NATIONAL QUALITY FORUM

Measure Evaluation 4.1
December 2009

This form contains the measure information submitted by stewards. Blank fields indicate no information was provided. Attachments also may have been submitted and are provided to reviewers. The subcriteria and most of the footnotes from the evaluation criteria are provided in Word comments within the form and will appear if your cursor is over the highlighted area. Hyperlinks to the evaluation criteria and ratings are provided in each section.

TAP/Workgroup (if utilized)**:** Complete all yellow highlighted areas of the form. Evaluate the extent to which each subcriterion is met. Based on your evaluation, summarize the strengths and weaknesses in each section.

Note: *If there is no TAP or workgroup, the SC also evaluates the subcriteria (yellow highlighted areas).*

Steering Committee: Complete all pink highlighted areas of the form. Review the workgroup/TAP assessment of the subcriteria, noting any areas of disagreement; then evaluate the extent to which each major criterion is met; and finally, indicate your recommendation for the endorsement. Provide the rationale for your ratings.

Evaluation ratings of the extent to which the criteria are met
C = Completely (unquestionably demonstrated to meet the criterion)
P = Partially (demonstrated to partially meet the criterion)
M = Minimally (addressed BUT demonstrated to only minimally meet the criterion)
N = Not at all (NOT addressed; OR incorrectly addressed; OR demonstrated to NOT meet the criterion)
NA = Not applicable (only an option for a few subcriteria as indicated)

(for NQF staff use) **NQF Review #:** 0137 **NQF Project:** Cardiovascular Endorsement Maintenance 2010
MEASURE DESCRIPTIVE INFORMATION
De.1 **Measure Title:** ACEI or ARB for left ventricular systolic dysfunction- Acute Myocardial Infarction (AMI) Patients
De.2 **Brief description of measure**: Percentage of acute myocardial infarction (AMI) patients with left ventricular systolic dysfunction (LVSD) who are prescribed an ACEI or ARB at hospital 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.
1.1-2 **Type of Measure:** Process De.3 **If included in a composite or paired with another measure, please identify composite or paired measure** N/A
De.4 **National Priority Partners Priority Area:** Population health De.5 **IOM Quality Domain**: Effectiveness De.6 **Consumer Care Need:** Living with illness

CONDITIONS FOR CONSIDERATION BY NQF	
Four conditions must be met before proposed measures may be considered and evaluated for suitability as voluntary consensus standards:	**NQF Staff**
A. The measure is in the public domain or an intellectual property (measure steward agreement) is signed. *Public domain only applies to governmental organizations. All non-government organizations must sign a measure steward agreement even if measures are made publicly and freely available.* A.1 **Do you attest that the measure steward holds intellectual property rights to the measure and the right to use aspects of the measure owned by another entity (e.g., risk model, code set)?** Yes A.2 **Indicate if Proprietary Measure** (*as defined in measure steward agreement*)**:** A.3 **Measure Steward Agreement:** Government entity and in the public domain - no agreement necessary A.4 **Measure Steward Agreement attached:**	**A** **Y**☒ **N**☐

B. The measure owner/steward verifies there is an identified responsible entity and process to maintain and update the measure on a schedule that is commensurate with the rate of clinical innovation, but at least every 3 years. Yes, information provided in contact section	**B** Y☒ N☐
C. The intended use of the measure includes both public reporting and quality improvement. ►**Purpose:** Public reporting, Internal quality improvement Accountability, Payment incentive	**C** Y☒ N☐
D. The requested measure submission information is complete. Generally, measures should be fully developed and tested so that all the evaluation criteria have been addressed and information needed to evaluate the measure is provided. Measures that have not been tested are only potentially eligible for a time-limited endorsement and in that case, measure owners must verify that testing will be completed within 12 months of endorsement. D.1**Testing:** Yes, fully developed and tested D.2 **Have NQF-endorsed measures been reviewed to identify if there are similar or related measures?** Yes	**D** Y☒ N☐
(for NQF staff use**)** **Have all conditions for consideration been met?** **Staff Notes to Steward** (*if submission returned*)**:**	**Met** Y☒ N☐
Staff Notes to Reviewers (*issues or questions regarding any criteria*)**:**	
Staff Reviewer Name(s): RWinkler	

TAP/Workgroup Reviewer Name:	
Steering Committee Reviewer Name:	
1. IMPORTANCE TO MEASURE AND REPORT	
Extent to which the specific measure focus is important to making significant gains in health care quality (safety, timeliness, effectiveness, efficiency, equity, patient-centeredness) and improving health outcomes for a specific high impact aspect of healthcare where there is variation in or overall poor performance. *Measures must be judged to be important to measure and report in order to be evaluated against the remaining criteria.* (evaluation criteria) **1a. High Impact**	**Eval Rating**
(for NQF staff use) **Specific NPP goal**:	
1a.1 **Demonstrated High Impact Aspect of Healthcare:** Affects large numbers, Leading cause of morbidity/mortality, Severity of illness, Patient/societal consequences of poor quality 1a.2 1a.3 **Summary of Evidence of High Impact:** In 2010, an estimated 785,000 Americans will have a new coronary event, and approximately 470,000 will have a recurrent event. An estimated additional 195,000 silent first myocardial infarctions occur each year. Approximately every 25 seconds, an American will have a coronary event, and approximately every minute, one will die. In 2004, AMI resulted in 695,000 hospital stays and $31 billion in health expenditures. The risk of further cardiovascular complications, including recurrent MI, sudden cardiac death, heart failure, stroke, and angina pectoris, among AMI survivors is substantial. 1a.4 **Citations for Evidence of High Impact:** · Lloyd-Jones D, Adams RJ, Brown TM, Carnethon M, Dai S, De Simone G, Ferguson TB, Ford E, Furie K, Gillespie C, Go A, Greenlund K, Haase N, Hailpern S, Ho PM, Howard V, Kissela B, Kittner S, Lackland D, Lisabeth L, Marelli A, McDermott MM, Meigs J, Mozaffarian D, Mussolino M, Nichol G, Roger VL, Rosamond W, Sacco R, Sorlie P, Stafford R, Thom T, Wasserthiel-Smoller S, Wong ND, Wylie-Rosett J; on behalf of the American Heart Association Statistics Committee and Stroke Statistics Subcommittee. Heart disease and stroke statistics—2010 update: a report from the American Heart Association. Circulation. 2010;121:e46–e215.	**1a** C☐ P☐ M☐ N☐

Comment [KP1]: 1a. The measure focus addresses:
- a specific national health goal/priority identified by NQF's National Priorities Partners; OR
- a demonstrated high impact aspect of healthcare (e.g., affects large numbers, leading cause of morbidity/mortality, high resource use (current and/or future), severity of illness, and patient/societal consequences of poor quality).

1b. Opportunity for Improvement

1b.1 Benefits (improvements in quality) envisioned by use of this measure: Use of angiotensin converting enzyme inhibitors or angiotensin receptor blockers in patients with left ventricular systolic dysfunction significantly reduces mortality and other adverse outcomes. Hospital performance rates have gradually increased over the years this measure has been reported to the public. Providers understand the importance of prescribing ACEIs and ARBs for their AMI patients with LVSD unless contraindications exist. Ongoing use of this measure will help ensure that high performing providers maintain high performance and the relatively lower performing providers have an impetus to improve.

1b.2 Summary of data demonstrating performance gap (variation or overall poor performance) across providers:
National performance rates:
2Q09: 95.4%
3Q09: 95.4%
4Q09: 95.9%
1Q10: 96.0%

1b.3 Citations for data on performance gap:
Clinical warehouse data:
2Q09: 19,935 AMI patients, 2,337 hospitals
3Q09: 18,475 AMI patients, 2,293 hospitals
4Q09: 19,758 AMI patients, 2,320 hospitals
1Q10: 19,997 AMI patients, 2,341 hospitals

1b.4 Summary of Data on disparities by population group:
At the univariate analysis level (unadjusted odds ratios), rates ranged from 94.4% for Native-Americans, to 94.8% for Hispanic/Latinos, 94.9% for Asians/Pacific Islanders, 95.3% for White/Caucasians, and 95.8% for African-Americans. The difference from the lowest to the highest rates was 1.4 percentage points. The rate for Caucasians was higher than the rates for minority groups except African-Americans.

1b.5 Citations for data on Disparities:
2009 Clinical warehouse data (Total 74,167 patients with race not missing): 57,482 Caucasian patients, 9,024 African-American patients, 5,896 Hispanic patients, 1,372 Asian/Pacific Islander patients, and 393 Native American patients.

1b
C☐
P☐
M☐
N☐

1c. Outcome or Evidence to Support Measure Focus

1c.1 Relationship to Outcomes (*For non-outcome measures, briefly describe the relationship to desired outcome. For outcomes, describe why it is relevant to the target population*)**:** ACE inhibitors reduce mortality and morbidity in patients with left ventricular systolic dysfunction after AMI. Additional benefits of ACEIs include alleviation of symptoms. Clinical trials have established ARB therapy as an acceptable alternative to ACEI, especially in patients who are ACEI intolerant. National guidelines strongly recommend ACEIs for patients hospitalized with AMI who have either clinical heart failure or LVSD. Guideline committees have also supported the inclusion of ARBs in performance measures for AMI.

1c.2-3. Type of Evidence: Evidence-based guideline, Randomized controlled trial, Systematic synthesis of research, Meta-analysis

1c.4 Summary of Evidence (*as described in the criteria; for outcomes, summarize any evidence that healthcare services/care processes influence the outcome*)**:**
Several trials have demonstrated the beneficial effects of angiotensin-converting enzyme inhibitors in patients with an MI, especially among those with LV systolic dysfunction. In the GISSI-3 study, therapy with the ACE inhibitor lisinopril resulted in significantly lower rates of death 42 days after myocardial infarction. Follow-up of patients with LV dysfunction after MI in the TRACE (TRAndolapril Cardiac Evaluation) trial showed that the beneficial effect of the ACE inhibitor trandolapril on mortality and hospitalization rate persists in the long term. In patients with MI complicated by LV systolic dysfunction, HF, or both, the angiotensin receptor blocker (ARB) valsartan was as effective as captopril in patients at high risk for cardiovascular events after MI (VALIANT). Chronic treatment of patients with chronic HF with the ARB

1c
C☐
P☐
M☐
N☐

Rating: C=Completely; P=Partially; M=Minimally; N=Not at all; NA=Not applicable

Comment [KP2]: 1b. Demonstration of quality problems and opportunity for improvement, i.e., data demonstrating considerable variation, or overall poor performance, in the quality of care across providers and/or population groups (disparities in care).

Comment [k3]: 1 Examples of data on opportunity for improvement include, but are not limited to: prior studies, epidemiologic data, measure data from pilot testing or implementation. If data are not available, the measure focus is systematically assessed (e.g., expert panel rating) and judged to be a quality problem.

Comment [k4]: 1c. The measure focus is:
- an outcome (e.g., morbidity, mortality, function, health-related quality of life) that is relevant to, or associated with, a national health goal/priority, the condition, population, and/or care being addressed;

OR
- if an intermediate outcome, process, structure, etc., there is **evidence** that supports the specific measure focus as follows:
  - Intermediate outcome – evidence that the measured intermediate outcome (e.g., blood pressure, Hba1c) leads to improved health/avoidance of harm or cost/benefit.
  - Process – evidence that the measured clinical or administrative process leads to improved health/avoidance of harm and if the measure focus is on one step in a multi-step care process, it measures the step that has the greatest effect on improving the specified desired outcome(s).
  - Structure – evidence that the measured structure supports the consistent delivery of effective processes or access that lead to improved health/avoidance of harm or cost/benefit.
  - Patient experience – evidence that an association exists between the measure of patient experience of health care and the outcomes, values and preferences of individuals/ the public.
  - Access – evidence that an association exists between access to a health service and the outcomes of, or experience with, care.
  - Efficiency – demonstration of an association between the measured resource use and level of performance with respect to one or more of the other five IOM aims of quality.

Comment [k5]: 4 Clinical care processes typically include multiple steps: assess → identify problem/potential problem → choose/plan intervention (with patient input) → provide intervention → evaluate impact on health status. If the measure focus is one step in such a multi-step process, the step with the greatest effect on the desired outcome should be selected as the focus of measurement. For example, although assessment of immunization status and recommending immunization are necessary steps, they are not sufficient to achieve the desired impact on health status – patients must be vaccinated to achieve immunity. This does not preclude consideration of measures of preventive screening interventions where there is a strong link with desired outcomes (e.g., … [1]

candesartan (at least half of whom had an MI) in the CHARM (Candesartan in Heart failure Assessment in Reduction of Mortality)-Overall program showed a reduction in cardiovascular deaths and hospital admissions for HF, independent of ejection fraction or baseline treatment in patients who did not tolerate ACE-inhibitors. While many patients can tolerate ACE inhibitors, some cannot due to cough or other side effects; in general, ARBs are generally well tolerated in randomized trials of patients judged to be intolerant of ACE inhibitors.

1c.5 Rating of strength/quality of evidence (*also provide narrative description of the rating and by whom***):** ACCF/AHA Task Force on Practice Guidelines, Level of Evidence A: [UA/NSTEMI and STEMI] Data derived from multiple randomized trials or meta-analyses, Multiple populations evaluated. References used to determine level of evidence must be provided and cited with the recommendation.

1c.6 Method for rating evidence: The methodology used by the ACCF/AHA Task Force on Practice Guidelines is fully documented in their publication "Methodology Manual and Policies From the ACCF/AHA Task Force on Practice Guidelines" (http://assets.cardiosource.com/Methodology_Manual_for_ACC_AHA_Writing_Committees.pdf). The guidelines are based upon a comprehensive assessment, both electronic and manual, of the English-language medical literature. This search focuses on high-quality randomized controlled trials, meta-analyses and systematic reviews, and when applicable observational studies. In some cases where higher quality data is not available, observational studies and case series are also considered. The quality of the design and execution of these studies is determined. When appropriate, data tables are generated from the available literature. After a review of the available literature, the writing committee rates the evidence according to the schemes outlined in their publication.

1c.7 Summary of Controversy/Contradictory Evidence: Aside from avoiding use in patients with clear contraindications to ACEI or ARB therapy, there is broad support in existing guidelines for the use of ACEI/ARBs in reducing mortality and morbidity.

1c.8 Citations for Evidence (*other than guidelines***):**

· Rutherford JD, Pfeffer MA, Moye LA, et al. Effects of captopril on ischemic events after myocardial infarction: results of the Survival and Ventricular Enlargement trial. SAVE Investigators. Circulation 1994;90:1731– 8.
· ACE Inhibitor Myocardial Infarction Collaborative Group. Indications for ACE inhibitors in the early treatment of acute myocardial infarction: systematic overview of individual data from 100,000 patients in randomized trials. Circulation 1998;97:2202–12.
· Buch P, Rasmussen S, Abildstrom SZ, Kober L, Carlsen J, Torp-Pedersen C. The long-term impact of the angiotensin-converting enzyme inhibitor trandolapril on mortality and hospital admissions in patients with left ventricular dysfunction after a myocardial infarction: follow-up to 12 years. Eur Heart J 2005;26:145–52.
· Yusuf S, Pepine CJ, Garces C et al. Effect of enalapril on myocardial infarction and unstable angina in patients with low ejection fractions. Lancet. 1992;340(8829):1173-1178.
· Pfeffer MA, Swedberg K, Granger CB, et al. Effects of candesartan on mortality and morbidity in patients with chronic heart failure: the CHARM-Overall programme. Lancet 2003;362:759–66.
· Granger CB, McMurray JJ, Yusuf S, Held P, Michelson EL, Olofsson B, et al. Effects of candesartan in patients with chronic heart failure and reduced left-ventricular systolic function intolerant to angiotensin-converting-enzyme inhibitors: the CHARM Alternative trial. Lancet 2003;362:772-6.
· Stecker EC, Fendrick AM, Knight BP, Aaronson KD. Prophylactic pacemaker use to allow beta-blocker therapy in patients with chronic heart failure with bradycardia. Am Heart J 2006;151:820-8.
· Gruppo Italiano per lo Studio della Sopravvivenza nell´Infarto Miocardico. GISSI-3: effects of lisinopril and transdermal glyceryl trinitrate singly and together on 6-week mortality and ventricular function after acute myocardial infarction. Lancet. 1994;343:1115–22.

1c.9 Quote the Specific guideline recommendation (*including guideline number and/or page number***):**
[STEMI]
Renin-Angiotensin-Aldosterone System Blockers: ACE Inhibitors Recommendations (p. 236)
1. ACE inhibitors should be started and continued indefinitely in all patients recovering from STEMI with LVEF less than or equal to 40% and for those with hypertension, diabetes, or chronic kidney disease, unless contraindicated.
Renin-Angiotensin-Aldosterone System Blockers: Angiotensin Receptor Blockers (p. 236)
1. Use of angiotensin receptor blockers is recommended in patients who are intolerant of ACE inhibitors

Comment [k6]: 3 The strength of the body of evidence for the specific measure focus should be systematically assessed and rated (e.g., USPSTF grading system http://www.ahrq.gov/clinic/uspstf07/methods/benefit.htm). If the USPSTF grading system was not used, the grading system is explained including how it relates to the USPSTF grades or why it does not. However, evidence is not limited to quantitative studies and the best type of evidence depends upon the question being studied (e.g., randomized controlled trials appropriate for studying drug efficacy are not well suited for complex system changes). When qualitative studies are used, appropriate qualitative research criteria are used to judge the strength of the evidence.

and have HF or have had an MI with LVEF less than or equal to 40%.
[UA/NSTEMI]
5.2.3. Inhibition of the Renin-Angiotensin-Aldosterone System Recommendations (p. e91)
1. Angiotensin-converting enzyme inhibitors should be given and continued indefinitely for patients recovering from UA/NSTEMI with HF, LV dysfunction (LVEF less than 0.40), hypertension, or diabetes mellitus, unless contraindicated.
2. An angiotensin receptor blocker should be prescribed at discharge to those UA/NSTEMI patients who are intolerant of an ACE inhibitor and who have either clinical or radiological signs of HF and LVEF less than 0.40.

1c.10 Clinical Practice Guideline Citation: · Anderson JL, Adams CD, Antman EM, Bridges CR, Califf RM, Casey DE Jr, et al. ACC/AHA 2007 guidelines for the management of patients with unstable angina/non–ST-elevation myocardial infarction: a report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines (Writing Committee to Revise the 2002 Guidelines for the Management of Patients With Unstable Angina/Non–ST-Elevation Myocardial Infarction): developed in collaboration with the American College of Emergency Physicians, American College of Physicians, Society for Academic Emergency Medicine, Society for Cardiovascular Angiography and Interventions, and Society of Thoracic Surgeons. J Am Coll Cardiol. 2007;50:e1–157.
· Antman EM, Hand M, Armstrong PW, Bates ER, Green LA, Halasyamani LK, et al. 2007 focused update of the ACC/AHA 2004 Guidelines for the Management of Patients With ST-Elevation Myocardial Infarction: a report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines (Writing Group to Review New Evidence and Update the ACC/AHA 2004 Guidelines for the Management of Patients With ST-Elevation Myocardial Infarction). J Am Coll Cardiol. 2008;51:210–47.
1c.11 National Guideline Clearinghouse or other URL:
http://content.onlinejacc.org/cgi/reprint/51/2/210.pdf,
http://content.onlinejacc.org/cgi/reprint/50/7/e1.pdf

1c.12 Rating of strength of recommendation (*also provide narrative description of the rating and by whom***):**
Rating made by ACCF/AHA Task Force on Practice Guidelines: [UA/NSTEMI and STEMI] Class I recommendation – Conditions for which there is evidence and/or general agreement that a given procedure or treatment is useful and effective. Benefit >>> Risk. Procedure/treatment should be performed/administered.

1c.13 Method for rating strength of recommendation (*If different from USPSTF system, also describe rating and how it relates to USPSTF)***:**
[UA/NSTEMI and STEMI] The methodology used by the ACCF/AHA Task Force on Practice Guidelines is fully documented in their publication "Methodology Manual and Policies From the ACCF/AHA Task Force on Practice Guidelines"
(http://assets.cardiosource.com/Methodology_Manual_for_ACC_AHA_Writing_Committees.pdf).
Recommendations are assigned strength by the Task Force based upon evidence, benefit vs. risk vs. harm, and patient preference.
Both the ACCF/AHA Guidelines and the USPSTF assess evidence with respect to two parameters: 1) the magnitude of the benefit, and 2) the certainty of this benefit. However, they use different coding systems. In ascertaining magnitude of the benefit, the ACCF/AHA uses a Class I-III scale and the USPSTF uses a high-moderate-low scale. In determining the certainty of this benefit, the ACCF/AHA uses levels of evidence A-C and USPSTF uses a high-moderate-low scale.

1c.14 Rationale for using this guideline over others:
The ACCF/AHA guidelines are widely accepted national guidelines that address the therapy of patients with AMI; they use an explicit and transparent methodology; and have thus served as the foundation of national quality measures.

TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Importance to Measure and Report*?

1

Steering Committee: Was the threshold criterion, *Importance to Measure and Report***, met?**
Rationale:

1
Y☐
N☐

Comment [k7]: USPSTF grading system **http://www.ahrq.gov/clinic/uspstf/grades.htm**: **A -** The USPSTF recommends the service. There is high certainty that the net benefit is substantial. **B -** The USPSTF recommends the service. There is high certainty that the net benefit is moderate or there is moderate certainty that the net benefit is moderate to substantial. **C -** The USPSTF recommends against routinely providing the service. There may be considerations that support providing the service in an individual patient. There is at least moderate certainty that the net benefit is small. Offer or provide this service only if other considerations support the offering or providing the service in an individual patient. **D -** The USPSTF recommends against the service. There is moderate or high certainty that the service has no net benefit or that the harms outweigh the benefits. **I -** The USPSTF concludes that the current evidence is insufficient to assess the balance of benefits and harms of the service. Evidence is lacking, of poor quality, or conflicting, and the balance of benefits and harms cannot be determined.

2. SCIENTIFIC ACCEPTABILITY OF MEASURE PROPERTIES	
Extent to which the measure, as specified, produces consistent (reliable) and credible (valid) results about the quality of care when implemented. (evaluation criteria)	Eval Rating
2a. MEASURE SPECIFICATIONS	
S.1 Do you have a web page where current detailed measure specifications can be obtained? **S.2 If yes, provide web page URL:** **2a. Precisely Specified**	
2a.1 Numerator Statement (*Brief, text description of the numerator - what is being measured about the target population, e.g. target condition, event, or outcome***):** AMI patients who are prescribed an ACEI or ARB at hospital discharge **2a.2 Numerator Time Window (***The time period in which cases are eligible for inclusion in the numerator***):** From hospital arrival to time of hospital discharge **2a.3 Numerator Details (***All information required to collect/calculate the numerator, including all codes, logic, and definitions***):** Refer to http://www.qualitynet.org/dcs/ContentServer?c=Page&pagename=QnetPublic%2FPage%2FQnetTier4&cid=1228760129036: · Section 1 - Data Dictionary | Alphabetical Data Dictionary – pages 1-18 through 1-19 plus pages 1-67 through 1-68. · Appendices | Appendix C - Medication Tables – pages Appendix C-6 through Appendix C-7 plus pages Appendix C-11 through Appendix C-12. · Section 2 - Measurement Information | Section 2.1 - Acute Myocardial Infarction (AMI) – pages AMI-3-1 through AMI-3-6.	
2a.4 Denominator Statement (*Brief, text description of the denominator - target population being measured***):** AMI patients (International Classification of Diseases, 9th revision, Clinical Modification [ICD-9-CM] principal diagnosis code of AMI: 410.00, 410.01, 410.10, 410.11, 410.20, 410.21, 410.30, 410.31, 410.40, 410.41, 410.50, 410.51, 410.60, 410.61, 410.70, 410.71, 410.80, 410.81, 410.90, 410.91); with chart documentation of a left ventricular ejection fraction (LVEF) < 40% or a narrative description of left ventricular systolic (LVS) function consistent with moderate or severe systolic dysfunction **2a.5 Target population gender:** Female, Male **2a.6 Target population age range:** Greater than or equal to 18 years old **2a.7 Denominator Time Window (***The time period in which cases are eligible for inclusion in the denominator***):** From hospital arrival to time of hospital discharge **2a.8 Denominator Details (***All information required to collect/calculate the denominator - the target population being measured - including all codes, logic, and definitions***):** ICD-9-CM Principal Diagnosis codes: 410.00: Anterolateral wall, acute myocardial infarction-episode of care unspecified 410.01: Anterolateral wall, acute myocardial infarction-initial episode 410.10: Other anterior wall, acute myocardial infarction-episode of care unspecified 410.11: Other anterior wall, acute myocardial infarction-initial episode 410.20: Inferolateral wall, acute myocardial infarction-episode of care unspecified 410.21: Inferolateral wall, acute myocardial infarction-initial episode 410.30: Inferoposterior wall, acute myocardial infarction-episode of care unspecified 410.31: Inferoposterior wall, acute myocardial infarction-initial episode 410.40: Other inferior wall, acute myocardial infarction-episode of care unspecified	**2a-specs** C☐ P☐ M☐ N☐

Comment [KP8]: 2a. The measure is well defined and precisely specified so that it can be implemented consistently within and across organizations and allow for comparability. The required data elements are of high quality as defined by NQF's Health Information Technology Expert Panel (HITEP) .

410.41: Other inferior wall, acute myocardial infarction-initial episode
410.50: Other lateral wall, acute myocardial infarction-episode of care unspecified
410.51: Other lateral wall, acute myocardial infarction-initial episode
410.60: True posterior wall, acute myocardial infarction-episode of care unspecified
410.61: True posterior wall, acute myocardial infarction-initial episode
410.70: Subendocardial, acute myocardial infarction-episode of care unspecified
410.71: Subendocardial, acute myocardial infarction-initial episode
410.80: Other specified sites, acute myocardial infarction-episode of care unspecified
410.81: Other specified sites, acute myocardial infarction-initial episode
410.90: Unspecified site, acute myocardial infarction-episode of care unspecified
410.91: Unspecified site, acute myocardial infarction-initial episode
LVSD - Refer to
http://www.qualitynet.org/dcs/ContentServer?c=Page&pagename=QnetPublic%2FPage%2FQnetTier4&cid=1228760129036:

· Section 1 - Data Dictionary | Alphabetical Data Dictionary – pages 1-257 through 1-260.

2a.9 Denominator Exclusions (*Brief text description of exclusions from the target population***):** Exclusions:
•<18 years of age
•Patients who have a length of stay greater than 120 days
•Discharged to another hospital
•Expired
•Left against medical advice
•Discharged to home for hospice care
•Discharged to a health care facility for hospice care
•Patients with comfort measures only documented
•Patients enrolled in clinical trials
•Patients with a documented reason for no ACEI and no ARB at discharge

2a.10 Denominator Exclusion Details (*All information required to collect exclusions to the denominator, including all codes, logic, and definitions***):**
Refer to
http://www.qualitynet.org/dcs/ContentServer?c=Page&pagename=QnetPublic%2FPage%2FQnetTier4&cid=1228760129036:

· Section 1 - Data Dictionary | Alphabetical Data Dictionary – pages 1-20 through 1-21, 1-90, 1-98 through 1-104, 1-117 through 1-120, 1-204, 1-257 through 1-260, and 1-315 through 1-320.
· Appendices | Appendix C - Medication Tables PDF – pages Appendix C-6 through Appendix C-7 plus pages Appendix C-11 through Appendix C-12, and Appendix H - Miscellaneous Tables – page Appendix H-5.
· Section 2 - Measurement Information | Section 2.1 - Acute Myocardial Infarction (AMI) – pages AMI-5 plus AMI-3-1 through AMI-3-6

2a.11 Stratification Details/Variables (*All information required to stratify the measure including the stratification variables, all codes, logic, and definitions***):**
N/A

2a.12-13 Risk Adjustment Type: No risk adjustment necessary

2a.14 Risk Adjustment Methodology/Variables (*List risk adjustment variables and describe conceptual models, statistical models, or other aspects of model or method***):**
N/A

2a.15-17 Detailed risk model available Web page URL or attachment:

2a.18-19 Type of Score: Rate/proportion
2a.20 Interpretation of Score: Better quality = Higher score
2a.21 Calculation Algorithm (*Describe the calculation of the measure as a flowchart or series of steps***):**
Refer to
http://www.qualitynet.org/dcs/ContentServer?c=Page&pagename=QnetPublic%2FPage%2FQnetTier4&cid=1228760129036: Section 2 - Measurement Information | Section 2.1 - Acute Myocardial Infarction (AMI) – pages AMI-5 plus AMI-3-1 through AMI-3-6.

2a.22 Describe the method for discriminating performance *(e.g., significance testing)***:**

Comment [k9]: 11 Risk factors that influence outcomes should not be specified as exclusions.
12 Patient preference is not a clinical exception to eligibility and can be influenced by provider interventions.

Benchmarks are established using the ABC methodology, based on the actual performance of the top facilities. ABC benchmarks identify superior performance and encourage poorer performers to improve. The methodology is a data-driven, peer-group performance feedback used to positively affect outcomes.

2a.23 Sampling (Survey) Methodology *If measure is based on a sample (or survey), provide instructions for obtaining the sample, conducting the survey and guidance on minimum sample size (response rate)*:
Patients admitted to the hospital for inpatient acute care with an ICD-9-CM Principal Diagnosis Code for AMI as defined in section 2a.8, a patient age greater than or equal to 18 years, and a length of stay less than or equal to 120 days would be included in the initial patient population and eligible to be sampled.
Monthly Sample Size Based on Population Size (Average monthly initial patient population size: Minimum required sample size):
>= 516: 104
131-515: 20% of Initial Patient Population size
26-130: 26
< 26: 100%

2a.24 Data Source (*Check the source(s) for which the measure is specified and tested)*
Paper medical record/flow-sheet, Electronic Health/Medical Record

2a.25 Data source/data collection instrument (*Identify the specific data source/data collection instrument, e.g. name of database, clinical registry, collection instrument, etc.***):**
Centers for Medicare & Medicaid Services (CMS) Abstraction & Reporting Tool (CART). Vendor tools also available.

2a.26-28 Data source/data collection instrument reference web page URL or attachment: URL
http://www.qualitynet.org/dcs/ContentServer?c=Page&pagename=QnetPublic%2FPage%2FQnetTier3&cid=1135267770141

2a.29-31 Data dictionary/code table web page URL or attachment: URL Refer to http://www.qualitynet.org/dcs/ContentServer?c=Page&pagename=QnetPublic%2FPage%2FQnetTier4&cid=1228760129036: Section 1 - Data Dictionary | Alphabetical Data Dictionary.

2a.32-35 Level of Measurement/Analysis (*Check the level(s) for which the measure is specified and tested)*
Facility/Agency, Population: national, Program: QIO

2a.36-37 Care Settings (*Check the setting(s) for which the measure is specified and tested)*
Hospital

2a.38-41 Clinical Services (*Healthcare services being measured, check all that apply*)

TESTING/ANALYSIS

2b. Reliability testing

2b.1 Data/sample *(description of data/sample and size)***:** CDAC (Clinical Data Abstraction Center) validation sample: 3Q09.

2b.2 Analytic Method *(type of reliability & rationale, method for testing)***:**
CDAC validation sampling involves SDPS selection of sample of 5 cases/quarter across all topics (AMI, HF, Pneumonia, etc.) from each hospital with a minimum of 6 discharges (across all topics) in the Clinical Data Warehouse within 4 months + 15 days following 3Q09. Hospital-abstracted data is compared to CDAC-adjudicated data.

2b.3 Testing Results *(reliability statistics, assessment of adequacy in the context of norms for the test conducted)***:**
ACEI Prescribed at Discharge – 91.0%
ARB Prescribed at Discharge – 86.4%
Clinical Trial – 98.9%
Comfort Measures Only – 94.3%

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Comment [KP10]: 2b. Reliability testing demonstrates the measure results are repeatable, producing the same results a high proportion of the time when assessed in the same population in the same time period.

Comment [k11]: 8 Examples of reliability testing include, but are not limited to: inter-rater/abstractor or intra-rater/abstractor studies; internal consistency for multi-item scales; test-retest for survey items. Reliability testing may address the data items or final measure score.

LVSD – 94.7%
Reason for No ACEI and No ARB at Discharge – 77.5%

2c. Validity testing

2c.1 Data/sample *(description of data/sample and size)*: Face validity is regularly assessed with the Technical Expert Panel responsible for reviewing and supporting the measure topic.

2c.2 Analytic Method *(type of validity & rationale, method for testing)*:
Face validity

2c.3 Testing Results *(statistical results, assessment of adequacy in the context of norms for the test conducted)*:
N/A

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2d. Exclusions Justified

2d.1 Summary of Evidence supporting exclusion(s):
The exclusions of age < 18 years, length of stay > 120 days, and enrollment in a clinical trial are common to the other measures in the AMI measure set, and to the inpatient Hospital Inpatient Quality Reporting Program measure set in general. Patients with documented comfort measures only or those discharged to hospice are appropriate exclusions, as the goal in these cases is palliative care – Therefore, the non-use of ACEI/ARB is often clinically appropriate. Patients who leave against medical advice or who expire are appropriately excluded, and it is sensible for those who are discharged to another hospital (where the patient goes on to continue acute care treatment) to be omitted as well. Lastly, there are clinically important contraindications to the use of ACEIs or ARBs. Reasons vary, from patient refusal and ACEI/ARB allergies, to clinical conditions such as moderate or severe aortic stenosis or severe hypotension. In these types of cases, the non-use of ACEI/ARB should not count against the provider if the clinical reason for not prescribing the ACEI/ARB is documented. Exclusions in this measure are concordant with the 2008 ACC/AHA Clinical Performance Measures for Adults With ST-elevation and non-ST-elevation Myocardial Infarction.

2d.2 Citations for Evidence:
· Krumholz HM, Anderson JL, Bachelder BL, Fesmire FM, Fihn SD, Foody JM, et al. ACC/AHA 2008 performance measures for adults with ST-elevation and non-ST-elevation myocardial infarction: a report of the American College of Cardiology/American Heart Association Task Force on Performance Measures (Writing Committee to Develop Performance Measures for ST-Elevation and Non-ST-Elevation Myocardial Infarction). J Am Coll Cardiol. 2008;52:2046 -99.

2d.3 Data/sample *(description of data/sample and size)*: Clinical warehouse data: 144,247 AMI patients, 3,502 hospitals, 1Q10.

2d.4 Analytic Method *(type analysis & rationale)*:
A frequency count was conducted to calculate the percentages outlined in section 2d.5. Frequency counts are a simple, efficient way to determine the occurrence of specific values of a data element in a given data set.

2d.5 Testing Results *(e.g., frequency, variability, sensitivity analyses)*:
Rates of Exclusion:
· Patients with comfort measures only documented: 5.8%
· Patients enrolled in clinical trials: 0.5%
· Discharged/transferred to another hospital for inpatient care, discharged/transferred to a federal health care facility, discharged/transferred to hospice, expired, or left against medical advice or discontinued care: 14.7%
· LVSD not documented as either EF < 40% or a narrative description consistent with moderate or severe systolic dysfunction: 61.4%
· Patients with a documented reason for no ACEI and no ARB at discharge: 3.7%

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NA☐

2e. Risk Adjustment for Outcomes/ Resource Use Measures

2e.1 Data/sample *(description of data/sample and size)*: N/A

2e
C☐
P☐

Comment [KP12]: 2c. Validity testing demonstrates that the measure reflects the quality of care provided, adequately distinguishing good and poor quality. If face validity is the only validity addressed, it is systematically assessed.

Comment [k13]: 9 Examples of validity testing include, but are not limited to: determining if measure scores adequately distinguish between providers known to have good or poor quality assessed by another valid method; correlation of measure scores with another valid indicator of quality for the specific topic; ability of measure scores to predict scores on some other related valid measure; content validity for multi-item scales/tests. Face validity is a subjective assessment by experts of whether the measure reflects the quality of care (e.g., whether the proportion of patients with BP < 140/90 is a marker of quality). If face validity is the only validity addressed, it is systematically assessed (e.g., ratings by relevant stakeholders) and the measure is judged to represent quality care for the specific topic and that the measure focus is the most important aspect of quality for the specific topic.

Comment [KP14]: 2d. Clinically necessary measure exclusions are identified and must be:
- supported by evidence of sufficient frequency of occurrence so that results are distorted without the exclusion;

AND
- a clinically appropriate exception (e.g., contraindication) to eligibility for the measure focus;

AND
- precisely defined and specified:
  - if there is substantial variability in exclusions across providers, the measure is specified so that exclusions are computable and the effect on the measure is transparent (i.e., impact clearly delineated, such as number of cases excluded, exclusion rates by type of exclusion);

if patient preference (e.g., informed decision-making) is a basis for exclusion, there must be evidence that it strongly impacts performance on the measure and the measure must be specified so that the information about patient preference and the effect on the measure is transparent (e.g., numerator category computed separately, denominator exclusion category computed separately).

Comment [k15]: 10 Examples of evidence that an exclusion distorts measure results include, but are not limited to: frequency of occurrence, sensitivity analyses with and without the exclusion, and variability of exclusions across providers.

Comment [KP16]: 2e. For outcome measures and other measures (e.g., resource use) when indicated:
- an evidence-based risk-adjustment strategy (e.g., risk models, risk stratification) is specified and is based on patient clinical factors that influence the measured outcome (but not disparities in care) and are present at start of care;[Error! Bookmark not defined.] OR

rationale/data support no risk adjustment.

2e.2 Analytic Method *(type of risk adjustment, analysis, & rationale)*:
N/A

2e.3 Testing Results *(risk model performance metrics)*:
N/A

2e.4 If outcome or resource use measure is not risk adjusted, provide rationale: N/A

M☐ N☐ NA☐

Comment [k17]: 13 Risk models should not obscure disparities in care for populations by including factors that are associated with differences/inequalities in care such as race, socioeconomic status, gender (e.g., poorer treatment outcomes of African American men with prostate cancer, inequalities in treatment for CVD risk factors between men and women). It is preferable to stratify measures by race and socioeconomic status rather than adjusting out differences.

2f. Identification of Meaningful Differences in Performance

2f.1 Data/sample from Testing or Current Use *(description of data/sample and size)*: Clinical warehouse data:
2Q09: 19,935 AMI patients, 2,337 hospitals
3Q09: 18,475 AMI patients, 2,293 hospitals
4Q09: 19,758 AMI patients, 2,320 hospitals
1Q10: 19,997 AMI patients, 2,341 hospitals

Comment [KP18]: 2f. Data analysis demonstrates that methods for scoring and analysis of the specified measure allow for identification of statistically significant and practically/clinically meaningful differences in performance.

2f.2 Methods to identify statistically significant and practically/meaningfully differences in performance *(type of analysis & rationale)*:
Analysts review quarterly benchmarks established (using the ABC methodology) and trends to identify differences in performance scores and investigate the possible causes. ABC benchmarks identify superior performance and encourage poorer performers to improve. The methodology is a data-driven, peer-group performance feedback used to positively affect outcomes. If measure specifications (algorithms, data elements) are found to cause the difference in performance, they are reviewed for possible updates.

Comment [k19]: 14 With large enough sample sizes, small differences that are statistically significant may or may not be practically or clinically meaningful. The substantive question may be, for example, whether a statistically significant difference of one percentage point in the percentage of patients who received smoking cessation counseling (e.g., 74% v. 75%) is clinically meaningful; or whether a statistically significant difference of $25 in cost for an episode of care (e.g., $5,000 v. $5,025) is practically meaningful. Measures with overall poor performance may not demonstrate much variability across providers.

2f.3 Provide Measure Scores from Testing or Current Use *(description of scores, e.g., distribution by quartile, mean, median, SD, etc.; identification of statistically significant and meaningfully differences in performance)*:
National performance rates:
2Q09: 95.4% (benchmark 100.0%)
3Q09: 95.4% (benchmark 99.8%)
4Q09: 95.9% (benchmark 99.8%)
1Q10: 96.0% (benchmark 99.9%)

2f C☐ P☐ M☐ N☐

2g. Comparability of Multiple Data Sources/Methods

Comment [KP20]: 2g. If multiple data sources/methods are allowed, there is demonstration they produce comparable results.

2g.1 Data/sample *(description of data/sample and size)*: Both paper records and electronic health records can be used to collect data. Some allowances have been made as facilities incorporate EHRs in their facilities because vendors do not utilize identical data fields, but customize products according to facility need and preferences.

2g.2 Analytic Method *(type of analysis & rationale)*:
No tests have been performed on this measure to determine comparability of sources (paper medical record vs. EHR).

2g.3 Testing Results *(e.g., correlation statistics, comparison of rankings)*:
N/A

2g C☐ P☐ M☐ N☐ NA☐

2h. Disparities in Care

Comment [KP21]: 2h. If disparities in care have been identified, measure specifications, scoring, and analysis allow for identification of disparities through stratification of results (e.g., by race, ethnicity, socioeconomic status, gender);OR rationale/data justifies why stratification is not necessary or not feasible.

2h.1 If measure is stratified, provide stratified results *(scores by stratified categories/cohorts)*: Not stratified, but results according to race, sex, etc can be determined.

2h.2 If disparities have been reported/identified, but measure is not specified to detect disparities, provide follow-up plans:
Since the preliminary univariate analyses do not show a clear indication of disparities (the largest difference is less than 2.0 percentage points as described in 1b.4), further analyses are needed to control for the simultaneous effect of other potential factors such as age, gender, comorbidity, and hospital characteristics and to take into account the correlation/cluster effect of patients discharged from the same hospitals.

2h C☐ P☐ M☐ N☐ NA☐

TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Scientific Acceptability of Measure Properties?*	**2**
Steering Committee: Overall, to what extent was the criterion, *Scientific Acceptability of Measure Properties*, **met?** **Rationale:**	*2* C☐ P☐ M☐ N☐

3. USABILITY

Extent to which intended audiences (e.g., consumers, purchasers, providers, policy makers) can understand the results of the measure and are likely to find them useful for decision making. (evaluation criteria)

Eval Rating

3a. Meaningful, Understandable, and Useful Information

3a.1 **Current Use:** In use

3a.2 **Use in a public reporting initiative (disclosure of performance results to the public at large)** (*If used in a public reporting initiative, provide name of initiative(s), locations, Web page URL(s). If not publicly reported, state the plans to achieve public reporting within 3 years*)**:**
Hospital Inpatient Quality Reporting Program:
·
http://www.qualitynet.org/dcs/ContentServer?c=Page&pagename=QnetPublic%2FPage%2FQnetTier2&cid=1138115987129
· http://www.hospitalcompare.hhs.gov/

3a.3 **If used in other programs/initiatives (***If used in quality improvement or other programs/initiatives, name of initiative(s), locations, Web page URL(s). If not used for QI, state the plans to achieve use for QI within 3 years***):**
Hospital Inpatient Quality Reporting Program (Measures can be used by individual hospitals for internal quality improvement):
·
http://www.qualitynet.org/dcs/ContentServer?c=Page&pagename=QnetPublic%2FPage%2FQnetTier2&cid=1138115987129
· http://www.hospitalcompare.hhs.gov/
Additionally, the Joint Commission also uses this measure for accreditation.

Testing of Interpretability (*Testing that demonstrates the results are understood by the potential users for public reporting and quality improvement*)
3a.4 **Data/sample** *(description of data/sample and size)***:** Unknown. [Feedback on the Hospital Compare website (used for public reporting) is collected through another contractor.]

3a.5 **Methods** *(e.g., focus group, survey, QI project)***:**
Voluntary electronic survey by visitors to website.

3a.6 **Results** *(qualitative and/or quantitative results and conclusions)***:**
Not available.

3a
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3b/3c. Relation to other NQF-endorsed measures

3b.1 **NQF # and Title of similar or related measures:**
NQF #0551: Ace Inhibitor / Angiotensin Receptor Blocker Use and Persistence Among Members with Coronary Artery Disease at High Risk for Coronary Events, NQF #0594: Post MI: ACE inhibitor or ARB therapy

(for NQF staff use) **Notes on similar/related endorsed or submitted measures:**

3b. Harmonization
If this measure is related to measure(s) already endorsed by NQF (e.g., same topic, but different target population/setting/data source or different topic but same target population):
3b.2 **Are the measure specifications harmonized? If not, why?**
This measure's specifications are not harmonized with NQF #0551 measure specifications. NQF #0551 is an

3b
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N☐

Comment [KP22]: 3a. Demonstration that information produced by the measure is meaningful, understandable, and useful to the intended audience(s) for both public reporting (e.g., focus group, cognitive testing) and informing quality improvement (e.g., quality improvement initiatives). An important outcome that may not have an identified improvement strategy still can be useful for informing quality improvement by identifying the need for and stimulating new approaches to improvement.

Comment [KP23]: 3b. The measure specifications are harmonized with other measures, and are applicable to multiple levels and settings.

Comment [k24]: 16 Measure harmonization refers to the standardization of specifications for similar measures on the same topic (e.g., *influenza immunization* of patients in hospitals or nursing homes), or related measures for the same target population (e.g., eye exam and HbA1c for *patients with diabetes*), or definitions applicable to many measures (e.g., age designation for children) so that they are uniform or compatible, unless differences are dictated by the evidence. The dimensions of harmonization can include numerator, denominator, exclusions, and data source and collection instructions. The extent of harmonization depends on the relationship of the measures, the evidence for the specific measure focus, and differences in data sources.

outpatient measure which assesses the use of and persistence to ACEIs and ARBs during a one year period in patients ages 18 – 75 with coronary artery disease or other atherosclerotic vascular disease (i.e., peripheral artery disease, atherosclerotic aortic disease, and carotid artery disease) who are at high risk for coronary events. High-risk comorbidities include heart failure, hypertension, diabetes, or chronic kidney disease (excluding stage V and patients on dialysis). In contrast, this measure focuses on inpatient care of the AMI patient in particular; a completely different focus in terms of setting and treatment. NQF #0551 excludes hospice patients, like this measure, but it automatically excludes many other types of patients, including those with a diagnosis of angioedema, hyperkalemia, hypotension, arterial stenosis, or renal failure (stage V or dialysis) at any time during the measurement year and patients who were pregnant during the measurement year – Conditions which our team believes are relative contraindications which require that the physician specifically document a linkage to the non-use of ACEI/ARB (vs. automatic exclusion). This measure's specifications are also not harmonized with NQF #0594 measure specifications. Like NQF #0551, NQF #0594 is an outpatient measure. NQF #0594 assesses the use of ACEIs and ARBs during a one year period in patients with STEMI or NSTEMI plus a history of hypertension, heart failure and/or diabetes prior to the measurement year. Again, in contrast, this measure is concentrated on care of the hospitalized AMI patient in particular; a completely different focus. NQF #0594 automatically excludes many types of patients, including those with a diagnosis of hyperkalemia, renal artery stenosis, ESRD´ severe chronic kidney disease, pregnancy, or angioneurotic edema – Conditions which our team again believes are relative contraindications which require linkage in physician documentation.	**NA** ☐
3c. Distinctive or Additive Value 3c.1 **Describe the distinctive, improved, or additive value this measure provides to existing NQF-endorsed measures:** No NQF-endorsed measures with same topic and target population. 5.1 **If this measure is similar to measure(s) already endorsed by NQF (i.e., on the same topic and the same target population), Describe why it is a more valid or efficient way to measure quality:** No NQF-endorsed measures with same topic and target population.	**3c** C☐ P☐ M☐ N☐ **NA** ☐
TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Usability*?	**3**
Steering Committee: Overall, to what extent was the criterion, *Usability*, met? **Rationale:**	**3** C☐ P☐ M☐ N☐
4. FEASIBILITY	
Extent to which the required data are readily available, retrievable without undue burden, and can be implemented for performance measurement. (evaluation criteria)	**Eval Rating**
4a. Data Generated as a Byproduct of Care Processes 4a.1-2 **How are the data elements that are needed to compute measure scores generated?** Data generated as byproduct of care processes during care delivery (Data are generated and used by healthcare personnel during the provision of care, e.g., blood pressure, lab value, medical condition), Coding/abstraction performed by someone other than person obtaining original information (E.g., DRG, ICD-9 codes on claims, chart abstraction for quality measure or registry)	**4a** C☐ P☐ M☐ N☐
4b. Electronic Sources 4b.1 **Are all the data elements available electronically?** (*elements that are needed to compute measure scores are in defined, computer-readable fields, e.g., electronic health record, electronic claims*) No 4b.2 **If not, specify the near-term path to achieve electronic capture by most providers.** Retooling work with HHS is expected to be completed in 2011.	**4b** C☐ P☐ M☐ N☐
4c. Exclusions	**4c**

Comment [KP25]: 3c. Review of existing endorsed measures and measure sets demonstrates that the measure provides a distinctive or additive value to existing NQF-endorsed measures (e.g., provides a more complete picture of quality for a particular condition or aspect of healthcare, is a more valid or efficient way to measure).

Comment [KP26]: 4a. For clinical measures, required data elements are routinely generated concurrent with and as a byproduct of care processes during care delivery. (e.g., BP recorded in the electronic record, not abstracted from the record later by other personnel; patient self-assessment tools, e.g., depression scale; lab values, meds, etc.)

Comment [KP27]: 4b. The required data elements are available in electronic sources. If the required data are not in existing electronic sources, a credible, near-term path to electronic collection by most providers is specified and clinical data elements are specified for transition to the electronic health record.

Comment [KP28]: 4c. Exclusions should not require additional data sources beyond what is required for scoring the measure (e.g., numerator and denominator) unless justified as supporting measure validity.

4c.1 Do the specified exclusions require additional data sources beyond what is required for the numerator and denominator specifications?
No

4c.2 If yes, provide justification.

C☐ P☐ M☐ N☐ NA☐

4d. Susceptibility to Inaccuracies, Errors, or Unintended Consequences

4d.1 Identify susceptibility to inaccuracies, errors, or unintended consequences of the measure and describe how these potential problems could be audited. If audited, provide results.

1. Documentation of both a reason for not prescribing an ACEI and reason for not prescribing an ARB are required for measure exclusion (barring other exclusions). Providers challenged the need to explicitly document both a reason for not prescribing an ACEI and reason for not prescribing an ARB when the reasons for not prescribing one class often apply to the other class in many cases. This concern was rectified in the measure and abstraction specifications effective with April 1, 2007 discharges. Specifications were changed to allow documentation of a reason for not prescribing one class (either ACEI or ARB) to be considered implicit documentation of a reason for not prescribing the other class when one of the following conditions was noted to be the reason for no ACEI or the reason for no ARB: angioedema, hyperkalemia, hypotension, renal artery stenosis, and worsening renal function/renal disease/dysfunction.
2. Since the time of last NQF endorsement (May 2007), the Heart Care measures team met with other topic teams within the Hospital Inpatient Quality Reporting Program (namely, children's asthma and surgical care) to examine the medication constructs being used. The measure designs at that time automatically excluded patients with a documented contraindication to a medication or reason for not prescribing a medication from the measure, regardless of whether the medication ended up being prescribed. That type of design was resulting in a substantial amount of "false exclusions" from the measure. The decision was made to rearrange the measure such that patients who were prescribed the medication would remain in the measure (i.e., be included in the numerator) when a reason for not prescribing the medication was documented, effective with April 1, 2009 discharges. It is believed that the number of false exclusions has significantly decreased as a result.
3. Because the denominator exclusion "Patients with a documented reason for no ACEI and no ARB at discharge" allows for any physician/advance practice nurse/physician assistant/pharmacist-documented "other reason" for not prescribing ACEI or ARB at discharge to count as an exclusion, overuse of this exclusion has the potential for distorting performance rates. However, overall trends in measure numerator and denominator counts do not suggest obvious gaming of the measure. There has been no increasing trend in the use of this reason data element since the logical increase which resulted when abstraction guidelines were changed to allow for the documentation of a reason for not prescribing one class (either ACEI or ARB) to be considered implicit documentation of a reason for not prescribing the other class in the cases of angioedema, hyperkalemia, hypotension, renal artery stenosis, and worsening renal function/renal disease/dysfunction. Nevertheless, exclusion rates for this measure will continue to be monitored for consistency, from quarter to quarter.
4. The data elements used in this measure are closely tracked. Questions submitted by abstractors are recorded, and trends related to published abstraction guidelines and disagreements over measure inclusions and exclusions in general are discussed in-depth every 6 months. Revisions in measure specifications, including data element definitions, are made as issues surface (e.g., how to handle documentation of a hold on ACEI/ARB at discharge or a planned delay to start ACEI/ARB after discharge, what constitutes acceptable physician documentation of a reason for not prescribing ACEI/ARB). The frequency of questions pertaining to each data element are tracked by the Hospital Inpatient Quality Reporting Program QIOSC. Clearly the number of questions a data element receives is another indication of how difficult the specifications for the measure might be. Frequency reports are reviewed regularly, to help identify where issues in data element definitions may exist. Of note, in an August 2010 report run by the Hospital Inpatient Quality Reporting Program QIOSC, the number of questions about the abstraction of the four most unique data elements to this measure (shared with the HF ACEI/ARB for LVSD measure), ACEI Prescribed at Discharge, ARB Prescribed at Discharge, LVSD, and Reason for No ACEI and No ARB at Discharge, amounted to 142, 16.7% of the total 848 Quest questions received for AMI and HF for that month. Lastly, CDAC validation reports (which compare hospital data to CDAC data) and internal CDAC abstractor accuracy reports are monitored, to ensure good quality data. In sum, issues which may surface in questions submitted by users and CDAC validation/accuracy reports will continue to be closely monitored to identify any additional problems, and revisions will be made if warranted.

4d
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Comment [KP29]: 4d. Susceptibility to inaccuracies, errors, or unintended consequences and the ability to audit the data items to detect such problems are identified.

4e. Data Collection Strategy/Implementation

4e.1 Describe what you have learned/modified as a result of testing and/or operational use of the measure regarding data collection, availability of data/missing data, timing/frequency of data collection, patient confidentiality, time/cost of data collection, other feasibility/ implementation issues:
Both the change to allow for the documentation of a reason for not prescribing one class (either ACEI or ARB) to be considered implicit documentation of a reason for not prescribing the other class in the cases of angioedema, hyperkalemia, hypotension, renal artery stenosis, and worsening renal function for April 2007+ discharges and the reordering of the "medication prescribed" and "reason for no medication" specifications done for April 2009+ discharges (as described in section 4d.1) reduce abstraction burden. Abstractors no longer have to do an exhaustive search for acceptable reasons for not prescribing ACEI and/or ARB at discharge, saving valuable abstraction time.

4e.2 Costs to implement the measure (*costs of data collection, fees associated with proprietary measures*)**:**
Varies according to data collection method (use of vendor) and type of abstractor used to collect clinical data. We have not received feedback that this measure has caused undue burden to the facilities collecting data.

4e.3 Evidence for costs:
N/A

4e.4 Business case documentation: N/A

4e
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Comment [KP30]: **4e.** Demonstration that the data collection strategy (e.g., source, timing, frequency, sampling, patient confidentiality, etc.) can be implemented (e.g., already in operational use, or testing demonstrates that it is ready to put into operational use).

TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Feasibility*?

4

Steering Committee: Overall, to what extent was the criterion, *Feasibility*, **met?**
Rationale:

4
C☐ P☐ M☐ N☐

RECOMMENDATION

(for NQF staff use) **Check if measure is untested and only eligible for time-limited endorsement.**

Time-limited ☐

Steering Committee: Do you recommend for endorsement?
Comments:

Y☐ N☐ A☐

CONTACT INFORMATION

Co.1 Measure Steward (Intellectual Property Owner)
Co.1 Organization
Centers for Medicare & Medicaid Services, 7500 Security Boulevard , Baltimore, Maryland, 21244-1850

Co.2 Point of Contact
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Measure Developer If different from Measure Steward
Co.3 Organization
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Co.5 Submitter If different from Measure Steward POC
Jo, DeBuhr, RN, BSN, broncosrule@att.net, 303-457-3195-, OFMQ

Co.6 Additional organizations that sponsored/participated in measure development
The Joint Commission

ADDITIONAL INFORMATION

Workgroup/Expert Panel involved in measure development
Ad.1 Provide a list of sponsoring organizations and workgroup/panel members' names and organizations. Describe the members' role in measure development.
This measure is reviewed and maintained by the Heart Care Technical Expert Panel. Quarterly teleconferences are held to discuss issues pertinent to this measure (and its specifications) and potential revisions. Current members:
Frederick Masoudi, MD, MSPH Workgroup Chair: Denver Health Medical Center, University of Colorado at Denver and Health Sciences Center
Don Casey, MD, MPH, MBA: VP Quality and Chief Medical Officer, Atlantic Health, Rep. of the American College of Physicians
Elizabeth Delong, PhD: Professor and Chair, Duke University, Biostatistics and Bioinformatics, Co-Director, Outcomes Research and Assessment
Joseph Drozda, MD: Clinical Investigator, Mercy Health Research, Executive Committee Member, PCPI, Rep. of American Medical Association
John P. Erwin, III: Professor of Medicine, Co-Director, Cardiovascular Fellowship Program, Hospital Champion, Acute Myocardial Infarction Quality Improvement, Scott and White Hospital and Clinic
Kerri Fei: Senior Policy Analyst, Measure Development Operations, American Medical Association
Susan Fitzgerald, RN, MS: Associate Director, Science and Quality, American College of Cardiology
Gary Francis, MD: Professor of Medicine, University of Minnesota, Rep. of Heart Failure Society of America
David C. Goff, MD, PhD: Professor and Chair, Department of Epidemiology and Prevention, Division of Public Health Sciences, Wake Forest University School of Medicine
Kathleen Grady, CNS: Administrative Director, Center for Heart Failure, Bluhm Cardiovascular Institute Division of Cardiothoracic Surgery, Northwestern Memorial Hospital
Darryl Gray, MD: Medical Officer, Agency for Healthcare Research and Quality
Lee Green, MD: Professor, University of Michigan Medical School
Ed Havranek, MD: Professor of Medicine, Denver Health Medical Center, University of Colorado School of Medicine
Paul A. Heidenreich: Assistant Professor of Medicine, Associate Professor by courtesy of Health Research and Policy at the VA Palo Alto Health Care System and CHP/PCOR Fellow
Alice C. Jacobs, MD: Professor of Medicine, Director, Cardiac Cath Lab, Boston University Medical Center
Marvin Konstam, MD: Director, Cardiovascular Center, Tufts Medical Center, Rep. of Heart Failure Society of America
Harlan Krumholz, MD: Harold H. Hines, Jr. Professor of Medicine and Epidemiology and Public Health, Yale University School of Medicine
Jerod Loeb, PhD: Executive Vice President, Quality Measurement & Research, The Joint Commission
Ann [Hiniker] Loth, RN, MS, CNS: Certified Clinical Nurse Specialist, Mayo Foundation
Joseph Messer, MD, MACC: Professor of Medicine, Rush University Medical Center, Rep. of American Medical Association
Eric Peterson, MD, MPH: Professor of Medicine, Director Cardiovascular Research, Duke Clinical Research Institute, Duke University Medical Center
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Ad.2 If adapted, provide name of original measure: N/A **Ad.3-5 If adapted, provide original specifications URL or attachment**
Measure Developer/Steward Updates and Ongoing Maintenance **Ad.6 Year the measure was first released:** 1999 **Ad.7 Month and Year of most recent revision:** 10, 2010 **Ad.8 What is your frequency for review/update of this measure?** Every 6 months **Ad.9 When is the next scheduled review/update for this measure?** 07, 2011
Ad.10 Copyright statement/disclaimers:
Ad.11 -13 Additional Information web page URL or attachment:
Date of Submission (*MM/DD/YY*)**:** 12/27/2010

Page 3: [1] Comment [k5] **Karen Pace** **10/5/2009 8:59:00 AM**

4 Clinical care processes typically include multiple steps: assess → identify problem/potential problem → choose/plan intervention (with patient input) → provide intervention → evaluate impact on health status. If the measure focus is one step in such a multi-step process, the step with the greatest effect on the desired outcome should be selected as the focus of measurement. For example, although assessment of immunization status and recommending immunization are necessary steps, they are not sufficient to achieve the desired impact on health status – patients must be vaccinated to achieve immunity. This does not preclude consideration of measures of preventive screening interventions where there is a strong link with desired outcomes (e.g., mammography) or measures for multiple care processes that affect a single outcome.