379 to a maximum of .750, with the 10th percentile at .485 and the 90th percentile at .672. The Committee agreed that based on the data presented there is an opportunity for improvement.

2. Scientific Acceptability of Measure Properties: The measure meets the Scientific Acceptability criteria

(2a. Reliability - precise specifications, testing; 2b. Validity - testing, threats to validity; 2d. Composite construction)

2a. Reliability: **H-6; M-6; L-0; I-0** 2b. Validity: **H-2; M-13; L-1; I-1** 2d. Composite: **H-1, M-14, L-0, I-2**

Rationale:

- The developer clarified that the tobacco status component requires a patient to be tobacco-free and that documentation of smoking cessation counseling alone is considered a “fail” for this component.
- Reliability testing was performed at the measure score level. The developer conducted a signal-to-noise analysis of the measure score. Reliability testing included data from 121 clinic sites covering 50,758 patients. Across the 121 measured clinics, average reliability was found to be 0.7817. The Committee expressed no concerns with the reliability of this measure.
- The Committee agreed that the measure specifications align with the clinical practice guidelines but voiced concern about the lack of exclusions for statin intolerance. The developer explained that at this time it is not possible to capture statin intolerance with ICD-9 or ICD-10 codes.
- The developer provided face validity and described the process by which their committees reviewed the measure. The developer was asked to clarify if the committees that reviewed the

measure for face validity determined whether performance scores resulting from the measure as specified can be used to distinguish good from poor quality as required by NQF policy. The developer noted that all Wisconsin Collaborative for Healthcare Quality (WCHQ) measures are used for physician compensation and to track corporate goals, so the committees review the measure very closely.

- The developer provided the performance results for the four individual components for 17 clinics. The Committee agreed that the components add value to the composite.

3. Feasibility: H-3; M-13; L-1; I-0

(3a. Clinical data generated during care delivery; 3b. Electronic sources; 3c. Susceptibility to inaccuracies/unintended consequences identified 3d. Data collection strategy can be implemented)

Rationale:

- The Committee agreed that this measure is feasible but argued that administrative claims alone cannot be used to capture some of the data elements in this measure, such as blood pressure and/or tobacco-free status. The Committee recommended including a combination of administrative claims, electronic health records, and registry data, etc. The developer agreed that administrative claims alone cannot be used to capture all of the data elements.

4. Use and Usability: H-7; M-10; L-0; I-0

(Meaningful, understandable, and useful to the intended audiences for 4a. Public Reporting/Accountability and 4b. Quality Improvement)

Rationale:

- The Committee noted that this measure is used by the Wisconsin Collaborative for Healthcare Quality (WCHQ) for quality improvement and public reporting.

5. Related and Competing Measures

- This measure is related to:
 - NQF #0076: Optimal Vascular Care: (MN Community Measurement). In 2014 MN Community Measurement (MNCM) removed the LDL target component of #0076 due to the recent changes in the lipid guidelines. MNCM has informed NQF that they will be updating their measure to include the statin component for maintenance review in spring 2016 (phase 4) based on the latest guidelines. With the addition of the statin component pending for #0076, #2763 will be directly competing.

Standing Committee Recommendation for Endorsement: Y-15; N-2

Rationale for deferral

- In an effort to foster parsimony and harmony within the Cardiovascular portfolio and enable the Committee to consider competing measures simultaneously, the Committee agreed to defer their recommendation for this measure until phase 4, so that a best-in-class determination can be made at that time.

Measures Not Recommended

2906 Coronary Artery Disease (CAD): Beta-Blocker Therapy-Prior Myocardial Infarction (MI) or Left Ventricular Systolic Dysfunction (LVEF <40%) (eMeasure paired with 0070)

[Submission](#)

Description: 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

Numerator Statement: Patients who were prescribed beta-blocker therapy

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 MI (within the past 3 years) or a current or prior LVEF <40%

Exclusions: Documentation of medical reason(s) for not prescribing beta-blocker therapy (eg, allergy, intolerance, other medical reasons)

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

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

Adjustment/Stratification:

Level of Analysis: Clinician : Group/Practice, Clinician : Individual

Setting of Care: Ambulatory Care : Clinician Office/Clinic, Home Health, Post Acute/Long Term Care Facility : Long Term Acute Care Hospital, Post Acute/Long Term Care Facility : Nursing Home/Skilled Nursing Facility, Other

Type of Measure: Process

Data Source: Electronic Clinical Data : Electronic Health Record

Measure Steward: AMA-convened Physician Consortium for Performance Improvement

STANDING COMMITTEE MEETING [09/09/2015-09/10/2015]

1. Importance to Measure and Report: The measure meets the Importance criteria

(1a. Evidence, 1b. Performance Gap)

1a. Evidence: **H-16; M-0; L-0; I-0; IE-0**; 1b. Performance Gap: **H-4; M-12; L-0; I-0**

Rationale:

- The evidence base for beta-blocker therapy prescribed for patients with coronary artery disease (CAD) who also have a prior myocardial infarction (MI) or a current or prior left ventricular ejection fraction (LVEF) <40% is derived from the 2012 ACCF/AHA/ACP/AATS/PCNA/SCAI/STS guideline for the diagnosis and management of patients with stable ischemic heart disease. The Committee agreed that the evidence provided demonstrates that beta-blocker therapy in patients with CAD leads to a reduced risk of death, reduced angina onset, improved ischemic threshold during exercise and reduced recurrent MIs in patients with prior MIs.

- The developers explained that performance data for the eMeasure were not provided because the Meaningful Use federal program does not currently provide performance data. The developer provided performance data from the PQRS Experience Report from 2010 to 2013. The performance rates ranged from 69.9% to 82.1%. The 2013 Small Group Practice Exception Rate was 2.0%. The Committee agreed that there was an opportunity for improvement based on the data provided from the registry measure but expressed the importance of obtaining performance data to adequately evaluate this eMeasure against this criterion in the future.

2. Scientific Acceptability of Measure Properties: The measure does not meet the Scientific Acceptability criteria

(2a. Reliability - precise specifications, testing; 2b. Validity - testing, threats to validity)

2a. Reliability: **H-0; M-9; L-6; I-1** 2b. Validity: **H-0; M-5; L-7; I-4**

Rationale:

- The Committee questioned why the eMeasure and registry measure specifications are not exactly the same. The developer explained that the clinical concepts and intent of the measure are the same but the specifications depend on the program and how they are implemented because the specifications will vary depending on the program.
- The Committee also questioned the use of the broad exceptions that include documentation of medical reason(s), patient reason(s), and/or system reason(s) for not prescribing beta-blocker therapy. The developer clarified that when claims measures were being “re-tooled” to eMeasures, the goal was to have a broad list of exceptions that could be reused across measures by different measure developers and across various clinical situations that would still allow for the use of physician judgement. If exceptions were customized for each eMeasure, the eMeasure would get very lengthy and it would be difficult to implement.
- The developer provided an analysis of 2,717 exceptions that came from five physician offices using five different EHR systems. The data showed that 2,292 (84.4%) exceptions were classified as medical reasons for not prescribing beta blocker therapy, 347 (12.8%) exceptions were classified patient reasons, and 78 (2.9%) were classified as system reasons.
- Data element validity testing was conducted for this eMeasure. (This also counts for data element reliability.)
- Validity testing for the eMeasure was conducted with data element validity testing at one test site, with the percent agreement at 82.8%. Performance on the measure increased to 90.3% through comparison of automated and manual EHR review. The Committee questioned why a Kappa Score was not provided in addition to the agreement rates. The Committee concluded that 82.8% agreement does not reflect adequate validity.
- Overall, the Committee expressed concern over evaluating eMeasures with minimal data, despite being in use, to adequately identify an opportunity for improvement and demonstrate validity and reliability based on NQF’s current criteria. The measure did not pass the Validity criterion.

Standing Committee Recommendation for Endorsement: This measure did not pass scientific acceptability.

3. Public and Member Comment

- No public comments were received for this eMeasure.

2740 Proportion of Patients with coronary artery disease (CAD) that have a Potentially Avoidable Complication (during the episode time window)

Submission

Description: Percent of adult population aged 18 + years who triggered an episode of coronary artery disease (CAD), are followed for at least one-year, and have one or more potentially avoidable complications (PACs). PACs may occur any time during the episode time window. Please reference attached document labeled NQF_CAD_all_codes_risk_adjustment_06.30.15.xls, in the tabs labeled PACs I-9 and PAC I-10 for a list of code definitions of PACs relevant to CAD.

We define PACs as one of two types:

(1) Type 1 PACs - PACs directly related to the index condition: Patients are considered to have a PAC, if they receive services during the episode time window for any of the complications directly related to CAD, such as for hypotension, cardiac arrest, fluid and electrolyte disturbances etc.

(2) Type 2 PACs - PACs suggesting Patient Safety Failures: Patients are also considered to have a PAC, if they receive services during the episode time window for any of the complications related to patient safety failures such as for sepsis, infections, phlebitis, deep vein thrombosis, pressure sores etc..

All relevant admissions in a patient with CAD are considered potentially avoidable and flagged as PACs.

PACs are counted as a dichotomous (yes/no) outcome. If a patient had one or more PACs, they get counted as a “yes” or a 1. The enclosed workbook labeled

NQF_CAD_all_codes_risk_adjustment_06.30.15.xls serves as an example. The tab labeled PAC overview gives the percent of CAD episodes that have a PAC and the tab labeled “PAC drill down” gives the types of PACs and their frequencies in CAD episodes within this dataset.

The information is based on a two-year claims database from a large regional commercial insurer. The database had over 3.2 million covered lives and over \$25.9 billion in “allowed amounts” for claims costs. The database is an administrative claims database with medical as well as pharmacy claims.

Numerator Statement: Outcome: Number of patients who triggered an episode of coronary artery disease (CAD), are followed for at least one-year, and had one or more potentially avoidable complications (PACs) during the episode time window.

Denominator Statement: Adult patients aged 18 years and above who triggered an episode of coronary artery disease (CAD) and are followed for at least one-year.

Exclusions: Denominator exclusions include exclusions of either “patients” or “claims” based on the following criteria:

1. “Patients” excluded are those that do not meet the enrollment criteria. If patient has an enrollment gap for more than 30 days during the episode time window, it is considered as an enrollment gap
2. “Patients” are also excluded if the cost of the episode is an outlier at greater than 99th percentile or less than 1st percentile value for all episodes. This is another way to ensure that episodes are complete as well as they do not bring in random noise into the analysis due to inappropriate codes or services.
3. “Claims” are excluded from the CAD measure if they are considered not relevant to CAD care.

Adjustment/Stratification:

Level of Analysis: Clinician : Group/Practice, Clinician : Individual, Clinician : Team

Setting of Care: Ambulatory Care : Ambulatory Surgery Center (ASC), Ambulatory Care : Clinician Office/Clinic, Hospital/Acute Care Facility, Other

Type of Measure: Composite

Data Source: Administrative claims

Measure Steward: Health Care Incentives Improvement Institute Inc. (HCI3)

STANDING COMMITTEE MEETING [09/09/2015-09/10/2015]

1. Importance to Measure and Report: The measure does not meet the Importance criteria

1. Importance: **Y-3; N-14**

Rationale:

- The Committee expressed concerns about the different types of potentially avoidable complications (PACs), especially the Type 2 PACs. The Committee agreed that the Type 1 PACs were more directly related to CAD but that the Type 2 PACs were too broad, making it difficult to attribute accountability to the physician. The developer responded that while PACs may not be eliminated completely, identifying the magnitude of PACs and learning more about the cause for the most frequent or the most expensive PACs, could place greater emphasis on PAC reduction and improvements in patient outcomes. The ability to clearly identify the type and frequency of each PAC creates a highly-actionable measure for all providers that are managing or co-managing the patient
- The developer clarified that this measure does not include 789 potentially avoidable complications. Instead, this number represents the number of potential individual codes associated with a diagnosis of approximately 31 Type 2 PACs.
- The Committee asserted that the developer did not provide evidence to support the one year time frame following a coronary artery disease episode for a PAC to occur.
- Overall, the Committee agreed that the rationale provided for the (PAC) outcomes did not meet the Evidence criterion. The measure did not pass the Evidence criterion.

2. Public and Member Comment

- Several comments received suggest that the measures be re-specified to differentiate between facility- level processes and clinician-level performance. One commenter noted concern for the comprehensive list of potentially avoidable complications, where these complications may be out of the control of the facility, or individual clinicians held responsible by the measure.
 - **Committee Response:** The Committee has reviewed the comments and taken them into consideration prior to the measure reconsideration process for the five HCI3 measures and one measure where consensus was not reached.
 - **Developer Response:** The Risk-Standardized PAC Rate (RSPR), which is derived from measuring the base rate of potentially avoidable complications (PACs) for a condition, procedure, or acute event, can be applied to individual physicians, practices, medical groups, facilities and health systems. The determination of the unit of accountability – entity measured – is based on whatever the user of the measure would decide as being appropriate. Methodologically, the predicate to the measurement is a reliability test that determines the minimum sample size required to compare the performance of providers. That sample size requirement will likely drive the decision about the best level of measurement, from the individual physician to the facility. The RSPR does not produce some raw count of individual occurrences of potentially avoidable complications, but rather a risk-standardized rate. This creates an appropriate measure of comparative performance, which can further be stratified as average, above average

or below average. Therefore, no one being measured will be penalized for having patients that experience a PAC. Instead, only those that have far higher rates of occurrences than others will have a poorer performance, much like any other composite rate used today.

- There is another important consideration about which provider to measure, and that is the attribution of the patient's episode to a provider. There is no standard way of attributing procedures, but there are well-accepted industry conventions, which we have applied in our methods. For example, procedures are often attributed to both facilities and the physician performing the procedure. However, the measure user can make its own determination of attribution.
- Therefore, to be clear, potentially avoidable complications are counted within the context of an episode of care. Episodes are then attributed to providers using certain logic. It is the result of that attribution which creates the provider-specific Risk-Standardized PAC Rate. Measure users that want to attribute all procedural episodes solely to facilities, for example, can do that. Others who might want to assign all procedural episodes to a provider group, as opposed to individual physicians can also do that. And the method allows for all of the above, provided the sample sizes are adequate.
- Potentially avoidable complications are defined for each episode of care, from a patient-centered perspective. Much of the measurement field today often takes a provider-centric view of measurement, meaning that the starting point is to determine whether the sequelae of a specific intervention in the treatment of a condition is tightly within the control of the physician performing the intervention. HCI3's approach is instead based on whether or not negative sequelae were experienced by the patient irrespective of whether the provider who is attributed the episode perceives those sequelae as being under their control. As recommended long ago by the Institute of Medicine, care should be patient-centered, and the RSPR is therefore designed to be patient-centered. Even if some PACs aren't directly controllable by the managing physician, their occurrence can always be influenced by the selection of high quality upstream and downstream providers.

RECONSIDERATION VOTE FOLLOWING PUBLIC AND MEMBER COMMENTS:

- During Public and Member Comment, the developer submitted a request for the Standing Committee to reconsider their initial decision, citing that the NQF measure evaluation criteria was not appropriately applied. On January 28, 2016 the Committee reconvened to reconsider the PAC measure; the developer clarified which diagnosis codes are associated with the Type 1 and Type 2 PACs. The Committee continued to express concern for the attribution of the Type 2 PACs associated with this measure and ultimately upheld their initial decision to not recommend the measure for NQF endorsement. The developer submitted a request for reconsideration to CSAC. After discussion with the CSAC co-chairs, the developer agreed to re-specify the measure from the provider-level of analysis to the facility-level of analysis. Following this, the Committee co-chairs recommended that the measure be deferred for review by the Patient Safety Committee.

1. Importance to Measure and Report: The measure does not meet the Importance criteria

(1a. Evidence, 1b. Performance Gap, 1c. High Impact, 1d. Composite- Quality Construct and Rationale)

1a. Evidence: Y-9, N-7

2747 Proportion of Patients with Heart Failure (HF) that have a Potentially Avoidable Complication (during the episode time window)

Submission

Description: Percent of adult population aged 18 + years who triggered an episode of heart failure (HF), are followed for at least one-year, and have one or more potentially avoidable complications (PACs). PACs may occur any time during the episode time window. Please reference attached document labeled NQF_HF_all_codes_risk_adjustment_06.30.15.xls, in the tabs labeled PACs I-9 and PAC I-10 for a list of code definitions of PACs relevant to HF.

We define PACs as one of two types:

(1) Type 1 PACs - PACs directly related to the index condition: Patients are considered to have a PAC, if they receive services during the episode time window for any of the complications directly related to HF, such as for hypotension, acute heart failure, fluid and electrolyte disturbances etc.

(2) Type 2 PACs - PACs suggesting Patient Safety Failures: Patients are also considered to have a PAC, if they receive services during the episode time window for any of the complications related to patient safety failures such as for sepsis, infections, phlebitis, deep vein thrombosis, pressure sores etc.

All relevant admissions in a patient with HF are considered potentially avoidable and flagged as PACs.

PACs are counted as a dichotomous (yes/no) outcome. If a patient had one or more PACs, they get counted as a “yes” or a 1. The enclosed workbook labeled NQF_HF_all_codes_risk_adjustment_06.30.15.xls serves as an example. The tab labeled PAC overview gives the percent of HF episodes that have a PAC and the tab labeled “PAC drill down” gives the types of PACs and their frequencies in HF episodes within this dataset.

The information is based on a two-year claims database from a large regional commercial insurer. The database had over 3.2 million covered lives and over \$25.9 billion in “allowed amounts” for claims costs. The database is an administrative claims database with medical as well as pharmacy claims.

Numerator Statement: Outcome: Number of patients who triggered an episode of heart failure (HF), are followed for at least one-year, and had one or more potentially avoidable complications (PACs) during the episode time window.

Denominator Statement: Adult patients aged 18 years and above who triggered an episode of heart failure (HF) and are followed for at least one-year.

Exclusions: Denominator exclusions include exclusions of either “patients” or “claims” based on the following criteria:

1. “Patients” excluded are those that do not meet the enrollment criteria. If patient has an enrollment gap for more than 30 days during the episode time window, it is considered as an enrollment gap
2. “Patients” are also excluded if the cost of the episode is an outlier at greater than 99th percentile or less than 1st percentile value for all episodes. This is another way to ensure that episodes are complete as well as they do not bring in random noise into the analysis due to inappropriate codes or services.
3. “Claims” are excluded from the HF measure if they are considered not relevant to HF care.

Adjustment/Stratification:

Level of Analysis: Clinician : Group/Practice, Clinician : Individual, Clinician : Team

Setting of Care: Ambulatory Care : Ambulatory Surgery Center (ASC), Ambulatory Care : Clinician Office/Clinic, Other

Type of Measure: Composite

Data Source: Administrative claims

Measure Steward: Health Care Incentives Improvement Institute Inc. (HCI3)

STANDING COMMITTEE MEETING [09/09/2015-09/10/2015]

1. Importance to Measure and Report: The measure does not meet the Importance criteria

1. Importance: **Y-2; N-15**

Rationale:

- The Committee agreed the Type 1 PACs were more directly related to heart failure but expressed a great deal of concern that the Type 2 PACs were too broad, and that the clinician would be held responsible for PACs unrelated to the management of heart failure. The Committee also expressed concern that there was no evidence or rationale provided to support the selection of the Type 2 PACs or the one year time frame.
- The Committee's greatest concern was that this measure is specified at the clinician level, rather than the facility level, which they believed was more appropriate.
- Overall, the Committee agreed that the rationale provided for the (PAC) outcomes did not meet the Evidence criterion.

2. Public and Member Comment

- Several comments suggested that the measure be re-specified to differentiate between facility level processes and clinician level of performance. One commenter noted concern for the comprehensive list of potentially avoidable complications, where these complications may be out of the control of the facility, or individual clinicians held responsible for the measure.
 - **Committee Response:** The Committee has reviewed the comments and taken them into consideration prior to the measure reconsideration process for the five HCI3 measures and one measure where consensus was not reached.
 - **Developer Response:** The Risk-Standardized PAC Rate (RSPR), which is derived from measuring the base rate of potentially avoidable complications (PACs) for a condition, procedure, or acute event, can be applied to individual physicians, practices, medical groups, facilities and health systems. The determination of the unit of accountability – entity measured – is based on whatever the user of the measure would decide as being appropriate. Methodologically, the predicate to the measurement is a reliability test that determines the minimum sample size required to compare the performance of providers. That sample size requirement will likely drive the decision about the best level of measurement, from the individual physician to the facility. The RSPR does not produce some raw count of individual occurrences of potentially avoidable complications, but rather a risk-standardized rate. This creates an appropriate measure of comparative performance, which can further be stratified as average, above average or below average. Therefore, no one being measured will be penalized for having patients that experience a PAC. Instead, only those that have far higher rates of occurrences than others will have a poorer performance, much like any other composite rate used today.
 - There is another important consideration about which provider to measure, and that is the attribution of the patient's episode to a provider. There is no standard way of attributing procedures, but there are well-accepted industry conventions, which we

have applied in our methods. For example, procedures are often attributed to both facilities and the physician performing the procedure. However, the measure user can make its own determination of attribution.

- Therefore, to be clear, potentially avoidable complications are counted within the context of an episode of care. Episodes are then attributed to providers using certain logic. It is the result of that attribution which creates the provider-specific Risk-Standardized PAC Rate. Measure users that want to attribute all procedural episodes solely to facilities, for example, can do that. Others who might want to assign all procedural episodes to a provider group, as opposed to individual physicians can also do that. And the method allows for all of the above, provided the sample sizes are adequate.
- Potentially avoidable complications are defined for each episode of care, from a patient-centered perspective. Much of the measurement field today often takes a provider-centric view of measurement, meaning that the starting point is to determine whether the sequelae of a specific intervention in the treatment of a condition is tightly within the control of the physician performing the intervention. HCI3's approach is instead based on whether or not negative sequelae were experienced by the patient irrespective of whether the provider who is attributed the episode perceives those sequelae as being under their control. As recommended long ago by the Institute of Medicine, care should be patient-centered, and the RSPR is therefore designed to be patient-centered. Even if some PACs aren't directly controllable by the managing physician, their occurrence can always be influenced by the selection of high quality upstream and downstream providers.

RECONSIDERATION VOTE FOLLOWING PUBLIC AND MEMBER COMMENTS:

- During Public and Member Comment, the developer submitted a request for the Standing Committee to reconsider their initial decision, citing that the NQF measure evaluation criteria was not appropriately applied. On January 28, 2016 the Committee reconvened to reconsider the PAC measure; the developer clarified which diagnosis codes are associated with the Type 1 and Type 2 PACs. The Committee continued to express concern for the attribution of the Type 2 PACs associated with this measure and ultimately upheld their initial decision to not recommend the measure for NQF endorsement. The developer submitted a request for reconsideration to CSAC. After discussion with the CSAC co-chairs, the developer agreed to re-specify the measure from the provider-level of analysis to the facility-level of analysis. Following this, the Committee co-chairs recommended that the measure be deferred for review by the Patient Safety Committee.

1. Importance to Measure and Report: The measure meets the Importance criteria

(1a. Evidence, 1b. Performance Gap, 1c. High Impact, 1d. Composite- Quality Construct and Rationale)

1a. Evidence: Y-10, N-6; 1b. Performance Gap: H-2; M-10; L-3; I-1; 1d. Composite: H-0; M-10; L-3; I-3

2. Scientific Acceptability of Measure Properties: The measure does not meet the Scientific Acceptability criteria

(2a. Reliability precise specifications, testing; 2b. Validity testing, threats to validity, 2d. Composite construction)

2a. Reliability: H-0; M-7; L-7; I-2

2748 Proportion of Patients with Hypertension (HTN) that have a Potentially Avoidable Complication (during the episode time window)

[Submission](#)

Description: Percent of adult population aged 18 + years who triggered an episode of hypertension (HTN), are followed for at least one-year, and have one or more potentially avoidable complications (PACs). PACs may occur any time during the episode time window. Please reference attached document labeled NQF_HTN_all_codes_risk_adjustment_06.30.15.xls, in the tabs labeled PACs I-9 and PAC I-10 for a list of code definitions of PACs relevant to HTN.

We define PACs as one of two types:

(1) Type 1 PACs - PACs directly related to the index condition: Patients are considered to have a PAC, if they receive services during the episode time window for any of the complications directly related to HTN, such as for malignant hypertension, blurred vision, acute CHF etc.

(2) Type 2 PACs - PACs suggesting Patient Safety Failures: Patients are also considered to have a PAC, if they receive services during the episode time window for any of the complications related to patient safety failures such as for sepsis, infections, phlebitis, deep vein thrombosis, pressure sores etc..

All relevant admissions in a patient with HTN are considered potentially avoidable and flagged as PACs.

PACs are counted as a dichotomous (yes/no) outcome. If a patient had one or more PACs, they get counted as a “yes” or a 1. The enclosed workbook labeled

NQF_HTN_all_codes_risk_adjustment_06.30.15.xls serves as an example. The tab labeled PAC overview gives the percent of HTN episodes that have a PAC and the tab labeled “PAC drill down” gives the types of PACs and their frequencies in HTN episodes within this dataset.

The information is based on a two-year claims database from a large regional commercial insurer. The database had over 3.2 million covered lives and over \$25.9 billion in “allowed amounts” for claims costs. The database is an administrative claims database with medical as well as pharmacy claims.

Numerator Statement: Outcome: Number of patients who triggered an episode of hypertension (HTN), are followed for at least one-year, and had one or more potentially avoidable complications (PACs) during the episode time window.

Denominator Statement: Adult patients aged 18 years and above who triggered an episode of hypertension (HTN) and are followed for at least one-year.

Exclusions: Denominator exclusions include exclusions of either “patients” or “claims” based on the following criteria:

1. “Patients” excluded are those that do not meet the enrollment criteria. If patient has an enrollment gap for more than 30 days during the episode time window, it is considered as an enrollment gap
2. “Patients” are also excluded if the cost of the episode is an outlier at greater than 99th percentile or less than 1st percentile value for all episodes. This is another way to ensure that episodes are complete as well as they do not bring in random noise into the analysis due to inappropriate codes or services.
3. “Claims” are excluded from the HTN measure if they are considered not relevant to HTN care.

Adjustment/Stratification:

Level of Analysis: Clinician : Group/Practice, Clinician : Individual, Clinician : Team

Setting of Care: Ambulatory Care : Ambulatory Surgery Center (ASC), Ambulatory Care : Clinician Office/Clinic, Other

Type of Measure: Composite

Data Source: Administrative claims

Measure Steward: Health Care Incentives Improvement Institute Inc. (HCI3)

STANDING COMMITTEE MEETING [09/09/2015-09/10/2015]

1. Importance to Measure and Report: The measure does not meet the Importance criteria

1. Importance: **Y-3; N-14**

Rationale:

- The Committee agreed the Type 1 PACs were more directly related to hypertension but expressed a great deal of concern that the Type 2 PACs were too broad, and that the clinician would be held responsible for PACs unrelated to the management of hypertension. The Committee also expressed concern that there was no evidence or rationale provided to support the selection of the Type 2 PACs or the one year time frame.
- The Committee's greatest concern was that this measure is specified at the clinician level, rather than the facility level, which they believed was more appropriate.
- Overall, the Committee agreed that the rationale provided for the (PAC) outcomes did not meet the Evidence criterion.

2. Public and Member Comment

- Several comments suggested that the measures be re-specified to differentiate between facility level processes and clinician level of performance. One commenter noted concern for the comprehensive list of potentially avoidable complications, where these complications may be out of the control of the facility, or individual clinicians held responsible by the measure.
 - **Committee Response:** The Committee has reviewed the comments and taken them into consideration prior to the measure reconsideration process for the five HCI3 measures and one measure where consensus was not reached.
 - **Developer Response:** The Risk-Standardized PAC Rate (RSPR), which is derived from measuring the base rate of potentially avoidable complications (PACs) for a condition, procedure, or acute event, can be applied to individual physicians, practices, medical groups, facilities and health systems. The determination of the unit of accountability – entity measured – is based on whatever the user of the measure would decide as being appropriate. Methodologically, the predicate to the measurement is a reliability test that determines the minimum sample size required to compare the performance of providers. That sample size requirement will likely drive the decision about the best level of measurement, from the individual physician to the facility. The RSPR does not produce some raw count of individual occurrences of potentially avoidable complications, but rather a risk-standardized rate. This creates an appropriate measure of comparative performance, which can further be stratified as average, above average or below average. Therefore, no one being measured will be penalized for having patients that experience a PAC. Instead, only those that have far higher rates of occurrences than others will have a poorer performance, much like any other composite rate used today.
 - There is another important consideration about which provider to measure, and that is the attribution of the patient's episode to a provider. There is no standard way of attributing procedures, but there are well-accepted industry conventions, which we

have applied in our methods. For example, procedures are often attributed to both facilities and the physician performing the procedure. However, the measure user can make its own determination of attribution.

- Therefore, to be clear, potentially avoidable complications are counted within the context of an episode of care. Episodes are then attributed to providers using certain logic. It is the result of that attribution which creates the provider-specific Risk-Standardized PAC Rate. Measure users that want to attribute all procedural episodes solely to facilities, for example, can do that. Others who might want to assign all procedural episodes to a provider group, as opposed to individual physicians can also do that. And the method allows for all of the above, provided the sample sizes are adequate.
- Potentially avoidable complications are defined for each episode of care, from a patient-centered perspective. Much of the measurement field today often takes a provider-centric view of measurement, meaning that the starting point is to determine whether the sequelae of a specific intervention in the treatment of a condition is tightly within the control of the physician performing the intervention. HCI3's approach is instead based on whether or not negative sequelae were experienced by the patient irrespective of whether the provider who is attributed the episode perceives those sequelae as being under their control. As recommended long ago by the Institute of Medicine, care should be patient-centered, and the RSPR is therefore designed to be patient-centered. Even if some PACs aren't directly controllable by the managing physician, their occurrence can always be influenced by the selection of high quality upstream and downstream providers.

RECONSIDERATION VOTE FOLLOWING PUBLIC AND MEMBER COMMENTS:

- During Public and Member Comment, the developer submitted a request for the Standing Committee to reconsider their initial decision, citing that the NQF measure evaluation criteria was not appropriately applied. On January 28, 2016 the Committee reconvened to reconsider the PAC measure; the developer clarified which diagnosis codes are associated with the Type 1 and Type 2 PACs. The Committee continued to express concern for the attribution of the Type 2 PACs associated with this measure and ultimately upheld their initial decision to not recommend the measure for NQF endorsement. The developer submitted a request for reconsideration to CSAC. After discussion with the CSAC co-chairs, the developer agreed to re-specify the measure from the provider-level of analysis to the facility-level of analysis. Following this, the Committee co-chairs recommended that the measure be deferred for review by the Patient Safety Committee.

1. Importance to Measure and Report: The measure does not meet the Importance criteria

(1a. Evidence, 1b. Performance Gap, 1c. High Impact, 1d. Composite- Quality Construct and Rationale)

1a. Evidence: Y-10, N-6; 1b. Performance Gap: H-2; M-9; L-4; I-1; 1d. Composite: H-0; M-8; L-5; I-3

2749 Proportion of Patients with Arrhythmias (ARR) that have a Potentially Avoidable Complication (during the episode time window)

[Submission](#)

Description: Percent of adult population aged 18 + years who triggered an episode of arrhythmias (ARR), are followed for at least one-year, and have one or more potentially avoidable complications (PACs). PACs may occur any time during the episode time window. Please reference attached document labeled NQF_ARR_all_codes_risk_adjustment_06.30.15.xls, in the tabs labeled PACs I-9 and PAC I-10 for a list of code definitions of PACs relevant to ARR.

We define PACs as one of two types:

(1) Type 1 PACs - PACs directly related to the index condition: Patients are considered to have a PAC, if they receive services during the episode time window for any of the complications directly related to ARR, such as for hypotension, cardiac arrest, fluid and electrolyte disturbances etc.

(2) Type 2 PACs - PACs suggesting Patient Safety Failures: Patients are also considered to have a PAC, if they receive services during the episode time window for any of the complications related to patient safety failures such as for sepsis, infections, phlebitis, deep vein thrombosis, pressure sores etc.

All relevant admissions in a patient with ARR are considered potentially avoidable and flagged as PACs.

PACs are counted as a dichotomous (yes/no) outcome. If a patient had one or more PACs, they get counted as a “yes” or a 1. The enclosed workbook labeled NQF_ARR_all_codes_risk_adjustment_06.30.15.xls serves as an example. The tab labeled PAC overview gives the percent of ARR episodes that have a PAC and the tab labeled “PAC drill down” gives the types of PACs and their frequencies in ARR episodes within this dataset.

The information is based on a two-year claims database from a large regional commercial insurer. The database had over 3.2 million covered lives and over \$25.9 billion in “allowed amounts” for claims costs. The database is an administrative claims database with medical as well as pharmacy claims.

Numerator Statement: Outcome: Number of patients who triggered an episode of arrhythmias (ARR), are followed for at least one-year, and had one or more potentially avoidable complications (PACs) during the episode time window.

Denominator Statement: Adult patients aged 18 years and above who triggered an episode of arrhythmias (ARR) and are followed for at least one-year.

Exclusions: Denominator exclusions include exclusions of either “patients” or “claims” based on the following criteria:

1. “Patients” excluded are those that do not meet the enrollment criteria. If patient has an enrollment gap for more than 30 days during the episode time window, it is considered as an enrollment gap
2. “Patients” are also excluded if the cost of the episode is an outlier at greater than 99th percentile or less than 1st percentile value for all episodes. This is another way to ensure that episodes are complete as well as they do not bring in random noise into the analysis due to inappropriate codes or services.
3. “Claims” are excluded from the ARR measure if they are considered not relevant to ARR care.

Adjustment/Stratification:

Level of Analysis: Clinician : Group/Practice, Clinician : Individual, Clinician : Team

Setting of Care: Ambulatory Care : Ambulatory Surgery Center (ASC), Ambulatory Care : Clinician Office/Clinic, Other

Type of Measure: Composite

Data Source: Administrative claims

Measure Steward: Health Care Incentives Improvement Institute Inc. (HCI3)

STANDING COMMITTEE MEETING [02/26/2014-02/27/2014]

1. Importance to Measure and Report: The measure does not meet the Importance criteria

1. Importance: **Y-5; N-12**

Rationale:

- The Committee agreed the Type 1 PACs were more directly related to arrhythmias but expressed a great deal of concern that the Type 2 PACs were too broad, making it difficult to attribute accountability to the clinician for PACs unrelated to the management of arrhythmias. The Committee also expressed concern that there was no evidence or rationale provided to support the selection of the Type 2 PACs or the one year time frame.
- The Committee's greatest concern was that this measure is specified at the clinician level, rather than the facility level, which they believed was more appropriate.
- Overall, the Committee agreed that the rationale provided for the (PAC) outcomes did not meet the Evidence criterion. The measure did not pass the Evidence criterion.

2. Public and Member Comment

- Several comments suggested that the measures be re-specified to differentiate between facility level processes and clinician level of performance. One commenter noted concern for the comprehensive list of potentially avoidable complications, where these complications may be out of the control of the facility, or individual clinicians held responsible by the measure.
 - **Committee Response:** The Committee has reviewed the comments and taken them into consideration prior to the measure reconsideration process for the five HCI3 measures and one measure where consensus was not reached.
 - **Developer Response:** The Risk-Standardized PAC Rate (RSPR), which is derived from measuring the base rate of potentially avoidable complications (PACs) for a condition, procedure, or acute event, can be applied to individual physicians, practices, medical groups, facilities and health systems. The determination of the unit of accountability – entity measured – is based on whatever the user of the measure would decide as being appropriate. Methodologically, the predicate to the measurement is a reliability test that determines the minimum sample size required to compare the performance of providers. That sample size requirement will likely drive the decision about the best level of measurement, from the individual physician to the facility. The RSPR does not produce some raw count of individual occurrences of potentially avoidable complications, but rather a risk-standardized rate. This creates an appropriate measure of comparative performance, which can further be stratified as average, above average or below average. Therefore, no one being measured will be penalized for having patients that experience a PAC. Instead, only those that have far higher rates of occurrences than others will have a poorer performance, much like any other composite rate used today.
 - There is another important consideration about which provider to measure, and that is the attribution of the patient's episode to a provider. There is no standard way of attributing procedures, but there are well-accepted industry conventions, which we

have applied in our methods. For example, procedures are often attributed to both facilities and the physician performing the procedure. However, the measure user can make its own determination of attribution.

- Therefore, to be clear, potentially avoidable complications are counted within the context of an episode of care. Episodes are then attributed to providers using certain logic. It is the result of that attribution which creates the provider-specific Risk-Standardized PAC Rate. Measure users that want to attribute all procedural episodes solely to facilities, for example, can do that. Others who might want to assign all procedural episodes to a provider group, as opposed to individual physicians can also do that. And the method allows for all of the above, provided the sample sizes are adequate.
- Potentially avoidable complications are defined for each episode of care, from a patient-centered perspective. Much of the measurement field today often takes a provider-centric view of measurement, meaning that the starting point is to determine whether the sequelae of a specific intervention in the treatment of a condition is tightly within the control of the physician performing the intervention. HCI3's approach is instead based on whether or not negative sequelae were experienced by the patient irrespective of whether the provider who is attributed the episode perceives those sequelae as being under their control. As recommended long ago by the Institute of Medicine, care should be patient-centered, and the RSPR is therefore designed to be patient-centered. Even if some PACs aren't directly controllable by the managing physician, their occurrence can always be influenced by the selection of high quality upstream and downstream providers.

RECONSIDERATION VOTE FOLLOWING PUBLIC AND MEMBER COMMENTS:

- During Public and Member Comment, the developer submitted a request for the Standing Committee to reconsider their initial decision, citing that the NQF measure evaluation criteria was not appropriately applied. On January 28, 2016 the Committee reconvened to reconsider the PAC measure; the developer clarified which diagnosis codes are associated with the Type 1 and Type 2 PACs. The Committee continued to express concern for the attribution of the Type 2 PACs associated with this measure and ultimately upheld their initial decision to not recommend the measure for NQF endorsement. The developer submitted a request for reconsideration to CSAC. After discussion with the CSAC co-chairs, the developer agreed to re-specify the measure from the provider-level of analysis to the facility-level of analysis. Following this, the Committee co-chairs recommended that the measure be deferred for review by the Patient Safety Committee.

1. Importance to Measure and Report: The measure does not meet the Importance criteria

(1a. Evidence, 1b. Performance Gap, 1c. High Impact, 1d. Composite- Quality Construct and Rationale)

1a. Evidence: Y-8, N-8

2751 Proportion of Patients undergoing an Angioplasty Procedure (Percutaneous Coronary Intervention - PCI) that have a Potentially Avoidable Complication (during the episode time window)

[Submission](#)

Description: Percent of adult population aged 18 + years who had a percutaneous coronary intervention (PCI) procedure, are followed for at least 90-days, and have one or more potentially avoidable complications (PACs). PACs may occur during the index stay or during the 90-day post discharge period. Please reference attached document labeled NQF_PCI_all_codes_risk_adjustment_06.30.15.xls, in the tabs labeled PACs I-9 and PAC I-10 for a list of code definitions of PACs relevant to PCI.

We define PACs as one of two types:

(1) Type 1 PACs - PACs directly related to the index condition: Patients are considered to have a PAC, if they receive services during the episode time window for any of the complications directly related to PCI, such as for hypotension, cardiac arrest, fluid and electrolyte disturbances etc.

(2) Type 2 PACs - PACs suggesting Patient Safety Failures: Patients are also considered to have a PAC, if they receive services during the episode time window for any of the complications related to patient safety failures such as for sepsis, infections, phlebitis, deep vein thrombosis, pressure sores etc.

All readmissions in a patient with PCI are considered potentially avoidable and flagged as PACs.

PACs are counted as a dichotomous (yes/no) outcome. If a patient had one or more PACs, they get counted as a “yes” or a 1. The enclosed workbook labeled NQF_PCI_all_codes_risk_adjustment_06.30.15.xls serves as an example. The tab labeled PAC overview gives the percent of PCI episodes that have a PAC and the tab labeled “PAC drill down” gives the types of PACs and their frequencies in PCI episodes within this dataset.

The information is based on a two-year claims database from a large regional commercial insurer. The database had over 3.2 million covered lives and over \$25.9 billion in “allowed amounts” for claims costs. The database is an administrative claims database with medical as well as pharmacy claims.

Numerator Statement: Number of patients who underwent a percutaneous coronary intervention (PCI) procedure, are followed for at least 90-days, and have one or more potentially avoidable complications (PACs) during the episode time window.

Denominator Statement: Adult patients aged 18 years and above who underwent an Angioplasty (percutaneous coronary intervention - PCI) procedure and are followed for at least 90-days.

Exclusions: Denominator exclusions include exclusions of "patients" as well as "claims" not relevant to PCI care. Please refer to the enclosed excel workbook entitled (NQF_PCI_all_codes_risk_adjustment_06.30.15.xls)

1. "Patients" are excluded from the measure if they meet one of the following criteria:

- a. If age is < 18 years
- b. If gender is missing
- c. If they do not have continuous enrollment for the entire time window with a maximum of 30 day enrollment gap with the entity providing the data (this helps determine if the database has captured most of the claims for the patient in the time window).
- d. If the episode time window extends beyond the dataset end date (this helps eliminate incomplete episodes).

e. The episode cost is an outlier (less than 1st percentile or greater than 99th percentile value for all episodes of the same type). This eliminates extreme variation that may result from random outlier events.

2. "Claims" are excluded from the measure based on the following criteria:

a. If none of the diagnosis codes on the claim are on the list of relevant diagnosis codes (either typical Dx or PAC Dx) for PCI.

b. If none of the procedure / CPT codes on the claim are on the list of relevant procedure codes for PCI.

Adjustment/Stratification: None

Level of Analysis: Facility

Setting of Care: Ambulatory Care : Ambulatory Surgery Center (ASC), Hospital/Acute Care Facility, Other

Type of Measure: Composite Performance

Data Source: Administrative claims

Measure Steward: Health Care Incentives Improvement Institute Inc. (HCI3)

STANDING COMMITTEE MEETING [09/09/2015-09/10/2015]

1. Importance to Measure and Report: The measure meets the Importance criteria

(1. Importance, 1b. Performance Gap, 1c. Composite – Quality Construct and Rationale)

1. Importance: **Y-11; N-6**; 1b. Performance Gap: **H-7; M-6; L-2; I-2**; 1c. Composite: **H-0; M-11; L-2; I-4**

Rationale:

- The Committee determined there was sufficient evidence that avoiding complications after undergoing an angioplasty procedure (PCI) results in better patient outcomes.
- The Committee agreed the Type 1 PACs were more directly related to PCI but expressed a great deal of concern that the Type 2 PACs were too broad, and that the facility would be held responsible for PACs unrelated to a PCI.
- The Committee agreed that the 90 day time frame is reasonable for this type of procedure and that the measure is appropriately specified at the facility level, rather than the clinician level.
- The performance gap data provided was calculated from PROMETHEUS administrative claims data from April 2012 – December 2014. For 5,898 PCI episodes and 41 facilities, the unadjusted PAC rates ranged from 31.6% to 80% and the risk-standardized PAC rates ranged from 31.6% to 80%. Although no disparity information was provided, it was believed that this measure should not be identified as disparity- sensitive.
- The quality construct was called into question because of the equal weighting of PACs; for example, a post-procedural fever was equally weighted with hemopericardium and other serious complications. However, the developer pointed out that a weighting system would be arbitrary; at present there an objective way of creating that system does not exist. The Committee agreed that weighting would be arbitrary but continued to question the validity of equally weighting sepsis and fever.

2. Scientific Acceptability of Measure Properties: The measure meets the Scientific Acceptability criteria

(2a. Reliability - precise specifications, testing; 2b. Validity - testing, threats to validity, 2d. Composite construction)

2a. Reliability: **H-0; M-11; L-4; I-2** 2b. Validity: **H-0; M-12; L-3; I-2** 2d. Composite: **H-2; M-9; L-3, I-3**

Rationale:

- Reliability testing was conducted at the performance measure score level. Facilities with < 10 PCI episodes were excluded from reliability testing. A sample of 565 facilities was initially included in the data set; facilities with less than 10 PCI episodes were excluded, therefore only 41 were included in the analysis. The median reliability score for facilities with 10 or more PCI episodes was 0.51. The median reliability score for facilities with 175 or more PCI episodes increased to 0.74. In the reliability testing attachment the developer stated, “These results suggest that the measure achieves sufficient differentiation in performance among high volume facilities.”
- The Committee expressed concern over the large sample size needed to reach an acceptable reliability level with this measure. Due to the large sample size needed, this measure could not be used to assess low-volume facilities. The developer suggested that when this measure is implemented, it should be used to evaluate performance (% of PCI patients with PACs) only if the reliability score is greater than 0.7. If the reliability score is less than 0.7, then the developer recommends reporting only the volume of PCIs performed.
- A systematic assessment of face validity for the performance measure score was conducted using multi-specialty clinical working groups, focus groups and face validity comparisons of the measure to other national accountability measures. The developer did not provide statistical results of the systematic assessment.
- The developer did not submit a description of the conceptual relationship between patient sociodemographic (SDS) factors and PAC rates but included age and gender in the risk-adjustment model. The developer explained that SDS factors cannot be captured via administrative claims data. The developer also stated that studies have shown that insurance status is the variable that most often correlates with sociodemographic status. This data set was from a commercial insurer; therefore it was not possible to compare it to other types of insurers such as Medicare or Medicaid.
- The developer provided details on each component of each PAC and their frequency. The Committee agreed that the developer satisfied the requirements for the composite criteria.

3. Feasibility: H-8; M-7; L-1; I-1

(3a. Clinical data generated during care delivery; 3b. Electronic sources; 3c. Susceptibility to inaccuracies/unintended consequences identified 3d. Data collection strategy can be implemented)

- Rationale: There Committee agreed that use of administrative claims database was sufficient and adequate and therefore agreed the measure was feasible.

4. Use and Usability: H-7; M-7; L-2; I-1

(Meaningful, understandable, and useful to the intended audiences for 4a. Public Reporting/Accountability and 4b. Quality Improvement)

Rationale:

- One of the Committee members suggested that reporting PAC rates could potentially lead to unintended consequences such as a reduction in PCIs performed in high risk patients in an effort to reduce the number of PACs.
- This measure is currently used in several state payment and quality improvement programs.

5. Related and Competing Measures

- No related or competing measures noted.

Standing Committee Recommendation for Endorsement: Y-10; N-7 (Consensus not reached)

6. Public and Member Comment

- Several comments suggested that the measures be re-specified to differentiate between facility level processes and clinician level of performance. One commenter noted concern with the comprehensive list of potentially avoidable complications, where these complications may be out of the control of the facility, or individual clinicians held responsible by the measure. Another commenter suggested the measure is too general to be meaningful.
 - **Committee Response:** The Committee has reviewed the comments and taken them into consideration prior to the measure reconsideration process for the five HCI3 measures and one measure where consensus was not reached.
 - **Developer Response:** The Risk-Standardized PAC Rate (RSPR), which is derived from measuring the base rate of potentially avoidable complications (PACs) for a condition, procedure, or acute event, can be applied to individual physicians, practices, medical groups, facilities and health systems. The determination of the unit of accountability – entity measured – is based on whatever the user of the measure would decide as being appropriate. Methodologically, the predicate to the measurement is a reliability test that determines the minimum sample size required to compare the performance of providers. That sample size requirement will likely drive the decision about the best level of measurement, from the individual physician to the facility. The RSPR does not produce some raw count of individual occurrences of potentially avoidable complications, but rather a risk-standardized rate. This creates an appropriate measure of comparative performance, which can further be stratified as average, above average or below average. Therefore, no one being measured will be penalized for having patients that experience a PAC. Instead, only those that have far higher rates of occurrences than others will have a poorer performance, much like any other composite rate used today.
 - There is another important consideration about which provider to measure, and that is the attribution of the patient's episode to a provider. There is no standard way of attributing procedures, but there are well-accepted industry conventions, which we have applied in our methods. For example, procedures are often attributed to both facilities and the physician performing the procedure. However, the measure user can make its own determination of attribution.
 - Therefore, to be clear, potentially avoidable complications are counted within the context of an episode of care. Episodes are then attributed to providers using certain logic. It is the result of that attribution which creates the provider-specific Risk-Standardized PAC Rate. Measure users that want to attribute all procedural episodes solely to facilities, for example, can do that. Others who might want to assign all procedural episodes to a provider group, as opposed to individual physicians can also do that. And the method allows for all of the above, provided the sample sizes are adequate.

- Potentially avoidable complications are defined for each episode of care, from a patient-centered perspective. Much of the measurement field today often takes a provider-centric view of measurement, meaning that the starting point is to determine whether the sequelae of a specific intervention in the treatment of a condition is tightly within the control of the physician performing the intervention. HCI3's approach is instead based on whether or not negative sequelae were experienced by the patient irrespective of whether the provider who is attributed the episode perceives those sequelae as being under their control. As recommended long ago by the Institute of Medicine, care should be patient-centered, and the RSPR is therefore designed to be patient-centered. Even if some PACs aren't directly controllable by the managing physician, their occurrence can always be influenced by the selection of high quality upstream and downstream providers.

RECONSIDERATION VOTE FOLLOWING PUBLIC AND MEMBER COMMENTS:

- During Public and Member Comment, the developer submitted a request for the Standing Committee to reconsider their initial decision, citing that the NQF measure evaluation criteria was not appropriately applied. On January 28, 2016 the Committee reconvened to reconsider the PAC measure; the developer clarified which diagnosis codes are associated with the Type 1 and Type 2 PACs. The Committee continued to express concern for the attribution of the Type 2 PACs associated with this measure and ultimately upheld their initial decision to not recommend the measure for NQF endorsement. The developer submitted a request for reconsideration to CSAC. After discussion with the CSAC co-chairs, the developer agreed to re-specify the 4 condition-specific measures from the provider-level of analysis to the facility-level of analysis. Following this, the Committee co-chairs recommended that the measure be deferred for review by the Patient Safety Committee.

Standing Committee Recommendation for Endorsement: Y-5; N-11

2752 Proportion of Patients undergoing Pacemaker / Defibrillator Implantation (PCMDFR) that have a Potentially Avoidable Complication (during the episode time window)

Submission

Description: Percent of adult population aged 18 + years who had a pacemaker/defibrillator implantation (PCMDFR), are followed for at least 30-days, and have one or more potentially avoidable complications (PACs). PACs may occur during the index stay or during the 30-day post discharge period. Please reference attached document labeled NQF_PCMDFR_all_codes_risk_adjustment_06.30.15.xls, in the tabs labeled PACs I-9 and PAC I-10 for a list of code definitions of PACs relevant to PCMDFR.

We define PACs as one of two types:

- (1) Type 1 PACs - PACs directly related to the index condition: Patients are considered to have a PAC, if they receive services during the episode time window for any of the complications directly related to PCMDFR, such as for wound infection, hypotension, cardiac arrest etc.
- (2) Type 2 PACs - PACs suggesting Patient Safety Failures: Patients are also considered to have a PAC, if they receive services during the episode time window for any of the complications related to patient safety failures such as for sepsis, infections, phlebitis, deep vein thrombosis, pressure sores etc.

All readmissions in a patient with PCMDFR are considered potentially avoidable and flagged as PACs. PACs are counted as a dichotomous (yes/no) outcome. If a patient had one or more PACs, they get counted as a “yes” or a 1. The enclosed workbook labeled NQF_PCMDFR_all_codes_risk_adjustment_06.30.15.xls serves as an example. The tab labeled PAC overview gives the percent of PCMDFR episodes that have a PAC and the tab labeled “PAC drill down” gives the types of PACs and their frequencies in PCMDFR episodes within this dataset.

The information is based on a two-year claims database from a large regional commercial insurer. The database had over 3.2 million covered lives and over \$25.9 billion in “allowed amounts” for claims costs. The database is an administrative claims database with medical as well as pharmacy claims.

Numerator Statement: Number of patients who underwent a pacemaker/defibrillator implantation (PCMDFR), are followed for at least 30-days, and have one or more potentially avoidable complications (PACs) during the episode time window.

Denominator Statement: Adult patients aged 18 years and above who underwent a Pacemaker/defibrillator implantation - PCMDFR) procedure and are followed for at least 30-days.

Exclusions: Denominator exclusions include exclusions of either “patients” or “claims” based on the following criteria:

1. “Patients” excluded are those that do not meet the enrollment criteria. If patient has an enrollment gap for any time period during the episode time window, it is considered as an enrollment gap
2. “Patients” are also excluded if the cost of the episode is an outlier at greater than 99th percentile or less than 1st percentile value for all episodes. This is another way to ensure that episodes are complete as well as they do not bring in random noise into the analysis due to inappropriate codes or services.
3. “Claims” are excluded from the PCMDFR measure if they are considered not relevant to PCMDFR care.

Adjustment/Stratification:

Level of Analysis: Facility

Setting of Care: Ambulatory Care : Ambulatory Surgery Center (ASC), Hospital/Acute Care Facility, Other

Type of Measure: Composite

Data Source: Administrative claims

Measure Steward: Health Care Incentives Improvement Institute Inc. (HCI3)

STANDING COMMITTEE MEETING [09/09/2015-09/10/2015]

1. Importance to Measure and Report: The measure does meet the Importance criteria

(1a. Evidence, 1b. Performance Gap, 1c. Composite – Quality Construct and Rationale)

1. Importance: **Y-9; N-6**; 1b. Performance Gap: **H-2; M-11; L-0; I-2**; 1c. Composite: **H-0; M-8; L-5; I-3**

Rationale:

- The Committee questioned whether the 30-day period was too limited and whether some infections would be missed, but the developer clarified that empirical testing revealed a strong link between the procedure and infections through 30 days but the relationship was significantly weaker past that point.
- The Committee also discussed the Type 2 PACs and their relevance to the procedure and noted that the rationale for selecting some of these PACs was not clear. The Committee stated that this measure is appropriate at the facility level rather than at the clinician level.

- The performance data submitted by the developer was calculated from PROMETHEUS administrative claims from 2012 to 2014 for 1,806 episodes. The unadjusted PAC rates ranged from 20%-64.3%. The risk-standardized PAC rates ranged from 20.8%-62.5%.
- The Committee agreed there was a performance gap for this measure but did not reach consensus on the evidence provided and the composite construct.

2. Scientific Acceptability of Measure Properties: The measure does not meet the Scientific Acceptability criteria

(2a. Reliability - precise specifications, testing; 2b. Validity - testing, threats to validity)

2a. Reliability: **H-0; M-9; L-5; I-2** 2b. Validity: **H-0; M-5; L-5; I-4**

Rationale:

- The developer stated that the measure was developed for use by individual clinician, group/practice, team, facility & integrated delivery system levels of analyses; the Committee was concerned that testing was provided at the facility level only.
- The developer stated that the beta-binomial failed to produce statistically significant parameters and were therefore unable to calculate facility reliability scores. One of the Committee members interpreted this to mean the measure may not adequately differentiate between facilities in the databased used to test the measure.
- A committee member noted concern over the lack of empirical results for validity, the adjustment of 170 factors, and the significant number of episodes that were eliminated from the measure due to exclusion criteria, permitting 1,806 of 3,968 (45.5%) PCMDFR episodes (in 3,258,706 unique beneficiaries) and 22 of 380 (5.8%) facilities for analysis.
- The Committee did not reach consensus on the reliability of this measure.
- The Committee questioned the lack of empirical validity results. The Committee was also concerned that the measure was adjusted for 170 risk factors. The developer explained that the 170 factors were done using a standard logistical regression model with claim submission forms.
- SDS factors were not available for this measure. Overall, the Committee agreed that the measure did not meet NQF's Validity criterion.

Standing Committee Recommendation for Endorsement: No, did not pass the validity criterion.

3. Public and Member Comment

- Several comments suggested that the measures be re-specified to differentiate between facility level processes and clinician level of performance. One commenter noted the concern for the comprehensive list of potentially avoidable complications, where these complications may be out of the control of the facility, or individual clinicians held responsible by the measure.
 - **Committee Response:** The Committee has reviewed the comments and taken them into consideration prior to the measure reconsideration process for the five HCI3 measures and one measure where consensus was not reached.
 - **Developer Response:** The Risk-Standardized PAC Rate (RSPR), which is derived from measuring the base rate of potentially avoidable complications (PACs) for a condition, procedure, or acute event, can be applied to individual physicians, practices, medical groups, facilities and health systems. The determination of the unit of accountability – entity measured – is based on whatever the user of the measure would decide as being appropriate. Methodologically, the predicate to the measurement is a reliability test

that determines the minimum sample size required to compare the performance of providers. That sample size requirement will likely drive the decision about the best level of measurement, from the individual physician to the facility. The RSPR does not produce some raw count of individual occurrences of potentially avoidable complications, but rather a risk-standardized rate. This creates an appropriate measure of comparative performance, which can further be stratified as average, above average or below average. Therefore, no one being measured will be penalized for having patients that experience a PAC. Instead, only those that have far higher rates of occurrences than others will have a poorer performance, much like any other composite rate used today.

- There is another important consideration about which provider to measure, and that is the attribution of the patient's episode to a provider. There is no standard way of attributing procedures, but there are well-accepted industry conventions, which we have applied in our methods. For example, procedures are often attributed to both facilities and the physician performing the procedure. However, the measure user can make its own determination of attribution.
- Therefore, to be clear, potentially avoidable complications are counted within the context of an episode of care. Episodes are then attributed to providers using certain logic. It is the result of that attribution which creates the provider-specific Risk-Standardized PAC Rate. Measure users that want to attribute all procedural episodes solely to facilities, for example, can do that. Others who might want to assign all procedural episodes to a provider group, as opposed to individual physicians can also do that. And the method allows for all of the above, provided the sample sizes are adequate.
- Potentially avoidable complications are defined for each episode of care, from a patient-centered perspective. Much of the measurement field today often takes a provider-centric view of measurement, meaning that the starting point is to determine whether the sequelae of a specific intervention in the treatment of a condition is tightly within the control of the physician performing the intervention. HCI3's approach is instead based on whether or not negative sequelae were experienced by the patient irrespective of whether the provider who is attributed the episode perceives those sequelae as being under their control. As recommended long ago by the Institute of Medicine, care should be patient-centered, and the RSPR is therefore designed to be patient-centered. Even if some PACs aren't directly controllable by the managing physician, their occurrence can always be influenced by the selection of high quality upstream and downstream providers.

RECONSIDERATION VOTE FOLLOWING PUBLIC AND MEMBER COMMENTS:

- During Public and Member Comment, the developer submitted a request for the Standing Committee to reconsider their initial decision, citing that the NQF measure evaluation criteria was not appropriately applied. On January 28, 2016 the Committee reconvened to reconsider the PAC measure; the developer clarified which diagnosis codes are associated with the Type 1 and Type 2 PACs. The Committee continued to express concern for the attribution of the Type 2 PACs associated with this measure and ultimately upheld their initial decision to not recommend the measure for NQF endorsement. The developer submitted a request for reconsideration to CSAC. After discussion with the CSAC co-chairs, the developer agreed to re-specify the 4

condition-specific measures from the provider-level of analysis to the facility-level of analysis. Following this, the Committee co-chairs recommended that the measure be deferred for review by the Patient Safety Committee.

1. Importance to Measure and Report: The measure meets the Importance criteria

(1a. Evidence, 1b. Performance Gap, 1c. High Impact, 1d. Composite- Quality Construct and Rationale)

1a. Evidence: Y-10, N-6; Composite: H-2; M-8; L-3; I-3

2. Scientific Acceptability of Measure Properties: **The measure does not meet the Scientific Acceptability criteria**

(2a. Reliability precise specifications, testing; 2b. Validity testing, threats to validity, 2d. Composite construction)

2a. Reliability: H-0; M-8; L-8; I-2

0018 : Controlling High Blood Pressure

Submission

Description: The percentage of patients 18–85 years of age who had a diagnosis of hypertension (HTN) and whose blood pressure was adequately controlled during the measurement year based on the following criteria:

- Patients 18–59 years of age whose blood pressure was <140/90 mm Hg.
- Patients 60–85 years of age with a diagnosis of diabetes whose blood pressure was <140/90 mm Hg.
- Patients 60–85 years of age without a diagnosis of diabetes whose blood pressure was <150/90 mm Hg.

Numerator Statement: The number of patients in the denominator whose most recent blood pressure (both systolic and diastolic) is adequately controlled during the measurement year based on the following criteria:

- Patients 18–59 years of age whose blood pressure was <140/90 mm Hg.
- Patients 60–85 years of age with a diagnosis of diabetes whose blood pressure was <140/90 mm Hg.
- Patients 60–85 years of age without a diagnosis of diabetes whose blood pressure was <150/90 mm Hg.

Denominator Statement: Patients 18 to 85 years of age by the end of the measurement year who had at least one outpatient encounter with a diagnosis of hypertension (HTN) during the first six months of the measurement year.

Exclusions: Exclude all patients with evidence of end-stage renal disease (ESRD) on or prior to the end of the measurement year. Documentation in the medical record must include a related note indicating evidence of ESRD. Documentation of dialysis or renal transplant also meets the criteria for evidence of ESRD.

Exclude all patients with a diagnosis of pregnancy during the measurement year.

Exclude all patients who had an admission to a nonacute inpatient setting during the measurement year.

Adjustment/Stratification: N/A

Level of Analysis: Health Plan, Integrated Delivery System

Setting of Care: Ambulatory Care : Clinician Office/Clinic, Urgent Care

Type of Measure: Ad-Hoc

Data Source: Administrative claims, Electronic Clinical Data

Measure Steward: National Committee for Quality Assurance

STANDING COMMITTEE MEETING [09/09/2015-09/10/2015]

1. Importance to Measure and Report: The measure does meet the Importance criteria

(1a. Evidence, 1b. Performance Gap, 1c. Composite – Quality Construct and Rationale)

1a. Evidence: **Y-4; N-12**

Rationale:

- This measure was submitted for an ad hoc review because the developer submitted material changes to the measure including changes to the measure population (age and diagnosis) and blood pressure targets for the numerator.
- The currently endorsed version of the measure defines adequate control of blood pressure as <140/90 for all populations. Based on the 2014 Evidence-Based Guidelines for the Management of High Blood Pressure in Adults, Report from the Panel Members Appointment to the Eighth Joint National Committee (JNC 8), the developer submitted changes to the measure to define adequate control of blood pressure as:
 - Patients 18–59 years of age whose blood pressure was <140/90 mm Hg
 - Patients 60–85 years of age with a diagnosis of diabetes whose blood pressure was <140/90 mm Hg
 - Patients 60–85 years of age without a diagnosis of diabetes whose blood pressure was <150/90 mm Hg
- The Committee questioned two of the studies referenced in the >70 population; one was a Japanese study that may not be representative of the U.S. population, and were also underpowered studies.
- The Committee was concerned that possible unintended consequences due to these updates were considered fully. In addition, one Committee member questioned the expert opinion used to justify these updates, and also noted the lack of rigorous randomized controlled trials (RCTs) that were included with the submission.
- The Committee noted the currently ongoing SPRINT trial, evaluating the >55 population and blood pressure goals. However, the results are forthcoming and cannot be considered for this measure review.
- One Committee member questioned why diabetes was added to this measure but not chronic kidney disease (CKD) since CKD is referenced in JNC 8. The developer responded that they considered including CKD in addition to diabetes but it was too complicated to capture CKD with administrative claims at this time.
- The Committee discussed the most current guidelines for hypertension and whether, according to these guidelines, a gap for improvement exists. In addition, AHA/ACC will be introducing new guidelines in 2016. Ultimately the Committee noted the importance of including a blood pressure medication measure in the Cardiovascular portfolio and that the measure will not cause undue harm.

Standing Committee Recommendation for Endorsement: Not Recommended for continued endorsement. Did not pass the evidence criterion.

- After discussion with the developer following the in-person meeting, the ad hoc review of the revised specifications for 0018: Controlling High Blood Pressure has been deferred pending availability of new evidence. The measure will retain endorsement with the existing specifications.

Measures Withdrawn from Consideration

Seven measures previously endorsed by NQF have not been resubmitted for maintenance of endorsement or have been withdrawn during the endorsement evaluation process. Endorsement for these measures has been removed.

Measure	Reason for withdrawal
0135 Evaluation of Left Ventricular Systolic Function (LVS) [hospital]	Developer will no longer be maintaining the measure.
0160 Beta-Blocker prescribed at discharge for AMI	Developer will no longer be maintaining the measure.
0162 ACEI or ARB for left ventricular systolic dysfunction - Heart Failure (HF) Patients	Developer will no longer be maintaining the measure.
0704 Proportion of Patients Hospitalized with AMI that have a Potentially Avoidable Complication (during the Index Stay or in the 30-day Post Discharge Period)	Developer will no longer be maintaining the measure.
1522 ACE/ARB Therapy at Discharge for ICD implant patients with Left Ventricular Systolic Dysfunction	Measure included in composite measure 0965: Patients with an ICD implant who receive prescriptions for all medications (ACE/ARB and beta-blockers) for which they are eligible for at discharge.
1528 Beta Blocker at Discharge for ICD implant patients with a previous MI	Measure included in composite measure 0965: Patients with an ICD implant who receive prescriptions for all medications (ACE/ARB and beta-blockers) for which they are eligible for at discharge.
1529 Beta Blocker at Discharge for ICD implant patients with Left Ventricular Systolic Dysfunction	Measure included in composite measure 0965: Patients with an ICD implant who receive prescriptions for all medications (ACE/ARB and beta-blockers) for which they are eligible for at discharge.

Appendix B: NQF Cardiovascular Portfolio and Related Measures

Key:

- * Measures applicable to patients within the CAD/AMI episode of care frameworks that are not in the cardiovascular portfolio.
- ^ Measures reviewed within phase 3 of the cardiovascular project.
- ‡ Measures applicable to multiple topic areas are listed more than once.

Patient-Focused Episode of Care for Coronary Artery Disease and Acute Myocardial Infarction (AMI)

Population at Risk: Primary Prevention

- 2020 Adult Current Smoking Prevalence*
- 0028 Preventive Care & Screening: Tobacco Use: Screening & Cessation Intervention*
- 0018 *Controlling High blood Pressure*‡
- 1927 Cardiovascular Health Screening for People with Schizophrenia or Bipolar Disorder Who Are Prescribed Antipsychotic Medications*
- 1933 Cardiovascular Monitoring for People with Cardiovascular Disease and Schizophrenia*

Cardiac Imaging

- 0669 Cardiac Imaging for Preoperative Risk Assessment for Non-Cardiac Low-Risk Surgery^
- 0670 Cardiac Stress Imaging Not Meeting Appropriate Use Criteria: Preoperative Evaluation in Low Risk Surgery Patients
- 0671 Cardiac Stress Imaging Not Meeting Appropriate Use Criteria: Routine Testing after Percutaneous Coronary Intervention (PCI)
- 0672 Cardiac Stress Imaging Not Meeting Appropriate Use Criteria: Testing in Asymptomatic, Low Risk Patients

Population at Risk: Secondary Prevention

- 0066 Chronic Stable Coronary Artery Disease: ACE Inhibitor or ARB Therapy--Diabetes or Left Ventricular Systolic Dysfunction (LVEF <40%)
- 0067 Chronic Stable Coronary Artery Disease: Antiplatelet Therapy^
- 0068 Ischemic Vascular Disease (IVD): Use of Aspirin or Another Antithrombotic^
- 0073 IVD: Blood Pressure Management
- 0074 Chronic Stable Coronary Artery Disease: Lipid Control
- 0076 Optimal Vascular Care [composite]

Acute Myocardial Infarction

- 0090 Electrocardiogram Performed for Non-Traumatic Chest Pain [clinician]
- 0092 Emergency Medicine: Aspirin at Arrival for Acute Myocardial Infarction (AMI) [clinician]

- 0163 Primary PCI Received Within 90 Minutes of Hospital Arrival
- 0164 Fibrinolytic Therapy Received Within 30 Minutes of Hospital Arrival
- 0288 Fibrinolytic Therapy Received Within 30 Minutes of ED Arrival [hospital for patients being transferred]
- 0290 Median Time to Transfer to Another Facility for Acute Coronary Intervention
- 2377 Defect free care for AMI [composite measure]

Outcomes

- 0230 Hospital 30-Day, All-Cause, Risk-Standardized Mortality Rate (RSMR) Following Acute Myocardial Infarction (AMI) Hospitalization for Patients 18 and Older^**
- 0505 Hospital 30-Day All-Cause Risk-Standardized Readmission Rate (RSRR) Following Acute Myocardial Infarction (AMI) Hospitalization*
- 0730 Acute Myocardial Infarction (AMI) Mortality Rate^**
- 2473 Hospital 30-Day Risk-Standardized AMI Mortality eMeasure

Percutaneous Coronary Intervention (PCI)

- 0133 In-hospital Risk-Adjusted Rate of Mortality for Patients Undergoing PCI
- 0535 30-day All-Cause Risk-Standardized Mortality Rate Following PCI for Patients Without STEMI and Without Cardiogenic Shock
- 0536 30-Day All-Cause Risk-Standardized Mortality Rate Following PCI for Patients with STEMI or Cardiogenic Shock
- 2411 Comprehensive Documentation for Indications for PCI
- 2459 In-hospital Risk Adjusted Rate of Bleeding Events for Patients Undergoing PCI

Coronary Artery Bypass Graft Surgery (These related measures are in NQF's surgery portfolio.)

- 0114 Risk-Adjusted Post-operative Renal Failure
- 0115 Risk-Adjusted Surgical Re-exploration
- 0116 Anti-Platelet Medication at Discharge
- 0117 Beta Blockade at Discharge
- 0118 Anti-Lipid Treatment Discharge
- 0119 Risk-Adjusted Operative Mortality for CABG
- 0122 Risk-Adjusted Operative Mortality MV Replacement + CABG Surgery
- 0123 Risk-Adjusted Operative Mortality for Aortic Valve Replacement (AVR) + CABG Surgery
- 0126 Selection of Antibiotic Prophylaxis for Cardiac Surgery Patients
- 0127 Preoperative Beta Blockade
- 0128 Duration of Antibiotic Prophylaxis for Cardiac Surgery Patients
- 0129 Risk-Adjusted Prolonged Intubation (Ventilation)
- 0130 Risk-Adjusted Deep Sternal Wound Infection Rate

- 0131 Risk-Adjusted Stroke/Cerebrovascular Accident
- 0134 Use of Internal Mammary Artery (IMA) in Coronary Artery Bypass Graft (CABG)
- 0696 The STS CABG Composite Score
- 1502 Risk-Adjusted Operative Mortality for MV Repair + CABG Surgery

Post-Acute/Rehabilitation Phase

- 0642 Cardiac Rehabilitation Patient Referral From an Inpatient Setting
- 0643 Cardiac Rehabilitation Patient Referral From an Outpatient Setting
- 0964 Therapy with Aspirin, P2Y12 Inhibitor, and Statin at Discharge Following PCI in Eligible Patients [facility]^**
- 2379 Adherence to Antiplatelet Therapy after Stent Implantation
- 2452 PCI: Post-Procedural Optimal Medical Therapy [clinician]

Population at Risk: Secondary Prevention

- 0070 Chronic Stable Coronary Artery Disease: Beta-Blocker Therapy--Prior Myocardial Infarction (MI) or Left Ventricular Systolic Dysfunction (LVEF <40%)^**
- 0071 Persistence of Beta-Blocker Treatment After a Heart Attack^**
- 0116 Anti-Platelet Medication at Discharge*
- 0117 Beta-Blocker at Discharge*
- 0118 Anti- Lipid Treatment Discharge*
- 0137 ACEI or ARB for Left Ventricular Systolic Dysfunction- AMI Patients
- 0142 Aspirin Prescribed at Discharge for AMI

Cost and Resource Use

- 1558 Relative Resource Use for People with Cardiovascular Conditions*

Patient-Focused Episode of Care for Heart Failure

Population at Risk

- 0018 *Controlling High Blood Pressure*
- 0028 Preventive Care & Screening: Tobacco Use: Screening & Cessation Intervention*
- 0421 Preventive Care and Screening: Body Mass Index (BMI) Screening and Follow-Up
- 2020 Adult Current Smoking Prevalence*

Evaluation and On-Going Management

- 0079 Left Ventricular Ejection Fraction Assessment (Outpatient Setting)^**
- 0081 Heart Failure: Angiotensin-Converting Enzyme (ACE) Inhibitor or Angiotensin Receptor Blocker (ARB) Therapy for Left Ventricular Systolic Dysfunction^**
- 2907 Heart Failure: Angiotensin-Converting Enzyme (ACE) Inhibitor or Angiotensin Receptor Blocker (ARB) Therapy for Left Ventricular Systolic Dysfunction eMeasure^**
- 0083 Heart Failure: Beta-Blocker Therapy for Left Ventricular Systolic Dysfunction^**

2908 Heart Failure: Beta-Blocker Therapy for Left Ventricular Systolic Dysfunction eMeasure^

2450 Heart Failure: Symptom and Activity Assessment

Acute Phase/ Hospitalization

0277 Heart Failure Admission Rate (PQI 8)*

0229 Hospital 30-day, all-cause, risk-standardized mortality rate (RSMR) following heart failure (HF) hospitalization for patients 18 and older^

0330 Hospital 30-day, all-cause, risk-standardized readmission rate (RSRR) following heart failure hospitalization*

0358 Congestive Heart Failure (CHF) Mortality Rate (IQI 16)

2438 Beta-Blocker Therapy (i.e., bisoprolol, carvedilol, or sustained-release metoprolol succinate) for LVSD Prescribed at Discharge

2439 Post-Discharge Appointment for Heart Failure Patients

2443 Post-Discharge Evaluation for Heart Failure Patients

2455 Heart Failure: Post-Discharge Appointment for Heart Failure Patients

Heart Rhythm Disorders

Atrial Fibrillation

1525 Chronic Anticoagulation Therapy

Implantable Cardioverter Defibrillator (ICD)

0694 Hospital Risk-Standardized Complication Rate following Implantation of Implantable Cardioverter-Defibrillator (ICD)^

0965 Patients with an ICD Implant Who Receive Prescriptions for All Medications (ACE/ARB and beta-blockers) for Which They Are Eligible for at Discharge^

2461 In-Person Evaluation Following Implantation of a Cardiovascular Implantable Electronic Device (CIED)

Cardiac Catheterization

0355 Bilateral Cardiac Catheterization Rate (IQI 25)

0715 Standardized Adverse Event Ratio for Children and Adults Undergoing Cardiac Catheterization for Congenital Heart Disease

Hypertension

0018 *Controlling High Blood Pressure*

Appendix C: Cardiovascular Portfolio—Use in Federal Programs

NQF #	Title	Federal Programs: Finalized as of 2013-2014
0018	Controlling High Blood Pressure	Initial Core Set of Health Care Quality Measures for Medicaid-Eligible Adults; Meaningful Use (EHR Incentive Program) - Eligible Professionals; Medicare Part C Plan Rating; Medicare Shared Savings Program; Physician Compare; Physician Feedback; Physician Quality Reporting System (PQRS); Value-Based Payment Modifier Program
0066	Chronic Stable Coronary Artery Disease: ACE Inhibitor or ARB Therapy--Diabetes or Left Ventricular Systolic Dysfunction (LVEF <40%)	Medicare Shared Savings Program; Physician Compare; Physician Feedback; Physician Quality Reporting System (PQRS); Value-Based Payment Modifier Program
0067	Chronic Stable Coronary Artery Disease: Antiplatelet Therapy	Physician Feedback; Physician Quality Reporting System (PQRS); Value-Based Payment Modifier Program
0068	Ischemic Vascular Disease (IVD): Use of Aspirin or another Antithrombotic	Meaningful Use (EHR Incentive Program) - Eligible Professionals; Medicare Shared Savings Program; Physician Compare; Physician Feedback; Physician Quality Reporting System (PQRS); Value-Based Payment Modifier Program
0070	Chronic Stable Coronary Artery Disease: Beta-Blocker Therapy--Prior Myocardial Infarction (MI) or Left Ventricular Systolic Dysfunction (LVEF <40%)	Physician Feedback;#Physician Quality Reporting System (PQRS); Value-Based Payment Modifier Program
0071	Persistence of Beta-Blocker Treatment After a Heart Attack	Medicare Part C Display Measure
0074	Chronic Stable Coronary Artery Disease: Lipid Control	Physician Compare; Physician Feedback; Value-Based Payment Modifier Program

NQF #	Title	Federal Programs: Finalized as of 2013-2014
0079	Heart Failure: Left Ventricular Ejection Fraction Assessment (Outpatient Setting)	Physician Feedback; Value-Based Payment Modifier Program
0081	Heart Failure: Angiotensin-Converting Enzyme (ACE) Inhibitor or Angiotensin Receptor Blocker (ARB) Therapy for Left Ventricular Systolic Dysfunction	Military Health System; Physician Feedback; Physician Quality Reporting System (PQRS); Value-Based Payment Modifier Program
0083	Heart Failure : Beta-blocker therapy for Left Ventricular Systolic Dysfunction	Medicare Shared Savings Program; Physician Compare; Physician Feedback; Physician Quality Reporting System (PQRS); Value-Based Payment Modifier Program
0090	Electrocardiogram Performed for Non-Traumatic Chest Pain	Physician Feedback; Physician Quality Reporting System (PQRS); Value-Based Payment Modifier Program
0092	Emergency Medicine: Aspirin at Arrival for Acute Myocardial Infarction (AMI)	Physician Feedback; Value-Based Payment Modifier Program
0137	ACEI or ARB for left ventricular systolic dysfunction- Acute Myocardial Infarction (AMI) Patients	Hospital Compare
0142	Aspirin prescribed at discharge for AMI	Hospital Compare; Hospital Inpatient Quality Reporting; Meaningful Use (EHR Incentive Program) - Hospitals, CAHs; Military Health System
0163	Primary PCI received within 90 minutes of Hospital Arrival	Hospital Compare; Hospital Inpatient Quality Reporting; Hospital Value-Based Purchasing; Meaningful Use (EHR Incentive Program) - Hospitals, CAHs
0164	Fibrinolytic Therapy received within 30 minutes of hospital arrival	Hospital Compare; Hospital Inpatient Quality Reporting; Hospital Value-Based Purchasing; Meaningful Use (EHR Incentive Program) - Hospitals, CAHs

NQF #	Title	Federal Programs: Finalized as of 2013-2014
0229	Hospital 30-day, all-cause, risk-standardized mortality rate (RSMR) following heart failure (HF) hospitalization for patients 18 and older	Hospital Compare; Hospital Inpatient Quality Reporting; Hospital Value-Based Purchasing
0230	Hospital 30-day, all-cause, risk-standardized mortality rate (RSMR) following acute myocardial infarction (AMI) hospitalization for patients 18 and older	Hospital Compare; Hospital Inpatient Quality Reporting; Hospital Value-Based Purchasing
0288	Fibrinolytic Therapy Received Within 30 Minutes of ED Arrival	Hospital Compare; Hospital Outpatient Quality Reporting; Military Health System
0290	Median Time to Transfer to Another Facility for Acute Coronary Intervention	Hospital Compare; Hospital Outpatient Quality Reporting
0643	Cardiac Rehabilitation Patient Referral From an Outpatient Setting	Physician Feedback; Physician Quality Reporting System (PQRS); Value-Based Payment Modifier Program
0669	Cardiac Imaging for Preoperative Risk Assessment for Non-Cardiac Low-Risk Surgery	Hospital Compare; Hospital Outpatient Quality Reporting
0670	Cardiac stress imaging not meeting appropriate use criteria: Preoperative evaluation in low risk surgery patients	Physician Feedback; Physician Quality Reporting System (PQRS); Value-Based Payment Modifier Program

NQF #	Title	Federal Programs: Finalized as of 2013-2014
0671	Cardiac stress imaging not meeting appropriate use criteria: Routine testing after percutaneous coronary intervention (PCI)	Physician Feedback; Physician Quality Reporting System (PQRS); Value-Based Payment Modifier Program
0672	Cardiac stress imaging not meeting appropriate use criteria: Testing in asymptomatic, low risk patients	Physician Feedback; Physician Quality Reporting System (PQRS); Value-Based Payment Modifier Program
1525	Chronic Anticoagulation Therapy	Physician Feedback; Physician Quality Reporting System (PQRS); Value-Based Payment Modifier Program

Appendix D: Project Standing Committee and NQF Staff

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Appendix E: Measure Specifications

0067 Chronic Stable Coronary Artery Disease: Antiplatelet Therapy

STATUS

Endorsed

STEWARD

American College of Cardiology

DESCRIPTION

Percentage of patients aged 18 years and older with a diagnosis of coronary artery disease seen within a 12 month period who were prescribed aspirin or clopidogrel.

TYPE

Process

DATA SOURCE

Electronic Clinical Data : Registry This measure is currently being used in the ACCF PINNACLE registry for the outpatient office setting.

Available in attached appendix at A.1 No data dictionary

LEVEL

Clinician : Individual

SETTING

Ambulatory Care : Clinician Office/Clinic

NUMERATOR STATEMENT

Patients who were prescribed* aspirin or clopidogrel within a 12 month period.

*Prescribed may include prescription given to the patient for aspirin or clopidogrel at one or more visits in the measurement period OR patient already taking aspirin or clopidogrel as documented in current medication list.

NUMERATOR DETAILS

For Claims/Administrative: Report CPT II Code 4086F: Aspirin or clopidogrel prescribed.

DENOMINATOR STATEMENT

All patients aged 18 years and older with a diagnosis of coronary artery disease seen within a 12 month period.

DENOMINATOR DETAILS

See 'Registry Supplemental Resources' attached in appendix field A.1 for data dictionary and form.

Codes that are applicable for the denominator are:

Diagnosis for coronary artery disease (ICD-9-CM) 410.00, 410.01, 410.02, 410.10, 410.11, 410.12, 410.20, 410.21, 410.22, 410.30, 410.31, 410.32, 410.40, 410.41, 410.42, 410.50, 410.51, 410.52, 410.60, 410.61, 410.62, 410.70, 410.71, 410.72, 410.80, 410.81, 410.82, 410.90, 410.91, 410.92, 411.0, 411.1, 411.81, 411.89, 412, 413.0, 413.1, 413.9, 414.00, 414.01, 414.02, 414.03, 414.04, 414.05, 414.06, 414.07, 414.2, 414.3, 414.8, 414.9, V45.81, V45.82

Diagnosis for coronary artery disease (ICD-10-CM): I20.0, I20.1, I20.8, I20.9, I21.01, I21.02, I21.09, I21.11, I21.19, I21.21, I21.29, I21.3, I21.4, I22.0, I22.1, I22.2, I22.8, I22.9, I24.0, I24.1, I24.8, I24.9, I25.10, I25.110, I25.111, I25.118, I25.119, I25.2, I25.5, I25.6, I25.700, I25.701, I25.708, I25.709, I25.710, I25.711, I25.718, I25.719, I25.720, I25.721, I25.728, I25.729, I25.730, I25.731, I25.738, I25.739, I25.750, I25.751, I25.758, I25.759, I25.760, I25.761, I25.768, I25.769, I25.790, I25.791, I25.798, I25.799, I25.810, I25.811, I25.812, I25.82, I25.83, I25.89, I25.9, Z95.1, Z95.5, Z98.61

Patient encounter during the reporting period (CPT): 99201, 99202, 99203, 99204, 99205, 99212, 99213, 99214, 99215, 99304, 99305, 99306, 99307, 99308, 99309, 99310, 99324, 99325, 99326, 99327, 99328, 99334, 99335, 99336, 99337, 99341, 99342, 99343, 99344, 99345, 99347, 99348, 99349, 99350

EXCLUSIONS

Documentation of medical reason(s) for not prescribing aspirin or clopidogrel (e.g., allergy, intolerance, receiving other thienopyridine therapy, receiving warfarin therapy, bleeding coagulation disorders, other medical reasons)

Documentation of patient reason(s) for not prescribing aspirin or clopidogrel (e.g., patient declined, other patient reasons)

Documentation of system reason(s) for not prescribing aspirin or clopidogrel (e.g., lack of drug availability, other reasons attributable to the health care system)

EXCLUSION DETAILS

For Claims/Administrative:

Documentation of medical reason(s) for not prescribing aspirin or clopidogrel

- Append modifier to CPT II code 4086F-1P

Documentation of patient reason(s) for not prescribing aspirin or clopidogrel

- Append modifier to CPT II code 4086F-2P

Documentation of system reason(s) for not prescribing aspirin or clopidogrel

- Append modifier to CPT II code 4086F-3P

RISK ADJUSTMENT

No risk adjustment or risk stratification

Not Applicable.

STRATIFICATION

Not Applicable.

TYPE SCORE

Rate/proportion better quality = higher score

ALGORITHM

To calculate performance rates:

- 1) Find the patients who meet the initial patient 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 patient 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 patient population and denominator are identical.
- 3) Find the patients who qualify for exclusions and subtract from the denominator.
- 4) From the patients within the denominator (after exclusions have been subtracted from the denominator), find the patients who qualify for the Numerator (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
- 5) From the patients who did not meet the numerator criteria, determine if the physician has documented that the patient meets any criteria for exception when exceptions have been specified [for this measure: medical reason(s)(e.g., eg, allergy, intolerance, receiving other thienopyridine therapy, receiving warfarin therapy, bleeding coagulation disorders, other medical reasons) or patient reason(s)(e.g., economic, social, and/or religious impediments, noncompliance, patient refusal, other patient reason)]. 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 of patients 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. No diagram provided

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5.1 Identified measures: 0465 : Perioperative Anti-platelet Therapy for Patients undergoing Carotid Endarterectomy

5a.1 Are specs completely harmonized? No

5a.2 If not completely harmonized, identify difference, rationale, impact: See 5b.1 for more detailed response due to lack of character spaces in this section.

5b.1 If competing, why superior or rationale for additive value: Measure 0067 looks at whether ASA or clopidogrel were prescribed during a 12 month measurement period. Meanwhile, the two existing NQF endorsed measures (#0465 and #0964) focused on whether the medications were prescribed prior to discharge or prior to surgery.

Specifically, Measure #0465 (Perioperative Antiplatelet Therapy for patients undergoing Carotid Endarterectomy) focuses on inpatient who were provided ASA or clopidogrel within 48 hours prior to surgery and prescribed this medication at hospital discharge. Measure #0067 looks at whether ASA or clopidogrel was prescribed during the 12 month measurement period. Both measures allow for medical exceptions.

In the case of Measure 0964 (Therapy with aspirin, P2Y12 inhibitor, and statin at discharge following PCI in eligible patients), this measure is also an inpatient measure and focuses on eligible PCI eligible patients who had ASA or P2y12 and statins prescribed prior to discharge.

Measure 0067 looks at whether ASA or clopidogrel was prescribed during the 12 month measurement period. Both measures allow for medical exceptions.

Measures #0465 and #0964 address a different patient demographic and focuses on inpatient prescribed of ASA or Clopidogrel.

0068 Ischemic Vascular Disease (IVD): Use of Aspirin or Another Antiplatelet

STATUS

Endorsed

STEWARD

National Committee for Quality Assurance

DESCRIPTION

The percentage of patients 18 years of age and older who were discharged from an inpatient setting with an acute myocardial infarction (AMI), coronary artery bypass graft (CABG) or percutaneous coronary intervention (PCI) during the 12 months prior to the measurement year, or who had a diagnosis of ischemic vascular disease (IVD) during the measurement year and the year prior to the measurement year and who had documentation of routine use of aspirin or another antiplatelet during the measurement year.

TYPE

Process

DATA SOURCE

Administrative claims, Electronic Clinical Data, Electronic Clinical Data : Electronic Health Record, Paper Medical Records N/A

No data collection instrument provided Attachment 0068_IVD_Value_Sets_Final.xlsx

LEVEL

Clinician : Group/Practice, Clinician : Individual

SETTING

Ambulatory Care : Clinician Office/Clinic

NUMERATOR STATEMENT

Patients who had documentation of routine use of aspirin or another antiplatelet during the measurement year.

NUMERATOR DETAILS

ADMINISTRATIVE

Patients who had documentation of routine use of aspirin or another antiplatelet during the measurement year.

Refer to Table IVD-E to identify medications for oral anti-platelet therapy.

ORAL ANTI-PLATELET THERAPIES (TABLE IVD-E)

PRESCRIPTIONS

- Aspirin
- Clopidogrel
- Aspirin-dipyridamole
- Prasugrel
- Ticagrelor
- Ticlopidine

MEDICAL RECORD

Patients who had documentation of routine use of aspirin or another antiplatelet during the measurement year.

At a minimum, documentation in the medical record must include a note indicating the date when aspirin or another antiplatelet was prescribed or documentation of prescription from another treating physician.

DENOMINATOR STATEMENT

Patients 18 years or older by the end of the measurement year discharged from an inpatient setting with an AMI, CABG, or PCI during the 12 months prior to the measurement year or who had a diagnosis of IVD during both the measurement year and the year prior to the measurement year.

DENOMINATOR DETAILS

ADMINISTRATIVE

Patients are identified for the eligible population in two ways: by event or by diagnosis. The organization must use both methods to identify the eligible population, but a patient only needs to be identified by one method to be included in the measure.

Event. Any of the following during the year prior to the measurement year meet criteria:

- MI. Discharged from an inpatient setting with an MI (MI Value Set)*. Use both facility and professional claims to identify MI.
- CABG. Discharged from an inpatient setting with a CABG (CABG Value Set)*. Use both facility and professional claims to identify CABG.
- PCI. Patients who had a PCI (PCI Value Set)* in any setting.

Diagnosis. Patients who meet at least one of the following criteria during both the measurement year and the year prior to the measurement year. Criteria need not be the same across both years.

- At least one outpatient visit (Outpatient Value Set)* with an IVD diagnosis (IVD Value Set)*, or
- At least one acute inpatient encounter (Acute Inpatient Value Set)* with an IVD diagnosis (IVD Value Set)*.

*Due to the extensive volume of codes associated with identifying the denominator for this measure, we are attaching a separate file with code value sets. See code value sets located in question S.2b.

MEDICAL RECORD

Documentation of IVD in the medical record includes:

- IVD
- Ischemic heart disease
- Angina
- Coronary atherosclerosis
- Coronary artery occlusion
- Cardiovascular disease
- Occlusion or stenosis of precerebral arteries (including basilar, carotid and vertebral arteries)
- Atherosclerosis of renal artery
- Atherosclerosis of native arteries of the extremities
- Chronic total occlusion of artery of the extremities
- Arterial embolism and thrombosis
- Atheroembolism.

Note: Use paper logs, patient registries or electronic medical records (EMRs) to identify the denominator, then use the medical record to confirm patient eligibility.

EXCLUSIONS

Patients who had documentation of use of anticoagulant medications during the measurement year.

EXCLUSION DETAILS

Patients who had documentation of use of anticoagulant medications during the measurement year.

ANTICOAGULANT MEDICATIONS

- Apixaban
- Argatroban
- Bivalirudin
- Dabigatran
- Dalteparin
- Desirudin
- Edoxaban
- Enoxaparin
- Fondaparinux
- Heparin
- Lepirudin
- Rivaroxaban
- Tinzaparin
- Warfarin

RISK ADJUSTMENT

No risk adjustment or risk stratification

N/A

STRATIFICATION

N/A

TYPE SCORE

Rate/proportion better quality = higher score

ALGORITHM

Step 1: Determine the denominator

Patients 18 years of age or older by the end of the measurement year AND who were discharged from an inpatient setting for an AMI, CABG or PCI during the 12 months prior to the measurement year or who had a diagnosis of IVD during both the measurement year and the year prior to the measurement year.

Step 2: Exclude patients who meet the exclusion criteria

Patients on anticoagulant therapy.

Step 3: Determine the numerator

Patients who had documentation of routine use of aspirin or another antiplatelet during the measurement year.

Step 4: Calculate the rate by dividing the numerator (Step 3) by the denominator (after exclusions) (Step 2). No diagram provided

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5.1 Identified measures: 0067 : Chronic Stable Coronary Artery Disease: Antiplatelet Therapy

0142 : Aspirin prescribed at discharge for AMI

0076 : Optimal Vascular Care

5a.1 Are specs completely harmonized? No

5a.2 If not completely harmonized, identify difference, rationale, impact: DUE TO THE TEXT LIMIT IN THIS SECTION – WE ARE PROVIDING OUR ANSWER FOR 5a.2 IN SECTION 5b.1.

5b.1 If competing, why superior or rationale for additive value: ANSWER FOR SECTION 5a.2

Our current measure, NQF 0068 – Ischemic Vascular Disease (IVD): Use of Aspirin or Another Antiplatelet, assesses the percentage of patients 18 years of age and older who were discharged from an inpatient setting with an acute myocardial infarction (AMI), coronary artery bypass graft (CABG) or percutaneous coronary intervention (PCI) during the 12 months prior to the measurement year, AND patients who had a diagnosis of ischemic vascular disease (IVD) during the measurement year and the year prior to the measurement year, who had documentation of the routine use of aspirin or another antiplatelet during the measurement year. NQF 0068 uses administrative claims, electronic clinical data, electronic health record data, and paper medical records from the ambulatory care setting, providing a wide array of options for how data can be collected and reported.

The following is a description of the differences and the impact on interpretability and data collection burden between NQF 0068 and each related measure listed in 5.1a:

NQF 0142 – ASPIRIN PRESCRIBED AT DISCHARGE FOR AMI

This measure assesses the percentage of AMI patients, 18 years and older, who are prescribed aspirin at hospital discharge. The measure population only includes patients who have had an AMI, whereas NQF 0068 includes patients who have had an AMI, CABG or PCI procedure, and patients who have diagnoses consistent with ischemic vascular disease. NQF 0142 focuses only on aspirin prescribed at discharge while NQF 0068 focuses on documentation of the use of any antiplatelet medication during the measurement year. NQF 0142 is a facility-level measure that uses administrative claims and paper medical records from the inpatient setting; NQF 0068 is a physician-level measure that uses administrative claims, electronic clinical data, electronic health record data, and paper medical records from the ambulatory care setting.

There is no impact on interpretability of publically-reported rates or added burden of data collection because the focus of each measure is different, the accountable entity is different and the data for each measure is collected from different data sources by different entities. Additionally, both use value sets of codes to identify patients with AMI that do not conflict.

NQF 0067 – CHRONIC STABLE CORONARY ARTERY DISEASE: ANTIPLATELET THERAPY

This measure assesses the percentage of patients aged 18 years and older with a diagnosis of coronary artery disease (CAD) who were seen by a physician within a 12-month period and who were prescribed aspirin or clopidogrel. The focus of this measure is very similar to NQF 0068 in that it assesses the routine use of antiplatelet therapy in a twelve-month period for patients with CAD. However, NQF 0068 includes more antiplatelet medications than just aspirin or clopidogrel and includes a broader population of patients with cardiovascular disease than just those with CAD.

Although NQF 0067 and NQF 0068 are both physician-level measures that are specified to collect data from administrative claims, electronic clinical data, electronic health record data, and paper medical records from the ambulatory care setting, the impact on interpretability of publically-reported rates or added burden of data collection should be minimal because NQF 0067 is currently only reported through registry data. Additionally, NQF 0067 is focused on only on patients with CAD, while NQF 0068 is focused on a broader population of patients with cardiovascular disease who would benefit from the use of antiplatelet medications.

NQF 0076 – OPTIMAL VASCULAR CARE

This composite measure assesses the percentage of adult patients ages 18 to 75 who have ischemic vascular disease with optimally-managed modifiable risk factors (blood pressure, tobacco-free status, daily aspirin use) at their most recent visit with a physician during the measurement year. While the focus populations for NQF 0076 and NQF 0068 are very similar, NQF 0076 is a composite that includes assessment of blood pressure control and tobacco use status. NQF 0068 assesses the routine use of aspirin or other antiplatelet medications while NQF 0076 focuses only on aspirin use. NQF 0076 does not use administrative claims though it does use electronic clinical data, electronic health record data, and paper medical records from the ambulatory care setting, which is similar to NQF 0068.

Despite the similarities, there should be minimal impact on interpretability of publically-reported rates or added burden of data collection between the two measures since NQF 0076 is a composite of multiple indicators while NQF 0068 is focused only on antiplatelet therapy.

NQF 2452 – PERCUTANEOUS CORONARY INTERVENTION (PCI): POST-PROCEDURAL OPTIMAL MEDICAL THERAPY (NOTE: UNABLE TO SELECT IN 5.a1)

NQF 2452 is a composite measure that assesses the percentage of patients undergoing PCI who receive prescriptions for all medications (aspirin, P2Y12 and statins) for which they are eligible for at discharge. The measure population for NQF 2452 is patients undergoing PCI while NQF

0068 includes patient who have had an AMI, CABG or PCI procedure, and patients who have diagnoses consistent with ischemic vascular disease. NQF 2452 assesses the prescription of aspirin, P2Y12 agents, and statins at discharge; NQF 0068 assesses documentation of use of antiplatelet medications during the measurement year. NQF 2452 is a physician-level measure that uses data from registries while NQF 0068 is a physician-level measure that uses administrative claims, electronic clinical data, electronic health record data, and paper medical records from the ambulatory care setting.

There is no impact on interpretability of publically-reported rates or added burden of data collection because the focus of each measure is different and the data for each measure is collected from different data sources by different entities.

NQF 0964 – THERAPY WITH ASPIRIN, P2Y12 INHIBITOR, AND STATIN AT DISCHARGE FOLLOWING PCI IN ELIGIBLE PATIENTS (NOTE: UNABLE TO SELECT IN 5.a1)

NQF 0964 is a composite measure that assesses the percentage of patients undergoing PCI who receive prescriptions for all medications (aspirin, P2Y12 and statins) for which they are eligible for at discharge. The measure population for NQF 0964 is patients undergoing PCI while NQF 0068 includes patient who have had an AMI, CABG or PCI procedure, and patients who have diagnoses consistent with ischemic vascular disease. NQF 0964 assesses the prescription of aspirin, P2Y12 agents, and statins at discharge; NQF 0068 assesses documentation of use of antiplatelet medications during the measurement year. NQF 0964 is a facility-level measure that uses data from registries while NQF 0068 is a physician-level measure that uses administrative claims, electronic clinical data, electronic health record data, and paper medical records from the ambulatory care setting.

There is no impact on interpretability of publically-reported rates or added burden of data collection because the focus of each measure is different, the accountable entity is different and the data for each measure is collected from different data sources by different entities.

ANSWER FOR SECTION 5b.1

Our current measure, NQF 0068, has a long history of use and is implemented in four national programs: PQRS, EHR Incentive Program, CMS ACO Shared Savings Program, and the Heart/Stroke Recognition Program.

0070 Coronary Artery Disease (CAD): Beta-Blocker Therapy-Prior Myocardial Infarction (MI) or Left Ventricular Systolic Dysfunction (LVEF <40%)

STATUS

Endorsed

STEWARD

AMA-convened Physician Consortium for Performance Improvement

DESCRIPTION

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

TYPE

Process

DATA SOURCE

Electronic Clinical Data, Electronic Clinical Data : Registry Not applicable.

No data collection instrument provided No data dictionary

LEVEL

Clinician : Group/Practice, Clinician : Individual

SETTING

Ambulatory Care : Clinician Office/Clinic, Home Health, Post Acute/Long Term Care Facility : Long Term Acute Care Hospital, Post Acute/Long Term Care Facility : Nursing Home/Skilled Nursing Facility, Other Domiciliary

NUMERATOR STATEMENT

Patients who were prescribed beta-blocker therapy

NUMERATOR DETAILS

For Registry:

Option 1 – for patients with LVEF < 40%:

Definitions:

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.

Beta-blocker Therapy- For patients with prior LVEF < 40%, beta-blocker therapy includes the following: bisoprolol, carvedilol, or sustained release metoprolol succinate.

Report Quality Data Code, G9189: Beta-blocker therapy prescribed or currently being taken

Option 2 – for patients with prior MI:

Definitions:

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.

Beta-blocker Therapy- For patients with prior MI, beta-blocker therapy includes any agent within the beta-blocker drug class. As of 2014, no recommendations or evidence are cited in current stable ischemic heart disease guidelines for preferential use of specific agents.

Report CPT Category II Code, 4008F: Beta-blocker therapy prescribed or currently being taken

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 MI (within the past 3 years) or a current or prior LVEF <40%

DENOMINATOR DETAILS

DENOMINATOR DEFINITION:

LVEF < 40% corresponds to qualitative documentation of moderate dysfunction or severe dysfunction.

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

DENOMINATOR NOTES:

The requirement of “Count >=2 of Encounter, Performed” is to establish that the eligible professional has an existing relationship with the patient.

For Registry:

Option 1 -- for patients with LVEF < 40%:

Patient aged >= 18 years

AND

Diagnosis for coronary artery disease (ICD-9-CM) [for use 1/1/2015-9/30/2015]: 411.0, 411.1, 411.81, 411.89, 413.0, 413.1, 413.9, 414.00, 414.01, 414.02, 414.03, 414.04, 414.05, 414.06, 414.07, 414.2, 414.3, 414.8, 414.9, V45.81, V45.82

Diagnosis for coronary artery disease (ICD-10-CM) [for use 10/01/2015-12/31/2015]: I20.0, I20.1, I20.8, I20.9, I24.0, I24.1, I24.8, I24.9, I25.10, I25.110, I25.111, I25.118, I25.119, I25.5, I25.6, I25.700, I25.701, I25.708, I25.709, I25.710, I25.711, I25.718, I25.719, I25.720, I25.721, I25.728, I25.729, I25.730, I25.731, I25.738, I25.739, I25.750, I25.751, I25.758, I25.759, I25.760, I25.761, I25.768, I25.769, I25.790, I25.791, I25.798, I25.799, I25.810, I25.811, I25.812, I25.82, I25.83, I25.89, I25.9, Z95.1, Z95.5, Z98.61

OR

History of cardiac surgery (CPT): 33140, 33510, 33511, 33512, 33513, 33514, 33516, 33517, 33518, 33519, 33521, 33522, 33523, 33533, 33534, 33535, 33536, 92920, 92924, 92928, 92933, 92937, 92941, 92943

AND

Patient encounter(s) during reporting period (CPT): 99201, 99202, 99203, 99204, 99205, 99212, 99213, 99214, 99215, 99304, 99305, 99306, 99307, 99308, 99309, 99310, 99324, 99325, 99326, 99327, 99328, 99334, 99335, 99336, 99337, 99341, 99342, 99343, 99344, 99345, 99347, 99348, 99349, 99350

AND

Two Denominator Eligible Visits

AND

Left ventricular ejection fraction (LVEF) < 40%: G8694

Option 2 – for patients with prior MI:

Patient aged >= 18 years

AND

Diagnosis for coronary artery disease (ICD-9-CM) [for use 1/1/2015-9/30/2015]: 411.0, 411.1, 411.81, 411.89, 413.0, 413.1, 413.9, 414.00, 414.01, 414.02, 414.03, 414.04, 414.05, 414.06, 414.07, 414.2, 414.3, 414.8, 414.9, V45.81, V45.82

Diagnosis for coronary artery disease (ICD-10-CM) [for use 10/01/2015-12/31/2015]: I20.0, I20.1, I20.8, I20.9, I24.0, I24.1, I24.8, I24.9, I25.10, I25.110, I25.111, I25.118, I25.119, I25.5, I25.6, I25.700, I25.701, I25.708, I25.709, I25.710, I25.711, I25.718, I25.719, I25.720, I25.721, I25.728, I25.729, I25.730, I25.731, I25.738, I25.739, I25.750, I25.751, I25.758, I25.759, I25.760,

I25.761, I25.768, I25.769, I25.790, I25.791, I25.798, I25.799, I25.810, I25.811, I25.812, I25.82, I25.83, I25.89, I25.9, Z95.1, Z95.5, Z98.61

OR

History of cardiac surgery (CPT): 33140, 33510, 33511, 33512, 33513, 33514, 33516, 33517, 33518, 33519, 33521, 33522, 33523, 33533, 33534, 33535, 33536, 92920, 92924, 92928, 92933, 92937, 92941, 92943

AND

Diagnosis for myocardial infarction (ICD-9-CM) [for use 1/1/2015-9/30/2015]: 410.00, 410.01, 410.02, 410.10, 410.11, 410.12, 410.20, 410.21, 410.22, 410.30, 410.31, 410.32, 410.40, 410.41, 410.42, 410.50, 410.51, 410.52, 410.60, 410.61, 410.62, 410.70, 410.71, 410.72, 410.80, 410.81, 410.82, 410.90, 410.91, 410.92, 412

Diagnosis for myocardial infarction (ICD-10-CM) [for use 10/01/2015-12/31/2015]: I21.01, I21.02, I21.09, I21.11, I21.19, I21.21, I21.29, I21.3, I21.4, I22.0, I22.1, I22.2, I22.8, I22.9, I24.1, I25.2

AND

Patient encounter(s) during reporting period (CPT): 99201, 99202, 99203, 99204, 99205, 99212, 99213, 99214, 99215, 99304, 99305, 99306, 99307, 99308, 99309, 99310, 99324, 99325, 99326, 99327, 99328, 99334, 99335, 99336, 99337, 99341, 99342, 99343, 99344, 99345, 99347, 99348, 99349, 99350

AND

Two Denominator Eligible Visits

EXCLUSIONS

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

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

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

EXCLUSION DETAILS

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. This measure was developed using the PCPI exception methodology which 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 this measure, 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) for not prescribing beta-blocker therapy (eg, other reasons attributable to the health care system).

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.

Additional details by data source are as follows:

For Registry:

Option 1 -- for patients with LVEF < 40%:

Report Quality Data Code, G9190: Documentation of medical reason(s) for not prescribing beta-blocker therapy (eg, allergy, intolerance, other medical reasons)

Report Quality Data Code, G9191: Documentation of patient reason(s) for not prescribing beta-blocker therapy (eg, patient declined, other patient reasons)

Report Quality Data Code, G9192 : Documentation of system reason(s) for not prescribing beta-blocker therapy (eg, other reasons attributable to the health care system)

Option 2 – for patients with prior MI:

Append a modifier to CPT Category II Code:

4008F-1P : Documentation of medical reason(s) for not prescribing beta-blocker therapy (eg, allergy, intolerance, other medical reasons)

4008F-2P : Documentation of patient reason(s) for not prescribing beta-blocker therapy (eg, patient declined, other patient reasons)

4008F-3P : Documentation of system reason(s) for not prescribing beta-blocker therapy (eg, other reasons attributable to the health care system)

RISK ADJUSTMENT

No risk adjustment or risk stratification

No risk adjustment or risk stratification

Provided in response box S.15a

STRATIFICATION

Consistent with CMS' Measures Management System Blueprint and recent national recommendations put forth by the IOM 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 and have included these variables as recommended data elements to be collected.

TYPE SCORE

Rate/proportion better quality = higher score

ALGORITHM

To calculate performance rates:

1. Find the patients who meet the initial population (ie, 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 (ie, 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 (ie, 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) (eg, allergy, intolerance, other medical reasons), patient reason(s) (eg, patient declined, other patient reasons) or system reason(s) for not prescribing beta-blocker therapy (eg, other reasons attributable to the health care system).] 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 (ie, 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. No diagram provided

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5.1 Identified measures: 0071 : Persistence of Beta-Blocker Treatment After a Heart Attack

0083 : Heart Failure (HF): Beta-Blocker Therapy for Left Ventricular Systolic Dysfunction (LVSD)

5a.1 Are specs completely harmonized? No

5a.2 If not completely harmonized, identify difference, rationale, impact: Measure 0070 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: 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.

5b.1 If competing, why superior or rationale for additive value:

0071 Persistence of Beta-Blocker Treatment After a Heart Attack

STATUS

Endorsed

STEWARD

National Committee for Quality Assurance

DESCRIPTION

The percentage of patients 18 years of age and older during the measurement year who were hospitalized and discharged from July 1 of the year prior to the measurement year to June 30 of the measurement year with a diagnosis of acute myocardial infarction (AMI) and who received persistent beta-blocker treatment for six months after discharge.

TYPE

Process

DATA SOURCE

Administrative claims, Electronic Clinical Data, Electronic Clinical Data : Pharmacy This measure is based on administrative claims collected in the course of providing care to health plan members. NCQA collects the Healthcare Effectiveness Data and Information Set (HEDIS) data for this measure directly from Health Management Organizations and Preferred Organizations via NCQA's online data submission system.

No data collection instrument provided Attachment 0071_PBH_Value_Sets_Final.xlsx

LEVEL

Health Plan, Integrated Delivery System

SETTING

Ambulatory Care : Clinician Office/Clinic

NUMERATOR STATEMENT

Patients who had a 180-day course of treatment with beta-blockers post discharge.

NUMERATOR DETAILS

ADMINISTRATIVE

Patients who had a 180-day course of treatment with beta-blockers post-discharge. Post discharge refers to patients discharged from an acute inpatient setting with an AMI (AMI Value Set) from July 1 of the year prior to the measurement year through June 30 of the measurement year.

In order to identify patients with "persistent" beta-blocker treatment, identify all patients in the denominator population whose dispensed days supply is ≥ 135 days in the 180-day measurement interval. The measure defines persistence of treatment as at least 75 percent of the days supply filled.

To determine continuity of treatment during the 180-day period, identify all prescriptions filled within the 180-day measurement interval, and add the number of allowed gap days (up to 45 days) to the number of treatment days for a maximum of 180 days (i.e., 135 treatment days + 45 gap days = 180 days).

To account for patients who are on beta-blockers prior to admission, factor those prescriptions into adherence rates if the actual treatment days fall within the 180-day measurement interval.

DEFINITIONS

Treatment days (days covered) - The actual number of calendar days covered with prescriptions within the specified 180-day measurement interval (i.e., a prescription of a 90-day supply dispensed on the 100th day will have 80 days counted in the 180-day interval).

180-day measurement interval - The 180 day period that includes the discharge date and the 179 days after discharge.

TABLE PBH-B BETA-BLOCKER MEDICATIONS

DESCRIPTION / PRESCRIPTION

Noncardioselective beta-blockers / Carvedilol; Labetalol; Nadolol; Penbutolol; Pindolol; Propranolol; Timlol; Sotalol

Cardioselective beta-blockers / Acebutolol; Atenolol; Betaxolol; Bisoprolol; Metoprolol; Nebivolol

Antihypertensive combinations / Atenolol-chlorthalidone; Bendroflumethiazide-nadolol; Bisoprolol-hydrochlorothiazide; Hydrochlorothiazide-metoprolol; Hydrochlorothiazide-propranolol

DENOMINATOR STATEMENT

Patients 18 years of age and older as of December 31 of the measurement year who were hospitalized and discharged from July 1 of the year prior to the measurement year to June 30 of the measurement year with diagnosis of AMI. See question S.9 Denominator Details for methods to identify patients who qualify for the denominator.

DENOMINATOR DETAILS

Patients discharged from an acute inpatient setting with an AMI (AMI Value Set) from July 1 of the year prior to the measurement year through June 30 of the measurement year.

Use only facility claims to identify denominator events (including readmissions or direct transfers). Do not use professional claims.

If a patient has more than one episode of AMI from July 1 of the year prior to the measurement year through June 30 of the measurement year, only include the first discharge.

Transfers to acute facilities: Include hospitalizations in which the patient was transferred directly to another acute inpatient facility for any diagnosis. Count the discharge from the subsequent acute inpatient facility, not the initial discharge. The discharge date from the facility to which the patient was transferred must occur on or before

June 30 of the measurement year.

Transfers to nonacute facilities. Exclude from the denominator, hospitalizations in which the patient was transferred directly to a nonacute care facility for any diagnosis.

Readmissions: If the patient was readmitted to an acute or nonacute care facility for any diagnosis, include the patient in the denominator and use the discharge date from the original hospitalization.

Due to the extensive volume of codes associated with identifying the denominator for this measure, we are attaching a separate file with code value sets. See code value sets located in question S.2b.

EXCLUSIONS

Exclude from the denominator, hospitalizations in which the patient was transferred directly to a nonacute care facility for any diagnosis.

Exclude patients who are identified as having an intolerance or allergy to beta-blocker therapy. Any of the following anytime during the patient's history through the end of the continuous enrollment period meet criteria:

- Asthma (Asthma Value Set).
- COPD (COPD Value Set).
- Obstructive chronic bronchitis (Obstructive Chronic Bronchitis Value Set).

- Chronic respiratory conditions due to fumes and vapors (Chronic Respiratory Conditions Due to Fumes/Vapors Value Set).
- Hypotension, heart block >1 degree or sinus bradycardia (Beta-Blocker Contraindications Value Set).
- A medication dispensing event indicative of a history of asthma (Table PBH-D).
- Intolerance or allergy to beta-blocker therapy.

EXCLUSION DETAILS

MEDICATIONS TO IDENTIFY EXCLUSIONS (History of Asthma)

DESCRIPTION / PRESCRIPTION

Bronchodilator combinations / Albuterol-ipratropium; Budesonide-formoterol; Fluticasone-salmeterol; Mometasone-formoterol

Inhaled corticosteroids / Beclomethasone; Budesonide; Ciclesonide; Flunisolide; Fluticasone; Fluticasone CFC free; Mometasone; Triamcinolone

Due to the extensive volume of codes associated with identifying denominator exclusions for this measure we are attaching a separate file with code value sets (except for medications to identify patients with a history of asthma). See code value sets located in question S.2b.

RISK ADJUSTMENT

No risk adjustment or risk stratification

N/A

STRATIFICATION

N/A

TYPE SCORE

Rate/proportion better quality = higher score

ALGORITHM

STEP 1: Determine the eligible population. To do so, identify patients who meet all specified criteria.

-AGES: 18 years and older as of December 31 of the measurement year.

-EVENT/DIAGNOSIS: Identify patients who were discharged from an acute setting with an AMI (AMI Value Set) from July 1 of the year prior to the measurement year through June 30 of the measurement year. Use only facility claims.

STEP 2: Exclude patients who meet the exclusions criteria. SEE S.10 AND S.11 FOR DENOMINATOR EXCLUSION CRITERIA AND DETAILS.

STEP 3: Determine the number of patients in the eligible population who were given a 180-day course of treatment with beta blockers post discharge.

STEP 4: Identify patients whose dispensed days supply is = 135 days in the 180-day measurement interval

STEP 5: Calculate the rate by dividing the numerator (Step 4) by the denominator (after exclusions) (Step 2). No diagram provided

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5.1 Identified measures: 0070 : Coronary Artery Disease (CAD): Beta-Blocker Therapy-Prior Myocardial Infarction (MI) or Left Ventricular Systolic Dysfunction (LVEF <40%)

5a.1 Are specs completely harmonized? No

5a.2 If not completely harmonized, identify difference, rationale, impact: DUE TO THE TEXT LIMIT IN THIS SECTION – WE ARE PROVIDING OUR ANSWER FOR 5a.2 IN SECTION 5b.1

5b.1 If competing, why superior or rationale for additive value: ANSWER FOR SECTION 5a.2

NCQA's current Persistence of Beta Blocker Treatment After a Heart Attack measure (NQF measure 0071) uses health plan-reported data to assess the percentage of patients 18 years of age and older during the measurement year who were discharged with a diagnosis of AMI during the 6 months prior to the beginning of the measurement year through the 6 months after the beginning of the measurement year and who received persistent beta-blocker treatment for six months after discharge.

RELATED NQF MEASURE 0070:

This measure assesses the 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 left ventricular ejection fraction (LVEF) <40% who were prescribed beta-blocker therapy.

HARMONIZED MEASURE ELEMENTS:

Measure 0071 and 0070 focus on patients 18 years and older who are prescribed beta-blocker treatment post-discharge after having a MI or history of MI. The National Quality Strategy Priorities classification for both measures is Prevention and Treatment of Cardiovascular Disease. Both measures exclude patients who are allergic or have an intolerance to beta blockers.

UNHARMONIZED MEASURE ELEMENTS:

Below are the unharmonized measure elements between measure 0071 and measure 0070:

Measure 0071 focuses on beta-blocker treatment post a MI and Measure 0070 focuses on patients who have a prior MI or a current or prior LVEF <40%.

-Data Source: Data for measure 0071 is collected through administrative claims, electronic clinical data, and pharmacy data, while data for measure 0070 is collected through medical record, electronic health record data, electronic clinical data, and paper records

-Level of Accountability: Measure 0071 is a health plan level measure while measure 0070 is a clinician-level measure.

-Population: Measure 0071 focuses on patients who were diagnosed with a MI and discharged and prescribed a beta-blocker therapy treatment. Measure 0070 focuses on patients in a measurement year with a diagnosis of coronary artery diseases who also have a prior MI or current or prior LVEF

-Exclusions: The difference in exclusions is that measure 0071 specifies asthma, COPD, obstructive chronic bronchitis, chronic respiratory conditions due to fumes and vapors, hypotension, heart block >1 degree, sinus bradycardia, and medication dispensing events indicative of a history of asthma as exclusions. Additionally, measure 0071 excludes hospitalizations in which the patient was transferred directly to a nonacute care facility for any diagnosis. Measure 0070 exclusions include: documentation of patient reason(s) for not prescribing beta-blocker therapy (e.g., patient declined, other patient reasons) and

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

IMPACT ON INTERPRETABILITY AND DATA COLLECTION BURDEN:

The differences between measures 0071 and 0070 do not have an impact on interpretability of publically reported rates, or the burden of data collection, because all data for both measures are collected from different data sources by different entities.

ANSWER FOR SECTION 5b.1

Our current measure has a long standing history of use by health plans and has been implemented for 10 years.

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

STATUS

Endorsed

STEWARD

American College of Cardiology

DESCRIPTION

Percentage of patients aged 18 years and older with a diagnosis of heart failure for whom the quantitative or qualitative results of a recent or prior (any time in the past) LVEF assessment is documented within a 12 month period.

TYPE

Process

DATA SOURCE

Electronic Clinical Data : Registry This measure is currently being used in the ACCF PINNACLE registry for the outpatient office setting. See attached form and data dictionary.

Available in attached appendix at A.1 No data dictionary

LEVEL

Clinician : Individual

SETTING

Ambulatory Care : Clinician Office/Clinic

NUMERATOR STATEMENT

Patients for whom the quantitative or qualitative results of a recent or prior (any time in the past) LVEF assessment is documented* within a 12 month period.

*Documentation must include documentation in a progress note of the results of an LVEF assessment, regardless of when the

evaluation of ejection fraction was performed.

Qualitative results correspond to numeric equivalents as follows:

Hyperdynamic: corresponds to LVEF greater than 70%

Normal: corresponds to LVEF 50% to 70% (midpoint 60%)

Mild dysfunction: corresponds to LVEF 40% to 49% (midpoint 45%)

Moderate dysfunction: corresponds to LVEF 30% to 39% (midpoint 35%)

Severe dysfunction: corresponds to LVEF less than 30%

NUMERATOR DETAILS

Left ventricular ejection fraction (LVEF) < 40% or documentation of severely or moderately depressed left ventricular systolic function (G8738)

OR

Left ventricular ejection fraction (LVEF) ≥40% or documentation as normal or mildly depressed left ventricular systolic function (G8739)

DENOMINATOR STATEMENT

All patients aged 18 years and older with a diagnosis of heart failure.

DENOMINATOR DETAILS

See 'Registry Supplemental Resources' attached in appendix field A.1 for data dictionary and form.

Codes that are applicable to denominator are:

Diagnosis for heart failure (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

Diagnosis for heart failure (ICD-10-CM): 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

Patient encounter during the reporting period (CPT): 99201, 99202, 99203, 99204, 99205, 99212, 99213, 99214, 99215, 99304, 99305, 99306, 99307, 99308, 99309, 99310, 99324, 99325, 99326, 99327, 99328, 99334, 99335, 99336, 99337, 99341, 99342, 99343, 99344, 99345, 99347, 99348, 99349, 99350

EXCLUSIONS

None.

EXCLUSION DETAILS

Not Applicable.

RISK ADJUSTMENT

No risk adjustment or risk stratification

Not applicable.

STRATIFICATION

Not Applicable.

TYPE SCORE

Rate/proportion better quality = higher score

ALGORITHM

To calculate performance rates:

- 1) Find the patients who meet the initial patient 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 patient 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 patient population and denominator are identical.
- 4) From the patients within the denominator, find the patients who qualify for the Numerator (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. No diagram provided

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5.1 Identified measures: 0135 : Evaluation of Left ventricular systolic function (LVS)

5a.1 Are specs completely harmonized? No

5a.2 If not completely harmonized, identify difference, rationale, impact: This measure is inpatient based and focuses on the assessment occurring prior to discharge. Our measure looks at whether the assessment was performed during a 12 month period for a patient with a diagnosis of heart failure.

5b.1 If competing, why superior or rationale for additive value: Related Measures: NQF # 0135: Evaluation of Left ventricular systolic function (LVS). This measure is inpatient based and focuses on the assessment occurring prior to discharge. Our measure looks at whether the assessment was performed during a 12 month period for a patient with a diagnosis of heart failure.

0081 Heart Failure (HF): Angiotensin-Converting Enzyme (ACE) Inhibitor or Angiotensin Receptor Blocker (ARB) Therapy for Left Ventricular Systolic Dysfunction (LVSD)

STATUS

Endorsed

STEWARD

AMA-PCPI

DESCRIPTION

Percentage of patients aged 18 years and older with a diagnosis of heart failure with a current or prior LVEF < 40% who were prescribed beta-blocker therapy either within a 12 month period when seen in the outpatient setting or at hospital discharge

TYPE

Process

DATA SOURCE

Electronic Clinical Data, Electronic Clinical Data : Registry not applicable

No data collection instrument provided No data dictionary

LEVEL

Clinician : Group/Practice, Clinician : Individual

SETTING

Ambulatory Care : Clinician Office/Clinic, Home Health, Hospital/Acute Care Facility, Post Acute/Long Term Care Facility : Long Term Acute Care Hospital, Post Acute/Long Term Care Facility : Nursing Home/Skilled Nursing Facility, Other Domiciliary

NUMERATOR STATEMENT

Patients who were prescribed* ACE inhibitor or ARB therapy either within a 12 month period when seen in the outpatient setting or at hospital discharge

*Prescribed may include:

Outpatient setting: prescription given to the patient for ACE inhibitor or ARB therapy at one or more visits in the measurement period OR patient already taking ACE inhibitor or ARB therapy as documented in current medication list

Inpatient setting: prescription given to the patient for ACE inhibitor or ARB therapy at discharge OR ACE inhibitor or ARB therapy to be continued after discharge as documented in the discharge medication list

NUMERATOR DETAILS

For Registry:

Definitions:

Prescribed – Outpatient setting: May include prescription given to the patient for ACE inhibitor or ARB therapy at one or more visits in the measurement period OR patient already taking ACE inhibitor or ARB therapy as documented in current medication list.

Prescribed – Inpatient setting: May include prescription given to the patient for ACE inhibitor or ARB therapy at discharge OR ACE inhibitor or ARB therapy to be continued after discharge as documented in the discharge medication list.

Report CPT Category II Code, 4010F : Angiotensin converting enzyme (ACE) inhibitor or angiotensin receptor blocker (ARB) therapy prescribed or currently being taken

DENOMINATOR STATEMENT

All patients aged 18 years and older with a diagnosis of heart failure with a current or prior LVEF < 40%

DENOMINATOR DETAILS

DENOMINATOR DEFINITION:

LVEF < 40% corresponds to qualitative documentation of moderate dysfunction or severe dysfunction.

DENOMINATOR NOTES:

To meet this measure, it must be reported for all heart failure patients a minimum of once during the measurement period when seen in the outpatient setting AND reported at each hospital discharge during the measurement period.

The requirement of “Count >=2 of Encounter, Performed” is to establish that the eligible professional has an existing relationship with the patient.

For Registry:

Option 1, Outpatient Setting:

Patients aged ≥ 18 years

AND

Diagnosis for heart failure (ICD-9-CM) [for use 1/1/2015-9/30/2015]: 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

Diagnosis for heart failure (ICD-10-CM) [for use 10/01/2015-12/31/2015]: 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(s) during reporting period (CPT): 99201, 99202, 99203, 99204, 99205, 99212, 99213, 99214, 99215, 99304, 99305, 99306, 99307, 99308, 99309, 99310, 99324, 99325, 99326, 99327, 99328, 99334, 99335, 99336, 99337, 99341, 99342, 99343, 99344, 99345, 99347, 99348, 99349, 99350

AND

Two Denominator Eligible Visits

AND

Left ventricular ejection fraction (LVEF) $< 40\%$ or documentation of moderately or severely depressed left ventricular systolic function: 3021F

Option 2, Inpatient Setting:

Patients aged ≥ 18 years

AND

Diagnosis for heart failure (ICD-9-CM) [for use 1/1/2015-9/30/2015]: 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

Diagnosis for heart failure (ICD-10-CM) [for use 10/01/2015-12/31/2015]: 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): 99238, 99239

AND

Left ventricular ejection fraction (LVEF) $< 40\%$ or documentation of moderately or severely depressed left ventricular systolic function: 3021F

EXCLUSIONS

Documentation of medical reason(s) for not prescribing ACE inhibitor or ARB therapy (eg, hypotensive patients who are at immediate risk of cardiogenic shock, hospitalized patients who have experienced marked azotemia, allergy, intolerance, other medical reasons)

Documentation of patient reason(s) for not prescribing ACE inhibitor or ARB therapy (eg, patient declined, other patient reasons)

Documentation of system reason(s) for not prescribing ACE inhibitor or ARB therapy (eg, other system reasons)

EXCLUSION DETAILS

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. This measure was developed using PCPI exception methodology which 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 : Angiotensin-Converting Enzyme (ACE) Inhibitor or Angiotensin Receptor Blocker (ARB) Therapy for Left Ventricular Systolic Dysfunction, exceptions may include medical reasons (e.g. hypotensive patients who are at immediate risk of cardiogenic shock, hospitalized patients who have experienced marked azotemia), patient, and/or system reasons for not prescribing an ACE/ARB. 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.

Additional details by data source are as follows:

For EHR:

HQMF eMeasure developed and is included in this submission.

For Registry:

Append a modifier to CPT Category II Code:

4010F-1P : Documentation of medical reason(s) for not prescribing angiotensin converting enzyme (ACE) inhibitor or angiotensin receptor blocker (ARB) therapy (eg, hypotensive patients who are at immediate risk of cardiogenic shock, hospitalized patients who have experienced marked azotemia, allergy, intolerance, other medical reasons)

4010F-2P : Documentation of patient reason(s) for not prescribing angiotensin converting enzyme (ACE) inhibitor or angiotensin receptor blocker (ARB) therapy (eg, patient declined, other patient reasons)

4010F-3P : Documentation of system reason(s) for not prescribing angiotensin converting enzyme (ACE) inhibitor or angiotensin receptor blocker (ARB) therapy (eg, other system reasons)

RISK ADJUSTMENT

No risk adjustment or risk stratification

No risk adjustment or risk stratification

STRATIFICATION

Consistent with CMS' Measures Management System Blueprint and recent national recommendations put forth by the IOM 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 and have included these variables as recommended data elements to be collected.

TYPE SCORE

Rate/proportion better quality = higher score

ALGORITHM

To calculate performance rates:

1. Find the patients who meet the initial population (ie, 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 (ie, 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 (ie, 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: Documentation of medical reason(s) for not prescribing ACE inhibitor or ARB therapy (eg, hypotensive patients who are at immediate risk of cardiogenic shock, hospitalized patients who have experienced marked azotemia); Documentation of patient reason(s) for not prescribing ACE inhibitor or ARB therapy; Documentation of system reason(s) for not prescribing ACE inhibitor or ARB 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 (ie, 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. No diagram provided

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5.1 Identified measures:

5a.1 Are specs completely harmonized?

5a.2 If not completely harmonized, identify difference, rationale, impact:

5b.1 If competing, why superior or rationale for additive value:

0083 Heart Failure (HF): Beta-Blocker Therapy for Left Ventricular Systolic Dysfunction (LVSD)

STATUS

Endorsed

STEWARD

AMA-PCPI

DESCRIPTION

Percentage of patients aged 18 years and older with a diagnosis of heart failure with a current or prior LVEF < 40% who were prescribed beta-blocker therapy either within a 12 month period when seen in the outpatient setting or at hospital discharge

TYPE

Process

DATA SOURCE

Electronic Clinical Data, Electronic Clinical Data : Registry
No data collection instrument provided

LEVEL

Clinician : Group/Practice, Clinician : Individual

SETTING

Ambulatory Care : Clinician Office/Clinic, Home Health, Hospital/Acute Care Facility, Post Acute/Long Term Care Facility : Long Term Acute Care Hospital, Post Acute/Long Term Care Facility : Nursing Home/Skilled Nursing Facility, Other Domiciliary

NUMERATOR STATEMENT

Patients who were prescribed* beta-blocker therapy** either within a 12 month period when seen in the outpatient setting or at hospital discharge

*Prescribed may include:

Outpatient setting: 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

Inpatient setting: prescription given to the patient for beta-blocker therapy at discharge OR beta-blocker therapy to be continued after discharge as documented in the discharge medication list

**Beta-blocker therapy should include bisoprolol, carvedilol, or sustained release metoprolol succinate. (see technical specifications for additional information on medications)

NUMERATOR DETAILS

For Registry:

Definitions:

Prescribed – Outpatient Setting - 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.

Prescribed – Inpatient Setting: May include prescription given to the patient for beta-blocker therapy at discharge OR beta-blocker therapy to be continued after discharge as documented in the discharge medication list.

Beta-blocker Therapy - For patients with prior LVEF < 40%, beta-blocker therapy should include bisoprolol, carvedilol, or sustained release metoprolol succinate.

Report Quality Data Code, G8450: Beta-blocker therapy prescribed

DENOMINATOR STATEMENT

All patients aged 18 years and older with a diagnosis of heart failure with a current or prior LVEF < 40%

LVEF < 40% corresponds to qualitative documentation of moderate dysfunction or severe dysfunction

DENOMINATOR DETAILS

DENOMINATOR DEFINITION:

LVEF < 40% corresponds to qualitative documentation of moderate dysfunction or severe dysfunction.

DENOMINATOR NOTES:

To meet this measure, it must be reported for all heart failure patients a minimum of once during the measurement period when seen in the outpatient setting AND reported at each hospital discharge during the measurement period.

The requirement of “Count >=2 of Encounter, Performed” is to establish that the eligible professional has an existing relationship with the patient.

For Registry:

Option 1, Outpatient Setting:

Patients aged >=18 years

AND

Diagnosis for heart failure (ICD-9-CM) [for use 1/1/2015-9/30/2015]: 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

Diagnosis for heart failure (ICD-10-CM) [for use 10/01/2015-12/31/2015]: 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(s) during the reporting period (CPT): 99201, 99202, 99203, 99204, 99205, 99212, 99213, 99214, 99215, 99304, 99305, 99306, 99307, 99308, 99309, 99310, 99324, 99325, 99326, 99327, 99328, 99334, 99335, 99336, 99337, 99341, 99342, 99343, 99344, 99345, 99347, 99348, 99349, 99350

AND

Two Denominator Eligible Visits

AND

Left ventricular ejection fraction (LVEF) < 40% or documentation of moderately or severely depressed left ventricular systolic function: G8923

Option 2, Inpatient Setting:

Patients aged >= 18 years

AND

Diagnosis for heart failure (ICD-9-CM) [for use 1/1/2015-9/30/2015]: 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

Diagnosis for heart failure (ICD-10-CM) [for use 10/01/2015-12/31/2015]: 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): 99238, 99239

AND

Left ventricular ejection fraction (LVEF) < 40% or documentation of moderately or severely depressed left ventricular systolic function: 3021F

EXCLUSIONS

Documentation of medical reason(s) for not prescribing beta-blocker therapy (eg, low blood pressure, fluid overload, asthma, patients recently treated with an intravenous positive inotropic agent)

Documentation of patient reason(s) for not prescribing beta-blocker therapy

Documentation of system reason(s) for not prescribing beta-blocker therapy

EXCLUSION DETAILS

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. This measure was developed using the PCPI exception methodology which 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 Beta-Blocker Therapy for Left Ventricular Systolic Dysfunction, exceptions may include Documentation of medical reason(s) for not prescribing beta-blocker therapy (eg, low blood pressure, fluid overload, asthma, patients recently treated with an intravenous positive inotropic agent), Documentation of patient reason(s) for not prescribing beta-blocker therapy, or Documentation of system reason(s) for not prescribing beta-blocker therapy. 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.

Additional details by data source are as follows:

For EHR:

HQMF eMeasure developed and is included in this submission.

For Registry:

Report Quality Data Code G8451: Beta-Blocker Therapy for LVEF < 40% not prescribed for reasons documented by the clinician (eg, low blood pressure, fluid overload, asthma, patients recently treated with an intravenous positive inotropic agent, allergy, intolerance, other medical

reasons, patient declined, other patient reasons, other reasons attributable to the healthcare system)

RISK ADJUSTMENT

No risk adjustment or risk stratification

n/a

STRATIFICATION

Consistent with CMS' Measures Management System Blueprint and recent national recommendations put forth by the IOM 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 and have included these variables as recommended data elements to be collected.

TYPE SCORE

Rate/proportion better quality = higher score

ALGORITHM

To calculate performance rates:

1. Find the patients who meet the initial population (ie, 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 (ie, 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 (ie, 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: Documentation of medical reason(s) for not prescribing beta-blocker therapy (eg, low blood pressure, fluid overload, asthma, patients recently treated with an intravenous positive inotropic agent); Documentation of patient reason(s) for not prescribing beta-blocker therapy; Documentation of system reason(s) 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 (ie, 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. No diagram provided

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5.1 Identified 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

5a.1 Are specs completely harmonized? No

5a.2 If not completely harmonized, identify difference, rationale, impact: Measure 0083 addresses a therapy which is also covered in part by the following NQF-endorsed measures: NQF 0071: Persistence of Beta-Blocker Treatment After a Heart Attack and NQF 0070: Coronary Artery Disease (CAD): Beta-Blocker Therapy—Prior Myocardial Infarction (MI) or Left Ventricular Systolic Dysfunction (LVEF <40%). The specifications are harmonized to the extent possible. However, measure 0083 is focused on a patient population with heart failure and therefore the denominator specifications for the measures differ.

5b.1 If competing, why superior or rationale for additive value:

0229 Hospital 30-day, all-cause, risk-standardized mortality rate (RSMR) following heart failure (HF) hospitalization for patients 18 and older

STATUS

Endorsed

STEWARD

Centers for Medicare & Medicaid Services (CMS)

DESCRIPTION

The measure estimates a hospital-level 30-day risk-standardized mortality rate (RSMR). Mortality is defined as death for any cause within 30 days after the date of admission for the index admission, for patients 18 and older discharged from the hospital with a principal diagnosis of heart failure (HF). CMS annually reports the measure for patients who are 65 years or older and are either Medicare fee-for-service (FFS) beneficiaries and hospitalized in non-federal hospitals or patients hospitalized in Veterans Health Administration (VA) facilities.

TYPE

Outcome

DATA SOURCE

Administrative claims, Other, Paper Medical Records Data sources for the Medicare FFS measure:

1. Medicare Part A inpatient and Part B outpatient claims: This data source contains claims data for FFS inpatient and outpatient services including: Medicare inpatient hospital care, outpatient hospital services, skilled nursing facility care, some home health agency services, as well as inpatient and outpatient physician claims for the 12 months prior to an index admission.
2. Medicare Enrollment Database (EDB): This database contains Medicare beneficiary demographic, benefit/coverage, and vital status information. This data source was used to obtain information on several inclusion/exclusion indicators such as Medicare status on admission as well as vital status. These data have previously been shown to accurately reflect patient vital status (Fleming et al., 1992).
3. Veterans Health Administration (VA) Data: This data source contains claims data for VA inpatient and outpatient services including: inpatient hospital care, outpatient hospital services,

skilled nursing facility care, some home health agency services, as well as inpatient and outpatient physician claims for the 12 months prior to and including each index admission. Unlike Medicare FFS patients, VA patients are not required to have been enrolled in Part A and Part B Medicare for the 12 months prior to the date of admission.

All-payer data sources:

For our analyses to examine use in all-payer data, we used all-payer data from California in addition to CMS data for Medicare FFS 65+ patients in California hospitals. California is a diverse state, and, with more than 37 million residents, California represents 12% of the US population. We used the California Patient Discharge Data, a large, linked database of patient hospital admissions. In 2006, there were approximately 3 million adult discharges from more than 450 non-Federal acute care hospitals. Records are linked by a unique patient identification number, allowing us to determine patient history from previous hospitalizations and to evaluate rates of both readmission and mortality (via linking with California vital statistics records).

Using all-payer data from California as well as CMS Medicare FFS data for California hospitals, we performed analyses to determine whether the HF mortality measure can be applied to all adult patients, including not only FFS Medicare patients aged 65+ but also non-FFS Medicare patients aged 18-64 years at the time of admission.

Reference:

Fleming C, Fisher ES, Chang CH, Bubolz TA, Malenka DJ. Studying outcomes and hospital utilization in the elderly: The advantages of a merged data base for Medicare and Veterans Affairs hospitals. *Medical Care*. 1992; 30(5): 377-91.

No data collection instrument provided Attachment HF_Mortality_NQF_Data_Dictionary__06-22-15_FINAL.xls

LEVEL

Facility

SETTING

Hospital/Acute Care Facility

NUMERATOR STATEMENT

The outcome for this measure is 30-day all-cause mortality. We define mortality as death from any cause within 30 days of the index admission date for patients 18 and older discharged from the hospital with a principal diagnosis of HF.

NUMERATOR DETAILS

The measure counts deaths for any cause within 30 days of the date of admission of the index HF hospitalization.

Identifying deaths in the FFS measure

As currently reported, we identify deaths for FFS Medicare patients 65 years and older in the Medicare Enrollment Database (EDB).

Identifying deaths in the all-payer measure

For the purposes of development of an all-payer measure, deaths were identified using the California vital statistics data file. Nationally, post-discharge deaths can be identified using an

external source of vital status, such as the Social Security Administration's Death Master File (DMF) or the Centers for Disease Control and Prevention's National Death Index (NDI).

DENOMINATOR STATEMENT

This claims-based measure can be used in either of two patient cohorts: (1) patients aged 65 years or older or (2) patients aged 18 years or older. We have explicitly tested the measure in both age groups. The cohort includes admissions for patients aged 18 years and older discharged from the hospital with a principal discharge diagnosis of HF and with a complete claims history for the 12 months prior to admission. The measure is currently publicly reported by CMS for those patients 65 years and older who are either Medicare FFS beneficiaries admitted to non-federal hospitals or patients admitted to VA hospitals. Additional details are provided in S.9 Denominator Details.

DENOMINATOR DETAILS

To be included in the measure cohort used in public reporting, patients must meet the following additional inclusion criteria:

1. Have a principal discharge diagnosis of heart failure
2. Enrolled in Medicare fee-for-service (FFS)
3. Aged 65 or over
4. Discharged from non-federal acute care hospitals or VA hospitals
5. Enrolled in Part A and Part B Medicare for the 12 months prior to the date of index admission.

VA beneficiaries/hospitalizations are also included in the HF mortality measure. Enrollment in Medicare FFS is not required for these patients.

This measure can also be used for an all-payer population aged 18 years and older. We have explicitly tested the measure in both patients aged 18+ years and those aged 65+ years (see Testing Attachment for details).

International Classification of Diseases, 9th Revision, Clinical Modification (ICD-9-CM) codes used to define the cohort for each measure are:

402.01 Malignant hypertensive heart disease with heart failure

402.11 Benign hypertensive heart disease with heart failure

402.91 Unspecified hypertensive heart disease with heart failure

404.01 Hypertensive heart and chronic kidney disease, malignant, with heart failure and with chronic kidney disease stage I through stage IV, or unspecified

404.03 Hypertensive heart and chronic kidney disease, malignant, with heart failure and with chronic kidney disease stage V or end stage renal disease

404.11 Hypertensive heart and chronic kidney disease, benign, with heart failure and with chronic kidney disease stage I through stage IV, or unspecified

404.13 Hypertensive heart and chronic kidney disease, benign, with heart failure and chronic kidney disease stage V or end stage renal disease

404.91 Hypertensive heart and chronic kidney disease, unspecified, with heart failure and with chronic kidney disease stage I through stage IV, or unspecified

404.93 Hypertensive heart and chronic kidney disease, unspecified, with heart failure and chronic kidney disease stage V or end stage renal disease

428.0 Congestive heart failure, unspecified

428.1 Left heart failure
428.20 Systolic heart failure, unspecified
428.21 Acute systolic heart failure
428.22 Chronic systolic heart failure
428.23 Acute on chronic systolic heart failure
428.30 Diastolic heart failure, unspecified
428.31 Acute diastolic heart failure
428.32 Chronic diastolic heart failure
428.33 Acute on chronic diastolic heart failure
428.40 Combined systolic and diastolic heart failure, unspecified
428.41 Acute combined systolic and diastolic heart failure
428.42 Chronic combined systolic and diastolic heart failure
428.43 Acute on chronic combined systolic and diastolic heart failure
428.9 Heart failure, unspecified

ICD-10 Codes that define the patient cohort:

I110 Hypertensive heart disease with heart failure
I130 Hypertensive heart and chronic kidney disease with heart failure and stage 1 through stage 4 chronic kidney disease, or unspecified chronic kidney disease
I132 Hypertensive heart and chronic kidney disease with heart failure and with stage 5 chronic kidney disease, or end stage renal disease
I509 Heart failure, unspecified
I501 Left ventricular failure
I5020 Unspecified systolic (congestive) heart failure
I5021 Acute systolic (congestive) heart failure
I5022 Chronic systolic (congestive) heart failure
I5023 Acute on chronic systolic (congestive) heart failure
I5030 Unspecified diastolic (congestive) heart failure
I5031 Acute diastolic (congestive) heart failure
I5032 Chronic diastolic (congestive) heart failure
I5033 Acute on chronic diastolic (congestive) heart failure
I5040 Unspecified combined systolic (congestive) and diastolic (congestive) heart failure
I5041 Acute combined systolic (congestive) and diastolic (congestive) heart failure
I5042 Chronic combined systolic (congestive) and diastolic (congestive) heart failure
I5043 Acute on chronic combined systolic (congestive) and diastolic (congestive) heart failure
An ICD-9 to ICD-10 crosswalk is attached in field S.2b. (Data Dictionary or Code Table).

EXCLUSIONS

The mortality measures exclude index admissions for patients:

1. Discharged alive on the day of admission or the following day who were not transferred to another acute care facility.

2. With inconsistent or unknown vital status or other unreliable demographic (age and gender) data;
3. Enrolled in the Medicare hospice program or used VA hospice services any time in the 12 months prior to the index admission, including the first day of the index admission;
4. Discharged against medical advice (AMA); or
5. Patients undergoing LVAD implantation or heart transplantation during an index admission or who have a history of LVAD or heart transplant in the preceding year.

For patients with more than one admission for a given condition in a given year, only one index admission for that condition is randomly selected for inclusion in the cohort.

For Medicare FFS patients, the measure additionally excludes admissions for patients without at least 30 days post-discharge enrollment in FFS Medicare (because the 30-day mortality outcome cannot be assessed in this group).

EXCLUSION DETAILS

1. The discharge disposition indicator is used to identify patients alive at discharge. Transfers are identified in the claims when a patient with a qualifying admission is discharged from an acute care hospital and admitted to another acute care hospital on the same day or next day. Patient length of stay and condition is identified from the admission claim.
2. Inconsistent vital status or unreliable data are identified if any of the following conditions are met 1) the patient's age is greater than 115 years; 2) if the discharge date for a hospitalization is before the admission date; 3) if the patient has a sex other than 'male' or 'female'.
3. Hospice enrollment in the 12 months prior to or on the index admission is identified using hospice data and the Inpatient standard analytic file (SAF). This exclusion applies when the measure is used in Medicare FFS patients only.
4. Discharges against medical advice (AMA) are identified using the discharge disposition indicator.
5. Patients with LVAD implantation or heart transplantation during an index admission or in the previous 12 months are identified by the corresponding codes for these procedures included in claims data.

Additional exclusions:

- HF admissions within 30 days of discharge from a qualifying index admission, which are identified by comparing the discharge date from the index admission with the readmission date.
- Admissions without at least 30 days post-discharge enrollment in FFS Medicare are determined by examining the Medicare Enrollment Database (EDB)

RISK ADJUSTMENT

Statistical risk model

Our approach to risk adjustment is tailored to and appropriate for a publicly reported outcome measure, as articulated in the American Heart Association (AHA) Scientific Statement, "Standards for Statistical Models Used for Public Reporting of Health Outcomes" (Krumholz et al., 2006).

The measure employs a hierarchical logistic regression model to create a hospital-level 30-day RSMR. In brief, the approach simultaneously models data at the patient and hospital levels to account for the variance in patient outcomes within and between hospitals (Normand & Shahian, 2007). At the patient level, the model adjusts the log-odds of mortality within 30 days

of admission for age, sex, and selected clinical covariates. At the hospital level, the approach models the hospital-specific intercepts as arising from a normal distribution. The hospital intercept represents the underlying risk of a death at the hospital, after accounting for patient risk. If there were no differences among hospitals, then after adjusting for patient risk, the hospital intercepts should be identical across all hospitals.

Candidate and Final Risk-adjustment Variables: Candidate variables were patient-level risk-adjustors that were expected to be predictive of mortality, based on empirical analysis, prior literature, and clinical judgment, including age, sex, and indicators of comorbidity and disease severity. For each patient, covariates are obtained from claims records extending 12 months prior to and including the index admission. For the measure currently implemented by CMS, these risk-adjusters are identified using both inpatient and outpatient Medicare FFS claims data. However, in the all-payer hospital discharge database measure, the risk-adjustment variables can be obtained only from inpatient claims in the prior 12 months and the index admission. (This was tested explicitly in our all-payer testing, as many all-payer datasets do not include outpatient claims.)

The model adjusts for case-mix differences based on the clinical status of patients at the time of admission. We use condition categories (CCs), which are clinically meaningful groupings of more than 15,000 ICD-9-CM diagnosis codes (Pope et al., 2000). A file that contains a list of the ICD-9-CM codes and their groupings into CCs is attached in data field S.2b (Data Dictionary or Code Table). In addition, only comorbidities that convey information about the patient at admission or in the 12 months prior, and not complications that arise during the course of the index hospitalization, are included in the risk adjustment. Hence, we do not risk adjust for CCs that may represent adverse events of care and that are only recorded in the index admission.

The final set of risk adjustment variables is:

Demographics

Male

Age-65 (years above 65, continuous) for 65 and over cohorts; or Age (years, continuous) for 18 and over cohorts.

Comorbidities

Congestive heart failure (CC 80)

Acute myocardial infarction (CC 81)

Other acute/subacute forms of ischemic heart disease (CC 82)

Coronary atherosclerosis or angina (CC 83-84)

Cardio-respiratory failure and shock (CC 79)

Valvular and rheumatic heart disease (CC 86)

Hypertension (CC 89, 91)

Stroke (CC 95-96)

Renal failure (CC 131)

Chronic obstructive pulmonary disease (COPD) (CC 108)

Pneumonia (CC 111-113)

Diabetes mellitus (DM) or DM complications except proliferative retinopathy (CC 15-20, 120)

Protein-calorie malnutrition (CC 21)

Dementia or other specified brain disorders (CC 49-50)

Hemiplegia, paraplegia, paralysis, functional disability (CC 67-69, 100-102, 177-178)

Vascular disease and complications (CC 104-105)

Metastatic cancer, acute leukemia and other severe cancers (CC 7-8)

Trauma in last year (CC 154-156, 158-162)

Major psychiatric disorders (CC 54-56)

Chronic Liver Disease (CC 25-27)

History of CABG (ICD-9-CM V45.81, 36.10-36.16)

History of PTCA (ICD-9-CM V45.82, 00.66, 36.01, 36.02, 36.05, 36.06, 36.07)

References:

Krumholz HM, Brindis RG, Brush JE, et al. 2006. Standards for Statistical Models Used for Public Reporting of Health Outcomes: An American Heart Association Scientific Statement From the Quality of Care and Outcomes Research Interdisciplinary Writing Group: Cosponsored by the Council on Epidemiology and Prevention and the Stroke Council Endorsed by the American College of Cardiology Foundation. *Circulation* 113: 456-462.

Normand S-LT, Shahian DM. 2007. Statistical and Clinical Aspects of Hospital Outcomes Profiling. *Stat Sci* 22(2): 206-226.

Pope GC, et al. 2000. Principal Inpatient Diagnostic Cost Group Models for Medicare Risk Adjustment. *Health Care Financing Review* 21(3): 93-118.

Provided in response box S.15a

STRATIFICATION

N/A

TYPE SCORE

Rate/proportion better quality = lower score

ALGORITHM

The measure estimates hospital-level 30-day all-cause RSMRs following hospitalization for HF using hierarchical logistic regression models. In brief, the approach simultaneously models data at the patient and hospital levels to account for variance in patient outcomes within and between hospitals [Normand and Shahian, 2007]. At the patient level, it models the log-odds of mortality within 30 days of index admission using age, sex, selected clinical covariates, and a hospital-specific intercept. At the hospital level, it models the hospital-specific intercepts as arising from a normal distribution. The hospital intercept represents the underlying risk of a mortality at the hospital, after accounting for patient risk. The hospital-specific intercepts are given a distribution to account for the clustering (non-independence) of patients within the same hospital. If there were no differences among hospitals, then after adjusting for patient risk, the hospital intercepts should be identical across all hospitals.

The RSMR is calculated as the ratio of the number of “predicted” to the number of “expected” deaths at a given hospital, multiplied by the national observed mortality rate. For each hospital, the numerator of the ratio is the number of deaths within 30 days predicted on the basis of the hospital’s performance with its observed case mix, and the denominator is the number of deaths expected based on the nation’s performance with that hospital’s case mix. This approach is analogous to a ratio of “observed” to “expected” used in other types of statistical analyses. It conceptually allows for a comparison of a particular hospital’s performance given its case mix to

an average hospital's performance with the same case mix. Thus, a lower ratio indicates lower-than-expected mortality rates or better quality, and a higher ratio indicates higher-than-expected mortality rates or worse quality.

The "predicted" number of deaths (the numerator) is calculated by using the coefficients estimated by regressing the risk factors and the hospital-specific intercept on the risk of mortality. The estimated hospital-specific intercept is added coefficients multiplied by the patient characteristics. The results are transformed and summed over all patients attributed to a hospital to get a predicted value. The "expected" number of deaths (the denominator) is obtained in the same manner, but a common intercept using all hospitals in our sample is added in place of the hospital-specific intercept. The results are transformed and summed over all patients in the hospital to get an expected value. To assess hospital performance for each reporting period, we re-estimate the model coefficients using the years of data in that period.

This calculation transforms the ratio of predicted over expected into a rate that is compared to the national observed readmission rate. The hierarchical logistic regression models are described fully in the original methodology report [Krumholz et al., 20052].

Reference:

1. Normand S-LT, Shahian DM. 2007. Statistical and Clinical Aspects of Hospital Outcomes Profiling. *Stat Sci* 22(2): 206-226.
2. Krumholz H, Normand S, Galusha D, et al. Risk-Adjustment Models for AMI and HF 30-Day Mortality Methodology. 2005. Available at measure-specific web page URL identified in S.1

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5.1 Identified measures: 0330 : Hospital 30-day, all-cause, risk-standardized readmission rate (RSRR) following heart failure (HF) hospitalization

0358 : Heart Failure Mortality Rate (IQI 16)

0468 : Hospital 30-day, all-cause, risk-standardized mortality rate (RSMR) following pneumonia hospitalization

0505 : Hospital 30-day all-cause risk-standardized readmission rate (RSRR) following acute myocardial infarction (AMI) hospitalization.

0506 : Hospital 30-day, all-cause, risk-standardized readmission rate (RSRR) following pneumonia hospitalization

0230 : Hospital 30-day, all-cause, risk-standardized mortality rate (RSMR) following acute myocardial infarction (AMI) hospitalization for patients 18 and older

1551 : Hospital-level 30-day, all-cause risk-standardized readmission rate (RSRR) following elective primary total hip arthroplasty (THA) and/or total knee arthroplasty (TKA)

1789 : Hospital-Wide All-Cause Unplanned Readmission Measure (HWR)

1891 : Hospital 30-Day, All-Cause, Risk-Standardized Readmission Rate (RSRR) following Chronic Obstructive Pulmonary Disease (COPD) Hospitalization

1893 : Hospital 30-Day, All-Cause, Risk-Standardized Mortality Rate (RSMR) following Chronic Obstructive Pulmonary Disease (COPD) Hospitalization

5a.1 Are specs completely harmonized? Yes

5a.2 If not completely harmonized, identify difference, rationale, impact: We did not include in our list of related measures any non-outcome (e.g., process) measures with the same target population as our measure. Our measure cohort was heavily vetted by clinical experts, a

technical expert panel, and a public comment period. Additionally, the measure, with the specified cohort, has been publicly reported since 2008. Because this is an outcome measure, clinical coherence of the cohort takes precedence over alignment with related non-outcome measures. Furthermore, non-outcome measures are limited due to broader patient exclusions. This is because they typically only include a specific subset of patients who are eligible for that measure (for example, patients who receive a specific medication or undergo a specific procedure).

5b.1 If competing, why superior or rationale for additive value: N/A

0230 Hospital 30-day, all-cause, risk-standardized mortality rate (RSMR) following acute myocardial infarction (AMI) hospitalization for patients 18 and older

STATUS

Endorsed

STEWARD

Centers for Medicare & Medicaid Services (CMS)

DESCRIPTION

The measure estimates a hospital-level 30-day risk-standardized mortality rate (RSMR). Mortality is defined as death for any cause within 30 days after the date of admission for the index admission, for patients 18 and older discharged from the hospital with a principal diagnosis of acute myocardial infarction (AMI). CMS annually reports the measure for patients who are 65 years or older and are either Medicare fee-for-service (FFS) beneficiaries and hospitalized in non-federal hospitals or are hospitalized in Veterans Health Administration (VA) facilities.

TYPE

Outcome

DATA SOURCE

Administrative claims, Other, Paper Medical Records Data sources for the Medicare FFS measure:

1. Medicare Part A inpatient and Part B outpatient claims: This data source contains claims data for fee-for service inpatient and outpatient services including: Medicare inpatient hospital care, outpatient hospital services, skilled nursing facility care, some home health agency services, as well as inpatient and outpatient physician claims for the 12 months prior to an index admission.
2. Medicare Enrollment Database (EDB): This database contains Medicare beneficiary demographic, benefit/coverage, and vital status information. This data source was used to obtain information on several inclusion/exclusion indicators such as Medicare status on admission as well as vital status. These data have previously been shown to accurately reflect patient vital status (Fleming et al., 1992).
3. Veterans Health Administration Data: This data source contains claims data for VA inpatient and outpatient services including: inpatient hospital care, outpatient hospital services, skilled nursing facility care, some home health agency services, as well as inpatient and outpatient physician claims for the 12 months prior to and including each index admission. Unlike Medicare

FFS patients, VA patients are not required to have been enrolled in Part A and Part B Medicare for the 12 months prior to the date of admission.

All-payer data sources:

For our analyses to examine use in all-payer data, we used all-payer data from California in addition to CMS data for Medicare FFS 65+ patients in California hospitals. California is a diverse state, and, with more than 37 million residents, California represents 12% of the US population. We used the California Patient Discharge Data, a large, linked database of patient hospital admissions. In 2006, there were approximately 3 million adult discharges from more than 450 non-Federal acute care hospitals. Records are linked by a unique patient identification number, allowing us to determine patient history from previous hospitalizations and to evaluate rates of both readmission and mortality (via linking with California vital statistics records).

Using all-payer data from California as well as CMS Medicare FFS data for California hospitals, we performed analyses to determine whether the AMI mortality measure can be applied to all adult patients, including not only FFS Medicare patients aged 65+ but also non-FFS Medicare patients aged 65+ and younger patients aged 18-64 years at the time of admission.

References:

Fleming C, Fisher ES, Chang CH, Bubolz TA, Malenka DJ. Studying outcomes and hospital utilization in the elderly: The advantages of a merged data base for Medicare and Veterans Affairs hospitals. *Medical Care*. 1992; 30(5): 377-91.

No data collection instrument provided Attachment AMI_Mortality_NQF_Data_Dictionary_06-22-15_FINAL.xlsx

LEVEL

Facility

SETTING

Hospital/Acute Care Facility

NUMERATOR STATEMENT

The outcome for this measure is 30-day all-cause mortality. We define mortality as death from any cause within 30 days of the index admission date for patients 18 and older discharged from the hospital with a principal diagnosis of AMI.

NUMERATOR DETAILS

The measure counts deaths for any cause within 30 days of the date of admission of the index AMI hospitalization.

Identifying deaths in the FFS measure

As currently reported, we identify deaths for FFS Medicare patients 65 years and older in the Medicare Enrollment Database (EDB).

Identifying deaths in the all-payer measure

For the purposes of development, deaths were identified using the California vital statistics data file. Nationally, post-discharge deaths can be identified using an external source of vital status, such as the Social Security Administration's Death Master File (DMF) or the Centers for Disease Control and Prevention's National Death Index (NDI).

DENOMINATOR STATEMENT

This claims-based measure can be used in either of two patient cohorts: (1) patients aged 65 years or older or (2) patients aged 18 years or older. The cohort includes admissions for patients discharged from the hospital with a principal discharge diagnosis of AMI and with a complete claims history for the 12 months prior to admission. Currently, the measure is publicly reported by CMS for those patients 65 years and older who are either Medicare FFS beneficiaries admitted to non-federal hospitals or patients admitted to VA hospitals. Additional details are provided in S.9 Denominator Details.

DENOMINATOR DETAILS

To be included in the measure cohort used in public reporting, patients must meet the following additional inclusion criteria:

1. Having a principal discharge diagnosis of AMI;
2. Enrolled in Medicare FFS;
3. Aged 65 or over;
4. Not transferred from another acute care facility; and
5. Enrolled in Part A and Part B Medicare for the 12 months prior to the date of index admission, and enrolled in Part A during the index admission.

VA beneficiaries/hospitalizations are also included in the AMI mortality measure. Enrollment in Medicare FFS is not required for these patients.

International Classification of Diseases, 9th Revision, Clinical Modification (ICD-9-CM) codes used to define the cohort for each measure are:

- 410.00 AMI (anterolateral wall) – episode of care unspecified
- 410.01 AMI (anterolateral wall) – initial episode of care
- 410.10 AMI (other anterior wall) – episode of care unspecified
- 410.11 AMI (other anterior wall) – initial episode of care
- 410.20 AMI (inferolateral wall) – episode of care unspecified
- 410.21 AMI (inferolateral wall) – initial episode of care
- 410.30 AMI (inferoposterior wall) – episode of care unspecified
- 410.31 AMI (inferoposterior wall) – initial episode of care
- 410.40 AMI (other inferior wall) – episode of care unspecified
- 410.41 AMI (other inferior wall) – initial episode of care
- 410.50 AMI (other lateral wall) – episode of care unspecified
- 410.51 AMI (other lateral wall) – initial episode of care
- 410.60 AMI (true posterior wall) – episode of care unspecified
- 410.61 AMI (true posterior wall) – initial episode of care
- 410.70 AMI (subendocardial) – episode of care unspecified
- 410.71 AMI (subendocardial) – initial episode of care
- 410.80 AMI (other specified site) – episode of care unspecified
- 410.81 AMI (other specified site) – initial episode of care
- 410.90 AMI (unspecified site) – episode of care unspecified
- 410.91 AMI (unspecified site) – initial episode of care

ICD-10 Codes that define the patient cohort:

I2109 ST elevation (STEMI) myocardial infarction involving other coronary artery of anterior wall

I2119 ST elevation (STEMI) myocardial infarction involving other coronary artery of inferior wall

I2111 ST elevation (STEMI) myocardial infarction involving right coronary artery

I2119 ST elevation (STEMI) myocardial infarction involving other coronary artery of inferior wall

I2129 ST elevation (STEMI) myocardial infarction involving other sites

I214 Non-ST elevation (NSTEMI) myocardial infarction

I213 ST elevation (STEMI) myocardial infarction of unspecified site

An ICD-9 to ICD-10 crosswalk is attached in field S.2b. (Data Dictionary or Code Table).

EXCLUSIONS

The mortality measures exclude index admissions for patients:

1. Discharged alive on the day of admission or the following day who were not transferred to another acute care facility.
2. With inconsistent or unknown vital status or other unreliable demographic (age and gender) data;
3. Enrolled in the Medicare hospice program or used VA hospice services any time in the 12 months prior to the index admission, including the first day of the index admission; or
4. Discharged against medical advice (AMA).

For patients with more than one admission for a given condition in a given year, only one index admission for that condition is randomly selected for inclusion in the cohort.

For Medicare FFS patients, the measure additionally excludes admissions for patients without at least 30 days post-discharge enrollment in FFS Medicare (because the 30-day mortality outcome cannot be assessed in this group).

EXCLUSION DETAILS

1. The discharge disposition indicator is used to identify patients alive at discharge. Transfers are identified in the claims when a patient with a qualifying admission is discharged from an acute care hospital and admitted to another acute care hospital on the same day or next day. In addition, patient length of stay and condition is identified from the admission claim.
2. Inconsistent vital status or unreliable data are identified if any of the following conditions are met 1) the patient's age is greater than 115 years; 2) if the discharge date for a hospitalization is before the admission date; and 3) if the patient has a sex other than 'male' or 'female'.
3. Hospice enrollment in the 12 months prior to or on the index admission is identified using hospice data and the Inpatient standard analytic file (SAF). This exclusion applies when the measure is used in Medicare FFS patients only.
4. Discharges against medical advice (AMA) are identified using the discharge disposition indicator.

Additional exclusions:

- AMI admissions within 30 days of discharge from a qualifying index admission, which are identified by comparing the discharge date from the index admission with the readmission date.
- Admissions without at least 30 days post-discharge enrollment in FFS Medicare, which is determined by examining the Medicare Enrollment Database (EDB)

RISK ADJUSTMENT

Statistical risk model

Our approach to risk adjustment is tailored to and appropriate for a publicly reported outcome measure, as articulated in the American Heart Association (AHA) Scientific Statement, “Standards for Statistical Models Used for Public Reporting of Health Outcomes” (Krumholz et. al., 2006).

The measure employs a hierarchical logistic regression model to create a hospital level 30-day RSMR. In brief, the approach simultaneously models data at the patient and hospital levels to account for the variance in patient outcomes within and between hospitals (Normand & Shahian, 2007). At the patient level, the model adjusts the log-odds of mortality within 30-days of admission for age, sex, and selected clinical covariates. At the hospital level, the approach models the hospital-specific intercepts as arising from a normal distribution. The hospital intercept represents the underlying risk of a death at the hospital, after accounting for patient risk. If there were no differences among hospitals, then after adjusting for patient risk, the hospital intercepts should be identical across all hospitals.

Candidate and Final Risk-adjustment Variables:

Candidate variables were patient-level risk-adjustors that were expected to be predictive of mortality, based on empirical analysis, prior literature, and clinical judgment including age, sex, and indicators of comorbidity and disease severity. For each patient, covariates are obtained from Medicare claims extending 12 months prior to and including the index admission. However, in the all-payer hospital discharge database measure, the risk-adjustment variables can be obtained only from inpatient claims in the prior 12 months and the index admission (this was tested explicitly in our all-payer testing, as many all-payer datasets do not include outpatient claims).

The model adjusts for case-mix differences based on the clinical status of patients at the time of admission. We used condition categories (CCs), which are clinically meaningful groupings of more than 15,000 ICD-9-CM diagnosis codes, and combinations of CCs as candidate variables (Pope et al., 2000). A file that contains a list of the ICD-9-CM codes and their groupings into CCs is attached in data field S.2b (Data Dictionary or Code Table). In addition, only comorbidities that convey information about the patient at admission or in the 12-months prior, and not complications that arise during the course of the hospitalization, are included in the risk-adjustment. Hence, we do not risk adjust for CCs that may represent adverse events of care and that are only recorded in the index admission.

The final set of risk adjustment variables are:

Demographics

Male

Age-65 (years above 65, continuous) for 65 and over cohorts; or Age (years, continuous) for 18 and over cohorts.

Comorbidities

Congestive heart failure (CC 80)

Acute myocardial infarction (CC 81)

Other acute/subacute forms of ischemic heart disease (CC 82)

Anterior myocardial infarction (ICD-9 codes 410.00-410.19)

Other location of myocardial infarction (ICD-9 codes 410.20-410.69)

Coronary atherosclerosis or angina (CC 83, 84)
 Cardio-respiratory failure and shock (CC 79)
 Valvular and rheumatic heart disease (CC 86)
 Hypertension (CC 89, 91)
 Stroke (CC 95-96)
 Cerebrovascular disease (CC 97-99, 103)
 Renal failure (CC 131)
 Chronic obstructive pulmonary disease (COPD) (CC 108)
 Pneumonia (CC 111-113)
 Diabetes mellitus (DM) or DM complications except proliferative retinopathy (CC 15-20, 120)
 Protein-calorie malnutrition (CC 21)
 Dementia or other specified brain disorders (CC 49, 50)
 Hemiplegia, paraplegia, paralysis, functional disability (CC 67-69, 100-102, 177, 178)
 Vascular disease and complications (CC 104, 105)
 Metastatic cancer, acute leukemia and other severe cancers (CC 7, 8)
 Trauma in last year (CC 154-156, 158-162)
 Major psychiatric disorders (CC 54-56)
 Chronic Liver Disease (CC 25-27)
 History of CABG (ICD-9-CM V45.81, 36.10-36.16)
 History of PTCA (ICD-9-CM V45.82, 00.66, 36.01, 36.02, 36.05, 36.06, 36.07)

References:

Krumholz HM, Brindis RG, Brush JE, et al. 2006. Standards for Statistical Models Used for Public Reporting of Health Outcomes: An American Heart Association Scientific Statement From the Quality of Care and Outcomes Research Interdisciplinary Writing Group: Cosponsored by the Council on Epidemiology and Prevention and the Stroke Council Endorsed by the American College of Cardiology Foundation. *Circulation* 113: 456-462.

Normand S-LT, Shahian DM. 2007. Statistical and Clinical Aspects of Hospital Outcomes Profiling. *Stat Sci* 22 (2): 206-226.

Pope GC, et al. 2000. Principal Inpatient Diagnostic Cost Group Models for Medicare Risk Adjustment. *Health Care Financing Review* 21(3): 93-118.

Provided in response box S.15a

STRATIFICATION

N/A

TYPE SCORE

Rate/proportion better quality = lower score

ALGORITHM

The measure estimates hospital-level 30-day all-cause RSMRs following hospitalization for AMI using hierarchical logistic regression models. In brief, the approach simultaneously models data at the patient and hospital levels to account for variance in patient outcomes within and

between hospitals (Normand and Shahian, 2007). At the patient level, it models the log-odds of mortality within 30 days of discharge using age, sex, selected clinical covariates, and a hospital-specific intercept. At the hospital level, it models the hospital-specific intercepts as arising from a normal distribution. The hospital intercept represents the underlying risk of mortality at the hospital, after accounting for patient risk. The hospital-specific intercepts are given a distribution to account for the clustering (non-independence) of patients within the same hospital. If there were no differences among hospitals, then after adjusting for patient risk, the hospital intercepts should be identical across all hospitals.

The RSMR is calculated as the ratio of the number of “predicted” to the number of “expected” deaths, multiplied by the national unadjusted mortality rate. For each hospital, the numerator of the ratio (“predicted”) is the number of deaths within 30 days predicted on the basis of the hospital’s performance with its observed case mix, and the denominator (“expected”) is the number of deaths expected on the basis of the nation’s performance with that hospital’s case mix. This approach is analogous to a ratio of “observed” to “expected” used in other types of statistical analyses. It conceptually allows for a comparison of a particular hospital’s performance given its case mix to an average hospital’s performance with the same case mix. Thus, a lower ratio indicates lower-than-expected mortality or better quality and a higher ratio indicates higher-than-expected mortality or worse quality.

The “predicted” number of deaths (the numerator) is calculated by using the coefficients estimated by regressing the risk factors and the hospital-specific intercept on the risk of mortality. The estimated hospital specific intercept is added coefficients multiplied by the patient characteristics. The results are transformed and summed over all patients attributed to a hospital to get a predicted value. The “expected” number of deaths (the denominator) is obtained in the same manner, but a common intercept using all hospitals in our sample is added in place of the hospital specific intercept. The results are transformed and summed over all patients in the hospital to get an expected value. To assess hospital performance for each reporting period, we re-estimate the model coefficients using the years of data in that period.

This calculation transforms the ratio of predicted over expected into a rate that is compared to the national observed readmission rate. The hierarchical logistic regression models are described fully in the original methodology report (Krumholz et al., 2005).

References:

1. Normand S-LT, Shahian DM. 2007. Statistical and Clinical Aspects of Hospital Outcomes Profiling. *Stat Sci* 22(2): 206-226.
2. Krumholz H, Normand S, Galusha D, et al. Risk-Adjustment Models for AMI and HF 30-Day Mortality Methodology. 2005. Available at measure-specific web page URL identified in S.1

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5.1 Identified measures: 0330 : Hospital 30-day, all-cause, risk-standardized readmission rate (RSRR) following heart failure (HF) hospitalization

0468 : Hospital 30-day, all-cause, risk-standardized mortality rate (RSMR) following pneumonia hospitalization

0505 : Hospital 30-day all-cause risk-standardized readmission rate (RSRR) following acute myocardial infarction (AMI) hospitalization.

0506 : Hospital 30-day, all-cause, risk-standardized readmission rate (RSRR) following pneumonia hospitalization

0229 : Hospital 30-day, all-cause, risk-standardized mortality rate (RSMR) following heart failure (HF) hospitalization for patients 18 and older

1551 : Hospital-level 30-day, all-cause risk-standardized readmission rate (RSRR) following elective primary total hip arthroplasty (THA) and/or total knee arthroplasty (TKA)

1789 : Hospital-Wide All-Cause Unplanned Readmission Measure (HWR)

1891 : Hospital 30-Day, All-Cause, Risk-Standardized Readmission Rate (RSRR) following Chronic Obstructive Pulmonary Disease (COPD) Hospitalization

1893 : Hospital 30-Day, All-Cause, Risk-Standardized Mortality Rate (RSMR) following Chronic Obstructive Pulmonary Disease (COPD) Hospitalization

2431 : Hospital-level, risk-standardized payment associated with a 30-day episode-of-care for Acute Myocardial Infarction (AMI)

5a.1 Are specs completely harmonized? Yes

5a.2 If not completely harmonized, identify difference, rationale, impact: We did not include in our list of related measures any non-outcome (e.g., process) measures with the same target population as our measure. Our measure cohort was heavily vetted by clinical experts. Additionally, the measure, with the specified cohort, has been publicly reported since 2008. Because this is an outcome measure, clinical coherence of the cohort takes precedence over alignment with related non-outcome measures. Furthermore, non-outcome measures are limited due to broader patient exclusions. This is because they typically only include a specific subset of patients who are eligible for that measure (for example, patients who receive a specific medication or undergo a specific procedure).

5b.1 If competing, why superior or rationale for additive value: N/A

0669 Cardiac Imaging for Preoperative Risk Assessment for Non-Cardiac, Low Risk Surgery

STATUS

Endorsed

STEWARD

Centers for Medicare & Medicaid Services

DESCRIPTION

This measure calculates the percentage of stress echocardiography, single photon emission computed tomography myocardial perfusion imaging (SPECT MPI), or stress magnetic resonance (MR) imaging studies performed at each facility in the 30 days prior to an ambulatory non-cardiac, low-risk surgery performed at any location. The measure is calculated based on a one-year window of Medicare claims data. The measure has been publicly reported, annually, by the Centers for Medicare & Medicaid Services (CMS), since 2011, as a component of its Hospital Outpatient Quality Reporting (HOQR) Program.

TYPE

Efficiency

DATA SOURCE

Administrative claims This measure was initially constructed using the 100-percent FFS outpatient standard analytical files (SAFs) from 2009. These outpatient SAFs contain the claims data on imaging utilization and low-risk surgical procedures performed in hospital outpatient departments (including emergency department services), which are necessary to attribute the measure to specific facilities. Public reporting of the measure currently uses the 100 percent Medicare FFS outpatients SAFs from 2013 and 2014.

No data collection instrument provided Attachment NQF_0669_Measure_Value_Sets_2015-06-30.xlsx

LEVEL

Facility, Population : National, Population : State

SETTING

Ambulatory Care : Clinician Office/Clinic, Hospital/Acute Care Facility, Imaging Facility

NUMERATOR STATEMENT

The number of stress echocardiography, SPECT MPI, and stress MR studies performed in a hospital outpatient department within 30 days of an ambulatory non-cardiac, low-risk surgery performed at any location (e.g., same hospital, other hospital, or physician office).

NUMERATOR DETAILS

The numerator is defined by the following categories of surgical procedures:

- Surgery/Integumentary System: Breast
- Surgery/Respiratory System: Accessory Sinuses
- Surgery/Respiratory System: Larynx
- Surgery/Respiratory System: Trachea and Bronchi
- Surgery/Respiratory System: Lungs and Pleura
- Surgery/Digestive System: Esophagus
- Surgery/Digestive System: Intestines (Except Rectum)
- Surgery/Digestive System: Rectum
- Surgery/Digestive System: Anus
- Surgery/Digestive System: Biliary Tract
- Surgery/Digestive System: Abdomen, Peritoneum, and Omentum
- Surgery/Urinary System: Kidney
- Surgery/Urinary System: Ureter
- Surgery/Urinary System: Bladder
- Surgery/Female Genital System: Cervix Uteri
- Surgery/Female Genital System: Corpus Uteri
- Surgery/Female Genital System: Oviduct/Ovary
- Surgery/Eye and Ocular Adnexa: Anterior Segment
- Other Surgeries

(Specific CPT codes for each condition class are included in the value set for this measure; this detailed list can be found in the Excel workbook provided for Section S2b.)

DENOMINATOR STATEMENT

The number of stress echocardiography, SPECT MPI, and stress MR studies performed in a hospital outpatient department on Medicare beneficiaries within a 12-month time window.

DENOMINATOR DETAILS

The denominator is defined by the following CPT codes:

SPECT MPI

CPT 78464, 78451, 78465, 78452

Stress Echocardiography

CPT 93350 C8928 and 93351 C8930

Stress MR

CPT 75559, 75560, 75563, 75564

Global and technical-component (TC) claims should be considered to capture all outpatient volume facility claims, typically paid under the Outpatient Prospective Payment System (OPPS)/Ambulatory Payment Classifications (APC) methodology, and to avoid double counting of professional-component claims (i.e., 26 modifier). A technical unit can be identified by a modifier code of TC. A global unit can be identified by the absence of a TC or 26 modifier code.

SPECT MPI, stress echocardiography, and stress MR studies can be billed separately for the technical and professional components or billed globally, which includes both the professional and technical components.

Professional component claims will outnumber technical component claims due to over-reads.

EXCLUSIONS

Studies are excluded for any patients with diagnosis codes in at least three of the following categories: diabetes mellitus, renal insufficiency, stroke or transient ischemic attack, prior heart failure, or ischemic heart disease.

EXCLUSION DETAILS

Studies are excluded for any patients with diagnosis codes in at least three of the following categories:

Diabetes (look back of one year)

Diabetes mellitus

ICD-9 codes 249, 250, and 648.0X

ICD-10 codes E08.00-E13.9

Diabetes mellitus in pregnancy, childbirth, and the puerperium

ICD-10 codes O24.011-O24.33, O24.811-O24.93

Renal Insufficiency (look back of one year)

Renal insufficiency

ICD-9 codes 403, 404, 580, 582, 583, 584, 585, 586, and 593.9

Hypertensive chronic kidney disease

ICD-10 codes I12.0-I12.9

Hypertensive heart and chronic kidney disease

ICD-10 codes I13.0-I13.2

Glomerular diseases

ICD-10 codes N00.0-N01.9, N03.0-N03.9, N05.0-N08

Acute kidney failure and chronic kidney disease

ICD-10 codes N17.0-N19

Other disorders of kidney and ureter

ICD-10 codes N28.9-N29

Stroke or transient ischemic attack (look back of three years)

ICD-9 codes 430, 431, 432, 433, 434, 435, 436, 437, 438, 674.0X, and 997.02

Transient cerebral ischemic attacks and related syndromes

ICD-10 codes G45.0-G45.2, G45.8-G45.9

Vascular syndromes of brain in cerebrovascular diseases

ICD-10 codes G46.0-G46.2

Cerebrovascular diseases

ICD-10 codes I60.00-I63.9, I65.21-I65.29, I66.01-I66.9, I67.1, I67.841-I67.89, I69.00-I69.998

Diseases of the circulatory system complicating pregnancy, childbirth and the puerperium

ICD-10 codes O99.411-O99.43

Prior heart failure (look back of three years)

Prior heart failure

ICD-9 codes 425, 428, and 429

Other forms of heart disease

ICD-10 codes I42.0-I43

Heart failure

ICD-10 codes I50.1-I50.9

Intraoperative and post-procedural complications and disorders of circulatory system, not elsewhere classified

ICD-10 codes I97.0-I97.191

Complications and ill-defined descriptions of heart disease

ICD-10 codes I51.0-I51.9

Ischemic heart disease (look back of three years)

Ischemic heart disease

ICD-9 codes 410, 411, 412, 413, and 414

ICD-10 codes I20.0-I22.9, I24.8-I25.119, I25.700-I25.799

RISK ADJUSTMENT

No risk adjustment or risk stratification

Not applicable; this measure does not risk adjust.

Provided in response box S.15a

STRATIFICATION

Not applicable; this measure does not stratify its results.

TYPE SCORE

Other (specify): Percentage better quality = lower score

ALGORITHM

This measure calculates the percentage of SPECT MPI, stress echocardiography, or stress MR studies that are performed within the 30 days preceding a non-cardiac, low-risk surgery, out of all SPECT MPI, stress echocardiography, and stress MR studies performed. The measure is calculated based on one year of hospital outpatient claims data, as follows:

1. Select hospital outpatient claims with a CPT code for any SPECT MPI, stress echocardiography, or stress MR on a revenue line item
2. Exclude professional component only claims with modifier = '26'
3. Exclude cases with three or more exclusion diagnoses occurring during the look back period for each diagnosis
4. Set denominator counter = 1
5. Set numerator counter = 1 if a non-cardiac, low-risk surgery occurs within the 30 days following the SPECT MPI, stress echocardiography, or stress MR from step 1, above
6. Aggregate denominator and numerator counts by Medicare provider number
7. Measure = numerator counts / denominator counts [The value should be recorded as a percentage] No diagram provided

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5.1 Identified measures: 0670 : Cardiac stress imaging not meeting appropriate use criteria: Preoperative evaluation in low risk surgery patients

5a.1 Are specs completely harmonized? No

5a.2 If not completely harmonized, identify difference, rationale, impact: Although NQF #0669 is similar to NQF #0670, there are several differences that would make measure harmonization infeasible and reduce the effectiveness of both currently endorsed measures. First, the measures serve different target populations and purposes: the CMS measure is used for public reporting and the measure calculations only include CMS FFS claims; on the other hand, the ACC measure is not restricted to the Medicare population and the measure calculations are sold to hospitals as part of a quality improvement package, rather than used for public reporting. Second, the measures include different stress testing procedures: the ACC measure (NQF #0670) includes SPECT MPI, stress echocardiography, CCTA, and CMR procedure codes in the denominator, whereas the CMS measure (NQF #0669) includes SPECT MPI, stress echocardiography, and stress MR procedure codes. Finally, the ACC measure relies on a different data source than does the CMS measure: unlike the CMS measure, the ACC measure does not account for instances where the imaging and low risk surgery occur at different facilities. While NQF #0669 is related to the ICSI measure, significant structural differences makes measure harmonization inappropriate for these measures. The denominator of the ICSI measure is defined by low-risk surgery cases, whereas the denominator of the CMS measure is defined by cardiac imaging studies. The ICSI measure also relies on test results for measure

calculation, a data element not available in CMS administrative claims data. Finally, the ICSI measure includes patients aged 2 years and older while the CMS measure is targeted to the Medicare population.

5b.1 If competing, why superior or rationale for additive value: We did not identify any competing measures that address both the same measure focus and target population as NQF #0669.

0694 Hospital Risk-Standardized Complication Rate following Implantation of Implantable Cardioverter-Defibrillator (ICD)

STATUS

Endorsed

STEWARD

American College of Cardiology

DESCRIPTION

This measure provides hospital specific risk-standardized rates of procedural complications following the implantation of an ICD in patients at least 65 years of age. The measure uses clinical data available in the National Cardiovascular Data Registry (NCDR) ICD Registry for risk adjustment linked with administrative claims data using indirect patient identifiers to identify procedural complications.

TYPE

Composite

DATA SOURCE

Administrative claims, Electronic Clinical Data : Registry The datasets used to create the measures are described below.

(1)NCDR ICD Registry data

The National ICD Registry is a cardiovascular data registry which captures detailed information about patients at least 18 years of age undergoing ICD implantation. This includes demographics, comorbid conditions, cardiac status, and laboratory results. As of May 2015, the registry had collected data from 1,786 hospitals in the United States totaling over 1,330,000 implants (NCDR data outcome reports).

The registry, launched on June 30, 2005, was developed through a partnership of the Heart Rhythm Society (HRS) and the American College of Cardiology Foundation (ACCF) in response to CMS' expanded ICD coverage decision for primary prevention ICD therapy. Data included in the registry are collected by hospitals and submitted electronically on a quarterly basis to NCDR. The patient records submitted to the registry focus on acute episodes of care, from admission to discharge. The NCDR does not currently link patient records longitudinally across episodes of care.

The data collection form and the complete list of variables collected and submitted by hospitals can be found at www.ncdr.com. For more information on these data, please see the attached methodology report.

Of note, hospitals are only required to submit data on all primary prevention ICDs implanted in Medicare patients, and, of the 159 data elements collected by the ICD Registry, only 54 are forwarded to CMS by ACC to determine payment eligibility. Nevertheless, the majority of participating hospitals have opted to participate fully in the quality improvement aspect of the registry, and submit all data elements on all patients undergoing ICD implantation.

(2) Medicare Data

The model was developed in a population of Medicare fee-for-service beneficiaries but can be expanded to all ICD patients at least 65 years of age. We used the administrative claims data to identify complications.

(a) Part A inpatient and outpatient data: Part A data refers to claims paid for Medicare inpatient hospital care, outpatient hospital services, skilled nursing facility care, some home health agency services, and hospice care. For this measure, we used Part A data to identify ICDs implanted for admitted and non-admitted patients (i.e. hospital patients with observation status). For model development, we used 2007 Medicare Part A data to match patient stays associated with an ICD with comparable data from the NCDR ICD Registry.

(b) Medicare Enrollment Database (EDB): This database contains Medicare beneficiary demographic, benefit/coverage, and vital status information. This dataset was used to obtain information on several inclusion/exclusion indicators, such as Medicare status on admission, and provided the ability to retrieve 90 days follow-up, linking patient Health Insurance Claim (HIC) number to the Part A data. These data have previously been shown to accurately reflect patient vital status (Fleming Fisher et al. 1992).

Available in attached appendix at A.1 Attachment icd_v2_datadictionary_codersdictionary_2-1-635699788053782318.pdf

LEVEL

Facility, Population : National

SETTING

Hospital/Acute Care Facility, Ambulatory Care : Urgent Care

NUMERATOR STATEMENT

The outcome for this measure is one or more complications within 30 or 90 days (depending on the complication) following initial ICD implantation. The measure treats complications as a dichotomous (yes/no) variable; we are interested in whether or not a complication has occurred and not how many complications occurred in each hospital.

NUMERATOR DETAILS

Complications are identified using International Classification of Diseases, 9th Revision, Clinical Modification (ICD-9-CM) diagnosis and procedure codes or Healthcare Common Procedure Coding System/Current Procedural Terminology (HCPCS/CPT) procedure codes as well as the Medicare Enrollment Database (vital status) as indicated below. This approach was developed by a CMS Technical Expert Panel of clinicians and methodologists who were charged with identifying a comprehensive claims-based approach to identifying serious procedural complications:

Complications identified within 30 days of device implant

(1) Pneumothorax or hemothorax plus a chest tube

Definition: (a) Pneumothorax / hemothorax: 512.0, 512.1x, 512.8, or 511.8x (diagnosis code)
AND

(b) Chest tube: 34.04, 34.05, 34.06, or 34.09 (procedure code)

(2) Hematoma plus a blood transfusion or evacuation

Definition: (a) Hematoma: 998.1x (diagnosis code) AND

(b) Blood transfusion: 518.7x, 287.4x, V59.01, V58.2x (diagnosis code), or
99.00, 99.03, 99.04 (procedure code) OR

Evacuation: 34.04, 34.09 (procedure code)

(3) Cardiac tamponade or pericardiocentesis

Definition: (a) Cardiac tamponade: 420.xx, 423.0x, 423.3x, 423.9x (diagnosis code) OR
37.0, 37.12 (procedure code)

(4) Death

Source: Medicare enrollment database

Complications identified within 90 days of device implant

(5) Mechanical complications requiring a system revision

Definition: (a) Mechanical complications with system revision: 996.0x, 996.72 (diagnosis code)
AND

(b) System revision: 37.75, 37.77, 37.79, 37.97, 37.94, 37.99, 39.94, or
00.52 (procedure code)

(6) Device related infection

Definition: (a) Infection: 996.61 (diagnosis code)

(7) Additional ICD implantation

Definition: (a) Inpatient or outpatient ICD implantation: 00.50, 00.51, 00.52, 00.53, 00.54, or
37.94 (procedure codes) OR

(b) Outpatient ICD implantation: 33216, 33217, 33218, 33220, 33223, 33230, 33231, 33240,
33241, or 33249, 33262, 33263, 33264 (CPT procedure codes)

We used the General Equivalence Mapping (GEM) crosswalk between ICD-9-CM and ICD-10-CM/PCS to create specifications for the ICD complication measure in ICD-10-CM/PCS.

Additionally, our process for mapping procedural codes in the measures to ICD-10 included detailed clinical review, including manual review of related ICD-10 codes to determine that all appropriate codes were included, rather than relying exclusively on the GEM. See appendix A.1. supplemental files.

DENOMINATOR STATEMENT

The target population for this measure includes inpatient and outpatient hospital stays with ICD implants for patients at least 65 years of age who have matching information in the National Cardiovascular Disease Registry (NCDR) ICD Registry. The time window can be specified from one to three years. This measure was developed with Medicare claims and CathPCI Registry data from one calendar year (2007).

DENOMINATOR DETAILS

We use this field to define the measure cohort, defined by ICD-9 procedures codes from inpatient claims and HCPCS/CPT procedure codes from outpatient claims as outlined below:

ICD-9 codes

00.50 Implantation of cardiac resynchronization pacemaker without mention of defibrillation, total system (crt-p)

00.51 Implantation of cardiac resynchronization defibrillator, total system (crt-d)

00.52 Implantation or replacement of transvenous lead (electrode) into left ventricular coronary venous system

00.53 Implantation or replacement of cardiac resynchronization pacemaker pulse generator only (crt-p)

00.54 Implantation or replacement of cardiac resynchronization defibrillator pulse generator device only (crt-d)

37.94 Implantation or replacement of automatic cardioverter/defibrillator, total system (aicd)

CPT codes 33216 Insertion, single chamber transvenous electrode ICD

33217 Insertion, dual chamber transvenous electrode ICD

33218 Repair, single chamber transvenous electrode ICD

33220 Repair, dual chamber transvenous electrode ICD

33223 Pocket revision ICD

33230 Initial pulse generator insertion only with existing dual leads

33231 Initial pulse generator insertion only with existing multiple leads 33240 Insertion of single or dual chamber ICD pulse generator

33241 Removal of single or dual chamber ICD pulse generator

33249 Insertion or repositioning of electrode lead(s) for single or dual chamber pacing ICD and insertion of pulse generator

33262 Removal pulse generator with replacement pulse generator only single lead system (transvenous)

33263 Removal pulse generator with replacement pulse generator only dual lead system (transvenous)

33264 Removal pulse generator with replacement pulse generator only multiple lead system (transvenous)

EXCLUSIONS

(1) Previous ICD placement. Hospital stays in which the patient had an ICD implanted prior to the index hospital stay are excluded.

Rationale: Ideally, the measure would include patients with a prior ICD, as this is a population known to be at high risk of adverse outcomes. However, for these patients it is difficult to distinguish in the administrative data whether adverse events such as infection were present on admission or complications of the second ICD placement. In order to avoid misclassification, we exclude these patients from the measure.

(2) Previous pacemaker placement, Hospital stays in which the patient had a previous pacemaker placement prior to the index hospital stay are excluded.

Rationale: Some complications (infection or mechanical complication) may be related to a pacemaker that was removed prior to placement of an ICD. Ideally, the measure would include patients with a prior pacemaker, as this is a population known to be at higher risk of adverse

outcomes. However, for these patients it is difficult to distinguish in the administrative data whether adverse events such as infection were present on admission or complications of the ICD placement. In order to avoid misclassification, we exclude these patients from the measure.

(3) Not Medicare FFS patient on admission. Patient admissions in which the patient is not enrolled in Medicare FFS at the time of the ICD procedure.

Rationale: Outcome data are being derived only for Medicare fee-for-service patients.

(4) Lack 90-day follow-up in Medicare FFS post-discharge. Patients who cannot be tracked for 90 days following discharge are excluded.

Rationale: There will not be adequate follow-up data to assess complications

(5) Not the first claim in the same claim bundle. There are cases when several claims in the same hospital representing a single episode of care exist in the data together. These claims are bundled together and any claim other than the first is excluded.

Rationale: Inclusion of additional claims could lead to double counting of an index ICD procedure.

EXCLUSION DETAILS

Denominator exclusions are identified based on variables contained in the Standard Analytic File (SAF) or Enrollment Database (EDB). Of note, a hospital stay may satisfy multiple exclusion criteria.

(1) Previous ICD placement is a flag in the NCDR-ICD registry that indicates whether or not a patient has an ICD present on admission.

(2) Previous pacemaker is a flag in the NCDR-ICD registry that indicates whether or not a patient has a pacemaker present on admission.

(3) Not Medicare FFS patient on admission is determined by patient enrollment in both Part A and Part B in FFS using CMS' EDB.

(4) Lack 90-day follow-up in Medicare FFS post-discharge is determined by patient enrollment status in both Part A and Part B and in FFS using CMS' EDB; the enrollment indicators must be appropriately marked for any month which falls within 90 days of hospital discharge or enrollment end date (this does not apply for patients who die within 90 days of the index hospital stay).

(5) Not the first claim in the same claim bundle is derived by examining inpatient claims located in the SAF; specifically the fields for admit discharge date and provider ID.

RISK ADJUSTMENT

Statistical risk model

Our approach to risk adjustment conforms to the scientific standards for a publicly reported outcome measure as articulated in the American Heart Association (AHA) Scientific Statement, "Standards for Statistical Models Used for Public Reporting of Health Outcomes" (Krumholz et al., 2006).

The measure employs a hierarchical logistic regression model to create a hospital-level 30 or 90 day RSCR. In brief, the approach simultaneously models data at the patient and hospital levels to account for the variance in patient outcomes within and between hospitals (Normand & Shahian, 2007). At the patient level, it models the log-odds of hospital complications within 30 or 90 days of discharge using age, selected clinical covariates, and a hospital-specific intercept. At the hospital level, the approach models the hospital-specific intercepts as arising from a

normal distribution. The hospital intercept represents the underlying risk of complication at the hospital, after accounting for patient risk. If there were no differences among hospitals, then after adjusting for patient risk, the hospital intercepts should be identical across all hospitals.

Candidate and Final Risk-adjustment Variables: Candidate variables were patient-level risk-adjustors that were expected to be predictive of procedural complications, based on empirical analysis, prior literature, and clinical judgment, including age, sex, and indicators of comorbidity and disease severity. For each patient, covariates are obtained from claims records extending 12 months prior to and including the index admission. For the measure currently implemented by CMS, these risk-adjusters are identified using both inpatient and outpatient Medicare FFS claims data.

The model adjusts for case-mix differences based on the clinical status of patients at the time of admission. We use condition categories (CCs), which are clinically meaningful groupings of more than 15,000 ICD-9-CM diagnosis codes (Pope et al., 2000). A file that contains a list of the ICD-9-CM codes and their groupings into CCs is attached in the supplemental materials. In addition, only comorbidities that convey information about the patient at admission or in the 12 months prior, and not complications that arise during the course of the index hospitalization, are included in the risk adjustment. Hence, we do not risk adjust for CCs that may represent adverse events of care and that are only recorded in the index admission.

The 9 variables included in the risk model are listed below.

(1) Sex

Male

Female

(2) Reason for admission

Admitted for procedure

Cardiac heart failure

Other

(3) NYHA class

I/II

III

IV

(4) Prior Coronary Artery Bypass Graft (CABG)

(5) Abnormal conduction

No

Yes-left bundle

Yes-other

(6) ICD type

Single chamber

Dual chamber

CRT-D

(7) Sodium

<135

135-145

>145

(8) Hemoglobin (5 g/dl)

(9) BUN (10 mg/dl)

References:

Krumholz HM, Brindis RG, Brush JE, et al. 2006. Standards for Statistical Models Used for Public Reporting of Health Outcomes: An American Heart Association Scientific Statement From the Quality of Care and Outcomes Research Interdisciplinary Writing Group: Cosponsored by the Council on Epidemiology and Prevention and the Stroke Council Endorsed by the American College of Cardiology Foundation. *Circulation* 113: 456-462.

Normand S-LT, Shahian DM. 2007. Statistical and Clinical Aspects of Hospital Outcomes Profiling. *Stat Sci* 22(2): 206-226.

Pope GC, et al. 2000. Principal Inpatient Diagnostic Cost Group Models for Medicare Risk Adjustment. *Health Care Financing Review* 21(3): 93-118.

Provided in response box S.15a

STRATIFICATION

This measure is not stratified.

TYPE SCORE

Rate/proportion better quality = lower score

ALGORITHM

The measure employs a hierarchical logistic regression model to create a hospital-level 30 or 90 day RSCR. In brief, the approach simultaneously models data at the patient and hospital levels to account for the variance in patient outcomes within and between hospitals (Normand & Shahian, 2007). At the patient level, it models the log-odds of hospital complications within 30 or 90 days of discharge using age, selected clinical covariates, and a hospital-specific intercept. At the hospital level, the approach models the hospital-specific intercepts as arising from a normal distribution. The hospital intercept represents the underlying risk of complications at the hospital, after accounting for patient risk. If there were no differences among hospitals, then after adjusting for patient risk, the hospital intercepts should be identical across all hospitals. The RSCR is calculated as the ratio of the number of “predicted” to the number of “expected” complications, multiplied by the national unadjusted complication rate. For each hospital, the numerator of the ratio (“predicted”) is the number of complications within 30 days predicted on the basis of the hospital’s performance with its observed case mix, and the denominator (“expected”) is the number of complications expected on the basis of the nation’s performance with that hospital’s case mix. This approach is analogous to a ratio of “observed” to “expected” used in other types of statistical analyses. It conceptually allows for a comparison of a particular hospital’s performance given its case mix to an average hospital’s performance with the same case mix. Thus, a lower ratio indicates lower-than-expected complications or better quality and a higher ratio indicates higher-than-expected complications or worse quality.

The “predicted” number of complications (the numerator) is calculated by using the coefficients estimated by regressing the risk factors and the hospital-specific intercept on the risk of complication. The estimated hospital specific intercept is added coefficients multiplied by the patient characteristics. The results are transformed and summed over all patients attributed to a hospital to get a predicted value. The “expected” number of complications (the denominator) is

obtained in the same manner, but a common intercept using all hospitals in our sample is added in place of the hospital specific intercept. The results are transformed and summed over all patients in the hospital to get an expected value. To assess hospital performance for each reporting period, we re-estimate the model coefficients using the years of data in that period.

Reference:

Normand S-LT, Shahian DM. 2007. Statistical and Clinical Aspects of Hospital Outcomes Profiling. Stat Sci 22(2): 206-226. No diagram provided

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5.1 Identified measures:

5a.1 Are specs completely harmonized? Yes

5a.2 If not completely harmonized, identify difference, rationale, impact: Yes. ACC and HRS have met and ensured the specifications are aligned as closely as possible. The inclusion and exclusion criteria are identical.

5b.1 If competing, why superior or rationale for additive value: HRS is expected to submit a complications measure that is attributable at the physician level. ACC and HRS staff have been in close contact and the specifications should mirror in both consensus standards applications.

0730 Acute Myocardial Infarction (AMI) Mortality Rate

STATUS

Endorsed

STEWARD

Agency for Healthcare Research and Quality

DESCRIPTION

In-hospital deaths per 1,000 hospital discharges with acute myocardial infarction (AMI) as a principal diagnosis for patients ages 18 years and older.

TYPE

Outcome

DATA SOURCE

Administrative claims While the measure is tested and specified using data from the Healthcare Cost and Utilization Project (HCUP) (see section 1.1 and 1.2 of the measure testing form), the measure specifications and software are specified to be used with any ICD-9-CM-coded administrative billing/claims/discharge dataset with Present on Admission (POA) information. Note that in Version 5.0, the AHRQ QI software no longer supports prediction of POA status using an embedded prediction module. Users are expected to provide POA data.

Available at measure-specific web page URL identified in S.1 Attachment
Technical_Specs_IQI15_v5.0.xlsx

LEVEL

Facility

SETTING

Hospital/Acute Care Facility

NUMERATOR STATEMENT

Number of in-hospital deaths among cases meeting the inclusion and exclusion rules for the denominator.

NUMERATOR DETAILS

Number of deaths (DISP=20 in AHRQ's Healthcare Cost and Utilization Project datasets) among cases meeting the inclusion and exclusion rules for the denominator.

DENOMINATOR STATEMENT

Discharges, for patients ages 18 years and older, with a principal ICD-9-CM diagnosis code for AMI.

DENOMINATOR DETAILS

ICD-9-CM AMI diagnosis codes (initial or unspecified episode of care):

41000 AMI ANTEROLATERAL, UNSPEC
41001 AMI ANTEROLATERAL, INIT
41010 AMI ANTERIOR WALL, UNSPEC
41011 AMI ANTERIOR WALL, INIT
41020 AMI INFEROLATERAL, UNSPEC
41021 AMI INFEROLATERAL, INIT
41030 AMI INFEROPOST, UNSPEC
41031 AMI INFEROPOST, INITIAL
41040 AMI INFERIOR WALL, UNSPEC
41041 AMI INFERIOR WALL, INIT
41050 AMI LATERAL NEC, UNSPEC
41051 AMI LATERAL NEC, INITIAL
41060 TRUE POST INFARCT, UNSPEC
41061 TRUE POST INFARCT, INIT
41070 SUBENDO INFARCT, UNSPEC
41071 SUBENDO INFARCT, INITIAL
41080 AMI NEC, UNSPECIFIED
41081 AMI NEC, INITIAL
41090 AMI NOS, UNSPECIFIED
41091 AMI NOS, INITIAL

EXCLUSIONS

Exclude cases:

- transferred to another short-term hospital, for whom the outcome at hospital discharge was unknown
- admitted for treatment of pregnancy, childbirth, and puerperium

- with missing discharge disposition, gender, age, quarter, year, or principal diagnosis

EXCLUSION DETAILS

Exclude cases:

- transferred to another short-term hospital (DISP=2)
- with Major Diagnosis Category (MDC) 14 (pregnancy, childbirth, and puerperium)
- with missing discharge disposition (DISP=missing), gender (SEX=missing), age (AGE=missing), quarter (DQTR=missing), year (YEAR=missing) or principal diagnosis (DX1=missing)

RISK ADJUSTMENT

Statistical risk model

The predicted value for each case is computed using a hierarchical model (logistic regression with hospital random effect) and covariates for gender, age (in 5-year age groups), All Patient Refined Diagnosis Related Groups (APR DRGs) with Risk of Mortality (ROM) scores, Major Diagnosis Categories (MDC) based on the principal diagnosis, and transfer in from another acute care hospital. The expected rate is computed as the sum of the predicted value for each case divided by the number of cases for the unit of analysis of interest (i.e., hospital). The risk adjusted rate is computed using indirect standardization as the observed rate divided by the expected rate, multiplied by the reference population rate.

The specific covariates for this measure are as follows:

Parameter	Label
Age	18 to 39
Age	40 to 44
Age	45 to 49
Age	50 to 54
Age	55 to 59
Age	65 to 79
Age	80 to 84
Age	85+
APR-DRG (ROM) 1 - 2	161-(1-2) CARDIAC DEFIBRILLATOR & HEART ASSIST IMPLANT, Risk of mortality
APR-DRG (ROM) 3 - 4	161-(3-4) CARDIAC DEFIBRILLATOR & HEART ASSIST IMPLANT, Risk of mortality
APR-DRG and 2	162-(1,2)CARDIAC VALVE PROCEDURES W CARDIAC CATHETERIZATION, ROM 1
APR-DRG	162-3 CARDIAC VALVE PROCEDURES W CARDIAC CATHETERIZATION, ROM 3
APR-DRG	162-4 CARDIAC VALVE PROCEDURES W CARDIAC CATHETERIZATION, ROM 4
APR-DRG	165-(1,2) CORONARY BYPASS W CARDIAC CATH OR PERCUTANEOUS CARDIAC PROC, ROM 1 and 2
APR-DRG	165-3 CORONARY BYPASS W CARDIAC CATH OR PERCUTANEOUS CARDIAC PROC, ROM 3

APR-DRG	165-4 CORONARY BYPASS W CARDIAC CATH OR PERCUTANEOUS CARDIAC PROC, ROM 4
APR-DRG	173-(1-4) OTHER VASCULAR PROCEDURES, ROM 1-4
APR-DRG	174-2 PERCUTANEOUS CARDIOVASCULAR PROCEDURES W AMI, ROM 2
APR-DRG	174-3 PERCUTANEOUS CARDIOVASCULAR PROCEDURES W AMI, ROM 3
APR-DRG	174-4 PERCUTANEOUS CARDIOVASCULAR PROCEDURES W AMI, ROM 4
APR-DRG	190-1 ACUTE MYOCARDIAL INFARCTION, ROM 1
APR-DRG	190-2 ACUTE MYOCARDIAL INFARCTION, ROM 2
APR-DRG	190-3 ACUTE MYOCARDIAL INFARCTION, ROM 3
APR-DRG	190-4 ACUTE MYOCARDIAL INFARCTION, ROM 4
MDC	5 CIRCULATORY SYSTEM, DISEASES & DISORDERS
TRANSFER	TRANSFER IN FROM ANOTHER ACUTE CARE HOSP (If ASOURCE='2' (Another Hospital) or POINTOFORIGINUB04='4' (Transfer from a Hospital), then TRANSFER=1)

Source:
http://qualityindicators.ahrq.gov/Downloads/Modules/IQI/V50/Parameter_Estimates_IQI_50.pdf
 Available in attached Excel or csv file at S.2b

STRATIFICATION

Not applicable

TYPE SCORE

Rate/proportion better quality = lower score

ALGORITHM

The observed rate is the number of discharge records where the patient experienced the QI adverse event divided by the number of discharge records at risk for the event. The expected rate is a comparative rate that incorporates information about a reference population that is not part of the user's input dataset – what rate would be observed if the expected level of care observed in the reference population and estimated with risk adjustment regression models, were applied to the mix of patients with demographic and comorbidity distributions observed in the user's dataset? The expected rate is calculated only for risk-adjusted indicators.

The expected rate is estimated for each person using a generalized estimating equations (GEE) approach to account for correlation at the hospital or provider level.

The risk-adjusted rate is a comparative rate that also incorporates information about a reference population that is not part of the input dataset – what rate would be observed if the level of care observed in the user's dataset were applied to a mix of patients with demographics and comorbidities distributed like the reference population? The risk adjusted rate is calculated using the indirect method as observed rate divided by expected rate multiplied by the reference population rate. The smoothed rate is the weighted average of the risk-adjusted rate from the user's input dataset and the rate observed in the reference population; the smoothed rate is calculated with a shrinkage estimator to result in a rate near that from the user's dataset if the provider's rate is estimated in a stable fashion with minimal noise, or to result in a rate near that of the reference population if the variance of the estimated rate from the input dataset is large

compared with the hospital-to-hospital variance estimated from the reference population. Thus, the smoothed rate is a weighted average of the risk-adjusted rate and the reference population rate, where the weight is the signal-to-noise ratio. In practice, the smoothed rate brings rates toward the mean, and tends to do this more so for outliers (such as rural hospitals).

For additional information, please see supporting information in the Quality Indicator Empirical Methods. No diagram provided

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5.1 Identified measures: 0230 : Hospital 30-day, all-cause, risk-standardized mortality rate (RSMR) following acute myocardial infarction (AMI) hospitalization for patients 18 and older
2473 : Hospital 30-Day Risk-Standardized Acute Myocardial Infarction (AMI) Mortality eMeasure

5a.1 Are specs completely harmonized? No

5a.2 If not completely harmonized, identify difference, rationale, impact: The indicators referenced above include 30-day mortality 1) for patients age 18 years and older 2) specified as an e-measure and 3) for patients age 65 and older. Inpatient mortality and 30-day mortality are different concepts, although capturing the same ultimate outcome. Harmonization is not appropriate.

5b.1 If competing, why superior or rationale for additive value: IQI 15 and the Centers for Medicare & Medicaid Services' NQF-endorsed measures concerning AMI mortality (0230 and 2473) use the same ICD-9-CM codes to identify AMI, but they differ in two important respects: (1) whereas the CMS measures concern only Medicare fee-for-service and VA beneficiaries 65 years or older, IQI 15 measures mortality among hospitalizations of patients 18 years or older at non-federal acute care hospitals for all payers; and (2) while the CMS measures evaluate 30-day mortality, IQI 15—because it is based only on UB-04 data elements—is limited to inpatient mortality. The latter difference is a potential disadvantage in that the time at risk is not uniform for all patients and 30-day mortality is typically greater than inpatient mortality, but the former difference is an advantage because IQI 15 encompasses a greater proportion of the entire population at risk. We therefore believe that #0730 complements #0230 by offering an alternative specification for users who are interested in patients of all ages and all payers, just as #2473 offers an alternative e-measure specification for those with electronic health data.

0965 Discharge Medications (ACE/ARB and beta blockers) in Eligible ICD Implant Patients

STATUS

Endorsed

STEWARD

American College of Cardiology

DESCRIPTION

Proportion of patients undergoing ICD implant who received prescriptions for all medications (ACE/ARB and beta blockers) for which they are eligible for at discharge.

TYPE

Composite

DATA SOURCE

Electronic Clinical Data : Registry National Cardiovascular Data Registry (NCDR) ICD Registry
Available in attached appendix at A.1 Attachment icd_v2_datadictionary_codersdictionary_2-1-635246241637392049.pdf

LEVEL

Facility

SETTING

Hospital/Acute Care Facility

NUMERATOR STATEMENT

Patients who receive ACE/ARB and Beta blockers for which they are eligible.

1. ACE/ARB prescribed at discharge (if eligible for ACE/ARB as described in denominator)
- AND
2. Beta blockers prescribed at discharge (if eligible for beta blockers as described in denominator)

NUMERATOR DETAILS

If eligible for beta blocker and given, then code "Yes"

If eligible for beta blocker and not given, then code "No, not given"

If eligible for ACE/ARB and given, then code then "Yes"

If eligible for ACE/ARB and not given, then code "No, not given"

If any "No, not given" present, then performance not met. Else, performance met.

Note: Contraindicated and those participating in blinded studies are also considered as exceptions and performance met.

DENOMINATOR STATEMENT

All patients with an ICD implant surviving hospitalization who are eligible to receive any one of the two medication classes:

- 1) Eligibility for ACE/ARB: Patients who have an ejection fraction (EF) of <40% AND do not have a documented contraindication to ACE/ARB documented
- OR
- 2) Eligibility for beta blockers: Patients who do not have a documented contraindication to beta blocker therapy and have either:
 - a. EF of <40% OR
 - b. a previous myocardial infarction (MI)

DENOMINATOR DETAILS

N/A

EXCLUSIONS

Discharge status of expired; not eligible for either ACE/ARB or beta blockers

EXCLUSION DETAILS

NCDR makes a clear distinction between absolute “Exclusions” (e.g., death, transfer) and relative “Exceptions”, (e.g., contraindications). While patients with exclusions are always automatically removed from the denominator and numerator, exceptions allow clinicians the opportunity to identify an intervention/process/medication as not clinically indicated based on the unique patient scenario.

Each of the two medications incorporated into this composite may be coded as Yes (medication prescribed), No (medication not prescribed), Blinded (pt. involved in a clinical trial, medication type unavailable for data entry), and Contraindicated (used to capture many of the medical exceptions used in this measure).

RISK ADJUSTMENT

No risk adjustment or risk stratification

N/A

STRATIFICATION

N/A

TYPE SCORE

Rate/proportion better quality = higher score

ALGORITHM

- 1) Remove patients whose discharge status is expired
- 2) Check if given patient is eligible for 1 of the 2 medication therapies.
- 3) If eligible for at least 1 medication, then keep this patient.
- 4) If not eligible for any of the 2 medications, then patient is removed from eligibility.
If eligible for ACE/ARB and given, then code “Yes”
If eligible for ACE/ARB and not given, then code “No, not given”
If eligible for ACE/ARB but contraindicated, then code “contraindicated/blinded”
If eligible for Beta Blocker and given, then code then “Yes”
If eligible for Beta Blocker and not given, then code “No, not given”
If eligible for Beta Blocker but contraindicated, then code “contraindicated/blinded”
- 5) If any “No, not given” present, then performance not met. Else, performance met.

Although ineligible cases are removed from the denominator population for the performance calculation, the number of patients 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.

Missing data defaults to “performance not met” This measure assumes that missing documentation on the process results in a failure of meeting an evidence based therapy. No diagram provided

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5.1 Identified measures: 0066 : Coronary Artery Disease (CAD): Angiotensin-Converting Enzyme (ACE) Inhibitor or Angiotensin Receptor Blocker (ARB) Therapy - Diabetes or Left Ventricular Systolic Dysfunction (LVEF < 40%)

0070 : Coronary Artery Disease (CAD): Beta-Blocker Therapy-Prior Myocardial Infarction (MI) or Left Ventricular Systolic Dysfunction (LVEF <40%)

0081 : Heart Failure (HF): Angiotensin-Converting Enzyme (ACE) Inhibitor or Angiotensin Receptor Blocker (ARB) Therapy for Left Ventricular Systolic Dysfunction (LVSD)

0083 : Heart Failure (HF): Beta-Blocker Therapy for Left Ventricular Systolic Dysfunction (LVSD)

0236 : Coronary Artery Bypass Graft (CABG): Preoperative Beta-Blocker in Patients with Isolated CABG Surgery

0594 : Post MI: ACE inhibitor or ARB therapy

0117 : Beta Blockade at Discharge

0071 : Persistence of Beta-Blocker Treatment After a Heart Attack

5a.1 Are specs completely harmonized? No

5a.2 If not completely harmonized, identify difference, rationale, impact: We believe the aforementioned measures are not in direct competition with measure 0965. In all cases the measure focuses on the same process, but different target population. Surgical (CABG): 0117, 0236, 0696 HF: 0083, 0081 CAD and outpatient focused: 0070, 0066 AMI: 0071 AMI, hypertension, heart failure, and diabetes: 0594 While ACC's ICD Registry does capture patient history, risk factors, and other ailments, the focus of the Registry surrounds the clinical conditions of the implantation of an ICD, dual chamber, or CRT-D device. Secondly, the Registry does not capture hypertension as an element.

5b.1 If competing, why superior or rationale for additive value:

2396 Carotid artery stenting: Evaluation of Vital Status and NIH Stroke Scale at Follow Up

STATUS

Endorsed

STEWARD

American College of Cardiology

DESCRIPTION

Proportion of patients with carotid artery stenting procedures who had follow up performed for evaluation of Vital Status and neurological assessment with an NIH Stroke Scale (by an examiner who is certified by the American Stroke

Association) Occurring between day 21 and the end of day 60 after the procedure. (Days 21-60 inclusive)

TYPE

Process

DATA SOURCE

Electronic Clinical Data : Registry NCDR Care Registry
Available at measure-specific web page URL identified in S.1 No data dictionary

LEVEL

Facility, Population : National

SETTING

Hospital/Acute Care Facility

NUMERATOR STATEMENT

Patient Status (alive or Deceased) at follow-up AND Neurologic status with an assessment using the NIH Stroke Scale (by an examiner who is certified by the American Stroke Association)

NUMERATOR DETAILS

Field Name: Patient Follow-up Performed Seq No: 9000

Definition: Indicate whether patient follow-up was performed for the procedure. The recommended timeframe for follow-up is 30 days.

1=Yes

Field Name: Follow-Up Date Seq No: 9002

Definition: Indicate the date of follow-up. The recommended timeframe for follow-up is 30 days.

Field Name: Follow Up NIH Stroke Scale Administered Seq No: 9010

Definition: Indicate if the National Institutes of Health Stroke Scale (NIHSS) was administered during follow-up.

1=Yes

Follow-up NIH Stroke Scale Examiner Certified Seq No: 9014

Definition: Indicate the date the National Institutes of Health Stroke Scale (NIHSS) was administered during the follow-up period.

Note - Recommended timeframe to administer NIHSS is within 30 days after the current procedure.

Definition: Indicate if the NIH Stroke Scale examiner who administered the follow-up stroke scale is certified to administer the stroke scale exam. The Stroke Scale assessment should be conducted by someone other than the operator for the current procedure.

1=Yes

Field Name: Follow-up NIH Stroke Scale Examiner Certified Seq No: 9014

Definition: Indicate the date the National Institutes of Health Stroke Scale (NIHSS) was administered during the follow-up period.

Note - Recommended timeframe to administer NIHSS is within 30 days after the current procedure.

Examiner certified= yes

Supporting definitions:

The Stroke Scale assessment should be conducted by someone other than the operator for the current procedure.

Note - NIHSS examiners may become certified through the American Stroke Association.

NIH Stroke Scale Certification is currently available online free of charge:

<http://learn.heart.org/ihtml/application/student>

[/interface.heart2/nihss.html](#)

Field Name: Patient Status Seq No: 9100

Definition: Indicate if the patient is alive or deceased.

Alive (1) or deceased (2)

DENOMINATOR STATEMENT

Count of CARE Registry patients that had a carotid artery stenting procedure

DENOMINATOR DETAILS

Patients undergoing a carotid artery stent procedure

EXCLUSIONS

Patients with a discharge status of deceased

Patients with was an acute, evolving stroke and dissection during the episode of care

EXCLUSION DETAILS

Field Name: Discharge Status Seq No: 8010

Definition: Indicate whether the patient was alive or deceased at discharge from the hospitalization during which the procedure occurred.

Alive=2

Field Name: Spontaneous Carotid Artery Dissection Seq No: 5060

Definition: Indicate if the patient has had a spontaneous carotid artery dissection prior to the current procedure.

1=Yes

Field Name: Acute Evolving Stroke Seq No: 4340

Definition: Indicate if the patient has experienced an acute evolving stroke with ischemia which is ongoing and progressing at the time of the procedure. Acute evolving stroke includes all of the following:

1. Any sudden development of neurological deficits attributable to cerebral ischemia and/or infarction.
2. Onset of symptoms occurring within prior three days and ongoing at time of procedure.
3. The event is marked by progressively worsening symptoms.

Note: Possible symptoms include, but are not limited to the following: numbness or weakness of the face or body; difficulty speaking or understanding; blurred or decreased vision; dizziness; or loss of balance and coordination.

1=Yes

RISK ADJUSTMENT

No risk adjustment or risk stratification

No risk adjustment.

STRATIFICATION

The measure is not stratified.

TYPE SCORE

Better quality = Higher score

ALGORITHM

No diagram provided

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5.1 Identified measures:

5a.1 Are specs completely harmonized? Yes

5a.2 If not completely harmonized, identify difference, rationale, impact:

5b.1 If competing, why superior or rationale for additive value: No competing measures.

2712 Statin Use in Persons with Diabetes

STATUS

Endorsed

STEWARD

Pharmacy Quality Alliance (PQA, Inc.)

DESCRIPTION

The percentage of patients ages 40 – 75 years who were dispensed a medication for diabetes that receive a statin medication.

TYPE

Process

DATA SOURCE

Administrative claims Health plan (e.g., Medicare, Medicaid, other) prescription claims data. Health Plan member enrollment information. This measure is intended to be reported by prescription drug plans that only have prescription claims and enrollment data.

No data collection instrument provided No data dictionary

LEVEL

Health Plan, Population : National

SETTING

Pharmacy

NUMERATOR STATEMENT

The number of patients in the denominator who received a prescription fill for a statin or statin combination during the measurement year.

NUMERATOR DETAILS

The number of patients in the denominator who received a prescription fill for a statin or statin combination during the measurement year. Statin medications for this measure include: lovastatin, rosuvastatin, fluvastatin, atorvastatin, pravastatin, pitavastatin, simvastatin. Statin combination medications for this measure include: niacin & lovastatin, atorvastatin & amlodipine, niacin & simvastatin, sitagliptin & simvastatin, ezetimibe & simvastatin, ezetimibe & atorvastatin. Note: The active ingredients are limited to oral formulations only.

DENOMINATOR STATEMENT

The denominator includes subjects aged 41 years – 75 years as of the last day of the measurement year who are continuously enrolled during the measurement period. Subjects include patients who were dispensed two or more prescription fills for a hypoglycemic agent during the measurement year.

DENOMINATOR DETAILS

Subjects are included if they are age 41-75 at the end of the measurement year. Subjects should be continuously enrolled during the measurement period. To determine continuous enrollment using enrollment data, for a Medicaid beneficiary for whom enrollment is verified monthly, the member may not have more than a 1-month gap in coverage (i.e., a member whose coverage lapses for 2 months [60 consecutive days] is not considered continuously enrolled). Subjects are included in the denominator if they were dispensed two or more prescription fills for a hypoglycemic agent during the measurement year. Hypoglycemic medications for this measure include:

Biguanides and Biguanide Combination Products: Metformin, pioglitazone & metformin, rosiglitazone & metformin, repaglinide & metformin, sitagliptin & metformin IR & SR, saxagliptin & metformin SR, linagliptin & metformin, glyburide & metformin, glipizide & metformin, alogliptin & metformin

Sulfonylureas and Sulfonylurea Combination Products: chlorpropamide, glipizide & metformin, glimepiride, glipizide, glyburide & metformin, glyburide, rosiglitazone & glimepiride, pioglitazone & glimepiride, tolazamide, tolbutamide

Meglitinides and Meglitinide Combination Products: nateglinide, repaglinide, repaglinide & metformin

Alpha- Glucosidase Inhibitors: acarbose, miglitol

Thiazolidinediones and Thiazolidinedione Combination Products: pioglitazone, pioglitazone & glimepiride, pioglitazone & metformin, rosiglitazone, rosiglitazone & glimepiride, rosiglitazone & metformin, alogliptin & pioglitazone

Incretin Mimetic Agents: exenatide, dulaglutide, liraglutide, albiglutide

Amylin Analogs: pramlintide

DPP-IV Inhibitors and DPP-IV Inhibitor Combination Products: sitagliptin, linagliptin, alogliptin, saxagliptin, alogliptin & metformin, alogliptin & pioglitazone, linagliptin & metformin, sitagliptin & metformin IR & SR, saxagliptin & metformin SR, sitagliptin & simvastatin

Insulins: insulin aspart, insulin aspart Protamine & Aspart, insulin detemir, insulin glargine, insulin glulisine, insulin isophane & regular human insulin, insulin isophane (human N), insulin lispro, insulin lispro Protamine & Insulin lispro, insulin regular (human R), insulin regular (human) inhalation powder

Sodium glucose co-transporter2 (SGLT2) Inhibitors: canagliflozin, dapagliflozin, empagliflozin
Note: Excludes nutritional supplement/dietary management combination products.

EXCLUSIONS

Patients in Hospice (Medicare Part D) are excluded from this measure. Medicare prescription claims for persons in hospice are not covered by Part D.

EXCLUSION DETAILS

Exclude those patients identified in the Medicare Enrollment Database as being enrolled in hospice

RISK ADJUSTMENT

No risk adjustment or risk stratification
N/A

STRATIFICATION

This measure will be stratified by insurance product line. Rates for Commercial, Medicaid, and Medicare will be reported separately.

TYPE SCORE

Rate/proportion better quality = higher score

ALGORITHM

Denominator Calculation:

Step 1: Identify the eligible population that is 41-75 years of age as of the last day of the measurement period and that are continuously enrolled in the drug plan.

Step 2: Exclude any person that is in hospice (Medicare Part D)

Step 3: Identify those patients in Step 2 who were dispensed two or more prescription fills for a hypoglycemic agent during the measurement year.

The number of patients identified in Step 3 is the denominator for the measure.

Numerator Calculation:

Step 4: Of those patients identified in Step 3, identify the patients who received one or more prescription fills for a statin or statin combination during the measurement year.

The number of patients identified by completing Step 4 represents the numerator for this measure.

Step 5: Divide the numerator by the denominator and then multiply by 100 to obtain the rate (as a percentage) for the measure. No diagram provided

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5.1 Identified measures:

5a.1 Are specs completely harmonized? No

5a.2 If not completely harmonized, identify difference, rationale, impact: Differences between measures 0729 and 2712: The composite measure, 0729, addresses A1c, blood pressure, statin use, tobacco non-use and daily aspirin or anti-platelet use for patients with diagnosis of ischemic vascular disease. Measure 2712 addresses one specific aspect of appropriate medication use,

statin medications in a population with diabetes age 40-75. The composite measure, 0729, is reported at the clinician level and uses data from the medical record. Measure 2712 is reported at the health plan level is based on prescription claims data. The composite measure 0729 includes diabetic patients 18-75 years, while measure 2712 only includes diabetic patients age 40-75 years. While the intent and basis of the measures are similar, there are some differences in the measure specification. These differences are due to the accessibility of clinical data for measure 0729 including LDL, allergies, diagnosis etc. Rationale: The rationales of the measures are similar as they address the same guideline but in different settings of care. Impact on interpretability: These measures will be interpreted differently since one (0729) is a composite measure of diabetes care used by clinicians in an ambulatory setting. The other measure (2712) is specific to statin use in a limited age group of diabetics and will be used by health plans and pharmacists. Data collection burden: There will be no additional level of burden as the data used in measure 2712 is prescription claims data and administrative data that are already collected by the health plan.

5b.1 If competing, why superior or rationale for additive value: N/A

2763 Ischemic Vascular Disease Care: All or None Outcome Measure-Optimal Control

STATUS

Deferred

STEWARD

Wisconsin Collaborative for Healthcare Quality

DESCRIPTION

The percentage of patients age 18 through 75 with one of the following conditions:

- 1) Two diagnoses related visits with Coronary Artery Disease (CAD) or a CAD risk-equivalent condition, or
- 2) Acute Coronary Event consisting of an acute myocardial infarction (AMI), coronary artery bypass graft (CABG), or percutaneous coronary intervention (PCI) from a hospital visit, who had each of the following during the one year measurement year:

- Documentation in the medical record of daily Aspirin or daily other antiplatelet medication usage, unless contraindicated.
- Most recent Blood pressure controlled to a level of less than 140/90 mm Hg
- Most recent Tobacco Status is Tobacco-Free
- Documentation in the medical record of Statin Use
- All or None Outcome Measure (Optimal Control) composite of BP <140/90, Tobacco Non-User, Daily Aspirin or Other Antiplatelet and Statin Use.

Patients are classified uniquely to one of the three condition subgroups in the order of Coronary Artery Disease, Coronary Artery Disease Risk-Equivalent condition, or Acute Coronary Event.

TYPE

Composite

DATA SOURCE

Administrative claims, Electronic Clinical Data, Electronic Clinical Data : Electronic Health Record, Electronic Clinical Data : Registry Data is obtained via data extracts (.csv files) from the practice and then uploaded into the WCHQ Repository Based Submission (RBS) database. Primary files consist of a Patient File, Encounter File, Problem List File, Clinical Data File, Tobacco File, Blood Pressure File and a Medication File. Certain data elements are cross-mapped to identify internal codes. The data is then calculated for the measure and is available with results at the group, clinic site and provider level. There is documentation provided describing the process of data submission and creation of the data files. This documentation is attached at A.1.

Available in attached appendix at A.1 Attachment WCHQ_IVD_Care_Measure_Code_List.xlsx

LEVEL

Clinician : Group/Practice

SETTING

Ambulatory Care : Clinician Office/Clinic

NUMERATOR STATEMENT

All-or-None Outcome Measure (Optimal Control) - Using the IVD denominator optimal results include:

- Most recent blood pressure measurement is less than 140/90 mm Hg

And

- Most recent tobacco status is Tobacco Free

NOTE: If there is No Documentation of Tobacco Status the patient is not compliant for this measure.

And

- Daily Aspirin or Other Antiplatelet Unless Contraindicated

And

- Statin Use

NUMERATOR DETAILS

NOTE: All code tables and associated codes referenced in this document are included in the Excel File attached at step S2b.

- **DAILY ASPIRIN OR OTHER ANTIPLATELET MEDICATIONS THERAPY UNLESS CONTRAINDICATED (Figure IVD-2)** This measure assesses the percentage of patients with documentation within the medical record of daily Aspirin or daily other antiplatelet agent at any time during the measurement period demonstrated through any of the following:

1. Documentation of an active prescription for daily Aspirin (see suggested list in Table IVD-6) or daily or other antiplatelet medications (see acceptable medications in Table IVD-7)
2. Documentation on the patient's medication list of active daily usage of Aspirin (see suggested list in Table IVD-6) or daily other antiplatelet medications (see acceptable medications in Table IVD-7)
3. Contraindication to Aspirin

a. Contraindications will count as numerator compliant. Any valid contraindication date prior to the end of the measure end date will count as compliant. There is no limit on the look back date, but the date of documentation or onset date must occur prior to the end of the measurement period.

b. Accepted contraindications:

i. History of gastrointestinal (GI) bleed (see codes in Table IVD-8)

ii. History of intracranial bleed (ICB) (see codes in Table IVD-8)

iii. History of GI Bleed or ICB from an ICD-9 diagnosis-based problem list or past medical history. There is no limit on the look back date, but the date of documentation or onset date must occur prior to the end of the measurement period.

iv. Anticoagulant Use (see acceptable list of Medications in Table IVD-9). There must be documentation of an active anticoagulant at any time during the Measurement Period.

- **BLOOD PRESSURE CONTROL (Figure IVD-2)**

The number of patients in the denominator whose blood pressure (BP) is adequately controlled during the Measurement Period. Adequate control is a representative systolic Blood Pressure less than 140 mm Hg and a representative diastolic Blood Pressure less than 90 mm Hg.

IDENTIFYING A REPRESENTATIVE BLOOD PRESSURE

Blood Pressure Selection Criteria:

a) Blood Pressure reading must have been obtained during the Measurement Period.

b) Systolic and Diastolic numbers must be from the same BP reading.

c) A controlled BP requires that both the systolic and diastolic readings must be less than 140/90.

d) Exclusions: Inpatient Stays, Emergency Room Visits, Urgent Care Visits, and Patient Self-Reported BP's (Home and Health Fair Blood Pressures)

e) Inclusions: Any office visit encounter, including Nurse Only BP Checks, not listed under Exclusions above. NOTE: A BP performed at a patient's home by a nurse who then inputs the result into an EMR counts as a Nurse Only BP.

- Select the Blood Pressure from the most recent visit.

- In the event that multiple Blood Pressures are recorded in the same day of service, select any reading that is controlled. If none are in control, select an uncontrolled reading.

- If no Blood Pressure is recorded during the Measurement Period, the patient is assumed to be "not controlled".

3. TOBACCO FREE (Figure IVD-2)

The number of patients in the denominator whose most recent tobacco documentation status with any provider within the 12 month measurement period is Tobacco Free.

Tobacco Use Definition:

- Cigarette

- Cigar

- Pipe Smoking

- Smokeless Tobacco (Chewing Tobacco, Snuff, etc.)

Tobacco Use Status can be identified by any of the following criteria:

1. Documentation stating that the patient has been asked if they are one of the following during the Measurement Period with the numerator compliant goal of Tobacco-Free:

1. Tobacco-Free (see examples below):

- a. Former tobacco user
- b. Never used
- c. Non-tobacco user
- d. Passive smoker

2. Non Tobacco-Free

a. Current tobacco user

3. No Documentation: The subset of denominator patients who did not have documentation of tobacco status during the last 12 Months [Measurement Period]

2. ICD-9, CPT, HCPCS and CPT-II Codes indicating tobacco use status during the Measurement Period) from billing or encounter data only. Do not use the problem list for these codes. (Table IVD-10)

4. STATIN USE (Figure IVD-2)

This measure assesses the percentage of patients with documentation within the medical record of statin use at any time during the measurement period demonstrated through any of the following:

1. Documentation of an active prescription for a statin (see acceptable medications in Table IVD-11)

2. Documentation on the patient's medication list of active usage of a statin (see acceptable medications in Table IVD-11)

5. ALL OR NONE OUTCOME MEASURE

IVD All-or-None Measure

The IVD All-or-None Measure is one outcome measure (optimal control). The measure contains four goals. All goals must be reached in order to meet that measure. The numerator for the all-or-none measure should be collected from the organization's total IVD denominator.

All-or-None Outcome Measure (Optimal Control) - Using the IVD denominator optimal results include:

- Most recent blood pressure measurement is less than 140/90 mm Hg

And

- Most recent tobacco status is Tobacco Free

NOTE: If there is No Documentation of Tobacco Status the patient is not compliant for this measure.

And

- Daily Aspirin or Other Antiplatelet Unless Contraindicated

And

- Statin Use

DENOMINATOR STATEMENT

Patients with CAD or a CAD Risk-Equivalent Condition 18-75 years of age and alive as of the last day of the MP.

DENOMINATOR DETAILS

NOTE: All code tables and associated codes referenced in this document are included in the Excel File attached at step S2b.

Patients eligible for inclusion in the denominator include (See Figure IVD-1):

[Question 1] – Is this a patient with the disease, or condition?

CORONARY ARTERY DISEASE (OR CAD RISK EQUIVALENT) DIAGNOSIS RELATED OUTPATIENT VISITS

Those patients with a total of two or more visits during the last 24 months [Measurement Period + Prior Year] from Table IVD-4 (Office Visit Encounter Codes-Outpatient) with any provider (MD, DO, PA, NP) within the Physician Group on different dates of service coded (including primary and secondary diagnoses) with diagnosis codes from Table IVD-1 (Coronary Artery Disease) or Table IVD-2 (CAD Risk-Equivalent Conditions). The following criteria apply:

Any combination of two or more diagnosis codes from either Table IVD-1 or Table IVD-2, on different dates of service.

OR

ACUTE CORONARY EVENT- RELATED HOSPITAL VISITS

Those patients who had a minimum of one hospital related visit (excluding Emergency and Lab Only visits) for an Acute Coronary Event from Table IVD-3 during the last 24 Months [Measurement Period + Prior Year].

[Question 2] – Is this a patient whose care is managed within the physician group?

Those patients who have at least two Primary Care Office Visit (Table IVD-4) in an ambulatory setting, regardless of diagnosis code, on different dates of service, to a PCP or Cardiologist in the past 24 months [Measurement Period + Prior Year]. If Cardiologist is not considered a PCP, at least one of the two office visits must be to a PCP.

[Question 3] – Is this a patient current in our system?

Those patients who had at least one Primary Care Office Visit (Table IVD-4) in an ambulatory setting, regardless of diagnosis code, with a PCP or a Cardiologist during the last 12 Months [Measurement Period].

EXCLUSIONS

There are no denominator exclusions

EXCLUSION DETAILS

N/A

RISK ADJUSTMENT

No risk adjustment or risk stratification

N/A

STRATIFICATION

This measure could be stratified by payer and this is documented in Appendix A of the measure specification, however, WCHQ does not currently publicly report the measure in a stratified manner.

TYPE SCORE

Other (specify): Percentage better quality = higher score

ALGORITHM

NOTE: Flow diagrams outlining the measure logic are included in step S.19.below at A.1 and is also included in the measure specification on pages 4 and 8 available at the URL identified in S.1. The denominator algorithm is applied by identifying the target population based on codes and appropriate office visits during the designated timeframe. Once the denominator population has been identified the numerator logic is applied to all patients in the denominator to determine which patients meet each individual numerator and for the All or None measure which patients meet all four numerators for the timeframe. Available in attached appendix at A.1

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5.1 Identified measures: 0076 : Optimal Vascular Care

5a.1 Are specs completely harmonized? No

5a.2 If not completely harmonized, identify difference, rationale, impact: The measure specifications are very similar for three of the measure components, Daily Aspirin, Blood Pressure Control and Tobacco Free. However, the WCHQ measure also adds the Statin Use component which is a secondary prevention according to the AHA/ACC revised guidelines in November 2013. There are also some slight denominator differences in number and time frame of visits required.

5b.1 If competing, why superior or rationale for additive value: Because this measure includes the secondary prevention element of Statin Use from the updated AHA/ACC guidelines from November 2013. It also uses a denominator algorithm that allows patient level lists to be generated for internal practice quality improvement purposes.

2764 Fixed-dose Combination of Hydralazine and Isosorbide Dinitrate Therapy for Self-identified Black or African American Patients with Heart Failure and LVEF <40% on ACEI or ARB and Beta-blocker Therapy

STATUS

Approved for Trial-Use

STEWARD

National Minority Quality Froum

DESCRIPTION

Percentage of patients aged 18 years and older with a diagnosis of heart failure (HF) and a current or prior ejection fraction (EF) <40% who are self-identified Black or African Americans and receiving ACEI or ARB and Beta-blocker therapy who were prescribed a fixed-dose combination of hydralazine and isosorbide dinitrate seen for an office visit in the measurement period in the outpatient setting or at each hospital discharge

TYPE

Process

DATA SOURCE

Electronic Clinical Data : Electronic Health Record Not applicable

No data collection instrument provided Attachment NMQF_fixed_dose_thrpy_value_sets.xls

LEVEL

Clinician : Group/Practice, Clinician : Individual

SETTING

Ambulatory Care : Clinician Office/Clinic, Hospital/Acute Care Facility

NUMERATOR STATEMENT

Patients prescribed a fixed-dose combination of hydralazine and isosorbide dinitrate seen for an office visit in the measurement period in the outpatient setting or at each hospital discharge

NUMERATOR DETAILS

The following data element is used to calculate the numerator:

1. Fixed-dose combination of hydralazine and isosorbide dinitrate prescription

Logic for calculating the numerator is included in the eMeasure specification.

Value sets used:

Fixed dose combination of hydralazine and isosorbide dinitrate (2.16.840.1.113762.1.4.1124.15)

DENOMINATOR STATEMENT

All patients aged 18 years and older with a diagnosis of heart failure with a current or prior EF <40% who are self-identified Black or African Americans and receiving ACEI or ARB and Beta-blocker therapy

DENOMINATOR DETAILS

The following data elements are used to calculate the denominator:

1. Diagnosis of heart failure

2. Ejection Fraction <40% or diagnosis of left ventricular systolic dysfunction

3. Self-identified as Black or African American

4. ACEI or ARB therapy

5. Beta-blocker therapy

6. Office visit

7. Hospital Discharge

Logic for calculating the denominator is included in the eMeasure specification.

Value sets used:

Heart Failure (2.16.840.1.113883.3.526.2.23, 2.16.840.1.113883.3.526.2.24, 2.16.840.1.113883.3.526.2.25, 2.16.840.1.113883.3.526.3.376)

Left Ventricular Systolic Dysfunction (2.16.840.1.113883.3.526.2.859, 2.16.840.1.113883.3.526.3.1091)

Moderate or Severe LVSD (2.16.840.1.113883.3.526.2.861, 2.16.840.1.113883.3.526.3.1090)

Ejection Fraction (2.16.840.1.113883.3.526.2.1238, 2.16.840.1.113883.3.526.3.1134)

Moderate or Severe (2.16.840.1.113883.3.526.3.1092)

Care Services in Long-Term Residential Facility (2.16.840.1.113883.3.464.1003.101.11.1070, 2.16.840.1.113883.3.464.1003.101.12.1014)

Self identified as Black or African American (2.16.840.1.113762.1.4.1124.1)

Discharge Services - Hospital Inpatient (2.16.840.1.113883.3.464.1003.101.11.1035, 2.16.840.1.113883.3.464.1003.101.12.1007)

Face-to-Face Interaction (2.16.840.1.113883.3.464.1003.101.11.1216, 2.16.840.1.113883.3.464.1003.101.12.1048)

Home Healthcare Services (2.16.840.1.113883.3.464.1003.101.11.1080, 2.16.840.1.113883.3.464.1003.101.12.1016)

Nursing Facility Visit (2.16.840.1.113883.3.464.1003.101.11.1060, 2.16.840.1.113883.3.464.1003.101.12.1012)

Office Visit (2.16.840.1.113883.3.464.1003.101.11.1005, 2.16.840.1.113883.3.464.1003.101.12.1001)

Outpatient Consultation (2.16.840.1.113883.3.464.1003.101.11.1040, 2.16.840.1.113883.3.464.1003.101.12.1008)

Patient provider interaction (2.16.840.1.113883.3.526.2.1049, 2.16.840.1.113883.3.526.3.1012)

ACE Inhibitor or ARB (2.16.840.1.113883.3.526.2.39, 2.16.840.1.113883.3.526.3.1139)

Beta Blocker Therapy for LVSD (2.16.840.1.113883.3.526.2.133, 2.16.840.1.113883.3.526.3.1174)

EXCLUSIONS

Denominator exclusions include:

- o Hypotension (severe or symptomatic)
- o Severe lupus erythematosus
- o Unstable angina
- o Peripheral neuritis
- o Patient actively taking Phosphodiesterase Type 5 (PDE5) Inhibitors

EXCLUSION DETAILS

The following data elements are used to calculate the denominator exclusions:

1. Hypotension (severe or symptomatic)
2. Severe lupus erythematosus
3. Unstable angina
4. Peripheral neuritis
5. Patient actively taking Phosphodiesterase Type 5 (PDE5) Inhibitors

Logic for calculating the denominator exclusions are included in the eMeasure specification.

Value sets used:

Hypotension (2.16.840.1.113883.3.526.2.175, 2.16.840.1.113883.3.526.2.180, 2.16.840.1.113883.3.526.2.185, 2.16.840.1.113883.3.526.3.370)

Lupus erythematosus (2.16.840.1.113762.1.4.1124.9, 2.16.840.1.113762.1.4.1124.10, 2.16.840.1.113762.1.4.1124.11, 2.16.840.1.113762.1.4.1124.12)

Unstable angina (2.16.840.1.113762.1.4.1124.16, 2.16.840.1.113762.1.4.1124.17, 2.16.840.1.113762.1.4.1124.18)

Peripheral neuritis (2.16.840.1.113762.1.4.1124.4, 2.16.840.1.113762.1.4.1124.5, 2.16.840.1.113762.1.4.1124.6, 2.16.840.1.113762.1.4.1124.7)

Patient actively taking Phosphodiesterase Type 5 (PDE5) Inhibitors (2.16.840.1.113762.1.4.1124.14)

Severe (2.16.840.1.113762.1.4.1124.19)

Symptomatic (2.16.840.1.113762.1.4.1124.20)

RISK ADJUSTMENT

No risk adjustment or risk stratification

Not applicable

STRATIFICATION

Not applicable

TYPE SCORE

Rate/proportion better quality = higher score

ALGORITHM

The measure logic is provided in the eMeasure specification.

Performance is calculated as:

1. Identify the initial patient population for the measure.
2. From those patients in the initial patient population, identify those that meet the denominator criteria.
3. From the patients who qualify for the denominator, identify those who meet the numerator criteria.
4. Identify those patients who did not meet the numerator criteria and determine whether an appropriate exclusion is documented.
5. Remove those patients with an exclusion from the denominator.
6. Calculation: Numerator/Denominator-Denominator Exclusions No diagram provided

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5.1 Identified measures: 0081 : Heart Failure (HF): Angiotensin-Converting Enzyme (ACE) Inhibitor or Angiotensin Receptor Blocker (ARB) Therapy for Left Ventricular Systolic Dysfunction (LVSD)

0083 : Heart Failure (HF): Beta-Blocker Therapy for Left Ventricular Systolic Dysfunction (LVSD)

5a.1 Are specs completely harmonized? Yes

5a.2 If not completely harmonized, identify difference, rationale, impact: Measure specifications for the target population and medication therapies for ACEI, ARB, and beta-blocker are completely harmonized with 0081 and 0083.

5b.1 If competing, why superior or rationale for additive value: Not applicable

2907 Heart Failure (HF): Angiotensin-Converting Enzyme (ACE) Inhibitor or Angiotensin Receptor Blocker (ARB) Therapy for Left Ventricular Systolic Dysfunction (LVSD)

STATUS

Endorsed

STEWARD

AMA-PCPI

DESCRIPTION

Percentage of patients aged 18 years and older with a diagnosis of heart failure with a current or prior LVEF < 40% who were prescribed beta-blocker therapy either within a 12 month period when seen in the outpatient setting or at hospital discharge

TYPE

Process

DATA SOURCE

Electronic Clinical Data : Electronic Health Record not applicable

No data collection instrument provided Attachment 0081_AMAPCPI_HF-ACEARB_ValueSets_June2015-635712727320959997-635917579129928971.xlsx

LEVEL

Clinician : Group/Practice, Clinician : Individual

SETTING

Ambulatory Care : Clinician Office/Clinic, Home Health, Hospital/Acute Care Facility, Post Acute/Long Term Care Facility : Long Term Acute Care Hospital, Post Acute/Long Term Care Facility : Nursing Home/Skilled Nursing Facility, Other Domiciliary

NUMERATOR STATEMENT

Patients who were prescribed* ACE inhibitor or ARB therapy either within a 12 month period when seen in the outpatient setting or at hospital discharge

*Prescribed may include:

Outpatient setting: prescription given to the patient for ACE inhibitor or ARB therapy at one or more visits in the measurement period OR patient already taking ACE inhibitor or ARB therapy as documented in current medication list

Inpatient setting: prescription given to the patient for ACE inhibitor or ARB therapy at discharge OR ACE inhibitor or ARB therapy to be continued after discharge as documented in the discharge medication list

NUMERATOR DETAILS

For EHR:

HQMF eMeasure developed and is included in this submission.

DENOMINATOR STATEMENT

All patients aged 18 years and older with a diagnosis of heart failure with a current or prior LVEF < 40%

DENOMINATOR DETAILS

For EHR:

HQMF eMeasure developed and is included in this submission.

DENOMINATOR DEFINITION:

LVEF < 40% corresponds to qualitative documentation of moderate dysfunction or severe dysfunction.

DENOMINATOR NOTES:

To meet this measure, it must be reported for all heart failure patients a minimum of once during the measurement period when seen in the outpatient setting AND reported at each hospital discharge during the measurement period.

The requirement of “Count ≥ 2 of Encounter, Performed” is to establish that the eligible professional has an existing relationship with the patient.

EXCLUSIONS

Documentation of medical reason(s) for not prescribing ACE inhibitor or ARB therapy (eg, hypotensive patients who are at immediate risk of cardiogenic shock, hospitalized patients who have experienced marked azotemia, allergy, intolerance, other medical reasons)

Documentation of patient reason(s) for not prescribing ACE inhibitor or ARB therapy (eg, patient declined, other patient reasons)

Documentation of system reason(s) for not prescribing ACE inhibitor or ARB therapy (eg, other system reasons)

EXCLUSION DETAILS

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. This measure was developed using PCPI exception methodology which 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 : Angiotensin-Converting Enzyme (ACE) Inhibitor or Angiotensin Receptor Blocker (ARB) Therapy for Left Ventricular Systolic Dysfunction, exceptions may include medical reasons (e.g. hypotensive patients who are at immediate risk of cardiogenic shock, hospitalized patients who have experienced marked azotemia), patient, and/or system reasons for not prescribing an ACE/ARB. Where examples of exceptions are included in the measure language, value sets for these examples are developed and included in the eSpecifications. 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.

Additional details by data source are as follows:

For EHR:

HQMF eMeasure developed and is included in this submission.

For Registry:

Append a modifier to CPT Category II Code:

4010F-1P : Documentation of medical reason(s) for not prescribing angiotensin converting enzyme (ACE) inhibitor or angiotensin receptor blocker (ARB) therapy (eg, hypotensive patients who are at immediate risk of cardiogenic shock, hospitalized patients who have experienced marked azotemia, allergy, intolerance, other medical reasons)

4010F-2P : Documentation of patient reason(s) for not prescribing angiotensin converting enzyme (ACE) inhibitor or angiotensin receptor blocker (ARB) therapy (eg, patient declined, other patient reasons)

4010F-3P : Documentation of system reason(s) for not prescribing angiotensin converting enzyme (ACE) inhibitor or angiotensin receptor blocker (ARB) therapy (eg, other system reasons)

RISK ADJUSTMENT

No risk adjustment or risk stratification

No risk adjustment or risk stratification

STRATIFICATION

Consistent with CMS' Measures Management System Blueprint and recent national recommendations put forth by the IOM 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 and have included these variables as recommended data elements to be collected.

TYPE SCORE

Rate/proportion better quality = higher score

ALGORITHM

To calculate performance rates:

1. Find the patients who meet the initial population (ie, 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 (ie, 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 (ie, 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: Documentation of medical reason(s) for not prescribing ACE inhibitor or ARB therapy (eg, hypotensive patients who are at immediate risk of cardiogenic shock, hospitalized patients who have experienced marked azotemia); Documentation of patient reason(s) for not prescribing ACE inhibitor or ARB therapy; Documentation of system reason(s) for not prescribing ACE inhibitor or ARB 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 (ie, 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. No diagram provided

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5.1 Identified measures:

5a.1 Are specs completely harmonized?

5a.2 If not completely harmonized, identify difference, rationale, impact:

5b.1 If competing, why superior or rationale for additive value:

2908 Heart Failure (HF): Beta-Blocker Therapy for Left Ventricular Systolic Dysfunction (LVSD)

STATUS

Endorsed

STEWARD

AMA-PCPI

DESCRIPTION

Percentage of patients aged 18 years and older with a diagnosis of heart failure with a current or prior LVEF < 40% who were prescribed beta-blocker therapy either within a 12 month period when seen in the outpatient setting or at hospital discharge

TYPE

Process

DATA SOURCE

Electronic Clinical Data : Electronic Health Record

No data collection instrument provided Attachment 0083_AMAPCPI_HF-BB_ValueSets_June2015-635712735683880063-635917579207929971.xlsx

LEVEL

Clinician : Group/Practice, Clinician : Individual

SETTING

Ambulatory Care : Clinician Office/Clinic, Home Health, Hospital/Acute Care Facility, Post Acute/Long Term Care Facility : Long Term Acute Care Hospital, Post Acute/Long Term Care Facility : Nursing Home/Skilled Nursing Facility, Other Domiciliary

NUMERATOR STATEMENT

Patients who were prescribed* beta-blocker therapy** either within a 12 month period when seen in the outpatient setting or at hospital discharge

*Prescribed may include:

Outpatient setting: 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

Inpatient setting: prescription given to the patient for beta-blocker therapy at discharge OR beta-blocker therapy to be continued after discharge as documented in the discharge medication list

**Beta-blocker therapy should include bisoprolol, carvedilol, or sustained release metoprolol succinate. (see technical specifications for additional information on medications)

NUMERATOR DETAILS

For EHR:

HQMF eMeasure developed and is included in this submission.

DENOMINATOR STATEMENT

All patients aged 18 years and older with a diagnosis of heart failure with a current or prior LVEF < 40%

LVEF < 40% corresponds to qualitative documentation of moderate dysfunction or severe dysfunction

DENOMINATOR DETAILS

For EHR:

HQMF eMeasure developed and is included in this submission.

DENOMINATOR DEFINITION:

LVEF < 40% corresponds to qualitative documentation of moderate dysfunction or severe dysfunction.

DENOMINATOR NOTES:

To meet this measure, it must be reported for all heart failure patients a minimum of once during the measurement period when seen in the outpatient setting AND reported at each hospital discharge during the measurement period.

The requirement of "Count >=2 of Encounter, Performed" is to establish that the eligible professional has an existing relationship with the patient.

EXCLUSIONS

Documentation of medical reason(s) for not prescribing beta-blocker therapy (eg, low blood pressure, fluid overload, asthma, patients recently treated with an intravenous positive inotropic agent)

Documentation of patient reason(s) for not prescribing beta-blocker therapy

Documentation of system reason(s) for not prescribing beta-blocker therapy

EXCLUSION DETAILS

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. This measure was developed using the PCPI exception methodology which 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 Beta-Blocker Therapy for Left Ventricular Systolic Dysfunction, exceptions may include Documentation of medical reason(s) for not prescribing beta-blocker therapy (eg, low blood pressure, fluid overload, asthma, patients recently treated with an intravenous positive inotropic agent), Documentation of patient reason(s) for not prescribing beta-blocker therapy, or Documentation of system reason(s) 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 eSpecifications. 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.

Additional details by data source are as follows:

For EHR:

HQMF eMeasure developed and is included in this submission.

RISK ADJUSTMENT

No risk adjustment or risk stratification

n/a

STRATIFICATION

Consistent with CMS' Measures Management System Blueprint and recent national recommendations put forth by the IOM 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 and have included these variables as recommended data elements to be collected.

TYPE SCORE

Rate/proportion better quality = higher score

ALGORITHM

To calculate performance rates:

1. Find the patients who meet the initial population (ie, 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 (ie, 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 (ie, 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: Documentation of medical reason(s) for not prescribing beta-blocker therapy (eg, low blood pressure, fluid overload, asthma, patients recently treated with an intravenous positive inotropic agent); Documentation of patient reason(s) for not prescribing beta-blocker therapy; Documentation of system reason(s) 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 (ie, 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. No diagram provided

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5.1 Identified 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

5a.1 Are specs completely harmonized? No

5a.2 If not completely harmonized, identify difference, rationale, impact: Measure 0083 addresses a therapy which is also covered in part by the following NQF-endorsed measures: NQF 0071: Persistence of Beta-Blocker Treatment After a Heart Attack and NQF 0070: Coronary Artery Disease (CAD): Beta-Blocker Therapy—Prior Myocardial Infarction (MI) or Left Ventricular Systolic Dysfunction (LVEF <40%). The specifications are harmonized to the extent possible. However, measure 0083 is focused on a patient population with heart failure and therefore the denominator specifications for the measures differ.

5b.1 If competing, why superior or rationale for additive value:

Appendix F1: Related and Competing Measures (tabular format)

Comparison of NQF #0067 and NQF #0068

	0067: Chronic Stable Coronary Artery Disease: Antiplatelet Therapy	0068: Ischemic Vascular Disease (IVD): Use of Aspirin or Another Antiplatelet
Steward	American College of Cardiology	National Committee for Quality Assurance
Description	Percentage of patients aged 18 years and older with a diagnosis of coronary artery disease seen within a 12 month period who were prescribed aspirin or clopidogrel.	The percentage of patients 18 years of age and older who were discharged from an inpatient setting with an acute myocardial infarction (AMI), coronary artery bypass graft (CABG) or percutaneous coronary intervention (PCI) during the 12 months prior to the measurement year, or who had a diagnosis of ischemic vascular disease (IVD) during the measurement year and the year prior to the measurement year and who had documentation of routine use of aspirin or another antiplatelet during the measurement year.
Type	Process	Process
Data Source	Electronic Clinical Data : Registry This measure is currently being used in the ACCF PINNACLE registry for the outpatient office setting. Available in attached appendix at A.1 No data dictionary	Administrative claims, Electronic Clinical Data, Electronic Clinical Data : Electronic Health Record, Paper Medical Records N/A No data collection instrument provided Attachment 0068_IVD_Value_Sets_Final.xlsx
Level	Clinician : Individual	Clinician : Group/Practice, Clinician : Individual
Setting	Ambulatory Care : Clinician Office/Clinic	Ambulatory Care : Clinician Office/Clinic
Numerator Statement	Patients who were prescribed* aspirin or clopidogrel within a 12 month period. *Prescribed may include prescription given to the patient for aspirin or clopidogrel at one or more visits in the measurement period OR patient already taking aspirin or clopidogrel as documented in current medication list.	Patients who had documentation of routine use of aspirin or another antiplatelet during the measurement year.
Numerator Details	For Claims/Administrative: Report CPT II Code 4086F: Aspirin or clopidogrel prescribed.	ADMINISTRATIVE Patients who had documentation of routine use of aspirin or another antiplatelet during the measurement year. Refer to Table IVD-E to identify medications for oral anti-platelet therapy. ORAL ANTI-PLATELET THERAPIES (TABLE IVD-E) PRESCRIPTIONS - Aspirin - Clopidogrel

	0067: Chronic Stable Coronary Artery Disease: Antiplatelet Therapy	0068: Ischemic Vascular Disease (IVD): Use of Aspirin or Another Antiplatelet
		<ul style="list-style-type: none"> - Aspirin-dipyridamole - Prasugrel - Ticagrelor - Ticlopidine --- <p>MEDICAL RECORD</p> <p>Patients who had documentation of routine use of aspirin or another antiplatelet during the measurement year. At a minimum, documentation in the medical record must include a note indicating the date when aspirin or another antiplatelet was prescribed or documentation of prescription from another treating physician.</p>
Denominator Statement	All patients aged 18 years and older with a diagnosis of coronary artery disease seen within a 12 month period.	Patients 18 years or older by the end of the measurement year discharged from an inpatient setting with an AMI, CABG, or PCI during the 12 months prior to the measurement year or who had a diagnosis of IVD during both the measurement year and the year prior to the measurement year.
Denominator Details	<p>See 'Registry Supplemental Resources' attached in appendix field A.1 for data dictionary and form.</p> <p>Codes that are applicable for the denominator are:</p> <p>Diagnosis for coronary artery disease (ICD-9-CM) 410.00, 410.01, 410.02, 410.10, 410.11, 410.12, 410.20, 410.21, 410.22, 410.30, 410.31, 410.32, 410.40, 410.41, 410.42, 410.50, 410.51, 410.52, 410.60, 410.61, 410.62, 410.70, 410.71, 410.72, 410.80, 410.81, 410.82, 410.90, 410.91, 410.92, 411.0, 411.1, 411.81, 411.89, 412, 413.0, 413.1, 413.9, 414.00, 414.01, 414.02, 414.03, 414.04, 414.05, 414.06, 414.07, 414.2, 414.3, 414.8, 414.9, V45.81, V45.82</p> <p>Diagnosis for coronary artery disease (ICD-10-CM): I20.0, I20.1, I20.8, I20.9, I21.01, I21.02, I21.09, I21.11, I21.19, I21.21, I21.29, I21.3, I21.4, I22.0, I22.1, I22.2, I22.8, I22.9, I24.0, I24.1, I24.8, I24.9, I25.10, I25.110, I25.111, I25.118, I25.119, I25.2, I25.5, I25.6, I25.700, I25.701, I25.708, I25.709, I25.710, I25.711, I25.718, I25.719, I25.720, I25.721, I25.728, I25.729, I25.730, I25.731, I25.738, I25.739, I25.750, I25.751, I25.758, I25.759, I25.760, I25.761, I25.768, I25.769, I25.790, I25.791, I25.798, I25.799,</p>	<p>ADMINISTRATIVE</p> <p>Patients are identified for the eligible population in two ways: by event or by diagnosis. The organization must use both methods to identify the eligible population, but a patient only needs to be identified by one method to be included in the measure.</p> <p>Event. Any of the following during the year prior to the measurement year meet criteria:</p> <ul style="list-style-type: none"> - MI. Discharged from an inpatient setting with an MI (MI Value Set)*. Use both facility and professional claims to identify MI. -CABG. Discharged from an inpatient setting with a CABG (CABG Value Set)*. Use both facility and professional claims to identify CABG. -PCI. Patients who had a PCI (PCI Value Set)* in any setting. <p>Diagnosis. Patients who meet at least one of the following criteria during both the measurement year and the year prior to the measurement year. Criteria need not be the same across both years.</p>

	0067: Chronic Stable Coronary Artery Disease: Antiplatelet Therapy	0068: Ischemic Vascular Disease (IVD): Use of Aspirin or Another Antiplatelet
	<p>I25.810, I25.811, I25.812, I25.82, I25.83, I25.89, I25.9, Z95.1, Z95.5, Z98.61</p> <p>Patient encounter during the reporting period (CPT): 99201, 99202, 99203, 99204, 99205, 99212, 99213, 99214, 99215, 99304, 99305, 99306, 99307, 99308, 99309, 99310, 99324, 99325, 99326, 99327, 99328, 99334, 99335, 99336, 99337, 99341, 99342, 99343, 99344, 99345, 99347, 99348, 99349, 99350</p>	<p>-At least one outpatient visit (Outpatient Value Set)* with an IVD diagnosis (IVD Value Set)*, or</p> <p>-At least one acute inpatient encounter (Acute Inpatient Value Set)* with an IVD diagnosis (IVD Value Set)*.</p> <p>*Due to the extensive volume of codes associated with identifying the denominator for this measure, we are attaching a separate file with code value sets. See code value sets located in question S.2b.</p> <p>---</p> <p>MEDICAL RECORD</p> <p>Documentation of IVD in the medical record includes:</p> <ul style="list-style-type: none"> - IVD - Ischemic heart disease - Angina - Coronary atherosclerosis - Coronary artery occlusion - Cardiovascular disease - Occlusion or stenosis of precerebral arteries (including basilar, carotid and vertebral arteries) - Atherosclerosis of renal artery - Atherosclerosis of native arteries of the extremities - Chronic total occlusion of artery of the extremities - Arterial embolism and thrombosis - Atheroembolism. <p>Note: Use paper logs, patient registries or electronic medical records (EMRs) to identify the denominator, then use the medical record to confirm patient eligibility.</p>
Exclusions	<p>Documentation of medical reason(s) for not prescribing aspirin or clopidogrel (e.g., allergy, intolerance, receiving other thienopyridine therapy, receiving warfarin therapy, bleeding coagulation disorders, other medical reasons)</p> <p>Documentation of patient reason(s) for not prescribing aspirin or clopidogrel (e.g., patient declined, other patient reasons)</p> <p>Documentation of system reason(s) for not prescribing aspirin or clopidogrel (e.g., lack of</p>	<p>Patients who had documentation of use of anticoagulant medications during the measurement year.</p>

	0067: Chronic Stable Coronary Artery Disease: Antiplatelet Therapy	0068: Ischemic Vascular Disease (IVD): Use of Aspirin or Another Antiplatelet
	drug availability, other reasons attributable to the health care system)	
Exclusion Details	<p>For Claims/Administrative:</p> <p>Documentation of medical reason(s) for not prescribing aspirin or clopidogrel</p> <ul style="list-style-type: none"> • Append modifier to CPT II code 4086F-1P <p>Documentation of patient reason(s) for not prescribing aspirin or clopidogrel</p> <ul style="list-style-type: none"> • Append modifier to CPT II code 4086F-2P <p>Documentation of system reason(s) for not prescribing aspirin or clopidogrel</p> <ul style="list-style-type: none"> • Append modifier to CPT II code 4086F-3P 	<p>Patients who had documentation of use of anticoagulant medications during the measurement year.</p> <p>ANTICOAGULANT MEDICATIONS</p> <ul style="list-style-type: none"> - Apixaban - Argatroban - Bivalirudin - Dabigatran - Dalteparin - Desirudin - Edoxaban - Enoxaparin - Fondaparinux - Heparin - Lepirudin - Rivaroxaban - Tinzaparin - Warfarin
Risk Adjustment	No risk adjustment or risk stratification Not Applicable.	No risk adjustment or risk stratification N/A
Stratification	Not Applicable.	N/A
Type Score	Rate/proportion better quality = higher score	Rate/proportion better quality = higher score
Algorithm	<p>To calculate performance rates:</p> <ol style="list-style-type: none"> 1) Find the patients who meet the initial patient 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 patient 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 patient population and denominator are identical. 3) Find the patients who qualify for exclusions and subtract from the denominator. 4) From the patients within the denominator (after exclusions have been subtracted from the denominator), find the patients who qualify for the Numerator (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 	<p>Step 1: Determine the denominator</p> <p>Patients 18 years of age or older by the end of the measurement year AND who were discharged from an inpatient setting for an AMI, CABG or PCI during the 12 months prior to the measurement year or who had a diagnosis of IVD during both the measurement year and the year prior to the measurement year.</p> <p>Step 2: Exclude patients who meet the exclusion criteria</p> <p>Patients on anticoagulant therapy.</p> <p>Step 3: Determine the numerator</p> <p>Patients who had documentation of routine use of aspirin or another antiplatelet during the measurement year.</p> <p>Step 4: Calculate the rate by dividing the numerator (Step 3) by the denominator (after exclusions) (Step 2). No diagram provided</p>

	0067: Chronic Stable Coronary Artery Disease: Antiplatelet Therapy	0068: Ischemic Vascular Disease (IVD): Use of Aspirin or Another Antiplatelet
	<p>the number of patients in the denominator</p> <p>5) From the patients who did not meet the numerator criteria, determine if the physician has documented that the patient meets any criteria for exception when exceptions have been specified [for this measure: medical reason(s)(e.g., eg, allergy, intolerance, receiving other thienopyridine therapy, receiving warfarin therapy, bleeding coagulation disorders, other medical reasons) or patient reason(s)(e.g., economic, social, and/or religious impediments, noncompliance, patient refusal, other patient reason)]. 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 of patients 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. No diagram provided</p>	
Submission items	<p>5.1 Identified measures: 0465 : Perioperative Anti-platelet Therapy for Patients undergoing Carotid Endarterectomy</p> <p>5a.1 Are specs completely harmonized? No</p> <p>5a.2 If not completely harmonized, identify difference, rationale, impact: See 5b.1 for more detailed response due to lack of character spaces in this section.</p> <p>5b.1 If competing, why superior or rationale for additive value: Measure 0067 looks at whether ASA or clopidogrel were prescribed during a 12 month measurement period. Meanwhile, the two existing NQF endorsed measures (#0465 and #0964) focused on whether the medications were prescribed prior to discharge or prior to surgery.</p> <p>Specifically, Measure #0465 (Perioperative Antiplatelet Therapy for patients undergoing Carotid Endarterectomy) focuses on inpatient who were provided ASA or clopidogrel within 48 hours prior to surgery and prescribed this medication at hospital discharge. Measure #0067 looks at whether ASA or clopidogrel was prescribed during the 12 month measurement period. Both measures allow for medical</p>	<p>5.1 Identified measures: 0067 : Chronic Stable Coronary Artery Disease: Antiplatelet Therapy</p> <p>0142 : Aspirin prescribed at discharge for AMI</p> <p>0076 : Optimal Vascular Care</p> <p>5a.1 Are specs completely harmonized? No</p> <p>5a.2 If not completely harmonized, identify difference, rationale, impact: DUE TO THE TEXT LIMIT IN THIS SECTION – WE ARE PROVIDING OUR ANSWER FOR 5a.2 IN SECTION 5b.1.</p> <p>5b.1 If competing, why superior or rationale for additive value: ANSWER FOR SECTION 5a.2</p> <p>Our current measure, NQF 0068 – Ischemic Vascular Disease (IVD): Use of Aspirin or Another Antiplatelet, assesses the percentage of patients 18 years of age and older who were discharged from an inpatient setting with an acute myocardial infarction (AMI), coronary artery bypass graft (CABG) or percutaneous coronary intervention (PCI) during the 12 months prior to the measurement year, AND</p>

	0067: Chronic Stable Coronary Artery Disease: Antiplatelet Therapy	0068: Ischemic Vascular Disease (IVD): Use of Aspirin or Another Antiplatelet
	<p>exceptions.</p> <p>In the case of Measure 0964 (Therapy with aspirin, P2Y12 inhibitor, and statin at discharge following PCI in eligible patients), this measure is also an inpatient measure and focuses on solely PCI eligible patients who had ASA or P2y12 and statins prescribed prior to discharge. Measure 0067 looks at whether ASA or clopidogrel was prescribed during the 12 month measurement period. Both measures allow for medical exceptions.</p> <p>Measures #0465 and #0964 address a different patient demographic and focuses on inpatient prescribed of ASA or Clopidogrel.</p>	<p>patients who had a diagnosis of ischemic vascular disease (IVD) during the measurement year and the year prior to the measurement year, who had documentation of the routine use of aspirin or another antiplatelet during the measurement year. NQF 0068 uses administrative claims, electronic clinical data, electronic health record data, and paper medical records from the ambulatory care setting, providing a wide array of options for how data can be collected and reported.</p> <p>The following is a description of the differences and the impact on interpretability and data collection burden between NQF 0068 and each related measure listed in 5.1a:</p> <p>NQF 0142 – ASPIRIN PRESCRIBED AT DISCHARGE FOR AMI</p> <p>This measure assesses the percentage of AMI patients, 18 years and older, who are prescribed aspirin at hospital discharge. The measure population only includes patients who have had an AMI, whereas NQF 0068 includes patients who have had an AMI, CABG or PCI procedure, and patients who have diagnoses consistent with ischemic vascular disease. NQF 0142 focuses only on aspirin prescribed at discharge while NQF 0068 focuses on documentation of the use of any antiplatelet medication during the measurement year. NQF 0142 is a facility-level measure that uses administrative claims and paper medical records from the inpatient setting; NQF 0068 is a physician-level measure that uses administrative claims, electronic clinical data, electronic health record data, and paper medical records from the ambulatory care setting.</p> <p>There is no impact on interpretability of publically-reported rates or added burden of data collection because the focus of each measure is different, the accountable entity is different and the data for each measure is collected from different data sources by different entities. Additionally, both use value sets of codes to identify patients with AMI that do not conflict.</p>

	0067: Chronic Stable Coronary Artery Disease: Antiplatelet Therapy	0068: Ischemic Vascular Disease (IVD): Use of Aspirin or Another Antiplatelet
		<p>NQF 0067 – CHRONIC STABLE CORONARY ARTERY DISEASE: ANTIPLATELET THERAPY</p> <p>This measure assesses the percentage of patients aged 18 years and older with a diagnosis of coronary artery disease (CAD) who were seen by a physician within a 12-month period and who were prescribed aspirin or clopidogrel. The focus of this measure is very similar to NQF 0068 in that it assesses the routine use of antiplatelet therapy in a twelve-month period for patients with CAD. However, NQF 0068 includes more antiplatelet medications than just aspirin or clopidogrel and includes a broader population of patients with cardiovascular disease than just those with CAD.</p> <p>Although NQF 0067 and NQF 0068 are both physician-level measures that are specified to collect data from administrative claims, electronic clinical data, electronic health record data, and paper medical records from the ambulatory care setting, the impact on interpretability of publically-reported rates or added burden of data collection should be minimal because NQF 0067 is currently only reported through registry data. Additionally, NQF 0067 is focused on only on patients with CAD, while NQF 0068 is focused on a broader population of patients with cardiovascular disease who would benefit from the use of antiplatelet medications.</p> <p>NQF 0076 – OPTIMAL VASCULAR CARE</p> <p>This composite measure assesses the percentage of adult patients ages 18 to 75 who have ischemic vascular disease with optimally-managed modifiable risk factors (blood pressure, tobacco-free status, daily aspirin use) at their most recent visit with a physician during the measurement year. While the focus populations for NQF 0076 and NQF 0068 are very similar, NQF 0076 is a composite that includes assessment of blood pressure control and tobacco use status. NQF 0068 assesses the routine use of aspirin or other antiplatelet medications while NQF 0076 focuses only on aspirin use. NQF 0076 does not use administrative</p>

	0067: Chronic Stable Coronary Artery Disease: Antiplatelet Therapy	0068: Ischemic Vascular Disease (IVD): Use of Aspirin or Another Antiplatelet
		<p>claims though it does use electronic clinical data, electronic health record data, and paper medical records from the ambulatory care setting, which is similar to NQF 0068.</p> <p>Despite the similarities, there should be minimal impact on interpretability of publically-reported rates or added burden of data collection between the two measures since NQF 0076 is a composite of multiple indicators while NQF 0068 is focused only on antiplatelet therapy.</p> <p>NQF 2452 – PERCUTANEOUS CORONARY INTERVENTION (PCI): POST-PROCEDURAL OPTIMAL MEDICAL THERAPY (NOTE: UNABLE TO SELECT IN 5.a1)</p> <p>NQF 2452 is a composite measure that assesses the percentage of patients undergoing PCI who receive prescriptions for all medications (aspirin, P2Y12 and statins) for which they are eligible for at discharge. The measure population for NQF 2452 is patients undergoing PCI while NQF 0068 includes patient who have had an AMI, CABG or PCI procedure, and patients who have diagnoses consistent with ischemic vascular disease. NQF 2452 assesses the prescription of aspirin, P2Y12 agents, and statins at discharge; NQF 0068 assesses documentation of use of antiplatelet medications during the measurement year. NQF 2452 is a physician-level measure that uses data from registries while NQF 0068 is a physician-level measure that uses administrative claims, electronic clinical data, electronic health record data, and paper medical records from the ambulatory care setting.</p> <p>There is no impact on interpretability of publically-reported rates or added burden of data collection because the focus of each measure is different and the data for each measure is collected from different data sources by different entities.</p> <p>NQF 0964 – THERAPY WITH ASPIRIN, P2Y12 INHIBITOR, AND STATIN AT DISCHARGE FOLLOWING PCI IN ELIGIBLE PATIENTS (NOTE: UNABLE TO SELECT IN 5.a1)</p>

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		<p>NQF 0964 is a composite measure that assesses the percentage of patients undergoing PCI who receive prescriptions for all medications (aspirin, P2Y12 and statins) for which they are eligible for at discharge. The measure population for NQF 0964 is patients undergoing PCI while NQF 0068 includes patient who have had an AMI, CABG or PCI procedure, and patients who have diagnoses consistent with ischemic vascular disease. NQF 0964 assesses the prescription of aspirin, P2Y12 agents, and statins at discharge; NQF 0068 assesses documentation of use of antiplatelet medications during the measurement year. NQF 0964 is a facility-level measure that uses data from registries while NQF 0068 is a physician-level measure that uses administrative claims, electronic clinical data, electronic health record data, and paper medical records from the ambulatory care setting. There is no impact on interpretability of publically-reported rates or added burden of data collection because the focus of each measure is different, the accountable entity is different and the data for each measure is collected from different data sources by different entities.</p> <p>ANSWER FOR SECTION 5b.1</p> <p>Our current measure, NQF 0068, has a long history of use and is implemented in four national programs: PQRS, EHR Incentive Program, CMS ACO Shared Savings Program, and the Heart/Stroke Recognition Program.</p>

Comparison of NQF #0081 and NQF #0066

	0081: Heart Failure (HF): Angiotensin-Converting Enzyme (ACE) Inhibitor or Angiotensin Receptor Blocker (ARB) Therapy for Left Ventricular Systolic Dysfunction (LVSD)	0066: Coronary Artery Disease (CAD): Angiotensin-Converting Enzyme (ACE) Inhibitor or Angiotensin Receptor Blocker (ARB) Therapy - Diabetes or Left Ventricular Systolic Dysfunction (LVEF < 40%)
Steward	AMA-PCPI	American College of Cardiology
Description	Percentage of patients aged 18 years and older with a diagnosis of heart failure with a current or prior LVEF < 40% who were prescribed beta-blocker therapy either within a 12 month period	Percentage of patients aged 18 years and older with a diagnosis of coronary artery disease seen within a 12 month period who also have diabetes OR a current or prior Left Ventricular

	0081: Heart Failure (HF): Angiotensin-Converting Enzyme (ACE) Inhibitor or Angiotensin Receptor Blocker (ARB) Therapy for Left Ventricular Systolic Dysfunction (LVSD)	0066: Coronary Artery Disease (CAD): Angiotensin-Converting Enzyme (ACE) Inhibitor or Angiotensin Receptor Blocker (ARB) Therapy - Diabetes or Left Ventricular Systolic Dysfunction (LVEF < 40%)
	when seen in the outpatient setting or at hospital discharge	Ejection Fraction (LVEF) < 40% who were prescribed ACE inhibitor or ARB therapy
Type	Process	Process
Data Source	Electronic Clinical Data, Electronic Clinical Data : Electronic Health Record, Electronic Clinical Data : Registry not applicable No data collection instrument provided Attachment 0081_AMAPCPI_HF-ACEARB_ValueSets_June2015-635712727320959997.xlsx	Administrative claims This measure, in its previous specifications, is currently being used in the ACCF PINNACLE registry for the outpatient office setting. URL No data dictionary
Level	Clinician : Group/Practice, Clinician : Individual	Clinician : Group/Practice, Clinician : Individual, Clinician : Team
Setting	Ambulatory Care : Clinician Office/Clinic, Home Health, Hospital/Acute Care Facility, Post Acute/Long Term Care Facility : Long Term Acute Care Hospital, Post Acute/Long Term Care Facility : Nursing Home/Skilled Nursing Facility, Other Domiciliary	Ambulatory Care : Clinician Office/Clinic, Home Health, Post Acute/Long Term Care Facility : Nursing Home/Skilled Nursing Facility, Behavioral Health/Psychiatric : Outpatient, Ambulatory Care : Urgent Care
Numerator Statement	Patients who were prescribed* ACE inhibitor or ARB therapy either within a 12 month period when seen in the outpatient setting or at hospital discharge *Prescribed may include: Outpatient setting: prescription given to the patient for ACE inhibitor or ARB therapy at one or more visits in the measurement period OR patient already taking ACE inhibitor or ARB therapy as documented in current medication list Inpatient setting: prescription given to the patient for ACE inhibitor or ARB therapy at discharge OR ACE inhibitor or ARB therapy to be continued after discharge as documented in the discharge medication list	Patients who were prescribed ACE inhibitor or ARB therapy
Numerator Details	For EHR: HQMF eMeasure developed and is included in this submission. For Registry: Definitions: Prescribed – Outpatient setting: May include prescription given to the patient for ACE inhibitor or ARB therapy at one or more visits in the measurement period OR patient already taking ACE inhibitor or ARB therapy as documented in current medication list.	Numerator Definition: Prescribed – May include prescription given to the patient for ACE inhibitor or ARB therapy at one or more visits in the measurement period OR patient already taking ACE inhibitor or ARB therapy as documented in current medication list. FOR EHR SPECIFICATION: No Current HQMF eCQM Available. FOR ADMINISTRATIVE CLAIMS SPECIFICATIONS: Report Quality Data Code G8935: Clinician

	0081: Heart Failure (HF): Angiotensin-Converting Enzyme (ACE) Inhibitor or Angiotensin Receptor Blocker (ARB) Therapy for Left Ventricular Systolic Dysfunction (LVSD)	0066: Coronary Artery Disease (CAD): Angiotensin-Converting Enzyme (ACE) Inhibitor or Angiotensin Receptor Blocker (ARB) Therapy - Diabetes or Left Ventricular Systolic Dysfunction (LVEF < 40%)
	<p>Prescribed – Inpatient setting: May include prescription given to the patient for ACE inhibitor or ARB therapy at discharge OR ACE inhibitor or ARB therapy to be continued after discharge as documented in the discharge medication list.</p> <p>Report CPT Category II Code, 4010F : Angiotensin converting enzyme (ACE) inhibitor or angiotensin receptor blocker (ARB) therapy prescribed or currently being taken</p>	<p>prescribed angiotensin converting enzyme (ACE) inhibitor or angiotensin receptor blocker (ARB) therapy</p>
Denominator Statement	All patients aged 18 years and older with a diagnosis of heart failure with a current or prior LVEF < 40%	All patients aged 18 years and older with a diagnosis of coronary artery disease (CAD) seen within a 12 month period who also have diabetes or a current or prior LVEF <40%
Denominator Details	<p>For EHR: HQMF eMeasure developed and is included in this submission. DENOMINATOR DEFINITION: LVEF < 40% corresponds to qualitative documentation of moderate dysfunction or severe dysfunction. DENOMINATOR NOTES: To meet this measure, it must be reported for all heart failure patients a minimum of once during the measurement period when seen in the outpatient setting AND reported at each hospital discharge during the measurement period. The requirement of “Count >=2 of Encounter, Performed” is to establish that the eligible professional has an existing relationship with the patient. For Registry: Option 1, Outpatient Setting: Patients aged >= 18 years AND Diagnosis for heart failure (ICD-9-CM) [for use 1/1/2015-9/30/2015]: 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 Diagnosis for heart failure (ICD-10-CM) [for use 10/01/2015-12/31/2015]: 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,</p>	<p>Denominator Definition: LVEF < 40% corresponds to qualitative documentation of moderate dysfunction or severe dysfunction. FOR EHR SPECIFICATION: No Current HQMF eCQM Available. FOR ADMINISTRATIVE CLAIMS SPECIFICATIONS: Option 1 Patients aged >= 18 years AND Diagnosis for coronary artery disease (ICD-9-CM) [for use 1/1/2015-9/30/2015]: 410.00, 410.01, 410.02, 410.10, 410.11, 410.12, 410.20, 410.21, 410.22, 410.30, 410.31, 410.32, 410.40, 410.41, 410.42, 410.50, 410.51, 410.52, 410.60, 410.61, 410.62, 410.70, 410.71, 410.72, 410.80, 410.81, 410.82, 410.90, 410.91, 410.92, 411.0, 411.1, 411.81, 411.89, 412, 413.0, 413.1, 413.9, 414.00, 414.01, 414.02, 414.03, 414.04, 414.05, 414.06, 414.07, 414.2, 414.3, 414.8, 414.9, V45.81, V45.82 Diagnosis for coronary artery disease(ICD-10-CM) [for use 10/01/2015-12/31/2015]: I20.0, I20.1, I20.8, I20.9, I21.01, I21.02, I21.09, I21.11, I21.19, I21.21, I21.29, I21.3, I21.4, I22.0, I22.1, I22.2, I22.8, I22.9, I24.0, I24.1, I24.8, I24.9, I25.10, I25.110, I25.111, I25.118, I25.119, I25.2, I25.5, I25.6, I25.700, I25.701, I25.708, I25.709, I25.710, I25.711, I25.718, I25.719, I25.720, I25.721, I25.728, I25.729, I25.730, I25.731, I25.738, I25.739, I25.750, I25.751, I25.758, I25.759, I25.760, I25.761, I25.768, I25.769,</p>

	0081: Heart Failure (HF): Angiotensin-Converting Enzyme (ACE) Inhibitor or Angiotensin Receptor Blocker (ARB) Therapy for Left Ventricular Systolic Dysfunction (LVSD)	0066: Coronary Artery Disease (CAD): Angiotensin-Converting Enzyme (ACE) Inhibitor or Angiotensin Receptor Blocker (ARB) Therapy - Diabetes or Left Ventricular Systolic Dysfunction (LVEF < 40%)
	<p>I50.43, I50.9</p> <p>AND</p> <p>Patient encounter(s) during reporting period (CPT): 99201, 99202, 99203, 99204, 99205, 99212, 99213, 99214, 99215, 99304, 99305, 99306, 99307, 99308, 99309, 99310, 99324, 99325, 99326, 99327, 99328, 99334, 99335, 99336, 99337, 99341, 99342, 99343, 99344, 99345, 99347, 99348, 99349, 99350</p> <p>AND</p> <p>Two Denominator Eligible Visits</p> <p>AND</p> <p>Left ventricular ejection fraction (LVEF) < 40% or documentation of moderately or severely depressed left ventricular systolic function: 3021F</p> <p>Option 2, Inpatient Setting:</p> <p>Patients aged >= 18 years</p> <p>AND</p> <p>Diagnosis for heart failure (ICD-9-CM) [for use 1/1/2015-9/30/2015]: 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</p> <p>Diagnosis for heart failure (ICD-10-CM) [for use 10/01/2015-12/31/2015]: 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</p> <p>AND</p> <p>Patient encounter during reporting period (CPT): 99238, 99239</p> <p>AND</p> <p>Left ventricular ejection fraction (LVEF) < 40% or documentation of moderately or severely depressed left ventricular systolic function: 3021F</p>	<p>I25.790, I25.791, I25.798, I25.799, I25.810, I25.811, I25.812, I25.82, I25.83, I25.89, I25.9, Z95.1, Z95.5, Z98.61</p> <p>AND</p> <p>Patient encounter during the reporting period (CPT): 99201, 99202, 99203, 99204, 99205, 99212, 99213, 99214, 99215, 99241, 99242, 99243, 99244, 99245, 99304, 99305, 99306, 99307, 99308, 99309, 99310, 99324, 99325, 99326, 99327, 99328, 99334, 99335, 99336, 99337, 99341, 99342, 99343, 99344, 99345, 99347, 99348, 99349, 99350</p> <p>AND</p> <p>Two Denominator Eligible Visits</p> <p>AND</p> <p>Left Ventricular Ejection Fraction (LVEF) < 40% or documentation of moderately or severely depressed left ventricular systolic function: G8934</p> <p>Option 2</p> <p>Patients aged >= 18 years</p> <p>AND</p> <p>Diagnosis for coronary artery disease (ICD-9-CM) [for use 1/1/2015-9/30/2015]: 410.00, 410.01, 410.02, 410.10, 410.11, 410.12, 410.20, 410.21, 410.22, 410.30, 410.31, 410.32, 410.40, 410.41, 410.42, 410.50, 410.51, 410.52, 410.60, 410.61, 410.62, 410.70, 410.71, 410.72, 410.80, 410.81, 410.82, 410.90, 410.91, 410.92, 411.0, 411.1, 411.81, 411.89, 412, 413.0, 413.1, 413.9, 414.00, 414.01, 414.02, 414.03, 414.04, 414.05, 414.06, 414.07, 414.2, 414.3, 414.8, 414.9, V45.81, V45.82</p> <p>Diagnosis for coronary artery disease (ICD-10-CM) [for use 10/01/2015-12/31/2015]: I20.0, I20.1, I20.8, I20.9, I21.01, I21.02, I21.09, I21.11, I21.19, I21.21, I21.29, I21.3, I21.4, I22.0, I22.1, I22.2, I22.8, I22.9, I24.0, I24.1, I24.8, I24.9, I25.10, I25.110, I25.111, I25.118, I25.119, I25.2, I25.5, I25.6, I25.700, I25.701, I25.708, I25.709, I25.710, I25.711, I25.718, I25.719, I25.720, I25.721, I25.728, I25.729, I25.730, I25.731, I25.738, I25.739, I25.750, I25.751, I25.758, I25.759, I25.760, I25.761, I25.768, I25.769, I25.790, I25.791, I25.798, I25.799, I25.810, I25.811, I25.812, I25.82, I25.83, I25.89, I25.9,</p>

	0081: Heart Failure (HF): Angiotensin-Converting Enzyme (ACE) Inhibitor or Angiotensin Receptor Blocker (ARB) Therapy for Left Ventricular Systolic Dysfunction (LVSD)	0066: Coronary Artery Disease (CAD): Angiotensin-Converting Enzyme (ACE) Inhibitor or Angiotensin Receptor Blocker (ARB) Therapy - Diabetes or Left Ventricular Systolic Dysfunction (LVEF < 40%)
		<p>Z95.1, Z95.5, Z98.61</p> <p>AND</p> <p>Diagnosis for diabetes (ICD-9-CM) [for use 1/1/2015-9/30/2015]: 250.00, 250.01, 250.02, 250.03, 250.10, 250.11, 250.12, 250.13, 250.20, 250.21, 250.22, 250.23, 250.30, 250.31, 250.32, 250.33, 250.40, 250.41, 250.42, 250.43, 250.50, 250.51, 250.52, 250.53, 250.60, 250.61, 250.62, 250.63, 250.70, 250.71, 250.72, 250.73, 250.80, 250.81, 250.82, 250.83, 250.90, 250.91, 250.92, 250.93</p> <p>Diagnosis for diabetes (ICD-10-CM) [for use 10/01/2015-12/31/2015]: E10.10, E10.11, E10.21, E10.22, E10.29, E10.311, E10.319, E10.321, E10.329, E10.331, E10.339, E10.341, E10.349, E10.351, E10.359, E10.36, E10.39, E10.40, E10.41, E10.42, E10.43, E10.44, E10.49, E10.51, E10.52, E10.59, E10.610, E10.618, E10.620, E10.621, E10.622, E10.628, E10.630, E10.638, E10.641, E10.649, E10.65, E10.69, E10.8, E10.9, E11.00, E11.01, E11.21, E11.22, E11.29, E11.311, E11.319, E11.321, E11.329, E11.331, E11.339, E11.341, E11.349, E11.351, E11.359, E11.36, E11.39, E11.40, E11.41, E11.42, E11.43, E11.44, E11.49, E11.51, E11.52, E11.59, E11.610, E11.618, E11.620, E11.621, E11.622, E11.628, E11.630, E11.638, E11.641, E11.649, E11.65, E11.69, E11.8, E11.9, E13.00, E13.01, E13.10, E13.11, E13.21, E13.22, E13.29, E13.311, E13.319, E13.321, E13.329, E13.331, E13.339, E13.341, E13.349, E13.351, E13.359, E13.36, E13.39, E13.40, E13.41, E13.42, E13.43, E13.44, E13.49, E13.51, E13.52, E13.59, E13.610, E13.618, E13.620, E13.621, E13.622, E13.628, E13.630, E13.638, E13.641, E13.649, E13.65, E13.69, E13.8, E13.9</p> <p>AND</p> <p>Patient encounter during the reporting period (CPT): 99201, 99202, 99203, 99204, 99205, 99212, 99213, 99214, 99215, 99241, 99242, 99243, 99244, 99245, 99304, 99305, 99306, 99307, 99308, 99309, 99310, 99324, 99325, 99326, 99327, 99328, 99334, 99335, 99336, 99337, 99341, 99342, 99343, 99344, 99345, 99347, 99348, 99349, 99350</p> <p>AND</p> <p>Two Denominator Eligible Visits</p>

	0081: Heart Failure (HF): Angiotensin-Converting Enzyme (ACE) Inhibitor or Angiotensin Receptor Blocker (ARB) Therapy for Left Ventricular Systolic Dysfunction (LVSD)	0066: Coronary Artery Disease (CAD): Angiotensin-Converting Enzyme (ACE) Inhibitor or Angiotensin Receptor Blocker (ARB) Therapy - Diabetes or Left Ventricular Systolic Dysfunction (LVEF < 40%)
Exclusions	<p>Documentation of medical reason(s) for not prescribing ACE inhibitor or ARB therapy (eg, hypotensive patients who are at immediate risk of cardiogenic shock, hospitalized patients who have experienced marked azotemia, allergy, intolerance, other medical reasons)</p> <p>Documentation of patient reason(s) for not prescribing ACE inhibitor or ARB therapy (eg, patient declined, other patient reasons)</p> <p>Documentation of system reason(s) for not prescribing ACE inhibitor or ARB therapy (eg, other system reasons)</p>	<p>Documentation of medical reason(s) for not prescribing ACE inhibitor or ARB therapy (eg, allergy, intolerant, pregnancy, renal failure due to ACE inhibitor, diseases of the aortic or mitral valve, other medical reasons)</p> <p>Documentation of patient reason(s) for not prescribing ACE inhibitor or ARB therapy (eg, patient declined, other patient reasons)</p> <p>Documentation of system reason(s) for not prescribing ACE inhibitor or ARB therapy (eg, lack of drug availability, other reasons attributable to the health care system)</p>
Exclusion Details	<p>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. This measure was developed using PCPI exception methodology which 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 : Angiotensin-Converting Enzyme (ACE) Inhibitor or Angiotensin Receptor Blocker (ARB) Therapy for Left Ventricular Systolic Dysfunction, exceptions may include medical reasons (e.g. hypotensive patients who are at immediate risk of cardiogenic shock, hospitalized patients who have experienced marked azotemia), patient, and/or system reasons for not prescribing an ACE/ARB. Where examples of exceptions are included in the measure language, value sets for these examples are developed and included in the eSpecifications. Although this methodology does not require the external reporting of more detailed exception data, the PCPI recommends</p>	<p>FOR EHR SPECIFICATION: No Current HQMF eCQM Available.</p> <p>FOR ADMINISTRATIVE CLAIMS SPECIFICATIONS: Report Quality Data Code G8474: Angiotensin converting enzyme (ACE) inhibitor or angiotensin receptor blocker (ARB) therapy not prescribed for reasons documented by the clinician (eg, allergy, intolerance, pregnancy, renal failure due to ACE inhibitor, diseases of the aortic or mitral valve, other medical reasons) or (eg, patient declined, other patient reasons) or (eg, lack of drug availability, other reasons attributable to the health care system)</p>

	0081: Heart Failure (HF): Angiotensin-Converting Enzyme (ACE) Inhibitor or Angiotensin Receptor Blocker (ARB) Therapy for Left Ventricular Systolic Dysfunction (LVSD)	0066: Coronary Artery Disease (CAD): Angiotensin-Converting Enzyme (ACE) Inhibitor or Angiotensin Receptor Blocker (ARB) Therapy - Diabetes or Left Ventricular Systolic Dysfunction (LVEF < 40%)
	<p>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.</p> <p>Additional details by data source are as follows: For EHR: HQMf eMeasure developed and is included in this submission. For Registry: Append a modifier to CPT Category II Code: 4010F-1P : Documentation of medical reason(s) for not prescribing angiotensin converting enzyme (ACE) inhibitor or angiotensin receptor blocker (ARB) therapy (eg, hypotensive patients who are at immediate risk of cardiogenic shock, hospitalized patients who have experienced marked azotemia, allergy, intolerance, other medical reasons) 4010F-2P : Documentation of patient reason(s) for not prescribing angiotensin converting enzyme (ACE) inhibitor or angiotensin receptor blocker (ARB) therapy (eg, patient declined, other patient reasons) 4010F-3P : Documentation of system reason(s) for not prescribing angiotensin converting enzyme (ACE) inhibitor or angiotensin receptor blocker (ARB) therapy (eg, other system reasons)</p>	
Risk Adjustment	No risk adjustment or risk stratification No risk adjustment or risk stratification	No risk adjustment or risk stratification
Stratification	Consistent with CMS' Measures Management System Blueprint and recent national recommendations put forth by the IOM 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 and have included these variables as recommended data elements to be collected.	We encourage the results of this measure to be stratified by race, ethnicity, sex, and payer.
Type Score	Rate/proportion better quality = higher score	Rate/proportion better quality = higher score
Algorithm	To calculate performance rates: 1. Find the patients who meet the initial	To calculate performance rates: 1) Find the patients who meet the initial patient

	0081: Heart Failure (HF): Angiotensin-Converting Enzyme (ACE) Inhibitor or Angiotensin Receptor Blocker (ARB) Therapy for Left Ventricular Systolic Dysfunction (LVSD)	0066: Coronary Artery Disease (CAD): Angiotensin-Converting Enzyme (ACE) Inhibitor or Angiotensin Receptor Blocker (ARB) Therapy - Diabetes or Left Ventricular Systolic Dysfunction (LVEF < 40%)
	<p>population (ie, the general group of patients that a set of performance measures is designed to address).</p> <p>2. From the patients within the initial population criteria, find the patients who qualify for the denominator (ie, 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.</p> <p>3. From the patients within the denominator, find the patients who meet the numerator criteria (ie, 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</p> <p>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: Documentation of medical reason(s) for not prescribing ACE inhibitor or ARB therapy (eg, hypotensive patients who are at immediate risk of cardiogenic shock, hospitalized patients who have experienced marked azotemia); Documentation of patient reason(s) for not prescribing ACE inhibitor or ARB therapy; Documentation of system reason(s) for not prescribing ACE inhibitor or ARB 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 (ie, 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.</p> <p>If the patient does not meet the numerator and a valid exception is not present, this case represents a quality failure. No diagram provided</p>	<p>population (ie, the general group of patients that the performance measure is designed to address).</p> <p>2) From the patients within the initial patient population criteria, find the patients who qualify for the denominator (ie, the specific group of patients for inclusion in a specific performance measure based on defined criteria). Note: in some cases the initial patient population and denominator are identical.</p> <p>3) From the patients within the denominator, find the patients who qualify for the Numerator (ie, 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</p> <p>If the patient does not meet the numerator, this case represents a quality failure.</p>
Submission	5.1 Identified measures:	5.1 Identified measures:

	0081: Heart Failure (HF): Angiotensin-Converting Enzyme (ACE) Inhibitor or Angiotensin Receptor Blocker (ARB) Therapy for Left Ventricular Systolic Dysfunction (LVSD)	0066: Coronary Artery Disease (CAD): Angiotensin-Converting Enzyme (ACE) Inhibitor or Angiotensin Receptor Blocker (ARB) Therapy - Diabetes or Left Ventricular Systolic Dysfunction (LVEF < 40%)
items	<p>5a.1 Are specs completely harmonized?</p> <p>5a.2 If not completely harmonized, identify difference, rationale, impact:</p> <p>5b.1 If competing, why superior or rationale for additive value:</p>	<p>5a.1 Are specs completely harmonized?</p> <p>5a.2 If not completely harmonized, identify difference, rationale, impact:</p> <p>5b.1 If competing, why superior or rationale for additive value: Related Measures: Maintenance submission of NQF #0066: ACE Inhibitor/Angiotensin Receptor Blocker (ARB) Therapy</p>

Comparison of NQF #0083 and NQF #2438

	0083: Heart Failure (HF): Beta-Blocker Therapy for Left Ventricular Systolic Dysfunction (LVSD)	2438: Beta-Blocker Therapy (i.e., Bisoprolol, Carvedilol, or Sustained-Release Metoprolol Succinate) for LVSD Prescribed at Discharge
Steward	AMA-PCPI	The Joint Commission
Description	Percentage of patients aged 18 years and older with a diagnosis of heart failure with a current or prior LVEF < 40% who were prescribed beta-blocker therapy either within a 12 month period when seen in the outpatient setting or at hospital discharge	Proportion of heart failure patients age 18 and older with LVSD for whom beta-blocker therapy (i.e., bisoprolol, carvedilol, or sustained-release metoprolol succinate) is prescribed at discharge. For purposes of this measure, LVSD is defined as chart documentation of a left ventricular ejection fraction (LVEF) less than 40% or a narrative description of left ventricular systolic (LVS) function consistent with moderate or severe systolic dysfunction.
Type	Process	Process
Data Source	Electronic Clinical Data, Electronic Clinical Data : Electronic Health Record, Electronic Clinical Data : Registry No data collection instrument provided Attachment 0083_AMAPCPI_HF-BB_ValueSets_June2015-635712735683880063.xlsx	Electronic Clinical Data : Electronic Health Record, Paper Medical Records A web-based data collection tool was developed by The Joint Commission for the pilot process. Moving forward, hospitals have the flexibility of creating their own tool modeled after the pilot tool or they may develop their own data collection tools using the data element dictionary and allowable values specified in the implementation guide. No data collection instrument provided Attachment ACHF_Appendix_ICD-9_and_ICD-10_Codes-635230560443297553.xlsx
Level	Clinician : Group/Practice, Clinician : Individual	Facility
Setting	Ambulatory Care : Clinician Office/Clinic, Home Health, Hospital/Acute Care Facility,	Hospital/Acute Care Facility

	0083: Heart Failure (HF): Beta-Blocker Therapy for Left Ventricular Systolic Dysfunction (LVSD)	2438: Beta-Blocker Therapy (i.e., Bisoprolol, Carvedilol, or Sustained-Release Metoprolol Succinate) for LVSD Prescribed at Discharge
	Post Acute/Long Term Care Facility : Long Term Acute Care Hospital, Post Acute/Long Term Care Facility : Nursing Home/Skilled Nursing Facility, Other Domiciliary	
Numerator Statement	<p>Patients who were prescribed* beta-blocker therapy** either within a 12 month period when seen in the outpatient setting or at hospital discharge</p> <p>*Prescribed may include:</p> <p>Outpatient setting: 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</p> <p>Inpatient setting: prescription given to the patient for beta-blocker therapy at discharge OR beta-blocker therapy to be continued after discharge as documented in the discharge medication list</p> <p>**Beta-blocker therapy should include bisoprolol, carvedilol, or sustained release metoprolol succinate. (see technical specifications for additional information on medications)</p>	<p>Patients who are prescribed bisoprolol, carvedilol, or sustained-release metoprolol succinate for LVSD at hospital discharge.</p>
Numerator Details	<p>For EHR: HQMFE Measure developed and is included in this submission.</p> <p>For Registry: Definitions:</p> <p>Prescribed – Outpatient Setting - 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.</p> <p>Prescribed – Inpatient Setting: May include prescription given to the patient for beta-blocker therapy at discharge OR beta-blocker therapy to be continued after discharge as documented in the discharge medication list.</p> <p>Beta-blocker Therapy - For patients with prior LVEF < 40%, beta-blocker therapy should include bisoprolol, carvedilol, or sustained release metoprolol succinate.</p> <p>Report Quality Data Code, G8450: Beta-blocker therapy prescribed</p>	<p>One data element used to calculate numerator: Bisoprolol, Carvedilol, or Sustained-Release Metoprolol Prescribed for LVSD at Discharge</p> <p>Data element defined: Documentation that bisoprolol, carvedilol, or sustained-release metoprolol was prescribed at discharge. Beta-blockers are agents which block beta-adrenergic receptors, thereby decreasing the rate and force of heart contractions, and reducing blood pressure. Over time beta-blockers improve the heart's pumping ability. The marked beneficial effects of beta blockade has been well demonstrated in large-scale clinical trials of symptomatic patients with New York Heart Association (NYHA) class II-IV heart failure and reduced LVEF using bisoprolol, carvedilol, and sustained-release metoprolol succinate.</p>

	0083: Heart Failure (HF): Beta-Blocker Therapy for Left Ventricular Systolic Dysfunction (LVSD)	2438: Beta-Blocker Therapy (i.e., Bisoprolol, Carvedilol, or Sustained-Release Metoprolol Succinate) for LVSD Prescribed at Discharge
Denominator Statement	All patients aged 18 years and older with a diagnosis of heart failure with a current or prior LVEF < 40% LVEF < 40% corresponds to qualitative documentation of moderate dysfunction or severe dysfunction	Heart failure patients with current or prior documentation of left ventricular ejection fraction (LVSD) < 40%.
Denominator Details	<p>For EHR: HQMFE Measure developed and is included in this submission.</p> <p>DENOMINATOR DEFINITION: LVEF < 40% corresponds to qualitative documentation of moderate dysfunction or severe dysfunction.</p> <p>DENOMINATOR NOTES: To meet this measure, it must be reported for all heart failure patients a minimum of once during the measurement period when seen in the outpatient setting AND reported at each hospital discharge during the measurement period. The requirement of "Count >=2 of Encounter, Performed" is to establish that the eligible professional has an existing relationship with the patient.</p> <p>For Registry: Option 1, Outpatient Setting: Patients aged >=18 years AND Diagnosis for heart failure (ICD-9-CM) [for use 1/1/2015-9/30/2015]: 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 Diagnosis for heart failure (ICD-10-CM) [for use 10/01/2015-12/31/2015]: 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(s) during the reporting period (CPT): 99201, 99202, 99203, 99204, 99205, 99212, 99213, 99214, 99215, 99304, 99305, 99306, 99307, 99308, 99309, 99310, 99324, 99325, 99326, 99327, 99328, 99334,</p>	<p>Included Populations:</p> <ul style="list-style-type: none"> Discharges with ICD-9-CM Principal Diagnosis Code for HF as defined in Appendix A, Table 2.1, and Documentation of LVSD < 40% <p>ICD-9-CM Table 2.1 Heart Failure (HF) Code: Shortened Description 402.01: MAL HYPERT HRT DIS W HF 402.11: BENIGN HYP HT DIS W HF 402.91: HYP HT DIS NOS W HT FAIL 404.01: MAL HYP HT/KD I-IV W HF 404.03: MAL HYP HT/KD STG V W HF 404.11: BEN HYP HT/KD I-IV W HF 404.13: BEN HYP HT/KD STG V W HF 404.91: HYP HT/KD NOS I-IV W HF 404.93: HYP HT/KD NOS ST V W HF 428.0: CHF NOS 428.1: LEFT HEART FAILURE 428.20: SYSTOLIC HRT FAILURE NOS 428.21: AC SYSTOLIC HRT FAILURE 428.22: CHR SYSTOLIC HRT FAILURE 428.23: AC ON CHR SYST HRT FAIL 428.30: DIASTOLC HRT FAILURE NOS 428.31: AC DIASTOLIC HRT FAILURE 428.32: CHR DIASTOLIC HRT FAIL 428.33: AC ON CHR DIAST HRT FAIL 428.40: SYST/DIAST HRT FAIL NOS 428.41: AC SYST/DIASTOL HRT FAIL 428.42: CHR SYST/DIASTL HRT FAIL 428.43: AC/CHR SYST/DIA HRT FAIL 428.9: HEART FAILURE NOS</p> <p>11 data elements are used to calculate the denominator. Data elements and definitions:</p> <ul style="list-style-type: none"> Admission Date: The month, day, and year of admission to acute inpatient care. Birthdate: The month, day, and year the patient was born. Clinical Trial: Documentation that during this

	0083: Heart Failure (HF): Beta-Blocker Therapy for Left Ventricular Systolic Dysfunction (LVSD)	2438: Beta-Blocker Therapy (i.e., Bisoprolol, Carvedilol, or Sustained-Release Metoprolol Succinate) for LVSD Prescribed at Discharge
	<p>99335, 99336, 99337, 99341, 99342, 99343, 99344, 99345, 99347, 99348, 99349, 99350 AND Two Denominator Eligible Visits AND Left ventricular ejection fraction (LVEF) < 40% or documentation of moderately or severely depressed left ventricular systolic function: G8923 Option 2, Inpatient Setting: Patients aged >= 18 years AND Diagnosis for heart failure (ICD-9-CM) [for use 1/1/2015-9/30/2015]: 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 Diagnosis for heart failure (ICD-10-CM) [for use 10/01/2015-12/31/2015]: 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): 99238, 99239 AND Left ventricular ejection fraction (LVEF) < 40% or documentation of moderately or severely depressed left ventricular systolic function: 3021F</p>	<p>hospital stay the patient was enrolled in a clinical trial in which patients with the same condition as the measure set were being studied.</p> <ul style="list-style-type: none"> • Comfort Measures Only: Comfort Measures Only refers to medical treatment of a dying person where the natural dying process is permitted to occur while assuring maximum comfort. It includes attention to the psychological and spiritual needs of the patient and support for both the dying patient and the patient's family. Comfort Measures Only is commonly referred to as "comfort care" by the general public. It is not equivalent to a physician order to withhold emergency resuscitative measures such as Do Not Resuscitate (DNR). • Discharge Disposition: The final place or setting to which the patient was discharged on the day of discharge. • ICD-9-CM Other Procedure Codes: The International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) codes identifying all significant procedures other than the principal procedure. • ICD-9-CM Principal Diagnosis Code: The International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) code associated with the diagnosis established after study to be chiefly responsible for occasioning the admission of the patient for this hospitalization. • ICD-9-CM Principal Procedure Code: The International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) code that identifies the principal procedure performed during this hospitalization. The principal procedure is the procedure performed for definitive treatment rather than diagnostic or exploratory purposes, or which is necessary to take care of a complication. • ICD-9-CM Principal Procedure Date: The month, day, and year when the principal procedure was performed. • LVSD < 40%: Left ventricular systolic dysfunction (LVSD) documented in medical record. LVSD is defined as a left ventricular ejection fraction less than 40% or a narrative description consistent with moderate or severe systolic dysfunction. • Reason for No Bisoprolol, Carvedilol, or Sustained-Release Metoprolol Prescribed for LVSD at Discharge: Reasons for not prescribing

	0083: Heart Failure (HF): Beta-Blocker Therapy for Left Ventricular Systolic Dysfunction (LVSD)	2438: Beta-Blocker Therapy (i.e., Bisoprolol, Carvedilol, or Sustained-Release Metoprolol Succinate) for LVSD Prescribed at Discharge
		<p>bisoprolol, carvedilol, or sustained-release metoprolol succinate at discharge:</p> <ul style="list-style-type: none"> o Beta-blocker allergy o Second or third-degree heart block on ECG on arrival or during hospital stay and does not have a pacemaker o Other reasons documented by physician/advanced practice nurse/physician assistant (physician/APN/PA) or pharmacist
Exclusions	<p>Documentation of medical reason(s) for not prescribing beta-blocker therapy (eg, low blood pressure, fluid overload, asthma, patients recently treated with an intravenous positive inotropic agent)</p> <p>Documentation of patient reason(s) for not prescribing beta-blocker therapy</p> <p>Documentation of system reason(s) for not prescribing beta-blocker therapy</p>	<p>Excluded Populations:</p> <ul style="list-style-type: none"> • Patients who had a left ventricular assistive device (LVAD) or heart transplant procedure during hospital stay (ICD-9-CM procedure code for LVAD and heart transplant as defined in Appendix A, Table 2.2) • Patients less than 18 years of age • Patients who have a Length of Stay greater than 120 days • Patients with Comfort Measures Only documented • Patients enrolled in a Clinical Trial • Patients discharged to another hospital • Patients who left against medical advice • Patients who expired • Patients discharged to home for hospice care • Patients discharged to a healthcare facility for hospice care • Patients with a documented Reason for No Bisoprolol, Carvedilol, or Sustained-Release Metoprolol Succinate Prescribed for LVSD at Discharge
Exclusion Details	<p>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. This measure was developed using the PCPI exception methodology which 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</p>	<p>Exclusion Details:</p> <ul style="list-style-type: none"> • Patients who had a left ventricular assistive device (LVAD) or heart transplant procedure during hospital stay (ICD-9-CM procedure code for LVAD and heart transplant as defined in Appendix A, Table 2.2): <p>ICD-9-CM Table 2.2 Left Ventricular Assistive Device (LVAD) and Heart Transplant Code: Shortened Description</p> <p>33.6: COMB HEART/LUNG TRANSPLA</p> <p>37.51: HEART TRANSPLANTATION</p> <p>37.52: IMP TOT INT BI HT RP SYS</p> <p>37.53: REPL/REP THR UNT TOT HRT</p> <p>37.54: REPL/REP OTH TOT HRT SYS</p>

	0083: Heart Failure (HF): Beta-Blocker Therapy for Left Ventricular Systolic Dysfunction (LVSD)	2438: Beta-Blocker Therapy (i.e., Bisoprolol, Carvedilol, or Sustained-Release Metoprolol Succinate) for LVSD Prescribed at Discharge
	<p>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 Beta-Blocker Therapy for Left Ventricular Systolic Dysfunction, exceptions may include Documentation of medical reason(s) for not prescribing beta-blocker therapy (eg, low blood pressure, fluid overload, asthma, patients recently treated with an intravenous positive inotropic agent), Documentation of patient reason(s) for not prescribing beta-blocker therapy, or Documentation of system reason(s) 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 eSpecifications. 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.</p> <p>Additional details by data source are as follows:</p> <p>For EHR:</p> <p>HQMF eMeasure developed and is included in this submission.</p> <p>For Registry:</p> <p>Report Quality Data Code G8451: Beta-Blocker Therapy for LVEF < 40% not prescribed for reasons documented by the clinician (eg, low blood pressure, fluid overload, asthma, patients recently treated with an intravenous positive inotropic agent, allergy, intolerance, other medical reasons, patient declined, other patient reasons, other reasons attributable to the healthcare system)</p>	<p>37.60: IMP BIVN EXT HRT AST SYS</p> <p>37.62: INSRT NON-IMPL CIRC DEV</p> <p>37.63: REPAIR HEART ASSIST SYS</p> <p>37.65: IMP VENT EXT HRT AST SYS</p> <p>37.66: IMPLANTABLE HRT ASSIST</p> <p>37.68: PERCUTAN HRT ASSIST SYST</p> <ul style="list-style-type: none"> • Patients less than 18 years of age. <ul style="list-style-type: none"> o Patient age (in years) equals Admission Date minus Birthdate. • Patients who have a Length of Stay greater than 120 days. <ul style="list-style-type: none"> o Length of Stay (in days) equals Discharge Date minus Admission Date. • Patients with Comfort Measures Only documented: <ul style="list-style-type: none"> o Physician/APN/PA documentation of comfort measures only (hospice, comfort care, etc.) mentioned in the following contexts suffices to exclude a case from the measure: <ul style="list-style-type: none"> x Comfort measures only recommendation x Order for consultation or evaluation by a hospice care service x Patient or family request for comfort measures only x Plan for comfort measures only x Referral to hospice care service • Patients enrolled in a Clinical Trial. <ul style="list-style-type: none"> o Patients are excluded if "Yes" is selected for Clinical Trial. • Patients discharged to another hospital <ul style="list-style-type: none"> o Determined by the data element Discharge Disposition, allowable value #4 Acute Care Facility • Patients who left against medical advice <ul style="list-style-type: none"> o Determined by the data element Discharge Disposition, allowable value #7 Left Against Medical Advice/AMA • Patients who expired <ul style="list-style-type: none"> o Determined by the data element Discharge Disposition allowable value #6 Expired • Patients discharged to home for hospice care <ul style="list-style-type: none"> o Determined by the data element Discharge Disposition allowable value #2 Hospice-Home • Patients discharged to a healthcare facility for hospice care <ul style="list-style-type: none"> o Determined by the data element Discharge

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		<p>Disposition allowable value #3 Hospice-Health Care Facility</p> <ul style="list-style-type: none"> • Patients with a documented Reason for No Bisoprolol, Carvedilol, or Sustained-Release Metoprolol Succinate Prescribed for LVSD at Discharge <ul style="list-style-type: none"> o Reasons for not prescribing bisoprolol, carvedilol, or sustained-release metoprolol succinate at discharge: <ul style="list-style-type: none"> x Beta-blocker allergy x Second or third-degree heart block on ECG on arrival or during hospital stay and does not have a pacemaker x Other reasons documented by physician/advanced practice nurse/physician assistant (physician/APN/PA) or pharmacist
Risk Adjustment	No risk adjustment or risk stratification n/a	No risk adjustment or risk stratification Not Applicable
Stratification	Consistent with CMS' Measures Management System Blueprint and recent national recommendations put forth by the IOM 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 and have included these variables as recommended data elements to be collected.	Not Applicable
Type Score	Rate/proportion better quality = higher score	Rate/proportion better quality = higher score
Algorithm	<p>To calculate performance rates:</p> <ol style="list-style-type: none"> 1. Find the patients who meet the initial population (ie, 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 (ie, 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 (ie, the group of patients in the denominator for whom a process or outcome of care occurs). Validate 	<p>Advanced Certification Heart Failure (ACHF) Initial Patient Population Algorithm</p> <p>Variable Key: Patient Age, Length of Stay and Initial Patient Population Reject Case Flag</p> <ol style="list-style-type: none"> 1. Start ACHF Initial Patient Population logic sub-routine. Process all cases that have successfully reached the point in the Transmission Data Processing Flow: Clinical which calls this Initial Patient Population Algorithm. Do not process cases that have been rejected before this point in the Transmission Data Processing Flow: Clinical. 2. Check ICD-9-CM Principal Diagnosis Code <ol style="list-style-type: none"> a. If ICD-9-CM Principal Diagnosis Code is not on Table 2.1, the patient is not in the ACHF Topic Population and is not eligible to be sampled for the ACHF measure set. Set the Initial Patient Population Reject Case Flag to equal Yes. Return to

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	<p>that the number of patients in the numerator is less than or equal to the number of patients in the denominator</p> <p>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: Documentation of medical reason(s) for not prescribing beta-blocker therapy (eg, low blood pressure, fluid overload, asthma, patients recently treated with an intravenous positive inotropic agent); Documentation of patient reason(s) for not prescribing beta-blocker therapy; Documentation of system reason(s) 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 (ie, 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. No diagram provided</p>	<p>Transmission Data Processing Flow: Clinical in the Data Transmission section.</p> <p>b. If ICD-9-CM Principal Diagnosis Code is on Table 2.1, continue processing and proceed to ICD-9-CM Principal or Other Procedure Codes.</p> <p>3. Check ICD-9-CM Principal or Other Procedure Codes</p> <p>a. If at least one of the ICD-9-CM Principal or Other Procedure Codes is on Table 2.2, the patient is not in the ACHF Initial Patient Population and is not eligible to be sampled for the ACHF measure set. Set the Initial Patient Population Reject Case Flag to equal Yes. Return to Transmission Data Processing Flow: Clinical in the Data Transmission section.</p> <p>b. If all of the ICD-9-CM Principal or Other Procedure Codes are missing or none are on Table 2.2, continue processing and proceed to the Patient Age Calculation.</p> <p>4. Calculate Patient Age. Patient Age, in years, is equal to the Admission Date minus the Birthdate. Use the month and day portion of admission date and birthdate to yield the most accurate age.</p> <p>5. Check Patient Age</p> <p>a. If the Patient Age is less than 18 years, the patient is not in the ACHF Initial Patient Population and is not eligible to be sampled for the ACHF measure set. Set the Initial Patient Population Reject Case Flag to equal Yes. Return to Transmission Data Processing Flow: Clinical in the Data Transmission section.</p> <p>b. If the Patient Age is greater than or equal to 18 years, continue processing and proceed to Length of Stay Calculation.</p> <p>6. Calculate the Length of Stay. Length of Stay, in days, is equal to the Discharge Date minus the Admission Date.</p> <p>7. Check Length of Stay</p> <p>a. If the Length of Stay is greater than 120 days, the patient is not in the ACHF Initial Patient Population and is not eligible to be sampled for the ACHF measure set. Set the Initial Patient Population Reject Case Flag to equal Yes. Return to Transmission Data Processing Flow: Clinical in the Data Transmission section.</p> <p>b. If the Length of Stay is less than or equal to 120 days, the patient is in the ACHF Initial Patient Population and is eligible to be sampled for the</p>

	0083: Heart Failure (HF): Beta-Blocker Therapy for Left Ventricular Systolic Dysfunction (LVSD)	2438: Beta-Blocker Therapy (i.e., Bisoprolol, Carvedilol, or Sustained-Release Metoprolol Succinate) for LVSD Prescribed at Discharge
		<p>ACHF measure set. Set Initial Patient Population Reject Case Flag to equal No. Return to Transmission Data Processing Flow: Clinical in the Data Transmission section.</p> <p>ACHF-01: Beta-Blocker Therapy (i.e., Bisoprolol, Carvedilol, or Sustained-Release Metoprolol Succinate) for LVSD Prescribed at Discharge</p> <p>Numerator: Patients who are prescribed bisoprolol, carvedilol, or sustained-release metoprolol succinate for LVSD at hospital discharge.</p> <p>Denominator: Heart failure patients with current or prior documentation of left ventricular ejection fraction (LVSD) < 40%.</p> <ol style="list-style-type: none"> 1. Start processing. Run cases that are included in the ACHF Initial Patient Population and pass the edits defined in the Transmission Data Processing Flow: Clinical through this measure. 2. Check Clinical Trial <ol style="list-style-type: none"> a. If Clinical Trial is missing, the case will proceed to a Measure Category Assignment of X and will be rejected. Stop processing. b. If Clinical Trial equals Yes, the case will proceed to a Measure Category Assignment of B and will not be in the Measure Population. Stop processing. c. If Clinical Trial equals No, continue processing and proceed to Discharge Disposition. 3. Check Discharge Disposition <ol style="list-style-type: none"> a. If Discharge Disposition is missing, the case will proceed to a Measure Category Assignment of X and will be rejected. Stop processing. b. Discharge Disposition equals 2, 3, 4, 6 or 7, the case will proceed to a Measure Category Assignment of B and will not be in the Measure Population. Stop processing. c. If Discharge Disposition equals 1, 5 or 8, continue processing and proceed to Comfort Measures Only. 4. Check Comfort Measures Only <ol style="list-style-type: none"> a. If Comfort Measures Only is missing, the case will proceed to a Measure Category Assignment of X and will be rejected. Stop processing. b. If Comfort Measures Only equals 1, 2 or 3, the case will proceed to a Measure Category Assignment of B and will not be in the Measure Population. Stop processing. c. If Comfort Measures Only equals 4, continue

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		<p>processing and proceed to LVSD <40%.</p> <p>5. Check LVSD <40%</p> <ul style="list-style-type: none"> a. If LVSD <40% is missing, the case will proceed to a Measure Category Assignment of X and will be rejected. Stop processing. b. If LVSD <40% equals No, the case will proceed to a Measure Category Assignment of B and will not be in the Measure Population. Stop processing. c. If LVSD <40% equals Yes, continue processing and proceed to Bisoprolol, Carvedilol, or Sustained-Release Metoprolol Prescribed for LVSD at Discharge. <p>6. Check Bisoprolol, Carvedilol, or Sustained-Release Metoprolol Prescribed for LVSD at Discharge</p> <ul style="list-style-type: none"> a. If Bisoprolol, Carvedilol, or Sustained-Release Metoprolol Prescribed for LVSD at Discharge is missing, the case will proceed to a Measure Category Assignment of X and will be rejected. Stop processing. b. If Bisoprolol, Carvedilol, or Sustained-Release Metoprolol Prescribed for LVSD at Discharge equals Yes, the case will proceed to a Measure Category Assignment of E and will be in the Numerator Population. Stop processing. c. If Bisoprolol, Carvedilol, or Sustained-Release Metoprolol Prescribed for LVSD at Discharge equals No, continue processing and proceed to Reason for No Bisoprolol, Carvedilol, or Sustained-Release Metoprolol Prescribed for LVSD at Discharge. <p>7. Check Reason for No Bisoprolol, Carvedilol, or Sustained-Release Metoprolol Prescribed for LVSD at Discharge</p> <ul style="list-style-type: none"> a. If Reason for No Bisoprolol, Carvedilol, or Sustained-Release Metoprolol Prescribed for LVSD at Discharge is missing, the case will proceed to a Measure Category Assignment of X and will be rejected. Stop processing. b. If Reason for No Bisoprolol, Carvedilol, or Sustained-Release Metoprolol Prescribed for LVSD at Discharge equals Yes, the case will proceed to a Measure Category Assignment of B and will not be in the Measure Population. Stop processing. c. If Reason for No Bisoprolol, Carvedilol, or Sustained-Release Metoprolol Prescribed for LVSD at Discharge equals No, the case will proceed to a Measure Category Assignment of D and will be in

	0083: Heart Failure (HF): Beta-Blocker Therapy for Left Ventricular Systolic Dysfunction (LVSD)	2438: Beta-Blocker Therapy (i.e., Bisoprolol, Carvedilol, or Sustained-Release Metoprolol Succinate) for LVSD Prescribed at Discharge
		the Measure Population. Stop processing. Available at measure-specific web page URL identified in S.1
Submission items	<p>5.1 Identified measures: 0070 : Coronary Artery Disease (CAD): Beta-Blocker Therapy-Prior Myocardial Infarction (MI) or Left Ventricular Systolic Dysfunction (LVEF <40%)</p> <p>0071 : Persistence of Beta-Blocker Treatment After a Heart Attack</p> <p>5a.1 Are specs completely harmonized? No</p> <p>5a.2 If not completely harmonized, identify difference, rationale, impact: Measure 0083 addresses a therapy which is also covered in part by the following NQF-endorsed measures: NQF 0071: Persistence of Beta-Blocker Treatment After a Heart Attack and NQF 0070: Coronary Artery Disease (CAD): Beta-Blocker Therapy—Prior Myocardial Infarction (MI) or Left Ventricular Systolic Dysfunction (LVEF <40%). The specifications are harmonized to the extent possible. However, measure 0083 is focused on a patient population with heart failure and therefore the denominator specifications for the measures differ.</p> <p>5b.1 If competing, why superior or rationale for additive value:</p>	<p>5.1 Identified measures: 0083 : Heart Failure (HF): Beta-Blocker Therapy for Left Ventricular Systolic Dysfunction (LVSD)</p> <p>5a.1 Are specs completely harmonized? No</p> <p>5a.2 If not completely harmonized, identify difference, rationale, impact: The numerator and denominator statements are harmonized. Principal differences in measure specifications are noted below, and are thought to be artifacts of the different levels of measurement (organization vs. practitioner) addressed by the 2 measures. Differences ACHF-01 Denominator Exclusions: • Patients who had a left ventricular assistive device (LVAD) or heart transplant procedure during hospital stay (ICD-9-CM procedure code for LVAD and heart transplant as defined in Appendix A, Table 2.2) • Patients less than 18 years of age • Patients who have a Length of Stay greater than 120 days • Patients with Comfort Measures Only documented • Patients enrolled in a Clinical Trial • Patients discharged to another hospital • Patients who left against medical advice • Patients who expired • Patients discharged to home for hospice care • Patients discharged to a healthcare facility for hospice care • Patients with a documented Reason for No Bisoprolol, Carvedilol, or Sustained-Release Metoprolol Succinate Prescribed for LVSD at Discharge 0083</p> <p>Denominator Exceptions: • Documentation of medical reason(s) for not prescribing beta-blocker therapy (eg, low blood pressure, fluid overload, asthma, patients recently treated with an intravenous positive inotropic agent) • Documentation of patient reason(s) for not prescribing beta-blocker therapy • Documentation of system reason(s) for not prescribing beta-blocker therapy</p> <p>Impact on interpretability and data collection burden: These two measures are specified to different levels of measurement (facility vs. practitioner). As such they are specified in order to be effectively and efficiently collected by the systems developed for each type of measure. Therefore, measure results should be easily interpretable with no adverse</p>

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		<p>impact on data collection burden.</p> <p>5b.1 If competing, why superior or rationale for additive value: Not applicable</p>

Comparison of NQF #0230, NQF #2473, and NQF #0730

	0230: Hospital 30-day, all-cause, risk-standardized mortality rate (RSMR) following acute myocardial infarction (AMI) hospitalization for patients 18 and older	2473: Hospital 30-Day Risk-Standardized Acute Myocardial Infarction (AMI) Mortality eMeasure	0730: Acute Myocardial Infarction (AMI) Mortality Rate
Steward	Centers for Medicare & Medicaid Services (CMS)	Centers for Medicare & Medicaid Services	Agency for Healthcare Research and Quality
Description	The measure estimates a hospital-level 30-day risk-standardized mortality rate (RSMR). Mortality is defined as death for any cause within 30 days after the date of admission for the index admission, for patients 18 and older discharged from the hospital with a principal diagnosis of acute myocardial infarction (AMI). CMS annually reports the measure for patients who are 65 years or older and are either Medicare fee-for-service (FFS) beneficiaries and hospitalized in non-federal hospitals or are hospitalized in Veterans Health Administration (VA) facilities.	This measure estimates hospital 30-day risk-standardized mortality rates following admission for AMI using clinical information collected at presentation in an electronic health record (EHR). Mortality is defined as death from any cause within 30 days of the index admission date.	In-hospital deaths per 1,000 hospital discharges with acute myocardial infarction (AMI) as a principal diagnosis for patients ages 18 years and older.
Type	Outcome	Outcome	Outcome
Data Source	Administrative claims, Other, Paper Medical Records Data sources for the Medicare FFS measure: 1. Medicare Part A inpatient and Part B outpatient claims: This data source contains claims data for fee-for service inpatient and outpatient services including: Medicare inpatient hospital care, outpatient hospital services, skilled nursing facility care, some home health agency services, as well as inpatient and outpatient physician claims for the 12 months prior to an index admission.	Administrative claims, Electronic Clinical Data, Electronic Clinical Data : Electronic Health Record, Electronic Clinical Data : Laboratory, Other The data source for the measure will be the hospital EHR for clinical data, merged with CMS Medicare claims and enrollment data (or another external source of death data) for the 30-day mortality outcome. The data source for measure development was the ACTION Registry(R)–GWTG(TM) (an initiative of the American College	Administrative claims While the measure is tested and specified using data from the Healthcare Cost and Utilization Project (HCUP) (see section 1.1 and 1.2 of the measure testing form), the measure specifications and software are specified to be used with any ICD-9-CM-coded administrative billing/claims/discharge dataset with Present on Admission (POA) information. Note that in Version 5.0, the

	0230: Hospital 30-day, all-cause, risk-standardized mortality rate (RSMR) following acute myocardial infarction (AMI) hospitalization for patients 18 and older	2473: Hospital 30-Day Risk-Standardized Acute Myocardial Infarction (AMI) Mortality eMeasure	0730: Acute Myocardial Infarction (AMI) Mortality Rate
	<p>2. Medicare Enrollment Database (EDB): This database contains Medicare beneficiary demographic, benefit/coverage, and vital status information. This data source was used to obtain information on several inclusion/exclusion indicators such as Medicare status on admission as well as vital status. These data have previously been shown to accurately reflect patient vital status (Fleming et al., 1992).</p> <p>3. Veterans Health Administration Data: This data source contains claims data for VA inpatient and outpatient services including: inpatient hospital care, outpatient hospital services, skilled nursing facility care, some home health agency services, as well as inpatient and outpatient physician claims for the 12 months prior to and including each index admission. Unlike Medicare FFS patients, VA patients are not required to have been enrolled in Part A and Part B Medicare for the 12 months prior to the date of admission.</p> <p>All-payer data sources:</p> <p>For our analyses to examine use in all-payer data, we used all-payer data from California in addition to CMS data for Medicare FFS 65+ patients in California hospitals. California is a diverse state, and, with more than 37 million residents, California represents 12% of the US population. We used the California Patient Discharge Data, a large, linked database of patient hospital admissions. In 2006, there were approximately 3 million adult discharges from more than 450 non-Federal acute care hospitals. Records are linked by a unique patient identification number, allowing us to determine patient history from previous</p>	<p>of Cardiology Foundation and the American Heart Association, with partnering support from Society of Chest Pain Centers, The American College of Emergency Physicians, and The Society of Hospital Medicine), maintained by the National Cardiovascular Data Registry (NCDR(R)), for clinical data, merged with CMS Medicare claims and enrollment data for the 30-day mortality outcome.</p> <p>No data collection instrument provided Attachment AMI_Mortality_eMeasure_Risk_model_coefficients.xlsx</p>	<p>AHRQ QI software no longer supports prediction of POA status using an embedded prediction module. Users are expected to provide POA data.</p> <p>Available at measure-specific web page URL identified in S.1 Attachment Technical_Specs_IQI15_v5.0.xlsx</p>

	0230: Hospital 30-day, all-cause, risk-standardized mortality rate (RSMR) following acute myocardial infarction (AMI) hospitalization for patients 18 and older	2473: Hospital 30-Day Risk-Standardized Acute Myocardial Infarction (AMI) Mortality eMeasure	0730: Acute Myocardial Infarction (AMI) Mortality Rate
	<p>hospitalizations and to evaluate rates of both readmission and mortality (via linking with California vital statistics records).</p> <p>Using all-payer data from California as well as CMS Medicare FFS data for California hospitals, we performed analyses to determine whether the AMI mortality measure can be applied to all adult patients, including not only FFS Medicare patients aged 65+ but also non-FFS Medicare patients aged 65+ and younger patients aged 18-64 years at the time of admission.</p> <p>References:</p> <p>Fleming C, Fisher ES, Chang CH, Bubolz TA, Malenka DJ. Studying outcomes and hospital utilization in the elderly: The advantages of a merged data base for Medicare and Veterans Affairs hospitals. Medical Care. 1992; 30(5): 377-91.</p> <p>No data collection instrument provided Attachment AMI_Mortality_NQF_Data_Dictionary_06-22-15_FINAL.xlsx</p>		
Level	Facility	Facility	Facility
Setting	Hospital/Acute Care Facility	Hospital/Acute Care Facility	Hospital/Acute Care Facility
Numerator Statement	The outcome for this measure is 30-day all-cause mortality. We define mortality as death from any cause within 30 days of the index admission date for patients 18 and older discharged from the hospital with a principal diagnosis of AMI.	The outcome for this measure is 30-day all-cause mortality. We define all-cause mortality as death from any cause within the 30 days after the index admission date.	Number of in-hospital deaths among cases meeting the inclusion and exclusion rules for the denominator.
Numerator Details	<p>The measure counts deaths for any cause within 30 days of the date of admission of the index AMI hospitalization.</p> <p>Identifying deaths in the FFS measure</p> <p>As currently reported, we identify deaths for FFS Medicare patients 65 years and older in the Medicare Enrollment Database (EDB).</p>	<p>The measure includes death from any cause within 30 days after the date of the index admission.</p> <p>Because this outcome will not be available from a hospital EHR, ascertainment of mortality will occur by linking to an external data source. For example, mortality could be obtained by linking with the Medicare</p>	Number of deaths (DISP=20 in AHRQ's Healthcare Cost and Utilization Project datasets) among cases meeting the inclusion and exclusion rules for the denominator.

	0230: Hospital 30-day, all-cause, risk-standardized mortality rate (RSMR) following acute myocardial infarction (AMI) hospitalization for patients 18 and older	2473: Hospital 30-Day Risk-Standardized Acute Myocardial Infarction (AMI) Mortality eMeasure	0730: Acute Myocardial Infarction (AMI) Mortality Rate
	<p>Identifying deaths in the all-payer measure</p> <p>For the purposes of development, deaths were identified using the California vital statistics data file. Nationally, post-discharge deaths can be identified using an external source of vital status, such as the Social Security Administration's Death Master File (DMF) or the Centers for Disease Control and Prevention's National Death Index (NDI).</p>	<p>Enrollment Database for Medicare patients or with another source of death data, such as the National Death Index or the Death Master File.</p>	
Denominator Statement	<p>This claims-based measure can be used in either of two patient cohorts: (1) patients aged 65 years or older or (2) patients aged 18 years or older. The cohort includes admissions for patients discharged from the hospital with a principal discharge diagnosis of AMI and with a complete claims history for the 12 months prior to admission. Currently, the measure is publicly reported by CMS for those patients 65 years and older who are either Medicare FFS beneficiaries admitted to non-federal hospitals or patients admitted to VA hospitals. Additional details are provided in S.9 Denominator Details.</p>	<p>The cohort includes inpatient admissions for patients aged 65 years and older who were discharged from short-term acute care hospitals with a principal discharge diagnosis of AMI.</p>	<p>Discharges, for patients ages 18 years and older, with a principal ICD-9-CM diagnosis code for AMI.</p>
Denominator Details	<p>To be included in the measure cohort used in public reporting, patients must meet the following additional inclusion criteria:</p> <ol style="list-style-type: none"> 1. Having a principal discharge diagnosis of AMI; 2. Enrolled in Medicare FFS; 3. Aged 65 or over; 4. Not transferred from another acute care facility; and 5. Enrolled in Part A and Part B Medicare for the 12 months prior to the date of index admission, and enrolled in Part A during the index 	<p>The cohort includes inpatient admissions for patients aged 65 years and older who were discharged from a short-term acute care hospital with a principal discharge diagnosis of AMI, as identified by the value sets in the attached measure specifications file (Section S.2a).</p>	<p>ICD-9-CM AMI diagnosis codes (initial or unspecified episode of care):</p> <p>41000 AMI ANTEROLATERAL, UNSPEC</p> <p>41001 AMI ANTEROLATERAL, INIT</p> <p>41010 AMI ANTERIOR WALL, UNSPEC</p> <p>41011 AMI ANTERIOR WALL, INIT</p> <p>41020 AMI INFEROLATERAL, UNSPEC</p>

	0230: Hospital 30-day, all-cause, risk-standardized mortality rate (RSMR) following acute myocardial infarction (AMI) hospitalization for patients 18 and older	2473: Hospital 30-Day Risk-Standardized Acute Myocardial Infarction (AMI) Mortality eMeasure	0730: Acute Myocardial Infarction (AMI) Mortality Rate
	<p>admission.</p> <p>VA beneficiaries/hospitalizations are also included in the AMI mortality measure. Enrollment in Medicare FFS is not required for these patients.</p> <p>International Classification of Diseases, 9th Revision, Clinical Modification (ICD-9-CM) codes used to define the cohort for each measure are:</p> <p>410.00 AMI (anterolateral wall) – episode of care unspecified</p> <p>410.01 AMI (anterolateral wall) – initial episode of care</p> <p>410.10 AMI (other anterior wall) – episode of care unspecified</p> <p>410.11 AMI (other anterior wall) – initial episode of care</p> <p>410.20 AMI (inferolateral wall) – episode of care unspecified</p> <p>410.21 AMI (inferolateral wall) – initial episode of care</p> <p>410.30 AMI (inferoposterior wall) – episode of care unspecified</p> <p>410.31 AMI (inferoposterior wall) – initial episode of care</p> <p>410.40 AMI (other inferior wall) – episode of care unspecified</p> <p>410.41 AMI (other inferior wall) – initial episode of care</p> <p>410.50 AMI (other lateral wall) – episode of care unspecified</p> <p>410.51 AMI (other lateral wall) – initial episode of care</p> <p>410.60 AMI (true posterior wall) – episode of care unspecified</p> <p>410.61 AMI (true posterior wall) – initial episode of care</p> <p>410.70 AMI (subendocardial) – episode of care unspecified</p> <p>410.71 AMI (subendocardial) – initial episode of care</p> <p>410.80 AMI (other specified site) – episode of care unspecified</p>		<p>41021 AMI INFEROLATERAL, INIT</p> <p>41030 AMI INFEROPOST, UNSPEC</p> <p>41031 AMI INFEROPOST, INITIAL</p> <p>41040 AMI INFERIOR WALL, UNSPEC</p> <p>41041 AMI INFERIOR WALL, INIT</p> <p>41050 AMI LATERAL NEC, UNSPEC</p> <p>41051 AMI LATERAL NEC, INITIAL</p> <p>41060 TRUE POST INFARCT, UNSPEC</p> <p>41061 TRUE POST INFARCT, INIT</p> <p>41070 SUBENDO INFARCT, UNSPEC</p> <p>41071 SUBENDO INFARCT, INITIAL</p> <p>41080 AMI NEC, UNSPECIFIED</p> <p>41081 AMI NEC, INITIAL</p> <p>41090 AMI NOS, UNSPECIFIED</p> <p>41091 AMI NOS, INITIAL</p>

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	<p>410.81 AMI (other specified site) – initial episode of care</p> <p>410.90 AMI (unspecified site) – episode of care unspecified</p> <p>410.91 AMI (unspecified site) – initial episode of care</p> <p>ICD-10 Codes that define the patient cohort:</p> <p>I2109 ST elevation (STEMI) myocardial infarction involving other coronary artery of anterior wall</p> <p>I2119 ST elevation (STEMI) myocardial infarction involving other coronary artery of inferior wall</p> <p>I2111 ST elevation (STEMI) myocardial infarction involving right coronary artery</p> <p>I2119 ST elevation (STEMI) myocardial infarction involving other coronary artery of inferior wall</p> <p>I2129 ST elevation (STEMI) myocardial infarction involving other sites</p> <p>I214 Non-ST elevation (NSTEMI) myocardial infarction</p> <p>I213 ST elevation (STEMI) myocardial infarction of unspecified site</p> <p>An ICD-9 to ICD-10 crosswalk is attached in field S.2b. (Data Dictionary or Code Table).</p>		
Exclusions	<p>The mortality measures exclude index admissions for patients:</p> <ol style="list-style-type: none"> 1. Discharged alive on the day of admission or the following day who were not transferred to another acute care facility. 2. With inconsistent or unknown vital status or other unreliable demographic (age and gender) data; 3. Enrolled in the Medicare hospice 	<p>The measure excludes index admissions:</p> <ol style="list-style-type: none"> 1) For patients who were discharged against medical advice (AMA) (because providers did not have the opportunity to deliver full care and prepare the patient for discharge); 2) For patients who were transferred in from another short-term acute care institution (because the death is attributed to 	<p>Exclude cases:</p> <ul style="list-style-type: none"> • transferred to another short-term hospital, for whom the outcome at hospital discharge was unknown • admitted for treatment of pregnancy, childbirth, and puerperium • with missing discharge disposition, gender,

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	<p>program or used VA hospice services any time in the 12 months prior to the index admission, including the first day of the index admission; or</p> <p>4. Discharged against medical advice (AMA).</p> <p>For patients with more than one admission for a given condition in a given year, only one index admission for that condition is randomly selected for inclusion in the cohort.</p> <p>For Medicare FFS patients, the measure additionally excludes admissions for patients without at least 30 days post-discharge enrollment in FFS Medicare (because the 30-day mortality outcome cannot be assessed in this group).</p>	<p>the hospital where the patient was initially admitted);</p> <p>3) With unreliable data (age >115 years);</p> <p>4) That were not randomly selected from a patient's multiple qualifying AMI admissions in a year (because AMI patients may have multiple admissions in a year and the measure includes one randomly selected AMI admission per patient per year);</p> <p>5) With unknown death (missing vital status) after linking to the Medicare Enrollment Database or other source of death data.</p>	<p>age, quarter, year, or principal diagnosis</p>
Exclusion Details	<p>1. The discharge disposition indicator is used to identify patients alive at discharge. Transfers are identified in the claims when a patient with a qualifying admission is discharged from an acute care hospital and admitted to another acute care hospital on the same day or next day. In addition, patient length of stay and condition is identified from the admission claim.</p> <p>2. Inconsistent vital status or unreliable data are identified if any of the following conditions are met 1) the patient's age is greater than 115 years; 2) if the discharge date for a hospitalization is before the admission date; and 3) if the patient has a sex other than 'male' or 'female'.</p> <p>3. Hospice enrollment in the 12 months prior to or on the index admission is identified using hospice data and the Inpatient standard analytic file (SAF). This exclusion applies when the</p>	<p>Denominator exclusions, including discharges AMA and transfers in from another acute care institution, are identified using the value sets in the attached measure specifications file (section S.2a).</p> <p>Index admissions with unreliable data are identified and excluded if the patient's age is greater than 115 years, based on the calculation of patient age. Patient age is calculated based on birthdate (see value set in attached file).</p> <p>Patients with unknown death (missing vital status) are identified by linking to the Medicare Enrollment Database or other source of death data.</p>	<p>Exclude cases:</p> <ul style="list-style-type: none"> transferred to another short-term hospital (DISP=2) with Major Diagnosis Category (MDC) 14 (pregnancy, childbirth, and puerperium) with missing discharge disposition (DISP=missing), gender (SEX=missing), age (AGE=missing), quarter (DQTR=missing), year (YEAR=missing) or principal diagnosis (DX1=missing)

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	<p>measure is used in Medicare FFS patients only.</p> <p>4. Discharges against medical advice (AMA) are identified using the discharge disposition indicator.</p> <p>Additional exclusions:</p> <ul style="list-style-type: none">• AMI admissions within 30 days of discharge from a qualifying index admission, which are identified by comparing the discharge date from the index admission with the readmission date.• Admissions without at least 30 days post-discharge enrollment in FFS Medicare, which is determined by examining the Medicare Enrollment Database (EDB)				
Risk Adjustment	<p>Statistical risk model</p> <p>Our approach to risk adjustment is tailored to and appropriate for a publicly reported outcome measure, as articulated in the American Heart Association (AHA) Scientific Statement, “Standards for Statistical Models Used for Public Reporting of Health Outcomes” (Krumholz et. al., 2006).</p> <p>The measure employs a hierarchical logistic regression model to create a hospital level 30-day RSMR. In brief, the approach simultaneously models data at the patient and hospital levels to account for the variance in patient outcomes within and between hospitals (Normand & Shahian, 2007). At the patient level, the model adjusts the log-odds of mortality within 30-days of admission for age, sex, and selected clinical covariates. At the hospital level, the approach models the hospital-specific intercepts as arising from a normal distribution. The hospital intercept represents the underlying risk of a death at the hospital, after accounting for</p>	<p>Statistical risk model</p> <p>The measure estimates the hospital 30-day all-cause risk-standardized mortality rate (RSMR) using a hierarchical logistic regression model. In brief, the approach simultaneously models outcomes at two levels (patient and hospital) to account for the variance in patient outcomes within and between hospitals (Normand et al., 2007). To model the log-odds of 30-day all-cause mortality at the patient level, the model adjusts for age and selected clinical covariates. The second level models the hospital-specific intercepts as a normal distribution. The hospital intercept represents the underlying risk of mortality at the hospital after accounting for patient risk. The hospital-specific intercepts are given a distribution in order to account for the clustering (non-independence) of patients within the same hospital (Normand et al., 2007).</p> <p>The measure adjusts for the following key variables:</p>	<p>Statistical risk model</p> <p>The predicted value for each case is computed using a hierarchical model (logistic regression with hospital random effect) and covariates for gender, age (in 5-year age groups), All Patient Refined Diagnosis Related Groups (APR DRGs) with Risk of Mortality (ROM) scores, Major Diagnosis Categories (MDC) based on the principal diagnosis, and transfer in from another acute care hospital. The expected rate is computed as the sum of the predicted value for each case divided by the number of cases for the unit of analysis of interest (i.e., hospital). The risk adjusted rate is computed using indirect standardization as the observed rate divided by the expected rate, multiplied by the reference population rate.</p> <p>The specific covariates for this measure are as follows:</p> <table><tr><th>Parameter</th><th>Label</th></tr></table>	Parameter	Label
Parameter	Label				

	0230: Hospital 30-day, all-cause, risk-standardized mortality rate (RSMR) following acute myocardial infarction (AMI) hospitalization for patients 18 and older	2473: Hospital 30-Day Risk-Standardized Acute Myocardial Infarction (AMI) Mortality eMeasure	0730: Acute Myocardial Infarction (AMI) Mortality Rate
	<p>patient risk. If there were no differences among hospitals, then after adjusting for patient risk, the hospital intercepts should be identical across all hospitals.</p> <p>Candidate and Final Risk-adjustment Variables:</p> <p>Candidate variables were patient-level risk-adjustors that were expected to be predictive of mortality, based on empirical analysis, prior literature, and clinical judgment including age, sex, and indicators of comorbidity and disease severity. For each patient, covariates are obtained from Medicare claims extending 12 months prior to and including the index admission. However, in the all-payer hospital discharge database measure, the risk-adjustment variables can be obtained only from inpatient claims in the prior 12 months and the index admission (this was tested explicitly in our all-payer testing, as many all-payer datasets do not include outpatient claims).</p> <p>The model adjusts for case-mix differences based on the clinical status of patients at the time of admission. We used condition categories (CCs), which are clinically meaningful groupings of more than 15,000 ICD-9-CM diagnosis codes, and combinations of CCs as candidate variables (Pope et al., 2000). A file that contains a list of the ICD-9-CM codes and their groupings into CCs is attached in data field S.2b (Data Dictionary or Code Table). In addition, only comorbidities that convey information about the patient at admission or in the 12-months prior, and not complications that arise during the course of the hospitalization, are included in the</p>	<p>Demographics:</p> <p>Age (continuous)</p> <p>Clinical condition on presentation:</p> <p>Heart rate (bpm) (continuous)</p> <p>Systolic blood pressure (mmHg) (continuous)</p> <p>Troponin ratio (initial troponin value (ng/ml)/hospital-specific upper limit of normal (ng/ml)) (continuous)</p> <p>Initial creatinine value (mg/dl) (continuous)</p> <p>Clinical risk-adjustment variables are the first values collected during the inpatient episode of care, including values collected in the emergency department prior to admission. Risk adjustment and measure score calculation will occur using aggregated data from all included sites.</p> <p>References:</p> <p>Normand S-LT, Shahian DM. 2007. Statistical and Clinical Aspects of Hospital Outcomes Profiling. Stat Sci 22 (2): 206-226.</p> <p>Available in attached Excel or csv file at S.2b</p>	<p>Age 18 to 39</p> <p>Age 40 to 44</p> <p>Age 45 to 49</p> <p>Age 50 to 54</p> <p>Age 55 to 59</p> <p>Age 65 to 79</p> <p>Age 80 to 84</p> <p>Age 85+</p> <p>APR-DRG 161-(1-2) CARDIAC DEFIBRILLATOR & HEART ASSIST IMPLANT, Risk of mortality (ROM) 1 - 2</p> <p>APR-DRG 161-(3-4) CARDIAC DEFIBRILLATOR & HEART ASSIST IMPLANT, Risk of mortality (ROM) 3 - 4</p> <p>APR-DRG 162-(1,2)CARDIAC VALVE PROCEDURES W CARDIAC CATHETERIZATION, ROM 1 and 2</p> <p>APR-DRG 162-3 CARDIAC VALVE PROCEDURES W CARDIAC CATHETERIZATION, ROM 3</p> <p>APR-DRG 162-4 CARDIAC VALVE PROCEDURES W CARDIAC CATHETERIZATION, ROM 4</p> <p>APR-DRG 165-(1,2) CORONARY BYPASS W CARDIAC CATH OR PERCUTANEOUS CARDIAC PROC, ROM 1 and 2</p> <p>APR-DRG 165-3 CORONARY BYPASS W CARDIAC CATH OR PERCUTANEOUS CARDIAC PROC, ROM 3</p> <p>APR-DRG 165-4 CORONARY BYPASS W CARDIAC CATH OR PERCUTANEOUS CARDIAC PROC, ROM 4</p> <p>APR-DRG 173-(1-4)</p>

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	<p>risk-adjustment. Hence, we do not risk adjust for CCs that may represent adverse events of care and that are only recorded in the index admission.</p> <p>The final set of risk adjustment variables are:</p> <p>Demographics</p> <p>Male</p> <p>Age-65 (years above 65, continuous) for 65 and over cohorts; or Age (years, continuous) for 18 and over cohorts.</p> <p>Comorbidities</p> <p>Congestive heart failure (CC 80)</p> <p>Acute myocardial infarction (CC 81)</p> <p>Other acute/subacute forms of ischemic heart disease (CC 82)</p> <p>Anterior myocardial infarction (ICD-9 codes 410.00-410.19)</p> <p>Other location of myocardial infarction (ICD-9 codes 410.20-410.69)</p> <p>Coronary atherosclerosis or angina (CC 83, 84)</p> <p>Cardio-respiratory failure and shock (CC 79)</p> <p>Valvular and rheumatic heart disease (CC 86)</p> <p>Hypertension (CC 89, 91)</p> <p>Stroke (CC 95-96)</p> <p>Cerebrovascular disease (CC 97-99, 103)</p> <p>Renal failure (CC 131)</p> <p>Chronic obstructive pulmonary disease (COPD) (CC 108)</p> <p>Pneumonia (CC 111-113)</p> <p>Diabetes mellitus (DM) or DM complications except proliferative retinopathy (CC 15-20, 120)</p> <p>Protein-calorie malnutrition (CC 21)</p> <p>Dementia or other specified brain disorders (CC 49, 50)</p> <p>Hemiplegia, paraplegia, paralysis,</p>		<p>OTHER VASCULAR PROCEDURES, ROM 1-4</p> <p>APR-DRG 174-2</p> <p>PERCUTANEOUS CARDIOVASCULAR PROCEDURES W AMI, ROM 2</p> <p>APR-DRG 174-3</p> <p>PERCUTANEOUS CARDIOVASCULAR PROCEDURES W AMI, ROM 3</p> <p>APR-DRG 174-4</p> <p>PERCUTANEOUS CARDIOVASCULAR PROCEDURES W AMI, ROM 4</p> <p>APR-DRG 190-1</p> <p>ACUTE MYOCARDIAL INFARCTION, ROM 1</p> <p>APR-DRG 190-2</p> <p>ACUTE MYOCARDIAL INFARCTION, ROM 2</p> <p>APR-DRG 190-3</p> <p>ACUTE MYOCARDIAL INFARCTION, ROM 3</p> <p>APR-DRG 190-4</p> <p>ACUTE MYOCARDIAL INFARCTION, ROM 4</p> <p>MDC 5</p> <p>CIRCULATORY SYSTEM, DISEASES & DISORDERS</p> <p>TRANSFER TRANSFER IN FROM ANOTHER ACUTE CARE HOSP (If ASOURCE='2' (Another Hospital) or</p> <p>POINTOFORIGINUBO 4='4' (Transfer from a Hospital), then TRANSFER=1)</p> <p>Source: http://qualityindicators.ahrq.gov/Downloads/Modules/IQI/V50/Parameter_Estimates_IQI_50.pdf.pdf Available in attached Excel or csv file at S.2b</p>

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	<p>functional disability (CC 67-69, 100-102, 177, 178)</p> <p>Vascular disease and complications (CC 104, 105)</p> <p>Metastatic cancer, acute leukemia and other severe cancers (CC 7, 8)</p> <p>Trauma in last year (CC 154-156, 158-162)</p> <p>Major psychiatric disorders (CC 54-56)</p> <p>Chronic Liver Disease (CC 25-27)</p> <p>History of CABG (ICD-9-CM V45.81, 36.10-36.16)</p> <p>History of PTCA (ICD-9-CM V45.82, 00.66, 36.01, 36.02, 36.05, 36.06, 36.07)</p> <p>References:</p> <p>Krumholz HM, Brindis RG, Brush JE, et al. 2006. Standards for Statistical Models Used for Public Reporting of Health Outcomes: An American Heart Association Scientific Statement From the Quality of Care and Outcomes Research Interdisciplinary Writing Group: Cosponsored by the Council on Epidemiology and Prevention and the Stroke Council Endorsed by the American College of Cardiology Foundation. <i>Circulation</i> 113: 456-462.</p> <p>Normand S-LT, Shahian DM. 2007. Statistical and Clinical Aspects of Hospital Outcomes Profiling. <i>Stat Sci</i> 22 (2): 206-226.</p> <p>Pope GC, et al. 2000. Principal Inpatient Diagnostic Cost Group Models for Medicare Risk Adjustment. <i>Health Care Financing Review</i> 21(3): 93-118.</p> <p>Provided in response box S.15a</p>		
Stratification	N/A	Results of this measure will not be stratified.	Not applicable
Type Score	Rate/proportion better quality = lower score	Rate/proportion better quality = lower score	Rate/proportion better quality = lower score

	0230: Hospital 30-day, all-cause, risk-standardized mortality rate (RSMR) following acute myocardial infarction (AMI) hospitalization for patients 18 and older	2473: Hospital 30-Day Risk-Standardized Acute Myocardial Infarction (AMI) Mortality eMeasure	0730: Acute Myocardial Infarction (AMI) Mortality Rate
Algorithm	<p>The measure estimates hospital-level 30-day all-cause RSMRs following hospitalization for AMI using hierarchical logistic regression models. In brief, the approach simultaneously models data at the patient and hospital levels to account for variance in patient outcomes within and between hospitals (Normand and Shahian, 2007). At the patient level, it models the log-odds of mortality within 30 days of discharge using age, sex, selected clinical covariates, and a hospital-specific intercept. At the hospital level, it models the hospital-specific intercepts as arising from a normal distribution. The hospital intercept represents the underlying risk of mortality at the hospital, after accounting for patient risk. The hospital-specific intercepts are given a distribution to account for the clustering (non-independence) of patients within the same hospital. If there were no differences among hospitals, then after adjusting for patient risk, the hospital intercepts should be identical across all hospitals.</p> <p>The RSMR is calculated as the ratio of the number of “predicted” to the number of “expected” deaths, multiplied by the national unadjusted mortality rate. For each hospital, the numerator of the ratio (“predicted”) is the number of deaths within 30 days predicted on the basis of the hospital’s performance with its observed case mix, and the denominator (“expected”) is the number of deaths expected on the basis of the nation’s performance with that hospital’s case mix. This approach is analogous to a ratio of “observed” to “expected” used in other types</p>	<p>The measure score is calculated based on the following steps:</p> <ol style="list-style-type: none"> 1. Patient cohort is identified based on the inclusion and exclusion criteria (see questions S.7, S.8, S.9, S.10, S.11); 2. Data elements for risk adjustment are collected using the first collected value, as detailed below; 3. Outcome is ascertained from an outside data source, such as the Medicare Enrollment Database (see questions S.4, S.5, S.6) 4. Measure score is calculated with aggregated data across all included sites, as described below. Measure calculation occurs outside of the EHR. <p>Risk-adjustment Variables</p> <p>The measure is adjusted for the variables listed below; all variables are continuous:</p> <ul style="list-style-type: none"> Age (years) Heart rate: HR<70 (bpm) Heart rate: HR≥70 (bpm) Systolic blood pressure (mmHg) Troponin ratio (ng/mL) Creatinine (mg/dL) <p>Troponin ratio is derived for each patient as follows: initial troponin value/hospital-specific upper reference limit for troponin. All hospitals will provide the upper reference limit of troponin for their laboratory.</p> <p>To reduce the effect of spurious outliers, extreme values obtained for the risk-adjustment variables will be transformed by replacement with a value at the outer limit of a designated range by a process called Winsorization. Specifically, low and high outliers for the risk-adjustment variables</p>	<p>The observed rate is the number of discharge records where the patient experienced the QI adverse event divided by the number of discharge records at risk for the event. The expected rate is a comparative rate that incorporates information about a reference population that is not part of the user’s input dataset – what rate would be observed if the expected level of care observed in the reference population and estimated with risk adjustment regression models, were applied to the mix of patients with demographic and comorbidity distributions observed in the user’s dataset? The expected rate is calculated only for risk-adjusted indicators.</p> <p>The expected rate is estimated for each person using a generalized estimating equations (GEE) approach to account for correlation at the hospital or provider level.</p> <p>The risk-adjusted rate is a comparative rate that also incorporates information about a reference population that is not part of the input dataset – what rate would be observed if the level of care observed in the user’s dataset were applied to a mix of patients with demographics and comorbidities distributed like the reference population? The risk adjusted rate is calculated using the indirect method as observed rate divided by expected rate multiplied by the reference</p>

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	<p>of statistical analyses. It conceptually allows for a comparison of a particular hospital's performance given its case mix to an average hospital's performance with the same case mix. Thus, a lower ratio indicates lower-than-expected mortality or better quality and a higher ratio indicates higher-than-expected mortality or worse quality.</p> <p>The "predicted" number of deaths (the numerator) is calculated by using the coefficients estimated by regressing the risk factors and the hospital-specific intercept on the risk of mortality. The estimated hospital specific intercept is added coefficients multiplied by the patient characteristics. The results are transformed and summed over all patients attributed to a hospital to get a predicted value. The "expected" number of deaths (the denominator) is obtained in the same manner, but a common intercept using all hospitals in our sample is added in place of the hospital specific intercept. The results are transformed and summed over all patients in the hospital to get an expected value. To assess hospital performance for each reporting period, we re-estimate the model coefficients using the years of data in that period.</p> <p>This calculation transforms the ratio of predicted over expected into a rate that is compared to the national observed readmission rate. The hierarchical logistic regression models are described fully in the original methodology report (Krumholz et al., 2005).</p> <p>References:</p> <p>1. Normand S-LT, Shahian DM.</p>	<p>will be Winsorized as follows:</p> <p>Age: no Winsorization</p> <p>Heart rate: low extreme values assigned to 40 bpm and high extreme values assigned to 140 bpm</p> <p>Systolic blood pressure: low extreme values assigned to 70 mmHg and high extreme values assigned to 150 mmHg</p> <p>Troponin ratio: no Winsorization of low values; high extreme values assigned to 60</p> <p>Creatinine: low extreme values assigned to 0.6 mg/dL and high extreme values assigned to 3 mg/dL</p> <p>Measure Score Calculation</p> <p>The RSMR is calculated as the ratio of the number of "predicted" to the number of "expected" deaths, multiplied by the national unadjusted mortality rate. For each hospital, the predicted hospital outcome (the numerator) is the sum of predicted probabilities of mortality for all patients at that particular hospital. The predicted probability for each patient in the hospital is calculated using the hospital-specific intercept (described in detail in the attached calculation algorithm) and patient risk factors. The expected hospital outcome (the denominator) is the sum of expected probabilities of mortality for all patients at a hospital. The expected probability of each patient in a hospital is calculated using a common intercept and patient risk factors.</p> <p>This approach is analogous to a ratio of "observed" to "expected" used in other types of statistical analyses. It conceptually allows for a comparison of a particular</p>	<p>population rate. The smoothed rate is the weighted average of the risk-adjusted rate from the user's input dataset and the rate observed in the reference population; the smoothed rate is calculated with a shrinkage estimator to result in a rate near that from the user's dataset if the provider's rate is estimated in a stable fashion with minimal noise, or to result in a rate near that of the reference population if the variance of the estimated rate from the input dataset is large compared with the hospital-to-hospital variance estimated from the reference population. Thus, the smoothed rate is a weighted average of the risk-adjusted rate and the reference population rate, where the weight is the signal-to-noise ratio. In practice, the smoothed rate brings rates toward the mean, and tends to do this more so for outliers (such as rural hospitals).</p> <p>For additional information, please see supporting information in the Quality Indicator Empirical Methods. No diagram provided</p>

	0230: Hospital 30-day, all-cause, risk-standardized mortality rate (RSMR) following acute myocardial infarction (AMI) hospitalization for patients 18 and older	2473: Hospital 30-Day Risk-Standardized Acute Myocardial Infarction (AMI) Mortality eMeasure	0730: Acute Myocardial Infarction (AMI) Mortality Rate
	<p>2007. Statistical and Clinical Aspects of Hospital Outcomes Profiling. Stat Sci 22(2): 206-226.</p> <p>2. Krumholz H, Normand S, Galusha D, et al. Risk-Adjustment Models for AMI and HF 30-Day Mortality Methodology. 2005. Available at measure-specific web page URL identified in S.1</p>	<p>hospital's performance given its case mix to an average hospital's performance with the same case mix. Thus, a ratio lower than one indicates a lower-than-expected mortality rate (or better quality), and a ratio greater than one indicates a higher-than-expected mortality rate (or worse quality). Please see attachments for more details on the calculation algorithm and the value sets for the risk-adjustment variables.</p> <p>References:</p> <p>Normand S-LT, Shahian DM. 2007. Statistical and Clinical Aspects of Hospital Outcomes Profiling. Stat Sci 22 (2): 206-226. Available in attached appendix at A.1</p>	
Submission items	<p>5.1 Identified measures: 0330 : Hospital 30-day, all-cause, risk-standardized readmission rate (RSRR) following heart failure (HF) hospitalization</p> <p>0468 : Hospital 30-day, all-cause, risk-standardized mortality rate (RSMR) following pneumonia hospitalization</p> <p>0505 : Hospital 30-day all-cause risk-standardized readmission rate (RSRR) following acute myocardial infarction (AMI) hospitalization.</p> <p>0506 : Hospital 30-day, all-cause, risk-standardized readmission rate (RSRR) following pneumonia hospitalization</p> <p>0229 : Hospital 30-day, all-cause, risk-standardized mortality rate (RSMR) following heart failure (HF) hospitalization for patients 18 and older</p> <p>1551 : Hospital-level 30-day, all-cause risk-standardized readmission rate (RSRR) following elective primary total hip arthroplasty (THA) and/or total</p>	<p>5.1 Identified measures: 0730 : Acute Myocardial Infarction (AMI) Mortality Rate</p> <p>0230 : Hospital 30-day, all-cause, risk-standardized mortality rate (RSMR) following acute myocardial infarction (AMI) hospitalization for patients 18 and older</p> <p>5a.1 Are specs completely harmonized? No</p> <p>5a.2 If not completely harmonized, identify difference, rationale, impact: The measure specifications are, by design, not completely harmonized in that the current measure uses clinical data elements collected from EHR for risk adjustment, and the measures listed above use claims data for risk adjustment. Additionally, the outcome in measure #0730 is inpatient mortality rather than 30-day mortality. Inpatient mortality rates can be influenced by hospital length of stay, so 30-day measures that establish a standard follow-up period are more appropriate</p>	<p>5.1 Identified measures: 0230 : Hospital 30-day, all-cause, risk-standardized mortality rate (RSMR) following acute myocardial infarction (AMI) hospitalization for patients 18 and older</p> <p>2473 : Hospital 30-Day Risk-Standardized Acute Myocardial Infarction (AMI) Mortality eMeasure</p> <p>5a.1 Are specs completely harmonized? No</p> <p>5a.2 If not completely harmonized, identify difference, rationale, impact: The indicators referenced above include 30-day mortality 1) for patients age 18 years and older 2) specified as an e-measure and 3) for patients age 65 and older. Inpatient mortality and 30-day mortality are different concepts, although capturing the same ultimate outcome. Harmonization is not appropriate.</p>

	0230: Hospital 30-day, all-cause, risk-standardized mortality rate (RSMR) following acute myocardial infarction (AMI) hospitalization for patients 18 and older	2473: Hospital 30-Day Risk-Standardized Acute Myocardial Infarction (AMI) Mortality eMeasure	0730: Acute Myocardial Infarction (AMI) Mortality Rate
	<p>knee arthroplasty (TKA)</p> <p>1789 : Hospital-Wide All-Cause Unplanned Readmission Measure (HWR)</p> <p>1891 : Hospital 30-Day, All-Cause, Risk-Standardized Readmission Rate (RSRR) following Chronic Obstructive Pulmonary Disease (COPD) Hospitalization</p> <p>1893 : Hospital 30-Day, All-Cause, Risk-Standardized Mortality Rate (RSMR) following Chronic Obstructive Pulmonary Disease (COPD) Hospitalization</p> <p>2431 : Hospital-level, risk-standardized payment associated with a 30-day episode-of-care for Acute Myocardial Infarction (AMI)</p> <p>5a.1 Are specs completely harmonized? Yes</p> <p>5a.2 If not completely harmonized, identify difference, rationale, impact: We did not include in our list of related measures any non-outcome (e.g., process) measures with the same target population as our measure. Our measure cohort was heavily vetted by clinical experts. Additionally, the measure, with the specified cohort, has been publicly reported since 2008. Because this is an outcome measure, clinical coherence of the cohort takes precedence over alignment with related non-outcome measures. Furthermore, non-outcome measures are limited due to broader patient exclusions. This is because they typically only include a specific subset of patients who are eligible for that measure (for example, patients who receive a specific medication or undergo a specific procedure).</p> <p>5b.1 If competing, why superior or rationale for additive value: N/A</p>	<p>for profiling a diverse group of hospitals (Drye et al., 2012). The measures listed above have target populations aged 18+, whereas the current measure's target population is age 65+. The exclusion criteria of the current measure are largely similar to those of measure #0230. We recommend the endorsement of an additional AMI mortality measure. The current measure represents an opportunity to move toward the use of eMeasures developed de novo for use in EHRs. However, as the implementation of these measures may take some time to become a reality in the foreseeable future, we recommend the endorsement of the current measure in addition to the continued endorsement of existing claims-based measures. References: Drye EE, Normand SL, Wang Y, Ross JS, Schreiner GC, Han L, Rapp M, Krumholz HM. Comparison of hospital risk-standardized mortality rates calculated by using in-hospital and 30-day models: an observational study with implications for hospital profiling. <i>Ann Intern Med.</i> 2012 Jan 3;156(1 Pt 1):19-26.</p> <p>5b.1 If competing, why superior or rationale for additive value: N/A</p>	<p>5b.1 If competing, why superior or rationale for additive value: IQI 15 and the Centers for Medicare & Medicaid Services' NQF-endorsed measures concerning AMI mortality (0230 and 2473) use the same ICD-9-CM codes to identify AMI, but they differ in two important respects: (1) whereas the CMS measures concern only Medicare fee-for-service and VA beneficiaries 65 years or older, IQI 15 measures mortality among hospitalizations of patients 18 years or older at non-federal acute care hospitals for all payers; and (2) while the CMS measures evaluate 30-day mortality, IQI 15—because it is based only on UB-04 data elements—is limited to inpatient mortality. The latter difference is a potential disadvantage in that the time at risk is not uniform for all patients and 30-day mortality is typically greater than inpatient mortality, but the former difference is an advantage because IQI 15 encompasses a greater proportion of the entire population at risk. We therefore believe that #0730 complements #0230 by offering an alternative specification for users who are interested in patients of all ages and all payers, just as #2473 offers an alternative e-measure specification for those with electronic health data.</p>

Comparison of NQF #0669 and NQF #0670

	0669: Cardiac Imaging for Preoperative Risk Assessment for Non-Cardiac, Low Risk Surgery	0670: Cardiac stress imaging not meeting appropriate use criteria: Preoperative evaluation in low risk surgery patients
Steward	Centers for Medicare & Medicaid Services	American College of Cardiology
Description	This measure calculates the percentage of stress echocardiography, single photon emission computed tomography myocardial perfusion imaging (SPECT MPI), or stress magnetic resonance (MR) imaging studies performed at each facility in the 30 days prior to an ambulatory non-cardiac, low-risk surgery performed at any location. The measure is calculated based on a one-year window of Medicare claims data. The measure has been publicly reported, annually, by the Centers for Medicare & Medicaid Services (CMS), since 2011, as a component of its Hospital Outpatient Quality Reporting (HOQR) Program.	Percentage of stress SPECT MPI, stress echo, CCTA, or CMR performed in low risk surgery patients for preoperative evaluation
Type	Efficiency	Efficiency
Data Source	Administrative claims This measure was initially constructed using the 100-percent FFS outpatient standard analytical files (SAFs) from 2009. These outpatient SAFs contain the claims data on imaging utilization and low-risk surgical procedures performed in hospital outpatient departments (including emergency department services), which are necessary to attribute the measure to specific facilities. Public reporting of the measure currently uses the 100 percent Medicare FFS outpatients SAFs from 2013 and 2014. No data collection instrument provided Attachment NQF_0669_Measure_Value_Sets_2015-06-30.xlsx	Electronic Clinical Data : Electronic Health Record, Electronic Clinical Data : Registry Optimization of Patient Selection for Cardiac Imaging Available in attached appendix at A.1 Attachment Imaging-Efficiency-Measures-Micro-specifications_Measure_Maintenance-635231526161153276.doc
Level	Facility, Population : National, Population : State	Facility, Clinician : Group/Practice
Setting	Ambulatory Care : Clinician Office/Clinic, Hospital/Acute Care Facility, Imaging Facility	Ambulatory Care : Clinician Office/Clinic, Imaging Facility
Numerator Statement	The number of stress echocardiography, SPECT MPI, and	Number of stress SPECT MPI, stress echo, CCTA, or CMR performed in patients undergoing low risk

	0669: Cardiac Imaging for Preoperative Risk Assessment for Non-Cardiac, Low Risk Surgery	0670: Cardiac stress imaging not meeting appropriate use criteria: Preoperative evaluation in low risk surgery patients
	stress MR studies performed in a hospital outpatient department within 30 days of an ambulatory non-cardiac, low-risk surgery performed at any location (e.g., same hospital, other hospital, or physician office).	surgery as a part of the preoperative evaluation
Numerator Details	<p>The numerator is defined by the following categories of surgical procedures:</p> <ul style="list-style-type: none"> -Surgery/Integumentary System: Breast -Surgery/Respiratory System: Accessory Sinuses -Surgery/Respiratory System: Larynx -Surgery/Respiratory System: Trachea and Bronchi -Surgery/Respiratory System: Lungs and Pleura -Surgery/Digestive System: Esophagus -Surgery/Digestive System: Intestines (Except Rectum) -Surgery/Digestive System: Rectum -Surgery/Digestive System: Anus -Surgery/Digestive System: Biliary Tract -Surgery/Digestive System: Abdomen, Peritoneum, and Omentum -Surgery/Urinary System: Kidney -Surgery/Urinary System: Ureter -Surgery/Urinary System: Bladder -Surgery/Female Genital System: Cervix Uteri -Surgery/Female Genital System: Corpus Uteri -Surgery/Female Genital System: Oviduct/Ovary -Surgery/Eye and Ocular Adnexa: Anterior Segment -Other Surgeries <p>(Specific CPT codes for each condition class are included in the value set for this measure; this detailed list can be found in the Excel workbook provided for Section S2b.)</p>	<p>Patients qualify this measure if:</p> <ul style="list-style-type: none"> -an upcoming surgery is the recorded reason for the imaging test AND -no other reason is recorded for the imaging AND <p>Surgery risk is low</p> <p>The following will be used to determine whether the risk of the surgery recorded is low:</p> <p>Surgical Risk Categories</p> <ul style="list-style-type: none"> • Low-Risk Surgery— cardiac death or MI less than 1% including endoscopic procedures, superficial procedures, cataract surgery, breast surgery. <p>Surgeries meeting this definition to be included in the measure are listed by</p> <p>CPT 4 Codes below. While additional surgeries may fit the low risk definition, only those surgeries listed below will be considered in determining inclusion in the numerator for this measure.</p> <p>Surgery/Integumentary System: Breast</p> <p>19100 Biopsy of breast</p> <p>19101 Biopsy of breast</p> <p>19102 Bx breast percut w/image</p> <p>19103 Bx breast percut w/device</p> <p>Surgery/Respiratory System: Accessory Sinuses</p> <p>31231 Nasal endoscopy, dx</p> <p>31233 Nasal/sinus endoscopy, dx</p> <p>31235 Nasal/sinus endoscopy, dx</p> <p>31237 Nasal/sinus endoscopy, surg</p> <p>31238 Nasal/sinus endoscopy, surg</p> <p>31239 Nasal/sinus endoscopy, surg</p> <p>31240 Nasal/sinus endoscopy, surg</p> <p>31267 Endoscopy, maxillary sinus</p> <p>31276 Sinus surgical endoscopy</p> <p>31299 Sinus surgery procedure</p> <p>Surgery/Respiratory System: Larynx</p> <p>31505 Diagnostic laryngoscopy</p> <p>31510 Laryngoscopy with biopsy</p> <p>31511 Remove foreign body, larynx</p> <p>31513 Injection into vocal cord</p>

	0669: Cardiac Imaging for Preoperative Risk Assessment for Non-Cardiac, Low Risk Surgery	0670: Cardiac stress imaging not meeting appropriate use criteria: Preoperative evaluation in low risk surgery patients
		31515 Laryngoscopy for aspiration 31520 Diagnostic laryngoscopy 31525 Diagnostic laryngoscopy 31526 Diagnostic laryngoscopy 31527 Laryngoscopy for treatment 31528 Laryngoscopy and dilatation 31529 Laryngoscopy and dilatation 31530 Operative laryngoscopy 31531 Operative laryngoscopy 31535 Operative laryngoscopy 31536 Operative laryngoscopy 31540 Operative laryngoscopy 31541 Operative laryngoscopy 31560 Operative laryngoscopy 31561 Operative laryngoscopy 31570 Laryngoscopy with injection 31571 Laryngoscopy with injection 31575 Diagnostic laryngoscopy 31576 Laryngoscopy with biopsy 31577 Remove foreign body, larynx 31578 Removal of larynx lesion 31579 Diagnostic laryngoscopy Surgery/Respiratory System: Trachea and Bronchi 31615 Visualization of windpipe 31620 Endobronchial us add-on 31622 Diagnostic bronchoscopy 31623 Dx bronchoscope/brush 31624 Dx bronchoscope/lavage 31625 Bronchoscopy with biopsy 31628 Bronchoscopy with biopsy 31629 Bronchoscopy with biopsy 31632 Bronchoscopy/lung bx, add'l 31633 Bronchoscopy/needle bx add'l 31645 Bronchoscopy, clear airways 31646 Bronchoscopy, reclear airways Surgery/Respiratory System: Lungs and Pleura 33508 Endoscopic vein harvest 37500 Endoscopy ligate perf veins 37501 Vascular endoscopy procedure 39400 Visualization of chest Surgery/Digestive System: Esophagus 43200 Esophagus endoscopy 43201 Esophagus endoscopy, w/submucous

	0669: Cardiac Imaging for Preoperative Risk Assessment for Non-Cardiac, Low Risk Surgery	0670: Cardiac stress imaging not meeting appropriate use criteria: Preoperative evaluation in low risk surgery patients
		<p>injection</p> <p>43202 Esophagus endoscopy, biopsy</p> <p>43204 Esophagus endoscopy & inject</p> <p>43205 Esophagus endoscopy/ligation</p> <p>43215 Esophagus endoscopy</p> <p>43216 Esophagus endoscopy/lesion</p> <p>43217 Esophagus endoscopy</p> <p>43219 Esophagus endoscopy</p> <p>43220 Esophagus endoscopy, dilation</p> <p>43226 Esophagus endoscopy, dilation</p> <p>43227 Esophagus endoscopy, repair</p> <p>43228 Esophagus endoscopy, ablation</p> <p>43231 Esoph endoscopy w/us exam</p> <p>43232 Esoph endoscopy w/us fn bx</p> <p>43234 Upper GI endoscopy, exam</p> <p>43235 Upper GI endoscopy, diagnosis</p> <p>43236 Upper GI scope w/submuc inj</p> <p>43237 Endoscopic us exam, esoph</p> <p>43238 Upper GI endoscopy w/us fn bx</p> <p>43239 Upper GI endoscopy, biopsy</p> <p>43241 Upper GI endoscopy with tube</p> <p>43242 Upper GI endoscopy w/us fn bx</p> <p>43243 Upper GI endoscopy & inject.</p> <p>43244 Upper GI endoscopy/ligation</p> <p>43246 Place gastrostomy tube</p> <p>43247 Operative upper GI endoscopy</p> <p>43248 Upper GI endoscopy/guidewire</p> <p>43249 Esophagus endoscopy, dilation</p> <p>43260 Endoscopy, bile duct/pancreas</p> <p>43261 Endoscopy, bile duct/pancreas</p> <p>43262 Endoscopy, bile duct/pancreas</p> <p>43263 Endoscopy, bile duct/pancreas</p> <p>43264 Endoscopy, bile duct/pancreas</p> <p>43265 Endoscopy, bile duct/pancreas</p> <p>43267 Endoscopy, bile duct/pancreas</p> <p>43268 Endoscopy, bile duct/pancreas</p> <p>43269 Endoscopy, bile duct/pancreas</p> <p>43271 Endoscopy, bile duct/pancreas</p> <p>43272 Endoscopy, bile duct/pancreas</p> <p>Surgery/Digestive System: Intestines (Except Rectum)</p> <p>44360 Small bowel endoscopy</p> <p>44361 Small bowel endoscopy, biopsy</p>

	0669: Cardiac Imaging for Preoperative Risk Assessment for Non-Cardiac, Low Risk Surgery	0670: Cardiac stress imaging not meeting appropriate use criteria: Preoperative evaluation in low risk surgery patients
		44363 Small bowel endoscopy 44383 Ileoscopy w/stent 44385 Endoscopy of bowel pouch 44386 Endoscopy, bowel pouch, biopsy 44388 Colon endoscopy 44389 Colonoscopy with biopsy 44390 Colonoscopy for foreign body 44391 Colonoscopy for bleeding 44392 Colonoscopy & polypectomy 44393 Colonoscopy, lesion removal 44397 Colonoscopy w stent Surgery/Digestive System: Rectum 45300 Proctosigmoidoscopy 45303 Proctosigmoidoscopy 45305 Proctosigmoidoscopy; biopsy 45307 Proctosigmoidoscopy 45308 Proctosigmoidoscopy 45309 Proctosigmoidoscopy 45315 Proctosigmoidoscopy 45317 Proctosigmoidoscopy 45320 Proctosigmoidoscopy 45321 Proctosigmoidoscopy 45327 Proctosigmoidoscopy w/stent 45330 Sigmoidoscopy, diagnostic 45331 Sigmoidoscopy and biopsy 45332 Sigmoidoscopy 45333 Sigmoidoscopy & polypectomy 45334 Sigmoidoscopy for bleeding 45335 Sigmoidoscope w/submuc inj 45337 Sigmoidoscopy, decompression 45338 Sigmoidoscopy 45339 Sigmoidoscopy 45340 Sig w/balloon dilation 45341 Sigmoidoscopy w/ultrasound 45342 Sigmoidoscopy w/us guide bx 45345 Sigmoidoscopy w/stent 45378 Diagnostic colonoscopy 45379 Colonoscopy 45380 Colonoscopy and biopsy 45381 Colonoscope, submucous inj 45382 Colonoscopy, control bleeding 45383 Colonoscopy, lesion removal 45384 Colonoscopy

	0669: Cardiac Imaging for Preoperative Risk Assessment for Non-Cardiac, Low Risk Surgery	0670: Cardiac stress imaging not meeting appropriate use criteria: Preoperative evaluation in low risk surgery patients
		45385 Colonoscopy, lesion removal 45387 Colonoscopy w/stent 45391 Colonoscopy w/endoscope us 45392 Colonoscopy w/endoscopic fnb Surgery/Digestive System: Anus 46600 Diagnostic anoscopy 46604 Anoscopy and dilation 46606 Anoscopy and biopsy 46608 Anoscopy; remove foreign body 46610 Anoscopy; remove lesion 46612 Anoscopy; remove lesions 46614 Anoscopy; control bleeding Surgery/Digestive System: Biliary Tract 47561 Laparo w/cholangio/biopsy Surgery/Digestive System: Abdomen, Peritoneum and Omentum 49322 – Laparoscopy, aspiration Surgery/Urinary System: Kidney 50551 Kidney endoscopy 50553 Kidney endoscopy 50555 Kidney endoscopy & biopsy 50557 Kidney endoscopy & treatment 50559 Renal endoscopy; radiotracer 50561 Kidney endoscopy & treatment • Surgery/Urinary System: Ureter 50951 Endoscopy of ureter 50953 Endoscopy of ureter 50955 Ureter endoscopy & biopsy 50970 Ureter endoscopy 50972 Ureter endoscopy & catheter 50974 Ureter endoscopy & biopsy 50976 Ureter endoscopy & treatment 50978 Ureter endoscopy & tracer 50980 Ureter endoscopy & treatment Surgery/Urinary System: Bladder 51715 Endoscopic injection/implant 52000 Cystoscopy 52001 Cystoscopy, removal of clots 52005 Cystoscopy & ureter catheter 52007 Cystoscopy and biopsy 52010 Cystoscopy & duct catheter 52204 Cystoscopy 52282 Cystoscopy, implant stent

	0669: Cardiac Imaging for Preoperative Risk Assessment for Non-Cardiac, Low Risk Surgery	0670: Cardiac stress imaging not meeting appropriate use criteria: Preoperative evaluation in low risk surgery patients
		<p>52327 Cystoscopy, inject material</p> <p>52330 Cystoscopy and treatment</p> <p>52351 Cystourethro & or pyeloscope</p> <p>52352 Cystourethro w/stone remove</p> <p>52353 Cystouretero w/lithotripsy</p> <p>52354 Cystouretero w/biopsy</p> <p>52355 Cystouretero w/excise tumor</p> <p>52402 Cystourethro cut ejacul duct</p> <p>Surgery/Female Genital System: Cervix Uteri</p> <p>57452 Examination of vagina</p> <p>57454 Vagina examination & biopsy</p> <p>57455 Biopsy of cervix w/scope</p> <p>57456 Endocerv curettage w/scope</p> <p>57460 Cervix excision</p> <p>57461 Konz of cervix w/scope, leep</p> <p>Surgery/Female Genital System: Corpus Uteri</p> <p>58555 Hysteroscopy, dx, sep proc</p> <p>58558 Hysteroscopy, biopsy</p> <p>58559 Hysteroscopy, lysis</p> <p>58560 Hysteroscopy, resect septum</p> <p>58562 Hysteroscopy, remove fb</p> <p>58565 Hysteroscopy, sterilization</p> <p>Surgery/Female Genital System: Oviduct/Ovary</p> <p>58670 Laparoscopy, tubal cautery</p> <p>58671 Laparoscopy, tubal block</p> <p>Surgery/Eye and Ocular Adnexa: Anterior Segment</p> <p>66820 Incision, secondary cataract</p> <p>66821 After cataract laser surgery</p> <p>66830 Removal of lens lesion</p> <p>66982 Cataract surgery, complex</p> <p>66983 Remove cataract, insert lens</p> <p>Other Surgeries:</p> <p>14301 Skin Tissue Rearrangement</p> <p>21011 Exc Face Les Sc< 2 cm</p> <p>21012 Exc Face Les Sc=2 cm</p> <p>21013 Exc Face Tum Deep < 2 cm</p> <p>21014 Exc Face Tum Deep = 2 cm</p> <p>21552 Exc Neck Les Sc = 3 cm</p> <p>21554 Exc Neck Tum Deep = 5 cm</p> <p>21558 Resect Neck Tum = 5 cm</p> <p>21931 Exc Back Les Sc = 3 cm</p> <p>21932 Exc Back Tum Deep < 5 cm</p> <p>21933 Exc Back Tum Deep = 5 cm</p>

	0669: Cardiac Imaging for Preoperative Risk Assessment for Non-Cardiac, Low Risk Surgery	0670: Cardiac stress imaging not meeting appropriate use criteria: Preoperative evaluation in low risk surgery patients
		<p>22901 Exc Back Tum Deep = 5 cm</p> <p>22902 Exc Abdomen Les Sc < 3 cm</p> <p>22903 Exc Abdomen Les Sc > 3 cm</p> <p>23071 Exc Shoulder Les Sc > 3 cm</p> <p>23073 Exc Shoulder Tum Deep > 5 cm</p> <p>24071 Exc Arm/Elbow Les Sc = 3 cm</p> <p>24073 Exc Arm/Elbow Tum Deep > 5 cm</p> <p>25071 Exc Forearm Les Sc > 3 cm</p> <p>25073 Exc Forearm Tum Deep = 3 cm</p> <p>26111 Exc Hand Les Sc > 1.5 cm</p> <p>26113 Exc Hand Tum Deep > 1.5 cm</p> <p>27043 Exc Hip Pelvis Les Sc > 3 CM</p> <p>27045 Exc Hip/Pelvis Tum Deep > 5 CM</p> <p>27337 Exc Thigh/Knee Les Sc > 3 CM</p> <p>27339 Exc Thigh/Knee Tum Deep >5CM</p> <p>27632 Exc Leg/Ankle Les Sc > 3cm</p> <p>27634 Exc Leg/Ankle Tum Deep >5 cm</p> <p>28039 Exc Foot/Toe Tum Sc > 1.5 cm</p> <p>28041 Exc Foot/Toe Tum Deep >1.5cm</p> <p>29581 Apply Multilay Compr Lower Leg</p> <p>31626 Bronchoscopy w/ Markers</p> <p>32552 Remove Lung Catheter</p> <p>36147 Access AV Dial Grft for Eval</p> <p>36148 Access AV Dial Grft for Proc</p> <p>37761 Ligate Leg Veins Open</p> <p>51727 Cystometrogram w/UP</p> <p>51728 Cystometrogram w/VP</p> <p>51729 Cystometrogram w/VP&UP</p> <p>53855 Insert Prost Urethral Stent</p> <p>63661 Remove Spine El Trd Perq Aray</p> <p>63662 Remove Spine El Trd Plate</p> <p>63663 Revise Spine El Trd Perq Aray</p> <p>63664 Revise Spine El Trd Plate Revised</p> <p>64490 Inj Paravert F Jnt C/T 1 LEV</p> <p>64493 INJ Paravert F JNT L/S 1 LEV</p> <p>0213T US Facet JT INJ CERV/T 1 LEV</p> <p>0216T US Facet JT INJ LS 1 LEVEL</p>
Denominator Statement	The number of stress echocardiography, SPECT MPI, and stress MR studies performed in a hospital outpatient department on Medicare beneficiaries within a 12-month time window.	Number of stress SPECT MPI, stress echo, CCTA, and CMR performed

	0669: Cardiac Imaging for Preoperative Risk Assessment for Non-Cardiac, Low Risk Surgery	0670: Cardiac stress imaging not meeting appropriate use criteria: Preoperative evaluation in low risk surgery patients
Denominator Details	<p>The denominator is defined by the following CPT codes:</p> <p>SPECT MPI CPT 78464, 78451, 78465, 78452</p> <p>Stress Echocardiography CPT 93350 C8928 and 93351 C8930</p> <p>Stress MR CPT 75559, 75560, 75563, 75564</p> <p>Global and technical-component (TC) claims should be considered to capture all outpatient volume facility claims, typically paid under the Outpatient Prospective Payment System(OPPS)/Ambulatory Payment Classifications (APC) methodology, and to avoid double counting of professional-component claims (i.e., 26 modifier). A technical unit can be identified by a modifier code of TC. A global unit can be identified by the absence of a TC or 26 modifier code.</p> <p>SPECT MPI, stress echocardiography, and stress MR studies can be billed separately for the technical and professional components or billed globally, which includes both the professional and technical components. Professional component claims will outnumber technical component claims due to over-reads.</p>	<p>All consecutive stress SPECT MPI, stress echocardiography, CCTA, and CMR orders</p> <p>Measurement Entity: Imaging laboratory prospectively measured on test requisition forms and/or patient charts</p> <p>Level of Measurement/Analysis: Imaging laboratory*</p> <p>*Attribution for inappropriate use is shared between the ordering physician and imaging laboratory. In an ideal world, attribution to the ordering physician or institution, as well as the imaging laboratory, would be reflected in the reporting of these measures. However, there are numerous complexities that prevent assignment of these measures to individual ordering physicians. For example, ordering volumes from individual physicians and institutions are insufficient to make meaningful comparisons to allow such attribution. Thus, these measures will be reported at the level of the imaging laboratory. However, the extent to which the institution housing the imaging laboratory can impact these measures will be dependent upon cooperation of ordering physicians with the imaging laboratory.</p>
Exclusions	Studies are excluded for any patients with diagnosis codes in at least three of the following categories: diabetes mellitus, renal insufficiency, stroke or transient ischemic attack, prior heart failure, or ischemic heart disease.	None.
Exclusion Details	<p>Studies are excluded for any patients with diagnosis codes in at least three of the following categories:</p> <p>Diabetes (look back of one year)</p> <p>Diabetes mellitus ICD-9 codes 249, 250, and 648.0X ICD-10 codes E08.00-E13.9</p> <p>Diabetes mellitus in pregnancy, childbirth, and the puerperium ICD-10 codes O24.011-O24.33, O24.811-O24.93</p>	None.

	0669: Cardiac Imaging for Preoperative Risk Assessment for Non-Cardiac, Low Risk Surgery	0670: Cardiac stress imaging not meeting appropriate use criteria: Preoperative evaluation in low risk surgery patients
	<p>Renal Insufficiency (look back of one year)</p> <p>Renal insufficiency</p> <p>ICD-9 codes 403, 404, 580, 582, 583, 584, 585, 586, and 593.9</p> <p>Hypertensive chronic kidney disease</p> <p>ICD-10 codes I12.0-I12.9</p> <p>Hypertensive heart and chronic kidney disease</p> <p>ICD-10 codes I13.0-I13.2</p> <p>Glomerular diseases</p> <p>ICD-10 codes N00.0-N01.9, N03.0-N03.9, N05.0-N08</p> <p>Acute kidney failure and chronic kidney disease</p> <p>ICD-10 codes N17.0-N19</p> <p>Other disorders of kidney and ureter</p> <p>ICD-10 codes N28.9-N29</p> <p>Stroke or transient ischemic attack (look back of three years)</p> <p>ICD-9 codes 430, 431, 432, 433, 434, 435, 436, 437, 438, 674.0X, and 997.02</p> <p>Transient cerebral ischemic attacks and related syndromes</p> <p>ICD-10 codes G45.0-G45.2, G45.8-G45.9</p> <p>Vascular syndromes of brain in cerebrovascular diseases</p> <p>ICD-10 codes G46.0-G46.2</p> <p>Cerebrovascular diseases</p> <p>ICD-10 codes I60.00-I63.9, I65.21-I65.29, I66.01-I66.9, I67.1, I67.841-I67.89, I69.00-I69.998</p> <p>Diseases of the circulatory system complicating pregnancy, childbirth and the puerperium</p> <p>ICD-10 codes O99.411-O99.43</p> <p>Prior heart failure (look back of three years)</p> <p>Prior heart failure</p> <p>ICD-9 codes 425, 428, and 429</p> <p>Other forms of heart disease</p> <p>ICD-10 codes I42.0-I43</p> <p>Heart failure</p> <p>ICD-10 codes I50.1-I50.9</p>	

	0669: Cardiac Imaging for Preoperative Risk Assessment for Non-Cardiac, Low Risk Surgery	0670: Cardiac stress imaging not meeting appropriate use criteria: Preoperative evaluation in low risk surgery patients
	<p>Intraoperative and post-procedural complications and disorders of circulatory system, not elsewhere classified</p> <p>ICD-10 codes I97.0-I97.191</p> <p>Complications and ill-defined descriptions of heart disease</p> <p>ICD-10 codes I51.0-I51.9</p> <p>Ischemic heart disease (look back of three years)</p> <p>Ischemic heart disease</p> <p>ICD-9 codes 410, 411, 412, 413, and 414</p> <p>ICD-10 codes I20.0-I22.9, I24.8-I25.119, I25.700-I25.799</p>	
Risk Adjustment	<p>No risk adjustment or risk stratification</p> <p>Not applicable; this measure does not risk adjust.</p> <p>Provided in response box S.15a</p>	<p>No risk adjustment or risk stratification</p> <p>None</p>
Stratification	<p>Not applicable; this measure does not stratify its results.</p>	<p>None</p>
Type Score	<p>Other (specify): Percentage better quality = lower score</p>	<p>Rate/proportion better quality = lower score</p>
Algorithm	<p>This measure calculates the percentage of SPECT MPI, stress echocardiography, or stress MR studies that are performed within the 30 days preceding a non-cardiac, low-risk surgery, out of all SPECT MPI, stress echocardiography, and stress MR studies performed. The measure is calculated based on one year of hospital outpatient claims data, as follows:</p> <ol style="list-style-type: none"> 1. Select hospital outpatient claims with a CPT code for any SPECT MPI, stress echocardiography, or stress MR on a revenue line item 2. Exclude professional component only claims with modifier = '26' 3. Exclude cases with three or more exclusion diagnoses occurring during the look back period for each diagnosis 4. Set denominator counter = 1 5. Set numerator counter = 1 if a non-cardiac, low-risk surgery occurs within the 30 days following the SPECT MPI, 	<p>Locate all stress SPECT MPI, stress echocardiography, CCTA, and CMR orders performed during the sampling period.</p> <p>Record the total number of tests during the sampling period as the denominator.</p> <p>From this sets of test orders, identify orders containing the criteria listed in the numerator No diagram provided</p>

	0669: Cardiac Imaging for Preoperative Risk Assessment for Non-Cardiac, Low Risk Surgery	0670: Cardiac stress imaging not meeting appropriate use criteria: Preoperative evaluation in low risk surgery patients
	<p>stress echocardiography, or stress MR from step 1, above</p> <p>6. Aggregate denominator and numerator counts by Medicare provider number</p> <p>7. Measure = numerator counts / denominator counts [The value should be recorded as a percentage] No diagram provided</p>	
Submission items	<p>5.1 Identified measures: 0670 : Cardiac stress imaging not meeting appropriate use criteria: Preoperative evaluation in low risk surgery patients</p> <p>5a.1 Are specs completely harmonized? No</p> <p>5a.2 If not completely harmonized, identify difference, rationale, impact: Although NQF #0669 is similar to NQF #0670, there are several differences that would make measure harmonization infeasible and reduce the effectiveness of both currently endorsed measures. First, the measures serve different target populations and purposes: the CMS measure is used for public reporting and the measure calculations only include CMS FFS claims; on the other hand, the ACC measure is not restricted to the Medicare population and the measure calculations are sold to hospitals as part of a quality improvement package, rather than used for public reporting. Second, the measures include different stress testing procedures: the ACC measure (NQF #0670) includes SPECT MPI, stress echocardiography, CCTA, and CMR procedures codes in the denominator, whereas the CMS measure (NQF #0669) includes SPECT MPI, stress echocardiography, and stress MR procedure codes. Finally, the ACC measure relies on a different data source than does the CMS measure: unlike the CMS measure, the ACC measure does not account for instances where the imaging and low risk surgery occur at different facilities.</p>	<p>5.1 Identified measures: 0669 : Cardiac Imaging for Preoperative Risk Assessment for Non-Cardiac, Low Risk Surgery</p> <p>5a.1 Are specs completely harmonized? No</p> <p>5a.2 If not completely harmonized, identify difference, rationale, impact: Different populations and data sources used</p> <p>5b.1 If competing, why superior or rationale for additive value: This measure provides an additional level of analysis that applies not only to hospitals but also outpatient physician clinics. The data source also provides a richer source of clinical information to distinguish between testing ordered for preoperative assessment and other cardiovascular causes co-existing at the same time.</p>

	0669: Cardiac Imaging for Preoperative Risk Assessment for Non-Cardiac, Low Risk Surgery	0670: Cardiac stress imaging not meeting appropriate use criteria: Preoperative evaluation in low risk surgery patients
	<p>While NQF #0669 is related to the ICSI measure, significant structural differences makes measure harmonization inappropriate for these measures. The denominator of the ICSI measure is defined by low-risk surgery cases, whereas the denominator of the CMS measure is defined by cardiac imaging studies. The ICSI measure also relies on test results for measure calculation, a data element not available in CMS administrative claims data. Finally, the ICSI measure includes patients aged 2 years and older while the CMS measure is targeted to the Medicare population.</p> <p>5b.1 If competing, why superior or rationale for additive value: We did not identify any competing measures that address both the same measure focus and target population as NQF #0669.</p>	

Comparison of NQF #2763 and NQF #0076

	2763: Ischemic Vascular Disease Care: All or None Outcome Measure-Optimal Control	0076: Optimal Vascular Care
Steward	Wisconsin Collaborative for Healthcare Quality	MN Community Measurement
Description	<p>The percentage of patients age 18 through 75 with one of the following conditions:</p> <ol style="list-style-type: none"> 1) Two diagnoses related visits with Coronary Artery Disease (CAD) or a CAD risk-equivalent condition, or 2) Acute Coronary Event consisting of an acute myocardial infarction (AMI), coronary artery bypass graft (CABG), or percutaneous coronary intervention (PCI) from a hospital visit, who had each of the following during the one year measurement year: <ul style="list-style-type: none"> •Documentation in the medical record of daily Aspirin or daily other antiplatelet medication usage, unless contraindicated. •Most recent Blood pressure controlled 	<p>Percentage of adult patients ages 18 to 75 who have ischemic vascular disease with optimally managed modifiable risk factors (blood pressure, tobacco-free status, daily aspirin use).</p>

	2763: Ischemic Vascular Disease Care: All or None Outcome Measure-Optimal Control	0076: Optimal Vascular Care
	<p>to a level of less than 140/90 mm Hg</p> <ul style="list-style-type: none"> •Most recent Tobacco Status is Tobacco-Free •Documentation in the medical record of Statin Use •All or None Outcome Measure (Optimal Control) composite of BP <140/90, Tobacco Non-User, Daily Aspirin or Other Antiplatelet and Statin Use. <p>Patients are classified uniquely to one of the three condition subgroups in the order of Coronary Artery Disease, Coronary Artery Disease Risk-Equivalent condition, or Acute Coronary Event.</p>	
Type	Composite	Outcome
Data Source	<p>Administrative claims, Electronic Clinical Data, Electronic Clinical Data : Electronic Health Record, Electronic Clinical Data : Registry Data is obtained via data extracts (.csv files) from the practice and then uploaded into the WCHQ Repository Based Submission (RBS) database. Primary files consist of a Patient File, Encounter File, Problem List File, Clinical Data File, Tobacco File, Blood Pressure File and a Medication File. Certain data elements are cross-mapped to identify internal codes. The data is then calculated for the measure and is available with results at the group, clinic site and provider level. There is documentation provided describing the process of data submission and creation of the data files. This documentation is attached at A.1.</p> <p>Available in attached appendix at A.1 Attachment WCHQ_IVD_Care_Measure_Code_List.xlsx</p>	<p>Electronic Clinical Data, Electronic Clinical Data : Electronic Health Record, Paper Medical Records An excel template with formatted columns for data fields is provided. Many medical groups extract the information from their EMR. Registries can be used as a source of information to create the data file; however groups must ensure that all of their eligible patients are included. Paper abstraction forms are provided for those clinics who wish to use them as an interim step to creating their data file. All data is uploaded in electronic format (.csv file) to a HIPAA secure, encrypted and password protected data portal.</p> <p>URL Attachment Codes_and_Data_Dictionary_Optimal_Vascular_Care_-_0076_4-6-2014-635787771123676105.xlsx</p>
Level	Clinician : Group/Practice	Clinician : Group/Practice
Setting	Ambulatory Care : Clinician Office/Clinic	Ambulatory Care : Clinician Office/Clinic
Numerator Statement	<p>All-or-None Outcome Measure (Optimal Control) - Using the IVD denominator optimal results include:</p> <ul style="list-style-type: none"> • Most recent blood pressure measurement is less than 140/90 mm Hg <p>And</p>	<p>Patients ages 18 to 75 with ischemic vascular disease (IVD) who meet all of the following targets from the most recent visit during the measurement period: Blood Pressure less than 140/90, Tobacco-Free Status, Daily Aspirin Use (unless contraindicated).</p>

	2763: Ischemic Vascular Disease Care: All or None Outcome Measure-Optimal Control	0076: Optimal Vascular Care
	<ul style="list-style-type: none"> Most recent tobacco status is Tobacco Free <p>NOTE: If there is No Documentation of Tobacco Status the patient is not compliant for this measure.</p> <p>And</p> <ul style="list-style-type: none"> Daily Aspirin or Other Antiplatelet Unless Contraindicated <p>And</p> <ul style="list-style-type: none"> Statin Use 	
Numerator Details	<p>NOTE: All code tables and associated codes referenced in this document are included in the Excel File attached at step S2b.</p> <ul style="list-style-type: none"> DAILY ASPIRIN OR OTHER ANTIPLATELET MEDICATIONS THERAPY UNLESS CONTRAINDICATED (Figure IVD-2) This measure assesses the percentage of patients with documentation within the medical record of daily Aspirin or daily other antiplatelet agent at any time during the measurement period demonstrated through any of the following: <ol style="list-style-type: none"> Documentation of an active prescription for daily Aspirin (see suggested list in Table IVD-6) or daily or other antiplatelet medications (see acceptable medications in Table IVD-7) Documentation on the patient's medication list of active daily usage of Aspirin (see suggested list in Table IVD-6) or daily other antiplatelet medications (see acceptable medications in Table IVD-7) Contraindication to Aspirin <ol style="list-style-type: none"> Contraindications will count as numerator compliant. Any valid contraindication date prior to the end of the measure end date will count as compliant. There is no limit on the look back date, but the date of documentation or onset date must occur prior to the end of the measurement period. Accepted contraindications: <ol style="list-style-type: none"> History of gastrointestinal (GI) bleed (see codes in Table IVD-8) History of intracranial bleed 	<p>Numerator for the Blood Pressure Component:</p> <p>Blood Pressure Date [Date (mm/dd/yyyy)] AND</p> <p>BP Systolic Value [Numeric] AND</p> <p>BP Diastolic Value [Numeric]</p> <p>Numerator calculation: numerator compliant is BP during the measurement period AND Systolic value is less than 140 AND Diastolic value is less than 90.</p> <p>Enter the date of the most recent Blood Pressure (BP) test date prior to and including 12/31/YYYY (measurement period).</p> <p>Enter the value of the most recent Blood Pressure (BP) prior to and including 12/31/ YYYY (measurement period).</p> <p>Numerator for the Tobacco Component:</p> <p>Tobacco Status Documentation Date [Date (mm/dd/yyyy)] AND</p> <p>Tobacco Status [Numeric]</p> <p>1 = Tobacco Free (patient does not use tobacco) 2 = No Documentation 3 = Current Tobacco User</p> <p>Numerator calculation: numerator compliant is Value 1 = Tobacco Free AND the most recent date documentation of tobacco status</p> <p>Enter the most recent date prior to and including 12/31/YYYY (measurement period) that the patient's tobacco status was documented.</p> <p>Enter the most recent tobacco status prior to and including 12/31/YYYY (measurement period).</p> <p>Numerator for the Aspirin Component:</p> <p>Aspirin (ASA) Date [Date (mm/dd/yyyy)]</p> <p>Enter the most recent date of documented ASA or anti-platelet prior to and including 12/31/YYYY (measurement period).</p> <p>FYI: any documented date in the measurement period of ASA or an anti-platelet is acceptable; the date does not need to be the most recent.</p> <p>OR</p>

	2763: Ischemic Vascular Disease Care: All or None Outcome Measure-Optimal Control	0076: Optimal Vascular Care
	<p>(ICB) (see codes in Table IVD-8)</p> <p>iii. History of GI Bleed or ICB from an ICD-9 diagnosis-based problem list or past medical history. There is no limit on the look back date, but the date of documentation or onset date must occur prior to the end of the measurement period.</p> <p>iv. Anticoagulant Use (see acceptable list of Medications in Table IVD-9). There must be documentation of an active anticoagulant at any time during the Measurement Period.</p> <ul style="list-style-type: none"> BLOOD PRESSURE CONTROL (Figure IVD-2) <p>The number of patients in the denominator whose blood pressure (BP) is adequately controlled during the Measurement Period. Adequate control is a representative systolic Blood Pressure less than 140 mm Hg and a representative diastolic Blood Pressure less than 90 mm Hg.</p> <p>IDENTIFYING A REPRESENTATIVE BLOOD PRESSURE</p> <p>Blood Pressure Selection Criteria:</p> <ol style="list-style-type: none"> Blood Pressure reading must have been obtained during the Measurement Period. Systolic and Diastolic numbers must be from the same BP reading. A controlled BP requires that both the systolic and diastolic readings must be less than 140/90. Exclusions: Inpatient Stays, Emergency Room Visits, Urgent Care Visits, and Patient Self-Reported BP's (Home and Health Fair Blood Pressures) Inclusions: Any office visit encounter, including Nurse Only BP Checks, not listed under Exclusions above. NOTE: A BP performed at a patient's home by a nurse who then inputs the result into an EMR counts as a Nurse Only BP. <ul style="list-style-type: none"> Select the Blood Pressure from the most recent visit. In the event that multiple Blood 	<p>Aspirin (ASA) Contraindication Date [Date (mm/dd/yyyy)]</p> <p>If patient has a documented contraindication to ASA, enter the date of the contraindication. Any valid contraindication date will be given credit. Auditor must be able to validate this date.</p> <p>Accepted contraindications:</p> <ul style="list-style-type: none"> Anticoagulant use (see table below) Any history of gastrointestinal (GI)* or intracranial bleed (ICB) Allergy to ASA <p>*Gastroesophageal reflux disease (GERD) is not automatically considered a contraindication but may be included if specifically documented as a contraindication by the physician.</p> <p>The following may be exclusions if specifically documented by the physician:</p> <ul style="list-style-type: none"> Use of non-steroidal anti-inflammatory agents Documented risk for drug interaction Uncontrolled hypertension defined as >180 systolic, >110 diastolic Other provider documented reason for not being on ASA therapy <p>Numerator calculation: numerator compliant is Aspirin Use or documented contraindication for use of aspirin.</p> <p>Enter the date prior to and including 12/31/YYYY (measurement period) that the patient's Aspirin use or contraindication of Aspirin use was documented.</p> <p>Aspirin and Aspirin Containing Products:</p> <p>The intent of the daily aspirin component of this measure is to reduce further cardiovascular risk/ events for patients who have IVD. Unless contraindicated, taking daily aspirin or an anti-platelet medication can prevent the formation of clots by reducing platelet adhesion and reduce the risk of heart attack, stroke or other vascular events.</p> <p>Products containing solely aspirin, any dosage, can be counted as meeting the daily aspirin use. The following are a few combination products that are also acceptable for the intent of daily aspirin use:</p> <ul style="list-style-type: none"> ? aspirin AND stomach acid reducer (buffered) ? aspirin AND nitrate (chest pain) ? aspirin AND statin <p>However, not all products containing an aspirin derivative can be assumed to meet the intent of daily aspirin use. Most of these combination products</p>

	2763: Ischemic Vascular Disease Care: All or None Outcome Measure-Optimal Control	0076: Optimal Vascular Care
	<p>Pressures are recorded in the same day of service, select any reading that is controlled. If none are in control, select an uncontrolled reading.</p> <ul style="list-style-type: none"> If no Blood Pressure is recorded during the Measurement Period, the patient is assumed to be “not controlled”. <p>3. TOBACCO FREE (Figure IVD-2)</p> <p>The number of patients in the denominator whose most recent tobacco documentation status with any provider within the 12 month measurement period is Tobacco Free.</p> <p>Tobacco Use Definition:</p> <ul style="list-style-type: none"> Cigarette Cigar Pipe Smoking Smokeless Tobacco (Chewing Tobacco, Snuff, etc.) <p>Tobacco Use Status can be identified by any of the following criteria:</p> <p>1. Documentation stating that the patient has been asked if they are one of the following during the Measurement Period with the numerator compliant goal of Tobacco-Free:</p> <p>1. Tobacco-Free (see examples below):</p> <ol style="list-style-type: none"> Former tobacco user Never used Non-tobacco user Passive smoker <p>2. Non Tobacco-Free</p> <ol style="list-style-type: none"> Current tobacco user <p>3. No Documentation: The subset of denominator patients who did not have documentation of tobacco status during the last 12 Months [Measurement Period]</p> <p>2. ICD-9, CPT, HCPCS and CPT-II Codes indicating tobacco use status during the Measurement Period) from billing or encounter data only. Do not use the problem list for these codes. (Table IVD-10)</p> <p>4. STATIN USE (Figure IVD-2)</p> <p>This measure assesses the percentage of</p>	<p>would not be taken on a daily basis and should not be considered “daily aspirin use.” Many of the combination products are intended to be used on an as needed basis for control of pain or cold/ flu symptoms. Combination products containing aspirin AND any of the following are NOT acceptable as meeting the intent of daily aspirin:</p> <ul style="list-style-type: none"> ? acetaminophen ? caffeine ? narcotics ? muscle relaxants ? decongestants ? antihistamines <p>Anti-Platelet Medications</p> <p>Anti-platelet medications (listed in the table below) may also be used to meet the intent of “daily aspirin use”. Like aspirin products, these medications can prevent the formation of clots by reducing platelet adhesion.</p> <p>Oral Anti-Platelet Medications:</p> <p>aspirin and dipyridamole; Aggrenox®</p> <p>dipyridamole; Persantine®</p> <p>ticagrelor; Brilinta®</p> <p>cilostazol; Pletal®</p> <p>prasugrel; Effient®</p> <p>clopidogrel; Plavix®</p> <p>ticlopidine; Ticlid®</p> <p>Anti-Coagulant Medications</p> <p>Anti-coagulant medications, “blood- thinners”, can frequently be a contraindication to taking daily aspirin or anti-platelet medication. This however is not an absolute contraindication as some patients on lower doses of warfarin and also safely take daily aspirin. If the patient is indeed taking daily aspirin in addition to an anti-coagulant, it is acceptable to submit as taking daily aspirin and not indicate a contraindication.</p> <p>Anticoagulant Medications:</p> <p>apixaban; Eliquis®</p> <p>rivaroxaban; Xarelto®</p> <p>dabigatran etexilate; Pradaxa®</p> <p>warfarin sodium; Coumadin®, Jantoven®</p> <p>enoxopren sodium; Lovenox®, Xaparin®, Clexane®</p>

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	<p>patients with documentation within the medical record of statin use at any time during the measurement period demonstrated through any of the following:</p> <ol style="list-style-type: none"> 1. Documentation of an active prescription for a statin (see acceptable medications in Table IVD-11) 2. Documentation on the patient's medication list of active usage of a statin (see acceptable medications in Table IVD-11) <p>5. ALL OR NONE OUTCOME MEASURE</p> <p>IVD All-or-None Measure</p> <p>The IVD All-or-None Measure is one outcome measure (optimal control). The measure contains four goals. All goals must be reached in order to meet that measure. The numerator for the all-or-none measure should be collected from the organization's total IVD denominator.</p> <p>All-or-None Outcome Measure (Optimal Control) - Using the IVD denominator optimal results include:</p> <ul style="list-style-type: none"> • Most recent blood pressure measurement is less than 140/90 mm Hg <p>And</p> <ul style="list-style-type: none"> • Most recent tobacco status is Tobacco Free <p>NOTE: If there is No Documentation of Tobacco Status the patient is not compliant for this measure.</p> <p>And</p> <ul style="list-style-type: none"> • Daily Aspirin or Other Antiplatelet Unless Contraindicated <p>And</p> <ul style="list-style-type: none"> • Statin Use 	
Denominator Statement	Patients with CAD or a CAD Risk-Equivalent Condition 18-75 years of age and alive as of the last day of the MP.	Patients ages 18 to 75 with ischemic vascular disease who have at least two visits for this condition over the last two measurement periods and at least one visit in the last measurement period.
Denominator Details	<p>NOTE: All code tables and associated codes referenced in this document are included in the Excel File attached at step S2b.</p> <p>Patients eligible for inclusion in the</p>	<ul style="list-style-type: none"> • Patient was age 18 to 75 at the start of the measurement period (date of birth was on or between 01/01/19yy to 01/01/19yy). • Patient was seen by an eligible provider in an eligible specialty face-to-face at least two times

	2763: Ischemic Vascular Disease Care: All or None Outcome Measure-Optimal Control	0076: Optimal Vascular Care
	<p>denominator include (See Figure IVD-1): [Question 1] – Is this a patient with the disease, or condition?</p> <p>CORONARY ARTERY DISEASE (OR CAD RISK EQUIVALENT) DIAGNOSIS RELATED OUTPATIENT VISITS</p> <p>Those patients with a total of two or more visits during the last 24 months [Measurement Period + Prior Year] from Table IVD-4 (Office Visit Encounter Codes-Outpatient) with any provider (MD, DO, PA, NP) within the Physician Group on different dates of service coded (including primary and secondary diagnoses) with diagnosis codes from Table IVD-1 (Coronary Artery Disease) or Table IVD-2 (CAD Risk-Equivalent Conditions). The following criteria apply:</p> <p>Any combination of two or more diagnosis codes from either Table IVD-1 or Table IVD-2, on different dates of service.</p> <p>OR</p> <p>ACUTE CORONARY EVENT- RELATED HOSPITAL VISITS</p> <p>Those patients who had a minimum of one hospital related visit (excluding Emergency and Lab Only visits) for an Acute Coronary Event from Table IVD-3 during the last 24 Months [Measurement Period + Prior Year].</p> <p>[Question 2] – Is this a patient whose care is managed within the physician group?</p> <p>Those patients who have at least two Primary Care Office Visit (Table IVD-4) in an ambulatory setting, regardless of diagnosis code, on different dates of service, to a PCP or Cardiologist in the past 24 months [Measurement Period + Prior Year]. If Cardiologist is not considered a PCP, at least one of the two office visits must be to a PCP.</p> <p>[Question 3] – Is this a patient current in our system?</p> <p>Those patients who had at least one</p>	<p>during the last two measurement periods (01/01/20yy to 12/31/20yy) with visits coded with an IVD ICD-9 diagnosis code (in any position, not only primary). Use this date of service range when querying the practice management or EMR system to allow a count of the visits within the measurement period.</p> <ul style="list-style-type: none"> • Patient was seen by an eligible provider in an eligible specialty face-to-face at least one time during the measurement period (01/01/20yy to 12/31/20yy) for any reason. This may or may not include one of the face-to-face IVD visits. <p>Please see attached code list provided in S.2.b Data Dictionary</p>

	2763: Ischemic Vascular Disease Care: All or None Outcome Measure-Optimal Control	0076: Optimal Vascular Care
	Primary Care Office Visit (Table IVD-4) in an ambulatory setting, regardless of diagnosis code, with a PCP or a Cardiologist during the last 12 Months [Measurement Period].	
Exclusions	There are no denominator exclusions	Valid exclusions include patients who had died during the measurement period, patients in hospice during the measurement period, patients who were permanent nursing home residents during the measurement period, or patients who were coded with IVD in error.
Exclusion Details	N/A	<p>Patient died prior to the end of the measurement period</p> <p>Patient was in hospice at any time during the measurement period</p> <p>Patient was a permanent nursing home resident home during the measurement period</p> <p>Documentation that diagnosis was coded in error</p>
Risk Adjustment	No risk adjustment or risk stratification N/A	<p>Statistical risk model</p> <p>Risk adjustment observed to expected method based on the following variables:</p> <ul style="list-style-type: none"> * insurance product * age bands <p>Provided in response box S.15a</p>
Stratification	This measure could be stratified by payer and this is documented in Appendix A of the measure specification, however, WCHQ does not currently publicly report the measure in a stratified manner.	The ischemic vascular disease population is not currently stratified.
Type Score	Other (specify): Percentage better quality = higher score	Weighted score/composite/scale better quality = higher score
Algorithm	<p>NOTE: Flow diagrams outlining the measure logic are included in step S.19.below at A.1 and is also included in the measure specification on pages 4 and 8 available at the URL identified in S.1.</p> <p>The denominator algorithm is applied by identifying the target population based on codes and appropriate office visits during the designated timeframe. Once the denominator population has been identified the numerator logic is applied to all patients in the denominator to determine which patients meet each individual numerator and for the All or None measure which patients meet all four numerators for the timeframe.</p>	<p>This measure is calculated by submitting a file of individual patient values (e.g. blood pressure, LDL value, etc) to a HIPAA secure data portal. Programming within the data portal determines if each patient is a numerator case and then a rate is calculated for each clinic site.</p> <p>If any component of the numerator is noncompliant for any one of the four components, then the patient is numerator noncompliant for the composite all or none optimal vascular care measure.</p> <p>Numerator logic is as follows:</p> <p>Is Blood Pressure date in the measurement year? If yes, numerator is compliant for this component. If no, numerator is noncompliant for this component. Assess next variable.</p> <p>Is BP Systolic <140? If yes, numerator is compliant for</p>

	2763: Ischemic Vascular Disease Care: All or None Outcome Measure-Optimal Control	0076: Optimal Vascular Care
	Available in attached appendix at A.1	<p>this component. If no, numerator is noncompliant for this component. Assess next variable.</p> <p>Is BP Diastolic <90? If yes, numerator is compliant for this component. If no, numerator is noncompliant for this component. Assess next variable.</p> <p>Is Tobacco Status = 1 (Tobacco Free) and Tobacco Assessment Date a valid date? If yes, numerator is compliant for this component. If no, numerator is noncompliant for this component. Assess next variable.</p> <p>Is Aspirin Date in the measurement period? OR, Is Aspirin Contraindication Date a valid date? If yes, numerator is compliant for this component. If no, numerator is noncompliant for this component. Assess next variable.</p> <p>If all of the above numerator components are compliant, then the patient is calculated as a numerator case for the optimal vascular care measure.</p>
Submission items	<p>5.1 Identified measures: 0076 : Optimal Vascular Care</p> <p>5a.1 Are specs completely harmonized? No</p> <p>5a.2 If not completely harmonized, identify difference, rationale, impact: The measure specifications are very similar for three of the measure components, Daily Aspirin, Blood Pressure Control and Tobacco Free. However, the WCHQ measure also adds the Statin Use component which is a secondary prevention according to the AHA/ACC revised guidelines in November 2013. There are also some slight denominator differences in number and time frame of visits required.</p> <p>5b.1 If competing, why superior or rationale for additive value: Because this measure includes the secondary prevention element of Statin Use from the updated AHA/ACC guidelines from November 2013. It also uses a denominator algorithm that allows patient level lists to be generated for internal practice quality improvement purposes.</p>	<p>5.1 Identified measures:</p> <p>5a.1 Are specs completely harmonized?</p> <p>5a.2 If not completely harmonized, identify difference, rationale, impact:</p> <p>5b.1 If competing, why superior or rationale for additive value: There are other similar measures that address three of the four components separately, but no measure exists that is a composite outcome measure.</p> <p>NQF # 0068 Ischemic Vascular Disease (IVD): Use of Aspirin or another Antithrombotic (NCQA)</p> <p>NQF # 0073 IVD: Blood Pressure Management (NCQA)</p> <p>NQF # 0075 IVD: Complete Lipid Profile and LDL Control <100 (NCQA)</p> <p>Related Measures: There are other similar measures that address three of the four components separately, but no measure exists that is a composite outcome measure. NQF # 0068 Ischemic Vascular Disease (IVD): Use of Aspirin or another Antithrombotic (NCQA) NQF # 0073 IVD: Blood Pressure Management (NCQA) NQF # 0075 IVD: Complete Lipid Profile and LDL Control <100 (NCQA)</p>

Appendix F2: Related and Competing Measures (narrative format)

Comparison of NQF #0067 and NQF #0068

0067: Chronic Stable Coronary Artery Disease: Antiplatelet Therapy

0068: Ischemic Vascular Disease (IVD): Use of Aspirin or Another Antiplatelet

Steward

0067: Chronic Stable Coronary Artery Disease: Antiplatelet Therapy

American College of Cardiology

0068: Ischemic Vascular Disease (IVD): Use of Aspirin or Another Antiplatelet

National Committee for Quality Assurance

Description

0067: Chronic Stable Coronary Artery Disease: Antiplatelet Therapy

Percentage of patients aged 18 years and older with a diagnosis of coronary artery disease seen within a 12 month period who were prescribed aspirin or clopidogrel.

0068: Ischemic Vascular Disease (IVD): Use of Aspirin or Another Antiplatelet

The percentage of patients 18 years of age and older who were discharged from an inpatient setting with an acute myocardial infarction (AMI), coronary artery bypass graft (CABG) or percutaneous coronary intervention (PCI) during the 12 months prior to the measurement year, or who had a diagnosis of ischemic vascular disease (IVD) during the measurement year and the year prior to the measurement year and who had documentation of routine use of aspirin or another antiplatelet during the measurement year.

Type

0067: Chronic Stable Coronary Artery Disease: Antiplatelet Therapy

Process

0068: Ischemic Vascular Disease (IVD): Use of Aspirin or Another Antiplatelet

Process

Data Source

0067: Chronic Stable Coronary Artery Disease: Antiplatelet Therapy

Electronic Clinical Data : Registry This measure is currently being used in the ACCF PINNACLE registry for the outpatient office setting.

Available in attached appendix at A.1 No data dictionary

0068: Ischemic Vascular Disease (IVD): Use of Aspirin or Another Antiplatelet

Administrative claims, Electronic Clinical Data, Electronic Clinical Data : Electronic Health Record, Paper Medical Records N/A

No data collection instrument provided Attachment 0068_IVD_Value_Sets_Final.xlsx

Level

0067: Chronic Stable Coronary Artery Disease: Antiplatelet Therapy

Clinician : Individual

0068: Ischemic Vascular Disease (IVD): Use of Aspirin or Another Antiplatelet

Clinician : Group/Practice, Clinician : Individual

Setting

0067: Chronic Stable Coronary Artery Disease: Antiplatelet Therapy

Ambulatory Care : Clinician Office/Clinic

0068: Ischemic Vascular Disease (IVD): Use of Aspirin or Another Antiplatelet

Ambulatory Care : Clinician Office/Clinic

Numerator Statement

0067: Chronic Stable Coronary Artery Disease: Antiplatelet Therapy

Patients who were prescribed* aspirin or clopidogrel within a 12 month period.

*Prescribed may include prescription given to the patient for aspirin or clopidogrel at one or more visits in the measurement period OR patient already taking aspirin or clopidogrel as documented in current medication list.

0068: Ischemic Vascular Disease (IVD): Use of Aspirin or Another Antiplatelet

Patients who had documentation of routine use of aspirin or another antiplatelet during the measurement year.

Numerator Details

0067: Chronic Stable Coronary Artery Disease: Antiplatelet Therapy

For Claims/Administrative: Report CPT II Code 4086F: Aspirin or clopidogrel prescribed.

0068: Ischemic Vascular Disease (IVD): Use of Aspirin or Another Antiplatelet

ADMINISTRATIVE

Patients who had documentation of routine use of aspirin or another antiplatelet during the measurement year.

Refer to Table IVD-E to identify medications for oral anti-platelet therapy.

ORAL ANTI-PLATELET THERAPIES (TABLE IVD-E)

PRESCRIPTIONS

- Aspirin
- Clopidogrel
- Aspirin-dipyridamole
- Prasugrel
- Ticagrelor
- Ticlopidine

MEDICAL RECORD

Patients who had documentation of routine use of aspirin or another antiplatelet during the measurement year.

At a minimum, documentation in the medical record must include a note indicating the date when aspirin or another antiplatelet was prescribed or documentation of prescription from another treating physician.

Denominator Statement

0067: Chronic Stable Coronary Artery Disease: Antiplatelet Therapy

All patients aged 18 years and older with a diagnosis of coronary artery disease seen within a 12 month period.

0068: Ischemic Vascular Disease (IVD): Use of Aspirin or Another Antiplatelet

Patients 18 years or older by the end of the measurement year discharged from an inpatient setting with an AMI, CABG, or PCI during the 12 months prior to the measurement year or who had a diagnosis of IVD during both the measurement year and the year prior to the measurement year.

Denominator Details

0067: Chronic Stable Coronary Artery Disease: Antiplatelet Therapy

See 'Registry Supplemental Resources' attached in appendix field A.1 for data dictionary and form.

Codes that are applicable for the denominator are:

Diagnosis for coronary artery disease (ICD-9-CM) 410.00, 410.01, 410.02, 410.10, 410.11, 410.12, 410.20, 410.21, 410.22, 410.30, 410.31, 410.32, 410.40, 410.41, 410.42, 410.50, 410.51, 410.52, 410.60, 410.61, 410.62, 410.70, 410.71, 410.72, 410.80, 410.81, 410.82, 410.90, 410.91, 410.92, 411.0, 411.1, 411.81, 411.89, 412, 413.0, 413.1, 413.9, 414.00, 414.01, 414.02, 414.03, 414.04, 414.05, 414.06, 414.07, 414.2, 414.3, 414.8, 414.9, V45.81, V45.82

Diagnosis for coronary artery disease (ICD-10-CM): I20.0, I20.1, I20.8, I20.9, I21.01, I21.02, I21.09, I21.11, I21.19, I21.21, I21.29, I21.3, I21.4, I22.0, I22.1, I22.2, I22.8, I22.9, I24.0, I24.1, I24.8, I24.9, I25.10, I25.110, I25.111, I25.118, I25.119, I25.2, I25.5, I25.6, I25.700, I25.701, I25.708, I25.709, I25.710, I25.711, I25.718, I25.719, I25.720, I25.721, I25.728, I25.729, I25.730, I25.731, I25.738, I25.739, I25.750, I25.751, I25.758, I25.759, I25.760, I25.761, I25.768, I25.769, I25.790, I25.791, I25.798, I25.799, I25.810, I25.811, I25.812, I25.82, I25.83, I25.89, I25.9, Z95.1, Z95.5, Z98.61

Patient encounter during the reporting period (CPT): 99201, 99202, 99203, 99204, 99205, 99212, 99213, 99214, 99215, 99304, 99305, 99306, 99307, 99308, 99309, 99310, 99324, 99325, 99326, 99327, 99328, 99334, 99335, 99336, 99337, 99341, 99342, 99343, 99344, 99345, 99347, 99348, 99349, 99350

0068: Ischemic Vascular Disease (IVD): Use of Aspirin or Another Antiplatelet

ADMINISTRATIVE

Patients are identified for the eligible population in two ways: by event or by diagnosis. The organization must use both methods to identify the eligible population, but a patient only needs to be identified by one method to be included in the measure.

Event. Any of the following during the year prior to the measurement year meet criteria:

- MI. Discharged from an inpatient setting with an MI (MI Value Set)*. Use both facility and professional claims to identify MI.

- CABG. Discharged from an inpatient setting with a CABG (CABG Value Set)*. Use both facility and professional claims to identify CABG.

- PCI. Patients who had a PCI (PCI Value Set)* in any setting.

Diagnosis. Patients who meet at least one of the following criteria during both the measurement year and the year prior to the measurement year. Criteria need not be the same across both years.

- At least one outpatient visit (Outpatient Value Set)* with an IVD diagnosis (IVD Value Set)*, or

- At least one acute inpatient encounter (Acute Inpatient Value Set)* with an IVD diagnosis (IVD Value Set)*.

*Due to the extensive volume of codes associated with identifying the denominator for this measure, we are attaching a separate file with code value sets. See code value sets located in question S.2b.

MEDICAL RECORD

Documentation of IVD in the medical record includes:

- IVD

- Ischemic heart disease

- Angina

- Coronary atherosclerosis

- Coronary artery occlusion

- Cardiovascular disease

- Occlusion or stenosis of precerebral arteries (including basilar, carotid and vertebral arteries)

- Atherosclerosis of renal artery

- Atherosclerosis of native arteries of the extremities

- Chronic total occlusion of artery of the extremities

- Arterial embolism and thrombosis

- Atheroembolism.

Note: Use paper logs, patient registries or electronic medical records (EMRs) to identify the denominator, then use the medical record to confirm patient eligibility.

Exclusions

0067: Chronic Stable Coronary Artery Disease: Antiplatelet Therapy

Documentation of medical reason(s) for not prescribing aspirin or clopidogrel (e.g., allergy, intolerance, receiving other thienopyridine therapy, receiving warfarin therapy, bleeding coagulation disorders, other medical reasons)

Documentation of patient reason(s) for not prescribing aspirin or clopidogrel (e.g., patient declined, other patient reasons)

Documentation of system reason(s) for not prescribing aspirin or clopidogrel (e.g., lack of drug availability, other reasons attributable to the health care system)

0068: Ischemic Vascular Disease (IVD): Use of Aspirin or Another Antiplatelet

Patients who had documentation of use of anticoagulant medications during the measurement year.

Exclusion Details

0067: Chronic Stable Coronary Artery Disease: Antiplatelet Therapy

For Claims/Administrative:

Documentation of medical reason(s) for not prescribing aspirin or clopidogrel

- Append modifier to CPT II code 4086F-1P

Documentation of patient reason(s) for not prescribing aspirin or clopidogrel

- Append modifier to CPT II code 4086F-2P

Documentation of system reason(s) for not prescribing aspirin or clopidogrel

- Append modifier to CPT II code 4086F-3P

0068: Ischemic Vascular Disease (IVD): Use of Aspirin or Another Antiplatelet

Patients who had documentation of use of anticoagulant medications during the measurement year.

ANTICOAGULANT MEDICATIONS

- Apixaban
- Argatroban
- Bivalirudin
- Dabigatran
- Dalteparin
- Desirudin
- Edoxaban
- Enoxaparin
- Fondaparinux
- Heparin
- Lepirudin
- Rivaroxaban
- Tinzaparin
- Warfarin

Risk Adjustment

0067: Chronic Stable Coronary Artery Disease: Antiplatelet Therapy

No risk adjustment or risk stratification

Not Applicable.

0068: Ischemic Vascular Disease (IVD): Use of Aspirin or Another Antiplatelet

No risk adjustment or risk stratification

N/A

Stratification

0067: Chronic Stable Coronary Artery Disease: Antiplatelet Therapy

Not Applicable.

0068: Ischemic Vascular Disease (IVD): Use of Aspirin or Another Antiplatelet

N/A

Type Score

0067: Chronic Stable Coronary Artery Disease: Antiplatelet Therapy

Rate/proportion better quality = higher score

0068: Ischemic Vascular Disease (IVD): Use of Aspirin or Another Antiplatelet

Rate/proportion better quality = higher score

Algorithm

0067: Chronic Stable Coronary Artery Disease: Antiplatelet Therapy

To calculate performance rates:

- 1) Find the patients who meet the initial patient 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 patient 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 patient population and denominator are identical.
- 3) Find the patients who qualify for exclusions and subtract from the denominator.
- 4) From the patients within the denominator (after exclusions have been subtracted from the denominator), find the patients who qualify for the Numerator (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
- 5) From the patients who did not meet the numerator criteria, determine if the physician has documented that the patient meets any criteria for exception when exceptions have been specified [for this measure: medical reason(s)(e.g., eg, allergy, intolerance, receiving other thienopyridine therapy, receiving warfarin therapy, bleeding coagulation disorders, other medical reasons) or patient reason(s)(e.g., economic, social, and/or religious impediments, noncompliance, patient refusal, other patient reason)]. 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 of patients 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. No diagram provided

0068: Ischemic Vascular Disease (IVD): Use of Aspirin or Another Antiplatelet

Step 1: Determine the denominator

Patients 18 years of age or older by the end of the measurement year AND who were discharged from an inpatient setting for an AMI, CABG or PCI during the 12 months prior to the measurement year or who had a diagnosis of IVD during both the measurement year and the year prior to the measurement year.

Step 2: Exclude patients who meet the exclusion criteria

Patients on anticoagulant therapy.

Step 3: Determine the numerator

Patients who had documentation of routine use of aspirin or another antiplatelet during the measurement year.

Step 4: Calculate the rate by dividing the numerator (Step 3) by the denominator (after exclusions) (Step 2). No diagram provided

Submission items

0067: Chronic Stable Coronary Artery Disease: Antiplatelet Therapy

5.1 Identified measures: 0465 : Perioperative Anti-platelet Therapy for Patients undergoing Carotid Endarterectomy

5a.1 Are specs completely harmonized? No

5a.2 If not completely harmonized, identify difference, rationale, impact: See 5b.1 for more detailed response due to lack of character spaces in this section.

5b.1 If competing, why superior or rationale for additive value: Measure 0067 looks at whether ASA or clopidogrel were prescribed during a 12 month measurement period. Meanwhile, the two existing NQF endorsed measures (#0465 and #0964) focused on whether the medications were prescribed prior to discharge or prior to surgery.

Specifically, Measure #0465 (Perioperative Antiplatelet Therapy for patients undergoing Carotid Endarterectomy) focuses on inpatient who were provided ASA or clopidogrel within 48 hours prior to surgery and prescribed this medication at hospital discharge. Measure #0067 looks at whether ASA or clopidogrel was prescribed during the 12 month measurement period. Both measures allow for medical exceptions.

In the case of Measure 0964 (Therapy with aspirin, P2Y12 inhibitor, and statin at discharge following PCI in eligible patients), this measure is also an inpatient measure and focuses on solely PCI eligible patients who had ASA or P2y12 and statins prescribed prior to discharge. Measure 0067 looks at whether ASA or clopidogrel was prescribed during the 12 month measurement period. Both measures allow for medical exceptions.

Measures #0465 and #0964 address a different patient demographic and focuses on inpatient prescribed of ASA or Clopidogrel.

0068: Ischemic Vascular Disease (IVD): Use of Aspirin or Another Antiplatelet

5.1 Identified measures: 0067 : Chronic Stable Coronary Artery Disease: Antiplatelet Therapy

0142 : Aspirin prescribed at discharge for AMI

0076 : Optimal Vascular Care

5a.1 Are specs completely harmonized? No

5a.2 If not completely harmonized, identify difference, rationale, impact: DUE TO THE TEXT LIMIT IN THIS SECTION – WE ARE PROVIDING OUR ANSWER FOR 5a.2 IN SECTION 5b.1.

5b.1 If competing, why superior or rationale for additive value: ANSWER FOR SECTION 5a.2

Our current measure, NQF 0068 – Ischemic Vascular Disease (IVD): Use of Aspirin or Another Antiplatelet, assesses the percentage of patients 18 years of age and older who were discharged from an inpatient setting with an acute myocardial infarction (AMI), coronary artery bypass graft (CABG) or percutaneous coronary intervention (PCI) during the 12 months prior to the measurement year, AND patients who had a diagnosis of ischemic vascular disease (IVD) during the measurement year and the year prior to the measurement year, who had documentation of the routine use of aspirin or another antiplatelet during the measurement year. NQF 0068 uses administrative claims, electronic clinical data, electronic health record data, and paper medical records from the ambulatory care setting, providing a wide array of options for how data can be collected and reported.

The following is a description of the differences and the impact on interpretability and data collection burden between NQF 0068 and each related measure listed in 5.1a:

NQF 0142 – ASPIRIN PRESCRIBED AT DISCHARGE FOR AMI

This measure assesses the percentage of AMI patients, 18 years and older, who are prescribed aspirin at hospital discharge. The measure population only includes patients who have had an AMI, whereas NQF 0068 includes patients who have had an AMI, CABG or PCI procedure, and patients who have diagnoses consistent with ischemic vascular disease. NQF 0142 focuses only on aspirin prescribed at discharge while NQF 0068 focuses on documentation of the use of any antiplatelet medication during the measurement year. NQF 0142 is a facility-level measure that uses administrative claims and paper medical records from the inpatient setting; NQF 0068 is a physician-level measure that uses administrative claims, electronic clinical data, electronic health record data, and paper medical records from the ambulatory care setting.

There is no impact on interpretability of publically-reported rates or added burden of data collection because the focus of each measure is different, the accountable entity is different and the data for each measure is collected from different data sources by different entities. Additionally, both use value sets of codes to identify patients with AMI that do not conflict.

NQF 0067 – CHRONIC STABLE CORONARY ARTERY DISEASE: ANTIPLATELET THERAPY

This measure assesses the percentage of patients aged 18 years and older with a diagnosis of coronary artery disease (CAD) who were seen by a physician within a 12-month period and who were prescribed aspirin or clopidogrel. The focus of this measure is very similar to NQF 0068 in that it assesses the routine use of antiplatelet therapy in a twelve-month period for patients with CAD. However, NQF 0068 includes more antiplatelet medications than just aspirin or clopidogrel and includes a broader population of patients with cardiovascular disease than just those with CAD.

Although NQF 0067 and NQF 0068 are both physician-level measures that are specified to collect data from administrative claims, electronic clinical data, electronic health record data, and paper medical records from the ambulatory care setting, the impact on interpretability of publically-reported rates or added burden of data collection should be minimal because NQF 0067 is currently only reported through registry data. Additionally, NQF 0067 is focused on only on patients with CAD, while NQF 0068 is focused on a broader population of patients with cardiovascular disease who would benefit from the use of antiplatelet medications.

NQF 0076 – OPTIMAL VASCULAR CARE

This composite measure assesses the percentage of adult patients ages 18 to 75 who have ischemic vascular disease with optimally-managed modifiable risk factors (blood pressure, tobacco-free status, daily aspirin use) at their most recent visit with a physician during the measurement year. While the focus populations for NQF 0076 and NQF 0068 are very similar, NQF 0076 is a composite that includes assessment of blood pressure control and tobacco use status. NQF 0068 assesses the routine use of aspirin or other antiplatelet medications while NQF 0076 focuses only on aspirin use. NQF 0076 does not use administrative claims though it does use electronic clinical data, electronic health record data, and paper medical records from the ambulatory care setting, which is similar to NQF 0068.

Despite the similarities, there should be minimal impact on interpretability of publically-reported rates or added burden of data collection between the two measures since NQF 0076 is a composite of multiple indicators while NQF 0068 is focused only on antiplatelet therapy.

NQF 2452 – PERCUTANEOUS CORONARY INTERVENTION (PCI): POST-PROCEDURAL OPTIMAL MEDICAL THERAPY (NOTE: UNABLE TO SELECT IN 5.a1)

NQF 2452 is a composite measure that assesses the percentage of patients undergoing PCI who receive prescriptions for all medications (aspirin, P2Y12 and statins) for which they are eligible for at discharge. The measure population for NQF 2452 is patients undergoing PCI while NQF 0068 includes patient who have had an AMI, CABG or PCI procedure, and patients who have diagnoses consistent with ischemic vascular disease. NQF 2452 assesses the prescription of aspirin, P2Y12 agents, and statins at discharge; NQF 0068 assesses documentation of use of antiplatelet medications during the measurement year. NQF 2452 is a physician-level measure that uses data from registries while NQF 0068 is a physician-level measure that uses administrative claims, electronic clinical data, electronic health record data, and paper medical records from the ambulatory care setting.

There is no impact on interpretability of publically-reported rates or added burden of data collection because the focus of each measure is different and the data for each measure is collected from different data sources by different entities.

NQF 0964 – THERAPY WITH ASPIRIN, P2Y12 INHIBITOR, AND STATIN AT DISCHARGE FOLLOWING PCI IN ELIGIBLE PATIENTS (NOTE: UNABLE TO SELECT IN 5.a1)

NQF 0964 is a composite measure that assesses the percentage of patients undergoing PCI who receive prescriptions for all medications (aspirin, P2Y12 and statins) for which they are eligible for at discharge. The measure population for NQF 0964 is patients undergoing PCI while NQF 0068 includes patient who have had an AMI, CABG or PCI procedure, and patients who have diagnoses consistent with ischemic vascular disease. NQF 0964 assesses the prescription of aspirin, P2Y12 agents, and statins at discharge; NQF 0068 assesses documentation of use of antiplatelet medications during the measurement year. NQF 0964 is a facility-level measure that uses data from registries while NQF 0068 is a physician-level measure that uses administrative claims, electronic clinical data, electronic health record data, and paper medical records from the ambulatory care setting.

There is no impact on interpretability of publically-reported rates or added burden of data collection because the focus of each measure is different, the accountable entity is different and the data for each measure is collected from different data sources by different entities.

ANSWER FOR SECTION 5b.1

Our current measure, NQF 0068, has a long history of use and is implemented in four national programs: PQRS, EHR Incentive Program, CMS ACO Shared Savings Program, and the Heart/Stroke Recognition Program.

Comparison of NQF #0081 and NQF #0066

0081: Heart Failure (HF): Angiotensin-Converting Enzyme (ACE) Inhibitor or Angiotensin Receptor Blocker (ARB) Therapy for Left Ventricular Systolic Dysfunction (LVSD)

0066: Coronary Artery Disease (CAD): Angiotensin-Converting Enzyme (ACE) Inhibitor or Angiotensin Receptor Blocker (ARB) Therapy - Diabetes or Left Ventricular Systolic Dysfunction (LVEF < 40%)

Steward

0081: Heart Failure (HF): Angiotensin-Converting Enzyme (ACE) Inhibitor or Angiotensin Receptor Blocker (ARB) Therapy for Left Ventricular Systolic Dysfunction (LVSD)

AMA-PCPI

0066: Coronary Artery Disease (CAD): Angiotensin-Converting Enzyme (ACE) Inhibitor or Angiotensin Receptor Blocker (ARB) Therapy - Diabetes or Left Ventricular Systolic Dysfunction (LVEF < 40%)

American College of Cardiology

Description

0081: Heart Failure (HF): Angiotensin-Converting Enzyme (ACE) Inhibitor or Angiotensin Receptor Blocker (ARB) Therapy for Left Ventricular Systolic Dysfunction (LVSD)

Percentage of patients aged 18 years and older with a diagnosis of heart failure with a current or prior LVEF < 40% who were prescribed beta-blocker therapy either within a 12 month period when seen in the outpatient setting or at hospital discharge

0066: Coronary Artery Disease (CAD): Angiotensin-Converting Enzyme (ACE) Inhibitor or Angiotensin Receptor Blocker (ARB) Therapy - Diabetes or Left Ventricular Systolic Dysfunction (LVEF < 40%)

Percentage of patients aged 18 years and older with a diagnosis of coronary artery disease seen within a 12 month period who also have diabetes OR a current or prior Left Ventricular Ejection Fraction (LVEF) < 40% who were prescribed ACE inhibitor or ARB therapy

Type

0081: Heart Failure (HF): Angiotensin-Converting Enzyme (ACE) Inhibitor or Angiotensin Receptor Blocker (ARB) Therapy for Left Ventricular Systolic Dysfunction (LVSD)

Process

0066: Coronary Artery Disease (CAD): Angiotensin-Converting Enzyme (ACE) Inhibitor or Angiotensin Receptor Blocker (ARB) Therapy - Diabetes or Left Ventricular Systolic Dysfunction (LVEF < 40%)

Process

Data Source

0081: Heart Failure (HF): Angiotensin-Converting Enzyme (ACE) Inhibitor or Angiotensin Receptor Blocker (ARB) Therapy for Left Ventricular Systolic Dysfunction (LVSD)

Electronic Clinical Data, Electronic Clinical Data : Electronic Health Record, Electronic Clinical Data : Registry not applicable

No data collection instrument provided Attachment 0081_AMAPCPI_HF-ACEARB_ValueSets_June2015-635712727320959997.xlsx

0066: Coronary Artery Disease (CAD): Angiotensin-Converting Enzyme (ACE) Inhibitor or Angiotensin Receptor Blocker (ARB) Therapy - Diabetes or Left Ventricular Systolic Dysfunction (LVEF < 40%)

Administrative claims This measure, in its previous specifications, is currently being used in the ACCF PINNACLE registry for the outpatient office setting.

URL No data dictionary

Level

0081: Heart Failure (HF): Angiotensin-Converting Enzyme (ACE) Inhibitor or Angiotensin Receptor Blocker (ARB) Therapy for Left Ventricular Systolic Dysfunction (LVSD)

Clinician : Group/Practice, Clinician : Individual

0066: Coronary Artery Disease (CAD): Angiotensin-Converting Enzyme (ACE) Inhibitor or Angiotensin Receptor Blocker (ARB) Therapy - Diabetes or Left Ventricular Systolic Dysfunction (LVEF < 40%)

Clinician : Group/Practice, Clinician : Individual, Clinician : Team

Setting

0081: Heart Failure (HF): Angiotensin-Converting Enzyme (ACE) Inhibitor or Angiotensin Receptor Blocker (ARB) Therapy for Left Ventricular Systolic Dysfunction (LVSD)

Ambulatory Care : Clinician Office/Clinic, Home Health, Hospital/Acute Care Facility, Post Acute/Long Term Care Facility : Long Term Acute Care Hospital, Post Acute/Long Term Care Facility : Nursing Home/Skilled Nursing Facility, Other Domiciliary

0066: Coronary Artery Disease (CAD): Angiotensin-Converting Enzyme (ACE) Inhibitor or Angiotensin Receptor Blocker (ARB) Therapy - Diabetes or Left Ventricular Systolic Dysfunction (LVEF < 40%)

Ambulatory Care : Clinician Office/Clinic, Home Health, Post Acute/Long Term Care Facility : Nursing Home/Skilled Nursing Facility, Behavioral Health/Psychiatric : Outpatient, Ambulatory Care : Urgent Care

Numerator Statement

0081: Heart Failure (HF): Angiotensin-Converting Enzyme (ACE) Inhibitor or Angiotensin Receptor Blocker (ARB) Therapy for Left Ventricular Systolic Dysfunction (LVSD)

Patients who were prescribed* ACE inhibitor or ARB therapy either within a 12 month period when seen in the outpatient setting or at hospital discharge

*Prescribed may include:

Outpatient setting: prescription given to the patient for ACE inhibitor or ARB therapy at one or more visits in the measurement period OR patient already taking ACE inhibitor or ARB therapy as documented in current medication list

Inpatient setting: prescription given to the patient for ACE inhibitor or ARB therapy at discharge OR ACE inhibitor or ARB therapy to be continued after discharge as documented in the discharge medication list

0066: Coronary Artery Disease (CAD): Angiotensin-Converting Enzyme (ACE) Inhibitor or Angiotensin Receptor Blocker (ARB) Therapy - Diabetes or Left Ventricular Systolic Dysfunction (LVEF < 40%)

Patients who were prescribed ACE inhibitor or ARB therapy

Numerator Details

0081: Heart Failure (HF): Angiotensin-Converting Enzyme (ACE) Inhibitor or Angiotensin Receptor Blocker (ARB) Therapy for Left Ventricular Systolic Dysfunction (LVSD)

For EHR:

HQMF eMeasure developed and is included in this submission.

For Registry:

Definitions:

Prescribed – Outpatient setting: May include prescription given to the patient for ACE inhibitor or ARB therapy at one or more visits in the measurement period OR patient already taking ACE inhibitor or ARB therapy as documented in current medication list.

Prescribed – Inpatient setting: May include prescription given to the patient for ACE inhibitor or ARB therapy at discharge OR ACE inhibitor or ARB therapy to be continued after discharge as documented in the discharge medication list.

Report CPT Category II Code, 4010F : Angiotensin converting enzyme (ACE) inhibitor or angiotensin receptor blocker (ARB) therapy prescribed or currently being taken

0066: Coronary Artery Disease (CAD): Angiotensin-Converting Enzyme (ACE) Inhibitor or Angiotensin Receptor Blocker (ARB) Therapy - Diabetes or Left Ventricular Systolic Dysfunction (LVEF < 40%)

Numerator Definition:

Prescribed – May include prescription given to the patient for ACE inhibitor or ARB therapy at one or more visits in the measurement period OR patient already taking ACE inhibitor or ARB therapy as documented in current medication list.

FOR EHR SPECIFICATION:

No Current HQMF eCQM Available.

FOR ADMINISTRATIVE CLAIMS SPECIFICATIONS:

Report Quality Data Code G8935: Clinician prescribed angiotensin converting enzyme (ACE) inhibitor or angiotensin receptor blocker (ARB) therapy

Denominator Statement

0081: Heart Failure (HF): Angiotensin-Converting Enzyme (ACE) Inhibitor or Angiotensin Receptor Blocker (ARB) Therapy for Left Ventricular Systolic Dysfunction (LVSD)

All patients aged 18 years and older with a diagnosis of heart failure with a current or prior LVEF < 40%

0066: Coronary Artery Disease (CAD): Angiotensin-Converting Enzyme (ACE) Inhibitor or Angiotensin Receptor Blocker (ARB) Therapy - Diabetes or Left Ventricular Systolic Dysfunction (LVEF < 40%)

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

Denominator Details

0081: Heart Failure (HF): Angiotensin-Converting Enzyme (ACE) Inhibitor or Angiotensin Receptor Blocker (ARB) Therapy for Left Ventricular Systolic Dysfunction (LVSD)

For EHR:

HQMF eMeasure developed and is included in this submission.

DENOMINATOR DEFINITION:

LVEF < 40% corresponds to qualitative documentation of moderate dysfunction or severe dysfunction.

DENOMINATOR NOTES:

To meet this measure, it must be reported for all heart failure patients a minimum of once during the measurement period when seen in the outpatient setting AND reported at each hospital discharge during the measurement period.

The requirement of "Count >=2 of Encounter, Performed" is to establish that the eligible professional has an existing relationship with the patient.

For Registry:

Option 1, Outpatient Setting:

Patients aged >= 18 years

AND

Diagnosis for heart failure (ICD-9-CM) [for use 1/1/2015-9/30/2015]: 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

Diagnosis for heart failure (ICD-10-CM) [for use 10/01/2015-12/31/2015]: 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(s) during reporting period (CPT): 99201, 99202, 99203, 99204, 99205, 99212, 99213, 99214, 99215, 99304, 99305, 99306, 99307, 99308, 99309, 99310, 99324, 99325, 99326, 99327, 99328, 99334, 99335, 99336, 99337, 99341, 99342, 99343, 99344, 99345, 99347, 99348, 99349, 99350

AND

Two Denominator Eligible Visits

AND

Left ventricular ejection fraction (LVEF) < 40% or documentation of moderately or severely depressed left ventricular systolic function: 3021F

Option 2, Inpatient Setting:

Patients aged \geq 18 years

AND

Diagnosis for heart failure (ICD-9-CM) [for use 1/1/2015-9/30/2015]: 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

Diagnosis for heart failure (ICD-10-CM) [for use 10/01/2015-12/31/2015]: 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): 99238, 99239

AND

Left ventricular ejection fraction (LVEF) < 40% or documentation of moderately or severely depressed left ventricular systolic function: 3021F

0066: Coronary Artery Disease (CAD): Angiotensin-Converting Enzyme (ACE) Inhibitor or Angiotensin Receptor Blocker (ARB) Therapy - Diabetes or Left Ventricular Systolic Dysfunction (LVEF < 40%)

Denominator Definition:

LVEF < 40% corresponds to qualitative documentation of moderate dysfunction or severe dysfunction.

FOR EHR SPECIFICATION:

No Current HQMF eCQM Available.

FOR ADMINISTRATIVE CLAIMS SPECIFICATIONS:

Option 1

Patients aged \geq 18 years

AND

Diagnosis for coronary artery disease (ICD-9-CM) [for use 1/1/2015-9/30/2015]: 410.00, 410.01, 410.02, 410.10, 410.11, 410.12, 410.20, 410.21, 410.22, 410.30, 410.31, 410.32, 410.40, 410.41, 410.42, 410.50, 410.51, 410.52, 410.60, 410.61, 410.62, 410.70, 410.71, 410.72, 410.80, 410.81, 410.82, 410.90, 410.91, 410.92, 411.0, 411.1, 411.81, 411.89, 412, 413.0, 413.1, 413.9, 414.00, 414.01, 414.02, 414.03, 414.04, 414.05, 414.06, 414.07, 414.2, 414.3, 414.8, 414.9, V45.81, V45.82

Diagnosis for coronary artery disease (ICD-10-CM) [for use 10/01/2015-12/31/2015]: I20.0, I20.1, I20.8, I20.9, I21.01, I21.02, I21.09, I21.11, I21.19, I21.21, I21.29, I21.3, I21.4, I22.0, I22.1, I22.2, I22.8, I22.9, I24.0, I24.1, I24.8, I24.9, I25.10, I25.110, I25.111, I25.118, I25.119, I25.2, I25.5, I25.6, I25.700, I25.701, I25.708, I25.709, I25.710, I25.711, I25.718, I25.719, I25.720, I25.721, I25.728, I25.729, I25.730, I25.731, I25.738, I25.739, I25.750, I25.751, I25.758, I25.759, I25.760, I25.761, I25.768, I25.769, I25.790, I25.791, I25.798, I25.799, I25.810, I25.811, I25.812, I25.82, I25.83, I25.89, I25.9, Z95.1, Z95.5, Z98.61

AND

Patient encounter during the reporting period (CPT): 99201, 99202, 99203, 99204, 99205, 99212, 99213, 99214, 99215, 99241, 99242, 99243, 99244, 99245, 99304, 99305, 99306, 99307, 99308, 99309, 99310, 99324, 99325, 99326, 99327, 99328, 99334, 99335, 99336, 99337, 99341, 99342, 99343, 99344, 99345, 99347, 99348, 99349, 99350

AND

Two Denominator Eligible Visits

AND

Left Ventricular Ejection Fraction (LVEF) < 40% or documentation of moderately or severely depressed left ventricular systolic function: G8934

Option 2

Patients aged >= 18 years

AND

Diagnosis for coronary artery disease (ICD-9-CM) [for use 1/1/2015-9/30/2015]: 410.00, 410.01, 410.02, 410.10, 410.11, 410.12, 410.20, 410.21, 410.22, 410.30, 410.31, 410.32, 410.40, 410.41, 410.42, 410.50, 410.51, 410.52, 410.60, 410.61, 410.62, 410.70, 410.71, 410.72, 410.80, 410.81, 410.82, 410.90, 410.91, 410.92, 411.0, 411.1, 411.81, 411.89, 412, 413.0, 413.1, 413.9, 414.00, 414.01, 414.02, 414.03, 414.04, 414.05, 414.06, 414.07, 414.2, 414.3, 414.8, 414.9, V45.81, V45.82

Diagnosis for coronary artery disease (ICD-10-CM) [for use 10/01/2015-12/31/2015]: I20.0, I20.1, I20.8, I20.9, I21.01, I21.02, I21.09, I21.11, I21.19, I21.21, I21.29, I21.3, I21.4, I22.0, I22.1, I22.2, I22.8, I22.9, I24.0, I24.1, I24.8, I24.9, I25.10, I25.110, I25.111, I25.118, I25.119, I25.2, I25.5, I25.6, I25.700, I25.701, I25.708, I25.709, I25.710, I25.711, I25.718, I25.719, I25.720, I25.721, I25.728, I25.729, I25.730, I25.731, I25.738, I25.739, I25.750, I25.751, I25.758, I25.759, I25.760, I25.761, I25.768, I25.769, I25.790, I25.791, I25.798, I25.799, I25.810, I25.811, I25.812, I25.82, I25.83, I25.89, I25.9, Z95.1, Z95.5, Z98.61

AND

Diagnosis for diabetes (ICD-9-CM) [for use 1/1/2015-9/30/2015]: 250.00, 250.01, 250.02, 250.03, 250.10, 250.11, 250.12, 250.13, 250.20, 250.21, 250.22, 250.23, 250.30, 250.31, 250.32, 250.33, 250.40, 250.41, 250.42, 250.43, 250.50, 250.51, 250.52, 250.53, 250.60, 250.61, 250.62, 250.63, 250.70, 250.71, 250.72, 250.73, 250.80, 250.81, 250.82, 250.83, 250.90, 250.91, 250.92, 250.93

Diagnosis for diabetes (ICD-10-CM) [for use 10/01/2015-12/31/2015]: E10.10, E10.11, E10.21, E10.22, E10.29, E10.311, E10.319, E10.321, E10.329, E10.331, E10.339, E10.341, E10.349, E10.351, E10.359, E10.36, E10.39, E10.40, E10.41, E10.42, E10.43, E10.44, E10.49, E10.51, E10.52, E10.59, E10.610, E10.618, E10.620, E10.621, E10.622, E10.628, E10.630, E10.638, E10.641, E10.649, E10.65, E10.69, E10.8, E10.9, E11.00, E11.01, E11.21, E11.22, E11.29, E11.311, E11.319, E11.321, E11.329, E11.331, E11.339, E11.341, E11.349, E11.351, E11.359, E11.36, E11.39, E11.40, E11.41, E11.42, E11.43, E11.44, E11.49, E11.51, E11.52, E11.59, E11.610, E11.618, E11.620, E11.621, E11.622, E11.628, E11.630, E11.638, E11.641, E11.649, E11.65, E11.69, E11.8, E11.9, E13.00, E13.01, E13.10, E13.11, E13.21, E13.22, E13.29, E13.311, E13.319, E13.321, E13.329, E13.331, E13.339, E13.341, E13.349, E13.351, E13.359, E13.36, E13.39, E13.40, E13.41, E13.42, E13.43, E13.44, E13.49, E13.51, E13.52, E13.59, E13.610, E13.618, E13.620, E13.621, E13.622, E13.628, E13.630, E13.638, E13.641, E13.649, E13.65, E13.69, E13.8, E13.9

AND

Patient encounter during the reporting period (CPT): 99201, 99202, 99203, 99204, 99205, 99212, 99213, 99214, 99215, 99241, 99242, 99243, 99244, 99245, 99304, 99305, 99306, 99307, 99308, 99309, 99310, 99324, 99325, 99326, 99327, 99328, 99334, 99335, 99336, 99337, 99341, 99342, 99343, 99344, 99345, 99347, 99348, 99349, 99350

AND

Two Denominator Eligible Visits

Exclusions

0081: Heart Failure (HF): Angiotensin-Converting Enzyme (ACE) Inhibitor or Angiotensin Receptor Blocker (ARB) Therapy for Left Ventricular Systolic Dysfunction (LVSD)

Documentation of medical reason(s) for not prescribing ACE inhibitor or ARB therapy (eg, hypotensive patients who are at immediate risk of cardiogenic shock, hospitalized patients who have experienced marked azotemia, allergy, intolerance, other medical reasons)

Documentation of patient reason(s) for not prescribing ACE inhibitor or ARB therapy (eg, patient declined, other patient reasons)

Documentation of system reason(s) for not prescribing ACE inhibitor or ARB therapy (eg, other system reasons)

0066: Coronary Artery Disease (CAD): Angiotensin-Converting Enzyme (ACE) Inhibitor or Angiotensin Receptor Blocker (ARB) Therapy - Diabetes or Left Ventricular Systolic Dysfunction (LVEF < 40%)

Documentation of medical reason(s) for not prescribing ACE inhibitor or ARB therapy (eg, allergy, intolerant, pregnancy, renal failure due to ACE inhibitor, diseases of the aortic or mitral valve, other medical reasons)

Documentation of patient reason(s) for not prescribing ACE inhibitor or ARB therapy (eg, patient declined, other patient reasons)

Documentation of system reason(s) for not prescribing ACE inhibitor or ARB therapy (eg, lack of drug availability, other reasons attributable to the health care system)

Exclusion Details

0081: Heart Failure (HF): Angiotensin-Converting Enzyme (ACE) Inhibitor or Angiotensin Receptor Blocker (ARB) Therapy for Left Ventricular Systolic Dysfunction (LVSD)

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. This measure was developed using PCPI exception methodology which 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 : Angiotensin-Converting Enzyme (ACE) Inhibitor or Angiotensin Receptor Blocker (ARB) Therapy for Left Ventricular Systolic Dysfunction, exceptions may include medical reasons (e.g. hypotensive patients who are at immediate risk of cardiogenic shock, hospitalized

patients who have experienced marked azotemia), patient, and/or system reasons for not prescribing an ACE/ARB. Where examples of exceptions are included in the measure language, value sets for these examples are developed and included in the eSpecifications. 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.

Additional details by data source are as follows:

For EHR:

HQMF eMeasure developed and is included in this submission.

For Registry:

Append a modifier to CPT Category II Code:

4010F-1P : Documentation of medical reason(s) for not prescribing angiotensin converting enzyme (ACE) inhibitor or angiotensin receptor blocker (ARB) therapy (eg, hypotensive patients who are at immediate risk of cardiogenic shock, hospitalized patients who have experienced marked azotemia, allergy, intolerance, other medical reasons)

4010F-2P : Documentation of patient reason(s) for not prescribing angiotensin converting enzyme (ACE) inhibitor or angiotensin receptor blocker (ARB) therapy (eg, patient declined, other patient reasons)

4010F-3P : Documentation of system reason(s) for not prescribing angiotensin converting enzyme (ACE) inhibitor or angiotensin receptor blocker (ARB) therapy (eg, other system reasons)

0066: Coronary Artery Disease (CAD): Angiotensin-Converting Enzyme (ACE) Inhibitor or Angiotensin Receptor Blocker (ARB) Therapy - Diabetes or Left Ventricular Systolic Dysfunction (LVEF < 40%)

FOR EHR SPECIFICATION:

No Current HQMF eCQM Available.

FOR ADMINISTRATIVE CLAIMS SPECIFICATIONS:

Report Quality Data Code G8474: Angiotensin converting enzyme (ACE) inhibitor or angiotensin receptor blocker (ARB) therapy not prescribed for reasons documented by the clinician (eg, allergy, intolerance, pregnancy, renal failure due to ACE inhibitor, diseases of the aortic or mitral valve, other medical reasons) or (eg, patient declined, other patient reasons) or (eg, lack of drug availability, other reasons attributable to the health care system)

Risk Adjustment

0081: Heart Failure (HF): Angiotensin-Converting Enzyme (ACE) Inhibitor or Angiotensin Receptor Blocker (ARB) Therapy for Left Ventricular Systolic Dysfunction (LVSD)

No risk adjustment or risk stratification

No risk adjustment or risk stratification

0066: Coronary Artery Disease (CAD): Angiotensin-Converting Enzyme (ACE) Inhibitor or Angiotensin Receptor Blocker (ARB) Therapy - Diabetes or Left Ventricular Systolic Dysfunction (LVEF < 40%)

No risk adjustment or risk stratification

Stratification

0081: Heart Failure (HF): Angiotensin-Converting Enzyme (ACE) Inhibitor or Angiotensin Receptor Blocker (ARB) Therapy for Left Ventricular Systolic Dysfunction (LVSD)

Consistent with CMS' Measures Management System Blueprint and recent national recommendations put forth by the IOM 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 and have included these variables as recommended data elements to be collected.

0066: Coronary Artery Disease (CAD): Angiotensin-Converting Enzyme (ACE) Inhibitor or Angiotensin Receptor Blocker (ARB) Therapy - Diabetes or Left Ventricular Systolic Dysfunction (LVEF < 40%)

We encourage the results of this measure to be stratified by race, ethnicity, sex, and payer.

Type Score

0081: Heart Failure (HF): Angiotensin-Converting Enzyme (ACE) Inhibitor or Angiotensin Receptor Blocker (ARB) Therapy for Left Ventricular Systolic Dysfunction (LVSD)

Rate/proportion better quality = higher score

0066: Coronary Artery Disease (CAD): Angiotensin-Converting Enzyme (ACE) Inhibitor or Angiotensin Receptor Blocker (ARB) Therapy - Diabetes or Left Ventricular Systolic Dysfunction (LVEF < 40%)

Rate/proportion better quality = higher score

Algorithm

0081: Heart Failure (HF): Angiotensin-Converting Enzyme (ACE) Inhibitor or Angiotensin Receptor Blocker (ARB) Therapy for Left Ventricular Systolic Dysfunction (LVSD)

To calculate performance rates:

1. Find the patients who meet the initial population (ie, 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 (ie, 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 (ie, 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: Documentation of medical reason(s) for not prescribing ACE inhibitor or ARB therapy (eg, hypotensive patients who are at

immediate risk of cardiogenic shock, hospitalized patients who have experienced marked azotemia); Documentation of patient reason(s) for not prescribing ACE inhibitor or ARB therapy; Documentation of system reason(s) for not prescribing ACE inhibitor or ARB 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 (ie, 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. No diagram provided

0066: Coronary Artery Disease (CAD): Angiotensin-Converting Enzyme (ACE) Inhibitor or Angiotensin Receptor Blocker (ARB) Therapy - Diabetes or Left Ventricular Systolic Dysfunction (LVEF < 40%)

To calculate performance rates:

- 1) Find the patients who meet the initial patient population (ie, the general group of patients that the performance measure is designed to address).
- 2) From the patients within the initial patient population criteria, find the patients who qualify for the denominator (ie, the specific group of patients for inclusion in a specific performance measure based on defined criteria). Note: in some cases the initial patient population and denominator are identical.
- 3) From the patients within the denominator, find the patients who qualify for the Numerator (ie, 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

If the patient does not meet the numerator, this case represents a quality failure.

Submission items

0081: Heart Failure (HF): Angiotensin-Converting Enzyme (ACE) Inhibitor or Angiotensin Receptor Blocker (ARB) Therapy for Left Ventricular Systolic Dysfunction (LVSD)

5.1 Identified measures:

5a.1 Are specs completely harmonized?

5a.2 If not completely harmonized, identify difference, rationale, impact:

5b.1 If competing, why superior or rationale for additive value:

0066: Coronary Artery Disease (CAD): Angiotensin-Converting Enzyme (ACE) Inhibitor or Angiotensin Receptor Blocker (ARB) Therapy - Diabetes or Left Ventricular Systolic Dysfunction (LVEF < 40%)

5.1 Identified measures:

5a.1 Are specs completely harmonized?

5a.2 If not completely harmonized, identify difference, rationale, impact:

5b.1 If competing, why superior or rationale for additive value: Related Measures:

Maintenance submission of NQF #0066: ACE Inhibitor/Angiotensin Receptor Blocker (ARB) Therapy

Comparison of NQF #0083 and NQF #2438

0083: Heart Failure (HF): Beta-Blocker Therapy for Left Ventricular Systolic Dysfunction (LVSD)

2438: Beta-Blocker Therapy (i.e., Bisoprolol, Carvedilol, or Sustained-Release Metoprolol Succinate) for LVSD Prescribed at Discharge

Steward

0083: Heart Failure (HF): Beta-Blocker Therapy for Left Ventricular Systolic Dysfunction (LVSD)

AMA-PCPI

2438: Beta-Blocker Therapy (i.e., Bisoprolol, Carvedilol, or Sustained-Release Metoprolol Succinate) for LVSD Prescribed at Discharge

The Joint Commission

Description

0083: Heart Failure (HF): Beta-Blocker Therapy for Left Ventricular Systolic Dysfunction (LVSD)

Percentage of patients aged 18 years and older with a diagnosis of heart failure with a current or prior LVEF < 40% who were prescribed beta-blocker therapy either within a 12 month period when seen in the outpatient setting or at hospital discharge

2438: Beta-Blocker Therapy (i.e., Bisoprolol, Carvedilol, or Sustained-Release Metoprolol Succinate) for LVSD Prescribed at Discharge

Proportion of heart failure patients age 18 and older with LVSD for whom beta-blocker therapy (i.e., bisoprolol, carvedilol, or sustained-release metoprolol succinate) is prescribed at discharge. For purposes of this measure, LVSD is defined as chart documentation of a left ventricular ejection fraction (LVEF) less than 40% or a narrative description of left ventricular systolic (LVS) function consistent with moderate or severe systolic dysfunction.

Type

0083: Heart Failure (HF): Beta-Blocker Therapy for Left Ventricular Systolic Dysfunction (LVSD)

Process

2438: Beta-Blocker Therapy (i.e., Bisoprolol, Carvedilol, or Sustained-Release Metoprolol Succinate) for LVSD Prescribed at Discharge

Process

Data Source

0083: Heart Failure (HF): Beta-Blocker Therapy for Left Ventricular Systolic Dysfunction (LVSD)

Electronic Clinical Data, Electronic Clinical Data : Electronic Health Record, Electronic Clinical Data : Registry

No data collection instrument provided Attachment 0083_AMAPCPI_HF-BB_ValueSets_June2015-635712735683880063.xlsx

2438: Beta-Blocker Therapy (i.e., Bisoprolol, Carvedilol, or Sustained-Release Metoprolol Succinate) for LVSD Prescribed at Discharge

Electronic Clinical Data : Electronic Health Record, Paper Medical Records A web-based data collection tool was developed by The Joint Commission for the pilot process. Moving

forward, hospitals have the flexibility of creating their own tool modeled after the pilot tool or they may develop their own data collection tools using the data element dictionary and allowable values specified in the implementation guide.

No data collection instrument provided Attachment ACHF_Appendix_ICD-9_and_ICD-10_Codes-635230560443297553.xlsx

Level

0083: Heart Failure (HF): Beta-Blocker Therapy for Left Ventricular Systolic Dysfunction (LVSD)

Clinician : Group/Practice, Clinician : Individual

2438: Beta-Blocker Therapy (i.e., Bisoprolol, Carvedilol, or Sustained-Release Metoprolol Succinate) for LVSD Prescribed at Discharge

Facility

Setting

0083: Heart Failure (HF): Beta-Blocker Therapy for Left Ventricular Systolic Dysfunction (LVSD)

Ambulatory Care : Clinician Office/Clinic, Home Health, Hospital/Acute Care Facility, Post Acute/Long Term Care Facility : Long Term Acute Care Hospital, Post Acute/Long Term Care Facility : Nursing Home/Skilled Nursing Facility, Other Domiciliary

2438: Beta-Blocker Therapy (i.e., Bisoprolol, Carvedilol, or Sustained-Release Metoprolol Succinate) for LVSD Prescribed at Discharge

Hospital/Acute Care Facility

Numerator Statement

0083: Heart Failure (HF): Beta-Blocker Therapy for Left Ventricular Systolic Dysfunction (LVSD)

Patients who were prescribed* beta-blocker therapy** either within a 12 month period when seen in the outpatient setting or at hospital discharge

*Prescribed may include:

Outpatient setting: 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

Inpatient setting: prescription given to the patient for beta-blocker therapy at discharge OR beta-blocker therapy to be continued after discharge as documented in the discharge medication list

**Beta-blocker therapy should include bisoprolol, carvedilol, or sustained release metoprolol succinate. (see technical specifications for additional information on medications)

2438: Beta-Blocker Therapy (i.e., Bisoprolol, Carvedilol, or Sustained-Release Metoprolol Succinate) for LVSD Prescribed at Discharge

Patients who are prescribed bisoprolol, carvedilol, or sustained-release metoprolol succinate for LVSD at hospital discharge.

Numerator Details

0083: Heart Failure (HF): Beta-Blocker Therapy for Left Ventricular Systolic Dysfunction (LVSD)

For EHR:

HQMF eMeasure developed and is included in this submission.

For Registry:

Definitions:

Prescribed – Outpatient Setting - 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.

Prescribed – Inpatient Setting: May include prescription given to the patient for beta-blocker therapy at discharge OR beta-blocker therapy to be continued after discharge as documented in the discharge medication list.

Beta-blocker Therapy - For patients with prior LVEF < 40%, beta-blocker therapy should include bisoprolol, carvedilol, or sustained release metoprolol succinate.

Report Quality Data Code, G8450: Beta-blocker therapy prescribed

2438: Beta-Blocker Therapy (i.e., Bisoprolol, Carvedilol, or Sustained-Release Metoprolol Succinate) for LVSD Prescribed at Discharge

One data element used to calculate numerator: Bisoprolol, Carvedilol, or Sustained-Release Metoprolol Prescribed for LVSD at Discharge

Data element defined: Documentation that bisoprolol, carvedilol, or sustained-release metoprolol was prescribed at discharge. Beta-blockers are agents which block beta-adrenergic receptors, thereby decreasing the rate and force of heart contractions, and reducing blood pressure. Over time beta-blockers improve the heart's pumping ability. The marked beneficial effects of beta blockade has been well demonstrated in large-scale clinical trials of symptomatic patients with New York Heart Association (NYHA) class II-IV heart failure and reduced LVEF using bisoprolol, carvedilol, and sustained-release metoprolol succinate.

Denominator Statement

0083: Heart Failure (HF): Beta-Blocker Therapy for Left Ventricular Systolic Dysfunction (LVSD)

All patients aged 18 years and older with a diagnosis of heart failure with a current or prior LVEF < 40%

LVEF < 40% corresponds to qualitative documentation of moderate dysfunction or severe dysfunction

2438: Beta-Blocker Therapy (i.e., Bisoprolol, Carvedilol, or Sustained-Release Metoprolol Succinate) for LVSD Prescribed at Discharge

Heart failure patients with current or prior documentation of left ventricular ejection fraction (LVSD) < 40%.

Denominator Details

0083: Heart Failure (HF): Beta-Blocker Therapy for Left Ventricular Systolic Dysfunction (LVSD)

For EHR:

HQMF eMeasure developed and is included in this submission.

DENOMINATOR DEFINITION:

LVEF < 40% corresponds to qualitative documentation of moderate dysfunction or severe dysfunction.

DENOMINATOR NOTES:

To meet this measure, it must be reported for all heart failure patients a minimum of once during the measurement period when seen in the outpatient setting AND reported at each hospital discharge during the measurement period.

The requirement of "Count ≥ 2 of Encounter, Performed" is to establish that the eligible professional has an existing relationship with the patient.

For Registry:

Option 1, Outpatient Setting:

Patients aged ≥ 18 years

AND

Diagnosis for heart failure (ICD-9-CM) [for use 1/1/2015-9/30/2015]: 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

Diagnosis for heart failure (ICD-10-CM) [for use 10/01/2015-12/31/2015]: 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(s) during the reporting period (CPT): 99201, 99202, 99203, 99204, 99205, 99212, 99213, 99214, 99215, 99304, 99305, 99306, 99307, 99308, 99309, 99310, 99324, 99325, 99326, 99327, 99328, 99334, 99335, 99336, 99337, 99341, 99342, 99343, 99344, 99345, 99347, 99348, 99349, 99350

AND

Two Denominator Eligible Visits

AND

Left ventricular ejection fraction (LVEF) $< 40\%$ or documentation of moderately or severely depressed left ventricular systolic function: G8923

Option 2, Inpatient Setting:

Patients aged ≥ 18 years

AND

Diagnosis for heart failure (ICD-9-CM) [for use 1/1/2015-9/30/2015]: 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

Diagnosis for heart failure (ICD-10-CM) [for use 10/01/2015-12/31/2015]: 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): 99238, 99239

AND

Left ventricular ejection fraction (LVEF) $< 40\%$ or documentation of moderately or severely depressed left ventricular systolic function: 3021F

2438: Beta-Blocker Therapy (i.e., Bisoprolol, Carvedilol, or Sustained-Release Metoprolol Succinate) for LVSD Prescribed at Discharge

Included Populations:

- Discharges with ICD-9-CM Principal Diagnosis Code for HF as defined in Appendix A, Table 2.1, and
- Documentation of LVSD < 40%

ICD-9-CM Table 2.1 Heart Failure (HF)

Code: Shortened Description

402.01: MAL HYPERT HRT DIS W HF

402.11: BENIGN HYP HT DIS W HF

402.91: HYP HT DIS NOS W HT FAIL

404.01: MAL HYP HT/KD I-IV W HF

404.03: MAL HYP HT/KD STG V W HF

404.11: BEN HYP HT/KD I-IV W HF

404.13: BEN HYP HT/KD STG V W HF

404.91: HYP HT/KD NOS I-IV W HF

404.93: HYP HT/KD NOS ST V W HF

428.0: CHF NOS

428.1: LEFT HEART FAILURE

428.20: SYSTOLIC HRT FAILURE NOS

428.21: AC SYSTOLIC HRT FAILURE

428.22: CHR SYSTOLIC HRT FAILURE

428.23: AC ON CHR SYST HRT FAIL

428.30: DIASTOLC HRT FAILURE NOS

428.31: AC DIASTOLIC HRT FAILURE

428.32: CHR DIASTOLIC HRT FAIL

428.33: AC ON CHR DIAST HRT FAIL

428.40: SYST/DIAST HRT FAIL NOS

428.41: AC SYST/DIASTOL HRT FAIL

428.42: CHR SYST/DIASTL HRT FAIL

428.43: AC/CHR SYST/DIA HRT FAIL

428.9: HEART FAILURE NOS

11 data elements are used to calculate the denominator. Data elements and definitions:

- Admission Date: The month, day, and year of admission to acute inpatient care.
- Birthdate: The month, day, and year the patient was born.
- Clinical Trial: Documentation that during this hospital stay the patient was enrolled in a clinical trial in which patients with the same condition as the measure set were being studied.
- Comfort Measures Only: Comfort Measures Only refers to medical treatment of a dying person where the natural dying process is permitted to occur while assuring maximum

comfort. It includes attention to the psychological and spiritual needs of the patient and support for both the dying patient and the patient's family. Comfort Measures Only is commonly referred to as “comfort care” by the general public. It is not equivalent to a physician order to withhold emergency resuscitative measures such as Do Not Resuscitate (DNR).

- Discharge Disposition: The final place or setting to which the patient was discharged on the day of discharge.
- ICD-9-CM Other Procedure Codes: The International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) codes identifying all significant procedures other than the principal procedure.
- ICD-9-CM Principal Diagnosis Code: The International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) code associated with the diagnosis established after study to be chiefly responsible for occasioning the admission of the patient for this hospitalization.
- ICD-9-CM Principal Procedure Code: The International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) code that identifies the principal procedure performed during this hospitalization. The principal procedure is the procedure performed for definitive treatment rather than diagnostic or exploratory purposes, or which is necessary to take care of a complication.
- ICD-9-CM Principal Procedure Date: The month, day, and year when the principal procedure was performed.
- LVSD < 40%: Left ventricular systolic dysfunction (LVSD) documented in medical record. LVSD is defined as a left ventricular ejection fraction less than 40% or a narrative description consistent with moderate or severe systolic dysfunction.
- Reason for No Bisoprolol, Carvedilol, or Sustained-Release Metoprolol Prescribed for LVSD at Discharge: Reasons for not prescribing bisoprolol, carvedilol, or sustained-release metoprolol succinate at discharge:
 - o Beta-blocker allergy
 - o Second or third-degree heart block on ECG on arrival or during hospital stay and does not have a pacemaker
 - o Other reasons documented by physician/advanced practice nurse/physician assistant (physician/APN/PA) or pharmacist

Exclusions

0083: Heart Failure (HF): Beta-Blocker Therapy for Left Ventricular Systolic Dysfunction (LVSD)

Documentation of medical reason(s) for not prescribing beta-blocker therapy (eg, low blood pressure, fluid overload, asthma, patients recently treated with an intravenous positive inotropic agent)

Documentation of patient reason(s) for not prescribing beta-blocker therapy

Documentation of system reason(s) for not prescribing beta-blocker therapy

2438: Beta-Blocker Therapy (i.e., Bisoprolol, Carvedilol, or Sustained-Release Metoprolol Succinate) for LVSD Prescribed at Discharge

Excluded Populations:

- Patients who had a left ventricular assistive device (LVAD) or heart transplant procedure during hospital stay (ICD-9-CM procedure code for LVAD and heart transplant as defined in Appendix A, Table 2.2)
- Patients less than 18 years of age
- Patients who have a Length of Stay greater than 120 days
- Patients with Comfort Measures Only documented
- Patients enrolled in a Clinical Trial
- Patients discharged to another hospital
- Patients who left against medical advice
- Patients who expired
- Patients discharged to home for hospice care
- Patients discharged to a healthcare facility for hospice care
- Patients with a documented Reason for No Bisoprolol, Carvedilol, or Sustained-Release Metoprolol Succinate Prescribed for LVSD at Discharge

Exclusion Details

0083: Heart Failure (HF): Beta-Blocker Therapy for Left Ventricular Systolic Dysfunction (LVSD)

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. This measure was developed using the PCPI exception methodology which 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 Beta-Blocker Therapy for Left Ventricular Systolic Dysfunction, exceptions may include Documentation of medical reason(s) for not prescribing beta-blocker therapy (eg, low blood pressure, fluid overload, asthma, patients recently treated with an intravenous positive inotropic agent), Documentation of patient reason(s) for not prescribing beta-blocker therapy, or Documentation of system reason(s) 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 eSpecifications. 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.

Additional details by data source are as follows:

For EHR:

HQMF eMeasure developed and is included in this submission.

For Registry:

Report Quality Data Code G8451: Beta-Blocker Therapy for LVEF < 40% not prescribed for reasons documented by the clinician (eg, low blood pressure, fluid overload, asthma, patients recently treated with an intravenous positive inotropic agent, allergy, intolerance, other medical reasons, patient declined, other patient reasons, other reasons attributable to the healthcare system)

2438: Beta-Blocker Therapy (i.e., Bisoprolol, Carvedilol, or Sustained-Release Metoprolol Succinate) for LVSD Prescribed at Discharge

Exclusion Details:

- Patients who had a left ventricular assistive device (LVAD) or heart transplant procedure during hospital stay (ICD-9-CM procedure code for LVAD and heart transplant as defined in Appendix A, Table 2.2):

ICD-9-CM Table 2.2 Left Ventricular Assistive Device (LVAD) and Heart Transplant

Code: Shortened Description

33.6: COMB HEART/LUNG TRANSPLA

37.51: HEART TRANSPLANTATION

37.52: IMP TOT INT BI HT RP SYS

37.53: REPL/REP THR UNT TOT HRT

37.54: REPL/REP OTH TOT HRT SYS

37.60: IMP BIVN EXT HRT AST SYS

37.62: INSRT NON-IMPL CIRC DEV

37.63: REPAIR HEART ASSIST SYS

37.65: IMP VENT EXT HRT AST SYS

37.66: IMPLANTABLE HRT ASSIST

37.68: PERCUTAN HRT ASSIST SYST

- Patients less than 18 years of age.
 - o Patient age (in years) equals Admission Date minus Birthdate.
- Patients who have a Length of Stay greater than 120 days.
 - o Length of Stay (in days) equals Discharge Date minus Admission Date.
- Patients with Comfort Measures Only documented:
 - o Physician/APN/PA documentation of comfort measures only (hospice, comfort care, etc.) mentioned in the following contexts suffices to exclude a case from the measure:
 - x Comfort measures only recommendation
 - x Order for consultation or evaluation by a hospice care service
 - x Patient or family request for comfort measures only
 - x Plan for comfort measures only
 - x Referral to hospice care service
- Patients enrolled in a Clinical Trial.
 - o Patients are excluded if “Yes” is selected for Clinical Trial.
- Patients discharged to another hospital

- o Determined by the data element Discharge Disposition, allowable value #4 Acute Care Facility
- Patients who left against medical advice
 - o Determined by the data element Discharge Disposition, allowable value #7 Left Against Medical Advice/AMA
- Patients who expired
 - o Determined by the data element Discharge Disposition allowable value #6 Expired
- Patients discharged to home for hospice care
 - o Determined by the data element Discharge Disposition allowable value #2 Hospice-Home
- Patients discharged to a healthcare facility for hospice care
 - o Determined by the data element Discharge Disposition allowable value #3 Hospice-Health Care Facility
- Patients with a documented Reason for No Bisoprolol, Carvedilol, or Sustained-Release Metoprolol Succinate Prescribed for LVSD at Discharge
 - o Reasons for not prescribing bisoprolol, carvedilol, or sustained-release metoprolol succinate at discharge:
 - x Beta-blocker allergy
 - x Second or third-degree heart block on ECG on arrival or during hospital stay and does not have a pacemaker
 - x Other reasons documented by physician/advanced practice nurse/physician assistant (physician/APN/PA) or pharmacist

Risk Adjustment

0083: Heart Failure (HF): Beta-Blocker Therapy for Left Ventricular Systolic Dysfunction (LVSD)

No risk adjustment or risk stratification

n/a

2438: Beta-Blocker Therapy (i.e., Bisoprolol, Carvedilol, or Sustained-Release Metoprolol Succinate) for LVSD Prescribed at Discharge

No risk adjustment or risk stratification

Not Applicable

Stratification

0083: Heart Failure (HF): Beta-Blocker Therapy for Left Ventricular Systolic Dysfunction (LVSD)

Consistent with CMS' Measures Management System Blueprint and recent national recommendations put forth by the IOM 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 and have included these variables as recommended data elements to be collected.

2438: Beta-Blocker Therapy (i.e., Bisoprolol, Carvedilol, or Sustained-Release Metoprolol Succinate) for LVSD Prescribed at Discharge

Not Applicable

Type Score

0083: Heart Failure (HF): Beta-Blocker Therapy for Left Ventricular Systolic Dysfunction (LVSD)

Rate/proportion better quality = higher score

2438: Beta-Blocker Therapy (i.e., Bisoprolol, Carvedilol, or Sustained-Release Metoprolol Succinate) for LVSD Prescribed at Discharge

Rate/proportion better quality = higher score

Algorithm

0083: Heart Failure (HF): Beta-Blocker Therapy for Left Ventricular Systolic Dysfunction (LVSD)

To calculate performance rates:

1. Find the patients who meet the initial population (ie, 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 (ie, 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 (ie, 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: Documentation of medical reason(s) for not prescribing beta-blocker therapy (eg, low blood pressure, fluid overload, asthma, patients recently treated with an intravenous positive inotropic agent); Documentation of patient reason(s) for not prescribing beta-blocker therapy; Documentation of system reason(s) 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 (ie, 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. No diagram provided

2438: Beta-Blocker Therapy (i.e., Bisoprolol, Carvedilol, or Sustained-Release Metoprolol Succinate) for LVSD Prescribed at Discharge

Advanced Certification Heart Failure (ACHF) Initial Patient Population Algorithm

Variable Key: Patient Age, Length of Stay and Initial Patient Population Reject Case Flag

1. Start ACHF Initial Patient Population logic sub-routine. Process all cases that have successfully reached the point in the Transmission Data Processing Flow: Clinical which calls this Initial Patient Population Algorithm. Do not process cases that have been rejected before this point in the Transmission Data Processing Flow: Clinical.
2. Check ICD-9-CM Principal Diagnosis Code

a. If ICD-9-CM Principal Diagnosis Code is not on Table 2.1, the patient is not in the ACHF Topic Population and is not eligible to be sampled for the ACHF measure set. Set the Initial Patient Population Reject Case Flag to equal Yes. Return to Transmission Data Processing Flow: Clinical in the Data Transmission section.

b. If ICD-9-CM Principal Diagnosis Code is on Table 2.1, continue processing and proceed to ICD-9-CM Principal or Other Procedure Codes.

3. Check ICD-9-CM Principal or Other Procedure Codes

a. If at least one of the ICD-9-CM Principal or Other Procedure Codes is on Table 2.2, the patient is not in the ACHF Initial Patient Population and is not eligible to be sampled for the ACHF measure set. Set the Initial Patient Population Reject Case Flag to equal Yes. Return to Transmission Data Processing Flow: Clinical in the Data Transmission section.

b. If all of the ICD-9-CM Principal or Other Procedure Codes are missing or none are on Table 2.2, continue processing and proceed to the Patient Age Calculation.

4. Calculate Patient Age. Patient Age, in years, is equal to the Admission Date minus the Birthdate. Use the month and day portion of admission date and birthdate to yield the most accurate age.

5. Check Patient Age

a. If the Patient Age is less than 18 years, the patient is not in the ACHF Initial Patient Population and is not eligible to be sampled for the ACHF measure set. Set the Initial Patient Population Reject Case Flag to equal Yes. Return to Transmission Data Processing Flow: Clinical in the Data Transmission section.

b. If the Patient Age is greater than or equal to 18 years, continue processing and proceed to Length of Stay Calculation.

6. Calculate the Length of Stay. Length of Stay, in days, is equal to the Discharge Date minus the Admission Date.

7. Check Length of Stay

a. If the Length of Stay is greater than 120 days, the patient is not in the ACHF Initial Patient Population and is not eligible to be sampled for the ACHF measure set. Set the Initial Patient Population Reject Case Flag to equal Yes. Return to Transmission Data Processing Flow: Clinical in the Data Transmission section.

b. If the Length of Stay is less than or equal to 120 days, the patient is in the ACHF Initial Patient Population and is eligible to be sampled for the ACHF measure set. Set Initial Patient Population Reject Case Flag to equal No. Return to Transmission Data Processing Flow: Clinical in the Data Transmission section.

ACHF-01: Beta-Blocker Therapy (i.e., Bisoprolol, Carvedilol, or Sustained-Release Metoprolol Succinate) for LVSD Prescribed at Discharge

Numerator: Patients who are prescribed bisoprolol, carvedilol, or sustained-release metoprolol succinate for LVSD at hospital discharge.

Denominator: Heart failure patients with current or prior documentation of left ventricular ejection fraction (LVSD) < 40%.

1. Start processing. Run cases that are included in the ACHF Initial Patient Population and pass the edits defined in the Transmission Data Processing Flow: Clinical through this measure.

2. Check Clinical Trial

- a. If Clinical Trial is missing, the case will proceed to a Measure Category Assignment of X and will be rejected. Stop processing.
 - b. If Clinical Trial equals Yes, the case will proceed to a Measure Category Assignment of B and will not be in the Measure Population. Stop processing.
 - c. If Clinical Trial equals No, continue processing and proceed to Discharge Disposition.
3. Check Discharge Disposition
- a. If Discharge Disposition is missing, the case will proceed to a Measure Category Assignment of X and will be rejected. Stop processing.
 - b. Discharge Disposition equals 2, 3, 4, 6 or 7, the case will proceed to a Measure Category Assignment of B and will not be in the Measure Population. Stop processing.
 - c. If Discharge Disposition equals 1, 5 or 8, continue processing and proceed to Comfort Measures Only.
4. Check Comfort Measures Only
- a. If Comfort Measures Only is missing, the case will proceed to a Measure Category Assignment of X and will be rejected. Stop processing.
 - b. If Comfort Measures Only equals 1, 2 or 3, the case will proceed to a Measure Category Assignment of B and will not be in the Measure Population. Stop processing.
 - c. If Comfort Measures Only equals 4, continue processing and proceed to LVSD <40%.
5. Check LVSD <40%
- a. If LVSD <40% is missing, the case will proceed to a Measure Category Assignment of X and will be rejected. Stop processing.
 - b. If LVSD <40% equals No, the case will proceed to a Measure Category Assignment of B and will not be in the Measure Population. Stop processing.
 - c. If LVSD <40% equals Yes, continue processing and proceed to Bisoprolol, Carvedilol, or Sustained-Release Metoprolol Prescribed for LVSD at Discharge.
6. Check Bisoprolol, Carvedilol, or Sustained-Release Metoprolol Prescribed for LVSD at Discharge
- a. If Bisoprolol, Carvedilol, or Sustained-Release Metoprolol Prescribed for LVSD at Discharge is missing, the case will proceed to a Measure Category Assignment of X and will be rejected. Stop processing.
 - b. If Bisoprolol, Carvedilol, or Sustained-Release Metoprolol Prescribed for LVSD at Discharge equals Yes, the case will proceed to a Measure Category Assignment of E and will be in the Numerator Population. Stop processing.
 - c. If Bisoprolol, Carvedilol, or Sustained-Release Metoprolol Prescribed for LVSD at Discharge equals No, continue processing and proceed to Reason for No Bisoprolol, Carvedilol, or Sustained-Release Metoprolol Prescribed for LVSD at Discharge.
7. Check Reason for No Bisoprolol, Carvedilol, or Sustained-Release Metoprolol Prescribed for LVSD at Discharge
- a. If Reason for No Bisoprolol, Carvedilol, or Sustained-Release Metoprolol Prescribed for LVSD at Discharge is missing, the case will proceed to a Measure Category Assignment of X and will be rejected. Stop processing.

- b. If Reason for No Bisoprolol, Carvedilol, or Sustained-Release Metoprolol Prescribed for LVSD at Discharge equals Yes, the case will proceed to a Measure Category Assignment of B and will not be in the Measure Population. Stop processing.
- c. If Reason for No Bisoprolol, Carvedilol, or Sustained-Release Metoprolol Prescribed for LVSD at Discharge equals No, the case will proceed to a Measure Category Assignment of D and will be in the Measure Population. Stop processing. Available at measure-specific web page URL identified in S.1

Submission items

0083: Heart Failure (HF): Beta-Blocker Therapy for Left Ventricular Systolic Dysfunction (LVSD)

5.1 Identified 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

5a.1 Are specs completely harmonized? No

5a.2 If not completely harmonized, identify difference, rationale, impact: Measure 0083 addresses a therapy which is also covered in part by the following NQF-endorsed measures: NQF 0071: Persistence of Beta-Blocker Treatment After a Heart Attack and NQF 0070: Coronary Artery Disease (CAD): Beta-Blocker Therapy—Prior Myocardial Infarction (MI) or Left Ventricular Systolic Dysfunction (LVEF <40%). The specifications are harmonized to the extent possible. However, measure 0083 is focused on a patient population with heart failure and therefore the denominator specifications for the measures differ.

5b.1 If competing, why superior or rationale for additive value:

2438: Beta-Blocker Therapy (i.e., Bisoprolol, Carvedilol, or Sustained-Release Metoprolol Succinate) for LVSD Prescribed at Discharge

5.1 Identified measures: 0083 : Heart Failure (HF): Beta-Blocker Therapy for Left Ventricular Systolic Dysfunction (LVSD)

5a.1 Are specs completely harmonized? No

5a.2 If not completely harmonized, identify difference, rationale, impact: The numerator and denominator statements are harmonized. Principal differences in measure specifications are noted below, and are thought to be artifacts of the different levels of measurement (organization vs. practitioner) addressed by the 2 measures. Differences

ACHF-01 Denominator Exclusions:

- Patients who had a left ventricular assistive device (LVAD) or heart transplant procedure during hospital stay (ICD-9-CM procedure code for LVAD and heart transplant as defined in Appendix A, Table 2.2)
- Patients less than 18 years of age
- Patients who have a Length of Stay greater than 120 days
- Patients with Comfort Measures Only documented
- Patients enrolled in a Clinical Trial
- Patients discharged to another hospital
- Patients who left against medical advice
- Patients who expired
- Patients discharged to home for hospice care
- Patients discharged to a healthcare facility for hospice care
- Patients with a documented Reason for No Bisoprolol, Carvedilol, or Sustained-Release Metoprolol Succinate Prescribed for LVSD at Discharge

0083 Denominator Exceptions:

- Documentation of medical reason(s) for not prescribing beta-blocker therapy (eg, low blood pressure, fluid overload, asthma, patients recently treated with an intravenous positive inotropic agent)
- Documentation of patient reason(s) for not prescribing beta-

blocker therapy • Documentation of system reason(s) for not prescribing beta-blocker therapy Impact on interpretability and data collection burden: These two measures are specified to different levels of measurement (facility vs. practitioner). As such they are specified in order to be effectively and efficiently collected by the systems developed for each type of measure. Therefore, measure results should be easily interpretable with no adverse impact on data collection burden.

5b.1 If competing, why superior or rationale for additive value: Not applicable

Comparison of NQF #0230, NQF #2473, and NQF #0730

0230: Hospital 30-day, all-cause, risk-standardized mortality rate (RSMR) following acute myocardial infarction (AMI) hospitalization for patients 18 and older

2473: Hospital 30-Day Risk-Standardized Acute Myocardial Infarction (AMI) Mortality eMeasure

0730: Acute Myocardial Infarction (AMI) Mortality Rate

Steward

0230: Hospital 30-day, all-cause, risk-standardized mortality rate (RSMR) following acute myocardial infarction (AMI) hospitalization for patients 18 and older

Centers for Medicare & Medicaid Services (CMS)

2473: Hospital 30-Day Risk-Standardized Acute Myocardial Infarction (AMI) Mortality eMeasure

Centers for Medicare & Medicaid Services

0730: Acute Myocardial Infarction (AMI) Mortality Rate

Agency for Healthcare Research and Quality

Description

0230: Hospital 30-day, all-cause, risk-standardized mortality rate (RSMR) following acute myocardial infarction (AMI) hospitalization for patients 18 and older

The measure estimates a hospital-level 30-day risk-standardized mortality rate (RSMR). Mortality is defined as death for any cause within 30 days after the date of admission for the index admission, for patients 18 and older discharged from the hospital with a principal diagnosis of acute myocardial infarction (AMI). CMS annually reports the measure for patients who are 65 years or older and are either Medicare fee-for-service (FFS) beneficiaries and hospitalized in non-federal hospitals or are hospitalized in Veterans Health Administration (VA) facilities.

2473: Hospital 30-Day Risk-Standardized Acute Myocardial Infarction (AMI) Mortality eMeasure

This measure estimates hospital 30-day risk-standardized mortality rates following admission for AMI using clinical information collected at presentation in an electronic health record (EHR). Mortality is defined as death from any cause within 30 days of the index admission date.

0730: Acute Myocardial Infarction (AMI) Mortality Rate

In-hospital deaths per 1,000 hospital discharges with acute myocardial infarction (AMI) as a principal diagnosis for patients ages 18 years and older.

Type

0230: Hospital 30-day, all-cause, risk-standardized mortality rate (RSMR) following acute myocardial infarction (AMI) hospitalization for patients 18 and older

Outcome

2473: Hospital 30-Day Risk-Standardized Acute Myocardial Infarction (AMI) Mortality eMeasure

Outcome

0730: Acute Myocardial Infarction (AMI) Mortality Rate

Outcome

Data Source

0230: Hospital 30-day, all-cause, risk-standardized mortality rate (RSMR) following acute myocardial infarction (AMI) hospitalization for patients 18 and older

Administrative claims, Other, Paper Medical Records Data sources for the Medicare FFS measure:

1. Medicare Part A inpatient and Part B outpatient claims: This data source contains claims data for fee-for service inpatient and outpatient services including: Medicare inpatient hospital care, outpatient hospital services, skilled nursing facility care, some home health agency services, as well as inpatient and outpatient physician claims for the 12 months prior to an index admission.
2. Medicare Enrollment Database (EDB): This database contains Medicare beneficiary demographic, benefit/coverage, and vital status information. This data source was used to obtain information on several inclusion/exclusion indicators such as Medicare status on admission as well as vital status. These data have previously been shown to accurately reflect patient vital status (Fleming et al., 1992).
3. Veterans Health Administration Data: This data source contains claims data for VA inpatient and outpatient services including: inpatient hospital care, outpatient hospital services, skilled nursing facility care, some home health agency services, as well as inpatient and outpatient physician claims for the 12 months prior to and including each index admission. Unlike Medicare FFS patients, VA patients are not required to have been enrolled in Part A and Part B Medicare for the 12 months prior to the date of admission.

All-payer data sources:

For our analyses to examine use in all-payer data, we used all-payer data from California in addition to CMS data for Medicare FFS 65+ patients in California hospitals. California is a diverse state, and, with more than 37 million residents, California represents 12% of the US population. We used the California Patient Discharge Data, a large, linked database of patient hospital admissions. In 2006, there were approximately 3 million adult discharges from more than 450 non-Federal acute care hospitals. Records are linked by a unique patient identification number, allowing us to determine patient history from previous hospitalizations and to evaluate rates of both readmission and mortality (via linking with California vital statistics records).

Using all-payer data from California as well as CMS Medicare FFS data for California hospitals, we performed analyses to determine whether the AMI mortality measure can be applied to all adult patients, including not only FFS Medicare patients aged 65+ but also

non-FFS Medicare patients aged 65+ and younger patients aged 18-64 years at the time of admission.

References:

Fleming C, Fisher ES, Chang CH, Bubolz TA, Malenka DJ. Studying outcomes and hospital utilization in the elderly: The advantages of a merged data base for Medicare and Veterans Affairs hospitals. Medical Care. 1992; 30(5): 377-91.

No data collection instrument provided Attachment

AMI_Mortality_NQF_Data_Dictionary_06-22-15_FINAL.xlsx

2473: Hospital 30-Day Risk-Standardized Acute Myocardial Infarction (AMI) Mortality eMeasure

Administrative claims, Electronic Clinical Data, Electronic Clinical Data : Electronic Health Record, Electronic Clinical Data : Laboratory, Other The data source for the measure will be the hospital EHR for clinical data, merged with CMS Medicare claims and enrollment data (or another external source of death data) for the 30-day mortality outcome.

The data source for measure development was the ACTION Registry(R)–GWTG(TM) (an initiative of the American College of Cardiology Foundation and the American Heart Association, with partnering support from Society of Chest Pain Centers, The American College of Emergency Physicians, and The Society of Hospital Medicine), maintained by the National Cardiovascular Data Registry (NCDR(R)), for clinical data, merged with CMS Medicare claims and enrollment data for the 30-day mortality outcome.

No data collection instrument provided Attachment

AMI_Mortality_eMeasure_Risk_model_coefficients.xlsx

0730: Acute Myocardial Infarction (AMI) Mortality Rate

Administrative claims While the measure is tested and specified using data from the Healthcare Cost and Utilization Project (HCUP) (see section 1.1 and 1.2 of the measure testing form), the measure specifications and software are specified to be used with any ICD-9-CM-coded administrative billing/claims/discharge dataset with Present on Admission (POA) information. Note that in Version 5.0, the AHRQ QI software no longer supports prediction of POA status using an embedded prediction module. Users are expected to provide POA data.

Available at measure-specific web page URL identified in S.1 Attachment

Technical_Specs_IQI15_v5.0.xlsx

Level

0230: Hospital 30-day, all-cause, risk-standardized mortality rate (RSMR) following acute myocardial infarction (AMI) hospitalization for patients 18 and older

Facility

2473: Hospital 30-Day Risk-Standardized Acute Myocardial Infarction (AMI) Mortality eMeasure

Facility

0730: Acute Myocardial Infarction (AMI) Mortality Rate

Facility

Setting

0230: Hospital 30-day, all-cause, risk-standardized mortality rate (RSMR) following acute myocardial infarction (AMI) hospitalization for patients 18 and older

Hospital/Acute Care Facility

2473: Hospital 30-Day Risk-Standardized Acute Myocardial Infarction (AMI) Mortality eMeasure

Hospital/Acute Care Facility

0730: Acute Myocardial Infarction (AMI) Mortality Rate

Hospital/Acute Care Facility

Numerator Statement

0230: Hospital 30-day, all-cause, risk-standardized mortality rate (RSMR) following acute myocardial infarction (AMI) hospitalization for patients 18 and older

The outcome for this measure is 30-day all-cause mortality. We define mortality as death from any cause within 30 days of the index admission date for patients 18 and older discharged from the hospital with a principal diagnosis of AMI.

2473: Hospital 30-Day Risk-Standardized Acute Myocardial Infarction (AMI) Mortality eMeasure

The outcome for this measure is 30-day all-cause mortality. We define all-cause mortality as death from any cause within the 30 days after the index admission date.

0730: Acute Myocardial Infarction (AMI) Mortality Rate

Number of in-hospital deaths among cases meeting the inclusion and exclusion rules for the denominator.

Numerator Details

0230: Hospital 30-day, all-cause, risk-standardized mortality rate (RSMR) following acute myocardial infarction (AMI) hospitalization for patients 18 and older

The measure counts deaths for any cause within 30 days of the date of admission of the index AMI hospitalization.

Identifying deaths in the FFS measure

As currently reported, we identify deaths for FFS Medicare patients 65 years and older in the Medicare Enrollment Database (EDB).

Identifying deaths in the all-payer measure

For the purposes of development, deaths were identified using the California vital statistics data file. Nationally, post-discharge deaths can be identified using an external source of vital status, such as the Social Security Administration's Death Master File (DMF) or the Centers for Disease Control and Prevention's National Death Index (NDI).

2473: Hospital 30-Day Risk-Standardized Acute Myocardial Infarction (AMI) Mortality eMeasure

The measure includes death from any cause within 30 days after the date of the index admission. Because this outcome will not be available from a hospital EHR, ascertainment of mortality will occur by linking to an external data source. For example, mortality could

be obtained by linking with the Medicare Enrollment Database for Medicare patients or with another source of death data, such as the National Death Index or the Death Master File.

0730: Acute Myocardial Infarction (AMI) Mortality Rate

Number of deaths (DISP=20 in AHRQ's Healthcare Cost and Utilization Project datasets) among cases meeting the inclusion and exclusion rules for the denominator.

Denominator Statement

0230: Hospital 30-day, all-cause, risk-standardized mortality rate (RSMR) following acute myocardial infarction (AMI) hospitalization for patients 18 and older

This claims-based measure can be used in either of two patient cohorts: (1) patients aged 65 years or older or (2) patients aged 18 years or older. The cohort includes admissions for patients discharged from the hospital with a principal discharge diagnosis of AMI and with a complete claims history for the 12 months prior to admission. Currently, the measure is publicly reported by CMS for those patients 65 years and older who are either Medicare FFS beneficiaries admitted to non-federal hospitals or patients admitted to VA hospitals. Additional details are provided in S.9 Denominator Details.

2473: Hospital 30-Day Risk-Standardized Acute Myocardial Infarction (AMI) Mortality eMeasure

The cohort includes inpatient admissions for patients aged 65 years and older who were discharged from short-term acute care hospitals with a principal discharge diagnosis of AMI.

0730: Acute Myocardial Infarction (AMI) Mortality Rate

Discharges, for patients ages 18 years and older, with a principal ICD-9-CM diagnosis code for AMI.

Denominator Details

0230: Hospital 30-day, all-cause, risk-standardized mortality rate (RSMR) following acute myocardial infarction (AMI) hospitalization for patients 18 and older

To be included in the measure cohort used in public reporting, patients must meet the following additional inclusion criteria:

1. Having a principal discharge diagnosis of AMI;
2. Enrolled in Medicare FFS;
3. Aged 65 or over;
4. Not transferred from another acute care facility; and
5. Enrolled in Part A and Part B Medicare for the 12 months prior to the date of index admission, and enrolled in Part A during the index admission.

VA beneficiaries/hospitalizations are also included in the AMI mortality measure. Enrollment in Medicare FFS is not required for these patients.

International Classification of Diseases, 9th Revision, Clinical Modification (ICD-9-CM) codes used to define the cohort for each measure are:

- 410.00 AMI (anterolateral wall) – episode of care unspecified
- 410.01 AMI (anterolateral wall) – initial episode of care

410.10 AMI (other anterior wall) – episode of care unspecified
 410.11 AMI (other anterior wall) – initial episode of care
 410.20 AMI (inferolateral wall) – episode of care unspecified
 410.21 AMI (inferolateral wall) – initial episode of care
 410.30 AMI (inferoposterior wall) – episode of care unspecified
 410.31 AMI (inferoposterior wall) – initial episode of care
 410.40 AMI (other inferior wall) – episode of care unspecified
 410.41 AMI (other inferior wall) – initial episode of care
 410.50 AMI (other lateral wall) – episode of care unspecified
 410.51 AMI (other lateral wall) – initial episode of care
 410.60 AMI (true posterior wall) – episode of care unspecified
 410.61 AMI (true posterior wall) – initial episode of care
 410.70 AMI (subendocardial) – episode of care unspecified
 410.71 AMI (subendocardial) – initial episode of care
 410.80 AMI (other specified site) – episode of care unspecified
 410.81 AMI (other specified site) – initial episode of care
 410.90 AMI (unspecified site) – episode of care unspecified
 410.91 AMI (unspecified site) – initial episode of care

ICD-10 Codes that define the patient cohort:

I2109 ST elevation (STEMI) myocardial infarction involving other coronary artery of anterior wall

I2119 ST elevation (STEMI) myocardial infarction involving other coronary artery of inferior wall

I2111 ST elevation (STEMI) myocardial infarction involving right coronary artery

I2119 ST elevation (STEMI) myocardial infarction involving other coronary artery of inferior wall

I2129 ST elevation (STEMI) myocardial infarction involving other sites

I214 Non-ST elevation (NSTEMI) myocardial infarction

I213 ST elevation (STEMI) myocardial infarction of unspecified site

An ICD-9 to ICD-10 crosswalk is attached in field S.2b. (Data Dictionary or Code Table).

2473: Hospital 30-Day Risk-Standardized Acute Myocardial Infarction (AMI) Mortality eMeasure

The cohort includes inpatient admissions for patients aged 65 years and older who were discharged from a short-term acute care hospital with a principal discharge diagnosis of AMI, as identified by the value sets in the attached measure specifications file (Section S.2a).

0730: Acute Myocardial Infarction (AMI) Mortality Rate

ICD-9-CM AMI diagnosis codes (initial or unspecified episode of care):

41000 AMI ANTEROLATERAL, UNSPEC

41001 AMI ANTEROLATERAL, INIT

41010	AMI ANTERIOR WALL, UNSPEC
41011	AMI ANTERIOR WALL, INIT
41020	AMI INFEROLATERAL, UNSPEC
41021	AMI INFEROLATERAL, INIT
41030	AMI INFEROPOST, UNSPEC
41031	AMI INFEROPOST, INITIAL
41040	AMI INFERIOR WALL, UNSPEC
41041	AMI INFERIOR WALL, INIT
41050	AMI LATERAL NEC, UNSPEC
41051	AMI LATERAL NEC, INITIAL
41060	TRUE POST INFARCT, UNSPEC
41061	TRUE POST INFARCT, INIT
41070	SUBENDO INFARCT, UNSPEC
41071	SUBENDO INFARCT, INITIAL
41080	AMI NEC, UNSPECIFIED
41081	AMI NEC, INITIAL
41090	AMI NOS, UNSPECIFIED
41091	AMI NOS, INITIAL

Exclusions

0230: Hospital 30-day, all-cause, risk-standardized mortality rate (RSMR) following acute myocardial infarction (AMI) hospitalization for patients 18 and older

The mortality measures exclude index admissions for patients:

1. Discharged alive on the day of admission or the following day who were not transferred to another acute care facility.
2. With inconsistent or unknown vital status or other unreliable demographic (age and gender) data;
3. Enrolled in the Medicare hospice program or used VA hospice services any time in the 12 months prior to the index admission, including the first day of the index admission; or
4. Discharged against medical advice (AMA).

For patients with more than one admission for a given condition in a given year, only one index admission for that condition is randomly selected for inclusion in the cohort.

For Medicare FFS patients, the measure additionally excludes admissions for patients without at least 30 days post-discharge enrollment in FFS Medicare (because the 30-day mortality outcome cannot be assessed in this group).

2473: Hospital 30-Day Risk-Standardized Acute Myocardial Infarction (AMI) Mortality eMeasure

The measure excludes index admissions:

- 1) For patients who were discharged against medical advice (AMA) (because providers did not have the opportunity to deliver full care and prepare the patient for discharge);

- 2) For patients who were transferred in from another short-term acute care institution (because the death is attributed to the hospital where the patient was initially admitted);
- 3) With unreliable data (age >115 years);
- 4) That were not randomly selected from a patient's multiple qualifying AMI admissions in a year (because AMI patients may have multiple admissions in a year and the measure includes one randomly selected AMI admission per patient per year);
- 5) With unknown death (missing vital status) after linking to the Medicare Enrollment Database or other source of death data.

0730: Acute Myocardial Infarction (AMI) Mortality Rate

Exclude cases:

- transferred to another short-term hospital, for whom the outcome at hospital discharge was unknown
- admitted for treatment of pregnancy, childbirth, and puerperium
- with missing discharge disposition, gender, age, quarter, year, or principal diagnosis

Exclusion Details

0230: Hospital 30-day, all-cause, risk-standardized mortality rate (RSMR) following acute myocardial infarction (AMI) hospitalization for patients 18 and older

1. The discharge disposition indicator is used to identify patients alive at discharge. Transfers are identified in the claims when a patient with a qualifying admission is discharged from an acute care hospital and admitted to another acute care hospital on the same day or next day. In addition, patient length of stay and condition is identified from the admission claim.
2. Inconsistent vital status or unreliable data are identified if any of the following conditions are met 1) the patient's age is greater than 115 years; 2) if the discharge date for a hospitalization is before the admission date; and 3) if the patient has a sex other than 'male' or 'female'.
3. Hospice enrollment in the 12 months prior to or on the index admission is identified using hospice data and the Inpatient standard analytic file (SAF). This exclusion applies when the measure is used in Medicare FFS patients only.
4. Discharges against medical advice (AMA) are identified using the discharge disposition indicator.

Additional exclusions:

- AMI admissions within 30 days of discharge from a qualifying index admission, which are identified by comparing the discharge date from the index admission with the readmission date.
- Admissions without at least 30 days post-discharge enrollment in FFS Medicare, which is determined by examining the Medicare Enrollment Database (EDB)

2473: Hospital 30-Day Risk-Standardized Acute Myocardial Infarction (AMI) Mortality eMeasure

Denominator exclusions, including discharges AMA and transfers in from another acute care institution, are identified using the value sets in the attached measure specifications file (section S.2a).

Index admissions with unreliable data are identified and excluded if the patient's age is greater than 115 years, based on the calculation of patient age. Patient age is calculated based on birthdate (see value set in attached file).

Patients with unknown death (missing vital status) are identified by linking to the Medicare Enrollment Database or other source of death data.

0730: Acute Myocardial Infarction (AMI) Mortality Rate

Exclude cases:

- transferred to another short-term hospital (DISP=2)
- with Major Diagnosis Category (MDC) 14 (pregnancy, childbirth, and puerperium)
- with missing discharge disposition (DISP=missing), gender (SEX=missing), age (AGE=missing), quarter (DQTR=missing), year (YEAR=missing) or principal diagnosis (DX1=missing)

Risk Adjustment

0230: Hospital 30-day, all-cause, risk-standardized mortality rate (RSMR) following acute myocardial infarction (AMI) hospitalization for patients 18 and older

Statistical risk model

Our approach to risk adjustment is tailored to and appropriate for a publicly reported outcome measure, as articulated in the American Heart Association (AHA) Scientific Statement, "Standards for Statistical Models Used for Public Reporting of Health Outcomes" (Krumholz et. al., 2006).

The measure employs a hierarchical logistic regression model to create a hospital level 30-day RSMR. In brief, the approach simultaneously models data at the patient and hospital levels to account for the variance in patient outcomes within and between hospitals (Normand & Shahian, 2007). At the patient level, the model adjusts the log-odds of mortality within 30-days of admission for age, sex, and selected clinical covariates. At the hospital level, the approach models the hospital-specific intercepts as arising from a normal distribution. The hospital intercept represents the underlying risk of a death at the hospital, after accounting for patient risk. If there were no differences among hospitals, then after adjusting for patient risk, the hospital intercepts should be identical across all hospitals.

Candidate and Final Risk-adjustment Variables:

Candidate variables were patient-level risk-adjustors that were expected to be predictive of mortality, based on empirical analysis, prior literature, and clinical judgment including age, sex, and indicators of comorbidity and disease severity. For each patient, covariates are obtained from Medicare claims extending 12 months prior to and including the index admission. However, in the all-payer hospital discharge database measure, the risk-adjustment variables can be obtained only from inpatient claims in the prior 12 months and the index admission (this was tested explicitly in our all-payer testing, as many all-payer datasets do not include outpatient claims).

The model adjusts for case-mix differences based on the clinical status of patients at the time of admission. We used condition categories (CCs), which are clinically meaningful groupings of more than 15,000 ICD-9-CM diagnosis codes, and combinations of CCs as candidate variables (Pope et al., 2000). A file that contains a list of the ICD-9-CM codes and

their groupings into CCs is attached in data field S.2b (Data Dictionary or Code Table). In addition, only comorbidities that convey information about the patient at admission or in the 12-months prior, and not complications that arise during the course of the hospitalization, are included in the risk-adjustment. Hence, we do not risk adjust for CCs that may represent adverse events of care and that are only recorded in the index admission.

The final set of risk adjustment variables are:

Demographics

Male

Age-65 (years above 65, continuous) for 65 and over cohorts; or Age (years, continuous) for 18 and over cohorts.

Comorbidities

Congestive heart failure (CC 80)

Acute myocardial infarction (CC 81)

Other acute/subacute forms of ischemic heart disease (CC 82)

Anterior myocardial infarction (ICD-9 codes 410.00-410.19)

Other location of myocardial infarction (ICD-9 codes 410.20-410.69)

Coronary atherosclerosis or angina (CC 83, 84)

Cardio-respiratory failure and shock (CC 79)

Valvular and rheumatic heart disease (CC 86)

Hypertension (CC 89, 91)

Stroke (CC 95-96)

Cerebrovascular disease (CC 97-99, 103)

Renal failure (CC 131)

Chronic obstructive pulmonary disease (COPD) (CC 108)

Pneumonia (CC 111-113)

Diabetes mellitus (DM) or DM complications except proliferative retinopathy (CC 15-20, 120)

Protein-calorie malnutrition (CC 21)

Dementia or other specified brain disorders (CC 49, 50)

Hemiplegia, paraplegia, paralysis, functional disability (CC 67-69, 100-102, 177, 178)

Vascular disease and complications (CC 104, 105)

Metastatic cancer, acute leukemia and other severe cancers (CC 7, 8)

Trauma in last year (CC 154-156, 158-162)

Major psychiatric disorders (CC 54-56)

Chronic Liver Disease (CC 25-27)

History of CABG (ICD-9-CM V45.81, 36.10-36.16)

History of PTCA (ICD-9-CM V45.82, 00.66, 36.01, 36.02, 36.05, 36.06, 36.07)

References:

Krumholz HM, Brindis RG, Brush JE, et al. 2006. Standards for Statistical Models Used for Public Reporting of Health Outcomes: An American Heart Association Scientific Statement

From the Quality of Care and Outcomes Research Interdisciplinary Writing Group:
Cosponsored by the Council on Epidemiology and Prevention and the Stroke Council
Endorsed by the American College of Cardiology Foundation. Circulation 113: 456-462.

Normand S-LT, Shahian DM. 2007. Statistical and Clinical Aspects of Hospital Outcomes Profiling. Stat Sci 22 (2): 206-226.

Pope GC, et al. 2000. Principal Inpatient Diagnostic Cost Group Models for Medicare Risk Adjustment. Health Care Financing Review 21(3): 93-118.

Provided in response box S.15a

2473: Hospital 30-Day Risk-Standardized Acute Myocardial Infarction (AMI) Mortality eMeasure

Statistical risk model

The measure estimates the hospital 30-day all-cause risk-standardized mortality rate (RSMR) using a hierarchical logistic regression model. In brief, the approach simultaneously models outcomes at two levels (patient and hospital) to account for the variance in patient outcomes within and between hospitals (Normand et al., 2007). To model the log-odds of 30-day all-cause mortality at the patient level, the model adjusts for age and selected clinical covariates. The second level models the hospital-specific intercepts as a normal distribution. The hospital intercept represents the underlying risk of mortality at the hospital after accounting for patient risk. The hospital-specific intercepts are given a distribution in order to account for the clustering (non-independence) of patients within the same hospital (Normand et al., 2007).

The measure adjusts for the following key variables:

Demographics:

Age (continuous)

Clinical condition on presentation:

Heart rate (bpm) (continuous)

Systolic blood pressure (mmHg) (continuous)

Troponin ratio (initial troponin value (ng/ml)/hospital-specific upper limit of normal (ng/ml)) (continuous)

Initial creatinine value (mg/dl) (continuous)

Clinical risk-adjustment variables are the first values collected during the inpatient episode of care, including values collected in the emergency department prior to admission. Risk adjustment and measure score calculation will occur using aggregated data from all included sites.

References:

Normand S-LT, Shahian DM. 2007. Statistical and Clinical Aspects of Hospital Outcomes Profiling. Stat Sci 22 (2): 206-226.

Available in attached Excel or csv file at S.2b

0730: Acute Myocardial Infarction (AMI) Mortality Rate

Statistical risk model

The predicted value for each case is computed using a hierarchical model (logistic regression with hospital random effect) and covariates for gender, age (in 5-year age groups), All Patient Refined Diagnosis Related Groups (APR DRGs) with Risk of Mortality

(ROM) scores, Major Diagnosis Categories (MDC) based on the principal diagnosis, and transfer in from another acute care hospital. The expected rate is computed as the sum of the predicted value for each case divided by the number of cases for the unit of analysis of interest (i.e., hospital). The risk adjusted rate is computed using indirect standardization as the observed rate divided by the expected rate, multiplied by the reference population rate.

The specific covariates for this measure are as follows:

ParameterLabel

Age	18 to 39
Age	40 to 44
Age	45 to 49
Age	50 to 54
Age	55 to 59
Age	65 to 79
Age	80 to 84
Age	85+

APR-DRG 161-(1-2) CARDIAC DEFIBRILLATOR & HEART ASSIST IMPLANT, Risk of mortality (ROM) 1 - 2

APR-DRG 161-(3-4) CARDIAC DEFIBRILLATOR & HEART ASSIST IMPLANT, Risk of mortality (ROM) 3 - 4

APR-DRG 162-(1,2)CARDIAC VALVE PROCEDURES W CARDIAC CATHETERIZATION, ROM 1 and 2

APR-DRG 162-3 CARDIAC VALVE PROCEDURES W CARDIAC CATHETERIZATION, ROM 3

APR-DRG 162-4 CARDIAC VALVE PROCEDURES W CARDIAC CATHETERIZATION, ROM 4

APR-DRG 165-(1,2) CORONARY BYPASS W CARDIAC CATH OR PERCUTANEOUS CARDIAC PROC, ROM 1 and 2

APR-DRG 165-3 CORONARY BYPASS W CARDIAC CATH OR PERCUTANEOUS CARDIAC PROC, ROM 3

APR-DRG 165-4 CORONARY BYPASS W CARDIAC CATH OR PERCUTANEOUS CARDIAC PROC, ROM 4

APR-DRG 173-(1-4) OTHER VASCULAR PROCEDURES, ROM 1-4

APR-DRG 174-2 PERCUTANEOUS CARDIOVASCULAR PROCEDURES W AMI, ROM 2

APR-DRG 174-3 PERCUTANEOUS CARDIOVASCULAR PROCEDURES W AMI, ROM 3

APR-DRG 174-4 PERCUTANEOUS CARDIOVASCULAR PROCEDURES W AMI, ROM 4

APR-DRG 190-1 ACUTE MYOCARDIAL INFARCTION, ROM 1

APR-DRG 190-2 ACUTE MYOCARDIAL INFARCTION, ROM 2

APR-DRG 190-3 ACUTE MYOCARDIAL INFARCTION, ROM 3

APR-DRG 190-4 ACUTE MYOCARDIAL INFARCTION, ROM 4

MDC 5 CIRCULATORY SYSTEM, DISEASES & DISORDERS

TRANSFER IN FROM ANOTHER ACUTE CARE HOSP (If ASOURCE='2' (Another Hospital) or POINTOFORIGINUB04='4' (Transfer from a Hospital), then TRANSFER=1)

Source:

http://qualityindicators.ahrq.gov/Downloads/Modules/IQI/V50/Parameter_Estimates_IQI_50.pdf.pdf

Available in attached Excel or csv file at S.2b

Stratification

0230: Hospital 30-day, all-cause, risk-standardized mortality rate (RSMR) following acute myocardial infarction (AMI) hospitalization for patients 18 and older

N/A

2473: Hospital 30-Day Risk-Standardized Acute Myocardial Infarction (AMI) Mortality eMeasure

Results of this measure will not be stratified.

0730: Acute Myocardial Infarction (AMI) Mortality Rate

Not applicable

Type Score

0230: Hospital 30-day, all-cause, risk-standardized mortality rate (RSMR) following acute myocardial infarction (AMI) hospitalization for patients 18 and older

Rate/proportion better quality = lower score

2473: Hospital 30-Day Risk-Standardized Acute Myocardial Infarction (AMI) Mortality eMeasure

Rate/proportion better quality = lower score

0730: Acute Myocardial Infarction (AMI) Mortality Rate

Rate/proportion better quality = lower score

Algorithm

0230: Hospital 30-day, all-cause, risk-standardized mortality rate (RSMR) following acute myocardial infarction (AMI) hospitalization for patients 18 and older

The measure estimates hospital-level 30-day all-cause RSMRs following hospitalization for AMI using hierarchical logistic regression models. In brief, the approach simultaneously models data at the patient and hospital levels to account for variance in patient outcomes within and between hospitals (Normand and Shahian, 2007). At the patient level, it models the log-odds of mortality within 30 days of discharge using age, sex, selected clinical covariates, and a hospital-specific intercept. At the hospital level, it models the hospital-specific intercepts as arising from a normal distribution. The hospital intercept represents the underlying risk of mortality at the hospital, after accounting for patient risk. The hospital-specific intercepts are given a distribution to account for the clustering (non-independence) of patients within the same hospital. If there were no differences among hospitals, then after adjusting for patient risk, the hospital intercepts should be identical across all hospitals.

The RSMR is calculated as the ratio of the number of “predicted” to the number of “expected” deaths, multiplied by the national unadjusted mortality rate. For each hospital, the numerator of the ratio (“predicted”) is the number of deaths within 30 days predicted on the basis of the hospital’s performance with its observed case mix, and the

denominator (“expected”) is the number of deaths expected on the basis of the nation’s performance with that hospital’s case mix. This approach is analogous to a ratio of “observed” to “expected” used in other types of statistical analyses. It conceptually allows for a comparison of a particular hospital’s performance given its case mix to an average hospital’s performance with the same case mix. Thus, a lower ratio indicates lower-than-expected mortality or better quality and a higher ratio indicates higher-than-expected mortality or worse quality.

The “predicted” number of deaths (the numerator) is calculated by using the coefficients estimated by regressing the risk factors and the hospital-specific intercept on the risk of mortality. The estimated hospital specific intercept is added coefficients multiplied by the patient characteristics. The results are transformed and summed over all patients attributed to a hospital to get a predicted value. The “expected” number of deaths (the denominator) is obtained in the same manner, but a common intercept using all hospitals in our sample is added in place of the hospital specific intercept. The results are transformed and summed over all patients in the hospital to get an expected value. To assess hospital performance for each reporting period, we re-estimate the model coefficients using the years of data in that period.

This calculation transforms the ratio of predicted over expected into a rate that is compared to the national observed readmission rate. The hierarchical logistic regression models are described fully in the original methodology report (Krumholz et al., 2005).

References:

1. Normand S-LT, Shahian DM. 2007. Statistical and Clinical Aspects of Hospital Outcomes Profiling. *Stat Sci* 22(2): 206-226.
2. Krumholz H, Normand S, Galusha D, et al. Risk-Adjustment Models for AMI and HF 30-Day Mortality Methodology. 2005. Available at measure-specific web page URL identified in S.1

2473: Hospital 30-Day Risk-Standardized Acute Myocardial Infarction (AMI) Mortality eMeasure

The measure score is calculated based on the following steps:

1. Patient cohort is identified based on the inclusion and exclusion criteria (see questions S.7, S.8, S.9, S.10, S.11);
2. Data elements for risk adjustment are collected using the first collected value, as detailed below;
3. Outcome is ascertained from an outside data source, such as the Medicare Enrollment Database (see questions S.4, S.5, S.6)
4. Measure score is calculated with aggregated data across all included sites, as described below. Measure calculation occurs outside of the EHR.

Risk-adjustment Variables

The measure is adjusted for the variables listed below; all variables are continuous:

- Age (years)
- Heart rate: HR<70 (bpm)
- Heart rate: HR>=70 (bpm)
- Systolic blood pressure (mmHg)
- Troponin ratio (ng/mL)

Creatinine (mg/dL)

Troponin ratio is derived for each patient as follows: initial troponin value/hospital-specific upper reference limit for troponin. All hospitals will provide the upper reference limit of troponin for their laboratory.

To reduce the effect of spurious outliers, extreme values obtained for the risk-adjustment variables will be transformed by replacement with a value at the outer limit of a designated range by a process called Winsorization. Specifically, low and high outliers for the risk-adjustment variables will be Winsorized as follows:

Age: no Winsorization

Heart rate: low extreme values assigned to 40 bpm and high extreme values assigned to 140 bpm

Systolic blood pressure: low extreme values assigned to 70 mmHg and high extreme values assigned to 150 mmHg

Troponin ratio: no Winsorization of low values; high extreme values assigned to 60

Creatinine: low extreme values assigned to 0.6 mg/dL and high extreme values assigned to 3 mg/dL

Measure Score Calculation

The RSMR is calculated as the ratio of the number of “predicted” to the number of “expected” deaths, multiplied by the national unadjusted mortality rate. For each hospital, the predicted hospital outcome (the numerator) is the sum of predicted probabilities of mortality for all patients at that particular hospital. The predicted probability for each patient in the hospital is calculated using the hospital-specific intercept (described in detail in the attached calculation algorithm) and patient risk factors.

The expected hospital outcome (the denominator) is the sum of expected probabilities of mortality for all patients at a hospital. The expected probability of each patient in a hospital is calculated using a common intercept and patient risk factors.

This approach is analogous to a ratio of “observed” to “expected” used in other types of statistical analyses. It conceptually allows for a comparison of a particular hospital’s performance given its case mix to an average hospital’s performance with the same case mix. Thus, a ratio lower than one indicates a lower-than-expected mortality rate (or better quality), and a ratio greater than one indicates a higher-than-expected mortality rate (or worse quality).

Please see attachments for more details on the calculation algorithm and the value sets for the risk-adjustment variables.

References:

Normand S-LT, Shahian DM. 2007. Statistical and Clinical Aspects of Hospital Outcomes Profiling. Stat Sci 22 (2): 206-226. Available in attached appendix at A.1

0730: Acute Myocardial Infarction (AMI) Mortality Rate

The observed rate is the number of discharge records where the patient experienced the QI adverse event divided by the number of discharge records at risk for the event. The expected rate is a comparative rate that incorporates information about a reference population that is not part of the user’s input dataset – what rate would be observed if the expected level of care observed in the reference population and estimated with risk adjustment regression models, were applied to the mix of patients with demographic and

comorbidity distributions observed in the user's dataset? The expected rate is calculated only for risk-adjusted indicators.

The expected rate is estimated for each person using a generalized estimating equations (GEE) approach to account for correlation at the hospital or provider level.

The risk-adjusted rate is a comparative rate that also incorporates information about a reference population that is not part of the input dataset – what rate would be observed if the level of care observed in the user's dataset were applied to a mix of patients with demographics and comorbidities distributed like the reference population? The risk adjusted rate is calculated using the indirect method as observed rate divided by expected rate multiplied by the reference population rate. The smoothed rate is the weighted average of the risk-adjusted rate from the user's input dataset and the rate observed in the reference population; the smoothed rate is calculated with a shrinkage estimator to result in a rate near that from the user's dataset if the provider's rate is estimated in a stable fashion with minimal noise, or to result in a rate near that of the reference population if the variance of the estimated rate from the input dataset is large compared with the hospital-to-hospital variance estimated from the reference population. Thus, the smoothed rate is a weighted average of the risk-adjusted rate and the reference population rate, where the weight is the signal-to-noise ratio. In practice, the smoothed rate brings rates toward the mean, and tends to do this more so for outliers (such as rural hospitals).

For additional information, please see supporting information in the Quality Indicator Empirical Methods. No diagram provided

Submission items

0230: Hospital 30-day, all-cause, risk-standardized mortality rate (RSMR) following acute myocardial infarction (AMI) hospitalization for patients 18 and older

5.1 Identified measures: 0330 : Hospital 30-day, all-cause, risk-standardized readmission rate (RSRR) following heart failure (HF) hospitalization

0468 : Hospital 30-day, all-cause, risk-standardized mortality rate (RSMR) following pneumonia hospitalization

0505 : Hospital 30-day all-cause risk-standardized readmission rate (RSRR) following acute myocardial infarction (AMI) hospitalization.

0506 : Hospital 30-day, all-cause, risk-standardized readmission rate (RSRR) following pneumonia hospitalization

0229 : Hospital 30-day, all-cause, risk-standardized mortality rate (RSMR) following heart failure (HF) hospitalization for patients 18 and older

1551 : Hospital-level 30-day, all-cause risk-standardized readmission rate (RSRR) following elective primary total hip arthroplasty (THA) and/or total knee arthroplasty (TKA)

1789 : Hospital-Wide All-Cause Unplanned Readmission Measure (HWR)

1891 : Hospital 30-Day, All-Cause, Risk-Standardized Readmission Rate (RSRR) following Chronic Obstructive Pulmonary Disease (COPD) Hospitalization

1893 : Hospital 30-Day, All-Cause, Risk-Standardized Mortality Rate (RSMR) following Chronic Obstructive Pulmonary Disease (COPD) Hospitalization

2431 : Hospital-level, risk-standardized payment associated with a 30-day episode-of-care for Acute Myocardial Infarction (AMI)

5a.1 Are specs completely harmonized? Yes

5a.2 If not completely harmonized, identify difference, rationale, impact: We did not include in our list of related measures any non-outcome (e.g., process) measures with the same target population as our measure. Our measure cohort was heavily vetted by clinical experts. Additionally, the measure, with the specified cohort, has been publicly reported since 2008. Because this is an outcome measure, clinical coherence of the cohort takes precedence over alignment with related non-outcome measures. Furthermore, non-outcome measures are limited due to broader patient exclusions. This is because they typically only include a specific subset of patients who are eligible for that measure (for example, patients who receive a specific medication or undergo a specific procedure).

5b.1 If competing, why superior or rationale for additive value: N/A

2473: Hospital 30-Day Risk-Standardized Acute Myocardial Infarction (AMI) Mortality eMeasure

5.1 Identified measures: 0730 : Acute Myocardial Infarction (AMI) Mortality Rate

0230 : Hospital 30-day, all-cause, risk-standardized mortality rate (RSMR) following acute myocardial infarction (AMI) hospitalization for patients 18 and older

5a.1 Are specs completely harmonized? No

5a.2 If not completely harmonized, identify difference, rationale, impact: The measure specifications are, by design, not completely harmonized in that the current measure uses clinical data elements collected from EHR for risk adjustment, and the measures listed above use claims data for risk adjustment. Additionally, the outcome in measure #0730 is inpatient mortality rather than 30-day mortality. Inpatient mortality rates can be influenced by hospital length of stay, so 30-day measures that establish a standard follow-up period are more appropriate for profiling a diverse group of hospitals (Drye et al., 2012). The measures listed above have target populations aged 18+, whereas the current measure's target population is age 65+. The exclusion criteria of the current measure are largely similar to those of measure #0230. We recommend the endorsement of an additional AMI mortality measure. The current measure represents an opportunity to move toward the use of eMeasures developed de novo for use in EHRs. However, as the implementation of these measures may take some time to become a reality in the foreseeable future, we recommend the endorsement of the current measure in addition to the continued endorsement of existing claims-based measures. References: Drye EE, Normand SL, Wang Y, Ross JS, Schreiner GC, Han L, Rapp M, Krumholz HM. Comparison of hospital risk-standardized mortality rates calculated by using in-hospital and 30-day models: an observational study with implications for hospital profiling. *Ann Intern Med*. 2012 Jan 3;156(1 Pt 1):19-26.

5b.1 If competing, why superior or rationale for additive value: N/A

0730: Acute Myocardial Infarction (AMI) Mortality Rate

5.1 Identified measures: 0230 : Hospital 30-day, all-cause, risk-standardized mortality rate (RSMR) following acute myocardial infarction (AMI) hospitalization for patients 18 and older

2473 : Hospital 30-Day Risk-Standardized Acute Myocardial Infarction (AMI) Mortality eMeasure

5a.1 Are specs completely harmonized? No

5a.2 If not completely harmonized, identify difference, rationale, impact: The indicators referenced above include 30-day mortality 1) for patients age 18 years and older 2) specified as an e-measure and 3) for patients age 65 and older. Inpatient mortality and 30-day mortality are different concepts, although capturing the same ultimate outcome. Harmonization is not appropriate.

5b.1 If competing, why superior or rationale for additive value: IQI 15 and the Centers for Medicare & Medicaid Services' NQF-endorsed measures concerning AMI mortality (0230 and 2473) use the same ICD-9-CM codes to identify AMI, but they differ in two important respects: (1) whereas the CMS measures concern only Medicare fee-for-service and VA beneficiaries 65 years or older, IQI 15 measures mortality among hospitalizations of patients 18 years or older at non-federal acute care hospitals for all payers; and (2) while the CMS measures evaluate 30-day mortality, IQI 15—because it is based only on UB-04 data elements—is limited to inpatient mortality. The latter difference is a potential disadvantage in that the time at risk is not uniform for all patients and 30-day mortality is typically greater than inpatient mortality, but the former difference is an advantage because IQI 15 encompasses a greater proportion of the entire population at risk. We therefore believe that #0730 complements #0230 by offering an alternative specification for users who are interested in patients of all ages and all payers, just as #2473 offers an alternative e-measure specification for those with electronic health data.

Comparison of NQF #0669 and NQF #0670

0669: Cardiac Imaging for Preoperative Risk Assessment for Non-Cardiac, Low Risk Surgery

0670: Cardiac stress imaging not meeting appropriate use criteria: Preoperative evaluation in low risk surgery patients

Steward

0669: Cardiac Imaging for Preoperative Risk Assessment for Non-Cardiac, Low Risk Surgery

Centers for Medicare & Medicaid Services

0670: Cardiac stress imaging not meeting appropriate use criteria: Preoperative evaluation in low risk surgery patients

American College of Cardiology

Description

0669: Cardiac Imaging for Preoperative Risk Assessment for Non-Cardiac, Low Risk Surgery

This measure calculates the percentage of stress echocardiography, single photon emission computed tomography myocardial perfusion imaging (SPECT MPI), or stress magnetic resonance (MR) imaging studies performed at each facility in the 30 days prior to an ambulatory non-cardiac, low-risk surgery performed at any location. The measure is calculated based on a one-year window of Medicare claims data. The measure has been publicly reported, annually, by the Centers for Medicare & Medicaid Services (CMS), since 2011, as a component of its Hospital Outpatient Quality Reporting (HOQR) Program.

0670: Cardiac stress imaging not meeting appropriate use criteria: Preoperative evaluation in low risk surgery patients

Percentage of stress SPECT MPI, stress echo, CCTA, or CMR performed in low risk surgery patients for preoperative evaluation

Type

0669: Cardiac Imaging for Preoperative Risk Assessment for Non-Cardiac, Low Risk Surgery

Efficiency

0670: Cardiac stress imaging not meeting appropriate use criteria: Preoperative evaluation in low risk surgery patients

Efficiency

Data Source

0669: Cardiac Imaging for Preoperative Risk Assessment for Non-Cardiac, Low Risk Surgery

Administrative claims This measure was initially constructed using the 100-percent FFS outpatient standard analytical files (SAFs) from 2009. These outpatient SAFs contain the claims data on imaging utilization and low-risk surgical procedures performed in hospital outpatient departments (including emergency department services), which are necessary to attribute the measure to specific facilities. Public reporting of the measure currently uses the 100 percent Medicare FFS outpatients SAFs from 2013 and 2014.

No data collection instrument provided Attachment

NQF_0669_Measure_Value_Sets_2015-06-30.xlsx

0670: Cardiac stress imaging not meeting appropriate use criteria: Preoperative evaluation in low risk surgery patients

Electronic Clinical Data : Electronic Health Record, Electronic Clinical Data : Registry Optimization of Patient Selection for Cardiac Imaging

Available in attached appendix at A.1 Attachment Imaging-Efficiency-Measures-Micro-specifications_Measure_Maintenance-635231526161153276.doc

Level

0669: Cardiac Imaging for Preoperative Risk Assessment for Non-Cardiac, Low Risk Surgery

Facility, Population : National, Population : State

0670: Cardiac stress imaging not meeting appropriate use criteria: Preoperative evaluation in low risk surgery patients

Facility, Clinician : Group/Practice

Setting

0669: Cardiac Imaging for Preoperative Risk Assessment for Non-Cardiac, Low Risk Surgery

Ambulatory Care : Clinician Office/Clinic, Hospital/Acute Care Facility, Imaging Facility

0670: Cardiac stress imaging not meeting appropriate use criteria: Preoperative evaluation in low risk surgery patients

Ambulatory Care : Clinician Office/Clinic, Imaging Facility

Numerator Statement

0669: Cardiac Imaging for Preoperative Risk Assessment for Non-Cardiac, Low Risk Surgery

The number of stress echocardiography, SPECT MPI, and stress MR studies performed in a hospital outpatient department within 30 days of an ambulatory non-cardiac, low-risk surgery performed at any location (e.g., same hospital, other hospital, or physician office).

0670: Cardiac stress imaging not meeting appropriate use criteria: Preoperative evaluation in low risk surgery patients

Number of stress SPECT MPI, stress echo, CCTA, or CMR performed in patients undergoing low risk surgery as a part of the preoperative evaluation

Numerator Details

0669: Cardiac Imaging for Preoperative Risk Assessment for Non-Cardiac, Low Risk Surgery

The numerator is defined by the following categories of surgical procedures:

- Surgery/Integumentary System: Breast
- Surgery/Respiratory System: Accessory Sinuses
- Surgery/Respiratory System: Larynx
- Surgery/Respiratory System: Trachea and Bronchi
- Surgery/Respiratory System: Lungs and Pleura
- Surgery/Digestive System: Esophagus
- Surgery/Digestive System: Intestines (Except Rectum)
- Surgery/Digestive System: Rectum
- Surgery/Digestive System: Anus
- Surgery/Digestive System: Biliary Tract
- Surgery/Digestive System: Abdomen, Peritoneum, and Omentum
- Surgery/Urinary System: Kidney
- Surgery/Urinary System: Ureter
- Surgery/Urinary System: Bladder
- Surgery/Female Genital System: Cervix Uteri
- Surgery/Female Genital System: Corpus Uteri
- Surgery/Female Genital System: Oviduct/Ovary
- Surgery/Eye and Ocular Adnexa: Anterior Segment
- Other Surgeries

(Specific CPT codes for each condition class are included in the value set for this measure; this detailed list can be found in the Excel workbook provided for Section S2b.)

0670: Cardiac stress imaging not meeting appropriate use criteria: Preoperative evaluation in low risk surgery patients

Patients qualify this measure if:

- an upcoming surgery is the recorded reason for the imaging test AND
 - no other reason is recorded for the imaging
- AND

Surgery risk is low

The following will be used to determine whether the risk of the surgery recorded is low:

Surgical Risk Categories

- Low-Risk Surgery— cardiac death or MI less than 1% including endoscopic procedures, superficial procedures, cataract surgery, breast surgery.

Surgeries meeting this definition to be included in the measure are listed by

CPT 4 Codes below. While additional surgeries may fit the low risk definition, only those surgeries listed below will be considered in determining inclusion in the numerator for this measure.

Surgery/Integumentary System: Breast

19100 Biopsy of breast

19101 Biopsy of breast

19102 Bx breast percut w/image

19103 Bx breast percut w/device

Surgery/Respiratory System: Accessory Sinuses

31231 Nasal endoscopy, dx

31233 Nasal/sinus endoscopy, dx

31235 Nasal/sinus endoscopy, dx

31237 Nasal/sinus endoscopy, surg

31238 Nasal/sinus endoscopy, surg

31239 Nasal/sinus endoscopy, surg

31240 Nasal/sinus endoscopy, surg

31267 Endoscopy, maxillary sinus

31276 Sinus surgical endoscopy

31299 Sinus surgery procedure

Surgery/Respiratory System: Larynx

31505 Diagnostic laryngoscopy

31510 Laryngoscopy with biopsy

31511 Remove foreign body, larynx

31513 Injection into vocal cord

31515 Laryngoscopy for aspiration

31520 Diagnostic laryngoscopy

31525 Diagnostic laryngoscopy

31526 Diagnostic laryngoscopy

31527 Laryngoscopy for treatment

31528 Laryngoscopy and dilatation

31529 Laryngoscopy and dilatation

31530 Operative laryngoscopy

31531 Operative laryngoscopy

31535 Operative laryngoscopy

31536 Operative laryngoscopy
 31540 Operative laryngoscopy
 31541 Operative laryngoscopy
 31560 Operative laryngoscopy
 31561 Operative laryngoscopy
 31570 Laryngoscopy with injection
 31571 Laryngoscopy with injection
 31575 Diagnostic laryngoscopy
 31576 Laryngoscopy with biopsy
 31577 Remove foreign body, larynx
 31578 Removal of larynx lesion
 31579 Diagnostic laryngoscopy
 Surgery/Respiratory System: Trachea and Bronchi
 31615 Visualization of windpipe
 31620 Endobronchial us add-on
 31622 Diagnostic bronchoscopy
 31623 Dx bronchoscope/brush
 31624 Dx bronchoscope/lavage
 31625 Bronchoscopy with biopsy
 31628 Bronchoscopy with biopsy
 31629 Bronchoscopy with biopsy
 31632 Bronchoscopy/lung bx, add'l
 31633 Bronchoscopy/needle bx add'l
 31645 Bronchoscopy, clear airways
 31646 Bronchoscopy, reclear airways
 Surgery/Respiratory System: Lungs and Pleura
 33508 Endoscopic vein harvest
 37500 Endoscopy ligate perf veins
 37501 Vascular endoscopy procedure
 39400 Visualization of chest
 Surgery/Digestive System: Esophagus
 43200 Esophagus endoscopy
 43201 Esophagus endoscopy, w/submucous injection
 43202 Esophagus endoscopy, biopsy
 43204 Esophagus endoscopy & inject
 43205 Esophagus endoscopy/ligation
 43215 Esophagus endoscopy
 43216 Esophagus endoscopy/lesion
 43217 Esophagus endoscopy

43219 Esophagus endoscopy
 43220 Esophagus endoscopy, dilation
 43226 Esophagus endoscopy, dilation
 43227 Esophagus endoscopy, repair
 43228 Esophagus endoscopy, ablation
 43231 Esoph endoscopy w/us exam
 43232 Esoph endoscopy w/us fn bx
 43234 Upper GI endoscopy, exam
 43235 Upper GI endoscopy, diagnosis
 43236 Upper GI scope w/submuc inj
 43237 Endoscopic us exam, esoph
 43238 Upper GI endoscopy w/us fn bx
 43239 Upper GI endoscopy, biopsy
 43241 Upper GI endoscopy with tube
 43242 Upper GI endoscopy w/us fn bx
 43243 Upper GI endoscopy & inject.
 43244 Upper GI endoscopy/ligation
 43246 Place gastrostomy tube
 43247 Operative upper GI endoscopy
 43248 Upper GI endoscopy/guidewire
 43249 Esophagus endoscopy, dilation
 43260 Endoscopy, bile duct/pancreas
 43261 Endoscopy, bile duct/pancreas
 43262 Endoscopy, bile duct/pancreas
 43263 Endoscopy, bile duct/pancreas
 43264 Endoscopy, bile duct/pancreas
 43265 Endoscopy, bile duct/pancreas
 43267 Endoscopy, bile duct/pancreas
 43268 Endoscopy, bile duct/pancreas
 43269 Endoscopy, bile duct/pancreas
 43271 Endoscopy, bile duct/pancreas
 43272 Endoscopy, bile duct/pancreas
 Surgery/Digestive System: Intestines (Except Rectum)
 44360 Small bowel endoscopy
 44361 Small bowel endoscopy, biopsy
 44363 Small bowel endoscopy
 44383 Ileoscopy w/stent
 44385 Endoscopy of bowel pouch
 44386 Endoscopy, bowel pouch, biopsy

44388 Colon endoscopy
44389 Colonoscopy with biopsy
44390 Colonoscopy for foreign body
44391 Colonoscopy for bleeding
44392 Colonoscopy & polypectomy
44393 Colonoscopy, lesion removal
44397 Colonoscopy w stent
Surgery/Digestive System: Rectum
45300 Proctosigmoidoscopy
45303 Proctosigmoidoscopy
45305 Proctosigmoidoscopy; biopsy
45307 Proctosigmoidoscopy
45308 Proctosigmoidoscopy
45309 Proctosigmoidoscopy
45315 Proctosigmoidoscopy
45317 Proctosigmoidoscopy
45320 Proctosigmoidoscopy
45321 Proctosigmoidoscopy
45327 Proctosigmoidoscopy w/stent
45330 Sigmoidoscopy, diagnostic
45331 Sigmoidoscopy and biopsy
45332 Sigmoidoscopy
45333 Sigmoidoscopy & polypectomy
45334 Sigmoidoscopy for bleeding
45335 Sigmoidoscope w/submuc inj
45337 Sigmoidoscopy, decompression
45338 Sigmoidoscopy
45339 Sigmoidoscopy
45340 Sig w/balloon dilation
45341 Sigmoidoscopy w/ultrasound
45342 Sigmoidoscopy w/us guide bx
45345 Sigmoidoscopy w/stent
45378 Diagnostic colonoscopy
45379 Colonoscopy
45380 Colonoscopy and biopsy
45381 Colonoscope, submucous inj
45382 Colonoscopy, control bleeding
45383 Colonoscopy, lesion removal
45384 Colonoscopy

45385 Colonoscopy, lesion removal
 45387 Colonoscopy w/stent
 45391 Colonoscopy w/endoscope us
 45392 Colonoscopy w/endoscopic fnb
 Surgery/Digestive System: Anus
 46600 Diagnostic anoscopy
 46604 Anoscopy and dilation
 46606 Anoscopy and biopsy
 46608 Anoscopy; remove foreign body
 46610 Anoscopy; remove lesion
 46612 Anoscopy; remove lesions
 46614 Anoscopy; control bleeding
 Surgery/Digestive System: Biliary Tract
 47561 Laparo w/cholangio/biopsy
 Surgery/Digestive System: Abdomen, Peritoneum and Omentum
 49322 – Laparoscopy, aspiration
 Surgery/Urinary System: Kidney
 50551 Kidney endoscopy
 50553 Kidney endoscopy
 50555 Kidney endoscopy & biopsy
 50557 Kidney endoscopy & treatment
 50559 Renal endoscopy; radiotracer
 50561 Kidney endoscopy & treatment
 • Surgery/Urinary System: Ureter
 50951 Endoscopy of ureter
 50953 Endoscopy of ureter
 50955 Ureter endoscopy & biopsy
 50970 Ureter endoscopy
 50972 Ureter endoscopy & catheter
 50974 Ureter endoscopy & biopsy
 50976 Ureter endoscopy & treatment
 50978 Ureter endoscopy & tracer
 50980 Ureter endoscopy & treatment
 Surgery/Urinary System: Bladder
 51715 Endoscopic injection/implant
 52000 Cystoscopy
 52001 Cystoscopy, removal of clots
 52005 Cystoscopy & ureter catheter
 52007 Cystoscopy and biopsy

52010 Cystoscopy & duct catheter
 52204 Cystoscopy
 52282 Cystoscopy, implant stent
 52327 Cystoscopy, inject material
 52330 Cystoscopy and treatment
 52351 Cystourethro & or pyeloscope
 52352 Cystourethro w/stone remove
 52353 Cystouretero w/lithotripsy
 52354 Cystouretero w/biopsy
 52355 Cystouretero w/excise tumor
 52402 Cystourethro cut ejacul duct
 Surgery/Female Genital System: Cervix Uteri
 57452 Examination of vagina
 57454 Vagina examination & biopsy
 57455 Biopsy of cervix w/scope
 57456 Endocerv curettage w/scope
 57460 Cervix excision
 57461 Konz of cervix w/scope, leep
 Surgery/Female Genital System: Corpus Uteri
 58555 Hysteroscopy, dx, sep proc
 58558 Hysteroscopy, biopsy
 58559 Hysteroscopy, lysis
 58560 Hysteroscopy, resect septum
 58562 Hysteroscopy, remove fb
 58565 Hysteroscopy, sterilization
 Surgery/Female Genital System: Oviduct/Ovary
 58670 Laparoscopy, tubal cautery
 58671 Laparoscopy, tubal block
 Surgery/Eye and Ocular Adnexa: Anterior Segment
 66820 Incision, secondary cataract
 66821 After cataract laser surgery
 66830 Removal of lens lesion
 66982 Cataract surgery, complex
 66983 Remove cataract, insert lens
 Other Surgeries:
 14301 Skin Tissue Rearrangement
 21011 Exc Face Les Sc< 2 cm
 21012 Exc Face Les Sc=2 cm
 21013 Exc Face Tum Deep < 2 cm

21014 Exc Face Tum Deep = 2 cm
 21552 Exc Neck Les Sc = 3 cm
 21554 Exc Neck Tum Deep = 5 cm
 21558 Resect Neck Tum = 5 cm
 21931 Exc Back Les Sc = 3 cm
 21932 Exc Back Tum Deep < 5 cm
 21933 Exc Back Tum Deep = 5 cm
 22901 Exc Back Tum Deep = 5 cm
 22902 Exc Abdomen Les Sc < 3 cm
 22903 Exc Abdomen Les Sc > 3 cm
 23071 Exc Shoulder Les Sc > 3 cm
 23073 Exc Shoulder Tum Deep > 5 cm
 24071 Exc Arm/Elbow Les Sc = 3 cm
 24073 Exc Arm/Elbow Tum Deep > 5 cm
 25071 Exc Forearm Les Sc > 3 cm
 25073 Exc Forearm Tum Deep = 3 cm
 26111 Exc Hand Les Sc > 1.5 cm
 26113 Exc Hand Tum Deep > 1.5 cm
 27043 Exc Hip Pelvis Les Sc > 3 CM
 27045 Exc Hip/Pelvis Tum Deep > 5 CM
 27337 Exc Thigh/Knee Les Sc > 3 CM
 27339 Exc Thigh/Knee Tum Deep >5CM
 27632 Exc Leg/Ankle Les Sc > 3cm
 27634 Exc Leg/Ankle Tum Deep >5 cm
 28039 Exc Foot/Toe Tum Sc > 1.5 cm
 28041 Exc Foot/Toe Tum Deep >1.5cm
 29581 Apply Multilay Compr Lower Leg
 31626 Bronchoscopy w/ Markers
 32552 Remove Lung Catheter
 36147 Access AV Dial Grft for Eval
 36148 Access AV Dial Grft for Proc
 37761 Ligate Leg Veins Open
 51727 Cystometrogram w/UP
 51728 Cystometrogram w/VP
 51729 Cystometrogram w/VP&UP
 53855 Insert Prost Urethral Stent
 63661 Remove Spine El Trd Perq Aray
 63662 Remove Spine El Trd Plate
 63663 Revise Spine El Trd Perq Aray

63664 Revise Spine El Trd Plate Revised
64490 Inj Paravert F Jnt C/T 1 LEV
64493 INJ Paravert F JNT L/S 1 LEV
0213T US Facet JT INJ CERV/T 1 LEV
0216T US Facet JT INJ LS 1 LEVEL

Denominator Statement

0669: Cardiac Imaging for Preoperative Risk Assessment for Non-Cardiac, Low Risk Surgery

The number of stress echocardiography, SPECT MPI, and stress MR studies performed in a hospital outpatient department on Medicare beneficiaries within a 12-month time window.

0670: Cardiac stress imaging not meeting appropriate use criteria: Preoperative evaluation in low risk surgery patients

Number of stress SPECT MPI, stress echo, CCTA, and CMR performed

Denominator Details

0669: Cardiac Imaging for Preoperative Risk Assessment for Non-Cardiac, Low Risk Surgery

The denominator is defined by the following CPT codes:

SPECT MPI

CPT 78464, 78451, 78465, 78452

Stress Echocardiography

CPT 93350 C8928 and 93351 C8930

Stress MR

CPT 75559, 75560, 75563, 75564

Global and technical-component (TC) claims should be considered to capture all outpatient volume facility claims, typically paid under the Outpatient Prospective Payment System(OPPS)/Ambulatory Payment Classifications (APC) methodology, and to avoid double counting of professional-component claims (i.e., 26 modifier). A technical unit can be identified by a modifier code of TC. A global unit can be identified by the absence of a TC or 26 modifier code.

SPECT MPI, stress echocardiography, and stress MR studies can be billed separately for the technical and professional components or billed globally, which includes both the professional and technical components.

Professional component claims will outnumber technical component claims due to over-reads.

0670: Cardiac stress imaging not meeting appropriate use criteria: Preoperative evaluation in low risk surgery patients

All consecutive stress SPECT MPI, stress echocardiography, CCTA, and CMR orders

Measurement Entity: Imaging laboratory prospectively measured on test requisition forms and/or patient charts

Level of Measurement/Analysis: Imaging laboratory*

*Attribution for inappropriate use is shared between the ordering physician and imaging laboratory. In an ideal world, attribution to the ordering physician or institution, as well as the imaging laboratory, would be reflected in the reporting of these measures. However, there are numerous complexities that prevent assignment of these measures to individual ordering physicians. For example, ordering volumes from individual physicians and institutions are insufficient to make meaningful comparisons to allow such attribution. Thus, these measures will be reported at the level of the imaging laboratory. However, the extent to which the institution housing the imaging laboratory can impact these measures will be dependent upon cooperation of ordering physicians with the imaging laboratory.

Exclusions

0669: Cardiac Imaging for Preoperative Risk Assessment for Non-Cardiac, Low Risk Surgery

Studies are excluded for any patients with diagnosis codes in at least three of the following categories: diabetes mellitus, renal insufficiency, stroke or transient ischemic attack, prior heart failure, or ischemic heart disease.

0670: Cardiac stress imaging not meeting appropriate use criteria: Preoperative evaluation in low risk surgery patients

None.

Exclusion Details

0669: Cardiac Imaging for Preoperative Risk Assessment for Non-Cardiac, Low Risk Surgery

Studies are excluded for any patients with diagnosis codes in at least three of the following categories:

Diabetes (look back of one year)

Diabetes mellitus

ICD-9 codes 249, 250, and 648.0X

ICD-10 codes E08.00-E13.9

Diabetes mellitus in pregnancy, childbirth, and the puerperium

ICD-10 codes O24.011-O24.33, O24.811-O24.93

Renal Insufficiency (look back of one year)

Renal insufficiency

ICD-9 codes 403, 404, 580, 582, 583, 584, 585, 586, and 593.9

Hypertensive chronic kidney disease

ICD-10 codes I12.0-I12.9

Hypertensive heart and chronic kidney disease

ICD-10 codes I13.0-I13.2

Glomerular diseases

ICD-10 codes N00.0-N01.9, N03.0-N03.9, N05.0-N08

Acute kidney failure and chronic kidney disease

ICD-10 codes N17.0-N19

Other disorders of kidney and ureter

ICD-10 codes N28.9-N29
 Stroke or transient ischemic attack (look back of three years)
 ICD-9 codes 430, 431, 432, 433, 434, 435, 436, 437, 438, 674.0X, and 997.02
 Transient cerebral ischemic attacks and related syndromes
 ICD-10 codes G45.0-G45.2, G45.8-G45.9
 Vascular syndromes of brain in cerebrovascular diseases
 ICD-10 codes G46.0-G46.2
 Cerebrovascular diseases
 ICD-10 codes I60.00-I63.9, I65.21-I65.29, I66.01-I66.9, I67.1, I67.841-I67.89, I69.00-I69.998
 Diseases of the circulatory system complicating pregnancy, childbirth and the puerperium
 ICD-10 codes O99.411-O99.43
 Prior heart failure (look back of three years)
 Prior heart failure
 ICD-9 codes 425, 428, and 429
 Other forms of heart disease
 ICD-10 codes I42.0-I43
 Heart failure
 ICD-10 codes I50.1-I50.9
 Intraoperative and post-procedural complications and disorders of circulatory system, not elsewhere classified
 ICD-10 codes I97.0-I97.191
 Complications and ill-defined descriptions of heart disease
 ICD-10 codes I51.0-I51.9
 Ischemic heart disease (look back of three years)
 Ischemic heart disease
 ICD-9 codes 410, 411, 412, 413, and 414
 ICD-10 codes I20.0-I22.9, I24.8-I25.119, I25.700-I25.799

0670: Cardiac stress imaging not meeting appropriate use criteria: Preoperative evaluation in low risk surgery patients

None.

Risk Adjustment

0669: Cardiac Imaging for Preoperative Risk Assessment for Non-Cardiac, Low Risk Surgery

No risk adjustment or risk stratification
 Not applicable; this measure does not risk adjust.
 Provided in response box S.15a

0670: Cardiac stress imaging not meeting appropriate use criteria: Preoperative evaluation in low risk surgery patients

No risk adjustment or risk stratification
 None

Stratification

0669: Cardiac Imaging for Preoperative Risk Assessment for Non-Cardiac, Low Risk Surgery

Not applicable; this measure does not stratify its results.

0670: Cardiac stress imaging not meeting appropriate use criteria: Preoperative evaluation in low risk surgery patients

None

Type Score

0669: Cardiac Imaging for Preoperative Risk Assessment for Non-Cardiac, Low Risk Surgery

Other (specify): Percentage better quality = lower score

0670: Cardiac stress imaging not meeting appropriate use criteria: Preoperative evaluation in low risk surgery patients

Rate/proportion better quality = lower score

Algorithm

0669: Cardiac Imaging for Preoperative Risk Assessment for Non-Cardiac, Low Risk Surgery

This measure calculates the percentage of SPECT MPI, stress echocardiography, or stress MR studies that are performed within the 30 days preceding a non-cardiac, low-risk surgery, out of all SPECT MPI, stress echocardiography, and stress MR studies performed. The measure is calculated based on one year of hospital outpatient claims data, as follows:

1. Select hospital outpatient claims with a CPT code for any SPECT MPI, stress echocardiography, or stress MR on a revenue line item
2. Exclude professional component only claims with modifier = '26'
3. Exclude cases with three or more exclusion diagnoses occurring during the look back period for each diagnosis
4. Set denominator counter = 1
5. Set numerator counter = 1 if a non-cardiac, low-risk surgery occurs within the 30 days following the SPECT MPI, stress echocardiography, or stress MR from step 1, above
6. Aggregate denominator and numerator counts by Medicare provider number
7. Measure = numerator counts / denominator counts [The value should be recorded as a percentage] No diagram provided

0670: Cardiac stress imaging not meeting appropriate use criteria: Preoperative evaluation in low risk surgery patients

Locate all stress SPECT MPI, stress echocardiography, CCTA, and CMR orders performed during the sampling period.

Record the total number of tests during the sampling period as the denominator.

From this sets of test orders, identify orders containing the criteria listed in the numerator
No diagram provided

Submission items

0669: Cardiac Imaging for Preoperative Risk Assessment for Non-Cardiac, Low Risk Surgery

5.1 Identified measures: 0670 : Cardiac stress imaging not meeting appropriate use criteria: Preoperative evaluation in low risk surgery patients

5a.1 Are specs completely harmonized? No

5a.2 If not completely harmonized, identify difference, rationale, impact: Although NQF #0669 is similar to NQF #0670, there are several differences that would make measure harmonization infeasible and reduce the effectiveness of both currently endorsed measures. First, the measures serve different target populations and purposes: the CMS measure is used for public reporting and the measure calculations only include CMS FFS claims; on the other hand, the ACC measure is not restricted to the Medicare population and the measure calculations are sold to hospitals as part of a quality improvement package, rather than used for public reporting. Second, the measures include different stress testing procedures: the ACC measure (NQF #0670) includes SPECT MPI, stress echocardiography, CCTA, and CMR procedures codes in the denominator, whereas the CMS measure (NQF #0669) includes SPECT MPI, stress echocardiography, and stress MR procedure codes. Finally, the ACC measure relies on a different data source than does the CMS measure: unlike the CMS measure, the ACC measure does not account for instances where the imaging and low risk surgery occur at different facilities. While NQF #0669 is related to the ICSI measure, significant structural differences makes measure harmonization inappropriate for these measures. The denominator of the ICSI measure is defined by low-risk surgery cases, whereas the denominator of the CMS measure is defined by cardiac imaging studies. The ICSI measure also relies on test results for measure calculation, a data element not available in CMS administrative claims data. Finally, the ICSI measure includes patients aged 2 years and older while the CMS measure is targeted to the Medicare population.

5b.1 If competing, why superior or rationale for additive value: We did not identify any competing measures that address both the same measure focus and target population as NQF #0669.

0670: Cardiac stress imaging not meeting appropriate use criteria: Preoperative evaluation in low risk surgery patients

5.1 Identified measures: 0669 : Cardiac Imaging for Preoperative Risk Assessment for Non-Cardiac, Low Risk Surgery

5a.1 Are specs completely harmonized? No

5a.2 If not completely harmonized, identify difference, rationale, impact: Different populations and data sources used

5b.1 If competing, why superior or rationale for additive value: This measure provides an additional level of analysis that applies not only to hospitals but also outpatient physician clinics. The data source also provides a richer source of clinical information to distinguish between testing ordered for preoperative assessment and other cardiovascular causes co-existing at the same time.

Comparison of NQF #2763 and NQF #0076

2763: Ischemic Vascular Disease Care: All or None Outcome Measure-Optimal Control

0076: Optimal Vascular Care

Steward

2763: Ischemic Vascular Disease Care: All or None Outcome Measure-Optimal Control

Wisconsin Collaborative for Healthcare Quality

0076: Optimal Vascular Care

MN Community Measurement

Description

2763: Ischemic Vascular Disease Care: All or None Outcome Measure-Optimal Control

The percentage of patients age 18 through 75 with one of the following conditions:

- 1) Two diagnoses related visits with Coronary Artery Disease (CAD) or a CAD risk-equivalent condition, or
- 2) Acute Coronary Event consisting of an acute myocardial infarction (AMI), coronary artery bypass graft (CABG), or percutaneous coronary intervention (PCI) from a hospital visit, who had each of the following during the one year measurement year:

- Documentation in the medical record of daily Aspirin or daily other antiplatelet medication usage, unless contraindicated.
- Most recent Blood pressure controlled to a level of less than 140/90 mm Hg
- Most recent Tobacco Status is Tobacco-Free
- Documentation in the medical record of Statin Use
- All or None Outcome Measure (Optimal Control) composite of BP <140/90, Tobacco Non-User, Daily Aspirin or Other Antiplatelet and Statin Use.

Patients are classified uniquely to one of the three condition subgroups in the order of Coronary Artery Disease, Coronary Artery Disease Risk-Equivalent condition, or Acute Coronary Event.

0076: Optimal Vascular Care

Percentage of adult patients ages 18 to 75 who have ischemic vascular disease with optimally managed modifiable risk factors (blood pressure, tobacco-free status, daily aspirin use).

Type

2763: Ischemic Vascular Disease Care: All or None Outcome Measure-Optimal Control

Composite

0076: Optimal Vascular Care

Outcome

Data Source

2763: Ischemic Vascular Disease Care: All or None Outcome Measure-Optimal Control

Administrative claims, Electronic Clinical Data, Electronic Clinical Data : Electronic Health Record, Electronic Clinical Data : Registry Data is obtained via data extracts (.csv files) from the practice and then uploaded into the WCHQ Repository Based Submission (RBS) database. Primary files consist of a Patient File, Encounter File, Problem List File, Clinical Data File, Tobacco File, Blood Pressure File and a Medication File. Certain data elements are cross-mapped to identify internal codes. The data is then calculated for the measure and is available with results at the group, clinic site and provider level. There is documentation provided describing the process of data submission and creation of the data files. This documentation is attached at A.1.

Available in attached appendix at A.1 Attachment
WCHQ_IVD_Care_Measure_Code_List.xlsx

0076: Optimal Vascular Care

Electronic Clinical Data, Electronic Clinical Data : Electronic Health Record, Paper Medical Records An excel template with formatted columns for data fields is provided. Many medical groups extract the information from their EMR. Registries can be used as a source of information to create the data file; however groups must ensure that all of their eligible patients are included. Paper abstraction forms are provided for those clinics who wish to use them as an interim step to creating their data file. All data is uploaded in electronic format (.csv file) to a HIPAA secure, encrypted and password protected data portal.

URL Attachment Codes_and_Data_Dictionary_Optimal_Vascular_Care_-_0076_4-6-2014-635787771123676105.xlsx

Level

2763: Ischemic Vascular Disease Care: All or None Outcome Measure-Optimal Control

Clinician : Group/Practice

0076: Optimal Vascular Care

Clinician : Group/Practice

Setting

2763: Ischemic Vascular Disease Care: All or None Outcome Measure-Optimal Control

Ambulatory Care : Clinician Office/Clinic

0076: Optimal Vascular Care

Ambulatory Care : Clinician Office/Clinic

Numerator Statement

2763: Ischemic Vascular Disease Care: All or None Outcome Measure-Optimal Control

All-or-None Outcome Measure (Optimal Control) - Using the IVD denominator optimal results include:

- Most recent blood pressure measurement is less than 140/90 mm Hg
- And
- Most recent tobacco status is Tobacco Free

NOTE: If there is No Documentation of Tobacco Status the patient is not compliant for this measure.

And

- Daily Aspirin or Other Antiplatelet Unless Contraindicated

And

- Statin Use

0076: Optimal Vascular Care

Patients ages 18 to 75 with ischemic vascular disease (IVD) who meet all of the following targets from the most recent visit during the measurement period: Blood Pressure less than 140/90, Tobacco-Free Status, Daily Aspirin Use (unless contraindicated).

Numerator Details

2763: Ischemic Vascular Disease Care: All or None Outcome Measure-Optimal Control

NOTE: All code tables and associated codes referenced in this document are included in the Excel File attached at step S2b.

- **DAILY ASPIRIN OR OTHER ANTIPLATELET MEDICATIONS THERAPY UNLESS CONTRAINDICATED** (Figure IVD-2) This measure assesses the percentage of patients with documentation within the medical record of daily Aspirin or daily other antiplatelet agent at any time during the measurement period demonstrated through any of the following:

1. Documentation of an active prescription for daily Aspirin (see suggested list in Table IVD-6) or daily or other antiplatelet medications (see acceptable medications in Table IVD-7)

2. Documentation on the patient's medication list of active daily usage of Aspirin (see suggested list in Table IVD-6) or daily other antiplatelet medications (see acceptable medications in Table IVD-7)

3. Contraindication to Aspirin

- a. Contraindications will count as numerator compliant. Any valid contraindication date prior to the end of the measure end date will count as compliant. There is no limit on the look back date, but the date of documentation or onset date must occur prior to the end of the measurement period.

- b. Accepted contraindications:

- i. History of gastrointestinal (GI) bleed (see codes in Table IVD-8)

- ii. History of intracranial bleed (ICB) (see codes in Table IVD-8)

- iii. History of GI Bleed or ICB from an ICD-9 diagnosis-based problem list or past medical history. There is no limit on the look back date, but the date of documentation or onset date must occur prior to the end of the measurement period.

- iv. Anticoagulant Use (see acceptable list of Medications in Table IVD-9). There must be documentation of an active anticoagulant at any time during the Measurement Period.

- **BLOOD PRESSURE CONTROL** (Figure IVD-2)

The number of patients in the denominator whose blood pressure (BP) is adequately controlled during the Measurement Period. Adequate control is a representative systolic Blood Pressure less than 140 mm Hg and a representative diastolic Blood Pressure less than 90 mm Hg.

IDENTIFYING A REPRESENTATIVE BLOOD PRESSURE

Blood Pressure Selection Criteria:

- a) Blood Pressure reading must have been obtained during the Measurement Period.
 - b) Systolic and Diastolic numbers must be from the same BP reading.
 - c) A controlled BP requires that both the systolic and diastolic readings must be less than 140/90.
 - d) Exclusions: Inpatient Stays, Emergency Room Visits, Urgent Care Visits, and Patient Self-Reported BP's (Home and Health Fair Blood Pressures)
 - e) Inclusions: Any office visit encounter, including Nurse Only BP Checks, not listed under Exclusions above. NOTE: A BP performed at a patient's home by a nurse who then inputs the result into an EMR counts as a Nurse Only BP.
- Select the Blood Pressure from the most recent visit.
 - In the event that multiple Blood Pressures are recorded in the same day of service, select any reading that is controlled. If none are in control, select an uncontrolled reading.
 - If no Blood Pressure is recorded during the Measurement Period, the patient is assumed to be "not controlled".

3. TOBACCO FREE (Figure IVD-2)

The number of patients in the denominator whose most recent tobacco documentation status with any provider within the 12 month measurement period is Tobacco Free.

Tobacco Use Definition:

- Cigarette
- Cigar
- Pipe Smoking
- Smokeless Tobacco (Chewing Tobacco, Snuff, etc.)

Tobacco Use Status can be identified by any of the following criteria:

1. Documentation stating that the patient has been asked if they are one of the following during the Measurement Period with the numerator compliant goal of Tobacco-Free:

1. Tobacco-Free (see examples below):

- a. Former tobacco user
- b. Never used
- c. Non-tobacco user
- d. Passive smoker

2. Non Tobacco-Free

- a. Current tobacco user

3. No Documentation: The subset of denominator patients who did not have documentation of tobacco status during the last 12 Months [Measurement Period]

2. ICD-9, CPT, HCPCS and CPT-II Codes indicating tobacco use status during the Measurement Period) from billing or encounter data only. Do not use the problem list for these codes. (Table IVD-10)

4. STATIN USE (Figure IVD-2)

This measure assesses the percentage of patients with documentation within the medical record of statin use at any time during the measurement period demonstrated through any of the following:

1. Documentation of an active prescription for a statin (see acceptable medications in Table IVD-11)
2. Documentation on the patient's medication list of active usage of a statin (see acceptable medications in Table IVD-11)

5. ALL OR NONE OUTCOME MEASURE

IVD All-or-None Measure

The IVD All-or-None Measure is one outcome measure (optimal control). The measure contains four goals. All goals must be reached in order to meet that measure. The numerator for the all-or-none measure should be collected from the organization's total IVD denominator.

All-or-None Outcome Measure (Optimal Control) - Using the IVD denominator optimal results include:

- Most recent blood pressure measurement is less than 140/90 mm Hg

And

- Most recent tobacco status is Tobacco Free

NOTE: If there is No Documentation of Tobacco Status the patient is not compliant for this measure.

And

- Daily Aspirin or Other Antiplatelet Unless Contraindicated

And

- Statin Use

0076: Optimal Vascular Care

Numerator for the Blood Pressure Component:

Blood Pressure Date [Date (mm/dd/yyyy)] AND

BP Systolic Value [Numeric] AND

BP Diastolic Value [Numeric]

Numerator calculation: numerator compliant is BP during the measurement period AND Systolic value is less than 140 AND Diastolic value is less than 90.

Enter the date of the most recent Blood Pressure (BP) test date prior to and including 12/31/YYYY (measurement period).

Enter the value of the most recent Blood Pressure (BP) prior to and including 12/31/ YYYY (measurement period).

Numerator for the Tobacco Component:

Tobacco Status Documentation Date [Date (mm/dd/yyyy)] AND

Tobacco Status [Numeric]

1 = Tobacco Free (patient does not use tobacco) 2 = No Documentation 3 = Current Tobacco User

Numerator calculation: numerator compliant is Value 1 = Tobacco Free AND the most recent date documentation of tobacco status

Enter the most recent date prior to and including 12/31/YYYY (measurement period) that the patient's tobacco status was documented.

Enter the most recent tobacco status prior to and including 12/31/YYYY (measurement period).

Numerator for the Aspirin Component:

Aspirin (ASA) Date [Date (mm/dd/yyyy)]

Enter the most recent date of documented ASA or anti-platelet prior to and including 12/31/YYYY (measurement period).

FYI: any documented date in the measurement period of ASA or an anti-platelet is acceptable; the date does not need to be the most recent.

OR

Aspirin (ASA) Contraindication Date [Date (mm/dd/yyyy)]

If patient has a documented contraindication to ASA, enter the date of the contraindication. Any valid contraindication date will be given credit. Auditor must be able to validate this date.

Accepted contraindications:

- Anticoagulant use (see table below)
- Any history of gastrointestinal (GI)* or intracranial bleed (ICB)
- Allergy to ASA

*Gastroesophageal reflux disease (GERD) is not automatically considered a contraindication but may be included if specifically documented as a contraindication by the physician.

The following may be exclusions if specifically documented by the physician:

- Use of non-steroidal anti-inflammatory agents
- Documented risk for drug interaction
- Uncontrolled hypertension defined as >180 systolic, >110 diastolic
- Other provider documented reason for not being on ASA therapy

Numerator calculation: numerator compliant is Aspirin Use or documented contraindication for use of aspirin.

Enter the date prior to and including 12/31/YYYY (measurement period) that the patient's Aspirin use or contraindication of Aspirin use was documented.

Aspirin and Aspirin Containing Products:

The intent of the daily aspirin component of this measure is to reduce further cardiovascular risk/ events for patients who have IVD. Unless contraindicated, taking daily aspirin or an anti-platelet medication can prevent the formation of clots by reducing platelet adhesion and reduce the risk of heart attack, stroke or other vascular events.

Products containing solely aspirin, any dosage, can be counted as meeting the daily aspirin use. The following are a few combination products that are also acceptable for the intent of daily aspirin use:

? aspirin AND stomach acid reducer (buffered)

? aspirin AND nitrate (chest pain)

? aspirin AND statin

However, not all products containing an aspirin derivative can be assumed to meet the intent of daily aspirin use. Most of these combination products would not be taken on a daily basis and should not be considered “daily aspirin use.” Many of the combination products are intended to be used on an as needed basis for control of pain or cold/ flu symptoms. Combination products containing aspirin AND any of the following are NOT acceptable as meeting the intent of daily aspirin:

? acetaminophen

? caffeine

? narcotics

? muscle relaxants

? decongestants

? antihistamines

Anti-Platelet Medications

Anti-platelet medications (listed in the table below) may also be used to meet the intent of “daily aspirin use”. Like aspirin products, these medications can prevent the formation of clots by reducing platelet adhesion.

Oral Anti-Platelet Medications:

aspirin and dipyridamole; Aggrenox®

dipyridamole; Persantine®

ticagrelor; Brilinta®

cilostazol; Pletal®

prasugrel; Effient®

clopidogrel; Plavix®

ticlopidine; Ticlid®

Anti-Coagulant Medications

Anti-coagulant medications, “blood- thinners”, can frequently be a contraindication to taking daily aspirin or anti-platelet medication. This however is not an absolute contraindication as some patients on lower doses of warfarin and also safely take daily aspirin. If the patient is indeed taking daily aspirin in addition to an anti-coagulant, it is acceptable to submit as taking daily aspirin and not indicate a contraindication.

Anticoagulant Medications:

apixaban; Eliquis®

rivaroxaban; Xarelto®

dabigatran etexilate; Pradaxa®

warfarin sodium; Coumadin®, Jantoven®

enoxapren sodium; Lovenox®, Xaparin®, Clexane®

Denominator Statement

2763: Ischemic Vascular Disease Care: All or None Outcome Measure-Optimal Control

Patients with CAD or a CAD Risk-Equivalent Condition 18-75 years of age and alive as of the last day of the MP.

0076: Optimal Vascular Care

Patients ages 18 to 75 with ischemic vascular disease who have at least two visits for this condition over the last two measurement periods and at least one visit in the last measurement period.

Denominator Details

2763: Ischemic Vascular Disease Care: All or None Outcome Measure-Optimal Control

NOTE: All code tables and associated codes referenced in this document are included in the Excel File attached at step S2b.

Patients eligible for inclusion in the denominator include (See Figure IVD-1):

[Question 1] – Is this a patient with the disease, or condition?

CORONARY ARTERY DISEASE (OR CAD RISK EQUIVALENT) DIAGNOSIS RELATED
OUTPATIENT VISITS

Those patients with a total of two or more visits during the last 24 months [Measurement Period + Prior Year] from Table IVD-4 (Office Visit Encounter Codes-Outpatient) with any provider (MD, DO, PA, NP) within the Physician Group on different dates of service coded (including primary and secondary diagnoses) with diagnosis codes from Table IVD-1 (Coronary Artery Disease) or Table IVD-2 (CAD Risk-Equivalent Conditions). The following criteria apply:

Any combination of two or more diagnosis codes from either Table IVD-1 or Table IVD-2, on different dates of service.

OR

ACUTE CORONARY EVENT- RELATED HOSPITAL VISITS

Those patients who had a minimum of one hospital related visit (excluding Emergency and Lab Only visits) for an Acute Coronary Event from Table IVD-3 during the last 24 Months [Measurement Period + Prior Year].

[Question 2] – Is this a patient whose care is managed within the physician group?

Those patients who have at least two Primary Care Office Visit (Table IVD-4) in an ambulatory setting, regardless of diagnosis code, on different dates of service, to a PCP or Cardiologist in the past 24 months [Measurement Period + Prior Year]. If Cardiologist is not considered a PCP, at least one of the two office visits must be to a PCP.

[Question 3] – Is this a patient current in our system?

Those patients who had at least one Primary Care Office Visit (Table IVD-4) in an ambulatory setting, regardless of diagnosis code, with a PCP or a Cardiologist during the last 12 Months [Measurement Period].

0076: Optimal Vascular Care

- Patient was age 18 to 75 at the start of the measurement period (date of birth was on or between 01/01/19yy to 01/01/19yy).

- Patient was seen by an eligible provider in an eligible specialty face-to-face at least two times during the last two measurement periods (01/01/20yy to 12/31/20yy) with visits coded with an IVD ICD-9 diagnosis code (in any position, not only primary). Use this date of service range when querying the practice management or EMR system to allow a count of the visits within the measurement period.
- Patient was seen by an eligible provider in an eligible specialty face-to-face at least one time during the measurement period (01/01/20yy to 12/31/20yy) for any reason. This may or may not include one of the face-to-face IVD visits.

Please see attached code list provided in S.2.b Data Dictionary

Exclusions

2763: Ischemic Vascular Disease Care: All or None Outcome Measure-Optimal Control

There are no denominator exclusions

0076: Optimal Vascular Care

Valid exclusions include patients who had died during the measurement period, patients in hospice during the measurement period, patients who were permanent nursing home residents during the measurement period, or patients who were coded with IVD in error.

Exclusion Details

2763: Ischemic Vascular Disease Care: All or None Outcome Measure-Optimal Control

N/A

0076: Optimal Vascular Care

Patient died prior to the end of the measurement period

Patient was in hospice at any time during the measurement period

Patient was a permanent nursing home resident home during the measurement period

Documentation that diagnosis was coded in error

Risk Adjustment

2763: Ischemic Vascular Disease Care: All or None Outcome Measure-Optimal Control

No risk adjustment or risk stratification

N/A

0076: Optimal Vascular Care

Statistical risk model

Risk adjustment observed to expected method based on the following variables:

* insurance product

* age bands

Provided in response box S.15a

Stratification

2763: Ischemic Vascular Disease Care: All or None Outcome Measure-Optimal Control

This measure could be stratified by payer and this is documented in Appendix A of the measure specification, however, WCHQ does not currently publicly report the measure in a stratified manner.

0076: Optimal Vascular Care

The ischemic vascular disease population is not currently stratified.

Type Score

2763: Ischemic Vascular Disease Care: All or None Outcome Measure-Optimal Control

Other (specify): Percentage better quality = higher score

0076: Optimal Vascular Care

Weighted score/composite/scale better quality = higher score

Algorithm

2763: Ischemic Vascular Disease Care: All or None Outcome Measure-Optimal Control

NOTE: Flow diagrams outlining the measure logic are included in step S.19.below at A.1 and is also included in the measure specification on pages 4 and 8 available at the URL identified in S.1.

The denominator algorithm is applied by identifying the target population based on codes and appropriate office visits during the designated timeframe. Once the denominator population has been identified the numerator logic is applied to all patients in the denominator to determine which patients meet each individual numerator and for the All or None measure which patients meet all four numerators for the timeframe. Available in attached appendix at A.1

0076: Optimal Vascular Care

This measure is calculated by submitting a file of individual patient values (e.g. blood pressure, LDL value, etc) to a HIPAA secure data portal. Programming within the data portal determines if each patient is a numerator case and then a rate is calculated for each clinic site.

If any component of the numerator is noncompliant for any one of the four components, then the patient is numerator noncompliant for the composite all or none optimal vascular care measure.

Numerator logic is as follows:

Is Blood Pressure date in the measurement year? If yes, numerator is compliant for this component. If no, numerator is noncompliant for this component. Assess next variable.

Is BP Systolic <140? If yes, numerator is compliant for this component. If no, numerator is noncompliant for this component. Assess next variable.

Is BP Diastolic <90? If yes, numerator is compliant for this component. If no, numerator is noncompliant for this component. Assess next variable.

Is Tobacco Status = 1 (Tobacco Free) and Tobacco Assessment Date a valid date? If yes, numerator is compliant for this component. If no, numerator is noncompliant for this component. Assess next variable.

Is Aspirin Date in the measurement period? OR, Is Aspirin Contraindication Date a valid date? If yes, numerator is compliant for this component. If no, numerator is noncompliant for this component. Assess next variable.

If all of the above numerator components are compliant, then the patient is calculated as a numerator case for the optimal vascular care measure.

Submission items

2763: Ischemic Vascular Disease Care: All or None Outcome Measure-Optimal Control

5.1 Identified measures: 0076 : Optimal Vascular Care

5a.1 Are specs completely harmonized? No

5a.2 If not completely harmonized, identify difference, rationale, impact: The measure specifications are very similar for three of the measure components, Daily Aspirin, Blood Pressure Control and Tobacco Free. However, the WCHQ measure also adds the Statin Use component which is a secondary prevention according to the AHA/ACC revised guidelines in November 2013. There are also some slight denominator differences in number and time frame of visits required.

5b.1 If competing, why superior or rationale for additive value: Because this measure includes the secondary prevention element of Statin Use from the updated AHA/ACC guidelines from November 2013. It also uses a denominator algorithm that allows patient level lists to be generated for internal practice quality improvement purposes.

0076: Optimal Vascular Care

5.1 Identified measures:

5a.1 Are specs completely harmonized?

5a.2 If not completely harmonized, identify difference, rationale, impact:

5b.1 If competing, why superior or rationale for additive value: There are other similar measures that address three of the four components separately, but no measure exists that is a composite outcome measure.

NQF # 0068 Ischemic Vascular Disease (IVD): Use of Aspirin or another Antithrombotic (NCQA)

NQF # 0073 IVD: Blood Pressure Management (NCQA)

NQF # 0075 IVD: Complete Lipid Profile and LDL Control <100 (NCQA)

Related Measures: There are other similar measures that address three of the four components separately, but no measure exists that is a composite outcome measure. NQF # 0068 Ischemic Vascular Disease (IVD): Use of Aspirin or another Antithrombotic (NCQA) NQF # 0073 IVD: Blood Pressure Management (NCQA) NQF # 0075 IVD: Complete Lipid Profile and LDL Control <100 (NCQA)

Appendix G: Pre-Evaluation Comments

Comments received as of August 12, 2015.

2764: Fixed-dose Combination of Hydralazine and Isosorbide Dinitrate Therapy for Self-identified Black or African American Patients with Heart Failure and LVEF <40% on ACEI or ARB and Beta-blocker Therapy

Submitted by Mark S. Johnson, MD MPH, Howard University

I would like to comment about the referenced recommendation. While I agree that it would be useful to have more African American HF patients take Hydralazine and Isosorbide Nitrate as part of the HF arsenal, I strongly reject the recommendation that this only be given in the fixed dose combination that is currently on the market. In my clinical experience few patients, especially elderly patients have been able to tolerate the fixed combination dose. The mean age of the patients who were in the NEJM article was the 57. Even in these patients the side effects rates were high (48% had headache and 27% had dizziness). Only 68% were able to reach target dose.

It is possible that the current fixed dose was chosen to avoid generic duplication. Patients should be given lower doses and titrated slowly.

2763: Ischemic Vascular Disease Care: All or None Outcome Measure-Optimal Control

Submitted by David Smith, MD

I am writing in support of a proposed quality measure that has the potential to save thousands of lives annually by highlighting a preventable treatment deficiency, namely, the National Minority Quality Forum's submission (# 2764) regarding a fixed-dose Combination of Hydralazine and Isosorbide Dinitrate Therapy for Self-identified Black or African American Patients with Heart Failure (HF) and LVEF <40% on ACEI or ARB and Beta-blocker Therapy.

Today, less than 10% of eligible heart failure patients are being prescribed an FDA-approved treatment that's been proven to significantly reduce hospitalization and mortality rates. That's why I'm writing in support of the measure submitted by the National Minority Quality Forum (NMQF) that strongly encourages healthcare providers to ensure that eligible African American patients with heart disease receive the proper course of treatment. More dispiringly is the fact that our current trainees are learning little about this treatment opportunity in their current curriculae. As a professor, it is most alarming that other teachers and attending professionals do not know how to adequately prescribe or dose the medicines appropriately and that there IS NO GENERIC EQUIVALENT. So, the perpetuation of this type of neglect has vast repercussions and a dreadful prediction for the future that immediate address of this problem promises immense future returns.

The science behind the impact of this FDA-approved drug has been well documented. Its benefits have been published in the New England Journal of Medicine and other peer-reviewed sources, and the American College of Cardiology and American Heart Association have released detailed practice guidelines calling for this specific treatment protocol.

Nonetheless, while published studies estimate that there are over 150,000 African Americans living in America who could benefit from this treatment, only 7% (or 11,000) of them are receiving it. As a consequence, experts have estimated that 6,655 blacks die prematurely every year.

An endorsement from the National Quality Forum (NQF) is considered the highest standard for healthcare quality, and sends a strong message to providers that measures are evidence-based, valid, and can help patients achieve better outcomes. I strongly believe that the proposed heart failure measure meets NQF's criteria, and encourage you to provide your formal endorsement in order to help facilitate widespread adoption of this treatment.

I appreciate the opportunity to weigh in on this important issue, and urge NQF to approve this quality measure submission. If I may lend any further words of support, please do not hesitate to call me.

2764: Fixed-dose Combination of Hydralazine and Isosorbide Dinitrate Therapy for Self-identified Black or African American Patients with Heart Failure and LVEF <40% on ACEI or ARB and Beta-blocker Therapy

Submitted by Mr. Adolph P. Falcon, MPP

The National Alliance for Hispanic Health (the Alliance) is deeply concerned that too many of the quality measures being promulgated by the National Quality Forum do not reflect the need to tailor treatment protocols to individual patient populations and the science of precision medicine. You have an immediate opportunity to set a new course for your work.

For this reason the Alliance offers our strongest support for a proposed quality measure # 2764 that would promote the most effective course of treatment for eligible African Americans with heart failure (HF). The proposed quality measure of a fixed-dose "Combination of Hydralazine and Isosorbide Dinitrate Therapy for Self-identified Black or African American Patients with Heart Failure (HF) and LVEF <40% on ACEI or ARB and Beta-blocker Therapy" reflects the best science and peer reviewed literature on quality care for African American patients with heart failure. Furthermore, the proposed measure is recognized as a standard of care by the American Heart Association and the first peer reviewed literature in support of this course of treatment appeared over a decade ago in the New England Journal of Medicine. Adopting this measure of care is long overdue.

While quality measure #2764 speaks to the particular health needs of the African American community, it is critical that the National Quality Forum recognize in its standards the importance of guaranteeing every individual patient the very best care available and that quality measures reflect the diversity of people in this nation. In this case, it means making sure that African American patients with heart disease get access to the right drug for them. For this reason, the National Alliance for Hispanic Health offers its full support for proposed quality measure #2764.

2764: Fixed-dose Combination of Hydralazine and Isosorbide Dinitrate Therapy for Self-identified Black or African American Patients with Heart Failure and LVEF <40% on ACEI or ARB and Beta-blocker Therapy

Submitted by Mr. Joseph Earl Harris, Jr.

I am writing in support of a proposed quality measure that will save thousands of lives. Although clinical trial evidence supports the use of fixed dose hydralazine and isosorbide dinitrate to improve survival in African Americans with advanced heart failure, less than 10 percent of eligible patients receive this therapy. I encourage NQF to provide its formal endorsement in order to facilitate widespread adoption of this treatment.

2764: Fixed-dose Combination of Hydralazine and Isosorbide Dinitrate Therapy for Self-identified Black or African American Patients with Heart Failure and LVEF <40% on ACEI or ARB and Beta-blocker Therapy

Submitted by Michele Blair, HFSA

We support the combined use of hydralazine and isosorbide dinitrate for self-identified Black or African American patients with heart failure (HF) and reduced ejection fraction on ACE inhibitor and beta-blocker therapy. As stated in our national guideline:

A combination of hydralazine and isosorbide dinitrate is recommended as part of standard therapy in addition to beta blockers and ACE inhibitors for African Americans with LV systolic dysfunction and:

New York Heart Association (NYHA) class III or IV HF (Strength of Evidence = A)

NYHA class II HF (Strength of Evidence = B)

2764: Fixed-dose Combination of Hydralazine and Isosorbide Dinitrate Therapy for Self-identified Black or African American Patients with Heart Failure and LVEF <40% on ACEI or ARB and Beta-blocker Therapy

Submitted by Modele O. Ogunniyi

As a cardiologist that takes care of predominantly African American Patients, I am writing in support of a proposed quality measure that has the potential to save thousands of lives annually, namely, the National Minority Quality Forum's submission (# 2764) regarding a fixed-dose combination of Hydralazine and Isosorbide Dinitrate Therapy for Self-identified Black or African American Patients with Heart Failure (HF) and LVEF <40% on ACEI or ARB and Beta-blocker therapy.

Today, less than 10% of eligible heart failure patients are being prescribed an FDA-approved treatment that's been proven to significantly reduce hospitalization and mortality rates. That's why I'm writing in support of the measure submitted by the National Minority Quality Forum (NMQF) that strongly encourages healthcare providers to ensure that eligible African American patients with heart disease receive the proper course of treatment.

The science behind the impact of this FDA-approved drug has been well documented. Its benefits have been published in the New England Journal of Medicine and other peer-reviewed sources, and the American College of Cardiology and American Heart Association have released detailed practice guidelines calling for this specific treatment protocol.

Nonetheless, while published studies estimate that there are over 150,000 African Americans living in America who could benefit from this treatment, only 7% (or 11,000) of them are receiving it. As a consequence, experts have estimated that 6,655 blacks die prematurely every year.

An endorsement from the National Quality Forum (NQF) is considered the highest standard for healthcare quality, and sends a strong message to providers that measures are evidence-based, valid, and can help patients achieve better outcomes. I strongly believe that the proposed heart failure measure meets NQF's criteria, and encourage you to provide your formal endorsement in order to help facilitate widespread adoption of this treatment.

Thanks for the opportunity to comment on this important issue, and urge NQF to approve this quality measure submission.

2764: Fixed-dose Combination of Hydralazine and Isosorbide Dinitrate Therapy for Self-identified Black or African American Patients with Heart Failure and LVEF <40% on ACEI or ARB and Beta-blocker Therapy

Submitted by

Beverly E. Oliver, FNP-BC

I am writing in support of a proposed quality measure that has the potential to save thousands of lives annually by highlighting a preventable treatment deficiency, namely, the National Minority Quality Forum's submission (# 2764) regarding a fixed-dose Combination of Hydralazine and Isosorbide Dinitrate Therapy for Self-identified Black or African American Patients with Heart Failure (HF) and LVEF <40% on ACEI or ARB and Beta-blocker Therapy.

Today, less than 10% of eligible heart failure patients are being prescribed an FDA-approved treatment that's been proven to significantly reduce hospitalization and mortality rates. That's why I'm writing in support of the measure submitted by the National Minority Quality Forum (NMQF) that strongly encourages healthcare providers to ensure that eligible African American patients with heart disease receive the proper course of treatment.

The science behind the impact of this FDA-approved drug has been well documented. Its benefits have been published in the New England Journal of Medicine and other peer-reviewed sources, and the American College of Cardiology and American Heart Association have released detailed practice guidelines calling for this specific treatment protocol.

Nonetheless, while published studies estimate that there are over 150,000 African Americans living in America who could benefit from this treatment, only 7% (or 11,000) of them are receiving it. As a consequence, experts have estimated that 6,655 blacks die prematurely every year.

An endorsement from the National Quality Forum (NQF) is considered the highest standard for healthcare quality, and sends a strong message to providers that measures are evidence-based, valid, and can help patients achieve better outcomes. I strongly believe that the proposed heart failure measure meets NQF's criteria, and encourage you to provide your formal endorsement in order to help facilitate widespread adoption of this treatment.

I appreciate the opportunity to weigh in on this important issue, and urge NQF to approve this quality measure submission.

2764: Fixed-dose Combination of Hydralazine and Isosorbide Dinitrate Therapy for Self-identified Black or African American Patients with Heart Failure and LVEF <40% on ACEI or ARB and Beta-blocker Therapy

Submitted by Jan Neil Basile, MD

I am a clinical trialist and hypertension specialist who cares for patients with heart failure including a large panel of AA patients.

Health care disparities continue to exist in minority populations for many reasons including clinical access, formulary availability, mistrust, socioeconomic position, and cultural and language issues just to mention a few. When there is solid clinical trial evidence of outcome benefit in a minority population given a IA recommendation of benefit from the American Heart Association (2014), quality measures should ensure that clinicians are held to this standard of care when having the opportunity to treat such patients.

Based on the African American Heart Failure Trial (AHEFT) in 2004 published in the NEJM, self described blacks who had heart failure (HF) with a reduced ejection fraction gained a significant 43% reduction in death, a reduction in first or recurrent hospitalization for HF, and an improvement in quality of life when fixed-dose isosorbide dinitrate/hydralazine was added to an ACE inhibitor or ARB + a Beta Blocker. This is believed to occur because of a unique pathophysiologic derangement in nitric oxide upregulation in Blacks.

By making isosorbide dinitrate/hydralazine a quality improvement measure in blacks who meet the definition of the AHEFT clinical trial we will ensure that this minority population who face tremendous obstacles from the social determinants of health to at least be assured of getting the best evidence base for clinical care.

2764: Fixed-dose Combination of Hydralazine and Isosorbide Dinitrate Therapy for Self-identified Black or African American Patients with Heart Failure and LVEF <40% on ACEI or ARB and Beta-blocker Therapy

Submitted by Dr. David A. Mann, MD, PhD

Representing my own opinions, and not that of any organizations that I work for or are affiliated with, I support the aim of proposed measure 2764 but not necessarily its exact language.

I fully support the goal of providing Black heart failure patients with optimal therapy for their heart failure. And I think that combination therapy with hydralazine and isosorbide dinitrate in the setting described in the measure has good evidence behind it.

I am not sure, however, that medical science is certain that only the specific dose combination used in the A-HeFT trial, provided in one particular proprietary combination formulation, is effective for this indication. Therefore I am hesitant to endorse a measure that appears to require the use of one particular proprietary formulation.

Immediate prescription of this fixed dose proprietary product bypasses dose titration, does not allow for individualized therapy, precludes use of more affordable generics, and may potentially generate more adverse effects than would occur with individualized dose titration to this therapeutic goal. I don't think that represents optimal care for patients.

How does the current language match up with underlying intent? If the intent is to encourage combination therapy with these two agents without requiring a particular product or a particular dosage, the language seems too restrictive. If the intent is to encourage the exact doses used in the A-HeFT trial, then the language is too lenient: any fixed dose combination at any doses of the agents would meet the stated measure.

As a quality measure, the current language could be problematic. If a patient is titrated to 100% of the A-HeFT dose of agent 1 but only tolerates 75% of the dose of agent 2, is that patient a fail on this metric? I would hope not, but by its exact language, the answer would seem to be yes.

Perhaps a better formulation of the language would be "Combination therapy with Hydralazine and Isosorbide Dinitrate for Self-identified Black or African American Patients with Heart Failure and LVEF <40% on ACEI or ARB and Beta-blocker Therapy"

2764: Fixed-dose Combination of Hydralazine and Isosorbide Dinitrate Therapy for Self-identified Black or African American Patients with Heart Failure and LVEF <40% on ACEI or ARB and Beta-blocker Therapy

Submitted by Elizabeth O. Ofili, MD

I am a cardiologist in clinical practice with a large number of African American patients. I see the daily struggles of patients whose quality of life is deeply impacted. The African American Heart Failure Trial (AHEFT) was prematurely stopped by the DSMB and published in NEJM in 2004. This landmark study showed that self-described African Americans or Blacks, had over 40% survival, as well as hospitalization and quality of life benefits when treated with fixed dose combination of isosorbide dinitrate and hydralazine (FDC I/H) on top of standard therapy. The evidence was so strong that it received a level 1A by the guideline writing committee and has been affirmed by each committee since then. It is a health equity issue that the most recent analysis of America's superior hospitals, show that very few African American patients are receiving this therapy. I join with others concerned with health disparities and the attainment of health equity, in asking NQF to add FDC I/H as a standard of care for self-described African Americans, as contained in every heart failure guideline since 2004. Thank you for helping us to deliver quality heart failure care for our patients. Elizabeth Ofili, MD, MPH, FACC Professor of Medicine and Attending Cardiologist

2764: Fixed-dose Combination of Hydralazine and Isosorbide Dinitrate Therapy for Self-identified Black or African American Patients with Heart Failure and LVEF <40% on ACEI or ARB and Beta-blocker Therapy

Submitted by Dr. Traci Ferguson, WellCare; Submitted by Ms. Kiersten Adams

WellCare Health Plans, Inc. fully supports the endorsement of NQF quality measure #2764, "Fixed-dose Combination of Hydralazine and Isosorbide Dinitrate Therapy for Self-identified Black or African American Patients with Heart Failure and LVEF <40% on ACEI or ARB and Beta-blocker Therapy." The benefits of combining Hydralazine and Isosorbide Dinitrate have been published in various peer-reviewed sources, including the New England Journal of Medicine. Additionally, this approach is supported by both the American College of Cardiology and the American Heart Association.

As one of the country's largest health care companies dedicated solely to serving public program beneficiaries, we see the effects that disparities can have on health outcomes. Adoption of this measure will ensure that eligible African American patients with symptomatic heart failure receive the proposed course of treatment. WellCare believes that endorsement of this quality measure submitted by the National Minority Quality Forum will increase the utilization of this evidence-based standard of care, thus saving thousands of lives each year.

2764: Fixed-dose Combination of Hydralazine and Isosorbide Dinitrate Therapy for Self-identified Black or African American Patients with Heart Failure and LVEF <40% on ACEI or ARB and Beta-blocker Therapy

Submitted by Tamarah Duperval-Brownlee, MD, MPH, MBA

I am writing in support of a proposed quality measure that has the potential to save thousands of lives annually by highlighting a preventable treatment deficiency, namely, the National Minority Quality Forum's submission (# 2764) regarding a fixed-dose Combination of Hydralazine and Isosorbide Dinitrate Therapy for Self-identified Black or African American Patients with Heart Failure (HF) and LVEF <40% on ACEI or ARB and Beta-blocker Therapy.

Today, less than 10% of eligible heart failure patients are being prescribed an FDA-approved treatment that's been proven to significantly reduce hospitalization and mortality rates. That's why I'm writing in support of the measure submitted by the National Minority Quality Forum (NMQF) that strongly encourages healthcare providers to ensure that eligible African American patients with heart disease receive the proper course of treatment.

The science behind the impact of this FDA-approved drug has been well documented. Its benefits have been published in the New England Journal of Medicine and other peer-reviewed sources, and the American College of Cardiology and American Heart Association have released detailed practice guidelines calling for this specific treatment protocol.

Nonetheless, while published studies estimate that there are over 150,000 African Americans living in America who could benefit from this treatment, only 7% (or 11,000) of them are receiving it. As a consequence, experts have estimated that 6,655 blacks die prematurely every year.

An endorsement from the National Quality Forum (NQF) is considered the highest standard for healthcare quality, and sends a strong message to providers that measures are evidence-based, valid, and can help patients achieve better outcomes. I strongly believe that the proposed heart failure measure meets NQF's criteria, and encourage you to provide your formal endorsement in order to help facilitate widespread adoption of this treatment.

I appreciate the opportunity to weigh in on this important issue, and urge NQF to approve this quality measure submission.

0067: Chronic Stable Coronary Artery Disease: Antiplatelet Therapy

Submitted by Dr. Kathy Gans-Brangs, PhD

We urge adding Brilinta (ticagrelor) to the specification for NQF# 0067. BRILINTA is an FDA approved P2Y₁₂ platelet inhibitor indicated to reduce the rate of thrombotic cardiovascular (CV) events in patients with acute coronary syndrome (ACS) when given with maintenance doses of aspirin less than 100 mg. In patients treated with percutaneous coronary intervention (PCI), it also reduces the rate of stent thrombosis. The EHR specifications, version 2.0 measure Value Set ID 000200 through 000208 (final 2 pages) include the following drug code descriptions: Thienopyridine therapy-excluding clopidogrel and specifically lists prasugrel, Effient, Ticlopidine and Ticlid. The measure list does not include Brilinta (ticagrelor).

Supporting Information: The safety and efficacy of BRILINTA was evaluated in PLATO, a multicenter, randomized, double-blind study comparing ticagrelor to clopidogrel in 18,624 patients with ACS.^{1,2} At 12 months, the rate of CV death/MI/stroke was 9.8% for ticagrelor versus 11.7% for clopidogrel resulting in a relative risk reduction of 16% ($p < 0.001$). The difference between treatments was driven by CV death and MI with no difference in stroke. The relative risk reduction of CV death was 21% and MI was 16% for ticagrelor versus clopidogrel ($p = 0.0013$ and $p = 0.0045$, respectively).^{1,2} In PLATO, 11,289 (60.6%) patients either had a previous stent implanted ($n = 1404$) or underwent stent implantation during the study ($n = 9885$).⁷ There was a lower risk of stent thrombosis with ticagrelor (1.3% for adjudicated "definite") than with clopidogrel (1.9%) (hazard ratio [HR], 0.67; 95% CI, 0.50-0.91; $p = 0.009$).^{1,2,3} The results were similar for drug-eluting stents and bare metal stents.³ The reduction in definite stent thrombosis with ticagrelor was numerically greater for late [> 30 days: HR 0.48, (CI 0.24 – 0.96)], and subacute [24 h – 30 days: HR 0.60, (CI 0.39 – 0.93)] vs. acute stent thrombosis [< 24 h: HR 0.94 (CI 0.43 – 2.05)].

1) BRILINTA Prescribing Information

2) Wallentin L, Becker RC, Budaj A, et al for the PLATO Investigators. Ticagrelor versus clopidogrel in patients with acute coronary syndromes. *N Engl J Med*. 2009;361:1045-1057

3) Steg PG, Harrington RA, Emanuelsson H, et al. Stent thrombosis with ticagrelor versus clopidogrel in patients with acute coronary syndromes: an analysis from the prospective, randomized PLATO trial. *Circulation*. 2013;128:1055-1065

Please refer to the BRILINTA Prescribing Information for Boxed Warnings related to increased risk of bleeding and reduced effectiveness with maintenance doses of ASA greater than 100 mg per day (<https://www.brilinta.com>).

2764: Fixed-dose Combination of Hydralazine and Isosorbide Dinitrate Therapy for Self-identified Black or African American Patients with Heart Failure and LVEF <40% on ACEI or ARB and Beta-blocker Therapy

Submitted by Cassandra McCullough, Association of Black Cardiologists; Submitted by Mr. Andrew M. Rosenberg

On behalf of over 1,500 healthcare professionals dedicated to treating patients with cardiovascular disease and to achieving health equity for all through the elimination of disparities, we are writing to express our strong support of quality measure #2764 to promote the most effective course of treatment for eligible African Americans with heart failure (HF).

Founded in 1974, the ABC is a nonprofit organization with an international membership comprised of health professionals, lay members of the community (Community Health Advocates), corporate members, and institutional members. At the Association of Black Cardiologists (ABC), there is no issue more central to our cause than ensuring that all Americans are given the foremost care to combat, treat, and overcome cardiovascular disease. This includes the recognition that cardiovascular disease occurs disproportionately in African Americans. The National Minority Quality Forum's (NMQF's) recently proposed quality measure represents a critical step towards furthering these goals, and we hope that you will join us in encouraging its widespread adoption by providers across the country.

The ABC is not new to this issue, indeed, our organization played a key role in the execution of the landmark African-American Heart Failure Trial (A-HeFT) that provided the clinical evidence upon which the NMQF's proposed quality measure is based. That data was published in 2004 in the *New England Journal of Medicine* as "breaking news," and was highlighted later that year at the annual American Heart Association Scientific Meeting.

We recall that the A-HeFT trial was terminated prematurely due to the significant outcomes present in the treated group. In fact, the results were so positive, the FDA's Data Safety Monitoring board deemed it unethical to allow the untreated group to proceed without the opportunity to receive this profound benefit.

The merit of this proposed measure—and our support of it—is defined by hard data and indisputable evidence: the A-HeFT study demonstrated that its fixed-dose standard of care reduced mortality rates in African Americans with heart failure by over 40% while also significantly reducing first-time hospitalizations. Yet despite the consensus that emerged from the medical community on the regimen's benefits, today it reaches only 7% of over 150,000 clinically-eligible African American patients across the country.

This concern should not be unique to ABC, NMQF, and other organizations focused on eliminating healthcare disparities. Instead, this issue speaks to anyone who believes that standards of care should be evidence-based, valid, and help patients achieve better outcomes. The role of our organization is to advocate for the cardiovascular treatments that will help all patients live fuller and longer lives, but nowhere is this more important than in our efforts to address disparities among people of color.

2763: Ischemic Vascular Disease Care: All or None Outcome Measure-Optimal Control

Submitted by Ashish R. Trivedi, Pharm.D.

While Lilly is supportive of this measure, we suggest the use of dual anti-platelet therapy (treatment with aspirin and a P2Y₁₂ inhibitor) as supported by the treatment guidelines for patients with acute coronary syndrome (ACS, including AMI) and/or those managed with revascularization [O’Gara et al 2013, Amsterdam et al, 2014, Levine et al, 2011].

References

O’Gara PT, Kushner FG, Ascheim DD, et al. 2013 ACCF/AHA guideline for the management of ST-elevation myocardial infarction: a report of the American College of Cardiology Foundation/American Heart Association Task Force on Practice Guidelines. *Circulation*. 2013;127(4):e362-425. doi:10.1161/CIR.0b013e3182742cf6.

Amsterdam EA, Wenger NK, Brindis RG, Casey DE, Jr., Ganiats TG, Holmes DR, Jr. et al. 2014 AHA/ACC guideline for the management of patients with non-ST-elevation acute coronary syndromes: a report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines. *Circulation*. 2014;130(25):e344-426. doi:10.1161/CIR.0000000000000134.

Levine GN, Bates ER, Blankenship JC, et al. 2011 ACCF/AHA/SCAI Guideline for Percutaneous Coronary Intervention: a report of the American College of Cardiology Foundation/American Heart Association Task Force on Practice Guidelines and the Society for Cardiovascular Angiography and Interventions. *Circulation*. 2011;124(23):e574-651. doi: 10.1161/CIR.0b013e31823ba622.

2751: Proportion of Patients undergoing an Angioplasty Procedure (Percutaneous Coronary Intervention - PCI) that have a Potentially Avoidable Complication (during the episode time window)

Submitted by Ashish R. Trivedi, Pharm.D.

Lilly is supportive of this measure as it focuses on reducing risk for potentially avoidable (eg, via improvement in quality of treatment and care) recurrent major adverse cardiovascular events (MACE), at no expense of increased safety events.

0067: Chronic Stable Coronary Artery Disease: Antiplatelet Therapy

Submitted by Ashish R. Trivedi, Pharm.D.

While Lilly is supportive of this measure, we suggest the addition of lipid lowering therapy to this measure as supported by treatment guidelines for patients with coronary artery disease (CAD) [Stone et al, 2013]. Also, we would like to point out that comprehensive and routine lipoprotein lipid assessment is still an integral part of managing risk in patients with ASCVD (including CAD) [Jacobson et al, 2015]. In addition, clinical trial data indicates significant residual cardiovascular risk in ASCVD patients treated with statins, even in the setting of optimal LDL-C reduction (eg, <70 mg/dL and <100 mg/dL), thus highlighting the need to consider alternative CV risk reduction algorithms beyond the focus on LDL-C levels and/or the use of statins [Cannon et al 2004, LaRosa et al 2005, Pedersen et al 2005].

References

Stone NJ, Robinson JG, Lichtenstein AH, et al. ACC/AHA Prevention Guideline: 2013 ACC/AHA Guideline on the Treatment of Blood Cholesterol to Reduce Atherosclerotic Cardiovascular Risk in Adults: A Report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines. *Circulation*. 2014;129:25 suppl 2 S1-S45, doi:10.1161/01.cir.0000437738.63853.7a

Jacobson TA, Ito MK, Maki KC, et al. National Lipid Association recommendations for patient-centered management of dyslipidemia: part 1 – Full Report. *J Clin Lipidol*. 2015; 9(2), 129–169. DOI: <http://dx.doi.org/10.1016/j.jacl.2015.02.003>

Cannon CP, Braunwald E, McCabe CH, et al. Intensive versus moderate lipid lowering with statin after acute coronary syndromes. *N Engl J Med*. 2004; 350:1495–1504.

LaRosa JC, Grundy SM, Waters DD, et al. Intensive lipid lowering with atorvastatin in patients with stable coronary disease. *N Engl J Med*. 2005; 352:1425–1435.

Pedersen TR, Faergeman O, Kastelein JJ, et al. High-dose atorvastatin vs usual-dose simvastatin for secondary prevention after myocardial infarction: the IDEAL study: a randomized controlled trial. *JAMA*. 2005; 294:2437–2445.

2712: Statin Use in Persons with Diabetes

Submitted by Ashish R. Trivedi, Pharm.D.

Lilly is supportive of the direction of the new guidelines focused on treating and reducing cardiovascular risk (vs treating to LDL-C targets) in patients with diabetes, who represent a large population of patients at substantially increased risk for ASCVD (atherosclerosis cardiovascular disease) events [Stone et al, 2013]. However, we would like to point out that comprehensive and routine lipoprotein lipid assessment is still an integral part of managing risk in patients with ASCVD [Jacobson et al, 2015]. In addition, clinical trial data indicates significant residual cardiovascular risk in ASCVD patients treated with statins, even in the setting of optimal LDL-C reduction (eg, <70 mg/dL and <100 mg/dL), thus highlighting the need to consider alternative CV risk reduction algorithms beyond the focus on LDL-C levels and/or the use of statins [Cannon et al 2004, LaRosa et al 2005, Pedersen et al 2005].

References

Stone NJ, Robinson JG, Lichtenstein AH, et al. ACC/AHA Prevention Guideline: 2013 ACC/AHA Guideline on the Treatment of Blood Cholesterol to Reduce Atherosclerotic Cardiovascular Risk in Adults: A Report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines. *Circulation*. 2014;129:25 suppl 2 S1-S45, doi:10.1161/01.cir.0000437738.63853.7a

Jacobson TA, Ito MK, Maki KC, et al. National Lipid Association recommendations for patient-centered management of dyslipidemia: part 1 – Full Report. *J Clin Lipidol*. 2015; 9(2), 129–169. DOI: <http://dx.doi.org/10.1016/j.jacl.2015.02.003>

Cannon CP, Braunwald E, McCabe CH, et al. Intensive versus moderate lipid lowering with statin after acute coronary syndromes. *N Engl J Med*. 2004; 350:1495–1504.

LaRosa JC, Grundy SM, Waters DD, et al. Intensive lipid lowering with atorvastatin in patients with stable coronary disease. *N Engl J Med*. 2005; 352:1425–1435.

Pedersen TR, Faergeman O, Kastelein JJ, et al. High-dose atorvastatin vs usual-dose simvastatin for secondary prevention after myocardial infarction: the IDEAL study: a randomized controlled trial. JAMA. 2005; 294:2437–2445.

2764: Fixed-dose Combination of Hydralazine and Isosorbide Dinitrate Therapy for Self-identified Black or African American Patients with Heart Failure and LVEF <40% on ACEI or ARB and Beta-blocker Therapy

Submitted by Mr. Ilen Bell

As a co-founder of Black Fitness Today, a leader in promoting health in the African American community, I am writing in support of a proposed quality measure that has the potential to save thousands of lives annually by highlighting a preventable treatment deficiency, namely, the National Minority Quality Forum's submission (# 2764) regarding a fixed-dose Combination of Hydralazine and Isosorbide Dinitrate Therapy for Self-identified Black or African American Patients with Heart Failure (HF) and LVEF <40% on ACEI or ARB and Beta-blocker Therapy.. When considering the number of lives that can potentially be saved annually -- over the past decade, approximately 66,550 African Americans have perished without being provided the opportunity to choose Hydralazine and Isosorbide Dinitrate Therapy.

It is alarming that only "10% of eligible heart failure patients are being prescribed this FDA-approved treatment," which "has been proven to reduce mortality in blacks by 43% and first-time hospitalizations for HF by 38%." That's why I'm writing in support of the measure submitted by the National Minority Quality Forum (NMQF) that strongly encourages healthcare providers to ensure that eligible African American patients with heart disease receive the proper course of treatment.

2764: Fixed-dose Combination of Hydralazine and Isosorbide Dinitrate Therapy for Self-identified Black or African American Patients with Heart Failure and LVEF <40% on ACEI or ARB and Beta-blocker Therapy

Submitted by Oladipupo Olafiranye

I am writing in strong support of the National Minority Quality Forum's (NMQF's) submission regarding a fixed-dose Combination of Hydralazine and Isosorbide Dinitrate Therapy for Self-identified Black or African American Patients with Heart Failure and left ventricular ejection fraction of less 40% on ACEI or ARB and Beta-blocker Therapy. As a member of the Association of Black Cardiologists (ABC), I strongly believe that this quality measure has the potential to save thousands of lives annually by highlighting a preventable treatment deficiency. Although, heart failure affects millions of Americans, African American are disproportionately affected by heart failure with age-adjusted death rates remaining higher in African Americans than other populations. And despite the fact that there is an FDA-approved treatment that has been proven to be particularly effective in African Americans, only a small percentage of those who are clinically eligible are receiving the treatment.

2764: Fixed-dose Combination of Hydralazine and Isosorbide Dinitrate Therapy for Self-identified Black or African American Patients with Heart Failure and LVEF <40% on ACEI or ARB and Beta-blocker Therapy

Submitted by David Maron, MD

Although clinical trial evidence supports the use of fixed-dose hydralazine and isosorbide dinitrate to improve survival in African Americans with advanced heart failure, less than 10% of eligible patients

receive this therapy. This proposed quality measure will raise awareness and increase the appropriate treatment of eligible African American patients with heart failure.

2764: Fixed-dose Combination of Hydralazine and Isosorbide Dinitrate Therapy for Self-identified Black or African American Patients with Heart Failure and LVEF <40% on ACEI or ARB and Beta-blocker Therapy

Submitted by James Januzzi, Jr., MD

As a clinician and clinical trialist, I am amazed at the gap between trial results and real-world prescription of a life-saving therapy for patients with HF such as we see with the under-use of hydralazine/nitrates in Blacks/African Americans. I agree this is a hugely important topic in need of further scrutiny and comment.

2764: Fixed-dose Combination of Hydralazine and Isosorbide Dinitrate Therapy for Self-identified Black or African American Patients with Heart Failure and LVEF <40% on ACEI or ARB and Beta-blocker Therapy

Submitted by LaVarne Burton, American Kidney Fund; Submitted by Mr. Michael Spigler

The American Kidney Fund (AKF) offers its full support of NQF# 2764. AKF is dedicated to ensuring that every kidney patient has access to health care, and that every person at risk for kidney disease is empowered to prevent it. As the nation's largest not-for-profit organization serving people with, and at risk for, kidney disease, we have helped more than 1 million low-income dialysis patients to access lifesaving medical care since our founding in 1971.

There are currently 31 million Americans living with some level of chronic kidney disease (CKD). Of these 31 million, minority populations face a greater risk of progressing from early CKD to kidney failure. African Americans with CKD, in particular, are disproportionately affected. More than 1 in 3 kidney failure patients living in the United States is African American.

Several studies have also shown that heart disease is a primary risk factor for developing kidney failure. That means that for the estimated 150,000 African Americans living with heart failure (HF), their risk for ultimately developing kidney failure is even greater.

AKF is committed to eliminating health disparities in CKD. The benefits of fixed-dose hydralazine and isosorbide dinitrate have been published in the New England Journal of Medicine and other peer-reviewed sources, yet only 7% of clinically eligible African Americans receive the treatment. We believe that adoption of this quality measure will improve African Americans' access to this life-saving treatment and will not only directly improve the outcomes for HF, but also indirectly improve the outcomes for African Americans at-risk for CKD.

2764: Fixed-dose Combination of Hydralazine and Isosorbide Dinitrate Therapy for Self-identified Black or African American Patients with Heart Failure and LVEF <40% on ACEI or ARB and Beta-blocker Therapy

Submitted by Nilam Sheth, PharmD

I am writing in support of a proposed quality measure that has the potential to save thousands of lives annually by highlighting a preventable treatment deficiency, namely, the National Minority Quality Forum's submission (# 2764) regarding a fixed-dose Combination of Hydralazine and Isosorbide Dinitrate

Therapy for Self-identified Black or African American Patients with Heart Failure (HF) and LVEF <40% on ACEI or ARB and Beta-blocker Therapy.

Today, less than 10% of eligible heart failure patients are being prescribed an FDA-approved treatment that's been proven to significantly reduce hospitalization and mortality rates. That's why I'm writing in support of the measure submitted by the National Minority Quality Forum (NMQF) that strongly encourages healthcare providers to ensure that eligible African American patients with heart disease receive the proper course of treatment.

The science behind the impact of this FDA-approved drug has been well documented. Its benefits have been published in the New England Journal of Medicine and other peer-reviewed sources, and the American College of Cardiology and American Heart Association have released detailed practice guidelines calling for this specific treatment protocol.

Nonetheless, while published studies estimate that there are over 150,000 African Americans living in America who could benefit from this treatment, only 7% (or 11,000) of them are receiving it. As a consequence, experts have estimated that 6,655 blacks die prematurely every year.

An endorsement from the National Quality Forum (NQF) is considered the highest standard for healthcare quality, and sends a strong message to providers that measures are evidence-based, valid, and can help patients achieve better outcomes. I strongly believe that the proposed heart failure measure meets NQF's criteria, and encourage you to provide your formal endorsement in order to help facilitate widespread adoption of this treatment.

I appreciate the opportunity to weigh in on this important issue, and urge NQF to approve this quality measure submission.

2764: Fixed-dose Combination of Hydralazine and Isosorbide Dinitrate Therapy for Self-identified Black or African American Patients with Heart Failure and LVEF <40% on ACEI or ARB and Beta-blocker Therapy

Submitted by Chris Adamec, MPA

RE: Comments on Fixed-dose Combination of Hydralazine and Isosorbide Dinitrate Therapy for Self-identified Black or African American Patients with Heart Failure and LVEF <40% on ACEI or ARB and Beta-blocker Therapy

The Healthcare Leadership Council (HLC) respectfully submits these comments in connection with NQF 2015 Cardiovascular Project. In this response, we support efforts by the National Minority Quality Forum (NMQF), the Association of Black Cardiologists (ABC), and other stakeholders to support the proposed measure that would support fixed-dose hydralazine and isosorbide dinitrate for self-identified Black or African American patients with heart failure. As you may be aware, today, only a very small number (about 7%) of African Americans who are clinically eligible for the FDA-approved therapy are getting it. As a consequence, over 6,500 blacks die prematurely every year because they are not receiving or adhering to standard of care. The quality measure would act to strongly encourage healthcare providers to ensure that eligible African American patients with heart disease receive the proper course of care treatment.

HLC, a coalition of chief executives from all disciplines within American healthcare, is the exclusive forum for the nation's healthcare leaders to jointly develop policies, plans, and programs to achieve their vision of a 21st century system that makes affordable, high-quality care accessible to all Americans.

Members of HLC – hospitals, academic health centers, health plans, pharmaceutical companies, medical device manufacturers, biotech firms, health product distributors, pharmacies, and information technology companies – envision a quality-driven system that fosters innovation. HLC members advocate measures to increase the quality and efficiency of American healthcare by emphasizing wellness and prevention, care coordination, and the use of evidence-based medicine, while utilizing consumer choice and competition to elevate value.

We encourage NQF to endorse quality measure #2764, “Fixed-dose Combination of Hydralazine and Isosorbide Dinitrate Therapy for Self-identified Black or African American Patients with Heart Failure and LVEF <40% on ACEI or ARB and Beta-blocker Therapy.” The benefits of this approach have been published in the New England Journal of Medicine and other peer-reviewed sources. They also align with guidelines from the American College of Cardiology and the American Heart Association.

HLC appreciates this opportunity to comment on the proposed Cardiovascular measures. We believe there is tremendous potential for the health care industry as a whole to bring about robust collaboration and quality improvement in achieving our shared goal of improving the value of healthcare delivery for all.

2764: Fixed-dose Combination of Hydralazine and Isosorbide Dinitrate Therapy for Self-identified Black or African American Patients with Heart Failure and LVEF <40% on ACEI or ARB and Beta-blocker Therapy

Submitted by Mr. Juan M. Cofield

The NAACP Board of Directors adopted Health equality for all Americans including a healthy life and high-quality health care as one of 5 Game changers. In support of the this Game Changer, the New England Area Conference (NEAC) of the NAACP strongly supports and advocates that African Americans who are clinical eligible for the FDA-approved therapy for Heart Failure. Further, NEAC encourages healthcare providers ensure that eligible African American patients with heart disease receive the proper course of care treatment - namely, the fixed dose of Hydralazine and isosorbide dinitrate.

General Draft

Submitted by Dr. Kathy Gans-Brangs, PhD

REQUEST FOR HARMONIZATION OF SIMILAR MEASURES: We believe that reviews undertaken by NQF in 2013-2014 and 2015 present an opportunity to ensure measure specification drug lists are current – that they exclude obsolete drug products based on inactive NDC codes and include all relevant FDA approved products. We urge the committee to review a side-by-side table of the specification for NQF measure # 0067 with measures 0964, 2452 and 2379 and any other relevant measures to ensure that the P2Y12 platelet inhibitor agents included are consistent (see Measure Comment Report for Cardiovascular Project 2013, Comment Period from May 27, 2014 to June 25, 2014).

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