NQF-Endorsed Measures for Cardiovascular Conditions 2014-2015: Phase 2

TECHNICAL DRAFT REPORT FOR VOTING

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DRAFT REPORT

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 (CVD) have declined by 31% from 2000 to 2010, CVD still accounts for 1 in 3 deaths in Americans.[1] Considering the overall toll of cardiovascular disease, measures that assess the performance of clinical care and patient outcomes are paramount to reducing the negative impacts of CVD.

NQF's cardiovascular measures portfolio is one of the largest, with measures for primary prevention and screening, coronary artery disease (CAD) or ischemic heart disease (IHD), heart attacks (AMI), percutaneous coronary intervention (PCI), cardiac rehabilitation, cardiac imaging, high blood pressure, heart failure (HF), rhythm disorders, Implantable Cardioverter Defibrillator (ICDs), and other cardiovascular topics. The vast majority of these measures are currently implemented in a variety of public and/or private accountability and quality improvement programs. Despite the large number of endorsed measures, gaps still remain including patient-reported outcomes and patient-centric composite measures.

Due to the large number of cardiovascular measures, maintenance review of endorsed measures and consideration of new measures is taking place over several phases in 2014-2015. This report presents the evaluations performed during phase 2. A background and description of the project is found in the phase 1 report detailing the methods and approach taken by NQF in all phases of the cardiovascular project. In phase 1, NQF endorsed 8 new measures and 6 measures undergoing maintenance review. In phase 3, planned for summer of 2015, an ~~to review an~~ additional 25 measures are scheduled for review.

In phase 2 of this project, the Cardiovascular Standing Committee evaluated 8 new measures and 8 measures undergoing maintenance review against NQF's standard evaluation criteria. Of the 16 measures under consideration, ~~9~~11 were recommended for endorsement, 1 was withdrawn for consideration, 4 were not recommended for endorsement. ~~, and 3 endorsement recommendations were deferred.~~

The 11 measures recommended for endorsement by the Standing Committee are:

- 0090 Emergency Medicine: 12-Lead Electrocardiogram (ECG) Performed for Non-Traumatic Chest Pain
- 0715 Standardized adverse event ratio for children < 18 years of age undergoing cardiac catheterization
- 1525 Atrial Fibrillation and Atrial Flutter: Chronic Anticoagulation Therapy

- 2438 Beta-Blocker Therapy (i.e., Bisoprolol, Carvedilol, or Sustained-Release Metoprolol Succinate) for LVSD Prescribed at Discharge
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- 2461 In-Person Evaluation Following Implantation of a Cardiovascular Implantable Electronic Device (CIED)
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- 0671 Cardiac stress imaging not meeting appropriate use criteria: Routine testing after percutaneous coronary intervention
- 0672 Cardiac stress imaging not meeting appropriate use criteria: Testing in asymptomatic, low risk patients

The 4 measures not recommended for endorsement by the Standing Committee are:

- 1524 Atrial Fibrillation: Assessment of Thromboembolic Risk Factors (CHADS2)
- 2440 Care Transition Record Transmitted
- 2441 Discussion of Advance Directives/Advance Care Planning
- 2442 Advance Directive Executed

One measure was withdrawn for consideration by the developer:

- 0543 Adherence to Statin Therapy for Individuals with Cardiovascular Disease

Brief summaries of the measures currently under review in this phase are included in the body of this report. Detailed summaries of the Committee's discussion and ratings of the criteria are included in Appendix A.

Introduction

Due to the large number of cardiovascular measures, maintenance review of endorsed measures and consideration of new measures is taking place over several phases in 2014-2015. This report is the second in a series of phased reports. In phase 1 NQF endorsed 8 new measures and 6 measures undergoing maintenance review. The phase 1 report details the methods and approach taken by NQF in all phases of the cardiovascular project. Phase 3 is planned for summer of 2015 to review an additional 25 measures.

Cardiovascular disease (CVD) is the leading cause of death for men and women in the United States. Although death rates attributable to cardiovascular disease (CVD) have declined by 31% from 2000 to 2010, CVD still accounts for 1 in 3 deaths in Americans.[1] Considering the overall toll of cardiovascular disease, measures that assess the performance of clinical care and patient outcomes is paramount to reducing the negative impacts of CVD. The vast majority of measures in NQF's portfolio for cardiovascular conditions are currently implemented in a variety of public and/or private accountability and quality improvement programs.

National Quality Strategy and NQF's Cardiovascular Portfolio of Measures

The National Quality Strategy (NQS)[1] serves as the overarching framework for guiding and aligning public and private efforts across all levels (local, state, regional, 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.*[2]

NQF endorsed measures for cardiovascular conditions support the NQS triple aim and align with many of the NQS priorities, including:

- Effective Prevention and Treatment of Illness, *beginning with cardiovascular conditions*.
- Communication and Care Coordination. Coordination is a priority because often care for patients with heart disease occurs across provider types (e.g., primary care, cardiologists, imaging, interventionalists) and often requires both acute and post-acute care across settings (e.g., emergency department, inpatient facilities, rehabilitation facilities). Also, improving care and care coordination for cardiovascular disease can reduce complications, thus helping to decrease hospital admissions, readmissions, and costs.
- Best Practices for Healthy Living. Engagement in healthy behaviors (e.g., healthy cholesterol levels) and accessing preventive services such as screening are critical for both the prevention and management of cardiovascular conditions.
- Ensuring that all persons and their families are engaged as partners in care.
- Making care safer by reducing harm caused in the delivery of care.

NQF Portfolio of Performance Measures for Cardiovascular Conditions

NQF's portfolio (Appendix B) of cardiovascular measures 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").[3] This portfolio contains 68 measures: 43 process measures, 20 outcome and resource use measures, and 5 composite measures (see the table below). Eight endorsed measures were evaluated for maintenance of endorsement by the Cardiovascular Standing Committee during this phase of the project.

NQF Cardiovascular Portfolio of Measures

	Process	Outcome/Resource Use	Composite
Primary prevention and screening	3	1	
CAD/IHD	7	5	
AMI	12	2	1
PCI	3	4	3
Heart failure	7	2	
Rhythm disorders	4		
ICDs	3		1
Cardiac imaging		4	
Cardiac Rehab	2		
Cardiac Catheterization		2	
High blood pressure	2		
Total	43	20	5

Twenty-six cardiovascular measures have been assigned to other topic area 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).

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 multi-stakeholder committees comprised of clinicians, patients and families, consumers, and other experts from hospitals and other healthcare providers, employers, health plans, public agencies, community coalitions—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 and measurement methodologies. Importantly, legislative mandates require that preference be given to NQF-endorsed measures for use in federal public reporting and performance-based payment programs. NQF measures also are used by a variety of stakeholders in the

private sector, including hospitals, health plans, and communities to assess and improve patient care and outcomes.

As with all measures in NQF's portfolio, some previously endorsed cardiovascular measures have been dropped from the NQF portfolio for various reasons, including retirement by measure stewards. Measures may also lose endorsement upon maintenance review. Loss of endorsement may occur for many different reasons including – but not limited to – a change in evidence without an associated change in specifications, high performance on a measures signifying no further opportunity for improvement, discovery of unintended consequences while using the measure, and endorsement of a superior measure.

A large part of the cardiovascular portfolio (Appendix B) is organized according to NQF's episode-of-care model (for coronary artery disease/AMI and heart failure) because of the large number of measures in these conditions. This patient-centric framework, which is broadly applicable to both acute and chronic conditions, can be used to map existing performance measures and highlight gaps in measurement. The episode-of-care model for acute myocardial infarction (AMI) was developed in 2009 by a panel of experts in healthcare and measurement in an effort to propose a responsible evaluation of a healthcare delivery system to consider the efficiency with which each patient with an AMI received care and the frequency with which AMI occurred in the community.

Use of Measures in the Portfolio

Most of the measures in NQF's cardiovascular portfolio are extensively utilized in a variety of federal, state, regional, local public, clinical, private, and other measurement programs, as well as local improvement activities and settings with a variety of measure types (e.g., process, outcome) and reporting modalities (administrative claims, clinical registry, electronic clinical quality measures). See Appendix C for details of federal program use for the measures in the portfolio that are currently under review.

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 measure portfolio to harmonize related measures across sites and settings of care. During this phase, the Committee identified numerous areas where additional measure development is needed, including:

- Risk-adjusted and risk-stratified outcomes measures to better understand socioeconomic barriers and disparities that impede equitable care access and health outcomes across patient populations and settings.

Patient-centric composite measures incorporating outcomes, structure, process and patient-reported outcome performance measures within the composite constructs when applicable.

- Measures that are meaningful to the spectrum of measurement stakeholders (e.g., patients/families, populations, consumers, clinicians/facilities, and other measurement users and supports), recognizing that not all stakeholders prioritize measures similarly (e.g.,

patients/families may prioritize quality-of-life and functional status measures, while clinicians may prioritize core clinical process measures).

- New and innovative measures facilitated by the evolution of measurement science.

Measures in the "Pipeline"

NQF recently launched a Measure Inventory Pipeline—a virtual space for developers to share information on measure development activities. Developers can use the Pipeline to display data on current and planned measure development and to share successes and challenges. Information shared via the Pipeline is available in real time and can be revised at any time. NQF expects that developers will use the Pipeline as a tool to connect and collaborate with peers on measurement development ideas. To date no measure concepts addressing cardiovascular conditions have been submitted.

Cardiovascular Conditions Considered in Phase 2

Measures addressing a variety of cardiovascular conditions were evaluated including:

- **Heart failure:** 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.[4]
- **Heart rhythm disorders** and **Cardiovascular Implantable Electronic Devices (CIED):** 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 2-6 million people. Some serious rhythm disorders cause the heart to fibrillate or stop beating, and devices such as pacemakers and Implantable Cardioverter Devices (ICDs) may be used to treat severe rhythm abnormalities.[5]
- **Acute myocardial infarctions (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.[6]
- **Cardiac imaging** refers to noninvasive tests of cardiac function.
- **Congenital heart disease** affects 1 in 100 infants.[7] Cardiac catheterization for congenital heart disease, once only used as a diagnostic procedure to visualize blood flowing through the heart chambers and arteries, is now also used to correct some abnormalities.
- **Statin medications:** High cholesterol affects 1 in 3 American adults; two-thirds do not have the condition under control; and half of adults with high cholesterol do not get treatment. Measures that assess the controlling of these risk factors, including the use of statin medications for high cholesterol could reduce risk of heart attack or stroke by more than 80%.[3]

Cardiovascular Measure Evaluation

The Cardiovascular Standing Committee (Appendix D) oversees NQF's cardiovascular portfolio of measures, evaluates new measures, and conducts maintenance reviews of endorsed measures. On December 4-5, 2014, the Cardiovascular Standing Committee evaluated 8 new measures and 8

measures undergoing maintenance review against NQF's standard evaluation criteria. The Committee's discussion and ratings of the criteria are detailed in the evaluation tables in Appendix A.

Cardiovascular Phase 2 Summary

	Maintenance	New	Total
Measures under consideration	8	8	**16**
Measures recommended	~~5~~ 8	3	**~~8~~ 11**
Measures not recommended	1	3	**4**
Reasons measures not recommended (# of measures)	Importance (1) Scientific Acceptability (1)	Importance (1) Competing Measure (1)	**N/A**
~~Measure decisions deferred~~	~~3 0~~	~~0~~	**~~3 0~~**
Measures withdrawn from consideration	~~5~~ 6	N/A	**~~5~~ 6**

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 has begun soliciting comments prior to the evaluation of the measures via an online tool located on the project webpage. During the pre-evaluation comment period, no comments were received.

Overarching Issue – 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 as a major priority the issue of harmonization within the cardiovascular portfolio, as well as harmonization with measures in other topic areas in other CDP projects. Though it is not always possible, due to priorities of the measurement enterprise (e.g., evidence shifts and program implementer requests), developer constraints, and other stakeholder needs, NQF staff makes every attempt to schedule review of related and competing measures together. The Committee considered related and competing measures as part of their recommendation for endorsement.

Summary of Measure Evaluation

The following brief summaries of the measure evaluations highlight the major issues that were considered by the Committee. Details of the Committee's discussion and ratings of the criteria are included in Appendix A.

Heart Rhythm Disorders and Implantable Cardioverter Defibrillator (ICD)

Two previously NQF-endorsed measures and 2 newly submitted measures addressing heart rhythm disorders and ICDs were reviewed.

1524 Atrial Fibrillation: Assessment of Thromboembolic Risk (American College of Cardiology): Not Recommended

***Description**: Percentage of patients aged 18 years and older with a diagnosis of nonvalvular atrial fibrillation (AF) or atrial flutter in whom assessment of all the specified thromboembolic risk factors using the Congestive heart failure, Hypertension, Age(≥75), Diabetes, prior Stroke or Thromboembolism(CHADS2) risk criteria is documented; **Measure Type**: Process ; **Level of Analysis**: Clinician : Individual; **Setting of Care**: Ambulatory Care : Clinician Office/Clinic; **Data Source**: Electronic Clinical Data: Registry*

This process measure—currently being used for public reporting and quality improvement in the ACC's Cardiology Practice Improvement Pathway (CPIP)/Bridges to Excellence (BTE), and PQRS Qualified Clinical Data Registry (QCDR) as part of the PINNACLE registry—calculates the percentage of adult patients with known nonvalvular atrial fibrillation (AF) or atrial flutter in whom assessment of all the specified thromboembolic risk factors using the CHADS2 risk criteria are documented. Significant performance gaps were identified in PINNACLE with a mean performance of 22.8% in 2012 and 25.4% in 2011, with blacks one-third less likely to know of their AF diagnosis than whites, reducing treatment likelihood and increasing stroke risk for blacks. The Committee was concerned that the methodology PINNACLE uses for determining if all risk factors are documented is a "check box," and not whether all risk factors considered and the CHADS2 score properly calculated. The Committee additionally questioned the specification of CHADS2 as the only validated AF assessment tool, as other validated tools such as the Congestive heart failure, Hypertension, Age(≥75), Diabetes, prior Stroke or Thromboembolism, Vascular disease, Age(65-74), Sex category (CHA2DS2-VASc) risk criteria are available. Due to these concerns the Committee did not recommend the measure for endorsement.

1525 Atrial Fibrillation and Atrial Flutter: Chronic Anticoagulation Therapy (American College of Cardiology): Recommended

***Description**: Percentage of patients aged 18 years and older with a diagnosis of nonvalvular atrial fibrillation (AF) or atrial flutter whose assessment of the specified thromboembolic risk factors indicate one or more high-risk factors or more than one moderate risk factor, as determined by CHADS2 risk stratification, who are prescribed warfarin OR another oral anticoagulant drug that is FDA approved for the prevention of thromboembolism; **Measure Type**: Process ; **Level of Analysis**: Clinician: Individual; **Setting of Care**: Ambulatory Care: Clinician Office/Clinic; **Data Source**: Electronic Clinical Data: Registry*

This process measure—currently being used for public reporting and quality improvement with measure #1524—calculates the percentage of adult patients with CHADS2 identified as moderate or high assessment of thromboembolic risk factors who are prescribed warfarin or another FDA approved oral anticoagulant drug to reduce the risk of stroke. Significant performance gaps were identified in PINNACLE with a mean performance of 59.4% in 2012 and 57.2% in 2011, data from Medicare Part D beneficiaries found decreased warfarin use by age and increasing comorbidity, in blacks, and among those with low income. Although some Committee members raised concerns regarding the exclusion for patient refusals, the Committee recommended the measure for continued endorsement.

2461 In-Person Evaluation Following Implantation of a Cardiovascular Implantable Electronic Device (CIED) (Heart Rhythm Society): Recommended

***Description**: Proportion of adult patients with a new CIED with an in-person evaluation within 2 to 12 weeks following implantation; **Measure Type**: Process; **Level of Analysis**: Facility, Clinician : Individual; **Setting of Care**: Ambulatory Care: Clinician Office/Clinic, Hospital/Acute Care Facility; **Data Source**: Administrative Claims*

This new process measure, which has been submitted to PQRS for clinician-level public reporting and payment programs, calculates the percentage of adult patients with an in-person evaluation within 2 to 12 weeks following implantation of a cardiovascular implantable electronic device (CIED), including pacemakers (PMs), implantable cardioverter-defibrillators (ICDs), and cardiac resynchronization devices (CRTs). Numerous studies find an association with the lack of follow-up after device implantation and increased risks of heart failure (HF) and death, and that inappropriate shocks are more likely to occur when patients are not appropriately monitored. Data from a large claims database found in-person follow-up visits within 2 to 12 weeks in only 42.4% for newly implanted CIEDs. The Committee asked whether the measure could also be used in children, and also questioned the exclusion of patients with a previously placed CIED. The Committee recommended this new measure for endorsement.

2474 Cardiac Tamponade and/or Pericardiocentesis Following Atrial Fibrillation Ablation (Heart Rhythm Society): Recommended

***Description**: Rate of cardiac tamponade and/or pericardiocentesis following atrial fibrillation (AF) ablation; **Measure Type:** Outcome ; **Level of Analysis**: Facility, Clinician : Individual; **Setting of Care**: Ambulatory Care : Clinician Office/Clinic, Hospital/Acute Care Facility; **Data Source**: Administrative Claims*

This new, risk-stratified outcome measure calculates the rate of complications (cardiac tamponade and/or pericardiocentesis) for adult patients within 30 days following atrial fibrillation (AF) ablation. Complications after AF ablation include atrial perforation, pericarditis, and other bleeding complications that can lead to pericardial tamponade and a need for urgent/emergent pericardiocentesis, and in some cases, emergency cardiac surgery. Complications range between 1.2% and 2.4% across various studies, with about 6% for cardiac tamponade within 30 days after AF ablation, with slightly higher rates for men and increased age. Although the Committee found the opportunity for improvement to be limited, they recommended this new adverse outcome measure for endorsement.

Heart Failure (HF)

The Joint Commission submitted 6 new process measures addressing heart failure from their Advanced Certification in Heart Failure (ACHF) program that started in 2014 with approximately 70-80 facilities participating to date. The measure data elements are also part of the Get With the Guidelines (GWTG) HF data collection tool.

2438 Beta-Blocker Therapy (i.e., Bisoprolol, Carvedilol, or Sustained-Release Metoprolol Succinate) for LVSD Prescribed at Discharge (The Joint Commission): Recommended

***Description**: Proportion of heart failure patients age18 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.; ***Measure Type****: Process;* ***Level of Analysis****: Facility;* ***Setting of Care****: Hospital/Acute Care Facility;* ***Data Source****: Electronic Clinical Data: Electronic Health Record, Paper Medical Records*

The measure calculates the percentage of hospitalized adult HF patients with LVSD for whom beta-blocker therapy is prescribed at hospital discharge. The developer cited evidence that taking 1 of 3 specific beta blocker drugs (Bisoprolol, Carvedilol, or Sustained-Release Metoprolol Succinate) reduces morbidity and mortality for HF patients, with mortality lowered by 27-34% in the trials. The Committee expressed concerns over the age and strength of the evidence, and some members were concerned with the list of exclusions. The Committee also commented on other studies not provided by developers showing that if beta-blockade is not prescribed at hospital discharge, it was less likely to be ordered in the outpatient setting. Evidence also demonstrates the best possible patient outcomes occur when patients take beta-blockade at hospital admission and continue throughout hospitalization, unless contraindications are present. Committee members noted the measure would be useful in an eMeasure format.

2439 Post-Discharge Appointment for Heart Failure Patients (The Joint Commission): Recommended

Description*: Patients for whom a follow-up appointment, including location, date, and time, for an office or home health visit for management of heart failure was scheduled within 7 days post-discharge and documented;* ***Measure Type****: Process;* ***Level of Analysis****: Facility;* ***Setting of Care****: Hospital/Acute Care Facility;* ***Data Source****: Electronic Clinical Data: Electronic Health Record, Paper Medical Records*

The measure calculates the percentage of hospitalized adult HF patients with a follow-up appointment, including location, date, and time, for an office or home health visit for management of heart failure that was scheduled within 7 days of hospital discharge. The Committee held a robust discussion on the differences between an appointment scheduled at the time of discharge and an actual patient visit that occurs in 7 days from patient discharge. The Committee questioned the characteristics of a visit, and whether a remote or social media visit or other patient contact could meet the intent of the measure. Committee members questioned the age of some of the evidence and did not reach consensus on whether the measure met the evidence criterion. The Committee also questioned the list of exclusions including left ventricular assist devices and out of state and country patients who may provide opportunities for potential performance "gaming," especially as home visits and telemedicine could provide needed re-evaluation. They also questioned whether a facility should be penalized if a patient is not scheduled or seen in a post-discharge appointment due to patient reasons. The developer asserted that to prevent hospital readmissions, the first step is the facility scheduling an appointment for re-evaluation to occur within 7 days of patient discharge noting that this measure sets up the next step in the process that is addressed in measure #2443: Post-Discharge Evaluation for Heart Failure Patients, whether a patient worsening of symptoms and treatment compliance was assessed within 72 hours of hospital discharge for HF patients.

In the post-meeting follow-up call, this measure was reviewed along with competing measure #2455 Heart Failure Post-Discharge Appointment for Heart Failure Patients endorsed in phase 1. Both

measures are intended for adult patients discharged from with HF, though #2439 does not include observation patients due to data collection billing complexities. Both measures are specified with GWTG data elements. The Committee requested an improved measure that specifies an actual visit for HF re-evaluation. Both measure developers agreed to share these requests with their respective measure developer committees. Measure #2455 has 3 exclusions, while #2439 has a list of measure exclusions across the 6 measures of the ACHF measures group. #2439 is used in 70-80 ACHF facilities and #2455 in about 400 GWTG Registry hospitals though there are no use limitations outside the registry program. As both measures are newly implemented, the Committee could not agree on a superior measure without reported implementation data, and both measures were recommended for endorsement.

2440 Care Transition Record Transmitted (The Joint Commission): Not Recommended

***Description**: A care transition record is transmitted to a next level of care provider within 7 days of discharge containing ALL of the following: reason for hospitalization; procedures performed during this hospitalization; treatment(s)/Service(s) provided during this hospitalization; discharge medications, including dosage and indication for use; follow-up treatment and services needed (e.g., post-discharge therapy, oxygen therapy, durable medical equipment);* ***Measure Type**: Process;* ***Level of Analysis:** Facility;* ***Setting of Care**: Hospital/Acute Care Facility;* ***Data Source**: Electronic Clinical Data : Electronic Health Record, Paper Medical Records*

The measure calculates the percentage of hospitalized adult HF patients with a transmitted care transition record containing the reason, procedures, and treatments performed during the hospitalization, discharge medications (including dose and indication for use), and follow-up treatment and services needed (e.g., post-discharge therapy, oxygen therapy, DMEs) to the next provider within 7 days of discharge. The developer explained that the timing of 7 days post-discharge is directly correlated to the post-discharge appointment and re-evaluation of HF worsening of symptoms between 7 to 10 days. Some Committee members questioned limiting the denominator only to HF patients. Other Committee members suggested 7 days is too long, given that many hospitals request care transition record transmission within 24 hours, and still others instantaneously upon discharge with the advent and increased usability of EMRs. The evidence was accepted with exception. The Committee initially recommended the measure for endorsement pending further evaluation with competing and related measures.

In a post-meeting call, this measure was reviewed with competing endorsed measure #0648 Timely Transmission of Transition Record (Discharges from an Inpatient Facility to Home/Self Care or Any Other Site of Care) developed by AMA-PCPI and ACC. The Committee strongly emphasized the need for care transition within 24 hours of discharge and did not agree that 7 days met current industry standards. Developers of #2440 reported they would follow up with the measure development committee. Developers noted differences within the measure specifications between #2440 which assesses hospitalized HF-only patients and #0648 which assesses all inpatient facilities (hospital inpatient or observation, skilled nursing facility, or rehabilitation facility). The Committee also noted differences in care transition record data points with #2440 reporting 5 data points, and #0648 reporting approximately 20 data points. The Committee found #0648 to be a superior measure, and #2440 was not recommended for endorsement.

2441 Discussion of Advance Directives/Advance Care Planning (The Joint Commission): Not Recommended

***Description**: Patients who have documentation in the medical record of a one-time discussion of advance directives/advance care planning with a healthcare provider; **Measure Type**: Process; **Level of Analysis**: Facility; **Setting of Care**: Hospital/Acute Care Facility; **Data Source**: Electronic Clinical Data: Electronic Health Record, Paper Medical Records*

The measure calculates the percentage of adult HF patients with documentation in the medical record of a one-time discussion of advance directives/advanced care planning with a healthcare provider. The Committee insisted this should not simply be a "documentation exercise," but rather a discussion held by a trained healthcare professional with a role in the care. Some Committee members asked whether this measure is also appropriate for the pediatric population, and questioned the list of measure exclusions (specifically LVAD patients), while others questioned the lack of shared communication and decisionmaking with the patient. The Committee also questioned limiting the denominator to only HF patients, the appropriateness of including all HF patients in the denominator, specifically those with mild conditions and the relevance of a one-time discussion as patients' wishes change over time, especially after an acute hospitalization. The Committee found the performance data provided was dated, missing patient input, and did not differentiate between documentation of the presence of advance directives/advance care planning and discussions by healthcare providers about advance directives/advance care planning. Committee members acknowledged that while advance directives are an important aspect to consider for patient-focused care, the evidence provided by the developers that such discussions can influence outcome in heart failure is not present. Noting concerns with evidence, the Committee did not recommend the measure for endorsement.

2442 Advance Directive Executed (The Joint Commission): Not Recommended

***Description**: Patients who have documentation in the medical record that an advance directive was executed; **Measure Type**: Process; **Level of Analysis**: Facility; **Setting of Care**: Hospital/Acute Care Facility; **Data Source**: Electronic Clinical Data: Electronic Health Record, Paper Medical Records*

The measure calculates the percentage of hospitalized adult HF patients with documentation of an executed advanced directive in the medical record. Though the developer presented information generally on advance directives/ advance care planning, the Committee found scarce evidence on the relationship of the executed advance directive documentation options and patient outcomes, and questioned the ability of this measure to improve performance. The Committee received further clarification on the definition of "executed," meaning there was documentation present in the medical record of an advance directive, along with the acceptable forms and locations of advance directives documentation. With this additional clarification, the Committee agreed that the measure did not pass the evidence criterion.

2443 Post-Discharge Evaluation for Heart Failure Patients (The Joint Commission): Recommended

***Description**: Patients who receive a re-evaluation for symptoms worsening and treatment compliance by a program team member within 72 hours after inpatient discharge; **Measure Type**: Process; **Level of Analysis**: Facility; **Setting of Care**: Hospital/Acute Care Facility; **Data Source**: Electronic Clinical Data: Electronic Health Record, Paper Medical Records*

The measure calculates the percentage of hospitalized adult HF patients who receive a re-evaluation for worsening symptoms and treatment compliance by a program team member within 72 hours after hospital discharge by phone, home care, or scheduled office visit to improve outcomes and reduce hospital readmissions. The Committee discussed various guideline recommendations for 3 or 7 days of follow-up after discharge, with 7 days having a slightly higher evidence rating. The Committee agreed that the results of 38% compliance in the measure developer's pilot study demonstrated a significant performance gap. The Committee suggested that 9 denominator data elements are cumbersome, and the inclusion of "unsuccessful attempts to contact patients" as a "yes" for the numerator. The lack of inclusion of observation patients was also questioned. The developer clarified that the observation patients were not included in the denominator due to the complexities of billing constraints with the emergency department designated an outpatient setting. The Committee recommended the measure for endorsement.

Acute Myocardial Infarction (Heart Attack)

One previously NQF-endorsed measure addressing heart attack was reviewed and recommended for endorsement by the Standing Committee.

0090: **Emergency Medicine: 12-Lead Electrocardiogram (ECG) Performed for Non-Traumatic Chest Pain (American Medical Association - Physician Consortium for Performance Improvement [AMA-PCPI]): Recommended**

***Description**: Percentage of patients aged 40 years and older with an emergency department discharge diagnosis of non-traumatic chest pain who had a 12-lead electrocardiogram (ECG) performed; **Measure Type**: Process; **Level of Analysis**: Clinician: Group/Practice; **Setting of Care**: Hospital/Acute Care Facility, Other; **Data Source**: Electronic Clinical Data: Electronic Health Record*

This new eMeasure was retooled from a previously endorsed claims/registry process measure, which was implemented in PQRS, and MOC/recognition with American Board of Emergency Physicians (ABEP). The measure assesses if 12-Lead Electrocardiogram (ECG) was performed for a diagnosis of nontraumatic chest pain (CP) in adult patients of at least 40 years discharged from an emergency room. Committee members had conflicting views on existing performance gaps—with some noting the current high performance with the 50th percentile reporting 100% performance, 25th percentile at 96%, and 10th percentile at 88%—and did not reach consensus for the performance gap criterion. The developer clarified that the denominator includes the spectrum of patients discharged to home through those admitted for emergent care. Despite varying opinions among the Committee regarding opportunity for improvement and high priority, the Committee recommended the eMeasure for endorsement.

Cardiac Imaging

Three previously NQF-endorsed and similar appropriate use measures addressing cardiac imaging were reviewed. The Appropriate Use Criteria (AUC) utilized by the developer for each measure was the RAND Appropriateness Method (RAM) which assists in determining the need for cardiovascular procedures. Though the Committee acknowledged the AUC or RAM as an evidence-based framework for determining the appropriateness or inappropriateness for completing cardiac imaging, and favored the underpinnings of the 3 measures, they sought additional clinical evidence for each of the 3 measure topics, and reconsidered the measures during the Post Comment Period Call. Each of the 3 measures are

used in PQRS public reporting, FOCUS payment program, IAC regulatory and accreditation program, FOCUS professional certification and recognition program, and FOCUS quality improvement program. ~~The Committee deferred the decision on recommendation for endorsement until additional information on the evidence could be provided by the developer.~~

0670 Cardiac stress imaging not meeting appropriate use criteria: Preoperative evaluation in low risk surgery patients (American College of Cardiology): ~~Deferred~~ Recommended

***Description**: Percentage of stress SPECT MPI, stress echo, CCTA, or CMR performed in low risk surgery patients for preoperative evaluation; **Measure Type**: Efficiency; **Level of Analysis**: Facility, Clinician: Group/Practice; **Setting of Care**: Ambulatory Care: Clinician Office/Clinic, Imaging Facility; **Data Source**: Electronic Clinical Data: Electronic Health Record, Electronic Clinical Data: Registry*

This imagining facility level process measure assesses whether cardiac stress imaging (by stress SPECT MPI, stress echo, CCTA, or CMR) was performed preoperatively in low risk surgery patients, a population in which the evidence does not ~~it is not~~ recommended. The developer presented evidence for the measure and performance gaps from a clinical practice guideline, systematic review and multiple studies utilizing the AUC method in determining appropriateness of cardiac imaging. Performance gaps exist between 2-17% and are often based on facility referral characteristics (e.g., cardiologist referrals affiliated with cardiovascular procedure and surgical facilities versus primary care referrals) and patient populations. Recent studies using administrative data report smaller performance gaps, though the clinical reasons for performing a cardiac imaging test is not collected which may result in higher identified gaps. Inter-rater reliability testing detailed substantial agreement or acceptable reliability. The Committee stated the specifications are consistent with the evidence, and empiric validity testing of the measure score evaluated the appropriate use score and the predictive value of SPECT MPI cardiac imaging test which compared major adverse outcomes to appropriate or inappropriate stress imaging test finding no statistically significant differences in the 2 groups. The measure is currently utilized in numerous programs, reported as feasible, and the 2017 CMS cardiac imaging appropriateness pre-authorization mandates are anticipated to increase feasibility findings. The Committee recommended the measure for endorsement.

~~This measure is used in PQRS public reporting, FOCUS payment program, IAC regulatory and accreditation program, FOCUS, professional certification and recognition program, and FOCUS quality improvement program. This measure is 1 of 3 similar measures from this developer (#0670, #0671, and #0672). The developer cited the evidence-based RAND Appropriateness Method (RAM) for appropriate use criteria (AUC) for cardiovascular procedures, though they did not address the evidence for preoperative evaluation. The Committee requested a summary of the evidence for cardiac stress imaging for low risk preoperative patients. As the three imaging measures are quite similar, the Committee agreed to reconsider this measure at the post-comment call along with measures #0671 and #0672 on March 18, 2015.~~

0671 Cardiac stress imaging not meeting appropriate use criteria: Routine testing after percutaneous coronary intervention (PCI) (American College of Cardiology): ~~Deferred~~ Recommended

***Description**: Percentage of all stress SPECT MPI, stress echo, CCTA, and CMR performed routinely after PCI, with reference to timing of test after PCI and symptom status; **Measure Type**: Efficiency; **Level of Analysis**: Facility, Clinician : Group/Practice; **Setting of Care**: Ambulatory Care: Clinician Office/Clinic,*

Imaging Facility; ***Data Source****: Electronic Clinical Data: Electronic Health Record, Electronic Clinical Data: Registry*

This imagining level focused process measure assesses whether cardiac stress imaging (by stress SPECT MPI, stress echo, CCTA, or CMR) was performed routinely (within 2 years) in asymptomatic patients after percutaneous coronary intervention (PCI), a population in which the evidence does not recommended. The developer presented evidence for the measure and performance gaps from a clinical practice guideline, systematic review and multiple studies utilizing the AUC method in determining appropriateness of cardiac imaging. The Committee questioned if patients with left main stenting and incomplete revascularization during the PCI were included in the denominator, 2 populations where cardiac imaging would be appropriate within 2 years after PCI in asymptomatic patients. The developer confirmed they were not included. The Committee accepted the evidence stating that patient outcomes are not improved with or without performed cardiac imaging for these patients. Significant performance gaps were identified in patients from 2005-2013 in various urban and rural settings and patient populations, with varying results based on facility referral characteristics. The Committee questioned if the measure denominator should more clearly align with the numerator activity, rather than all cardiac imaging completed at the facility. The developer stated modification to the denominator would also represent challenges in benchmarking performance across facilities, and that local quality improvement activities are based on facility-specific performance. Inter-rater reliability testing detailed substantial agreement or acceptable reliability. The Committee stated the specifications are consistent with the evidence, and empiric validity testing of the measure score evaluated the appropriate use score and the predictive value of SPECT MPI cardiac imaging test which compared major adverse outcomes to appropriate or inappropriate testing and found no statistically significant differences in the 2 groups. The measure is currently utilized in numerous programs, reported as feasible, and the 2017 CMS cardiac imaging appropriateness pre-authorization mandates are anticipated to increase feasibility findings. The Committee recommended the measure for endorsement.
~~This measure is one of three similar AUC measures from this developer (#0670, #0671, and #0672). The Committee requested a summary of the evidence for testing after PCI. The Committee agreed to reconsider this measure at the post-comment call with measures #0670 and #0672 on March 18, 2015.~~

0672 Cardiac stress imaging not meeting appropriate use criteria: Testing in asymptomatic, low risk patients (American College of Cardiology): ~~Deferred~~ Recommended

Description*: Percentage of all stress SPECT MPI, stress echo, CCTA, and CMR performed in asymptomatic, low CHD risk patients for initial detection and risk assessment;* ***Measure Type:*** *Efficiency;* ***Level of Analysis****: Facility, Clinician: Group/Practice;* ***Setting of Care****: Ambulatory Care: Clinician Office/Clinic, Imaging Facility;* ***Data Source****: Electronic Clinical Data: Electronic Health Record, Electronic Clinical Data: Registry*

This imagining facility level process measure assesses whether cardiac stress imaging (by stress SPECT MPI, stress echo, CCTA, or CMR) was performed in asymptomatic, low risk patients, a population in which the evidence does not recommended. The developer presented evidence for the measure and performance gaps from a clinical practice guideline, systematic review and multiple studies utilizing the AUC method in determining appropriateness of cardiac imaging. The Committee accepted the evidence stating that patient outcomes are not improved for asymptomatic, low risk patients receiving cardiac

imaging versus those who do not. Significant performance gaps were identified and select Committee members questioned how a facility-level measure would improve referral practices. The developer stated that referral patterns are not the focus of the measure, though they do contribute to the analysis of the measure performance and are often reported as the focus of facility quality improvement activities. Inter-rater reliability testing detailed substantial agreement or acceptable reliability. The Committee found the specifications consistent with the evidence, and empiric validity testing of the measure score evaluated the appropriate use score and the predictive value of SPECT MPI cardiac imaging test comparing major adverse outcomes to appropriate or inappropriate stress imaging test with no statistically significant differences in the 2 groups. The measure is currently utilized in numerous programs, reported as feasible, and the 2017 CMS cardiac imaging appropriateness pre-authorization mandates are anticipated to increase feasibility findings. The Committee recommended the measure for endorsement.

~~This measure is one of three similar AUC measures from this developer (#0670, #0671, and #0672). The Committee requested a summary of the evidence for testing in asymptomatic, low risk patients. The Committee agreed to reconsider this measure at the post-comment call with measures #0670 and #0671 on March 18, 2015.~~

Congenital Heart Disease and Cardiac Catheterization

One previously NQF-endorsed outcome measure addressing congenital heart disease and cardiac catheterization was reviewed and recommended for endorsement by the Standing Committee.

0715 Standardized adverse event ratio for children <18 years of age undergoing cardiac catheterization (Boston Children's Hospital): Recommended

***Description**: Ratio of observed to expected clinically important adverse events, risk-adjusted using the Catheterization for Congenital Heart Disease Adjustment for Risk Method (CHARM); **Measure Type**: Outcome; **Level of Analysis**: Facility; **Setting of Care**: Hospital/Acute Care Facility; **Data Source**: Electronic Clinical Data, Paper Medical Records, Electronic Clinical Data: Registry*

This outcome measure, risk stratified by age and procedure risk, is used for internal quality improvement in 15 children's hospitals in the Congenital Cardiac Catheterization Project on Outcomes-Quality Improvement (C3PO-QI). There are plans for public reporting. The measure provides a ratio of observed to expected clinically important adverse events, risk-adjusted using the Catheterization for Congenital Heart Disease Adjustment for Risk Method (CHARM) for patients less than 18 years in institutions performing a minimum of 50 cardiac catheterizations per year. Since pediatric interventional cardiology is a newer specialty with increased interventional procedures complementing or replacing surgical techniques, adverse events during cardiac catheterization rates vary widely with a lack uniformity in outcome definitions. This measure outlines standardized moderate, major, and catastrophic adverse event definitions, and standardizes the reporting of methods to adjust for case mix complexity to allow for meaningful comparisons of performance among institutions. Adverse event rates in 8 pediatric hospitals used in testing ranged from 1.71% to 7.86% from 2007 to 2010. The Committee recommended continued endorsement.

Heart Disease and Statins

One previously NQF-endorsed measure addressing heart disease and statins was reviewed and recommended by the Standing Committee. However, the developer decided to withdrawn this measure for further endorsement consideration.

0543 Adherence to Statin Therapy for Individuals with Cardiovascular Disease (Centers for Medicare & Medicaid Services): ~~Recommended~~ Withdrawn

***Description**: The percentage of individuals with cardiovascular disease (CVD), including coronary artery disease, cerebrovascular disease, and peripheral artery disease presumed to be of atherosclerotic origin, who are prescribed statin therapy that had a Proportion of Days Covered (PDC) for statin medications of at least 0.8 during the measurement period (12 consecutive months); **Measure Type**: Process; **Level of Analysis**: Clinician: Group/Practice, Health Plan, Integrated Delivery System, Population: State; **Setting of Care**: Ambulatory Care: Clinician Office/Clinic; **Data Source**: Administrative claims*

This process measure, used in CMS's Physician Feedback Quality and Resource Use Report (QRUR), calculates the percentage of individuals with cardiovascular disease (CVD), who are prescribed statin therapy with sufficient medication dispensed for 80% of days for 12 consecutive months. The measure is intended to encourage providers to develop communication, education tools, and processes to improve adherence to statins in their patients with CVD. The developer provided Medicare Part B FFS and Medicare Part D adherence rates for 10 states (range 65-76%); 38 prescription drug plans (range 59-78%); 434 physician groups (range 53-77%); and 31 ACOs (60-76%), noting significant disparities (70.4% for all patients, 58% for African Americans, and 60.4% Hispanics.) The Committee questioned whether providers have control over medication adherence and considered public reporting consequences for clinicians, as well as how to handle issues including potential small denominators, capture of patient choice and contraindications (such as allergies and patient refusal), and the role of EHR interoperability in data capture. Some Committee members questioned the need for cholesterol value validity, though the shifting recommendations away from cholesterol thresholds present additional measurement challenges. The Committee recommended continued endorsement.

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Appendix A: Details of Measure Evaluation

Measures Recommended

Measures Not Recommended

~~Recommendation Deferred by the Standing Committee~~

Measures Withdrawn From Consideration

Measures Recommended

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

0543 Adherence to Statin Therapy for Individuals with Cardiovascular Disease

Submission | Specifications

Description: The percentage of individuals with cardiovascular disease (CVD), including coronary artery disease, cerebrovascular disease, and peripheral artery disease presumed to be of atherosclerotic origin, who are prescribed statin therapy that had a Proportion of Days Covered (PDC) for statin medications of at least 0.8 during the measurement period (12 consecutive months).

Numerator Statement: Individuals with CVD who had at least two prescription drug claims for statins and have a PDC for statin medications of at least 0.8

Denominator Statement: Individuals at least 21 years of age as of the beginning of the measurement period with CVD (including coronary artery disease, cerebrovascular disease, and peripheral artery disease presumed to be of atherosclerotic origin) and at least two claims for statins during the measurement period (12 consecutive months)

Exclusions: Not Applicable

Adjustment/Stratification:

Level of Analysis: Clinician : Group/Practice, Health Plan, Integrated Delivery System, Population : State

Setting of Care: Ambulatory Care : Clinician Office/Clinic

Type of Measure: Process

Data Source: Administrative claims

Measure Steward: Centers for Medicare & Medicaid Services

STANDING COMMITTEE MEETING [12/04/2014-12/05/2014]

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

(1a. Evidence, 1b. Performance Gap, 1c. High Impact)

1a. Evidence: **H-8**; **M-9**; **L-0**; **I-0; IE-0**; 1b. Performance Gap: **H-7**; **M-10**; **L-2**; **I-0;** 1c. Impact: **H-10**; **M-6**; **L-2**; **I-0**

Rationale:

- Based on the 2013 ACC/AHA guideline recommendations as well as a 2010 meta-analysis of 21 randomized controlled studies and eight recent relevant studies, the Committee agreed that the evidence provided shows that adherence to statins among patients with coronary artery disease can result in lower all-cause mortality,
- A Committee member questioned the impact of this measure considering its original endorsement in 2009, performance data from 2011, and questioned the measure effectiveness over time in improving care or adherence.
- Overall, the Committee concluded that the data presented by the developer on statin adherence taken from 10 states, 38 prescription drug plans, 434 physician groups and 31 ACOs demonstrates an opportunity for improvement with a mean performance rate of 70.4%. Additionally the Committee agreed the measure is disparities sensitive given the data showing the average measure results for African Americans (58%) and Hispanics (60.4%) are lower than the combined mean performance rate (70.4%)
- Considered by the Committee as high priority given that coronary artery disease is a major cause of morbidity and mortality in the United States.

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-14**; **L-5**; **I-0** 2b. Validity: **H-1**; **M-14**; **L-4**; **I-0**

Rationale:

- The Committee agreed that the measure specifications were precise highlighting updates to align with the 2013 ACC/AHA Guidelines and provided both ICD-9 and ICD-10 codes.
- Some Committee members were concerned with the accuracy of the coding

- The developer replied that there were no additional information other than the accuracy is in congruent with other cardiovascular measures that are in NQF.
- Empirical reliability testing was conducted at the measure score level using the data source at different levels of analysis (states, drug plans, physician groups, and ACOs) specified for the measure. Reliability results for states is 0.99; mean results for drug plans is 0.71; mean results for physician groups is 0.72; and 31 ACOs range from 0.69–0.98.
- The developers conducted convergent validity testing by comparing the measure results to similar NQF-endorsed measures for adherence to medications. Results are in the same range of 70-76% for this measure and three other measures of adherence for ACOs, plans, groups and states with correlation coefficients >0.90 for states but lower correlations for drug plans and physician groups.
- The developer acknowledged some threats to validity with missing data however, an empirical assessment was conducted which concluded the missing data was not a major threat to the overall validity of this measured.

3. Feasibility: H-9; M-10; L-0; I-0

(3a. Clinical data generated during care delivery; 3b. Electronic sources; 3c.Susceptibility to inaccuracies/ unintended consequences identified 4d. Data collection strategy can be implemented)

Rationale:

- The Committee agreed the data currently being collected through pharmacy claims is feasible as both the cost and burden of data collection are minimal.

4. Use and Usability: H-3; M-5; L-6; I-5

(Meaningful, understandable, and useful to the intended audiences for 3a. Public Reporting/Accountability and 3b. Quality Improvement)

Rationale:

- The measure is currently being used in Physician Feedback Quality and Resource Use Report (QRUR) with benchmarking. The measure is not publicly reported but has been submitted through the Measures under Consideration process for the CMS ACO Shared Savings program.
- The Committee stressed the lack of information provided on improvement of the measure overtime considering it was originally endorsed in 2009, with testing data from 2011. The developer emphasized there is a current delay in getting the data from the program that can be used for analysis and trend analysis.

5. Related and Competing Measures

- No related or competing measures noted.

Standing Committee Recommendation for Endorsement: Y-15; N-4

6. Public and Member Comment [03/24/15-04/07/15]

Comments Received:

- Comments received for this measure raised several issues:
  - The importance to define therapeutic treatment levels, specifically defining "at least moderate or high intensity"
  - The importance to define medication intolerance, specifically incorporating patients who are prescribed alternative therapies when statin use is contraindicated such as HMG-COA reductase inhibitor combinations
  - Provider control to report medication adherence

Developer Action:

- Immediately prior to the Post-Comment Period Call, NQF staff was notified by the developer will no longer be maintaining the measure as it is not being utilized in the CMS Quality and Resource Use Report (QRUR).
- Committee Response: Thank you for your comment. As the measure developer will no longer

~~maintaining the measure and the measure will be withdrawn from further consideration, no further Committee comments are required~~
~~**7. Consensus Standards Approval Committee (CSAC) Vote: Y X; N X; A X**~~
~~**8. Board of Directors Vote: Y X; N X**~~
~~**9. Appeals**~~

0090 Emergency Medicine: 12-Lead Electrocardiogram (ECG) Performed for Non-Traumatic Chest Pain (eMeasure)

Submission | Specifications

Description: Percentage of patients aged 40 years and older with an emergency department discharge diagnosis of non-traumatic chest pain who had a 12-lead electrocardiogram (ECG) performed

Numerator Statement: Patients who had a 12-Lead ECG performed

Denominator Statement: All patients aged 40 years and older with an emergency department discharge diagnosis of non-traumatic chest pain

Exclusions: Medical reasons for not performing a 12-lead ECG

Patient reasons for not performing a 12-lead ECG

Adjustment/Stratification:

Level of Analysis: Clinician : Group/Practice

Setting of Care: Hospital/Acute Care Facility, Other

Type of Measure: Process

Data Source: Electronic Clinical Data, Electronic Clinical Data : Electronic Health Record

Measure Steward: American Medical Association - Physician Consortium for Performance Improvement (AMA-PCPI)

STANDING COMMITTEE MEETING [12/04/2014-12/05/2014]

1. Importance to Measure and Report: <u>The measure meets the Importance criteria</u>

(1a. Evidence, 1b. Performance Gap, 1c. High Impact)

1a. Evidence: **H-10**; **M-6**; **L-1**; **I-0; IE-0**; 1b. Performance Gap: **H-0**; **M-10**; **L-7**; **I-0;** 1c. Impact: **H-1**; **M-8**; **L-8**; **I-0**

<u>Rationale</u>:

- The Committee agreed that the evidence presented from the summary of two clinical practice guidelines, 1) 2013 ACCF/AHA Guidelines for the Management of ST-Elevation Myocardial Infarction and 2) ACCF/AHA Task Force on Practice Guidelines Class I recommendation and from additional recent research studies is sufficient.
- One Committee member was concerned that the measure does not address importance of detecting a STEMI patient rather only to not performing an ECG in a patient with non-traumatic chest pain.
- The developer provided electronic clinical data from 2010 PQRS claims data from 69, 602 providers with 97.05% aggregate performance rate and 95.16% mean performance rate. The 25th percentile is 96.55% leaving which the Committee agreed does not leave much room for improvement.
    - The developer noted that the performance data may be skewed upward as it is from a voluntary reporting program and could imply that most of the participants who are reporting are already performing well on this type of care.
- Some Committee members questioned the priority of this measure as it identifies only missed myocardial infarction (MI) patients at discharge. Considering the improvements in MI care within the past few years, the missed MI rate being captured is low.
    - The developer highlighted the importance of chest pain as it is a very high prevalent issue and if an MI is missed, the consequences can be severe and costly.
- The Committee did not come to consensus with both performance gaps (58.8%) and priorities (52.9%) in the gray zone.

2. Scientific Acceptability of Measure Properties: <u>The measure meets the Scientific Acceptability criteria</u>

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

2a. Reliability: **H-3**; **M-14**; **L-0**; **I-0;** 2b. Validity: **H-11**; **M-6**; **L-0**; **I-0**

<u>Rationale</u>:

- The Committee agreed the specifications presented were clearly defined and consistent with the evidence. The eMeasure specifications capture the data elements and measure logic needed for the automated measure calculation. The developer value sets and the applicable ICD-9 and ICD-10 codes. The developer submitted the appropriate eMeasure documentation, except the "eMeasure XML" due to anticipated updates and unavailability of the Measure Authoring Tool (MAT). The developer agreed to submit the missing documentation in the 1st quarter of 2015.
- Reliability testing was performed at the data element level with data abstracted from one EHR in 2010 and tested at both the individual and group levels of analysis, with data from one urban academic center in a large Midwestern city in 50 charts in 3416 eligible patients. Kappa reliability testing was conducted on critical data elements in the measure, the results of the testing found 100% agreement for the numerator and exceptions and 94% agreement for the denominator (kappa score was not provided).
- The developer submitted the appropriate eMeasure documentation, except the "eMeasure XML" due to anticipated updates and unavailability of the Measure Authoring Tool (MAT). The developer agreed to submit the missing documentation in the 1st quarter of 2015.
- Empiric reliability testing on the data element level counts for empiric validity testing. Validity testing was also with a systematic assessment of face validity of performance scores using an ACEP (Quality and Performance Committee – 2013-2014) expert panel. The results indicated the majority of the expert panel was in agreement that the measure's performance score could be used to distinguish good and poor quality. Additionally kappa validity testing conducted showed a score of 1.00 indicates the measure exceptions demonstrate almost perfect agreement.

3. Feasibility: H-5; M-11; L-1; I-0

(3a. Clinical data generated during care delivery; 3b. Electronic sources; 3c.Susceptibility to inaccuracies/ unintended consequences identified 4d. Data collection strategy can be implemented)

Rationale:

- Data for the eMeasure was abstracted from one EHR with an eMeasure feasibility score provided on the testing site. Overall, the Committee agreed the measure is moderately feasible.

4. Use and Usability: H-1; M-14; L-1; I-1

(Meaningful, understandable, and useful to the intended audiences for 3a. Public Reporting/Accountability and 3b. Quality Improvement)

Rationale:

- The measure is currently not publicly reported although the developer stated it would be submitted for public reporting and maintenance of certification programs. Additionally the claims and registry complements to this measure that were not included for the endorsement submission, were included in PQRS and in professional certification/recognition with the American Board of Emergency Physicians.

5. Related and Competing Measures

- This measure is related to facility-level measure NQF #0289 Median Time to ECG. Median time from emergency department arrival to ECG (performed in the ED prior to transfer) for acute myocardial infarction (AMI) or Chest Pain patients (with Probable Cardiac Chest Pain).
- The Committee agreed there is minimal overlap between the two measures.

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

6. Public and Member Comment[03/24/15-04/07/15]

- Comments received showed general support for this measure. However, commenters highlighted that there is still a performance gap with timely EKGs in sub-populations.
- "Despite some concerns of a performance gap from the standing committee, there are still many eligible professionals not reporting on this measure and the current literature reveals some inequalities

in the timing of EKG received by sex and minority status, further demonstrating the importance of this measure maintaining endorsement."

- Committee Response:
  - While the Committee recognized the narrow window for improvement and considered the voluntary reporting programs that could skew the data, the Committee agrees with the commenter, that this measure should continue to be part of the Cardiovascular portfolio.

7. Consensus Standards Approval Committee (CSAC) Vote: Y-X; N-X; A-X

8. Board of Directors Vote: Y-X; N-X

9. Appeals

1525 Atrial Fibrillation and Atrial Flutter: Chronic Anticoagulation Therapy

Submission | Specifications

Description: Percentage of patients aged 18 years and older with a diagnosis of nonvalvular atrial fibrillation (AF) or atrial flutter whose assessment of the specified thromboembolic risk factors indicate one or more high-risk factors or more than one moderate risk factor, as determined by CHADS2 risk stratification, who are prescribed warfarin OR another oral anticoagulant drug that is FDA approved for the prevention of thromboembolism

Numerator Statement: Patients who are prescribed warfarin OR another oral anticoagulant drug that is FDA approved for the prevention of thromboembolism

Denominator Statement: All patients aged 18 years and older with a diagnosis of nonvalvular atrial fibrillation (AF) or atrial flutter whose assessment of the specified thromboembolic risk factors indicate one or more high-risk factors or more than one moderate risk factor, as determined by CHADS2 risk stratification

Exclusions: Denominator Exclusions:

- Patients with mitral stenosis or prosthetic heart valves
- Patients with transient or reversible causes of AF (eg, pneumonia, hyperthyroidism, pregnancy, cardiac surgery)

Denominator Exceptions:

Documentation of medical reason(s) for not prescribing warfarin OR another oral anticoagulant drug that is FDA approved for the prevention of thromboembolism (eg, allergy, risk of bleeding, other medical reason)

Documentation of patient reason(s) for not prescribing warfarin OR another oral anticoagulant drug that is FDA approved for the prevention of thromboembolism (eg, economic, social, and/or religious impediments, noncompliance, patient refusal, other patient reason)

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 [12/04/2014-12/05/2014]

1. Importance to Measure and Report: <u>The measure meets the Importance criteria</u>

(1a. Evidence, 1b. Performance Gap, 1c. High Impact)

1a. Evidence: **H-16**; **M-2**; **L-0**; **I-0; IE-0**; 1b. Performance Gap: **H-17**; **M-0**; **L-0**; **I-0;** 1c. Impact: **H-17**; **M-0**; **L-0**; **I-0**

<u>Rationale</u>:

- The Committee agreed that there is strong evidence to support the use of chronic anticoagulation therapy in the prevention of thromboembolism/ stroke and the reduction of stroke morbidity and mortality rates from two Clinical Practice Guidelines 1) ACCF/AHA/HRS 2013 Guideline and 2) the ACCP

2012 Guideline studies.

- Data presented by the developer showed significant variability in the use of oral anticoagulation for the prevention of thromboembolism with the overall mean performance rate for 2011 and 2012 at 57.2% and 59.4% respectively. Committee members concluded there is a strong performance gap and opportunity for improvement.
- The Committee agreed the measure is disparities sensitive with the data suggesting at risk populations (women, older patients, African Americans and those with low income) are less likely to be treated with warfarin.
- Atrial fibrillation is a prevalent disease associated with high morbidity, mortality and cost.

2. Scientific Acceptability of Measure Properties: <u>The measure meets the Scientific Acceptability criteria</u>

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

2a. Reliability: **H-8**; **M-8**; **L-1**; **I-0** 2b. Validity: **H-3**; **M-14**; **L-0**; **I-0**

<u>Rationale</u>:

- The Committee determined that the measure specifications are clearly defined and consistent with the evidence presented, noting that all codes necessary to calculate the measure are present.
- The Committee concluded the test sample was adequate with a sample size of 225,446 patients with atrial fibrillation/flutter in the PINNACLE registry for CY2012. Reliability testing was conducted at the performance measure score level. For the performance measure level, the developer conducted a signal-to-noise reliability test with an overall score of 0.99.
- Face validity was assessed by various experts serving on ACC and AHA committees to establish agreement that the measure's performance score could be used to distinguish quality. The majority (88.2%) of these experts either agreed or strongly agreed that the measure's performance score could be used to distinguish quality. Moreover the developers elicited content validity assessments from the development workgroup members, from a public comment process, and other various review and approval processes.
- Overall, the Committee agreed that exclusions are consistent with the evidence provided. However, one Committee member raised concerns with the exclusions of the measure such as religious preference, patient preference and compliance, suggesting it could be a potential threat to validity. With further discussion, the Committee came to a consensus that this exception is acceptable as patient refusal to anticoagulants is common in the field.

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

(3a. Clinical data generated during care delivery; 3b. Electronic sources; 3c.Susceptibility to inaccuracies/ unintended consequences identified 4d. Data collection strategy can be implemented)<u>Rationale</u>:

- Overall, the Committee agreed the measure was feasible to implement. Some raised concerns with the feasibility of extracting some data elements (i.e. mitral stenosis, economic, social, religious issues, and noncompliance) via EMRs.

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

(Meaningful, understandable, and useful to the intended audiences for 3a. Public Reporting/Accountability and 3b. Quality Improvement)

<u>Rationale</u>:

- This measure is currently publicly reported in PQRS and in professional certification and recognition in ACC's Cardiology Practice Improvement Pathway (CPIP)/Bridges to Excellence (BTE). This measure will also be included in the 2014 PQRS Qualified Clinical Data Registry as part of the PINNACLE registry.
- Concerns were raised regarding the use and access to the PINNACLE Registry as not all providers use the registry.

5. Related and Competing Measures

- This measure directly is related to:
- 1524: Assessment of Thromboembolic Risk Factors (CHADS2)

- 0241 : Stroke and Stroke Rehabilitation: Anticoagulant Therapy Prescribed for Atrial Fibrillation (AF) at Discharge
- 0436 : STK-03: Anticoagulation Therapy for Atrial Fibrillation/Flutter The Committee discussed that although these measures address the same focus , the target populations are slightly different, justifying the need for both measures

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

6. Public and Member Comment [03/24/15-04/07/15]Comments Received:

- The comments received for this measure had three major themes:
  - A request to include all "at risk" atrial fibrillation (AF) patients in the numerator statement.
  - A request to use CHA2DS2 VASc instead of CHADS2, according to the 2014 AHA/ACC/HRS Guideline for the Management of Patients with Atrial Fibrillation
  - Addressing the exclusion of patients who refuse treatment

Developer Response:

- We are in the process of convening the writing committee to update the entire atrial fibrillation measure set, and will share with them your feedback regarding "at risk" versus high risk.

As noted in our comment for 1525, The reason why this measure does not include the CHA2DS2-VASc was that the NQF deadline for measure submission (December 23, 2013) did not align with the updated Atrial Fibrillation guidelines were not yet released. As a result, modifications to the measure could not be made, and tested utilizing the NQF evaluation criteria in time for the measure review. The reason we cannot modify this measure to include CHA2DS2-VASc during the NQF endorsement process is twofold. NQF requires that measures tested given the existing measure specification. Given that at the time of submission the guideline had not yet been released, the measure reflected the previous guideline recommendations of CHADS2, as well as the testing data provided to NQF that shows that the measure is feasible, reliable, and valid. Second, as measure developers we try to ensure an open process to providing feedback on all measures included in a measure set. Therefore, we have not only a peer review process, but also an open comment period where we encourage the public to comment on our draft measure set prior to it being finalized. We would provide such a process even for changes such as changes CHADS2 to CHA2DS2-VASc. We are in the process of convening the writing committee to update our atrial fibrillation measure set and do plan to look at replacing CHADS2 with CHA2DS2-VASc. With regards to considering the role or non-role of percutaneous, we will share your feedback with the writing committee as they review this measure and start the process of updating the entire measure set. Thank you again for your comment.

- Measure #1525 does include both medical and patient reason exceptions for not prescribing warfarin OR another oral anticoagulant drug that is FDA approved for the prevention of thromboembolism. Patient reason exceptions include economic, social, and/or religious impediments, noncompliance, patient refusal, other patient reason. Given the importance in engaging consumers in their care decisions, we believe in some instances the patients may choose not to have a prescription issued by the physician.

Committee Response:

- Thank you for your comment. Although some Committee members raised concerns regarding the exclusion for patient refusals, the Committee recommended the measure for continued endorsement.

7. Consensus Standards Approval Committee (CSAC) Vote: Y-X; N-X; A-X

8. Board of Directors Vote: Y-X; N-X

9. Appeals

2461 In-Person Evaluation Following Implantation of a Cardiovascular Implantable Electronic Device (CIED)

Submission | Specifications

Description: Proportion of adult patients with a new CIED with an in-person evaluation within 2 to 12 weeks

following implantation.

Numerator Statement: This measures assess the number of patients from the denominator with an in-person evaluation within 2-12 weeks following implantation. For the purposes of this measure, an "in-person evaluation" is defined as an in-person interrogation device evaluation either with or without iterative adjustment, as clinically indicated. The in-person evaluation can be provided by any trained physician or Clinically Employed Allied Professional (CEAP) in a designated CIED follow-up clinic, medical institution, or physician office.

Denominator Statement: All Medicare FFS patients with implantation of a new CIED during the reporting period. CIEDs encompassed for this measure are the following devices:

- Pacemakers (PMs)
- Implantable Cardioverter Defibrillators (ICDs)
- Cardiac resynchronization devices (CRTs)

Exclusions: Exclude patients with any of the following diagnoses/conditions:

- Patients with Implantable Loop Recorders or Implantable Cardiovascular Monitors.
- Patients with pulse generator exchange only.
- Patients with prior CIED implantation.
- Patient preference for other or no treatment.

Adjustment/Stratification:

Level of Analysis: Clinician : Individual

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

Type of Measure: Process

Data Source: Administrative claims

Measure Steward: Heart Rhythm Society

STANDING COMMITTEE MEETING [12/04/2014-12/05/2014]

1. Importance to Measure and Report: <u>The measure meets the Importance criteria</u>

(1a. Evidence, 1b. Performance Gap, 1c. High Impact)

1a. Evidence: **H-6**; **M-10**; **L-0**; **I-0; IE-0**; 1b. Performance Gap: **H-13**; **M-3**; **L-0**; **I-0;** 1c. Impact: **H-11**; **M-5**; **L-0**; **I-0**

<u>Rationale</u>:

- Evidence provided by the developer includes a clinical practice guideline, an Expert Consensus Statement by the Heart Rhythm Society & European Heart Rhythm Association, and additional publications that support the recommendation of patients with newly implanted devices should have an in-person follow-up appointment 2-12 weeks from implantation, and yearly in-person evaluations from the time of implantation.
- Using data from the Ingenix (now OptumInsight) anonymized database of claims information, the developer highlights various performance gaps in follow up evaluations for newly implanted CIEDs with only 42.4% having had an initial in-person visit within 2 to 12 weeks. Additionally data provided illustrates only 19.62% receiving recommended follow up evaluation, with performance rates ranging from 14.07-27.27%.
- The Committee acknowledged the measure to be disparities sensitive with minorities having lower incidence for follow up visits.
- Approximately 200,000 Americans now receive a CIED annually, representing a substantial number of patients with implantable cardiac device, and a NQS priority, the Committee acknowledged this is a high priority.

2. Scientific Acceptability of Measure Properties: <u>The measure meets the Scientific Acceptability criteria</u>

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

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

<u>Rationale</u>:

- The data source is from both administrative and electronic clinical data and is specified at the clinician level of analysis. Overall, the Committee determined that the measure specifications were precise, noting that all codes necessary to calculate the measure were present and the specifications were consistent with the evidence presented.
- Some Committee members raised concerns with the measure's exclusion of patients with prior CIED implants as those patients are still vulnerable to complications. The developer explained that this helps to minimize the variability.
- Reliability testing was conducted at the data element level using data derived from administrative claims.
- Validity testing was conducted at the data element level comparing data from administrative claims to patient charts, results of this testing indicate sensitivities in the 95-100% range; specificities in the 92-93% range; positive predictive values were greater than 89% and negative predictive values were greater than 91%.

3. Feasibility: H-5; M-11; L-0; I-0

(3a. Clinical data generated during care delivery; 3b. Electronic sources; 3c.Susceptibility to inaccuracies/ unintended consequences identified 4d. Data collection strategy can be implemented)

<u>Rationale</u>:

- Overall the Committee agreed the measure is feasible to implement as it is collected through electronic administrative claims.

4. Use and Usability: H-5; M-11; L-0; I-0

(Meaningful, understandable, and useful to the intended audiences for 3a. Public Reporting/Accountability and 3b. Quality Improvement)

<u>Rationale</u>:

- Although the measure is currently not publicly reported, it has been submitted to CMS for public reporting and payment programs for 2015.
- The Committee acknowledged the measure demonstrates usability toward achieving the goal of high quality, efficient healthcare for individuals or populations.

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 [03/24/15-04/07/15]

- The comment received requested that the range of in-person follow up visits be stratified by time.

Developer response:

- As noted in the measure submission application, appropriate device programming can impact on patient outcomes following CIED implantation. Intermediate outcomes include optimizing cardiac device function to meet the patient's clinical needs, along with detection and treatment of arrhythmias. Health outcomes include improving the patient's quality of life. For example, optimizing ICD programming may reduce unnecessary device therapy and could potentially reduce mortality (as suggested by MADIT-RIT)."It has also been recently demonstrated that follow-up within 2-12 weeks after CIED placement is independently associated with improved survival at 1 year. (Hess 2013) In addition, the HRS/EHRA expert consensus on the monitoring of cardiovascular implantable electronic devices (CIEDs): description of techniques, indications, personnel, frequency and ethical considerations states that device interrogations should continue every 3-6 months after the initial outpatient face-to-face visit that occurs within the first 2-12 weeks post-implantation. Heart Rhythm. 2008;5(6):907-925.

The timeframe for the performance measure should align with the timeframe specified in the clinical evidence and the consensus statement and should not be further delineated or stratified.

Committee response:

- The developer may consider these suggestions for future iterations of the measure.

7. Consensus Standards Approval Committee (CSAC) Vote: Y-X; N-X; A-X

8. Board of Directors Vote: Y-X; N-X

9. Appeals

2474 Cardiac Tamponade and/or Pericardiocentesis Following Atrial Fibrillation Ablation

Submission | Specifications

Description: Rate of cardiac tamponade and/or pericardiocentesis following atrial fibrillation (AF) ablation.

Numerator Statement: The number of patients from the denominator with cardiac tamponade and/or pericardiocentesis occurring within 30 days following atrial fibrillation ablation.

Denominator Statement: All patients aged 18 years and older with atrial fibrillation ablation performed during the reporting period.

Exclusions: No exclusions.

Adjustment/Stratification:

Level of Analysis: Facility, Clinician : Individual

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

Type of Measure: Outcome

Data Source: Administrative claims

Measure Steward: Heart Rhythm Society

STANDING COMMITTEE MEETING [12/04/2014-12/05/2014]

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

(1a. Evidence, 1b. Performance Gap, 1c. High Impact)

1a. Evidence: **16-Y; 1-N;** 1b. Performance Gap: **H-1**; **M-8**; **L-6**; **I-2;** 1c. Impact: **H-2**; **M-9**; **L-4**; **I-1**

Rationale:

- The Committee acknowledged the importance of this outcome measure, noting the correlation between the health outcomes to processes of care.
- One Committee member questioned whether there is an alternative to ablation. The developer acknowledged an alternative of the use of medication therapy and discussed on the two approaches, highlighting that although there are other alternatives, ablation is the last effective option for this patient group.
- The mean performance rate ranges from 1.2-2.4% reported across literature reviews. Some Committee members interpreted the results as moderate due to low incidence rates, while others did not view this as an opportunity for improvement.
- The agreed with the high severity impact of the measure. However, the Committee noted the low prevalence of cardiac tamponade and/or pericardiocentesis with the incidence of cardiac tamponade at 2 cases per 10,000 population in the United States.

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-9**; **L-1**; **I-0;** 2b. Validity: **H-1**; **M-10**; **L-4**; **I-1**

Rationale:

- The Committee found the measure specifications to be clearly defined. The data source is specified as

administrative claims various levels of analysis (individual clinician, and hospital/facility/agency).
- Reliability testing was conducted at the performance measure score level through beta-binomial model measuring signal-to-noise ratio for individual clinicians and facilities, and the results demonstrated high reliability analysis, which the Committee stated was sufficient.
- Face validity was assessed by an expert committee review during the measure development phase and agreed that the measure was valid as specified.
- Empiric validity testing was conducted at the performance measure score level to minimize variability by setting (i.e., provider level data vs. hospital level data).

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 4d. Data collection strategy can be implemented)

Rationale:

- The Committee agreed the measure is feasible for implementation as data elements are routinely generated and obtained through administrative data claims; additionally there are electronic forms readily available.

4. Use and Usability: H-7; M-9; L-0; I-0

(Meaningful, understandable, and useful to the intended audiences for 3a. Public Reporting/Accountability and 3b. Quality Improvement)

Rationale:

- The measure is currently publicly reported in PQRS since 2015. The Committee encourages the use of this measure to better understand the trends for quality improvement initiatives.

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 [03/24/15-04/07/15]

- The comment received raised the issue of a lack in performance gap and did not agree with the Committee's recommendation to endorse this measure.
- The committee reviewed the performance gap issue and agreed that although the performance rates were low across literature reviews, cardiac tamponade is critical to patient safety in cardiovascular care.

7. Consensus Standards Approval Committee (CSAC) Vote: Y-X; N-X; A-X

8. Board of Directors Vote: Y-X; N-X

9. Appeals

0715 Standardized adverse event ratio for children < 18 years of age undergoing cardiac catheterization

Submission | Specifications

Description: Ratio of observed to expected clinically important adverse events, risk-adjusted using the Catheterization for Congenital Heart Disease Adjustment for Risk Method (CHARM)

Numerator Statement: Number of diagnostic and interventional cardiac catheterization cases for children < 18 years of age resulting in a clinically important adverse event, performed by an institution performing at least 50 cases per year in pediatric patients < 18 years of age.

Denominator Statement: Number of diagnostic and interventional cardiac catheterization cases for children < 18

years of age, performed by an institution performing at least 50 cases per year in pediatric patients < 18 years of age.

Exclusions: Primary electrophysiology cases, ablation cases, pericardiocentesis only, thoracentesis only.

Adjustment/Stratification:

Level of Analysis: Facility

Setting of Care: Hospital/Acute Care Facility

Type of Measure: Outcome

Data Source: Electronic Clinical Data, Paper Medical Records, Electronic Clinical Data : Registry

Measure Steward: Boston Children's Hospital

STANDING COMMITTEE MEETING [12/04/2014-12/05/2014]

1. Importance to Measure and Report: <u>The measure meets the Importance criteria</u>

(1a. Evidence, 1b. Performance Gap, 1c. High Impact)

1a. Evidence: **15-Y; 1-N**; 1b. Performance Gap: **H-2**; **M-12**; **L-0**; **I-1;** 1c. Impact: **H-10**; **M-6**; **L-0**; **I-0**

<u>Rationale</u>:

- The Committee agreed that there is evidence to support the correlation between the occurrence of adverse clinical outcomes during a cardiac catheterization, which result in harm or potential patient injury and require assessment of causality to focus improvement efforts.
- Observed adverse event rates from eight pediatric hospitals used in testing are included with rates from these facilities ranging from 1.71% to 7.86%, however it was not clear whether these rates reflect primarily moderate or severe events.
- Congenital heart disease is a leading cause of morbidity/mortality, affecting 1% of infants. Cardiac catheterization has become a common quote interventional procedure with therapeutic goals complementing surgical strategies helping to eliminate the need for surgery.

2. Scientific Acceptability of Measure Properties: <u>The measure meets the Scientific Acceptability criteria</u>

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

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

<u>Rationale</u>:

- A sample of 3,359 pediatric patients from 11 pediatric hospitals with a total of 784 cases were abstracted from EHRs and paper records entered into the database registry. The Committee agreed that the specifications were detailed and consistent with the evidence presented.
- Reliability testing was assessed using a statistical risk model using three risk factors included in the specifications (procedure type risk group, number of indicators of hemodynamic vulnerability, and age. The c-statistic reported for the risk-adjustment model was 0.72.
- The data element validity testing indicates that 85% of the 149 adverse events included in the medical record were captured in the registry.

3. Feasibility: H-6; M-9; L-0; I-1

- *(3a. Clinical data generated during care delivery; 3b. Electronic sources; 3c.Susceptibility to inaccuracies/ unintended consequences identified 4d. Data collection strategy can be implemented)*

<u>Rationale</u>:

- The Committee agreed the measure is feasible to implement, as all of the data elements are used in electronic sources.

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

(Meaningful, understandable, and useful to the intended audiences for 3a. Public Reporting/Accountability and 3b. Quality Improvement)

<u>Rationale</u>:

- The Committee noted that the measure is currently being used internally for quality improvement in the

Congenital Cardiac Catheterization Project on Outcomes-Quality Improvement (C3PO-QI) program.

- The developer stated they would like to include in future public reporting though concrete plans are not in place. They are, however, tracking on the progress of participating institutions and providing reporting to participants.

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 [03/24/15-04/07/15]

- The comment received showed support for this measure.

7. Consensus Standards Approval Committee (CSAC) Vote: Y-X; N-X; A-X

8. Board of Directors Vote: Y-X; N-X

9. Appeals

2438 Beta-Blocker Therapy (i.e., Bisoprolol, Carvedilol, or Sustained-Release Metoprolol Succinate) for LVSD Prescribed at Discharge

Submission | Specifications

Description: Proportion of heart failure patients age18 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.

Numerator Statement: Patients who are prescribed bisoprolol, carvedilol, or sustained-release metoprolol succinate for LVSD at hospital discharge.

Denominator Statement: Heart failure patients with current or prior documentation of left ventricular ejection fraction (LVSD) < 40%.

Exclusions: 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

Adjustment/Stratification:

Level of Analysis: Facility

Setting of Care: Hospital/Acute Care Facility

Type of Measure: Process

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

Measure Steward: The Joint Commission

STANDING COMMITTEE MEETING [12/04/2014-12/05/2014]

1. Importance to Measure and Report: <u>The measure meets the Importance criteria</u>

(1a. Evidence, 1b. Performance Gap, 1c. High Impact)

1a. Evidence: **H-4**; **M-11**; **L-1**; **I-0; IE-0**; 1b. Performance Gap: **H-7**; **M-11**; **L-0**; **I-1;** 1c. Impact: **H-11**; **M-7**; **L-1**; **I-0**

<u>Rationale</u>:

- Evidence provided by the developer included four large randomized trials indicating that using one of three specific beta blocker drugs (Bisoprolol, Carvedilol, or Sustained-Release Metoprolol Succinate) reduces morbidity and mortality for patients with heart failure by 27-34%.
- Although guidelines from the ACCF/AHA was classified as a Class 1 recommendation, it was emphasized by the Committee that this evidence does not support the prescription of the three specific beta blockers at the time of discharge but rather the benefits of these drugs are for long-term therapy and compliance.
- During pilot testing in nine sites (878 patients), the performance rates varied from 61.5 – 100%, displaying an opportunity for improvement.
- Approximately 5.1 million patients have heart failure with a 20% lifetime risk of developing heart failure, making it a national health priority.

2. Scientific Acceptability of Measure Properties: <u>The measure meets the Scientific Acceptability criteria</u>

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

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

<u>Rationale</u>:

- Empiric validity testing was performed for both the data elements and the measure score, however did not show statistical significance as a result of small sample sizes.
- Developers provided the % agreement and Kappa scores for three data elements: Bisoprolol, Carvedilol, or Sustained-Release Metoprolol Succinate Prescribed for LVSD at Discharge (88.55%; 0.72); LVSD < 40% (70.15%; 0.77); Reason for No Bisoprolol, Carvedilol, or Sustained-Release Metoprolol Succinate Prescribed for LVSD at Discharge (84.58%; 0.33) , showing fair to substantial agreement

3. Feasibility: H-1; M-11; L-6; I-1

(3a. Clinical data generated during care delivery; 3b. Electronic sources; 3c.Susceptibility to inaccuracies/ unintended consequences identified 4d. Data collection strategy can be implemented)

<u>Rationale</u>:

- The Committee agreed the measure is feasible for implementation, however voiced concerns that using data elements from paper medical records can contribute to administrative and cost burdens.

4. Use and Usability: H-2; M-9; L-8; I-0

(Meaningful, understandable, and useful to the intended audiences for 3a. Public Reporting/Accountability and 3b. Quality Improvement)

<u>Rationale</u>:

- This new process measure is one of six HF measures from TJC Advanced Certification in Heart Failure (ACHF) program starting in 2014, with approximately 70-80 facilities participating as of the time of the meeting. The measure data elements are also part of the GWTG HF data collection tool.

5. Related and Competing Measures

- N/A

Standing Committee Recommendation for Endorsement: **Y-17**; **N-2**

6. Public and Member Comment [03/24/15-04/07/15]

- The comments received for this measure included an overall theme to consider the burden of data collection.

Developer Response:

- The designated setting for this measure is: Hospital/Acute Care Facility and this measure was not intended to be a claims based measure, nor do hospitals have access to pharmacy claims. The measure requires: documentation that bisoprolol, carvedilol, or sustained-release metoprolol succinate was prescribed at discharge. With consideration of burden of abstraction, the Hospital/Acute Care Facility has the flexibility in using a number of available sources in order to abstract this information. These sources include but are not limited to: Medication Administration Record (MAR), Discharge Summary, Discharge Instruction Sheet, Nursing Notes, Progress Notes, Physician Orders, Physician's Notes, Transfer Sheet, and Medication Reconciliation Form.

Committee Response

- The Committee recognizes the commenters' concerns with paper medical records and its potential burden to the end users. However, the Committee agreed during the in-person meeting the data collection methods are based on the program the measures are used, and that they are feasible for implementation.

7. Consensus Standards Approval Committee (CSAC) Vote: Y-X; N-X; A-X

8. Board of Directors Vote: Y-X; N-X

9. Appeals

2439 Post-Discharge Appointment for Heart Failure Patients

Submission | Specifications

Description: Patients for whom a follow-up appointment, including location, date, and time, for an office or home health visit for management of heart failure was scheduled within 7 days post-discharge and documented.

Numerator Statement: Patients for whom a follow-up appointment, including location, date, and time, for an office or home health visit for management of heart failure was scheduled within 7 days post-discharge and documented.

Denominator Statement: All heart failure patients discharged from a hospital inpatient setting to home or home care.

Exclusions: 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
- Patient 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 locations other than home, home care, or law enforcement
- Patients with a documented Reason for No Post-Discharge Appointment Within 7 Days

Adjustment/Stratification:

Level of Analysis: Facility

Setting of Care: Hospital/Acute Care Facility

Type of Measure: Process

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

Measure Steward: The Joint Commission

STANDING COMMITTEE MEETING [12/04/2014-12/05/2014]

1. Importance to Measure and Report: <u>The measure meets the Importance criteria</u>

(1a. Evidence, 1b. Performance Gap, 1c. High Impact)

1a. Evidence: **H-0**; **M-4**; **L-4**; **I-3; IE-6**; 1b. Performance Gap: **H-3**; **M-12**; **L-2**; **I-0;** 1c. Impact: **H-11**; **M-4**; **L-2**; **I-0**

Rationale:

- The Committee agreed that the evidence presented from a systematic review of two clinical practice guidelines, 1) 2013 ACCF/AHA: Scheduling an early follow-up visit (within 7 to 14 days) and early telephone follow-up (within 3 days) of hospital discharge is reasonable and 2) 2010 HFSA: Plans for post-discharge management (scale present in home, visiting nurse or telephone follow up generally no longer than 3 days after discharge) demonstrate evidence to support post-op evaluation performed. However, no evidence is presented to clearly demonstrate how an appointment scheduled is related to patient outcomes.
- Based on the data presented from two studies in 2005-2007, results demonstrate that 19.6% of patients hospitalized for heart failure were hospitalized within 30 days of discharge. It was noted by the Committee that there was no associated bill for an outpatient visit for 52% of the patients who were re-hospitalized within 30 days after discharge for heart failure.
- Approximately 5.1 million Americans are currently suffering from heart failure. The impact of heart failure increases with age, rising from approximately 20 per 1,000 individuals 65 to 69 years of age to more than 80 per 1,000 individuals among those over 85 years of age, thus making this measure a high priority.

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-13**; **L-3**; **I-1;** 2b. Validity: **H-0**; **M-12**; **L-5**; **I-0**

Rationale:

- The Committee determined that the measure specifications were precise, noting that the all codes necessary to calculate the measure were present and the specifications were consistent with the evidence presented
- Empiric reliability testing was performed at the data element level using data from nine hospitals submitted for 878 inpatient records. Inter-rater reliability was assessed with two different abstractions compared to the medical record. The % agreement scores (82.1% and 96.2%) and Kappa scores (0.63 and 0.43) for two data elements are reported, showing moderate or substantial agreement.
- Empiric validity of the measure score was assessed correlating the results with other heart failure transition measures of performance. Due to the small sample sizes, none of the correlations reached statistical significance.

3. Feasibility: H-1; M-15; L-1; I-0

(3a. Clinical data generated during care delivery; 3b. Electronic sources; 3c.Susceptibility to inaccuracies/ unintended consequences identified 4d. Data collection strategy can be implemented)

Rationale:

- Overall the Committee agreed the measure is feasible as it uses defined elements in electronic sources and paper records.

4. Use and Usability: H-4; M-11; L-2; I-0

(Meaningful, understandable, and useful to the intended audiences for 3a. Public Reporting/Accountability and 3b. Quality Improvement)

Rationale:

- This new process measure is one of six HF measures from TJC Advanced Certification in Heart Failure (ACHF) program starting in 2014, with approximately 70-80 facilities participating as of the time of the meeting. The measure data elements are also part of the GWTG HF data collection tool.

5. Related and Competing Measures

This measure is directly related with NQF # 2455 Heart Failure: Post-discharge Appointment for Heart Failure Patients (measure reviewed during the Cardiovascular Phase 1 project)

- Generally, the Committee agreed that these measures are similar but noted key differences in the timing of the appointment and the exclusions. Committee members strongly emphasized the importance of a

quality measure that assessed whether a patient had a post-discharge rather than an appointment scheduled. The developers will request that their Cardiovascular Writing Committee and technical Advisory Panel (TAP) modify the measure to incorporate the visit concept, or add an additional measure accounting for an actual patient visit.

- Both measures NQF# 2439 and NQF# 2455 include patients admitted as inpatients from observation. However, the measure steward clarified NQF# 2439 does not incorporate observation patients discharged as outpatients as they are often difficult to identify as a group due to billing constraints. NQF# 2455 does include discharge observation patients. NQF #2439 also has denominator exclusions, which are standardized across the ACHF measure set.
- As both measures are newly implemented, #2439 implemented in CY2014 and #2455 receiving endorsement in Phase 1 of the project, the Committee could not come to consensus on a superior measure without reported implementation data, and both measure were recommended for endorsement.

Standing Committee Recommendation for Endorsement: **Y-12**; **N-6**

6. Public and Member Comment [03/24/15-04/07/15]

- There were two main themes to the comments received for this measure:
  - The burden of data collection
  - Emphasis on care coordination and outcome measurement

Developer Response:

- The designated setting for this measure is: Hospital/Acute Care Facility, and it was not developed for use by health plans. Additionally, this measure was not intended to be a claims based measure. The Joint Commission develops performance measures based upon Attributes of Performance Measures and Associated Evaluation Criteria. One of these attributes requires that the measure is: Under Provider Control - refers to the extent to which the provider has the ability to influence the processes and/or outcomes being measured.
- The criterion for this attribute is that the measure addresses processes or outcomes over which the health care organization has responsibility, substantial control, and the ability to effect change. Given that designated setting for this measure is Hospital/Acute Care Facility, it is within provider control to secure an appointment for follow-up care within 7 days of discharge. The Hospital/Acute Care Facility however would have no control over patient attendance for the appointment. Therefore this would be an unreasonable burden to place on a hospital/Acute Care Facility for performance measurement. With respect to this measure being utilized for other conditions, it was developed and tested for use specifically for heart failure patients. Expansion to other clinical conditions would require further testing in those populations.

Committee Response:

- The Committee recognizes the commenters' concerns with paper medical records and its potential burden to the end users. However, the Committee agreed during the in-person meeting the data collection methods are based on the program the measures are used, and that they are feasible for implementation.

7. Consensus Standards Approval Committee (CSAC) Vote: Y-X; N-X; A-X

8. Board of Directors Vote: Y-X; N-X

9. Appeals

2443 Post-Discharge Evaluation for Heart Failure Patients

Submission | Specifications

Description: Patients who receive a re-evaluation for symptoms worsening and treatment compliance by a program team member within 72 hours after inpatient discharge.

Numerator Statement: Patients who have a documented re-evaluation conducted via phone call or home visit within 72 hours after discharge.

Denominator Statement: All heart failure patients discharged from a hospital inpatient setting to home or home care AND patients leaving against medical advice (AMA).

Exclusions: 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
- Patient 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 locations other than home, home care or law enforcement.

Adjustment/Stratification:

Level of Analysis: Facility

Setting of Care: Hospital/Acute Care Facility

Type of Measure: Process

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

Measure Steward: The Joint Commission

STANDING COMMITTEE MEETING [12/04/2014-12/05/2014]

1. Importance to Measure and Report: <u>The measure meets the Importance criteria</u>

(1a. Evidence, 1b. Performance Gap, 1c. High Impact)

1a. Evidence: **H-1**; **M-5**; **L-1**; **I-0; IE-7**; 1b. Performance Gap: **H-11**; **M-3**; **L-0**; **I-0;** 1c. Impact: **H-13**; **M-1**; **L-0**; **I-0**

<u>Rationale</u>:

- The Committee raised concerns on the lack of evidence provided, but agreed the practical application of this measure is beneficial to patient outcomes. The 2012 Cochran review of 25 clinical trials where post-hospital early follow-up was discussed as being relevant, although not originally cited. While the cited study only analyzed a 7 day reevaluation, the recommendation to reevaluate within 3 days is aligned the two cited guidelines from ACCF/AHA and HFSA.
- The Committee agreed that the results of the measure developer's pilot study demonstrated a significant performance gap of 38% compliance with the indicator.
- With a 20% lifetime risk rate of developing heart failure, and its correlation to high costs and morbidity, the Committee deemed this to be a high priority.

2. Scientific Acceptability of Measure Properties: <u>The measure meets the Scientific Acceptability criteria</u>

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

2a. Reliability: **H-2**; **M-12**; **L-0**; **I-0;** 2b. Validity: **H-1**; **M-9**; **L-3**; **I-1**

<u>Rationale</u>:

- The Committee determined that the measure specifications were precise, noting that all codes necessary to calculate the measure were present and the specifications were consistent with the evidence presented.
- Empiric reliability testing was performed at the data element level using data from nine hospitals and 878 inpatient records. Re-abstraction was provided for one data element, Post-Discharge Evaluation Conducted within 72 Hours: which resulted in a 95% agreement rate and a Kappa score of 0.75, indicating suboptimal reliability.
- Empiric validity testing showed an overall adherence rate of 9.5%. This measure was positively correlated with post-discharge appointments for heart failure patients, not proven statistically significant. However, the Committee agreed the validity provided was adequate.

3. Feasibility: H-2; M-11; L-1; I-0

(3a. Clinical data generated during care delivery; 3b. Electronic sources; 3c.Susceptibility to inaccuracies/ unintended consequences identified 4d. Data collection strategy can be implemented)

Rationale:

- The Committee agreed the measure is feasible to implement. However, concerns were raised over the ability to capture telephone follow-up. The cost was estimated to be $10.34 to abstract the data for each measure, depending on the level of personnel, by either electronic or paper charts. Developer also mentioned plans to develop this into an e-measure.

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

(Meaningful, understandable, and useful to the intended audiences for 3a. Public Reporting/Accountability and 3b. Quality Improvement)

Rationale:

- This new process measure is one of six HF measures from TJC Advanced Certification in Heart Failure (ACHF) program starting in 2014, with approximately 70-80 facilities participating as of the time of the meeting. The measure data elements are also part of the GWTG HF data collection tool.

5. Related and Competing Measures

This measure is related to:

- 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;
- 2440 Care Transition Record Transmitted;
- 2441 Discussion of Advance Directives/Advance Care Planning;
- 2442 Advance Directive Executed.

Standing Committee Recommendation for Endorsement: **Y-14**; **N-0**

6. Public and Member Comment [03/24/15-04/07/15]

- The comment received for this measure raised the issues the burden of chart review and capturing patients treated through observation stays or in the emergency department.

Developers Response:

- The designated setting for this measure is: Hospital/Acute Care Facility with a focus on patients admitted to the hospital for heart failure. Therefore, it does include those patients who entered the inpatient setting via the observation unit or Emergency Department. With respect to the burden of abstraction, the Hospital/Acute Care Facility has the flexibility in using data sources that are not a part of the inpatient medical record as this information would be captured after the patient is discharged. The data sources include but are not limited to: home health forms, logs from follow-up phone calls, or other logs that record follow-up information. This measure was developed and tested prior to implementation and has been in use for over a year by programs who have been awarded Advanced Certification in Heart Failure. The Joint Commission has not received feedback respecting undue burden of data abstraction for this measure. The measure is specified to capture patients only with a principal discharge diagnosis of Heart Failure. There are exclusions considered for the following: Patients who had a left ventricular assistive device (LVAD) or heart transplant procedure during hospital stay, patients with comfort measures only, and patients enrolled in a clinical trial.

Committee response:

- The Committee agrees that effective care coordination and outcome measures are critical components to improving care transitions for cardiovascular patients. Thank you for your comment.

7. Consensus Standards Approval Committee (CSAC) Vote: Y-X; N-X; A-X

8. Board of Directors Vote: Y-X; N-X

9. Appeals

0670 Cardiac stress imaging not meeting appropriate use criteria: Preoperative evaluation in low risk surgery patients

Submission | Specifications

Description: Percentage of stress SPECT MPI, stress echo, CCTA, or CMR performed in low risk surgery patients for preoperative evaluation

Numerator Statement: Number of stress SPECT MPI, stress echo, CCTA, or CMR performed in low risk surgery patients as a part of the preoperative evaluation

Denominator Statement: Number of stress SPECT MPI, stress echo, CCTA, and CMR performed

Exclusions: None.

Adjustment/Stratification:

Level of Analysis: Facility, Clinician : Group/Practice

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

Type of Measure: Efficiency

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

Measure Steward: American College of Cardiology

STANDING COMMITTEE MEETING [12/04/2014 ~~12/05/2014~~ 3/23/2015]

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

(1a. Evidence: 1b. Performance Gap, 1c. High Priority)

1a. Evidence: **H-1 ~~0~~**; **M-12 ~~7~~**; **L-2 ~~9~~; I-1; IE-0 ~~1~~;** 1b. Performance Gap: **H-3**; **M-7**; **L-6**; **I-0 ~~X~~** 1c. High Priority: **H-4**; **M-9** ; **L-3** ; **I-0**

Rationale:

- This imagining facility level process measure assesses whether cardiac stress imaging (by stress SPECT MPI, stress echo, CCTA, or CMR) was performed preoperatively in low risk surgery patients, a population in which the evidence does not recommended.
- This measure is one of three similar measures from this developer (#0670, #0671 and #0672). The developer define appropriate use criteria (AUC) as "when to do" and "how often to do" a given procedure in the context of scientific evidence, the health care environment, the patient's profile and a physician's judgment, stating the criteria are designed to examine the use of diagnostic and therapeutic procedures to support efficient use of medical resources, while also providing patients with quality, appropriate care.
- The developer references the evidence-based RAND Delphi process or the RAND Appropriateness Method (RAM) for AUC for use of cardiovascular procedures, detailing over-use and under-use characteristic. AUC provide practical tools to measure this variability and to look at utilization patterns. The criteria are designed to examine the use of diagnostic and therapeutic procedures to support efficient use of medical resources, while also providing patients with quality, appropriate care.
- Although the Committee found evidence for AUC or RAM sufficient, favored the underpinnings of the measure, and believed it supported the tenets the NQS Triple Aim, the evidence for cardiac stress imaging preoperatively in low risk surgery patients was not summarized. An updated submission from the developer was submitted to the Standing Committee for review at the Post Comment Call on March 18, 2015. Below includes highlighted discussions from the meeting:
- The *2014 ACC/AHA Guideline on Perioperative Cardiovascular Evaluation and Management of Patients Undergoing Noncardiac Surgery: A Report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines* and multiple other studies in a systematic review of the clinical evidence supporting the measure, and additional studies on the use of AUC in determining appropriateness for cardiac imaging were summarized.
- Evidence on performance gaps demonstrated between 2% and 17% of cardiac imaging tests are performed preoperatively in asymptomatic patients having low risk surgeries, which the evidence does not recommend. Multiple studies using the RAND AUC for determining appropriateness of cardiac imaging were also provided.
- The Committee accepted the evidence stating that patient outcomes are not improved for patients

receiving cardiac imaging prior to low risk surgeries versus those who do not.
- The committee discussed low performance gaps in newer data, yet older data does provide performance gaps, though they also reported the newer studies could not collect the reason the patient was having the study, which may increase reported performance gaps.
- The committee agreed this measure meets a high priority, as tests are costly and contribute to costly downstream effects.

2. Scientific Acceptability of Measure Properties:

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

2a. Reliability: **H-4**; **M-12**; **L-0**; **I-0** 2b. Validity: **H-5**; **M-11**; **L-0**; **I-0**

Rationale:

- The measure performance is calculated using clearly defined administrative data on the facility level of analysis from ACC's FOCUS Clinical Registry.
- Reliability testing was performed using inter-rater reliability testing in a mid-western acute care hospital in 298 patient records detailed kappa of 0.72 which is as "substantial agreement" or acceptable reliability. The Committee reported they would prefer more recent testing than the 2005 data provided.
- Validity specifications were consistent with the evidence. Empiric evidence for AUC showed no difference with or without testing. No threats are evident and data is not risk adjusted.
- The developer recommended the use of data collection prospectively. Also, they have not identified issues related to missing data elements.

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

(3a. Data generated during care; 3b. Electronic sources; and 3c. Data collection can be implemented (eMeasure feasibility assessment of data elements and logic)

Rationale:

- The committee agreed that reasonable data sources are used in this measure by the registry or paper records are routinely generated with reasonable abstraction efforts. There was agreement that the information was acceptable.

4. Use and Usability: H-3; M-12; L-1; I-0

(4a. Accountability/transparency; and 4b. Improvement – progress demonstrated; and 4c. Benefits outweigh evidence of unintended negative consequences)

Rationale:

- The developer stated the measure is used in the PQRS, FOCUS- ACC lab accreditation, quality improvement and utilization management
- The committee noted that coordinated reporting efforts would be necessary.

5. Related and Competing Measures

- 0669, 0671 and 0672.
- The developer demonstrated variability between the 3 measures, based on patient populations, including provider and institutional size of referring entities and referrals for cardiac imaging tests.

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

6. Public and Member Comment

- There were no comments received for this measure.

7. Consensus Standards Approval Committee (CSAC) Vote: Y-X; N-X; A-X

8. Board of Directors Vote: Y-X; N-X

9. Appeals

0671 Cardiac stress imaging not meeting appropriate use criteria: Routine testing after percutaneous coronary intervention (PCI)

Submission | Specifications

Description: Percentage of all stress SPECT MPI, stress echo, CCTA and CMR performed routinely after PCI, with reference to timing of test after PCI and symptom status.

Numerator Statement: Number of stress SPECT MPI, stress echo, CCTA and CMR performed in asymptomatic patients within 2 years of the most recent PCI

Denominator Statement: Number of stress SPECT MPI, stress echo, CCTA and CMR performed

Exclusions: None

Adjustment/Stratification:

Level of Analysis: Facility, Clinician : Group/Practice

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

Type of Measure: Efficiency

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

Measure Steward: American College of Cardiology

STANDING COMMITTEE MEETING [12/04/2014-~~12/05/2014~~ 3/23/2015]

1. Importance to Measure and Report:

(1a. Evidence, 1b. Performance Gap, 1c. High Impact)

1a. Evidence: **H-1**; **M-13**; **L-2**; **I-0; IE-0**; 1b. Performance Gap: **H-4**; **M-11**; **L-1**; **I-0;** 1c. Impact: **H-3**; **M-11**; **L-2**; **I-0**

Rationale:

- This imagining level focused process measure assesses whether cardiac stress imaging (by stress SPECT MPI, stress echo, CCTA, or CMR) was performed routinely (within 2 years) in asymptomatic patients after percutaneous coronary intervention (PCI), a population in which the evidence does not recommended.
- This measure is one of three similar measures from this developer (#0670, #0671, and #0672). The Committee initiated a discussion on evidence and favored the underpinnings of the three measures, and believed it supports the tenets the NQS Triple Aim, though evidence questions for routine cardiac stress imaging within 2 years of PCI persisted. An updated submission from the developer was provided for Committee review at the Post Comment Call on March 18, 2015. Below includes highlighted discussions from the meeting:
- The *2012 ACCF/AHA/ACP/AATS/PCNA/SCAI/STS Guideline for the Diagnosis and Management of Patients with Stable Ischemic Heart Disease* and multiple other studies in a systematic review of the clinical evidence supporting the measure, and additional studies on the use of AUC in determining appropriateness for cardiac imaging were summarized.
- Select Committee members questioned if patients with left main stenting and incomplete revascularization during the PCI were included in the denominator, 2 populations where cardiac imaging would be appropriate within 2 years after PCI in asymptomatic patients. The developer confirmed the FOCUS data collection tool captures information on patients with the 2 findings, and they are not included in the measure denominator.
- The Committee accepted the evidence stating that patient outcomes are not improved when cardiac imaging is performed for asymptomatic patients within 2 years of PCI versus patients without cardiac imaging during that time.
- Significant performance gaps demonstrating performance gaps in up to one half of asymptomatic patients undergoing cardiac imaging within 24 months PCI in patients from 2005-2013 from various urban and rural settings and patient populations, with varying results based on facility referral characteristics (e.g., cardiologist referrals affiliated with cardiovascular procedure and surgical facilities versus primary care referrals).
- The committee agreed that the measure developer indicated the necessary performance gap because this is an NQS priority area, tests are expensive and can lead to risky procedures, with significant downstream

effects..

2. Scientific Acceptability of Measure Properties:

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

2a. Reliability: **H-4**; **M-11**; **L-1**; **I-0;** 2b. Validity: **H-4**; **M-10**; **L-1**; **I-1**

Rationale:

- Select Committee members questioned the measure denominator, stating they would prefer the measure calculate performance with only the patients as defined for assessing the numerator activity, rather than all cardiac imaging completed at the facility though they recognized the constraints of registry collected data. The developer stated modification to the denominator would also represent challenges in benchmarking performance across facilities due to varying facility characteristics, and that local quality improvement activities are based on facility-specific performance.
- Inter-rater reliability testing was performed using data from 298 patients from the Mayo Clinic. The developer reported substantial agreement with a of kappa=0.72 for stress echocardiography
- The developers report that "in the inappropriate group, there were no statistically significant differences in major adverse coronary event rates between subjects with abnormal versus normal [imaging test]."
- The committee questioned the degree individuals tested were truly asymptomatic, but did not see any threats to validity.
- The Committee stated the specifications are consistent with the evidence, and empiric validity testing of the measure score evaluated the appropriate use score and the predictive value of SPECT MPI cardiac imaging test. This testing compared clinical outcomes for patients classified as having an appropriate or inappropriate stress imaging test and found no statistically significant differences in major adverse coronary events between the 2 groups.

3. Feasibility: H-4; M-12; L-0; I-0

(3a. Clinical data generated during care delivery; 3b. Electronic sources; 3c.Susceptibility to inaccuracies/ unintended consequences identified 4d. Data collection strategy can be implemented)

Rationale:

- Select Committee members raised the question of ACC's Registry cost to end users and the developer reported all data collection tools are open access without restriction or fee.
- The committee agreed that reasonable data sources are used in this measure by the registry or paper records are routinely generated with reasonable abstraction efforts. There was agreement that the information was acceptable.

4. Use and Usability: H-4; M-10; L-2; I-0

(Meaningful, understandable, and useful to the intended audiences for 3a. Public Reporting/Accountability and 3b. Quality Improvement)

Rationale:

- The developer stated the measure is used in the PQRS, FOCUS- ACC lab accreditation, quality improvement and utilization management.
- Public reporting is anticipated in 2017 as a mandate by CMS. 5% of outliers will need preauthorization.
- No unintended consequences are reported. On a national scale, elimination of 3-5% of unnecessary imaging in post PCI patients would result in significant savings without compromise of quality and patient outcome the data presented.

5. Related and Competing Measures

- The developer demonstrated variability between the 3 measures, based on patient populations, including provider and institutional size of referring entities and referrals for cardiac imaging tests.

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

6. Public and Member Comment

• There were no comments received for this measure.
7. Consensus Standards Approval Committee (CSAC) Vote: Y-X; N-X; A-X
8. Board of Directors Vote: Y-X; N-X
9. Appeals

0672 Cardiac stress imaging not meeting appropriate use criteria: Testing in asymptomatic, low risk patients

Submission | Specifications

Description: Percentage of all stress SPECT MPI, stress echo, CCTA, and CMR performed in asymptomatic, low CHD risk patients for initial detection and risk assessment

Numerator Statement: Number of stress SPECT MPI, stress echo, CCTA, and CMR performed for asymptomatic, low CHD risk patients for initial detection and risk assessment*

Denominator Statement: Number of stress SPECT MPI, stress echo, CCTA, and CMR performed

Exclusions: None

Adjustment/Stratification:

Level of Analysis: Facility, Clinician : Group/Practice

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

Type of Measure: Efficiency

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

Measure Steward: American College of Cardiology

STANDING COMMITTEE MEETING [12/04/2014-~~12/05/2014~~ 3/23/2015]

1. Importance to Measure and Report:

(1a. Evidence, 1b. Performance Gap, 1c. High Impact)

1a. Evidence: **H-1**; **M-12**; **L-3**; **I-X; IE-X**; 1b. Performance Gap: **H-3**; **M-10**; **L-3**; **I-0;** 1c. Impact: **H-4**; **M-10**; **L-1**; **I-1**

Rationale:

- This imagining facility level process measure assesses whether cardiac stress imaging (by stress SPECT MPI, stress echo, CCTA, or CMR) was performed in asymptomatic, low risk patients, a population in which the evidence does not recommended.
- This measure is one of three similar measures from this developer (#0670, #0671, and #0672, though the measure was not discussed at the in-person meeting. The Committee favored the underpinnings of the the measure, believed it supported the tenets the NQS Triple Aim. Although the Committee accepted the evidence for AUC or RAM, favored the underpinnings of the measure, and believed it supported the tenets the NQS Triple Aim, the evidence for cardiac stress imaging preoperatively in low risk surgery patients was not summarized. An updated submission from the developer was submitted to the Committee for review at the Post Comment Call on March 18, 2015. Below includes highlighted discussions from the meeting:
- The 2010 ACCF/AHA Guideline for Assessment of Cardiovascular Risk in Asymptomatic Adults: A Report of the American College of Cardiology Foundation/American Heart Association Task Force on Practice Guideline, multiple other studies in a systematic review of the clinical evidence supporting the measure, and additional studies on the use of AUC in determining appropriateness for cardiac imaging were summarized.
- The Committee accepted the evidence stating that patient outcomes are not improved for asymptomatic, low risk patients receiving cardiac imaging versus those who do not.
- Significant performance gaps were identified in patients from 2005-2013 in various urban and rural settings and patient populations, with varying results based on facility referral characteristics (e.g., cardiologist referrals affiliated with cardiovascular procedure and surgical facilities versus primary care

referrals).

2. Scientific Acceptability of Measure Properties:

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

2a. Reliability: **H-3**; **M-11**; **L-2**; **I-0;** 2b. Validity: **H-4**; **M-10**; **L-2**; **I-0**

Rationale:

- Select Committee members questioned if patients with left main stenting and incomplete revascularization during the PCI were included in the denominator, 2 populations where cardiac imaging would be appropriate within 2 years after PCI in asymptomatic patients. The developer confirmed the FOCUS data collection tool captures information on patients with the 2 findings, and they are not included in the measure denominator.
- Reliability testing was conducted using data from 298 patients from the Mayo Clinic (Rochester, MN) in 2005. Reliability testing at the data element level was conducted, the developer reported the "agreement kappa=0.72 for stress echocardiography."
- The developer conducted empiric validity testing of the measure score to study the "relationship between appropriate use score and predictive value of SPECT MPI" by comparing the clinical outcome of patients classified as having an appropriate or inappropriate stress imaging test. The developers reported that "in the inappropriate group, there were no statistically significant differences in major adverse coronary event rates between subjects with abnormal versus normal [imaging test]."

3. Feasibility: H-4; M-11; L-0; I-1

(3a. Clinical data generated during care delivery; 3b. Electronic sources; 3c.Susceptibility to inaccuracies/ unintended consequences identified 4d. Data collection strategy can be implemented)

Rationale:

- Select Committee members raised the question of ACC's Registry cost to end users and the developer reported all data collection tools are open access without restriction or fee.
- The committee agreed that reasonable data sources are used in this measure by the registry or paper records are routinely generated with reasonable abstraction efforts. There was agreement that the information was acceptable.

4. Use and Usability: H-3; M-11; L-2; I-0

(Meaningful, understandable, and useful to the intended audiences for 3a. Public Reporting/Accountability and 3b. Quality Improvement)

Rationale:

- The developer stated the measure is currently being used in the following programs: PQRS, FOCUS-ACC/lab accreditation and IAC- lab accreditation, additionally the developer highlighted no unintended consequences were identified.

5. Related and Competing Measures

OR

- The Committee acknowledged that although there were related measures, no competing measures were identified.

Standing Committee Recommendation for Endorsement: **Y-14**; **N-2**

6. Public and Member Comment

- There were no comments received for this measure.

7. Consensus Standards Approval Committee (CSAC) Vote: Y-X; N-X; A-X

8. Board of Directors Vote: Y-X; N-X

9. Appeals

Measures Not Recommended

1524 Atrial Fibrillation: Assessment of Thromboembolic Risk Factors (CHADS2)

Submission | Specifications

Description: Percentage of patients aged 18 years and older with a diagnosis of nonvalvular atrial fibrillation (AF) or atrial flutter in whom assessment of all the specified thromboembolic risk factors using the CHADS2 risk criteria is documented

Numerator Statement: Patients in whom assessment of all of the specified thromboembolic risk factors using the CHADS2 risk criteria is documented

Denominator Statement: All patients aged 18 years and older with a diagnosis of nonvalvular atrial fibrillation (AF) or atrial flutter

Exclusions: Denominator exclusions include patients with mitral stenosis or prosthetic heart valves, patients with transient or reversible cause of AF (eg, pneumonia, hyperthyroidism, pregnancy, cardiac surgery).

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 [12/04/2014-12/05/2014]

1. Importance to Measure and Report: <u>The measure meets the Importance criteria</u>

(1a. Evidence: 1b. Performance Gap, 1c. High Priority)

1a. Evidence: **H-16**; **M-1**; **L-0; I-0; IE-0**; 1b. Performance Gap: **H-17**; **M-0**; **L-0**; **I-0** 1c. High Priority: **H-17**; **M-0**; **L-0**; **I-0;**

<u>Rationale</u>:

- The Committee agreed that there is strong evidence to support this measure as the developer presented two clinical practice guidelines that recommend validated CHADS2 risk assessment: Class I recommendation in the ACCF/AHA/HRS 2013 Guideline and the ACCP 2012 guidelines with 17 randomized controlled trials.
- Based on the PINNACLE registry which includes over 700 providers, the mean performance rate was 20.5% in 2011 and 22.8% in 2012, illustrating a significant opportunity for improvement
- It is estimated that of 1.25 million (55%) patients currently not receiving appropriate stroke prophylaxis in the United States suffer approximately 58,000 strokes annually with an associated total direct cost to Medicare of $ 4.8 billion, making it a high priority.

2. Scientific Acceptability of Measure Properties: <u>The measure does not meet the Scientific Acceptability criteria</u>

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

2a. Reliability: **H-0**; **M-3**; **L-5**; **I-10** 2b. Validity: **H-X**; **M-X**; **L-X**; **I-X**

<u>Rationale</u>:

- Reliability testing was conducted at the measure score level using a signal-to-noise analysis.
- Committee found the reliability of identifying all specified risk factors with a “checkbox methodology” rather than the calculation of the individual CHADS2 scoring elements to be weak.
- The Committee additionally questioned CHADS2 as the only validated AF assessment tool, as the measure does not include CHA2DS2-VASc or other validated assessments.

3. Feasibility: H-X; M-X; L-X; I-X

(3a. Data generated during care; 3b. Electronic sources; and 3c. Data collection can be implemented (eMeasure

feasibility assessment of data elements and logic)

Rationale:

- N/A

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

(4a. Accountability/transparency; and 4b. Improvement – progress demonstrated; and 4c. Benefits outweigh evidence of unintended negative consequences)

Rationale:

- N/A

5. Related and Competing Measures

- This measure directly competes with NQF # 1525 Chronic Anticoagulation Therapy. The Committee discussed that although these measures address the same focus , the target populations are slightly different, justifying the need for both measures

Standing Committee Recommendation for Endorsement: **Y-X**; **N-X**

6. Public and Member Comment [03/24/15-04/07/15]

Comments Received:

- Except for one comment received, generally the comments received for this measure agreed with the committee to not recommend endorsement, emphasizing the use of CHA2DS2-VASC instead of CHADS2.

Developer Response:

- We appreciate your support of this measure as we agree that it is an important measure associated with improving care of Atrial Fibrillation patients. The reason the measure reflects CHADS2 and not CHA2DS2-VASc is as follows. NQF requires that measures tested given the existing measure specification. Given that at the time of submission the guideline had not yet been released, the measure reflected the previous guideline recommendations of CHADS2, as well as the testing data provided to NQF that shows that the measure is feasible, reliable, and valid. Additionally, as measure developers we try to ensure an open process to providing feedback on all measures included in a measure set. Therefore, we have not only a peer review process, but also an open comment period where we encourage the public to comment on our draft measure set prior to it being finalized. The reason why this measure does not include the CHA2DS2-VASc was that the NQF deadline for measure submission (December 23, 2013) did not align with the updated Atrial Fibrillation guidelines which were in fact released after the NQF deadline had passed. As a result, modifications to the measure could not be made, and tested utilizing the NQF evaluation criteria in time for the measure review, since the guideline was not yet released and we could not provide any notice of the proposed change to the measure to the public. However, we are in the process of convening the writing committee to update the atrial fibrillatio measure set and do plan to look at replacing CHADS2 with CHA2DS2-VASc which is recommended in the guidelines.

7. Consensus Standards Approval Committee (CSAC) Vote: Y-X; N-X; A-X

8. Board of Directors Vote: Y-X; N-X

9. Appeals

2441 Discussion of Advance Directives/Advance Care Planning

Submission | Specifications

Description: Patients who have documentation in the medical record of a one-time discussion of advance directives/advance care planning with a healthcare provider.

Numerator Statement: Patients who have documentation in the medical record of a one-time discussion of

advance directives/advance care planning with a healthcare provider

Denominator Statement: All heart failure patients.

Exclusions: 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
- Patient who have a Length of Stay greater than 120 days
- Patients with Comfort Measures Only documented
- Patients discharged to another hospital
- Patients discharged to home for hospice care
- Patients discharged to a health care facility for hospice care
- Patients who expire

Adjustment/Stratification:

Level of Analysis: Facility

Setting of Care: Hospital/Acute Care Facility

Type of Measure: Process

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

Measure Steward: The Joint Commission

STANDING COMMITTEE MEETING [12/04/2014-12/05/2014]

1. Importance to Measure and Report: <u>The measure does not meet the Importance criteria</u>

(1a. Evidence: 1b. Performance Gap, 1c. High Priority)

1a. Evidence: **H-1**; **M-0**; **L-3; I-6; IE-8**; 1b. Performance Gap: **H-1**; **M-4**; **L-4**; **I-8** 1c. High Priority: **Y-X**; **N-X;**

<u>Rationale</u>:

- The developer referenced five studies and provided a diagram to support the execution of how advanced directives can lead to "Decreased anxiety for patients/caregivers regarding end-of-life decision making" and "Coordinated end-of-life care." However, no systematic review of the evidence was presented.
- The Committee questioned the qualifications of the healthcare worker assessing patients' end-of-life preferences, stating is should not be "passed off" function, rather one who is appropriately trained, cares about the patient and has a focal role in their care. Some Committee members were concerned the measure may lead to psychological unintended consequences as it only focuses on one-time discussions.
- Select Committee members stated this measure is additionally appropriate for the pediatric population, and questioned the list of measure exclusions (specifically LVAD and comfort-care patients), while others questioned the limited denominator of the measure to HF-only patients.
- The Committee questioned the appropriateness of all HF patients in the denominator, specifically those with EF ≥ 40%, and questioned the relevance of a one-time discussion as patients wished change over time, especially after an acute hospitalization.
- Committee members acknowledged that while advanced directives is an important aspect to consider for patient-focused care, the evidence provided by the developers that such discussions can influence outcome in heart failure is not present. The Committee did not reach consensus on evidence.
- As a new measure, there are no direct data for performance. However, the developer provided data from a 2004 study that shows less than 50% of patients had an advanced directive in their medical record. Moreover, a pilot testing done at nine hospitals revealed a rate of 66.6%.
- The Committee found the data provided by the developer to be dated, missing patient input and questioned whether 100% performance was an appropriate goal for the measure. The measure did not pass on performance gap criteria.

2. Scientific Acceptability of Measure Properties:

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

2a. Reliability: **H-X**; **M-X**; **L-X**; **I-X** 2b. Validity: **H-X**; **M-X**; **L-X**; **I-X**

Rationale:

- N/A

3. Feasibility: H-X; M-X; L-X; I-X

(3a. Data generated during care; 3b. Electronic sources; and 3c. Data collection can be implemented (eMeasure feasibility assessment of data elements and logic)

Rationale:

- N/A

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

(4a. Accountability/transparency; and 4b. Improvement – progress demonstrated; and 4c. Benefits outweigh evidence of unintended negative consequences)

Rationale:

- This new process measure is one of six HF measures from TJC Advanced Certification in Heart Failure (ACHF) program starting in 2014, with approximately 70-80 facilities participating as of the time of the meeting. The measure data elements are also part of the GWTG HF data collection tool.

5. Related and Competing Measures

- N/A

Standing Committee Recommendation for Endorsement: **Y-X**; **N-X**

6. Public and Member Comment [03/24/15-04/07/15]

Comments Received:

- One comment received agreed with the Committee recommendation to not endorse this measure.
- One comment received did not support the Committee recommendation to not endorse this measure.

Committee response:

- The Committee questioned the qualifications of the healthcare worker assessing patients' end-of-life preferences, stating is should not be "passed off" function, rather one who is appropriately trained, cares about the patient and has a focal role in their care. The Committee discussed the potential psychological unintended consequences as it only focuses on one-time discussions. Additionally, during in-person meeting, there were several concerns raised regarding the lack of direct evidence relating process of care of executing an advanced directive to improved outcome in care.

7. Consensus Standards Approval Committee (CSAC) Vote: Y-X; N-X; A-X

8. Board of Directors Vote: Y-X; N-X

9. Appeals

2442 Advance Directive Executed

Submission | Specifications

Description: Patients who have documentation in the medical record that an advance directive was executed.

Numerator Statement: Patients who have documentation in the medical record that an advance directive was executed.

Denominator Statement: All heart failure patients.

Exclusions: 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
- Patient who have a Length of Stay greater than 120 days
- Patients with Comfort Measures Only documented
- Patients discharged to another hospital
- Patients discharged to home for hospice care
- Patients discharged to a health care facility for hospice care
- Patients who expire

Adjustment/Stratification:

Level of Analysis: Facility

Setting of Care: Hospital/Acute Care Facility

Type of Measure: Process

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

Measure Steward: The Joint Commission

STANDING COMMITTEE MEETING [12/04/2014-12/05/2014]

1. Importance to Measure and Report: <u>The measure does not meet the Importance criteria</u>

(1a. Evidence: 1b. Performance Gap, 1c. High Priority)

1a. Evidence: **H-0**; **M-1**; **L-7; I-7; IE-2**; 1b. Performance Gap: **H-X**; **M-X**; **L-X**; **I-X** 1c. High Priority: **Y-X**; **N-X;**

<u>Rationale</u>:

- No systematic review was provided, however several citations highlighted the importance of initiating advance directives leads to favorable patient outcomes, and decreased anxiety for patients/caregivers regarding end-of-life decision making and coordinated end-of-life care.
- The Committee stated several concerns that there is no direct evidence relating process of care of executing an advanced directive with improved care.

2. Scientific Acceptability of Measure Properties:

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

2a. Reliability: **H-X**; **M-X**; **L-X**; **I-X** 2b. Validity: **H-X**; **M-X**; **L-X**; **I-X**

<u>Rationale</u>:

- N/A

3. Feasibility: H-X; M-X; L-X; I-X

(3a. Data generated during care; 3b. Electronic sources; and 3c. Data collection can be implemented (eMeasure feasibility assessment of data elements and logic)

<u>Rationale</u>:

- N/A

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

(4a. Accountability/transparency; and 4b. Improvement – progress demonstrated; and 4c. Benefits outweigh evidence of unintended negative consequences)

<u>Rationale</u>:

- This new process measure is one of six HF measures from TJC Advanced Certification in Heart Failure (ACHF) program starting in 2014, with approximately 70-80 facilities participating as of the time of the meeting. The measure data elements are also part of the GWTG HF data collection tool.

5. Related and Competing Measures

- N/A

Standing Committee Recommendation for Endorsement: **Y-X**; **N-X**

6. Public and Member Comment [03/24/15-04/07/15]

Comments received:

- The two comments received for this measure disagreed with the Committee's recommendation to not endorse this measure. The comments highlighted the cost of end-of-life care and capturing patient wishes as reasons why an advance directive is important

Committee Response:

- The Committee questioned the qualifications of the healthcare worker assessing patients' end-of-life preferences, stating is should not be "passed off" function, rather one who is appropriately trained, cares about the patient and has a focal role in their care. The Committee discussed the potential psychological unintended consequences as it only focuses on one-time discussions. As part of our portfolio of endorsed measures, 0326: Advance Care Plan addresses documentation of a discussion regarding advance care plan or surrogate decision maker documentation for patients 65 and older regardless of diagnosis in the ambulatory, home health, hospice, acute care facility, post-acute/long term care inpatient rehab and nursing facilities.

7. Consensus Standards Approval Committee (CSAC) Vote: Y-X; N-X; A-X

8. Board of Directors Vote: Y-X; N-X

9. Appeals

2440 Care Transition Record Transmitted

Submission | Specifications

Description: A care transition record is transmitted to a next level of care provider within 7 days of discharge containing ALL of the following:

- Reason for hospitalization
- Procedures performed during this hospitalization
- Treatment(s)/Service(s) provided during this hospitalization
- Discharge medications, including dosage and indication for use
- Follow-up treatment and services needed (e.g., post-discharge therapy, oxygen therapy, durable medical equipment)

Numerator Statement: Care transition record transmitted to a next level of care provider within 7 days of discharge containing ALL of the following:

- Reason for hospitalization
- Procedures performed during this hospitalization
- Treatment(s)/Service(s) provided during this hospitalization
- Discharge medications, including dosage and indication for use
- Follow-up treatment(s) and service(s) needed

Denominator Statement: All heart failure patients discharged from a hospital inpatient setting to home or home care.

Exclusions: 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 locations other than home, home care, or law enforcement

Adjustment/Stratification:

Level of Analysis: Facility

Setting of Care: Hospital/Acute Care Facility

Type of Measure: Process

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

Measure Steward: The Joint Commission

STANDING COMMITTEE MEETING [12/04/2014-12/05/2014]

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

(1a. Evidence, 1b. Performance Gap, 1c. High Impact)

1a. Evidence: **H-0**; **M-4**; **L-1**; **I-0; IE-13**; 1b. Performance Gap: **H-10**; **M-8**; **L-0**; **I-0;** 1c. Impact: **H-12**; **M-4**; **L-2**; **I-0**

Rationale:

- The Committee agreed the evidence for this measure is insufficient, but acknowledged the importance of care transition record communication and agreed on an exception to the evidence criteria. Five citations for evidence were included, generally resulting in recommendations. Where empirical evidence was lacking, committee members recognized the difficulty in retrieving this data, and correlated practical application of this transmission with the ability to reduce hospital readmissions. Additionally, it was pointed out that transition evidence exists in the care coordination projects. The significance of the 7 day requirement compared to a shorter time frame of 3 days was raised, as well as the ability to meet this expectation with a fragmented healthcare communication system.
- The Committee concluded there was sufficient performance gap evidence. Multiple literature references were provided of studies where transmission of the care record occurred in fewer than 50% of cases, or were delayed beyond 7 days. Measure testing showed overall rate of adherence 48.7%, min=0%, max=86.2%, median=57.1% showing significant gaps in care and room for improvement.
- The measure addresses the significant burden of heart failure as a high-cost, high-risk disease, directly related to hospital readmission rates.

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-2**; **I-0;** 2b. Validity: **H-0**; **M-15**; **L-3**; **I-0**

Rationale:

- The Numerator Statement clearly defines 5 data points. Reason for hospitalization, Procedures performed, Treatments/Services provided, Discharge medications, including dosages and indication for use, and follow-up treatments and services needed. One committee member raised a concern about the importance of including LVAD (left ventricular assistive device) patients to the numerator. Those patients are at risk of complications if they are not properly evaluated within on week post-discharge.
- The Committee determined that the measure specifications were precise, noting that all codes necessary to calculate the measure were present and the specifications were consistent with the evidence presented.
- Empiric reliability testing was performed at the data element level using data from nine hospitals and 878 inpatient records. Re-abstraction was provided for one data element, Post-Discharge Evaluation Conducted within 72 Hours: which resulted in a 95% agreement rate and a Kappa score of 0.75, indicating suboptimal reliability.
- Empiric validity testing showed an overall adherence rate of 9.5%. This measure was positively correlated with post-discharge appointments for heart failure patients, not proven statistically significant. However, The Committee agreed the validity provided was adequate. Exclusion population amounted to >50% of the 1372 admissions and concluded the value of exclusion outweighs the burden of increased data collection and analysis..

3. Feasibility: H-7; M-9; L-1; I-1

(3a. Clinical data generated during care delivery; 3b. Electronic sources; 3c.Susceptibility to inaccuracies/

*unintended consequences identified 4d. Data collection strategy can be implemented)*Rationale:

- Similar to Measure # 2443, the Committee agreed the measure is feasible to implement. However, concerns were raised over the ability to capture telephone follow-up. The cost was estimated to be $10.34 to abstract the data for each measure, depending on the level of personnel, by either electronic or paper charts.

4. Use and Usability: H-4; M-10; L-1; I-3

(Meaningful, understandable, and useful to the intended audiences for 3a. Public Reporting/Accountability and 3b. Quality Improvement)

Rationale:

- This new process measure is one of six HF measures from TJC Advanced Certification in Heart Failure (ACHF) program starting in 2014, with approximately 70-80 facilities participating as of the time of the meeting. The measure data elements are also part of the GWTG HF data collection tool.

5. Related and Competing Measures

- This measure is directly related or competes with the following measures:
- 0558 : HBIPS-7 Post discharge continuing care plan transmitted to next level of care provider upon discharge
- 0648 : Timely Transmission of Transition Record (Discharges from an Inpatient Facility to Home/Self Care or Any Other Site of Care) - facility level measure
- 0647 : Transition Record with Specified Elements Received by Discharged Patients (Discharges from an Inpatient Facility to Home/Self Care or Any Other Site of Care)- facility level measure

Endorsed measure pair #0648 and #0647 apply to all patients discharged from an inpatient facility. In measures # 0648 and 0647 the information is provided to the patient in printed or electronic format at each transition of care, and transmitted to the facility/physician/other health care professional providing follow-up care within 24 hours.

- Measure 0648 and 2440 are competing measures though 2440 targets a subset of patients captured in measure 0648. The Committee emphasized the delayed transmission of patient records (7 days), and agreed that a target of <24 hours is ideal.. The developers of NQF# 2440 agreed to recommend the change to the Heart Failure TAP.
- The Committee also noted that the data elements included: inpatient, post-discharge/patient self-management, advance care plan, and contact information/plan for follow-up care are similar/comparable to measure # 0648. Additionally, the denominator outlined in measure # 2440 included only heart failure patients, while 0648 assesses all inpatient care transition records.
- Overall, the Committee decided to remove their recommendation of endorsement for Measure # 2440, as measure # 0648 was determined to be "best in class" and will remain endorsed within the Care Coordination portfolio

Standing Committee Recommendation for Endorsement: **Y-6**; **N-12**

6. Public and Member Comment [03/24/15-04/07/15]

- The comments received for this measure agreed with the Committee's recommendation to not endorse this measure because of the length of the seven day window for the transmission of records.

7. Consensus Standards Approval Committee (CSAC) Vote: Y-X; N-X; A-X

8. Board of Directors Vote: Y-X; N-X

9. Appeals

~~Recommendation Deferred by the Standing Committee~~

~~The following measures submitted for the Standing Committee's review during the project have been deferred for future consideration:~~

Measures Withdrawn from Consideration

The following 5 previously endorsed measures were withdrawn from endorsement consideration by the developer prior to or during the measure evaluation period:

Measure	Measure Steward	Reason for Retirement
0092 Aspirin at Arrival of AMI	American Medical Association - Physician Consortium for Performance Improvement	Developer decided not to submit the measure based on programmatic use in the current claims and registry format.
0543 Adherence to Statin Therapy for Individuals with Coronary Artery Disease	Centers for Medicare and Medicaid Services	Developer will no longer be maintaining the measure as it is not being utilized in the CMS Quality and Resource Use Report (QRUR).
0569 Adherence to Lipid-lowering medication	Health Benchmarks, Inc.	Developer will not be maintaining the measure
0639 Statin Prescribed at Discharge	Centers for Medicare and Medicaid Services	Developer will not be maintaining the measure
1552 Blood Pressure Screening by age 13	National Committee for Quality Assurance	Developer decided to retire the measure due to underutilization.
1553 Blood Pressure Screening by age 18	National Committee for Quality Assurance	Developer decided to retire the measure due to underutilization.

Appendix B: NQF Cardiovascular Portfolio and Related Measures

Patient-Focused Episode of Care for Coronary Artery Disease and Acute Myocardial Infarction (AMI)

**Measures applicable to patients within the CAD/AMI episode of care frameworks that are not in the Cardiovascular portfolio.*

Measures with a double asterisk ** and formatted in bold are currently being reviewed in the 2015 cardiovascular, phase 2 project.

NQF-endorsed measures for patients with CAD/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

0073 IVD: Blood Pressure Management

0067 Chronic Stable Coronary Artery Disease: Antiplatelet Therapy

0068 Ischemic Vascular Disease (IVD): Use of Aspirin or another Antithrombotic

0066 Chronic Stable Coronary Artery Disease: ACE Inhibitor or ARB Therapy--Diabetes or Left Ventricular Systolic Dysfunction (LVEF <40%)

0074 Chronic Stable Coronary Artery Disease: Lipid Control

0075 IVD: Complete Lipid Profile and LDL Control <100

0076 Optimal Vascular Care [composite]

~~**0543 Coronary Artery Disease and Medication Possession Ratio for Statin Therapy****~~

Acute Phase

Acute Myocardial Infarction

0290 Median Time to Transfer to Another Facility for Acute Coronary Intervention

0090 Electrocardiogram Performed for Non-Traumatic Chest Pain [clinician]**

0092 Aspirin at Arrival of AMI

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]

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

2473 Hospital 30-day Risk-standardized AMI Mortality eMeasure

0505* Hospital 30-day all-cause risk-standardized readmission rate (RSRR) following acute myocardial infarction (AMI) hospitalization

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)

0730 Acute Myocardial Infarction (AMI) Mortality Rate

Percutaneous Coronary Intervention (PCI)

2411 Comprehensive documentation for Indications for PCI

2459 In-hospital Risk Adjusted Rate of Bleeding Events for patients undergoing 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

Coronary Artery Bypass Graft surgery* (these related measures are in NQF's Surgery portfolio)

0128 Duration of Antibiotic Prophylaxis for Cardiac Surgery Patients

0126 Selection of Antibiotic Prophylaxis for Cardiac Surgery Patients

0127 Preoperative Beat Blockade

0114 Risk-Adjusted Post-operative Renal Failure

0115 Risk-Adjusted Surgical Re-exploration

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

1502 Risk-Adjusted Operative Mortality for MV Repair + CABG Surgery

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)

0116 Anti-Platelet Medication at Discharge

0117 Beta Blockade at Discharge

0118 Anti-Lipid Treatment Discharge

0696 The STS CABG Composite Score

Post-Acute/Rehabilitation Phase

0964 Therapy with aspirin, P2Y12 inhibitor, and statin at discharge following PCI in eligible patients [facility]

2452 PCI: Post-procedural Optimal Medical Therapy [clinician]

2379 Adherence to antiplatelet therapy after stent implantation

0642 Cardiac Rehabilitation Patient Referral From an Inpatient Setting

0643 Cardiac Rehabilitation Patient Referral From an Outpatient Setting

Population at Risk: Secondary Prevention

0160 Beta-blocker prescribed at discharge for AMI

0117 Beta-blocker at Discharge

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

1528 Beta Blocker at Discharge for ICD implant patients with a previous MI

0071 Persistence of Beta-Blocker Treatment After a Heart Attack

0141 Aspirin prescribed at discharge for AMI

0142 Aspirin prescribed at discharge for AMI

0116 Anti-Platelet Medication at Discharge

0137 ACEI or ARB for left ventricular systolic dysfunction- AMI Patients

0594 Post MI: ACE inhibitor or ARB therapy

0118 Anti- Lipid Treatment Discharge

~~**0543 Adherence to Statin Therapy for Individuals with Coronary Artery Disease****~~

Cost and Resource Use

1558*: Relative Resource Use for People with Cardiovascular Conditions

Patient-Focused Episode of Care for Heart Failure

NQF-Endorsed Measures for Heart Failure patients

Population at Risk:

2020* Adult Current Smoking Prevalence

0028* Preventive Care & Screening: Tobacco Use: Screening & Cessation Intervention

0421 Preventive Care and Screening: Body Mass Index (BMI) Screening and Follow-Up

0018 Controlling High Blood Pressure

Evaluation and On-Going Management:

2450 Heart Failure: Symptom and Activity Assessment

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

0083 Heart Failure: Beta-blocker therapy for Left Ventricular Systolic Dysfunction

0521 Heart Failure Symptoms Assessed and Addressed [home health]

Acute Phase/ Hospitalization

0277* Heart Failure Admission Rate (PQI 8)

0135 Evaluation of Left Ventricular Systolic Function (LVS) [hospital]

0162 ACEI or ARB for left ventricular systolic dysfunction- Heart Failure (HF) Patients

2455 Heart Failure: Post-Discharge Appointment for Heart Failure Patients

0330* Hospital 30-day, all-cause, risk-standardized readmission rate (RSRR) following heart failure hospitalization

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

0358 Congestive Heart Failure (CHF) Mortality Rate (IQI 16)

Heart Rhythm Disorders

Atrial Fibrillation

1525 Chronic Anticoagulation Therapy**

Implantable Cardioverter Defibrillator ICD)

1522 ACE/ARB Therapy at Discharge for ICD implant patients with LVSD

1528 Beta Blocker at Discharge for ICD implant patients with a previous MI

1529 Beta Blocker at Discharge for ICD implant patients with LVSD

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

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

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 Quality Reporting System (PQRS)
0066	Chronic Stable Coronary Artery Disease: ACE Inhibitor or ARB Therapy--Diabetes or Left Ventricular Systolic Dysfunction (LVEF <40%)	Medicare Shared Savings Program; Physician Feedback; Physician Quality Reporting System (PQRS)
0067	Chronic Stable Coronary Artery Disease: Antiplatelet Therapy	Physician Feedback; Physician Quality Reporting System (PQRS)
0068	Ischemic Vascular Disease (IVD): Use of Aspirin or another Antithrombotic	Meaningful Use (EHR Incentive Program) - Eligible Professionals; Medicare Shared Savings Program; Physician Feedback; Physician Quality Reporting System (PQRS); HRSA
0070	Chronic Stable Coronary Artery Disease: Beta-Blocker Therapy--Prior Myocardial Infarction (MI) or Left Ventricular Systolic Dysfunction (LVEF <40%)	Meaningful Use (EHR Incentive Program) - Eligible Professionals; Physician Feedback; Physician Quality Reporting System (PQRS)
0074	Chronic Stable Coronary Artery Disease: Lipid Control	Medicare Shared Savings Program; Physician Feedback; Physician Quality Reporting System (PQRS)
0075	IVD: Complete Lipid Profile and LDL Control <100	Meaningful Use (EHR Incentive Program) - Eligible Professionals; Medicare Part C Plan Rating; Medicare Shared Savings Program; Physician Quality Reporting System (PQRS)
0079	Heart Failure: Left Ventricular Ejection Fraction Assessment (Outpatient Setting)	Physician Feedback; Physician Quality Reporting System (PQRS)

0081	Heart Failure: Angiotensin-Converting Enzyme (ACE) Inhibitor or Angiotensin Receptor Blocker (ARB) Therapy for Left Ventricular Systolic Dysfunction	Meaningful Use (EHR Incentive Program) - Eligible Professionals; Physician Feedback; Physician Quality Reporting System (PQRS)
0083	Heart Failure : Beta-blocker therapy for Left Ventricular Systolic Dysfunction	Meaningful Use (EHR Incentive Program) - Eligible Professionals; Medicare Shared Savings Program; Physician Feedback; Physician Quality Reporting System (PQRS)
0090	Electrocardiogram Performed for Non-Traumatic Chest Pain	Physician Feedback; Physician Quality Reporting System (PQRS)
0092	Aspirin at Arrival of AMI	Physician Feedback; Physician Quality Reporting System (PQRS)
0135	Evaluation of Left ventricular systolic function (LVS)	Hospital Inpatient Quality Reporting; HRSA
0142	Aspirin prescribed at discharge for AMI	Hospital Inpatient Quality Reporting; Meaningful Use (EHR Incentive Program) - Hospitals, CAHs
0162	ACEI or ARB for left ventricular systolic dysfunction - Heart Failure (HF) Patients	Hospital Inpatient Quality Reporting; HRSA
0163	Primary PCI received within 90 minutes of Hospital Arrival	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 Inpatient Quality Reporting; Hospital Value-Based Purchasing; Meaningful Use (EHR Incentive Program) - Hospitals, CAHs; HRSA
0229	Hospital 30-day, all-cause, risk-standardized mortality rate (RSMR) following heart failure (HF) hospitalization for patients 18 and older	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 Inpatient Quality Reporting; Hospital Value-Based Purchasing
0286	Aspirin at Arrival	Hospital Outpatient Quality Reporting; HRSA
0288	Fibrinolytic Therapy Received Within 30 Minutes of ED Arrival	Hospital Outpatient Quality Reporting; HRSA
0289	Median Time to ECG	Hospital Outpatient Quality Reporting; HRSA
0290	Median Time to Transfer to Another Facility for Acute Coronary Intervention	Hospital Outpatient Quality Reporting; HRSA
0521	Heart Failure Symptoms Addressed	Home Health Quality Reporting
0643	Cardiac Rehabilitation Patient Referral From an Outpatient Setting	Hospital Outpatient Quality Reporting; Physician Quality Reporting System (PQRS)
0669	Cardiac Imaging for Preoperative Risk Assessment for Non-Cardiac Low-Risk Surgery	Hospital Outpatient Quality Reporting
0670	Cardiac stress imaging not meeting appropriate use criteria: Preoperative evaluation in low risk surgery patients	Physician Quality Reporting System (PQRS)
0671	Cardiac stress imaging not meeting appropriate use criteria: Routine testing after percutaneous	Physician Quality Reporting System (PQRS)

	coronary intervention (PCI)	
0672	Cardiac stress imaging not meeting appropriate use criteria: Testing in asymptomatic, low risk patients	Physician Quality Reporting System (PQRS)
1525	Chronic Anticoagulation Therapy	Physician Quality Reporting System (PQRS)

Appendix D: Project Standing Committee and NQF Staff

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Appendix F: Phase 2 Measures Recommended Specifications

	1525 Atrial Fibrillation and Atrial Flutter: Chronic Anticoagulation Therapy
Status	Submitted
Steward	American College of Cardiology
Description	Percentage of patients aged 18 years and older with a diagnosis of nonvalvular atrial fibrillation (AF) or atrial flutter whose assessment of the specified thromboembolic risk factors indicate one or more high-risk factors or more than one moderate risk factor, as determined by CHADS2 risk stratification, who are prescribed warfarin OR another oral anticoagulant drug that is FDA approved for the prevention of thromboembolism
Type	Process
Data Source	Electronic Clinical Data : Registry See 'Registry Supplemental Resources' attached in appendix field A.1. Available in attached appendix at A.1 No data dictionary
Level	Clinician : Individual
Setting	Ambulatory Care : Clinician Office/Clinic
Time Window	Measurement period may vary by implementation program. For the Pinnacle registry: Denominator: during the 3 month (quarterly) measurement period Numerator: at one or more visits during the measurement period [evaluate every visit during quarter – evaluate that each patient got numerator intervention at one or more visits in quarter]
Numerator Statement	Patients who are prescribed warfarin OR another oral anticoagulant drug that is FDA approved for the prevention of thromboembolism
Numerator Details	For the purposes of this measure, anticoagulant therapy is considered to be the following medications: warfarin, dabigatran, rivaroxaban, apixaban See 'Registry Supplemental Resources' attached in appendix field A.1.
Denominator Statement	All patients aged 18 years and older with a diagnosis of nonvalvular atrial fibrillation (AF) or atrial flutter whose assessment of the specified thromboembolic risk factors indicate one or more high-risk factors or more than one moderate risk factor, as determined by CHADS2 risk stratification
Denominator Details	The assessment of patients with nonvalvular AF for thromboembolic risk factors should include the following criteria: [Risk Factors] [Weighting] Prior Stroke, TIA, or Systemic Embolism High Risk Age >= 75 Years Moderate Risk Hypertension Moderate Risk Diabetes Mellitus Moderate Risk Heart Failure or Impaired Left Ventricular Systolic Function Moderate Risk See 'Registry Supplemental Resources' attached in appendix field A.1. For the denominator ? Atrial Flutter: ICD-9-CM: 427.32 ICD-10-CM: I48.1 SNOMED-CT: 5370000, 195080001, 425615007, 427665004 Atrial Fibrillation: ICD-9-CM: 427.31

	ICD-10-CM: I48.0 SNOMED-CT: 7141000047109, 49436004, 195080001, 233910005, 233911009, 282825002, 314208002, 426749004, 440028005, 440059007 Encounters: CPT: 99201, 99202, 99203, 99204, 99205, 99212, 99213, 99214, 99215, 99241, 99242, 99243, 99244, 99245 SNOMED-CT: 4525004, 12843005, 18170008, 19681004, 87790002, 90526000, 185349003, 185463005, 185465003, 207195004, 270427003, 270430005, 308335008, 390906007, 406547006, 439708006
Exclusions	Denominator Exclusions: •Patients with mitral stenosis or prosthetic heart valves •Patients with transient or reversible causes of AF (eg, pneumonia, hyperthyroidism, pregnancy, cardiac surgery) Denominator Exceptions: Documentation of medical reason(s) for not prescribing warfarin OR another oral anticoagulant drug that is FDA approved for the prevention of thromboembolism (eg, allergy, risk of bleeding, other medical reason) Documentation of patient reason(s) for not prescribing warfarin OR another oral anticoagulant drug that is FDA approved for the prevention of thromboembolism (eg, economic, social, and/or religious impediments, noncompliance, patient refusal, other patient reason)
Exclusion details	The ACCF, AHA, and PCPI distinguish between measure exceptions and measure exclusions. Exclusions arise when the intervention required by the numerator is not appropriate for a group of patients who are otherwise included in the initial patient or eligible population of a measure (ie, the denominator). Exclusions are absolute and are to be removed from the denominator of a measure and therefore clinical judgment does not enter the decision. For measure 1525, exclusions include patients with mitral stenosis or prosthetic heart valves, and patients with transient or reversible causes of AF (eg, pneumonia, hyperthyroidism, pregnancy, cardiac surgery). Exclusions, including applicable value sets, are included in the measure specifications. Measure Exceptions Exceptions are used to remove a patient from the denominator of a performance measure when the patient does not receive a therapy or service AND that therapy or service would not be appropriate due to patient-specific reasons. The patient would otherwise meet the denominator criteria. Exceptions are not absolute, and are based on clinical judgment, individual patient characteristics, or patient preferences. The ACCF, AHA, PCPI exception methodology uses three categories of exception 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 1525, exceptions may include medical reason(s) (eg, allergy, risk of bleeding, other medical reason) or patient reason(s) (eg, economic, social, and/or religious impediments, noncompliance, patient refusal, other patient reason). 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 are included in 'Registry Supplemental Resources' attached in appendix field A.1.
Risk	No risk adjustment or risk stratification

Adjustment	No risk adjustment or risk stratification.
Stratification	We encourage the results of this measure be stratified by race, ethnicity, administrative sex, and payer, consistent with the data elements collected by the Pinnacle Registry.
Type Score	Rate/proportion better quality = higher score
Algorithm	To calculate performance rates: 1) Find the patients who meet the initial patient population (ie, 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. (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) Find the patients who quality 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 (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 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)(eg, allergy, risk of bleeding, other medical reason) or patient reason(s)(eg, 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 (ie, 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. For calculation algorithm, see 'Registry Supplemental Resources' attached in appendix field A.1. Available in attached appendix at A.1
Copyright / Disclaimer	5.1 Identified measures: 0241 : Stroke and Stroke Rehabilitation: Anticoagulant Therapy Prescribed for Atrial Fibrillation (AF) at Discharge 0436 : STK-03: Anticoagulation Therapy for Atrial Fibrillation/Flutter 5a.1 Are specs completely harmonized? No 5a.2 If not completely harmonized, identify difference, rationale, impact: Measures 0241 and 0436 focus on the provision of anticoagulant therapy in patients hospitalized with stroke who also have atrial fibrillation. These measures focus on secondary prevention of stroke, while our measure focuses on the primary prevention of stroke. 5b.1 If competing, why superior or rationale for additive value: Not applicable, no competing measures.

	~~**0543 Adherence to Statin Therapy for Individuals with Cardiovascular Disease**~~
~~Status~~	~~Submitted~~
~~Steward~~	~~Centers for Medicare & Medicaid Services~~
~~Description~~	~~The percentage of individuals with cardiovascular disease (CVD), including coronary artery disease, cerebrovascular disease, and peripheral artery disease presumed to be of atherosclerotic origin, who are prescribed statin therapy that had a Proportion of Days~~

	Covered (PDC) for statin medications of at least 0.8 during the measurement period (12 consecutive months).
Type	Process
Data Source	Administrative claims For measure calculation, the following Medicare files were required: • Denominator tables • Prescription drug benefit (Part D) coverage tables • Beneficiary file • Institutional claims (Part A) • Non-institutional claims (Part B) — physician carrier/non-DME • Prescription drug benefit (Part D) claims For ACO attribution, the following were required: • Denominator tables for Parts A and B enrollment • Prescription drug benefit (Part D) coverage tables • Beneficiary file • Institutional claims (Part A) • Non-institutional claims (Part B) — physician carrier/non-DME • Prescription drug benefit (Part D) claims For physician group attribution, the following were required: • Non-institutional claims (Part B) — physician carrier/non-DME • Denominator tables to determine individual enrollment • Beneficiary file or coverage table to determine hospice benefit and Medicare as secondary payor status • CMS physician and physician specialty tables • National Plan & Provider Enumeration System (NPPES) database No data collection instrument provided Attachment 2014_NQF_0543_Code_Tables.xlsx
Level	Clinician : Group/Practice, Health Plan, Integrated Delivery System, Population : State
Setting	Ambulatory Care : Clinician Office/Clinic
Time Window	We define this as any time during the measurement period (12 consecutive months).
Numerator Statement	Individuals with CVD who had at least two prescription drug claims for statins and have a PDC for statin medications of at least 0.8
Numerator Details	The numerator is defined as individuals with a PDC of 0.8 or greater. The PDC is calculated as follows: PDC NUMERATOR: The PDC numerator is the sum of the days covered by the days' supply of all statin prescriptions. The period covered by the PDC starts on the day the first prescription is filled (index date) and lasts through the end of the measurement period, or death, whichever comes first. For prescriptions with a days' supply that extends beyond the end of the measurement period, count only the days for which the drug was available to the individual during the measurement period. If there are prescriptions for the same drug (generic name) on the same date of service, keep the prescription with the largest days' supply. If prescriptions for the same drug (generic name) overlap, then adjust the prescription start date to be the day after the previous fill has ended. PDC DENOMINATOR: The PDC denominator is the number of days from the first prescription date through the end of the measurement period, or death date, whichever comes first.
Denominator Statement	Individuals at least 21 years of age as of the beginning of the measurement period with CVD (including coronary artery disease, cerebrovascular disease, and peripheral artery disease presumed to be of atherosclerotic origin) and at least two claims for statins during the measurement period (12 consecutive months)

Denominator Details	IDENTIFICATION OF CARDIOVASCULAR DISEASE Individuals with CVD are identified by having a diagnosis of CVD within the inpatient or outpatient claims data. Individuals must have: At least two face-to-face encounters with a diagnosis of CVD with different dates of service in an outpatient setting or non-acute inpatient setting during the measurement period; Or At least one face-to-face encounter with a diagnosis of CVD in an acute inpatient or emergency department setting during the measurement period. CODES USED TO IDENTIFY CVD DIAGNOSIS: ICD-9-CM: 410.xx, 411.0, 411.1, 411.81, 411.89, 412, 413.0, 413.9, 414.00, 414.01, 414.02, 414.03, 414.04, 414.05, 414.06, 414.07, 414.2, 414.3, 414.4, 414.8, 414.9, 433.xx, 434.xx, 435.xx, 436.xx, 437.0, 437.1, 440.xx, V45.81, V45.82 ICD-9-CM Procedure Code: 36.xx ICD-10-CM: 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, I24.8, 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, I25.89, I25.9, I65.1, I63.02, I63.12, I63.22, I65.21, I65.22, I65.23, I65.29, I63.031, I63.032, I63.039, I63.131, I63.132, I63.139, I63.231, I63.232, I63.239, I65.01, I65.02, I65.03, I65.09, I63.011, I63.012, I63.019, I63.111, I63.112, I63.119, I63.211, I63.212, I63.219, I65.8, I63.59, I65.8, I63.09, I63.19, I63.59 ,I65.9, I63.00, I63.10, I63.20, I63.29, I66.01, I66.02, I66.03, I66.09, I66.11, I66.12, I66.13, I66.19, I66.21, I66.22, I66.23, I66.29, I66.3, I63.30, I63.311, I63.312, I63.319, I63.321, I63.322, I63.329, I63.331, I63.332, I63.339, I63.341, I63.342, I63.349, I63.39, I63.6, I66.01, I66.02, I66.03, I66.09, I66.11, I66.12, I66.13, I66.19, I66.21, I66.22, I66.23, I66.29, I66.3, I66.9, I63.40, I63.411, I63.412, I63.419, I63.421, I63.422, I63.429, I63.431, I63.432, I63.439, I63.441, I63.442, I63.449, I63.49, I66.01, I66.02, I66.03, I66.09, I66.11, I66.12, I66.13, I66.19, I66.21, I66.22, I66.23, I66.29, I66.3, I66.8, I66.9, I63.50, I63.511, I63.512, I63.519, I63.521, I63.522, I63.529, I63.531, I63.532, I63.539, I63.541, I63.542, I63.549, I63.59, I63.8, I63.9, G45.0, G45.0, G45.8, G45.0, G45.1, G45.2, G45.8, G46.0, G46.1, G46.2, G45.9, I67.841, I67.848, I67.89, I67.2, I67.81, I67.82, I67.89, I70.201, I70.202, I70.203, I70.208, I70.209, I70.211, I70.212, I70.213, I70.218, I70.219, I70.221, I70.222, I70.223, I70.228, I70.229, I70.231, I70.232, I70.233, I70.234, I70.235, I70.238, I70.239, I70.241, I70.242, I70.243, I70.244, I70.245, I70.248, I70.249, I70.25, I70.261, I70.262, I70.263, I70.268, I70.269, I70.291, I70.292, I70.293, I70.298, I70.299, I70.301, I70.302, I70.303, I70.308, I70.309, I70.311, I70.312, I70.313, I70.318, I70.319, I70.321, I70.322, I70.323, I70.328, I70.329, I70.331, I70.332, I70.333, I70.334, I70.335, I70.338, I70.339, I70.341, I70.342, I70.343, I70.344, I70.345, I70.348, I70.349, I70.35, I70.361, I70.362, I70.363, I70.368, I70.369, I70.391, I70.392, I70.393, I70.398, I70.399, I70.601, I70.602, I70.603, I70.608, I70.609, I70.611, I70.612, I70.613, I70.618, I70.619, I70.621, I70.622, I70.623, I70.628, I70.629, I70.631, I70.632, I70.633, I70.634, I70.635, I70.638, I70.639, I70.641, I70.642, I70.643, I70.644, I70.645, I70.648, I70.649, I70.65, I70.661, I70.662, I70.663, I70.668, I70.669, I70.691, I70.692, I70.693, I70.698, I70.699, I70.701, I70.702, I70.703, I70.708, I70.709, I70.711, I70.712, I70.713, I70.718, I70.719, I70.721, I70.722, I70.723, I70.728, I70.729, I70.731, I70.732, I70.733, I70.734, I70.735, I70.738, I70.739, I70.741, I70.742, I70.743, I70.744, I70.745, I70.748, I70.749, I70.75, I70.761, I70.762, I70.763, I70.768, I70.769, I70.791, I70.792, I70.793, I70.798, I70.799, I70.401, I70.402, I70.403, I70.408, I70.409, I70.411, I70.412, I70.413, I70.418, I70.419, I70.421, I70.422, I70.423, I70.428, I70.429, I70.431, I70.432, I70.433, I70.434, I70.435, I70.438, I70.439, I70.441, I70.442, I70.443, I70.444, I70.445, I70.448, I70.449, I70.45, I70.461, I70.462, I70.463, I70.468, I70.469, I70.491, I70.492, I70.493, I70.498, I70.499, I70.501, I70.502, I70.503, I70.508, I70.509, I70.511, I70.512, I70.513, I70.518, I70.519, I70.521, I70.522, I70.523, I70.528, I70.529, I70.531, I70.532, I70.533, I70.534, I70.535, I70.538, I70.539, I70.541, I70.542, I70.543, I70.544, I70.545, I70.548, I70.549, I70.55, I70.561, I70.562, I70.563, I70.568, I70.569,

	I70.591, I70.592, I70.593, I70.598, I70.599, Z95.1, Z95.5, Z98.61 Current Procedural Terminology (CPT)*: 33140, 33510, 33511, 33512, 33513, 33514, 33516, 33517, 33518, 33519, 33521, 33522, 33523, 33530, 33533, 33534, 33535, 33536, 92980, 92981, 92982, 92984, 92995, 92996 CODES USED TO IDENTIFY ENCOUNTER TYPE: OUTPATIENT SETTING CPT: 99201-99205, 99211-99215, 99217-99220, 99241-99245, 99341-99345, 99347-99350, 99384-99387, 99401-99404, 99411, 99412, 99420, 99429 UB-92 revenue: 051x, 0520-0523, 0526-0529, 057x-059x, 077x, 082x-085x, 088x, 0982, 0983 NONACUTE INPATIENT CPT: 99304-99310, 99315, 99316, 99318, 99324-99328, 99334-99337 UB-92 revenue: 0118, 0128, 0138, 0148, 0158, 019x, 0524, 0525, 055x, 066x ACUTE INPATIENT CPT: 99221-99223, 99224-99226, 99231-99233, 99238, 99239, 99251-99255, 99291 UB-92 revenue: 010x, 0110-0114, 0119, 0120-0124, 0129, 0130-0134, 0139, 0140-0144, 0149, 0150-0154, 0159, 016x, 020x-022x, 072x, 080x, 0987 EMERGENCY DEPARTMENT CPT: 99281-99285 UB-92 revenue: 045x, 0981 *CPT ©2011 American Medical Association. All rights reserved. CPT is a registered trademark of the American Medical Association. The following are the statin medications by class for the denominator. The route of administration includes all oral formulations of the medications listed below. STATIN MEDICATIONS: HMG-COA reductase inhibitors: atorvastatin fluvastatin lovastatin pravastatin rosuvastatin simvastatin pitavastatin HMG-COA reductase inhibitors combinations: amlodipine-atorvastatin ezetimibe-simvastatin ezetimibe-atorvastatin niacin-lovastatin niacin-simvastatin sitagliptin-simvastatin
Exclusions	Not Applicable
Exclusion details	Not Applicable
Risk Adjustment	No risk adjustment or risk stratification Not Applicable
Stratification	Depending on the operational use of the measure, measure results may be stratified by: • State • Accountable Care Organizations (ACOs)

	• Plan • Physician Group • Age- Divided into 6 categories: 18-24, 25-44, 45-64, 65-74, 75-84, and 85+ years of age • Race/Ethnicity • Dual Eligibility
Type Score	Rate/proportion better quality = higher score
Algorithm	Adherence to Statin Therapy for Individuals with CVD is calculated as follows: Obtain Medicare administrative claims data and related files as described in detail in Section S.23 – S.24. Denominator: Individuals at least 21 years of age and older as of the beginning of the measurement period with CVD and at least 2 prescription drug claims for a statin in the measurement period Create Denominator: 1. Pull individuals who are 21 years of age or older as of the beginning of the measurement period. 2. Include individuals who were continuously enrolled in Part D coverage during the measurement period, with no more than a one-month gap in enrollment during the measurement period. 3. Include individuals who had no more than a one-month gap in Part A enrollment, no more than a one-month gap in Part B enrollment, and no more than 1 month of HMO enrollment during the current measurement period (fee-for-service [FFS] individuals only). 4. Of those individuals identified in Step 3, keep those who had: At least 2 face-to-face encounters with a principal or secondary diagnosis of CVD with different dates of service in an outpatient setting or non-acute inpatient setting during the measurement period, OR At least 1 face-to-face encounter with a principal or secondary diagnosis of CVD in an acute inpatient setting or emergency department setting during the measurement period. 5. From the individuals identified in Step 4, extract Part D claims for a statin drug. Attach the generic name and the drug ID to the dataset. 6. Of the individuals identified in Step 5, exclude those who did not have at least 2 claims for a statin on different dates of service during the measurement period. Numerator: Individuals with CVD who had at least two prescription drug claims for a statin and had a PDC of at least 0.8 during the measurement period Create Numerator: Of the individuals in the denominator, calculate the PDC for each individual according to the following methods: 1. Determine the individual's measurement period, defined as the number of days from the index prescription date through the end of the measurement period, or death, whichever comes first. Index date is the date of the first prescription in the measurement period. 2. Within the measurement period, count the days the individual was covered by at least one statin drug based on the prescription fill date and days of supply. a. Pull Part D statin claims for individuals in the denominator. Attach the drug ID and the generic name to the dataset. b. Sort and de-duplicate claims by beneficiary ID, service date, generic name, and descending days' supply. If prescriptions for the same drug (generic name) are dispensed on the same date of service for an individual, keep the dispensing with the largest days' supply. c. Calculate the number of days covered by statin drug therapy per individual. d. For prescriptions with a days' supply that extends beyond the end of the measurement

	period, count only the days for which the drug was available to the individual during the measurement period. e. If prescriptions for the same drug (generic name) overlap, then adjust the prescription start date to be the day after the previous fill has ended. f. If prescriptions for different drugs (different generic names) overlap, do not adjust the prescription start date. 3. Calculate the PDC for each individual. Divide the number of covered days found in Step 2 by the number of days in the individual's measurement period found in Step 1. An example of SAS code for Steps 1-3 was adapted from PQA and is also available at the URL: http://www2.sas.com/proceedings/forum2007/043-2007.pdf. Using the individuals identified in the denominator, count the number of individuals with a calculated PDC of at least 0.8. No diagram provided
Copyright / Disclaimer	5.1 Identified measures: 1880 : Adherence to Mood Stabilizers for Individuals with Bipolar I Disorder 1879 : Adherence to Antipsychotic Medications for Individuals with Schizophrenia 1519 : Statin Therapy at Discharge after Lower Extremity Bypass (LEB) 0639 : Statin Prescribed at Discharge 0611 : Hyperlipidemia (Primary Prevention) - Lifestyle Changes and/or Lipid Lowering Therapy 0569 : ADHERENCE TO STATINS 0545 : Adherence to Statins for Individuals with Diabetes Mellitus 0542 : Adherence to Chronic Medications 0541 : Proportion of Days Covered (PDC): 3 Rates by Therapeutic Category 0118 : Anti-Lipid Treatment Discharge 0076 : Optimal Vascular Care 0075 : Ischemic Vascular Disease (IVD): Complete Lipid Profile and LDL-C Control <100 mg/dL 0074 : Chronic Stable Coronary Artery Disease: Lipid Control 0070 : Coronary Artery Disease (CAD): Beta-Blocker Therapy—Prior Myocardial Infarction (MI) or Left Ventricular Systolic Dysfunction (LVEF <40%) 0067 : Chronic Stable Coronary Artery Disease: Antiplatelet Therapy 0066 : Chronic Stable Coronary Artery Disease: ACE Inhibitor or ARB Therapy - Diabetes or Left Ventricular Systolic Dysfunction (LVEF <40%) 5a.1 Are specs completely harmonized? No 5a.2 If not completely harmonized, identify difference, rationale, impact: NQF 0543 is related to and completely harmonized with the four NQF-endorsed measures that use the PDC method of calculating adherence. These four measures (measure titles are provided in Section 5.1a above) include one NQF-endorsed measure by PQA (NQF 0541) and three NQF-endorsed measures by CMS (NQF 0542, 0545, and 1879). For the related measures that are not completely harmonized with NQF 0543, the following paragraphs identify differences between these measures and NQF 0543, rationale, impact on interpretability, and data collection burden. Chronic Stable Coronary Artery Disease Measures by American Medical Association-Physician Consortium for Performance Improvement (AMA-PCPI) - NQF 0543 has the same general target population (i.e., individuals with cardiovascular disease) as the four measures developed by the AMA-PCPI. The four AMA-PCPI measures (NQF 0066, 0067, 0070, and 0074) are related to, but are not completely harmonized with, NQF 0543. Differences between NQF 0543 and AMA-PCPI Chronic Stable Coronary Artery Disease Measures - Identification of Individuals with Clinical Disease: NQF 0543 uses an algorithm for identifying individuals with cardiovascular disease of atherosclerotic origin (i.e., coronary artery disease, cerebrovascular disease, and peripheral artery disease presumed to be of atherosclerotic origin), which entails using diagnosis codes and/or procedure codes to identify atherosclerotic cardiovascular disease within the inpatient or outpatient claims data. However, the AMA-PCPI Chronic Stable

	~~Coronary Artery Disease Measures use only diagnosis codes for coronary artery disease at an ambulatory visit. Both NQF 0543 and the AMA-PCPI Chronic Stable Coronary Artery Disease Measures identify patients within the a 12-month measurement period. Age of individuals in measure: NQF 0543 includes individuals who are at least 21 years of age, and older and the AMA-PCPI Chronic Stable Coronary Artery Disease Measures include individuals who are at least 18 years of age and older. Rationale: NQF 0543 and the AMA-PCPI Chronic Stable Coronary Artery Disease Measures both use a one-year time frame. The age range (i.e., >21 years of age) and the clinical conditions (i.e., atherosclerotic cardiovascular disease) of individuals included in NQF 0543 are consistent with the 2013 ACC/AHA Guideline on the Treatment of Blood Cholesterol to Reduce Atherosclerotic Cardiovascular Risk in Adults (Stone et al., 2013), whereas the age range and clinical conditions used in the AMA-PCPI Measures (i.e., 18 years of age and older and coronary artery disease) may be consistent with other guidelines relevant to the topics of those measures. Impact on interpretability: NQF 0543 includes individuals with cerebrovascular disease, and peripheral artery disease, in addition to those with coronary artery disease, whereas the AMA-PCPI measures include only those identified as having coronary artery disease. In addition, NQF 0543 includes individuals identified on the basis of inpatient and outpatient diagnosis codes, whereas the AMA-PCPI measures include only those identified using outpatient claims. Therefore, NQF 0543 uses a broader definition of the eligible population than the AMA-PCPI measures. Data collection burden: The target population of NQF 0543 is identified using administrative/claims data, so the data collection burden is minimal. The AMA-PCPI Chronic Stable Coronary Artery Disease Measures use either administrative/claims data or electronic health record data, and therefore, may require more time and resources to calculate the measure. NQF 0075 Ischemic Vascular Disease (IVD): Complete Lipid Profile and LDL-C Control <100 mg/dL (National Committee for Quality Assurance) - NQF 0543 has the same general target population (i.e., individuals with cardiovascular disease) as this measure developed by the National Committee for Quality Assurance (NCQA). This measure is related to, but is not completely harmonized with, NQF 0543. Differences between NQF 0543 and NQF 0075: Identification of Individuals with Cardiovascular Disease: NQF 0543 uses the same algorithm for identifying individuals with cardiovascular disease as NQF 0075, which entails using diagnosis codes and/or procedure codes to identify cardiovascular disease within the inpatient or outpatient claims data. However, NQF 0543 uses only claims for the 12-month measurement period, whereas NQF 0075 uses a look-back period of one year prior to the measurement period for diagnosis and procedure data. Age of Individuals Included in the Measure: NQF 0543 includes individuals who are at least 21 years of age and older as of the beginning of the measurement year, whereas NQF 0075 includes individuals who are 18-75 years as of December 31st of the measurement year. Rationale: NQF 0543 uses a one-year time frame, rather than two years for NQF 0075, which allows more individuals (i.e., those with one year of data) to be included. NQF 0543 includes individuals 21 years and older, rather than 18-75 years for NCQA's NQF 0075, to be consistent with the recommendations of the 2013 ACC/AHA Guideline on the Treatment of Blood Cholesterol to Reduce Atherosclerotic Cardiovascular Risk in Adults (Stone et al., 2013). Impact on interpretability: NQF 0543 is easier to interpret than NQF 0075 because it is consistent with the latest ACC/AHA Cholesterol Treatment Guideline. Data collection burden: The target populations of NQF 0543 and NQF 0075 are identified using administrative claims or encounter data, so the data collection burden for the two measures should be similar. NQF 0569 Adherence to Statins (Health Benchmark-IMS Health): NQF 0543 and NQF 0569 address the same measure focus (i.e., adherence to statin therapy), but NQF 0569 has a different target population (i.e., diabetes, hyperlipidemia, and coronary artery disease). Differences between NQF 0543 and NQF 0569: NQF 0543 uses the proportion of days covered (PDC) methodology rather than the medication possession ratio (MPR). The PDC used in NQF 0543 provides a more conservative estimate of adherence when a patient might be switching among several medications for the same indication or using multiple medications within a single class (Nau, n.d.) than the MPR used by NQF 0569. The PDC provides a better estimate of adherence under these circumstances. NQF 0569 excludes "new users of a statin~~

	~~that started after the first three months of the measurement year." NQF 0543 covers the entire 12-month measurement period. The impact of the exclusion used in NQF 0569 would be to limit the measure to those who have at least 9 months of data. Rationale: NQF 0543 is intended as a statin adherence measure for all patients with cardiovascular disease of atherosclerotic origin, to be consistent with the 2013 ACC/AHA Guideline on the Treatment of Blood Cholesterol to Reduce Atherosclerotic Cardiovascular Risk in Adults (Stone et al., 2013) recommendations for statin therapy. Impact on interpretability: NQF 0543 is easier to interpret than NQF 569 because it calculates adherence for all patients with cardiovascular disease of atherosclerotic origin, rather than restricting the denominator to those with cardiovascular disease and other indications. Data collection burden: Both measures are based on administrative claims data, so there should be little or no difference in data collection burden. Citations for 5a.2 - Nau, D. P. (n.d.). Proportion of days covered (PDC) as a preferred method of measuring medication adherence. Pharmacy Quality Alliance. Retrieved from http://www.pqaalliance.org/images/uploads/files/PQA%20PDC%20vs%20MPR.pdf Stone, N. J., Robinson, J., Lichtenstein, A. H., Merz, C. N. B., Blum, C. B., Eckel, R. H., . . . Wilson, P. W. F. (2013). 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. Journal of the American College of Cardiology. doi: 10.1161/01.cir.0000437738.63853.7a~~ ~~5b.1 If competing, why superior or rationale for additive value: None~~

	2461 In-Person Evaluation Following Implantation of a Cardiovascular Implantable Electronic Device (CIED)
Status	Submitted
Steward	Heart Rhythm Society
Description	Proportion of adult patients with a new CIED with an in-person evaluation within 2 to 12 weeks following implantation.
Type	Process
Data Source	Administrative claims Not applicable. Available at measure-specific web page URL identified in S.1 Attachment xlHRS4ICD-9to-10CodeCrosswalk01-15-13FINAL.xls
Level	Clinician : Individual
Setting	Ambulatory Care : Clinician Office/Clinic, Hospital/Acute Care Facility
Time Window	12 months.
Numerator Statement	This measures assess the number of patients from the denominator with an in-person evaluation within 2-12 weeks following implantation. For the purposes of this measure, an "in-person evaluation" is defined as an in-person interrogation device evaluation either with or without iterative adjustment, as clinically indicated. The in-person evaluation can be provided by any trained physician or Clinically Employed Allied Professional (CEAP) in a designated CIED follow-up clinic, medical institution, or physician office.
Numerator Details	Patients to be included in the numerator are identified using the following interrogation and programming device evaluation CPT codes: • Pacemaker Systems: 93288, 93279, 93280, or 93281 • ICD Systems: 93289, 93282, 93283, or 93284
Denominator Statement	All Medicare FFS patients with implantation of a new CIED during the reporting period. CIEDs encompassed for this measure are the following devices: • Pacemakers (PMs)

	• Implantable cardioverter-defibrillators (ICDs) • Cardiac resynchronization devices (CRTs)
Denominator Details	The patients to be included in the denominator population are identified when any of the following CIED placement codes are included in their administrative claims: • ICD-9 Procedure Codes: 00.50, 00.51, 37.8, 37.80—37.83, 37.94 -CPT Codes: 33206—33208, 33249
Exclusions	Exclude patients with any of the following diagnoses/conditions: 1. Patients with Implantable Loop Recorders or Implantable Cardiovascular Monitors. 2. Patients with pulse generator exchange only. 3. Patients with prior CIED implantation. 4. Patient preference for other or no treatment.
Exclusion details	Patients with any of the following exclusion codes are emoved from denominator population: • ICD-9 Procedure Codes: V45.01, V45.02, V53.31, V53.32, V62.6, 37.85—37.87, 37.89, 37.98, • CPT Codes: 33214, 33227-33229, 32322, 33236, 33237, 33240, 33241, 33244, 33262-33264
Risk Adjustment	No risk adjustment or risk stratification Not applicable.
Stratification	The measure does not require stratification.
Type Score	Rate/proportion better quality = higher score
Algorithm	1. Search records to build file of all Medicare FFS patients. The “fixed” fields that should be a part of the file are patient name/identifier, physician, procedure code, date of procedure, date of evaluation. You will calculate the time elapsed between procedure and evaluation with a formula once the data are obtained. 2. The denominator is determined by narrowing search file by retaining only those with an implantation of a new CIED (i.e., pacemakers, implantable cardioverter-de?brillators, cardiac resynchronization devices) from mm/dd/yyyy through mm/dd/yyyy (365 days). Include in the cohort all patients with hospital claims with any of the following CPT or ICD-9 procedure codes: • ICD-9 Procedure Codes: 00.50, 00.51, 37.8, 37.80—37.83, 37.94 • CPT Codes: 33206—33208, 33249 [Note: If a patient has more than one of any denominator code only use the first one.] 3. Capture the date of the CIED implantation. 4. Exclude patients with hospital or physician office claims for any of the following diagnoses/conditions: patients with Implantable Loop Recorders or Implantable Cardiovascular Monitors; patients with pulse generator exchange only; patients with prior CIED implantation; and patients with preference for other or no treatment. • ICD-9 Procedure Codes: V45.01, V45.02, V53.31, V53.32, V62.6, 37.85—37.87, 37.89, 37.98, • CPT Codes: 33214, 33227-33229, 32322, 33236, 33237, 33240, 33241, 33244, 33262-33264 5. Next, exclude patients if the implementation of a new CIED occurs during the last 83 days of the 12-month report period. If records for the period mm/dd/yyyy to mm/dd/yy are used, exclude patients where one of the above procedure codes occurs on or after 12 weeks prior end date. 6. The number of patients left constitutes the denominator. 7. To obtain the numerator, use a copy of the aforementioned denominator file less the exclusions. Identify all patients with physician office claims with any of the following codes, indicating that an interrogation or programming device evaluation occurred: • Pacemaker Systems: 93288, 93279, 93280, or 93281 • ICD Systems: 93289, 93282, 93283, or 93284 8. Capture the date of the interrogation/programming device evaluation.

	9. Convert the dates for the procedures into the appropriate Excel format to calculate elapsed time between the CIED implantation and the interrogation/programming device evaluation. See for example: http://support.microsoft.com/kb/214094 10. Exclude all patients whose elapsed time is >84 days. The remaining patients are those who meet the numerator criteria. 11. The performance is calculated as numerator/denominator. No diagram provided
Copyright / Disclaimer	5.1 Identified measures: 5a.1 Are specs completely harmonized? 5a.2 If not completely harmonized, identify difference, rationale, impact: Not applicable. 5b.1 If competing, why superior or rationale for additive value: Not applicable.

	2474 Cardiac Tamponade and/or Pericardiocentesis Following Atrial Fibrillation Ablation
Status	Submitted
Steward	Heart Rhythm Society
Description	Rate of cardiac tamponade and/or pericardiocentesis following atrial fibrillation (AF) ablation.
Type	Outcome
Data Source	Administrative claims Not applicable. Available at measure-specific web page URL identified in S.1 Attachment xlHRS12ICD-9to-10CodeCrosswalk01-15-13FINAL.xls
Level	Facility, Clinician : Individual
Setting	Ambulatory Care : Clinician Office/Clinic, Hospital/Acute Care Facility
Time Window	The performance results are calculated using a three-year rolling average. The average is calculated by summing the numerators for three consecutive years and dividing by the sum of the denominators for the same three consecutive years.
Numerator Statement	The number of patients from the denominator with cardiac tamponade and/or pericardiocentesis occurring within 30 days following atrial fibrillation ablation.
Numerator Details	The following CPT codes should be used: • Diagnosis = Cardiac tamponade (ICD-9 423.3) AND/OR any of the following ICD-9 or CPT Procedure Codes • Procedure = Pericardiocentesis (ICD-9 37.0; CPT 33010, 33011)
Denominator Statement	All patients aged 18 years and older with atrial fibrillation ablation performed during the reporting period.
Denominator Details	Include in the cohort patients with any one or more of the following CPT code or ICD-9 procedure codes: • Procedure = Atrial Fibrillation Ablation (ICD-9 37.33, 37.34; CPT 33250, 33251, 33254, 33255, 33256, +33257, +33258, +33259, 33265, 33266, 93650, 93651, 93653, +93655, 93656, +93657; HCPCS C1886) AND • Diagnosis on date of procedure = Atrial Fibrillation (ICD-9 427.31); the presence of any additional ablation-related diagnosis code(s) is immaterial for purpose of inclusion in the denominator population.
Exclusions	No exclusions.
Exclusion details	Not applicable.

Risk Adjustment	Stratification by risk category/subgroup Not applicable; not risk adjusted.
Stratification	Stratify measure by the following categories: age and gender.
Type Score	Rate/proportion better quality = lower score
Algorithm	Determine rate of cardiac tamponade and/or pericardiocentesis following atrial fibrillation ablation. 1. Search records to build file of all patients who are 18 years or older as of event start date. 2. The denominator is determined by narrowing search file by retaining only those with an Atrial Fibrillation Ablation during the three-year study period. Include in the cohort patients with any one or more of the following CPT code or ICD-9 procedure codes: • Procedure = Atrial Fibrillation Ablation (ICD-9 37.33, 37.34; CPT 33250, 33251, 33254, 33255, 33256, +33257, +33258, +33259, 33265, 33266, 93650, 93651, 93653, +93655, 93656, +93657; HCPCS C1886) AND • Diagnosis on date of procedure = Atrial Fibrillation (ICD-9 427.31); the presence of any additional ablation-related diagnosis code(s) is immaterial for purpose of inclusion in the denominator population. If there is no diagnosis code present on the date of the ablation procedure, identify all of the following procedure codes (and corresponding dates) coded in the 30-days prior to the procedure: • Diagnosis = Atrial Fibrillation (ICD-9 427.31) • Diagnosis = Paroxysmal Supraventricular Tachycardia (ICD-9 427.0) • Diagnosis = Paroxysmal Ventricular Tachycardia (ICD-9 427.1) • Diagnosis = Paroxysmal Tachycardia, Unspecified (ICD-9 427.2) • Diagnosis = Atrial Flutter (ICD-9 427.32) • Diagnosis = Wolf-Parkinson-White Syndrome (ICD-9 426.7) • Diagnosis = Nonparoxysmal Atrioventricular Nodal Tachycardia (ICD-9 426.89) • Diagnosis = Atrioventricular Nodal Reentrant Tachycardia (ICD-9 427.89) Include in the denominator only those patients whose most recent diagnosis code (i.e., the code dated most proximal to the ablation procedure) is Atrial Fibrillation (ICD-9 427.31); when Atrial Fibrillation is the most recent diagnosis code, the presence of any additional ablation-related diagnosis code(s) on the same date is immaterial for purpose of inclusion in the denominator population. 3. To calculate the numerator, select the patients retained in the denominator, and identify the patients who had cardiac tamponade and/or pericardiocentesis occurring within 30 days following atrial fibrillation ablation. The following CPT codes should be used: • Diagnosis = Cardiac tamponade (ICD-9 423.3) AND/OR any of the following ICD-9 or CPT Procedure Codes • Procedure = Pericardiocentesis (ICD-9 37.0; CPT 33010, 33011) 4. The performance is calculated as numerator/denominator. Available in attached appendix at A.1
Copyright / Disclaimer	5.1 Identified measures: 5a.1 Are specs completely harmonized? 5a.2 If not completely harmonized, identify difference, rationale, impact: Not applicable. 5b.1 If competing, why superior or rationale for additive value: Not applicable.

	0715 Standardized adverse event ratio for children < 18 years of age undergoing cardiac catheterization
Status	Submitted
Steward	Boston Children's Hospital
Description	Ratio of observed to expected clinically important adverse events, risk-adjusted using the Catheterization for Congenital Heart Disease Adjustment for Risk Method (CHARM)
Type	Outcome
Data Source	Electronic Clinical Data, Paper Medical Records, Electronic Clinical Data : Registry Multi-center registry for congenital cardiac catheterization procedures. Attachment 2a1.30_Data_Dictionary-634828755893693057-635216662178470422-635421392122638298.doc
Level	Facility
Setting	Hospital/Acute Care Facility
Time Window	Not pre-specified, but a minimum of one year is recommended.
Numerator Statement	Number of diagnostic and interventional cardiac catheterization cases for children < 18 years of age resulting in a clinically important adverse event, performed by an institution performing at least 50 cases per year in pediatric patients < 18 years of age.
Numerator Details	Clinically important events are defined as follows: Moderate adverse event (transient change in condition may be life-threatening if not treated, condition returns to baseline, required monitoring, required intervention such as reversal agent, additional medication, transfer to the intensive care unit for monitoring, or moderate transcatheter intervention to correct condition); major adverse event (change in condition, life-threatening if not treated, change in condition may be permanent, may have required an intensive care unit admission or emergent re-admit to hospital, may have required invasive monitoring, required interventions such as electrical cardioversion or unanticipated intubation or required major invasive procedures or transcatheter interventions to correct condition); or catastrophic adverse event (any death or emergent surgery or heart lung bypass support to prevent death with failure to wean from bypass support). Types of cardiac catheterization procedures eligible for this measure are listed below: Any diagnostic catheterization within 72 hours of surgery Any interventional catheterization within 72 hours of surgery Atrial septostomy / BAS Atrial septostomy / dilation and stent Atrial septostomy / static balloon dilation Balloon angioplasty / aorta Balloon angioplasty / lobar segment LPA RPA Balloon angioplasty / native RVOT Balloon angioplasty / proximal LPA or RPA Balloon angioplasty / RV to PA conduit Balloon angioplasty / RVOT s/p surgery (no conduit) Balloon angioplasty / systemic artery (not aorta) Balloon angioplasty / systemic shunt Balloon angioplasty / systemic vein Balloon angioplasty or stent / pulmonary vein(s) Coil / coronary fistula Coil occlusion / device / systemic arterial collaterals Coil occlusion / LSVC

	Coil occlusion / PDA Coil occlusion / systemic shunt Coil occlusion / veno-veno collaterals Device closure / ASD Device closure / baffle leak Device closure / fenestration Device closure / PDA Device closure / perivalvar leak Device closure / PFO Device closure / venous collateral Device closure / VSD Diagnostic catheterization with EPS Hemodynamic catheterization Interventional techniques / atherectomy catheter Interventional techniques / atretic valve perforation Interventional techniques/ recanulization of jailed vessel in stent Interventional techniques / recanulization of occluded peripheral vessels Interventional techniques / snare foreign body Interventional techniques / trans-septal puncture Invasive procedure / central line placement Invasive procedure / elective chest tube pericardiocentesis Invasive procedure / pericardiocentesis Other intended hemodynamic alteration / oxygen-nitric trial or ionotropes Other procedures: bronchoscopy, drains, echo, TEE RV biopsy diagnostic RV biopsy elective post transplant Stent placement / aorta Stent placement / intracardiac / atria Stent placement / intracardiac / ventricular Stent placement / lobar segment LPA or RPA Stent placement / native RVOT Stent placement / proximal LPA or RPA Stent placement / RV to PA conduit Stent placement / RVOT s/p surgery (no conduit) Stent placement / systemic artery (not aorta) Stent placement / systemic shunt Stent placement / systemic vein Stent redilation / aorta Stent redilation / intracardiac / atria Stent redilation / intracardiac / ventricular Stent redilation / lobar segment LPA or RPA Stent redilation / proximal LPA or RPA Stent redilation / pulmonary vein Stent redilation / RV to PA conduit Stent redilation / systemic artery not aorta Stent redilation / systemic vein

	Ultrasound / IVUS Valvuloplasty / aorta Valvuloplasty / mitral Valvuloplasty / pulmonary Valvuloplasty / tricuspid ASD = atrial septal defect, BAS = balloon atrial septostomy, EPS = electrophysiology study, IVUS = intravascular ultrasound, LPA = left pulmonary artery, LSVC = left superior vena cava, PA = pulmonary artery, PDA = patent ductus arteriosus, PFO = patent foramen ovale, RPA = right pulmonary artery, RV = right ventricle, RVOT = right ventricular outflow tract, TEE = transesophageal echocardiogram, VSD = ventricular septal defect.
Denominator Statement	Number of diagnostic and interventional cardiac catheterization cases for children < 18 years of age, performed by an institution performing at least 50 cases per year in pediatric patients < 18 years of age.
Denominator Details	Types of cardiac catheterization procedures eligible for this measure are listed below: Diagnostic case Device or coil closure: venous collateral; LSVC; PDA; ASD or PFO; Fontan fenestration; system to pulmonary aftery collaterals; systemic surgical shunt; baffle leak; coronary fistula; VSD; perivalvar leak Valvuloplasty: pulmonary valve; aortic valve; tricuspid valve; mitral valve Balloon angioplasty: RVOT, aorta dilation; pulmonary artery, systemic artery (not aorta); systemic surgical shunt; systemic to pulmonary collaterals; systemic vein; pulmonary vein Stent placement: systemic vein; RVOT; aorta; systemic artery (not aorta); ventricular septum, pulmonary artery, pulmonary vein; systemic surgical shunt; systemic pulmonary collateral Stent redilation: RVOT; atrial septum; aorta; systemic artery (not aorta); systemic vein;pulmonary artery; pulmonary vein; ventricular septum Other: myocardial biopsy; snare foreign body; trans-septal puncture; atrial septostomy; recanalization of jailed vessel in stent; recanalization of occluded vessel; atrial septum dilation and stent; any catheterization <4 days after surgery; atretic valve perforation ASD = atrial septal defect, ATM = atmospheres, CB = Cutting Balloon, LSVC = left superior vena cava, PA = pulmonary artery, PDA = patent ductus arteriosus, PFO = patent foramen ovale, RV = right ventricle, RVOT = right ventricular outflow tract (RVOT includes RV to PA conduit or status post RVOT surgery with no conduit), VSD = ventricular septal defect
Exclusions	Primary electrophysiology cases, ablation cases, pericardiocentesis only, thoracentesis only.
Exclusion details	Primary electrophysiology cases, ablation cases, pericardiocentesis only, thoracentesis only.
Risk Adjustment	Statistical risk model The measure is a standardized adverse event ratio for children < 18 years undergoing cardiac catheterization. It is defined as the ratio of observed to expected rates of clinically important adverse events occurring during or following cardiac catheterization. This technique allows computation of an overall risk-adjusted measure of outcome for groups of patients. A logistic regression model is used for risk adjustment to calculate the expected adverse event rate for each group; the outcome variable is occurrence of a clinically important adverse event. The three factors in the adjustment model are: procedure type risk group, number of indicators of hemodynamic vulnerability, and age <1 year versus >= 1 year. 1) Procedure type risk group has 4 categories; categories 2, 3 and 4 are included in the model as binary covariates, with group 1 as the reference category. The procedure type risk group is based on the intervention performed as defined below. Group 1 has the lowest risk of an adverse event and group 4 the highest risk. Risk Category 1

	Diagnostic case: age >= 1 year Device or coil closure: venous collateral, LSVC Other: myocardial biopsy Risk Category 2 Diagnostic case: age >=1 month and <1 year Valvuloplasty: pulmonary valve >=1 month Device or coil closure: PDA, ASD or PFO, Fontan fenestration, system to pulmonary aftery collaterals Balloon angioplasty: RVOT, aorta dilation <8 ATM Stent placement: systemic vein Stent redilation: RVOT, atrial septum, aorta, systemic artery (not aorta), systemic vein Other: snare foreign body, trans-septal puncture Risk Category 3 Diagnostic case: age <1 month Valvuloplasty: aortic valve >=1 month, pulmonary valve <1 month, tricuspid valve Device or coil closure: systemic surgical shunt, baffle leak, coronary fistula Balloon angioplasty: pulmonary artery <4 vessels, pulmonary artery >=4 vessels all <8 ATM, aorta >8 ATM or CB, systemic artery (not aorta), systemic surgical shunt, systemic to pulmonary collaterals, systemic vein Stent placement: RVOT, aorta, systemic artery (not aorta) Stent redilation: pulmonary artery, pulmonary vein Other: atrial septostomy, recanalization of jailed vessel in stent, recanalization of occluded vessel Risk Category 4 Valvuloplasty: mitral valve, aortic valve <1 month Device or coil closure: VSD, perivalvar leak Balloon angioplasty: pulmonary artery >=4 vessels, pulmonary vein Stent placement: ventricular septum, pulmonary artery, pulmonary vein, systemic surgical shunt, systemic pulmonary collateral Stent redilation: ventricular septum Other: atrial septum dilation and stent, any catheterization <4 days after surgery, atretic valve perforation ASD = atrial septal defect, ATM = atmospheres, CB = Cutting Balloon, LSVC = left superior vena cava, PA = pulmonary artery, PDA = patent ductus arteriosus, PFO = patent foramen ovale, RV = right ventricle, RVOT = right ventricular outflow tract (RVOT includes RV to PA conduit or status post RVOT surgery with no conduit), VSD = ventricular septal defect 2) Hemodynamic vulnerability is defined as 0, 1, or >=2 of the indicators below present at the time of catheterization. The presence of 1 or >=2 indicators are included in the model as binary covariates, with 0 indicators as the reference category. Systemic ventricle end diastolic pressure >=18 mm Hg Systemic arterial saturation <95% if not single ventricle, <78% if single ventricle Mixed venous saturation <60% if not single ventricle, <50% if single ventricle Main pulmonary artery systolic pressure >=45 mm Hg if not single ventricle, mean pressure >=17 mm Hg if single ventricle 3) Age at catheterization <1 year versus >= 1 year is included in the model as a binary covariate. References: Bergersen L, Gauvreau K, Marshall A, Kreutzer J, Beekman R, Hirsch R, Foerster S, Balzer D,

	Vincent J, Hellenbrand W, Holzer R, Cheatham J, Moore J, Lock J, Jenkins K. Procedure-type risk categories for pediatric and congenital cardiac catheterization. Circ Cardiovasc Interv. 2011 Apr 1;4(2):188-94. Epub 2011 Mar 8. Bergersen L, Gauvreau K, Foerster SR, Marshall AC, McElhinney DB, Beekman RH, Hirsch R, Kreutzer J, Balzer D, Vincent J, Hellenbrand WE, Holzer R, Cheatham JP, Moore JW, Burch G, Armsby L, Lock JE, Jenkins KJ. Catheterization for congenital heart disease adjustment for risk method (CHARM). Journal of the American College of Cardiology: Cardiovascular Interventions 2011; 4:1037-1046. Available in attached Excel or csv file at S.2b
Stratification	N/A
Type Score	Ratio better quality = lower score
Algorithm	The measure is a standardized adverse event ratio for children < 18 years of age undergoing cardiac catheterization for congenital heart disease. It is defined as the ratio of observed to expected rates of clinically important adverse events (AE) occurring during or following cardiac catheterization for congenital heart disease. This technique allows computation of an overall risk-adjusted measure of performance for groups of patients. To begin, the observed AE rate is calculated for each group. This is defined as the number of diagnostic and interventional cardiac catheterization cases performed in a pediatric cardiac catheterization lab resulting in a clinically important adverse event divided by the total number of hemodynamic and interventional cardiac catheterization cases performed in the pediatric cardiac catheterization lab. All cases must be in patients < 18 years of age. Next, the expected AE rate is calculated for each group. To do this, a multivariable logistic regression model with outcome any clinically important AE is fitted. Three clinical characteristics are incorporated as covariates: procedure type risk groups 2, 3, and 4 as binary covariates, with group 1 as the reference category; presence of 1 or =2 indicators of hemodynamic vulnerability as binary covariates, with 0 indicators as the reference category; and age < 1 year as a binary covariate. This logistic model is used to calculate the predicted probability of an AE for each individual case in the data set. The average predicted probability of AE for all cases, calculated by summing the predicted probabilities for each case and dividing by the total number of cases, represents the expected AE rate for the group, adjusting for case mix. The standardized adverse event ratio (SAER) is then calculated as the observed AE rate divided by the expected AE rate. If the observed AE rate for a group is higher than expected, meaning that the group performs worse than would be expected given its case mix, the SAER is greater than 1. If the observed AE rate for a group is lower than would be expected, indicating better than anticipated performance, the SAER is less than 1. The measure calculation algorithm can be accessed through the following link: https://c3po-qi.chboston.org/#/SiteContent/QIResources Reference: Bergersen L, Gauvreau K, Foerster SR, Marshall AC, McElhinney DB, Beekman RH, Hirsch R, Kreutzer J, Balzer D, Vincent J, Hellenbrand WE, Holzer R, Cheatham JP, Moore JW, Burch G, Armsby L, Lock JE, Jenkins KJ. Catheterization for congenital heart disease adjustment for risk method (CHARM). Journal of the American College of Cardiology: Cardiovascular Interventions 2011; 4:1037-1046.
Copyright / Disclaimer	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: N/A

	0670 Cardiac stress imaging not meeting appropriate use criteria: Preoperative evaluation in low risk surgery patients
Status	Submitted
Steward	American College of Cardiology
Description	Percentage of stress SPECT MPI, stress echo, CCTA, or CMR performed in low risk surgery patients for preoperative evaluation
Type	Efficiency
Data Source	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, Clinician : Group/Practice
Setting	Ambulatory Care : Clinician Office/Clinic, Imaging Facility
Time Window	Sample of all SPECT MPI, stress echo, CCTA, or CMR test orders during a calendar year using a single, consecutive 60 day time period
Numerator Statement	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	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 Cystouretro & or pyeloscope 52352 Cystouretro 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 Conz 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 Comprs 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 Uretheral 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	Number of stress SPECT MPI, stress echo, CCTA, and CMR performed
Denominator Details	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	None.
Exclusion details	None.
Risk Adjustment	No risk adjustment or risk stratification None
Stratification	None
Type Score	Rate/proportion better quality = lower score
Algorithm	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
Copyright / Disclaimer	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.

	0671 Cardiac stress imaging not meeting appropriate use criteria: Routine testing after percutaneous coronary intervention (PCI)
Status	Public and Member Commenting
Steward	American College of Cardiology
Description	Percentage of all stress SPECT MPI, stress echo, CCTA and CMR performed routinely after PCI, with reference to timing of test after PCI and symptom status.
Type	Efficiency
Data Source	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-635231485653419342.doc
Level	Facility, Clinician : Group/Practice
Setting	Ambulatory Care : Clinician Office/Clinic, Imaging Facility
Time Window	Sample of all SPECT MPI, stress echo, CCTA and CMR test orders during a calendar year using a single, consecutive 60 day time period
Numerator Statement	Number of stress SPECT MPI, stress echo, CCTA and CMR performed in asymptomatic patients within 2 years of the most recent PCI
Numerator Details	For all orders post PCI, determine all orders that were in asymptomatic patients: Among asymptomatic patients, subtract date of most recent PCI from date of test requisition and categorize into orders less than two years since most recent PCI and orders placed greater than or equal to two years since most recent PCI Patients qualify for this measure if: - Asymptomatic AND - Less than two years since most recent PCI NOTE: Data collection from patient requisition is required to adequately determine patient's symptom status. Determination with only administrative data is not possible for these

	measures.
Denominator Statement	Number of stress SPECT MPI, stress echo, CCTA and CMR performed
Denominator Details	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	None
Exclusion details	None
Risk Adjustment	No risk adjustment or risk stratification None
Stratification	None
Type Score	Rate/proportion better quality = lower score
Algorithm	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
Copyright / Disclaimer	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:

	0672 Cardiac stress imaging not meeting appropriate use criteria: Testing in asymptomatic, low risk patients
Status	Submitted
Steward	American College of Cardiology
Description	Percentage of all stress SPECT MPI, stress echo, CCTA, and CMR performed in asymptomatic, low CHD risk patients for initial detection and risk assessment
Type	Efficiency
Data Source	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.doc
Level	Facility, Clinician : Group/Practice
Setting	Ambulatory Care : Clinician Office/Clinic, Imaging Facility

Time Window	Sample of all SPECT MPI, stress echo, CCTA, and CMR test orders during a calendar year using a single, consecutive 60 day time period
Numerator Statement	Number of stress SPECT MPI, stress echo, CCTA, and CMR performed for asymptomatic, low CHD risk patients for initial detection and risk assessment*
Numerator Details	For all orders in asymptomatic patients, determine orders for initial diagnosis and risk assessement. In doing so, patients with known CHD, prior PCI or prior CABG and the following exclusions are not included. Patients qualify for this numerator if: - Asymptomatic AND - Low CHD risk based on clinician estimate AND NOT any of the following: - Known CAD, including • prior MI • prior ACS • prior CABG • prior PCI or • CHD on prior diagnostic test - Exercise stress treadmill - Non-invasive imaging - Stress echo - Stress SPECT MPI - CT Angiography - Calcium Scoring - Invasive imaging (cardiac catheterization) • Ischemic equivalent • Undergone prior CHD assessment by one the following methods no matter the test result: o Exercise stress treadmill o Non-invasive imaging - Stress echo - Stress SPECT MPI - CT Angiography - Calcium Scoring o Invasive imaging (cardiac catheterization) • Patients for whom preoperative testing is the primary reason for imaging Submission of individual clinical data variables required for Framingham risk (ATP III criteria) calculation for asymptomatic patients is recognized to place a significant data collection burden upon institutions and may not be possible based on data elements that are readily available at the imaging laboratory. As such, a clinician estimate of CHD risk will be collected for all asymptomatic patients who are being seen for initial detection and risk assessment without known coronary heart disease. However, in making their estimate, clinicians should consider the maximum number of available patient factors used to estimate risk based on Framingham (ATP III criteria), typically age, gender, diabetes, smoking status, and use of blood pressure medication, and integrate age appropriate estimates for missing elements, such as LDL or standard blood pressure. While calculation of the estimate does not require submission of the actual clinical data elements other than the clinician estimate of CHD risk, clinicians are attesting to the accuracy of the estimate by submitting it. An audit of clinician estimates should be completed on a subset of clinicians to verify their estimates as being accurate based

	on the data that was available. NOTE: Data collection from patient requisition is required to adequately determine patient's symptom status and clinical risk. Determination with only administrative data is not possible for this measure.
Denominator Statement	Number of stress SPECT MPI, stress echo, CCTA, and CMR performed
Denominator Details	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	None
Exclusion details	None.
Risk Adjustment	No risk adjustment or risk stratification N/A
Stratification	None.
Type Score	Rate/proportion better quality = lower score
Algorithm	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
Copyright / Disclaimer	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:

	0090 Emergency Medicine: 12-Lead Electrocardiogram (ECG) Performed for Non-Traumatic Chest Pain
Status	Submitted
Steward	American Medical Association - Physician Consortium for Performance Improvement (AMA-PCPI)
Description	Percentage of patients aged 40 years and older with an emergency department discharge diagnosis of non-traumatic chest pain who had a 12-lead electrocardiogram (ECG) performed
Type	Process
Data Source	Electronic Clinical Data, Electronic Clinical Data : Electronic Health Record Not applicable. Available in attached appendix at A.1 Attachment S2b_ECG_VALUESETS_ACEP-AMA-PCPI.xlsx

Level	Clinician : Group/Practice
Setting	Hospital/Acute Care Facility, Other Emergency Department
Time Window	At each visit within the 12-month measurement period
Numerator Statement	Patients who had a 12-Lead ECG performed
Numerator Details	12-Lead ECG: LOINC: 34534-8- EKG 12 channel panel See eSpecification attached in appendix field A.1.
Denominator Statement	All patients aged 40 years and older with an emergency department discharge diagnosis of non-traumatic chest pain
Denominator Details	Diagnosis: ICD-9 CM: 413.0, 413.1, 413.9, 786.50, 786.51, 786.52, 786.59 ICD-10 CM: I20.1, I20.8, I20.9, I25.111, I25.118, I25.119, I25.701, I25.708, I25.709, I25.711, I25.718, I25.719, I25.721, I25.728, I25.729, I25.731, I25.738, I25.739, I25.751, I25.758, I25.759, I25.761, I25.768, I25.769, I25.791, I25.798, I25.799, R07.1, R07.2, R07.81, R07.82, R07.89, R07.9 Descriptors are included in code table attached in S2b. SNOMED-CT: Code list is longer than 1 page; see Code table attached in S2b; also included in eSpecification in Appendix A.1. AND: Encounter CPT: 99281, 99282, 99283, 99284, 99285 SNOMED-CT: 4525004-Emergency department patient visit (procedure) Also, see eSpecification attached in appendix field A.1. See eSpecification attached in appendix field A.1.
Exclusions	Medical reasons for not performing a 12-lead ECG Patient reasons for not performing a 12-lead ECG
Exclusion details	The PCPI exception methodology uses three categories of reasons for which a patient may be removed from the denominator of an individual measure. These measure exception categories are not uniformly relevant across all measures; for each measure, there must be a clear rationale to permit an exception for a medical, patient, or system reason. Examples are provided in the measure exception language of instances that may constitute an exception and are intended to serve as a guide to clinicians. For measure #0090, exceptions may include medical reason(s),patient reason(s), or system reason(s) for the patient not receiving a 12-lead ECG when presenting with non-traumatic chest pain. 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: Denominator exceptions: Code list longer than 1 page; see excel file attached in S2b. See also eSpecification attached in appendix field A.1. Denominator exclusions: None
Risk	No risk adjustment or risk stratification

Adjustment	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, payer and primary written and spoken language, 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 patient population (ie, 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 (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 4) 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) or patient reason(s). 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. Calculation algorithm is included in attachment A.1. Available in attached appendix at A.1
Copyright / Disclaimer	5.1 Identified measures: 0665 : Patient(s) with an emergency medicine visit for non-traumatic chest pain that had an ECG. 0289 : Median Time to ECG 5a.1 Are specs completely harmonized? No 5a.2 If not completely harmonized, identify difference, rationale, impact: Measure 0289 is related to this measure, but differs, as it addresses time to ECG, wherein this measure addresses performance of ECG. 5b.1 If competing, why superior or rationale for additive value: Measure 0665 competes with this measure, #0090. We have developed and will maintain specifications for multiple data sources, including Electronic Health Records (EHRs) and Claims-Based Reporting. Our specifications for EHRs are developed in accordance with the terminology standards (eg, SNOMED, RxNorm, LOINC) named in the Meaningful Use Program (CMS EHR Incentive Program). The competing measure appears to utilize clinical enriched data including data from claims and pharmacy which is potentially limiting in that the measure could only be used by those groups/settings with access to that type of information (ie, pharmacy data).

	2438 Beta-Blocker Therapy (i.e., Bisoprolol, Carvedilol, or Sustained-Release Metoprolol Succinate) for LVSD Prescribed at Discharge
Status	Submitted

Steward	The Joint Commission
Description	Proportion of heart failure patients age18 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
Data Source	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	Facility
Setting	Hospital/Acute Care Facility
Time Window	Monthly by discharge date.
Numerator Statement	Patients who are prescribed bisoprolol, carvedilol, or sustained-release metoprolol succinate for LVSD at hospital discharge.
Numerator Details	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	Heart failure patients with current or prior documentation of left ventricular ejection fraction (LVSD) < 40%.
Denominator Details	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	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	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	No risk adjustment or risk stratification Not Applicable
Stratification	Not Applicable
Type Score	Rate/proportion better quality = higher score
Algorithm	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
Copyright / Disclaimer	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

	2439 Post-Discharge Appointment for Heart Failure Patients
Status	Submitted
Steward	The Joint Commission
Description	Patients for whom a follow-up appointment, including location, date, and time, for an office or home health visit for management of heart failure was scheduled within 7 days post-discharge and documented.
Type	Process
Data Source	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-635230561263712071.xlsx
Level	Facility
Setting	Hospital/Acute Care Facility
Time Window	Monthly by discharge date.
Numerator Statement	Patients for whom a follow-up appointment, including location, date, and time, for an office or home health visit for management of heart failure was scheduled within 7 days post-discharge and documented.
Numerator Details	One data element used to calculate numerator: Post-Discharge Appointment Scheduled Within 7 Days Data element defined: Documentation that a follow-up appointment for an office or home health visit for management of heart failure was scheduled within 7 days post-discharge and documented including location, date, and time.
Denominator Statement	All heart failure patients discharged from a hospital inpatient setting to home or home care.
Denominator Details	Included Populations: • Discharges with ICD-9-CM Principal Diagnosis Code for HF as defined in Appendix A, Table 2.1, and • A discharge to home, home care, or court/law enforcement 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 10 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. • Reason for No Post-Discharge Appointment Within 7 Days: o Patient is a visitor from another state or region outside of the provider’s scope of referral o Patient is a resident of a country other than the United States Scheduling of the initial follow-up appointment with the primary care provider is a first-step to ensuring continuity of care.

Exclusions	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 • Patient 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 locations other than home, home care, or law enforcement • Patients with a documented Reason for No Post-Discharge Appointment Within 7 Days
Exclusion details	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. oPatients are excluded if “Yes” is selected for Clinical Trial. • Patients discharged to locations other than home, home care, or law enforcement o Determined by the data element Discharge Disposition, allowable values: 2. Hospice - Home 3. Hospice – Health Care Facility 4. Acute Care Facility

	5. Other Health Care Facility 6. Expired 7. Left Against Medical Advice/AMA • Patients with a documented Reason for No Post-Discharge Appointment Within 7 Days o Reason for No Post-Discharge Appointment Within 7 Days: x Patient is a visitor from another state or region outside of the provider's scope of referral x Patient is a resident of a country other than the United States
Risk Adjustment	No risk adjustment or risk stratification Not Applicable
Stratification	Not Applicable
Type Score	Rate/proportion better quality = higher score
Algorithm	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-02: Post-Discharge Appointment for Heart Failure Patients Numerator: Patients for whom a follow-up appointment, including location, date, and time, for an office or home health visit for management of heart failure was scheduled within 7 days post-discharge and documented. Denominator: All heart failure patients discharged from a hospital inpatient setting to home or home care. 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, 5, 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 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 Post-Discharge Appointment Scheduled Within 7 Days. 5. Check Post-Discharge Appointment Scheduled Within 7 Days a. If Post-Discharge Appointment Scheduled Within 7 Days is missing, the case will proceed to a Measure Category Assignment of X and will be rejected. Stop processing. b. If Post-Discharge Appointment Scheduled Within 7 Days equals Yes, the case will proceed to a Measure Category Assignment of E and will be in the Numerator Population. Stop processing. c. If Post-Discharge Appointment Scheduled Within 7 Days equals No, continue processing and proceed to Reason for No Post-Discharge Appointment Within 7 Days. 6. Check Reason for No Post-Discharge Appointment Within 7 Days a. If Reason for No Post-Discharge Appointment Within 7 Days is missing, the case will proceed to a Measure Category Assignment of X and will be rejected. Stop processing. b. If Reason for No Post-Discharge Appointment Within 7 Days equals Yes, the case will proceed to a Measure Category Assignment of B and will not be in the Measure Population. Stop processing. If Reason for No Post-Discharge Appointment Within 7 Days 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
Copyright /	5.1 Identified measures:

Disclaimer	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: Not Applicable

	2440 Care Transition Record Transmitted
Status	Submitted
Steward	The Joint Commission
Description	A care transition record is transmitted to a next level of care provider within 7 days of discharge containing ALL of the following: • Reason for hospitalization • Procedures performed during this hospitalization • Treatment(s)/Service(s) provided during this hospitalization • Discharge medications, including dosage and indication for use • Follow-up treatment and services needed (e.g., post-discharge therapy, oxygen therapy, durable medical equipment)
Type	Process
Data Source	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-635230563372547107.xlsx
Level	Facility
Setting	Hospital/Acute Care Facility
Time Window	Monthly by discharge date.
Numerator Statement	Care transition record transmitted to a next level of care provider within 7 days of discharge containing ALL of the following: • Reason for hospitalization • Procedures performed during this hospitalization • Treatment(s)/Service(s) provided during this hospitalization • Discharge medications, including dosage and indication for use • Follow-up treatment(s) and service(s) needed
Numerator Details	Six data elements used to calculate numerator. Data elements and definitions: Care Transition Record Transmitted: A care transition record is a document or set of documents containing standardized components specific to the patient's diagnosis, treatment, and care. A care transition record is transmitted to the next level of care provider no later than the seventh post-discharge day. • Care Transition Record-Discharge Medications: Documentation in the care transition record includes the discharge medications, dosage and indication for use or that no medications were prescribed at discharge. Medications are defined as any prescription medications, sample medications, herbal remedies, vitamins, nutriceuticals, over-the-counter drugs and any product designated by the Food and Drug Administration. • Care Transition Record-Follow-Up Treatment(s) and Service(s) Needed: Documentation in the care transition record includes follow-up treatment(s) and service(s) needed. Follow-up treatments and services include treatments and services to be initiated or

	continued to manage the patient's heart failure after discharge from the hospital. • Care Transition Record-Procedures Performed During Hospitalization: Documentation in the care transition record includes procedures performed during hospitalization. Procedures may be diagnostic (e.g., echocardiogram), therapeutic (e.g., thoracentesis), or surgical (e.g., pacemaker insertion). • Care Transition Record-Reason for Hospitalization: Documentation in the care transition record includes the reason for hospitalization. The reason for hospitalization should be a short synopsis describing the events the patient experienced prior to this hospitalization. The reason for hospitalization may be listed as the triggering or precipitating event prior to the patient's admission to the hospital. • Care Transition Record-Treatment(s)/Service(s) Provided: Documentation in the care transition record includes treatment(s) and service(s) provided during hospitalization. Treatments and services include anything offered to or done for the patient during the hospital stay to manage his/her heart failure.
Denominator Statement	All heart failure patients discharged from a hospital inpatient setting to home or home care.
Denominator Details	Included Populations: • Discharges with ICD-9-CM Principal Diagnosis Code for HF as defined in Appendix A, Table 2.1, and • A discharge to home, home care, or court/law enforcement 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 Nine 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.
Exclusions	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 locations other than home, home care, or law enforcement
Exclusion details	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 locations other than home, home care, or law enforcement o Determined by the data element Discharge Disposition, allowable values: 2 Hospice-Home 3 Hospice-Home Care Facility 4 Acute Care Facility 5 Other Health Care Facility 6 Expired 7 Left Against Medical Advice
Risk Adjustment	No risk adjustment or risk stratification Not Applicable
Stratification	Not Applicable
Type Score	Rate/proportion better quality = higher score
Algorithm	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-03: Care Transition Record Transmitted Numerator: Care transition record transmitted to a next level of care provider within 7 days of discharge containing ALL of the following: • Reason for hospitalization • Procedures performed during this hospitalization • Treatment(s)/Service(s) provided during this hospitalization • Discharge medications, including dosage and indication for use • Follow-up treatment(s) and service(s) needed Denominator: All heart failure patients discharged from a hospital inpatient setting to home or home care. Variable Key: Discharge Counter and Missing Flag 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, 5, 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 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 Initialize Discharge Counter and Set Missing Flag. 5. Initialize Discharge Counter to equal zero. Set Missing Flag to equal No. Continue processing and proceed to Care Transition Record-Discharge Medications. 6. Check Care Transition Record-Discharge Medications a. If Care Transition Record-Discharge Medications is missing, set the Missing Flag to equal Yes. Continue processing and proceed to Care Transition Record-Follow-Up Treatment(s) and Service(s) Needed. b. If Care Transition Record-Discharge Medications equals No, continue processing and proceed to Care Transition Record-Follow-Up Treatment(s) and Service(s) Needed. c. If Care Transition Record-Discharge Medications equals Yes, add one to the Discharge Counter. Continue processing and proceed to Care Transition Record-Follow-Up Treatment(s) and Service(s) Needed. 7. Check Care Transition Record-Follow-Up Treatment(s) and Service(s) Needed a. If Care Transition Record-Follow-Up Treatment(s) and Service(s) Needed is missing, set the Missing Flag to equal Yes. Continue processing and proceed to Care Transition Record-Procedures Performed During Hospitalization. b. If Care Transition Record-Follow-Up Treatment(s) and Service(s) Needed equals No, continue processing and proceed to Care Transition Record-Procedures Performed During Hospitalization. c. If Care Transition Record-Follow-Up Treatment(s) and Service(s) Needed equals Yes, add one to the Discharge Counter. Continue processing and proceed to Care Transition Record-Procedures Performed During Hospitalization. 8. Check Care Transition Record-Procedures Performed During Hospitalization a. If Care Transition Record-Procedures Performed During Hospitalization is missing, set the Missing Flag to equal Yes. Continue processing and proceed to Care Transition Record-Reason for Hospitalization. b. If Care Transition Record-Procedures Performed During Hospitalization equals No, continue processing and proceed to Care Transition Record-Reason for Hospitalization. c. If Care Transition Record-Procedures Performed During Hospitalization equals Yes, add one to the Discharge Counter. Continue processing and proceed to Care Transition Record-Reason for Hospitalization. 9. Check Care Transition Record-Reason for Hospitalization a. If Care Transition Record-Reason for Hospitalization is missing, set the Missing Flag to equal Yes. Continue processing and proceed to Care Transition Record-Treatment(s)/Service(s) Provided. b. If Care Transition Record-Reason for Hospitalization equals No, continue processing and proceed to Care Transition Record-Treatment(s)/Service(s) Provided. c. If Care Transition Record-Reason for Hospitalization equals Yes, add one to the Discharge Counter. Continue processing and proceed to Care Transition Record-Treatment(s)/Service(s) Provided. 10. Check Care Transition Record-Treatment(s)/Service(s) Provided a. If Care Transition Record-Treatment(s)/Service(s) Provided is missing, set the Missing Flag to equal Yes. Continue processing and proceed to Missing Flag.

	b. If Care Transition Record-Reason for Hospitalization equals No, continue processing and proceed to Missing Flag. c. If Care Transition Record-Reason for Hospitalization equals Yes, add one to the Discharge Counter. Continue processing and proceed to Missing Flag. 11. Check Missing Flag a. If Missing Flag equals Yes, the case will proceed to a Measure Category Assignment of X and will be rejected. Stop processing. b. If Missing Flag equals No, continue processing and proceed to Discharge Counter. 12. Check Discharge Counter a. If Discharge Counter is not equal to 5, the case will proceed to a Measure Category Assignment of D and will be in the Measure Population. Stop processing. b. If Discharge Counter equals 5, continue processing and proceed to Care Transition Record Transmitted. 13. Check Care Transition Record Transmitted a. If Care Transition Record Transmitted is missing, the case will proceed to a Measure Category Assignment of X and will be rejected. Stop processing. b. If Care Transition Record Transmitted equals 2 or 3, the case will proceed to a Measure Category Assignment of D and will be in the Measure Population. Stop processing. c. If Care Transition Record Transmitted equals 1, the case will proceed to a Measure Category Assignment of E and will be in the Numerator Population. Stop processing. Available at measure-specific web page URL identified in S.1
Copyright / Disclaimer	5.1 Identified measures: 0558 : HBIPS-7 Post discharge continuing care plan transmitted to next level of care provider upon discharge 0648 : Timely Transmission of Transition Record (Discharges from an Inpatient Facility to Home/Self Care or Any Other Site of Care) 5a.1 Are specs completely harmonized? No 5a.2 If not completely harmonized, identify difference, rationale, impact: All three measures focus on transmission of care information to the next level of care provider following hospital discharge. Principal differences in measure specifications are noted below, and are thought to be artifacts of the different patient populations (heart failure, psychiatric vs. all patients) and levels of measurement (organization vs. practitioner) addressed by the 3 measures. The measure specifications for ACHF-03 were written to be consistent with The Joint Commission Advanced Certification in Heart Failure standard DSPR.3 which requires: “The program [to provide] care coordination services across inpatient and outpatient settings.” Requirements specific to heart failure care certification include: • The program identifies an individual to coordinate the care of participants. • The program provides participants with access to a practitioner 24 hours a day, 7 days a week (access may include use of the telephone and the internet, and referral to urgent care settings). • The program communicates important information regarding co-occurring conditions and co-morbidities to appropriate practitioner(s) to treat or manage conditions. o The program care coordinator(s) is responsible for the communication of relevant information among practitioners and across settings. o The program care coordinator(s) is responsible for sharing information among practitioners in a timeframe that meets the participant’s needs. o The program care coordinator(s) is responsible for confirming practitioner receipt of information and actions taken. and DSPR.8 which requires: that care, treatment, and services are provided in a planned and timely manner, which includes the arrangement of a follow-up appointment with a health care provider to occur within seven days after discharge. Differences include: Patient focus:

	• 0558: pertains to patients discharged from a hospital-based inpatient psychiatric setting • 0648: pertains to ALL patients, regardless of age, discharged from an inpatient facility (eg, hospital inpatient or observation, skilled nursing facility, or rehabilitation facility) to home/self care or any other site of care • ACHF-03 pertains to: all heart failure patients discharged from a hospital inpatient setting to home or home care Time frame for transition of the record: • 0558: Within 5 days of discharge • 0648: Within 24 hours of discharge • ACHF-03: Within 7 days of discharge – based upon ACC/AHA guidelines Numerator Data Elements: It is noted that the data elements are titled differently. 0558 and ACHF-01 specify each of the required components in a separate data element where 0648 includes all components in the definition of Transition Record. Numerator Data Elements 0558: • Continuing Care Plan-Discharge Medications • Continuing Care Plan-Next Level of Care • Continuing Care Plan-Principal Discharge Diagnosis • Continuing Care Plan-Reason for Hospitalization Numerator Data Elements 0648: • Transition record • Transmitted • Primary physician or other health care professional designated for follow-up care Numerator Data Elements ACHF-03 • Care Transition Record Transmitted • Care Transition Record-Discharge Medications • Care Transition Record-Follow-Up Treatment(s) and Service(s) Needed • Care Transition Record-Procedures Performed During Hospitalization • Care Transition Record-Reason for Hospitalization • Care Transition Record-Treatment(s)/Service(s) Provided The data elements for ACHF-03 were harmonized to the extent possible with the data elements of measure 0558. The exclusions are slightly different between the 3 measures. This can be attributed to characteristics of the different patient populations. In addition, ACHF-03 is specified to be consistent with Joint Commission measures that are aligned with CMS. Exclusions 0558: • Patients who expired • Patients with an unplanned departure resulting in discharge due to elopement • Patients or their guardians who refused aftercare • Patients or guardians who refused to sign authorization to release information • Patients with an unplanned departure resulting in discharge due to failing to return from leave Exclusions 0648: • Patients who died • Patients who left against medical advice or discontinued care Exclusions ACHF-03: • 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 • Patient 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 locations other than home, home care, or law enforcement Impact on interpretability and data collection burden: These measures are specified to

	different patient populations and 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

	2443 Post-Discharge Evaluation for Heart Failure Patients
Status	Submitted
Steward	The Joint Commission
Description	Patients who receive a re-evaluation for symptoms worsening and treatment compliance by a program team member within 72 hours after inpatient discharge.
Type	Process
Data Source	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-635230565750261999.xlsx
Level	Facility
Setting	Hospital/Acute Care Facility
Time Window	Monthly by discharge date.
Numerator Statement	Patients who have a documented re-evaluation conducted via phone call or home visit within 72 hours after discharge.
Numerator Details	One data element used to calculate numerator: Post-Discharge Evaluation Conducted Within 72 Hours Data element defined: Documentation that the post-discharge evaluation was conducted with the patient and/or caregiver(s) within 72 hours following hospital discharge.
Denominator Statement	All heart failure patients discharged from a hospital inpatient setting to home or home care AND patients leaving against medical advice (AMA).
Denominator Details	Included Populations: • Discharges with ICD-9-CM Principal Diagnosis Code for HF as defined in Appendix A, Table 2.1, and • A discharge to home, home care, or court/law enforcement • Patients who left against medical advice (AMA) 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 Nine 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.
Exclusions	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 • Patient 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 locations other than home, home care or law enforcement.
Exclusion details	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 locations other than home, home care, or law enforcement o Determined by the data element Discharge Disposition, allowable values: 2 Hospice-Home 3 Hospice-Home Care Facility 4 Acute Care Facility 6 Expired
Risk Adjustment	No risk adjustment or risk stratification Not Applicable
Stratification	Not Applicable

Type Score	Rate/proportion better quality = higher score
Algorithm	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. Available at measure-specific web page URL identified in S.1
Copyright / Disclaimer	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: Not applicable

Appendix G: Related and Competing Measures

Comparison of NQF #2439 and NQF #2455

	2439: Post-Discharge Appointment for Heart Failure Patients	2455: Heart Failure: Post-Discharge Appointment for Heart Failure Patients
Steward	The Joint Commission	American College of Cardiology
Description	Patients for whom a follow-up appointment, including location, date, and time, for an office or home health visit for management of heart failure was scheduled within 7 days post-discharge and documented.	Percentage of patients, regardless of age, discharged from an inpatient facility to ambulatory care or home health care with a principal discharge diagnosis of heart failure for whom a follow up appointment was scheduled and documented prior to discharge (as specified)
Type	Process	Process
Data Source	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-635230561263712071.xlsx	Electronic Clinical Data : Registry The data collection instrument is the Get With The Guidelines®-Heart Failure Patient Management Tool. Available in attached appendix at A.1 Attachment S2b_HF_PostDischarge_ValueSets_Dec2013.xls
Level	Facility	Facility
Setting	Hospital/Acute Care Facility	Hospital/Acute Care Facility
Numerator Statement	Patients for whom a follow-up appointment, including location, date, and time, for an office or home health visit for management of heart failure was scheduled within 7 days post-discharge and documented.	Patients for whom a follow up appointment was scheduled and documented prior to discharge including either: - an office visit for management for heart failure with a physician OR advanced practice nurse OR physician assistant OR - a home health visit for management of heart failure
Numerator Details	One data element used to calculate numerator: Post-Discharge Appointment Scheduled Within 7 Days Data element defined: Documentation that a follow-up appointment for an office or home health visit for management of heart failure was scheduled within 7 days post-discharge and documented	Numerator Note: Due to the nature of scheduling home health visits, the location and date of the follow-up appointment is sufficient for meeting the measure.

	including location, date, and time.	For EHR options: eSpecification developed and is included in this submission.
Denominator Statement	All heart failure patients discharged from a hospital inpatient setting to home or home care.	All patients, regardless of age, discharged from an inpatient facility (ie, hospital inpatient or observation) to ambulatory care (home/self care) of home health care with a principle discharge diagnosis of heart failure
Denominator Details	Included Populations: • Discharges with ICD-9-CM Principal Diagnosis Code for HF as defined in Appendix A, Table 2.1, and • A discharge to home, home care, or court/law enforcement 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	For EHR options: eSpecification developed and is included in this submission.

	428.42: CHR SYST/DIASTL HRT FAIL 428.43: AC/CHR SYST/DIA HRT FAIL 428.9: HEART FAILURE NOS 10 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. • Reason for No Post-Discharge Appointment Within 7 Days: o Patient is a visitor from another state or region outside of the provider's scope of referral o Patient is a resident of a country other than the United States Scheduling of the initial follow-up appointment with the primary care provider is a first-step to ensuring continuity of care.	
Exclusions	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 • Patient 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 locations other than home, home care, or law enforcement • Patients with a documented Reason for No Post-Discharge Appointment Within 7 Days	Denominator exclusions include: Patient was discharged to a health care facility for hospice care, to home for hospice care, or to a rehabilitation facility. Patient left against medical advice. Patient expired. Denominator exceptions include: Documentation of medical reason(s) for not documenting that a follow up appointment was scheduled Documentation of patient reason(s) for not documenting that a follow up appointment was scheduled (eg, international patients, patients from state and/or local corrections facilities for whom scheduling the appointment is prohibited)
Exclusion Details	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	The ACCF/AHA and PCPI distinguishes between measure exceptions and measure exclusions. Exclusions arise when the intervention required by the numerator is not appropriate for a group of patients who are otherwise included in the initial patient or eligible population of a measure (ie, the denominator). Exclusions are absolute and are to be removed from the denominator of a measure and therefore clinical judgment does not enter the decision. For this measure, exclusions include patients discharged to a health care facility for hospice care, to home for hospice care, or to a rehabilitation facility. Exclusions also include patients that left against medical advice, and patients who expired. Exclusions, including applicable value sets, are included in the measure specifications. Measure Exceptions Exceptions are used to remove a patient from the denominator of a

	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. oPatients are excluded if "Yes" is selected for Clinical Trial. • Patients discharged to locations other than home, home care, or law enforcement o Determined by the data element Discharge Disposition, allowable values: 2. Hospice - Home 3. Hospice – Health Care Facility 4. Acute Care Facility 5. Other Health Care Facility 6. Expired 7. Left Against Medical Advice/AMA • Patients with a documented Reason for No Post-Discharge Appointment Within 7 Days	performance measure when the patient does not receive a therapy or service AND that therapy or service would not be appropriate due to patient-specific reasons. The patient would otherwise meet the denominator criteria. Exceptions are not absolute, and are based on clinical judgment, individual patient characteristics, or patient preferences. The PCPI exception methodology uses three categories of exception 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), patient reason(s) (eg, international patients, patients from state and/or local corrections facilities for whom scheduling the appointment is prohibited), or system reason(s) for the patient not receiving a post-discharge appointment. Where examples of exceptions are included in the measure language, value sets for these examples are developed and are included in the eSpecifications. Although this methodology does not require the external reporting of more detailed exception data, the ACCF/AHA and PCPI recommend that physicians document the specific reasons for exception in patients' medical records for purposes of optimal patient management and audit-readiness. The ACCF/AHA and PCPI also advocate 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 options: eSpecification: developed and is included in this submission.

	o Reason for No Post-Discharge Appointment Within 7 Days: x Patient is a visitor from another state or region outside of the provider's scope of referral x Patient is a resident of a country other than the United States	
Risk Adjustment	No risk adjustment or risk stratification Not Applicable	No risk adjustment or risk stratification No risk adjustment or risk stratification.
Stratification	Not Applicable	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, payer and primary written and spoken language, and have included these variables as recommended data elements to be collected.
Type Score	Rate/proportion better quality = higher score	Rate/proportion better quality = higher score
Algorithm	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	To calculate performance rates: 1) Find the patients who meet the initial patient population (ie, 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 (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 4) 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) (eg, patients who expired or patients who left against medical advice) or patient reason(s) (eg, international patients). 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

	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-02: Post-Discharge Appointment for Heart Failure Patients Numerator: Patients for whom a follow-up appointment, including location, date, and time, for an office or home health visit for management of heart failure was scheduled within 7 days post-discharge and documented. Denominator: All heart failure patients discharged from a hospital	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. Calculation algorithm is included in attachment (see A.1). Available in attached appendix at A.1

	inpatient setting to home or home care. 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, 5, 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 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 Post-Discharge Appointment Scheduled Within 7 Days. 5. Check Post-Discharge Appointment Scheduled Within 7 Days a. If Post-Discharge Appointment Scheduled Within 7 Days is missing, the case will proceed to a Measure Category Assignment of X and will be rejected. Stop processing. b. If Post-Discharge Appointment Scheduled Within 7 Days equals Yes, the case will proceed to a Measure Category Assignment of E	

	and will be in the Numerator Population. Stop processing. c. If Post-Discharge Appointment Scheduled Within 7 Days equals No, continue processing and proceed to Reason for No Post-Discharge Appointment Within 7 Days. 6. Check Reason for No Post-Discharge Appointment Within 7 Days a. If Reason for No Post-Discharge Appointment Within 7 Days is missing, the case will proceed to a Measure Category Assignment of X and will be rejected. Stop processing. b. If Reason for No Post-Discharge Appointment Within 7 Days equals Yes, the case will proceed to a Measure Category Assignment of B and will not be in the Measure Population. Stop processing. If Reason for No Post-Discharge Appointment Within 7 Days 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	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: Not Applicable	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:

Comparison of NQF #2440 and NQF #0648

	2440: Care Transition Record Transmitted	0648: Timely Transmission of Transition Record (Discharges from an Inpatient Facility to Home/Self Care or Any Other Site of Care)
Steward	The Joint Commission	American Medical Association - Physician Consortium for Performance Improvement (AMA-PCPI)
Description	A care transition record is transmitted to a next level of care provider within 7 days of discharge containing ALL of the following: • Reason for hospitalization • Procedures performed during this hospitalization • Treatment(s)/Service(s) provided during this hospitalization • Discharge medications, including dosage and indication for use • Follow-up treatment and services needed (e.g., post-discharge therapy, oxygen therapy, durable medical equipment)	Percentage of patients, regardless of age, discharged from an inpatient facility (eg, hospital inpatient or observation, skilled nursing facility, or rehabilitation facility) to home or any other site of care for whom a transition record was transmitted to the facility or primary physician or other health care professional designated for follow-up care within 24 hours of discharge
Type	Process	Process
Data Source	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-635230563372547107.xlsx	Administrative claims, Electronic Clinical Data : Electronic Health Record, Paper Medical Records See attached data collection tool. Attachment 0648_AMA PCPI_CARETRANS TimelyTransmissionTransitionRecord_DataCollectionTool-635319482343680585.pdf
Level	Facility	Facility, Integrated Delivery System
Setting	Hospital/Acute Care Facility	Ambulatory Care : Ambulatory Surgery Center (ASC), Hospital/Acute Care Facility, Post Acute/Long Term Care Facility : Inpatient Rehabilitation Facility, Post Acute/Long Term Care Facility : Nursing Home/Skilled Nursing Facility
Numerator Statement	Care transition record transmitted to a next level of care provider within 7 days of discharge containing ALL of the following: • Reason for hospitalization • Procedures performed during this hospitalization	Patients for whom a transition record was transmitted to the facility or primary physician or other health care professional designated for follow-up care within 24 hours of discharge

	• Treatment(s)/Service(s) provided during this hospitalization • Discharge medications, including dosage and indication for use • Follow-up treatment(s) and service(s) needed	
Numerator Details	Six data elements used to calculate numerator. Data elements and definitions: Care Transition Record Transmitted: A care transition record is a document or set of documents containing standardized components specific to the patient's diagnosis, treatment, and care. A care transition record is transmitted to the next level of care provider no later than the seventh post-discharge day. • Care Transition Record-Discharge Medications: Documentation in the care transition record includes the discharge medications, dosage and indication for use or that no medications were prescribed at discharge. Medications are defined as any prescription medications, sample medications, herbal remedies, vitamins, nutriceuticals, over-the-counter drugs and any product designated by the Food and Drug Administration. • Care Transition Record-Follow-Up Treatment(s) and Service(s) Needed: Documentation in the care transition record includes follow-up treatment(s) and service(s) needed. Follow-up treatments and services include treatments and services to be initiated or continued to manage the patient's heart failure after discharge from the hospital. • Care Transition Record-Procedures Performed During Hospitalization: Documentation in the care transition record includes procedures performed during hospitalization. Procedures may be diagnostic (e.g., echocardiogram), therapeutic (e.g., thoracentesis), or surgical (e.g., pacemaker insertion). • Care Transition Record-Reason for Hospitalization: Documentation in the care transition record includes the reason for hospitalization. The reason for hospitalization should be a short synopsis describing the events the patient experienced prior to this hospitalization. The reason for hospitalization may be listed as the triggering or precipitating event prior to the patient's admission to the hospital. • Care Transition Record-Treatment(s)/Service(s) Provided:	Numerator Definitions: a. Transition record: a core, standardized set of data elements related to patient's diagnosis, treatment, and care plan that is discussed with and provided to patient in printed or electronic format at each transition of care, and transmitted to the facility/physician/other health care professional providing follow-up care. Electronic format may be provided only if acceptable to patient. b. Transmitted: transition record may be transmitted to the facility or physician or other health care professional designated for follow-up care via fax, secure e-mail, or mutual access to an electronic health record (EHR) c. Primary physician or other health care professional designated for follow-up care: may be designated primary care physician (PCP), medical specialist, or other physician or health care professional For EHR: This measure does not lend itself to a "traditional specification" for EHR reporting, where data elements, logic and clinical coding are identified to calculate the measure, due to the fact that every facility may have a different template for a transition record and the information required for this measure is based on individualized patient information unique to one episode of care (ie, inpatient stay). We have provided guidance on how a facility should query the electronic health record for the information required for this measure. Transmitting the Transition Record with Specified Elements The Transition Record should be transmitted to the next provider(s) of care in accordance with current recommended standards for interoperability as determined by the Meaningful Use (CMS EHR Incentive) requirements. The use of industry standards for the transmission of the Transition Record information will ensure that the information can be received into the destination EHR.

	Documentation in the care transition record includes treatment(s) and service(s) provided during hospitalization. Treatments and services include anything offered to or done for the patient during the hospital stay to manage his/her heart failure.	Systematic External Reporting that the Transition Record was transmitted within 24 hours of discharge To systematically identify the transition records that were transmitted within 24 hours of discharge, a discrete data field and code may be needed in the EHR. This discrete data field will facilitate external reporting of the information. For Claims/Administrative: Numerator Elements to be identified through medical record abstraction: See Sample Data Collection Tool attached.
Denominator Statement	All heart failure patients discharged from a hospital inpatient setting to home or home care.	All patients, regardless of age, discharged from an inpatient facility (eg, hospital inpatient or observation, skilled nursing facility, or rehabilitation facility) to home/self care or any other site of care
Denominator Details	Included Populations: • Discharges with ICD-9-CM Principal Diagnosis Code for HF as defined in Appendix A, Table 2.1, and • A discharge to home, home care, or court/law enforcement 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	For EHR: Eligible discharges for the denominator should be identified through the Admission, Discharge, Transfer (ADT) system, or from another electronic system where this information is stored. For Claims/Administrative: Identify patients discharged from inpatient facility using the following: UB-04 (Form Locator 04 - Type of Bill): • 0111 (Hospital, Inpatient, Admit through Discharge Claim) • 0121 (Hospital, Inpatient - Medicare Part B only, Admit through Discharge Claim) • 0114 (Hospital, Inpatient, Last Claim) • 0124 (Hospital, Inpatient - Medicare Part B only, Interim-Last Claim) • 0211 (Skilled Nursing-Inpatient, Admit through Discharge Claim) • 0214 (Skilled Nursing-Inpatient, Interim, Last Claim) • 0221 (Skilled Nursing-Inpatient, Medicare Part B only, Admit through Discharge Claim) • 0224 (Skilled Nursing- Interim, Last Claim) • 0281 (Skilled Nursing-Swing Beds, Admit through Discharge Claim) • 0284 (Skilled Nursing-Swing Beds, Interim, Last Claim) AND

	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 Nine 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.	Discharge Status (Form Locator 17) • 01 (Discharged to home care or self care (routine discharge) • 02 (Discharged/transferred to a short term general hospital for inpatient care) • 03 (Discharged/transferred to skilled nursing facility (SNF) with Medicare certification in anticipation of skilled care) • 04 (Discharged/transferred to an intermediate care facility) • 05 Discharged/transferred to a designated cancer center or children’s hospital • 06 (Discharged/transferred to home under care of organized home health service org. in anticipation of covered skilled care) • 21 (Discharged/transferred to court/law enforcement) • 43 (Discharged/transferred to a federal health care facility) • 50 (Hospice – home) • 51 (Hospice - medical facility (certified) providing hospice level of care) • 61 (Discharged/transferred to hospital-based Medicare approved swing bed) • 62 (Discharged/transferred to an inpatient rehabilitation facility (IRF) including rehabilitation distinct part units of a hospital) • 63 (Discharged/transferred to a Medicare certified long term care hospital (LTCH)) • 64 (Discharged/transferred to a nursing facility certified under Medicaid but not certified under Medicare) • 65 (Discharged/transferred to a psychiatric hospital or psychiatric distinct part unit of a hospital) • 66 (Discharged/transferred to a Critical Access Hospital (CAH)) • 70 (Discharged/transferred to another type of health care institution not defined elsewhere in this code list) OR UB-04 (Form Locator 04 - Type of Bill): • 0131 (Hospital Outpatient, Admit through Discharge Claim) • 0134 (Hospital Outpatient, Interim, Last Claim) AND

	• 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.	UB-04 (Form Locator 42 - Revenue Code): • 0762 (Hospital Observation) • 0490 (Ambulatory Surgery) • 0499 (Other Ambulatory Surgery) AND Discharge Status (Form Locator 17) • 01 (Discharged to home care or self care (routine discharge) • 02 (Discharged/transferred to a short term general hospital for inpatient care) • 03 (Discharged/transferred to skilled nursing facility (SNF) with Medicare certification in anticipation of skilled care) • 04 (Discharged/transferred to an intermediate care facility) • 05 Discharged/transferred to a designated cancer center or children's hospital • 06 (Discharged/transferred to home under care of organized home health service org. in anticipation of covered skilled care) • 21 (Discharged/transferred to court/law enforcement) • 43 (Discharged/transferred to a federal health care facility) • 50 (Hospice – home) • 51 (Hospice - medical facility (certified) providing hospice level of care) • 61 (Discharged/transferred to hospital-based Medicare approved swing bed) • 62 (Discharged/transferred to an inpatient rehabilitation facility (IRF) including rehabilitation distinct part units of a hospital) • 63 (Discharged/transferred to a Medicare certified long term care hospital (LTCH)) • 64 (Discharged/transferred to a nursing facility certified under Medicaid but not certified under Medicare) • 65 (Discharged/transferred to a psychiatric hospital or psychiatric distinct part unit of a hospital) • 66 (Discharged/transferred to a Critical Access Hospital (CAH)) • 70 (Discharged/transferred to another type of health care institution not defined elsewhere in this code list)

Exclusions	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 locations other than home, home care, or law enforcement	Patients who died Patients who left against medical advice (AMA) or discontinued care
Exclusion Details	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.	The PCPI methodology uses three categories of reasons for which a patient may be excluded 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. Where examples of exceptions are included in the measure language, these examples are coded 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. For example, it is possible for implementers to calculate the percentage of patients that physicians have identified as meeting the criteria for exception. Additional details by data source are as follows. For Claims/Administrative Data: UB-04 (Form Locator 17 - Discharge Status): • 07 – Left against medical advice or discontinued care • 20 – Expired • 40 – Expired at home • 41 – Expired in a medical facility

	• 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 locations other than home, home care, or law enforcement o Determined by the data element Discharge Disposition, allowable values: 2 Hospice-Home 3 Hospice-Home Care Facility 4 Acute Care Facility 5 Other Health Care Facility 6 Expired 7 Left Against Medical Advice	• 42 – Expired-place unknown
Risk Adjustment	No risk adjustment or risk stratification Not Applicable	No risk adjustment or risk stratification No risk adjustment or risk stratification.
Stratification	Not Applicable	We encourage the results of this measure to be stratified by race, ethnicity, gender, and primary language, and have included these variables as recommended data elements to be collected.
Type Score	Rate/proportion better quality = higher score	Rate/proportion better quality = higher score
Algorithm	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	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

	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	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. 4) From the patients who did not meet the numerator criteria, determine if the physician has documented that the patient meets any criteria for denominator exception when exceptions have been specified. If the patient meets any exception criteria, they should be removed from the denominator for performance calculation. – Although exception 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.

	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-03: Care Transition Record Transmitted Numerator: Care transition record transmitted to a next level of care provider within 7 days of discharge containing ALL of the following: • Reason for hospitalization • Procedures performed during this hospitalization • Treatment(s)/Service(s) provided during this hospitalization • Discharge medications, including dosage and indication for use • Follow-up treatment(s) and service(s) needed Denominator: All heart failure patients discharged from a hospital inpatient setting to home or home care. Variable Key: Discharge Counter and Missing Flag 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, 5, 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 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 Initialize Discharge Counter and Set Missing Flag. 5. Initialize Discharge Counter to equal zero. Set Missing Flag to equal No. Continue processing and proceed to Care Transition Record-Discharge Medications. 6. Check Care Transition Record-Discharge Medications a. If Care Transition Record-Discharge Medications is missing, set the Missing Flag to equal Yes. Continue processing and proceed to Care Transition Record-Follow-Up Treatment(s) and Service(s) Needed. b. If Care Transition Record-Discharge Medications equals No, continue processing and proceed to Care Transition Record-Follow-Up Treatment(s) and Service(s) Needed. c. If Care Transition Record-Discharge Medications equals Yes, add one to the Discharge Counter. Continue processing and proceed to Care Transition Record-Follow-Up Treatment(s) and Service(s) Needed. 7. Check Care Transition Record-Follow-Up Treatment(s) and Service(s) Needed a. If Care Transition Record-Follow-Up Treatment(s) and Service(s) Needed is missing, set the Missing Flag to equal Yes. Continue processing and proceed to Care Transition Record-Procedures Performed During Hospitalization. b. If Care Transition Record-Follow-Up Treatment(s) and Service(s)	

	Needed equals No, continue processing and proceed to Care Transition Record-Procedures Performed During Hospitalization. c. If Care Transition Record-Follow-Up Treatment(s) and Service(s) Needed equals Yes, add one to the Discharge Counter. Continue processing and proceed to Care Transition Record-Procedures Performed During Hospitalization. 8. Check Care Transition Record-Procedures Performed During Hospitalization a. If Care Transition Record-Procedures Performed During Hospitalization is missing, set the Missing Flag to equal Yes. Continue processing and proceed to Care Transition Record-Reason for Hospitalization. b. If Care Transition Record-Procedures Performed During Hospitalization equals No, continue processing and proceed to Care Transition Record-Reason for Hospitalization. c. If Care Transition Record-Procedures Performed During Hospitalization equals Yes, add one to the Discharge Counter. Continue processing and proceed to Care Transition Record-Reason for Hospitalization. 9. Check Care Transition Record-Reason for Hospitalization a. If Care Transition Record-Reason for Hospitalization is missing, set the Missing Flag to equal Yes. Continue processing and proceed to Care Transition Record-Treatment(s)/Service(s) Provided. b. If Care Transition Record-Reason for Hospitalization equals No, continue processing and proceed to Care Transition Record-Treatment(s)/Service(s) Provided. c. If Care Transition Record-Reason for Hospitalization equals Yes, add one to the Discharge Counter. Continue processing and proceed to Care Transition Record-Treatment(s)/Service(s) Provided. 10. Check Care Transition Record-Treatment(s)/Service(s) Provided a. If Care Transition Record-Treatment(s)/Service(s) Provided is missing, set the Missing Flag to equal Yes. Continue processing and proceed to Missing Flag. b. If Care Transition Record-Reason for Hospitalization equals No, continue processing and proceed to Missing Flag. c. If Care Transition Record-Reason for Hospitalization equals Yes,	

	add one to the Discharge Counter. Continue processing and proceed to Missing Flag. 11. Check Missing Flag a. If Missing Flag equals Yes, the case will proceed to a Measure Category Assignment of X and will be rejected. Stop processing. b. If Missing Flag equals No, continue processing and proceed to Discharge Counter. 12. Check Discharge Counter a. If Discharge Counter is not equal to 5, the case will proceed to a Measure Category Assignment of D and will be in the Measure Population. Stop processing. b. If Discharge Counter equals 5, continue processing and proceed to Care Transition Record Transmitted. 13. Check Care Transition Record Transmitted a. If Care Transition Record Transmitted is missing, the case will proceed to a Measure Category Assignment of X and will be rejected. Stop processing. b. If Care Transition Record Transmitted equals 2 or 3, the case will proceed to a Measure Category Assignment of D and will be in the Measure Population. Stop processing. c. If Care Transition Record Transmitted equals 1, the case will proceed to a Measure Category Assignment of E and will be in the Numerator Population. Stop processing. Available at measure-specific web page URL identified in S.1	
Submission items	5.1 Identified measures: 0558 : HBIPS-7 Post discharge continuing care plan transmitted to next level of care provider upon discharge 0648 : Timely Transmission of Transition Record (Discharges from an Inpatient Facility to Home/Self Care or Any Other Site of Care) 5a.1 Are specs completely harmonized? No 5a.2 If not completely harmonized, identify difference, rationale, impact: All three measures focus on transmission of care information to the next level of care provider following hospital discharge. Principal differences in measure specifications are noted below, and are thought to be artifacts of the different patient populations (heart failure, psychiatric vs. all patients) and levels of measurement (organization vs. practitioner) addressed by the 3 measures. The	5.1 Identified measures: 0338 : CAC-3: Home Management Plan of Care (HMPC) Document Given to Patient/Caregiver 0558 : HBIPS-7 Post discharge continuing care plan transmitted to next level of care provider upon discharge 0136 : Heart Failure (HF): Detailed discharge instructions 5a.1 Are specs completely harmonized? No 5a.2 If not completely harmonized, identify difference, rationale, impact: Our measure has a broader target population since the three measures above are for the psychiatric, heart failure and pediatric asthma populations, respectively. 5b.1 If competing, why superior or rationale for additive value: N/A

	measure specifications for ACHF-03 were written to be consistent with The Joint Commission Advanced Certification in Heart Failure standard DSPR.3 which requires: “The program [to provide] care coordination services across inpatient and outpatient settings.” Requirements specific to heart failure care certification include: • The program identifies an individual to coordinate the care of participants. • The program provides participants with access to a practitioner 24 hours a day, 7 days a week (access may include use of the telephone and the internet, and referral to urgent care settings). • The program communicates important information regarding co-occurring conditions and co-morbidities to appropriate practitioner(s) to treat or manage conditions. o The program care coordinator(s) is responsible for the communication of relevant information among practitioners and across settings. o The program care coordinator(s) is responsible for sharing information among practitioners in a timeframe that meets the participant’s needs. o The program care coordinator(s) is responsible for confirming practitioner receipt of information and actions taken. and DSPR.8 which requires: that care, treatment, and services are provided in a planned and timely manner, which includes the arrangement of a follow-up appointment with a health care provider to occur within seven days after discharge. Differences include: Patient focus: • 0558: pertains to patients discharged from a hospital-based inpatient psychiatric setting • 0648: pertains to ALL patients, regardless of age, discharged from an inpatient facility (eg, hospital inpatient or observation, skilled nursing facility, or rehabilitation facility) to home/self care or any other site of care • ACHF-03 pertains to: all heart failure patients discharged from a hospital inpatient setting to home or home care Time frame for transition of the record: • 0558: Within 5 days of discharge • 0648: Within 24 hours of discharge	

	• ACHF-03: Within 7 days of discharge – based upon ACC/AHA guidelines Numerator Data Elements: It is noted that the data elements are titled differently. 0558 and ACHF-01 specify each of the required components in a separate data element where 0648 includes all components in the definition of Transition Record. Numerator Data Elements 0558: • Continuing Care Plan-Discharge Medications • Continuing Care Plan-Next Level of Care • Continuing Care Plan-Principal Discharge Diagnosis • Continuing Care Plan-Reason for Hospitalization Numerator Data Elements 0648: • Transition record • Transmitted • Primary physician or other health care professional designated for follow-up care Numerator Data Elements ACHF-03 • Care Transition Record Transmitted • Care Transition Record-Discharge Medications • Care Transition Record-Follow-Up Treatment(s) and Service(s) Needed • Care Transition Record-Procedures Performed During Hospitalization • Care Transition Record-Reason for Hospitalization • Care Transition Record-Treatment(s)/Service(s) Provided The data elements for ACHF-03 were harmonized to the extent possible with the data elements of measure 0558. The exclusions are slightly different between the 3 measures. This can be attributed to characteristics of the different patient populations. In addition, ACHF-03 is specified to be consistent with Joint Commission measures that are aligned with CMS. Exclusions 0558: • Patients who expired • Patients with an unplanned departure resulting in discharge due to elopement • Patients or their guardians who refused aftercare • Patients or guardians who refused to sign authorization to release information • Patients with an unplanned departure resulting in discharge	

	due to failing to return from leave Exclusions 0648: • Patients who died • Patients who left against medical advice or discontinued care Exclusions ACHF-03: • 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 • Patient 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 locations other than home, home care, or law enforcement Impact on interpretability and data collection burden: These measures are specified to different patient populations and 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	

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