

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 #: 1522	NQF Project: Cardiovascular Endorsement Maintenance 2010
MEASURE DESCRIPTIVE INFORMATION	
De.1 Measure Title: ACE/ARB Therapy at Discharge for ICD implant patients with LVSD	
De.2 Brief description of measure: Proportion of ICD implant patients with a diagnosis of LVSD who are prescribed ACE-I or ARB therapy at discharge.	
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:	
De.5 IOM Quality Domain: Effectiveness, Timeliness	
De.6 Consumer Care Need: Getting better, 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. <i>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.</i>	A Y <input checked="" type="checkbox"/> N <input type="checkbox"/>
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: Agreement will be signed and submitted prior to or at the time of measure submission	
A.4 Measure Steward Agreement attached: NQF - signed-634256795457800554.pdf	
B. The measure owner/steward verifies there is an identified responsible entity and process to maintain and	B

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	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>
C. The intended use of the measure includes <u>both</u> public reporting <u>and</u> quality improvement. ► Purpose: Public reporting, Internal quality improvement Accountability, Payment incentive, Accreditation	C Y <input checked="" type="checkbox"/> N <input type="checkbox"/>
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 <input checked="" type="checkbox"/> N <input type="checkbox"/>
(for NQF staff use) Have all conditions for consideration been met? Staff Notes to Steward (if submission returned):	Met Y <input checked="" type="checkbox"/> N <input type="checkbox"/>
Staff Notes to Reviewers (issues or questions regarding any criteria): What about missing values for LVEF? Disparities addressed in separate testing document.	
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. <i>Measures must be judged to be important to measure and report in order to be evaluated against the remaining criteria. (evaluation criteria)</i> 1a. High Impact	Eval Ratin g
(for NQF staff use) Specific NPP goal:	
1a.1 Demonstrated High Impact Aspect of Healthcare: Affects large numbers, Frequently performed procedure, Leading cause of morbidity/mortality, High resource use, Severity of illness 1a.2 1a.3 Summary of Evidence of High Impact: Optimal medical therapy is critical to ensure favorable patient outcomes following implantation of an implantable cardiac defibrillator (ICD) to prevent sudden cardiac death (SCD). In 2006, 114,000 inpatient defibrillator implantations were performed. The mean hospital charge for ICD procedures was \$115,763. Approximately 81 million American adults have 1 or more types of CVD, with 5.8 million having heart failure. Over 30% of all deaths are related to CVD. Over 90% of patients receiving an ICD for primary prevention have ejection fraction under 40%, while 70% of patients receiving an ICD for secondary prevention have an ejection fraction under 40%. Therefore, it is critical that these patients receive discharge medications to treat left ventricular systolic dysfunction to reduce associated morbidity and mortality, as well as repeat hospitalizations and procedures. 1a.4 Citations for Evidence of High Impact: American Heart Association. Heart disease and stroke statistics-2010 update: A report of the American Heart Association. Available at: http://circ.ahajournals.org/cgi/content/abstract/CIRCULATIONAHA.109.192667v1. Accessed December 3, 2010.	1a C <input type="checkbox"/> P <input type="checkbox"/> M <input type="checkbox"/> N <input type="checkbox"/>

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).

<p>1b. Opportunity for Improvement</p> <p>1b.1 Benefits (improvements in quality) envisioned by use of this measure: <i>This measure allows benchmarking against the national aggregate and against hospitals with similar procedural volume, so that hospitals with low performance rates can engage in quality improvement efforts to improve compliance for this measure and subsequently improve patient outcomes related to this measure.</i></p> <p>1b.2 Summary of data demonstrating performance gap (variation or overall poor performance) across providers: Mean: 0.77 SD: 0.17</p> <p>Quartile 1: 0.71 Median: 0.79 Quartile 3: 0.87 95%: 1.00</p> <p>1b.3 Citations for data on performance gap: Unpublished NCDR data</p> <p>1b.4 Summary of Data on disparities by population group: Mean by hospital SES (proportion white patients): 0-72.7% white:77.2% 72.7-87.7% white:77.1% 87.7-96.12% white:78.9% 96.13-100% white:74.8%</p> <p>Mean performance by safety net status (defined as government hospitals or non-governmental hospitals with high medicaid caseload using AHA 2008 data): Not a safety net hospital: 77.0% Safety net hospital: 77.0%</p> <p>1b.5 Citations for data on Disparities: Unpublished NCDR data</p>	<p>1b</p> <p>C <input type="checkbox"/></p> <p>P <input type="checkbox"/></p> <p>M <input type="checkbox"/></p> <p>N <input type="checkbox"/></p>
<p>1c. Outcome or Evidence to Support Measure Focus</p> <p>1c.1 Relationship to Outcomes (<i>For non-outcome measures, briefly describe the relationship to desired outcome. For outcomes, describe why it is relevant to the target population</i>): <i>ACE inhibitors and ARBs improve clinical outcomes among patients with LV dysfunction by interfering with ventricular remodeling and attenuating ventricular dilation over time. Use of ACE inhibitors or ARBs reduces the likelihood for development of heart failure, MI, and death.</i></p> <p>1c.2-3. Type of Evidence: <i>Evidence-based guideline, Randomized controlled trial, Expert opinion, Systematic synthesis of research, Meta-analysis</i></p> <p>1c.4 Summary of Evidence (<i>as described in the criteria; for outcomes, summarize any evidence that healthcare services/care processes influence the outcome</i>): Several large randomized clinical trials have demonstrated the efficacy of ACE inhibitor or ARB use in preventing adverse outcomes for patients with left ventricular systolic dysfunction. A systematic review of the evidence supporting use of ACE inhibitors for heart failure assessed ACE inhibitor use for 12,763 patients followed for an average of 35 months. Mortality was found to be lower for all trials reviewed (23.0% vs. 26.8%, odds ratio 0.8), as were readmission rates and rates of MI. Benefits of ACE therapy were independent of age, sex, and baseline use of diuretics, aspirin, and beta blockers.</p> <p>1c.5 Rating of strength/quality of evidence (<i>also provide narrative description of the rating and by whom</i>): Level of Evidence A: Data derived from multiple randomized clinical trials or meta-analyses.</p> <p>1c.6 Method for rating evidence: <i>The weight of evidence in support of the recommendation is listed as</i></p>	<p>1c</p> <p>C <input type="checkbox"/></p> <p>P <input type="checkbox"/></p> <p>M <input type="checkbox"/></p> <p>N <input type="checkbox"/></p>

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:
oIntermediate outcome - evidence that the measured intermediate outcome (e.g., blood pressure, Hba1c) leads to improved health/avoidance of harm or cost/benefit.
oProcess - 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).
oStructure - 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. ... [1]

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 ... [2]

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 ... [3])

follows:

- Level of Evidence A: Data derived from multiple randomized clinical trials or meta-analyses.
- Level of Evidence B: Data derived from a single randomized trial or nonrandomized studies.
- Level of Evidence C: Only consensus opinion of experts, case studies, or standard-of-care.

1c.7 Summary of Controversy/Contradictory Evidence: N/A

1c.8 Citations for Evidence (other than guidelines): Flather MD, Yusuf S, Kober L, et al. Long-term ACE-inhibitor therapy in patients with heart failure or left-ventricular dysfunction: a systematic overview of data from individual patients. ACE-Inhibitor Myocardial Infarction Collaborative Group. Lancet. 2000;355:1575-81.

1c.9 Quote the Specific guideline recommendation (including guideline number and/or page number):
ACC/AHA Secondary Prevention Guidelines:

ACE inhibitors:

- Start and continue indefinitely in all patients with left ventricular ejection fraction $\leq 40\%$ and in those with hypertension, diabetes, or chronic kidney disease, unless contraindicated. I (A)
- Consider for all other patients. I (B)
- Among lower-risk patients with normal left ventricular ejection fraction in whom cardiovascular risk factors are well controlled and revascularization has been performed, use of ACE inhibitors may be considered optional. IIa (B)

Angiotensin receptor blockers:

- Use in patients who are intolerant of ACE inhibitors and have heart failure or have had a myocardial infarction with left ventricular ejection fraction $\leq 40\%$. I (A)
- Consider in other patients who are ACE inhibitor intolerant. I (B)
- Consider use in combination with ACE inhibitors in systolic-dysfunction heart failure. IIb (B) (Page 2132)

ACC/AHA Heart Failure Guidelines (2005, 2009 Update)

13. In patients with reduced ejection fraction experiencing a symptomatic exacerbation of HF requiring hospitalization during chronic maintenance treatment with oral therapies known to improve outcomes, particularly ACEIs or ARBs and beta-blocker therapy, it is recommended that these therapies be continued in most patients in the absence of hemodynamic instability or contraindications. (Level of Evidence: C) (Page e47)

14. In patients hospitalized with HF with reduced ejection fraction not treated with oral therapies known to improve outcomes, particularly ACEIs or ARBs and beta-blocker therapy, initiation of these therapies is recommended in stable patients prior to hospital discharge. (Level of Evidence: B) (Page e47)

17. Comprehensive written discharge instructions for all patients with a hospitalization for HF and their caregivers is strongly recommended, with special emphasis on the following 6 aspects of care: diet; discharge medications, with a special focus on adherence, persistence, and uptitration to recommended doses of ACEI/ARB and beta-blocker medication; activity level; follow-up appointments; daily weight monitoring; and what to do if HF symptoms worsen. (Level of Evidence: C) (Page e48)

1c.10 Clinical Practice Guideline Citation: 1. Smith SC, Jr., Allen J, Blair SN, et al. AHA/ACC guidelines for secondary prevention for patients with coronary and other atherosclerotic vascular disease: 2006 update endorsed by the National Heart, Lung, and Blood Institute. J Am Coll Cardiol. 2006;47:2130-9.

2. Hunt SA, Abraham WT, Chin MH, et al. 2009 Focused update incorporated into the ACC/AHA 2005 Guidelines for the Diagnosis and Management of Heart Failure in Adults A Report of the American College of Cardiology Foundation/American Heart Association Task Force on Practice Guidelines Developed in Collaboration With the International Society for Heart and Lung Transplantation. J Am Coll Cardiol. 2009;53:e1-e90.

1c.11 National Guideline Clearinghouse or other URL: <http://www.cardiosource.org/Science-And-Quality/Practice-Guidelines-and-Quality-Standards.aspx>

1c.12 Rating of strength of recommendation (also provide narrative description of the rating and by whom):

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.

<p>Class 1: Conditions for which there is evidence and/or general agreement that a given procedure or treatment is beneficial, useful and effective.</p> <p>1c.13 Method for rating strength of recommendation (If different from USPSTF system, also describe rating and how it relates to USPSTF): ACC/AHA Taskforce on Practice Guidelines Method:</p> <p>Indications are categorized as class I, II, or III on the basis of a multifactorial assessment of risk and expected efficacy viewed in the context of current knowledge and the relative strength of this knowledge. These classes summarize the recommendations for procedures or treatments as follows:</p> <p>Class I: Conditions for which there is evidence for and/or general agreement that a given procedure or treatment is beneficial, useful, and effective.</p> <p>Class II: Conditions for which there is conflicting evidence and/or a divergence of opinion about the usefulness/efficacy of a procedure or treatment.</p> <p>Class IIa: Weight of evidence/opinion is in favor of usefulness/efficacy.</p> <p>Class IIb: Usefulness/efficacy is less well established by evidence/opinion.</p> <p>Class III: Conditions for which there is evidence and/or general agreement that a procedure/treatment is not useful/effective and in some cases may be harmful.</p> <p>1c.14 Rationale for using this guideline over others: These guidelines are the most widely recognized professional guidelines in the US for cardiovascular medicine for patients with heart failure.</p>	
TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for <i>Importance to Measure and Report</i> ?	1
Steering Committee: Was the threshold criterion, <i>Importance to Measure and Report</i> , met? Rationale:	1 Y <input type="checkbox"/> N <input type="checkbox"/>
2. SCIENTIFIC ACCEPTABILITY OF MEASURE PROPERTIES	
Extent to which the measure, <u>as specified</u> , 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:	
<u>2a. Precisely Specified</u>	
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): Count of patients with ACE-I or ARB therapy prescribed at discharge.	
2a.2 Numerator Time Window (The time period in which cases are eligible for inclusion in the numerator): 1 year	
2a.3 Numerator Details (All information required to collect/calculate the numerator, including all codes, logic, and definitions): Discharge medications= ACE inhibitor (any)= yes or ARB (any)=yes	2a-specs C <input type="checkbox"/> P <input type="checkbox"/> M <input type="checkbox"/> N <input type="checkbox"/>
2a.4 Denominator Statement (Brief, text description of the denominator - target population being measured):	

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) .

Count of patients with an ICD implant with moderate or severe LVSD (LVEF<40%) without contraindication to ACE inhibitors and ARBs.

2a.5 Target population gender: Female, Male
 2a.6 Target population age range: All patients

2a.7 Denominator Time Window (*The time period in which cases are eligible for inclusion in the denominator*):
 1 year

2a.8 Denominator Details (*All information required to collect/calculate the denominator - the target population being measured - including all codes, logic, and definitions*):
 Procedure type= initial generator implant=yes or generator change=yes

Most recent LVEF<40%

2a.9 Denominator Exclusions (*Brief text description of exclusions from the target population*): -Patients who expired prior to discharge
 -Patients with ACE-I and ARB therapy contraindicated or blinded.

2a.10 Denominator Exclusion Details (*All information required to collect exclusions to the denominator, including all codes, logic, and definitions*):
 Discharge status=deceased
 ACE inhibitor (any)= contraindicated or blinded **AND** ARB (any)=contraindicated or blinded.

Contraindicated supporting definition:
 Medication was not prescribed because of a contraindication.
 Contraindications must be documented explicitly by the physician, or clearly evidenced within the medical record

Blinded supporting definition:
 Patient was in research study or clinical trial and administration of this specific medication is unknown

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:

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*):
 Denominator Calculation:

1. Count of patients with arrival/discharge dates from data submissions that pass NCDR data inclusion thresholds
2. Exclude patients with arrival/discharge dates without initial generator implant or generator change
3. Exclude patients with LVEF>/=40% or LVEF assessed=no
4. Exclude patients with discharge status=deceased
5. Exclude patients with ACE inhibitor (any)= contraindicated or blinded **AND** ARB (any)=contraindicated or blinded.

Numerator Calculation:
 6. From denominator population, count of patients with discharge medication of ACE inhibitor (any)=yes or ARB (any)=yes.

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.

2a.22 Describe the method for discriminating performance (e.g., significance testing):
 Hospitals performance for this measure is benchmarked each quarter and annually against hospitals with similar procedural volume, as well as against the ICD Registry aggregate. These 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):*
 N/A

2a.24 Data Source *(Check the source(s) for which the measure is specified and tested)*
 Registry data

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.):*
 National Cardiovascular Data Registry (NCDR)® ICD Registry™

2a.26-28 Data source/data collection instrument reference web page URL or attachment: URL
<http://www.ncdr.com/WebNCDR/ICD/ELEMENTS.ASPX>

2a.29-31 Data dictionary/code table web page URL or attachment: URL
<http://www.ncdr.com/WebNCDR/ICD/ELEMENTS.ASPX>

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

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

2a.38-41 Clinical Services *(Healthcare services being measured, check all that apply)*
 Clinicians: PA/NP/Advanced Practice Nurse, Clinicians: Physicians (MD/DO)

TESTING/ANALYSIS

2b. Reliability testing

2b.1 Data/sample *(description of data/sample and size):* Reliability was established by validating the derivation cohort from 2009 with data from 2008. 131,371 patient records were analyzed from 1283 facilities between January and December 2008.

2b.2 Analytic Method *(type of reliability & rationale, method for testing):*
 Reliability was established by validating the derivation cohort from 2009 with data from 2008.

2b.3 Testing Results *(reliability statistics, assessment of adequacy in the context of norms for the test conducted):*
 Results were consistent among the derivation cohort and the testing cohort. Specifically, the median for hospitals in the derivation cohort was 79.0% with the lowest decile 58.9% and highest decile 94.0%. This is similar to that observed in the testing cohort (median 79.2%, lowest decile 60.0%, highest decile 94.6%).

The Data Quality Report (DQR) program has been developed to ensure data are valid and complete. The DQR is a process for submitting data files to the NCDR®. Participants use their data collection tool software to create a submission file which is uploaded to the NCDR website. After uploading, the data in the file is automatically checked for errors and completeness. Passing the DQR ensures well-formed data and a statistically significant submission. Types of errors detected by the DQR include:
 Schema: Structure doesn't match NCDR requirements
 Dates: Inconsistent dates
 Selection: Missing or mismatched data; Can be a parent/child errors where a field requests more data.
 Outlier: Anomalies or exceptions; Data exceeds the possible limits. For example: 1,000mm length lesion.
 Counter: errors deal with Closure Methods, Lesions, and Intracoronary Devices. Each one has a counter, when

- 2b
- C
- P
- M
- N

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.

more than one is used List: Missing data in the Medications or either Device lists	
2c. Validity testing	
2c.1 Data/sample (description of data/sample and size): Face/content validity: review of relevant evidence and guidelines and expert panel consensus process	
2c.2 Analytic Method (type of validity & rationale, method for testing): Face/content validity was established to ensure this measure represented an important aspect of cardiovascular care for which improvement is needed.	
2c.3 Testing Results (statistical results, assessment of adequacy in the context of norms for the test conducted): A review of the relevant evidence and guidelines and expert panel consensus process resulted in the conclusion that this is a valid measure of quality of cardiovascular care for patients receiving an ICD.	2c C <input type="checkbox"/> P <input type="checkbox"/> M <input type="checkbox"/> N <input type="checkbox"/>
2d. Exclusions Justified	
2d.1 Summary of Evidence supporting exclusion(s):	
2d.2 Citations for Evidence:	
2d.3 Data/sample (description of data/sample and size): 144,538 patient records from 1305 hospitals in the ICD registry from January 2009 to December 2009.	
2d.4 Analytic Method (type analysis & rationale): Rate of exclusion coding.	2d C <input type="checkbox"/> P <input type="checkbox"/> M <input type="checkbox"/> N <input type="checkbox"/> NA <input type="checkbox"/>
2d.5 Testing Results (e.g., frequency, variability, sensitivity analyses): Deceased: 0.32% ACE inhibitor and ARB contraindicated or blinded: 2.45%	
2e. Risk Adjustment for Outcomes/ Resource Use Measures	
2e.1 Data/sample (description of data/sample and size): N/A	
2e.2 Analytic Method (type of risk adjustment, analysis, & rationale): N/A	2e C <input type="checkbox"/> P <input type="checkbox"/> M <input type="checkbox"/> N <input type="checkbox"/> NA <input type="checkbox"/>
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	
2f. Identification of Meaningful Differences in Performance	
2f.1 Data/sample from Testing or Current Use (description of data/sample and size): 144,538 patient records from 1305 hospitals in the ICD registry from January 2009 to December 2009.	
2f.2 Methods to identify statistically significant and practically/meaningfully differences in performance (type of analysis & rationale): Distribution of performance by percentile to demonstrate variability across hospitals.	
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): Mean: 0.77	2f C <input type="checkbox"/> P <input type="checkbox"/> M <input type="checkbox"/> N <input type="checkbox"/>

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

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 out...

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 w...

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.

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...

SD: 0.17 Quartile 1: 0.71 Median: 0.79 Quartile 3: 0.87 95%: 1.00	
2g. Comparability of Multiple Data Sources/Methods	
2g.1 Data/sample (description of data/sample and size): N/A	2g C <input type="checkbox"/> P <input type="checkbox"/> M <input type="checkbox"/> N <input type="checkbox"/> NA <input type="checkbox"/>
2g.2 Analytic Method (type of analysis & rationale): N/A	
2g.3 Testing Results (e.g., correlation statistics, comparison of rankings): N/A	
2h. Disparities in Care	2h C <input type="checkbox"/> P <input type="checkbox"/> M <input type="checkbox"/> N <input type="checkbox"/> NA <input type="checkbox"/>
2h.1 If measure is stratified, provide stratified results (scores by stratified categories/cohorts):	
2h.2 If disparities have been reported/identified, but measure is not specified to detect disparities, provide follow-up plans: Disparities not reported for this measure.	
TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for <i>Scientific Acceptability of Measure Properties</i> ?	2
Steering Committee: Overall, to what extent was the criterion, <i>Scientific Acceptability of Measure Properties</i> , met? Rationale:	2 C <input type="checkbox"/> P <input type="checkbox"/> M <input type="checkbox"/> N <input type="checkbox"/>
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): ACCF plans to begin voluntary public reporting of NCDR measures, including this measure, by 2012. ACCF is currently evaluating public reporting options and finalizing decisions related to location and display of information to be reported as well as communication plans.	
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): This measure is used for QI by NCDR ICD Registry participating institutions. As of October 2010, 1582 institutions are enrolled in the ICD registry. 78% submit data on all patients and 22% submit data on CMS patients only as part of a CMS mandate for submission of primary prevention data for all primary prevention ICD implant procedures.	
Participating institutions receive an institutional outcomes report each quarter with their hospital's data. Over 1000 metrics are included in version 1 of each hospital's outcomes report. 10 metrics are highlighted in the all patients report executive summary (16 for version 2 which will be released in early 2011). These metrics are selected by an NCDR panel of experts as presenting the greatest opportunity for care	3a C <input type="checkbox"/> P <input type="checkbox"/> M <input type="checkbox"/> N <input type="checkbox"/>

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

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.

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.

<p>improvement. Hospitals receive their measure score, as well as the rates for all hospitals in the ICD registry, and all hospitals in the same comparison group (based on volume), and the rate for the 90th and 50th percentiles. A box and whisker plot is displayed for each metric to show hospitals how they compare to all hospitals in the ICD registry.</p> <p>This measure is also provided to Hospital Corporation of America (HCA) for incorporation in their QI program efforts.</p> <p>The Centers for Medicare & Medicaid Services (CMS) mandates that all institutions submit data on ICD implant procedures for primary prevention in order to receive reimbursement for these procedures. CMS will use this data for assessment of the efficacy of ICD use for primary prevention.</p> <p>Testing of Interpretability (<i>Testing that demonstrates the results are understood by the potential users for public reporting and quality improvement</i>)</p> <p>3a.4 Data/sample (<i>description of data/sample and size</i>): 849 ICD registry participants, fall 2010.</p> <p>3a.5 Methods (<i>e.g., focus group, survey, QI project</i>): Online survey</p> <p>3a.6 Results (<i>qualitative and/or quantitative results and conclusions</i>): 77% of survey participants answered yes to the question "Will the following metrics provide information that will be valuable for quality improvement at your institution?"</p>	
<p>3b/3c. Relation to other NQF-endorsed measures</p> <p>3b.1 NQF # and Title of similar or related measures: #162: HF patients who are prescribed an ACEI or ARB at hospital discharge, #137: ACEI or ARB for left ventricular systolic dysfunction- Acute Myocardial Infarction (AMI) Patients, #162:Heart Failure: Angiotensin converting enzyme inhibitor (ACEI) for left ventricular systolic dysfunction (LVSD)</p>	
<p>(for NQF staff use) Notes on similar/related endorsed or submitted measures:</p>	
<p>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 <u>or</u> different topic but same target population):</p> <p>3b.2 Are the measure specifications harmonized? If not, why? This following exclusions for this measure are aligned with the CMS ACE/ARB measures: pt expired, ACE/ARB contraindicated or blinded. The following exclusions in the CMS measures are not in this measure because the registry currently does not collect discharge location: discharged to another hospital, left against medical advice, discharged to home for hospice care. A data element will be added to the ICD registry in the future for discharge location, and the measure will subsequently be updated at that time with these exclusions. This measure also does not have an exclusion for length of stay greater than 120 days, or for patients with comfort only measures, as the CMS measures do.</p>	<p>3b</p> <p>C <input type="checkbox"/></p> <p>P <input type="checkbox"/></p> <p>M <input type="checkbox"/></p> <p>N <input type="checkbox"/></p> <p>NA <input type="checkbox"/></p>
<p>3c. Distinctive or Additive Value</p> <p>3c.1 Describe the distinctive, improved, or additive value this measure provides to existing NQF-endorsed measures: This measure provides additive value to the set of NQF endorsed measure in that it would be the first endorsed measure to include the ICD population with LVSD and to use a registry as a data source.</p> <p>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:</p>	<p>3c</p> <p>C <input type="checkbox"/></p> <p>P <input type="checkbox"/></p> <p>M <input type="checkbox"/></p> <p>N <input type="checkbox"/></p> <p>NA <input type="checkbox"/></p>
<p>TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for <i>Usability</i>?</p>	<p>3</p>
<p>Steering Committee: Overall, to what extent was the criterion, <i>Usability</i>, met? Rationale:</p>	<p>3</p> <p>C <input type="checkbox"/></p> <p>P <input type="checkbox"/></p> <p>M <input type="checkbox"/></p> <p>N <input type="checkbox"/></p>

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.

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).

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
<p>4a. Data Generated as a Byproduct of Care Processes</p> <p>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)</p>	<p>4a</p> <p>C <input type="checkbox"/></p> <p>P <input type="checkbox"/></p> <p>M <input type="checkbox"/></p> <p>N <input type="checkbox"/></p>
<p>4b. Electronic Sources</p> <p>4b.1 Are all the data elements available electronically? (<i>elements that are needed to compute measure scores are in defined, computer-readable fields, e.g., electronic health record, electronic claims</i>) Yes</p> <p>4b.2 If not, specify the near-term path to achieve electronic capture by most providers.</p>	<p>4b</p> <p>C <input type="checkbox"/></p> <p>P <input type="checkbox"/></p> <p>M <input type="checkbox"/></p> <p>N <input type="checkbox"/></p>
<p>4c. Exclusions</p> <p>4c.1 Do the specified exclusions require additional data sources beyond what is required for the numerator and denominator specifications? No</p> <p>4c.2 If yes, provide justification.</p>	<p>4c</p> <p>C <input type="checkbox"/></p> <p>P <input type="checkbox"/></p> <p>M <input type="checkbox"/></p> <p>N <input type="checkbox"/></p> <p>NA <input type="checkbox"/></p>
<p>4d. Susceptibility to Inaccuracies, Errors, or Unintended Consequences</p> <p>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. The NCDR program takes a number of steps to minimize any potential for inaccuracies or errors in data used to report on performance back to hospitals. The process begins with support to data abstractors, including webinars, meetings, resource guides on the website, and clinical quality consultants available via e-mail or toll free phone number, to ensure consistent data collection. The NCDR establishes a unified electronic platform for data capture and submission that includes a certification process of the technical data collection tool selected by the hospital (either a commercially available software vendor product, the NCDR’s own web-based data collection tool, or a hospital’s customized electronic medical record system) that must occur prior to any data submissions. The certification process provides edit checks of data elements within the data collection tool to ensure a high quality data submission. The NCDR data submission process includes a Data Quality Report (DQR) process that checks for validity in submissions based upon predetermined thresholds for element and composite completeness. The NCDR is putting in place a new strategy to systematically review the DQR results. The NCDR on-site audit program has been developed to assess the reliability of data abstraction. This annual process reviews key elements at a select number of patient reports at a select number of sites and provides feedback scores to the hospitals. Any elements not currently included in the on-site audit process and deemed critical to capture for this measure will be added upon NQF endorsement.</p>	<p>4d</p> <p>C <input type="checkbox"/></p> <p>P <input type="checkbox"/></p> <p>M <input type="checkbox"/></p> <p>N <input type="checkbox"/></p>
<p>4e. Data Collection Strategy/Implementation</p> <p>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: Beta testing with a sample of registry participants takes place with each new registry version to identify errors in the data collection tool. In addition, modifications are made to metrics based on feedback during a</p>	<p>4e</p> <p>C <input type="checkbox"/></p> <p>P <input type="checkbox"/></p> <p>M <input type="checkbox"/></p> <p>N <input type="checkbox"/></p>

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.

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

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).

<p>public comment period.</p> <p>The Data Quality Report (DQR) program has been developed to ensure data are valid and complete. The DQR is a process for submitting data files to the NCDR. Participants use their data collection tool software to create a submission file which is uploaded to the NCDR website. After uploading, the data in the file are automatically checked for errors and completeness. Passing the DQR ensures well-formed data and a statistically significant submission. Types of errors detected by the DQR include:</p> <p>Schema: Structure doesn't match NCDR requirements Dates: Inconsistent dates Selection: Missing or mismatched data; can be parent/child errors where a field requests more data Outlier: Anomalies or exceptions; data exceeds the possible limits.</p> <p>4e.2 Costs to implement the measure (costs of data collection, fees associated with proprietary measures): ICD registry participants pay a fee of \$3,480/year (as of 2010) to enroll in the registry. Staff resources are needed for data collection and submission at the participating institution. Registry site managers/data collectors undergo (non-mandatory) training offered by the NCDR.</p> <p>4e.3 Evidence for costs: http://www.ncdr.com/WebNCDR/ncdrdocuments/B08352N%20ICD%20Registry%20Enrollment%20Packet%20Complete.pdf</p> <p>4e.4 Business case documentation:</p>	
<p>TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for <i>Feasibility</i>?</p>	<p>4</p>
<p>Steering Committee: Overall, to what extent was the criterion, <i>Feasibility</i>, met? Rationale:</p>	<p>4 C <input type="checkbox"/> P <input type="checkbox"/> M <input type="checkbox"/> N <input type="checkbox"/></p>
<p>RECOMMENDATION</p>	
<p>(for NQF staff use) Check if measure is untested and only eligible for time-limited endorsement.</p>	<p>Time-limited <input type="checkbox"/></p>
<p>Steering Committee: Do you recommend for endorsement? Comments:</p>	<p>Y <input type="checkbox"/> N <input type="checkbox"/> A <input type="checkbox"/></p>
<p>CONTACT INFORMATION</p>	
<p>Co.1 Measure Steward (Intellectual Property Owner) Co.1 Organization American College of Cardiology Foundation (ACCF), 2400 N Street NW, Washington, District Of Columbia, 20037</p> <p>Co.2 Point of Contact Kristyne, McGuinn, MHS, kmcguinn@acc.org, 202-375-6529-</p>	
<p>Measure Developer If different from Measure Steward Co.3 Organization American College of Cardiology Foundation (ACCF), 2400 N Street NW, Washington, District Of Columbia, 20037</p> <p>Co.4 Point of Contact Kristyne, McGuinn, MHS, kmcguinn@acc.org, 202-375-6529-</p>	
<p>Co.5 Submitter If different from Measure Steward POC Kristyne, McGuinn, MHS, kmcguinn@acc.org, 202-375-6529-, American College of Cardiology Foundation (ACCF)</p>	

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

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.

ICD Registry Steering Committee:

- Mark S. Kremers, MD, FACC, FHRS Chair
- Stephen C. Hammill, MD, FACC, FHRS Ex-Officio
- Sana M. Al-Khatib, MD, FACC
- Charles I. Berul, MD, FACC
- Jeptha P. Curtis, MD, FACC
- Paul A. Heidenreich, MD, FACC
- Ileana L. Pina, MD, FACC
- Matthew R. Reynolds, MD, FACC
- Lynne Warner Stevenson, MD, FACC
- Mary Norine Walsh, MD, FACC

Public Reporting Workgroup:

- Fred Masoudi, MD, MSPH, FACC, FAHA, FACP
- H. Vernon Anderson, MD, FACC, FSCAI
- David Malenka, MD, FACC
- Matt Roe, MD, FACC
- Steve Hammill, MD, FHRS, FACC
- Jeptha Curtis, MD, FACC
- Paul Heidenreich, MD, MS, FACC
- Brahmajee Nallamothu, MD, MPH, FACC
- Mark Kremers, MD, FACC
- Christopher White MD, FACC
- Carl Tommaso, MD, FACC, FAHA, FSCAI
- Sunil Rao, MD, FACC, FSCAI
- Andrea Russo, MD, FACC, FHRS
- Debabrata Mukherjee MD, FACC

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: [2006](#)

Ad.7 Month and Year of most recent revision: [12, 2010](#)

Ad.8 What is your frequency for review/update of this measure? [Every 3-4 years or if guideline updates warrant more frequent update, or with new dataset version.](#)

Ad.9 When is the next scheduled review/update for this measure? [06, 2011](#)

Ad.10 Copyright statement/disclaimers: [© 2010 American College of Cardiology Foundation All Rights Reserved](#)

Ad.11 -13 Additional Information web page URL or attachment: [Attachment ICDacearbTesting.pdf](#)

Date of Submission (MM/DD/YY): [12/14/2010](#)

Page 3: [1] Comment [k4] Karen Pace 10/5/2009 8:59:00 AM

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:
 - o Intermediate outcome - evidence that the measured intermediate outcome (e.g., blood pressure, HbA1c) leads to improved health/avoidance of harm or cost/benefit.
 - o 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).
 - o 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.
 - o 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.
 - o Access - evidence that an association exists between access to a health service and the outcomes of, or experience with, care.
 - o 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.

Page 3: [2] 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.

Page 3: [3] Comment [k6] Karen Pace 10/5/2009 8:59:00 AM

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.

Page 8: [4] Comment [KP14] Karen Pace 10/5/2009 8:59:00 AM

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).

Page 8: [5] Comment [KP16] Karen Pace 10/5/2009 8:59:00 AM

rationale/data support no risk adjustment.

Page 8: [6] Comment [k17]	Karen Pace	10/5/2009 8:59:00 AM
----------------------------------	-------------------	-----------------------------

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.

Page 8: [7] Comment [k19]	Karen Pace	10/5/2009 8:59:00 AM
----------------------------------	-------------------	-----------------------------

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.

ACE Inhibitor/ARB at discharge: Testing Results

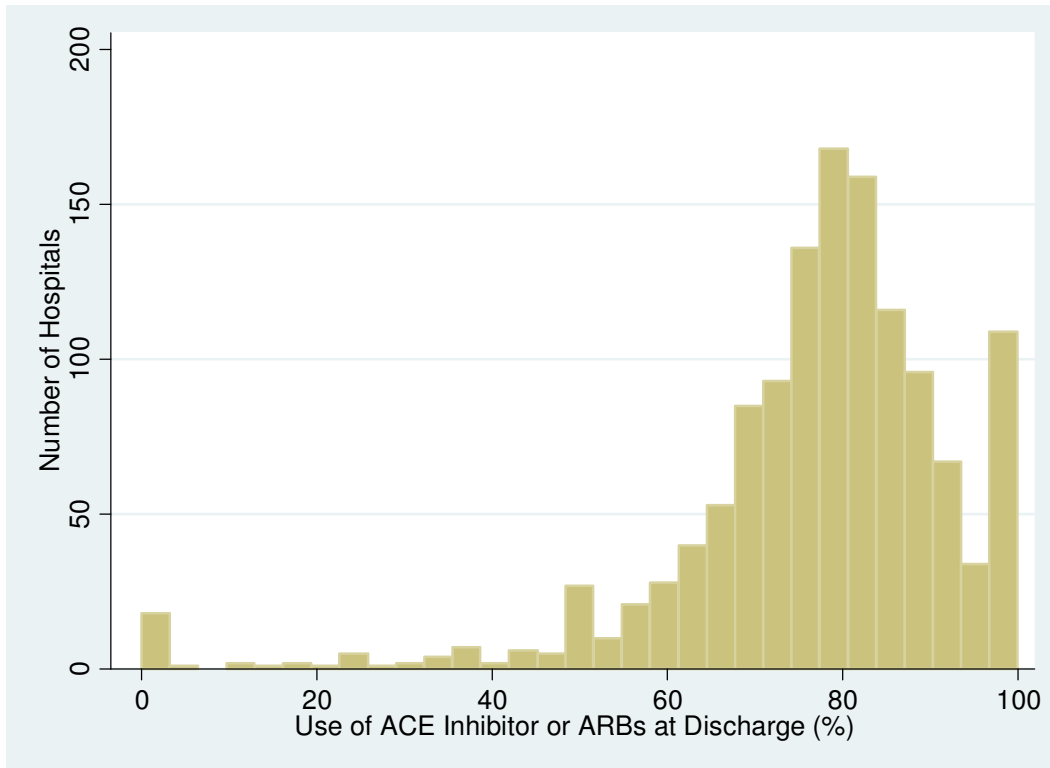
Table Study Sample (ICD 2009)

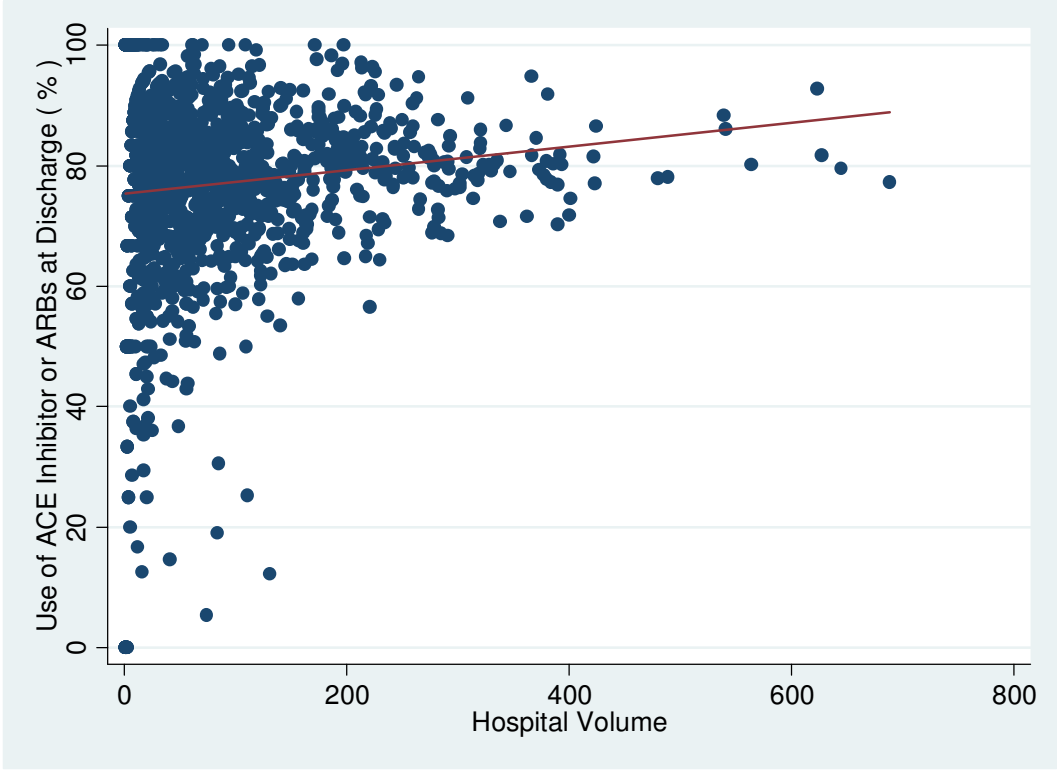
Exclusions	Hospital stays		Patients		Facilities	
	#	%	#	%	#	%
Sample from 01/01/2009 to 12/31/2009	144538	100	143653	100	1305	100
excluding deceased patients	457	0.32	455	0.32	0	0
Remaining	144081	99.68	143198	99.68	1305	100
Excluding EF percent $\geq 40\%$ + missing	30592	21.23	30357	21.20	6	0.46
Remaining	113489	78.77	112841	78.80	1299	99.54
Excluding ACE inhibitor and ARB unknown, contraindicated or blinded	2783	2.45	2748	2.44	0	0.00
Study Sample	110706	97.55	110093	97.56	1299	100.00
ACE inhibitor or ARB use at discharge	87500	79.04	87065	79.08	1281	98.61

Distribution of ACE inhibitor or ARB use at Discharge

Description	Hospital volume	% patients received ACEI or ARB at discharge
N	1299	1299
Mean	85.22	0.7702
Std Deviation	93.73	0.1667
100% Max	689	1.0000
99%	401	1.0000
95%	279	1.0000
90%	213	0.9464
75% Q3	117	0.8654
50% Median	54	0.7917
25% Q1	20	0.7105
10%	6	0.6000
5%	3	0.5000
1%	1	0.0000
0% Min	1	0.0000

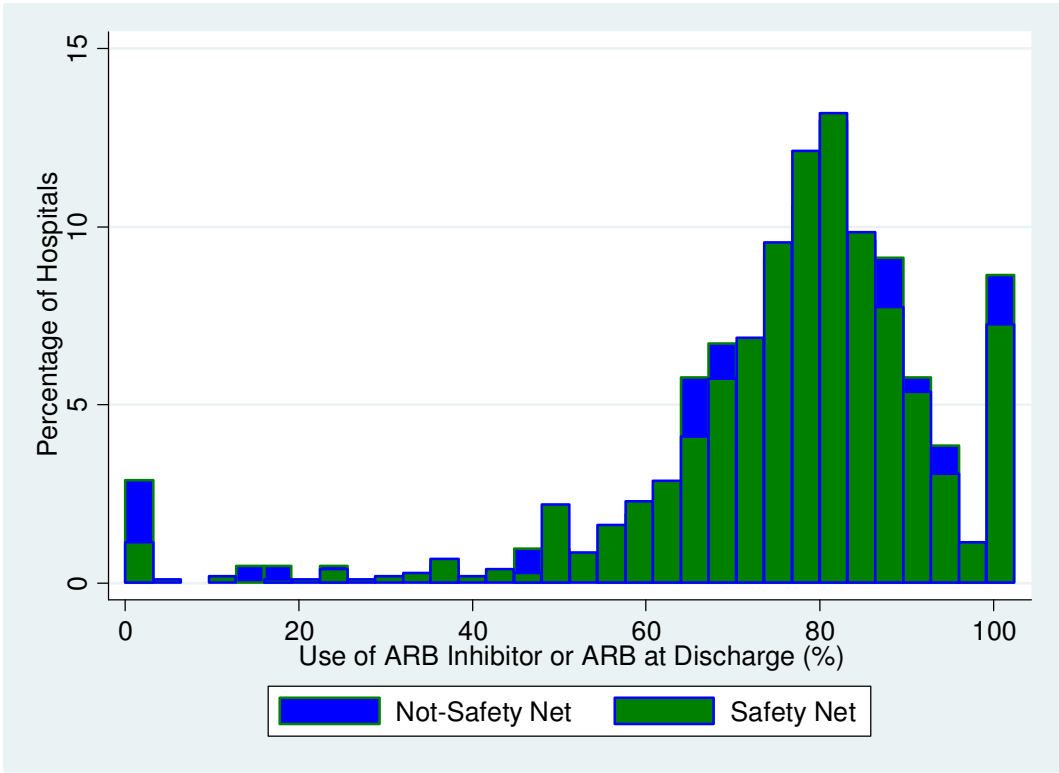
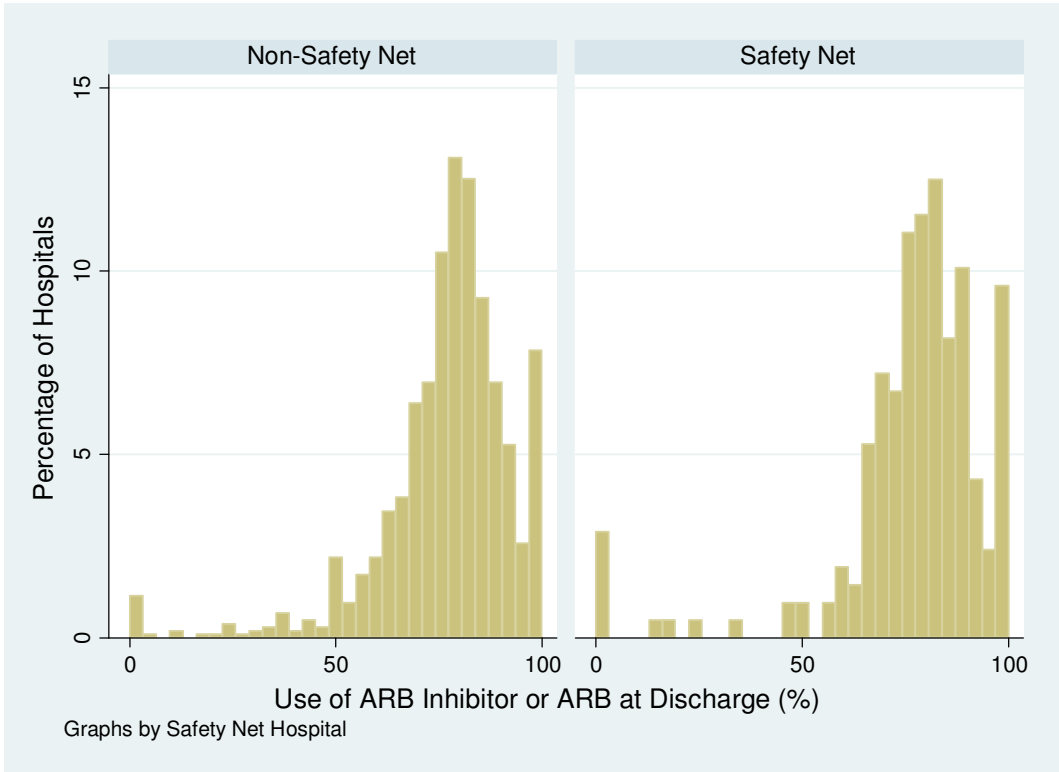
Among patients with EF<40% , who are eligible for either ACE inhibitors or ARBs





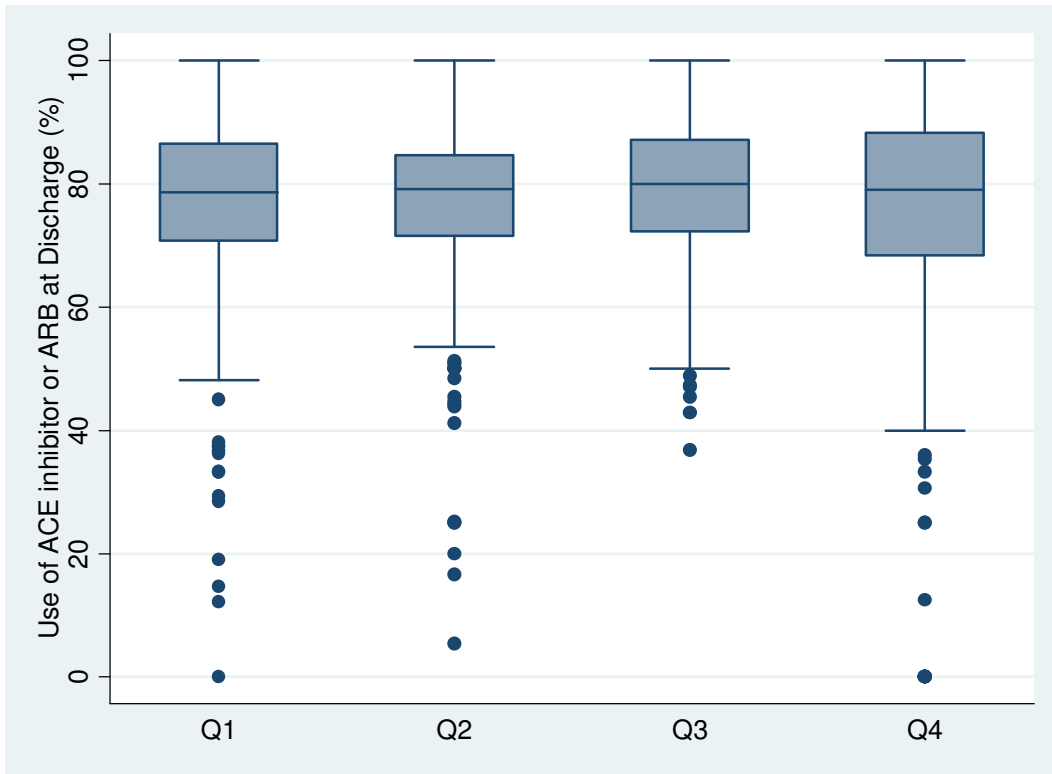
Distribution of AEC inhibitor or ARB use at Discharge Stratified by Safety Net Status				
Description	Safety Net Status*			
	No		Yes	
	Volume	ACEI or ARB	Volume	ACEI or ARB
N	1046	1046	208	208
Mean	86.32	0.7694	81.32	0.7699
Std Deviation	93.67	0.1627	95.28	0.1899
100% Max	689	1.0000	564	1.0000
99%	400	1.0000	386	1.0000
95%	266	1.0000	291	1.0000
90%	212	0.9400	222	0.9558
75% Q3	119	0.8632	113.5	0.8750
50% Median	56	0.7915	44.5	0.8000
25% Q1	21	0.7097	17	0.7131
10%	7	0.5952	6	0.6250
5%	3	0.5000	3	0.4545
1%	1	0.0000	1	0.0000
0% Min	1	0.0000	1	0.0000

* Defined as government hospitals or non-government hospitals with high medicaid caseload using AHA 2008 Data.



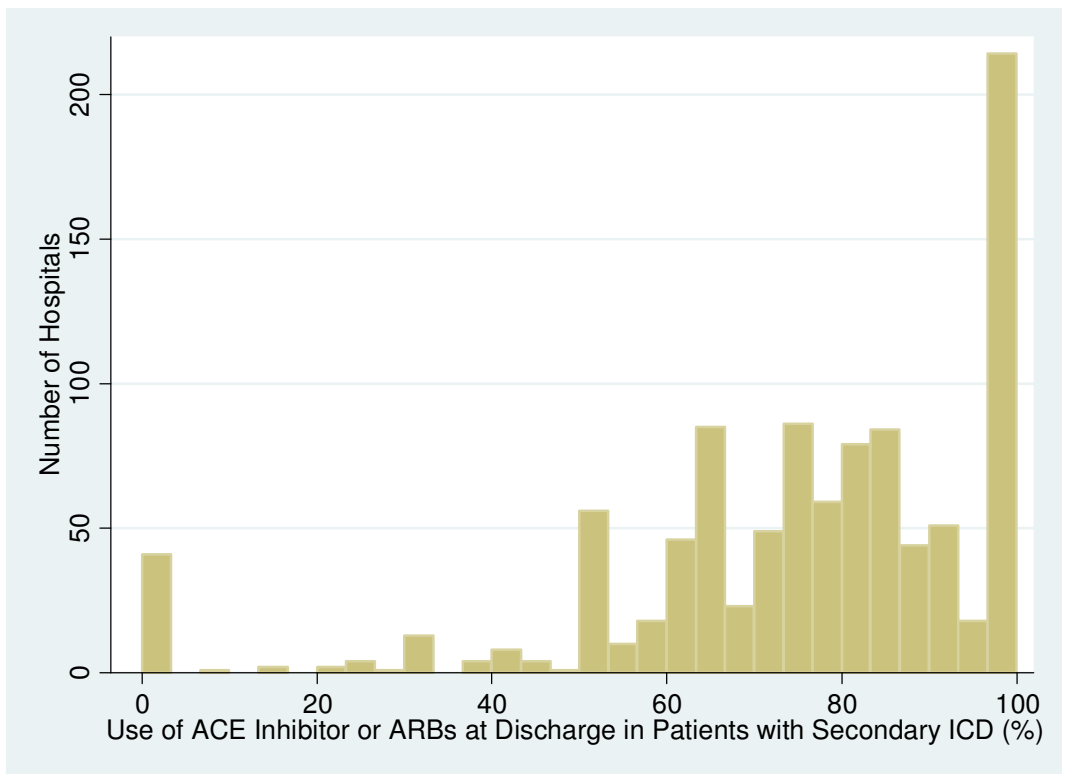
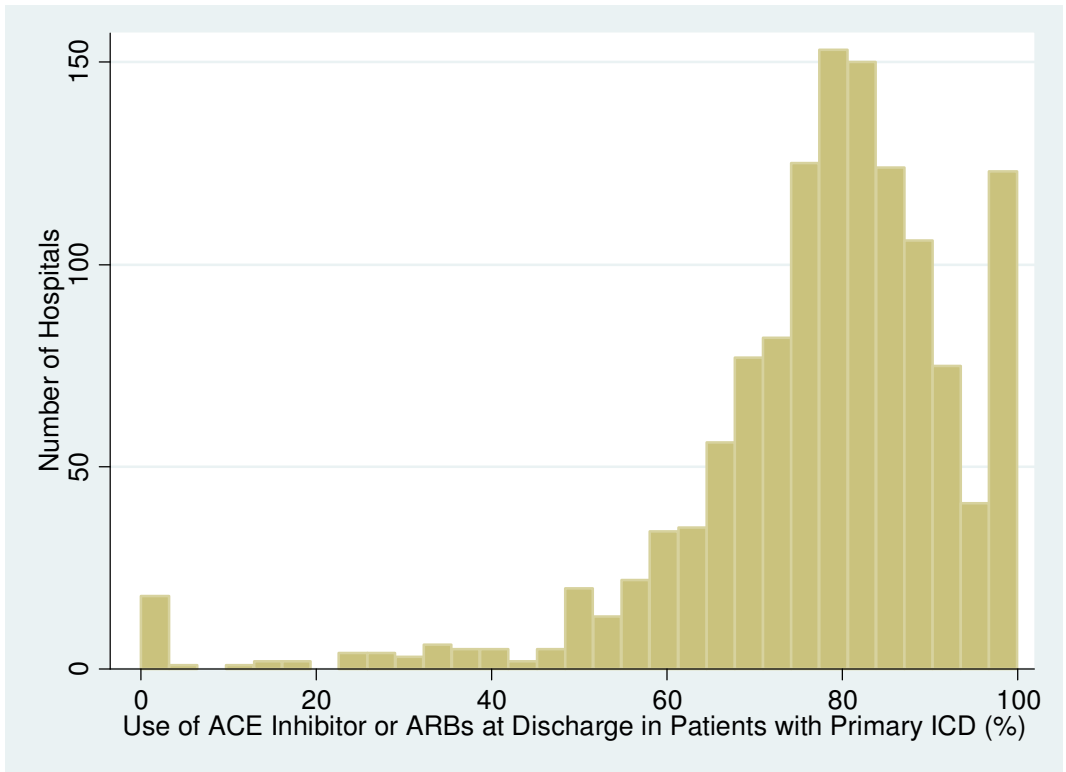
Distribution of AEC inhibitor or ARB use at Discharge Stratified by % White

Description	%White	%White							
		Q1 (0.00% to 72.73%)		Q2 (72.74% to 87.69%)		Q3 (87.70% to 96.12%)		Q4 (96.13% to 100.00%)	
		Volume	ACEI or ARE	Volume	ACEI or ARB	Volume	ACEI or ARB	Volume	ACEI or ARB
N	1299	323	323	326	326	325	325	325	325
Mean	0.8102	81.19	0.7724	109.32	0.7714	95.14	0.7894	55.15	0.7477
Std Deviation	0.2059	100.39	0.1565	106.42	0.1405	87.38	0.1138	67.66	0.2309
100% Max	1.0000	627	1.0000	645	1.0000	689	1.0000	489	1.0000
99%	1.0000	424	1.0000	401	1.0000	366	1.0000	282	1.0000
95%	1.0000	290	1.0000	323	1.0000	263	0.9481	192	1.0000
90%	1.0000	215	0.9626	274	0.9231	214	0.9180	138	1.0000
75% Q3	0.9612	105	0.8656	150	0.8464	128	0.8715	78	0.8830
50% Median	0.8769	43	0.7868	78.5	0.7915	67	0.8000	31	0.7901
25% Q1	0.7273	15	0.7073	30	0.7155	32	0.7222	6	0.6829
10%	0.5238	6	0.6047	11	0.6154	18	0.6437	2	0.5000
5%	0.3750	3	0.5000	7	0.5079	13	0.5796	1	0.0000
1%	0.0000	1	0.1905	4	0.2500	9	0.4546	1	0.0000
0% Min	0.0000	1	0.0000	4	0.0541	9	0.3684	1	0.0000



Distribution of AEC inhibitor or ARB use at Discharge Stratified by ICD indication

Description	ICD Indication			
	Priamry		Secondary	
	Volume	ACEI or ARB	Volume	ACEI or ARB
N	1294	1294	1003	1003
Mean	71.09	0.7760	18.66	0.7521
Std Deviation	75.91	0.1700	26.56	0.2313
100% Max	551	1.0000	475	1.0000
99%	339	1.0000	108	1.0000
95%	228	1.0000	61	1.0000
90%	175	0.9619	45	1.0000
75% Q3	98	0.8776	25	0.9156
50% Median	46	0.8000	10	0.7895
25% Q1	16	0.7111	4	0.6667
10%	6	0.6000	1	0.5000
5%	3	0.5000	1	0.2857
1%	1	0.0000	1	0.0000
0% Min	1	0.0000	1	0.0000



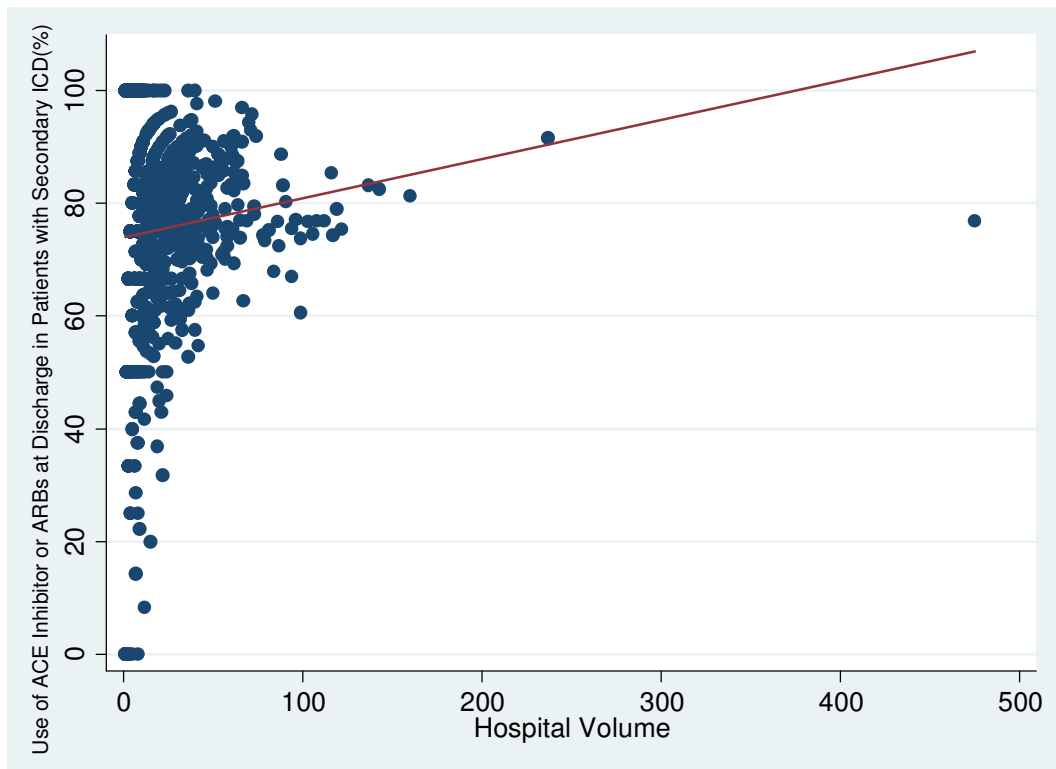
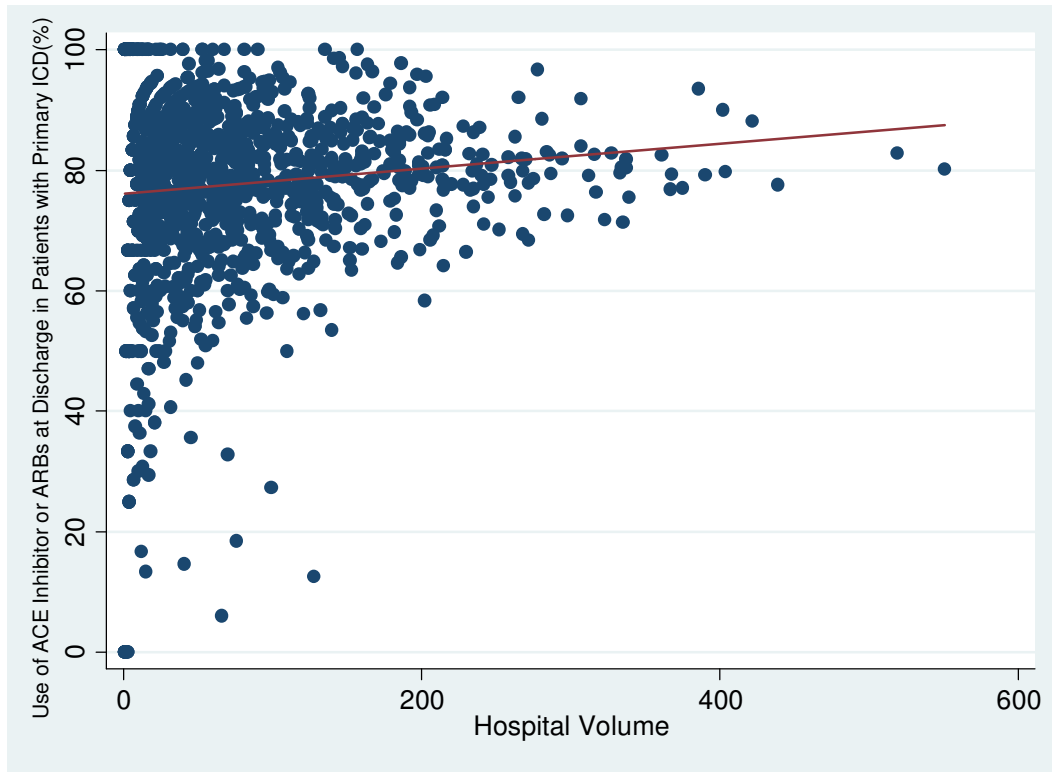
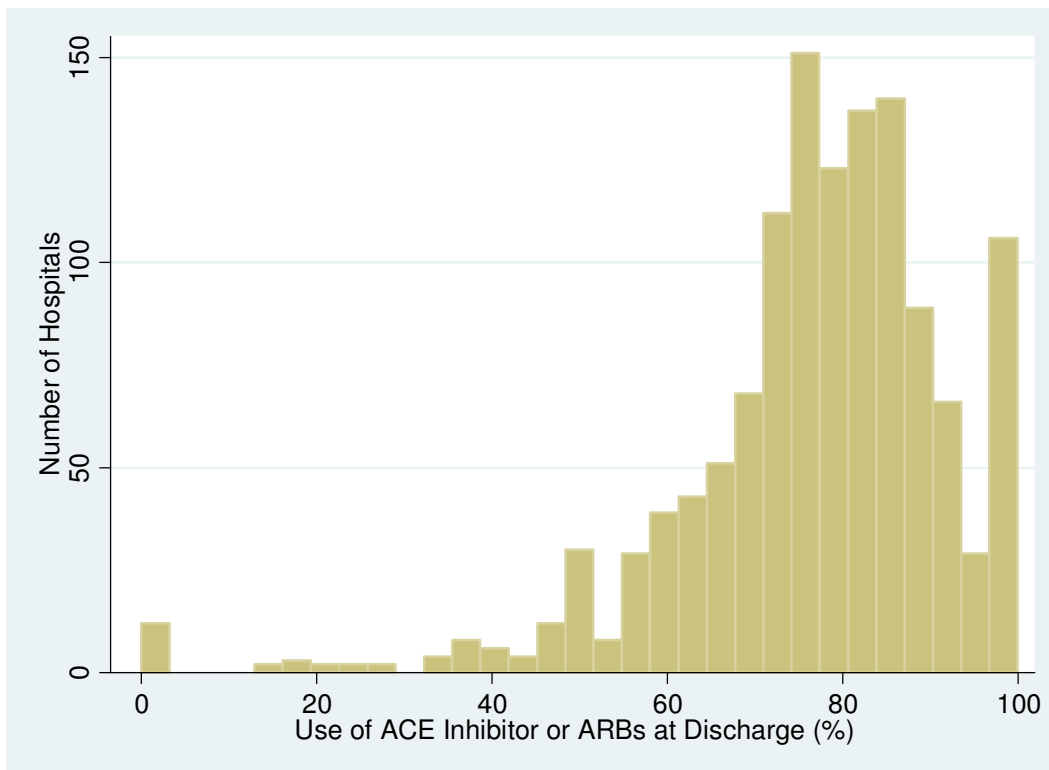


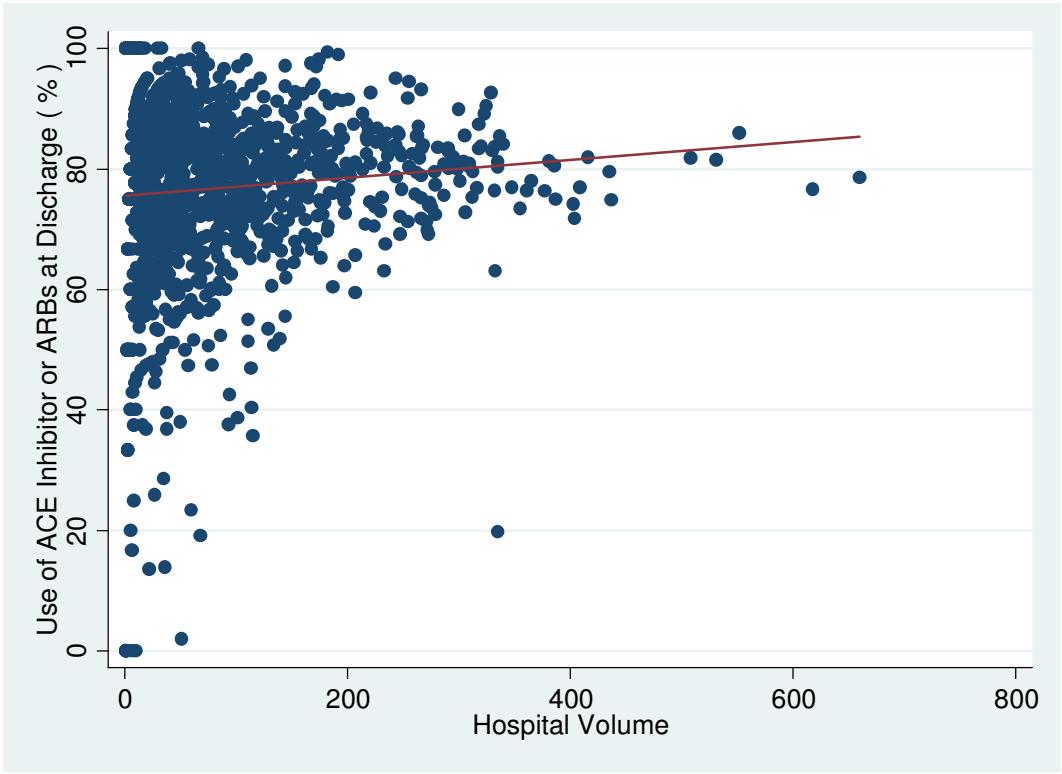
Table Study Sample (ICD 2008)

Exclusions	Hospital stays		Patients		Facilities	
	#	%	#	%	#	%
Sample from 01/01/2008 to 12/31/2008	131371	100	130593	100	1283	100
excluding deceased patients	500	0.38	494	0.38	0	0
Remaining	130871	99.62	130099	99.62	1283	100
Excluding EF percent $\geq 40\%$ + missing	25185	19.24	25004	19.22	5	0.39
Remaining	105686	80.76	105095	80.78	1278	99.61
Excluding unknown, contraindicated or blinded	1847	1.75	1824	1.74	0	0.00
Study Sample	103839	98.25	103271	98.26	1278	100.00
ACE inhibitor or ARB use at discharge	81208	78.21	80833	78.27	1267	99.14

Distribution of ACE inhibitor or ARB use at Discharge

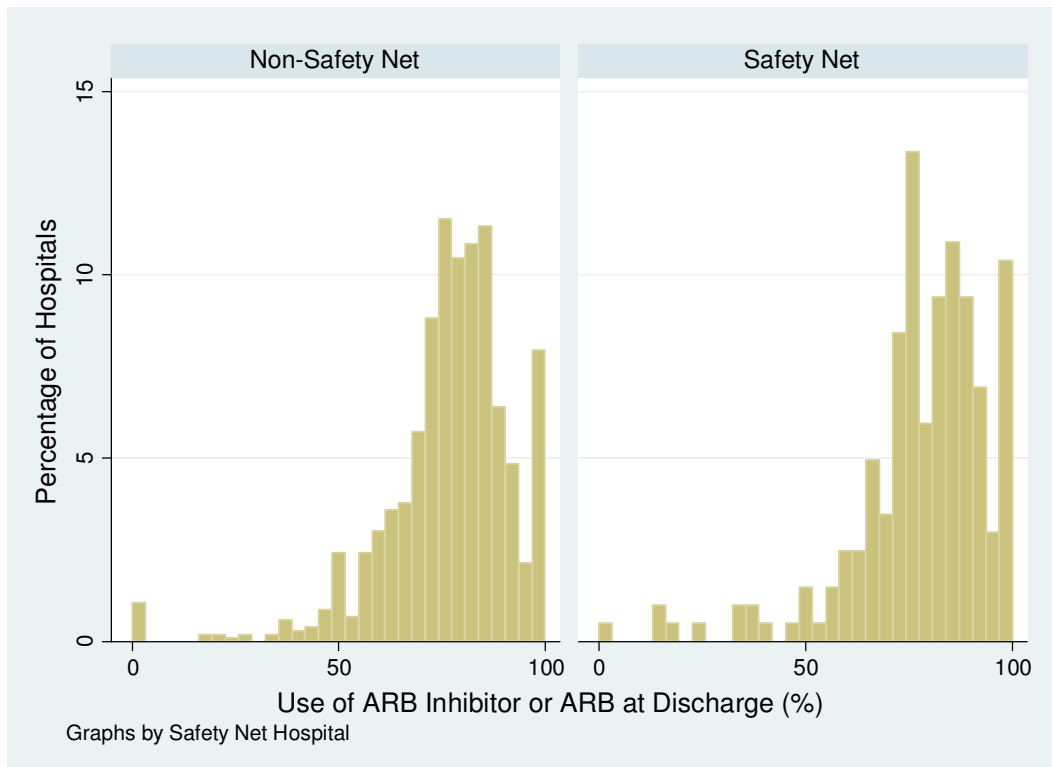
Description	Hospital volume	% patients prescribed ACEI or ARB at discharge
N	1278	1278
Mean	81.25	0.7681
Std Deviation	87.50	0.1598
100% Max	660	1.0000
99%	386	1.0000
95%	267	1.0000
90%	196	0.9394
75% Q3	112	0.8629
50% Median	51	0.7895
25% Q1	19	0.7059
10%	6	0.5890
5%	3	0.5000
1%	1	0.1364
0% Min	1	0.0000

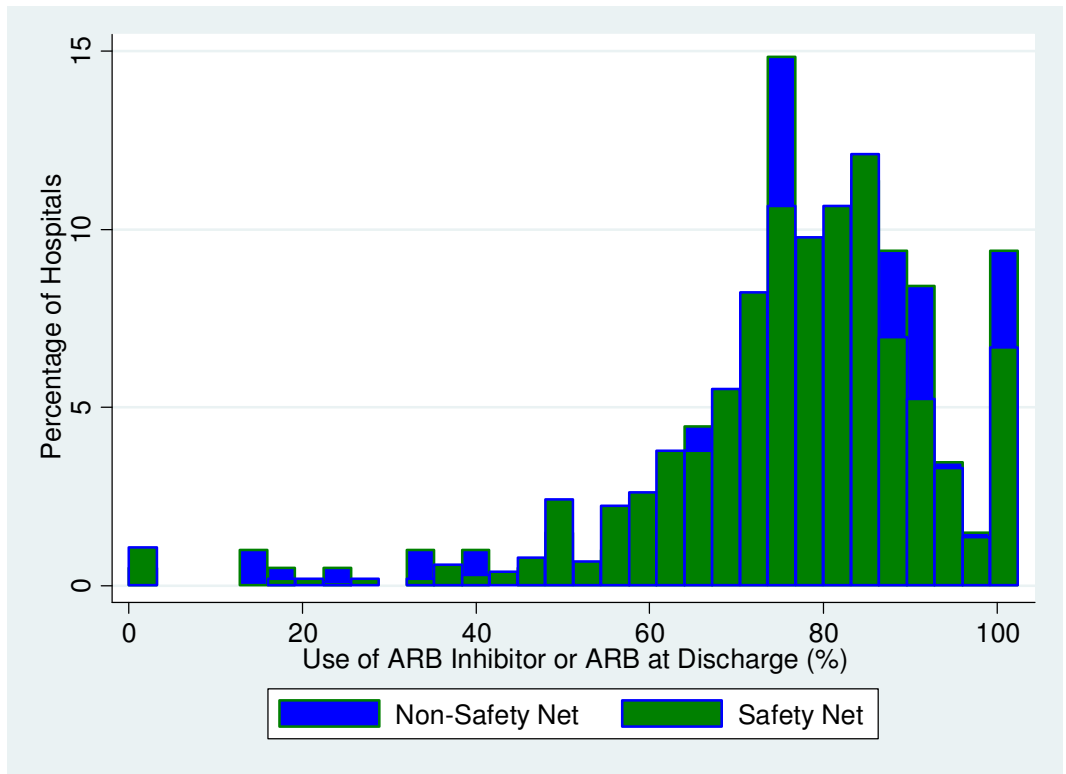




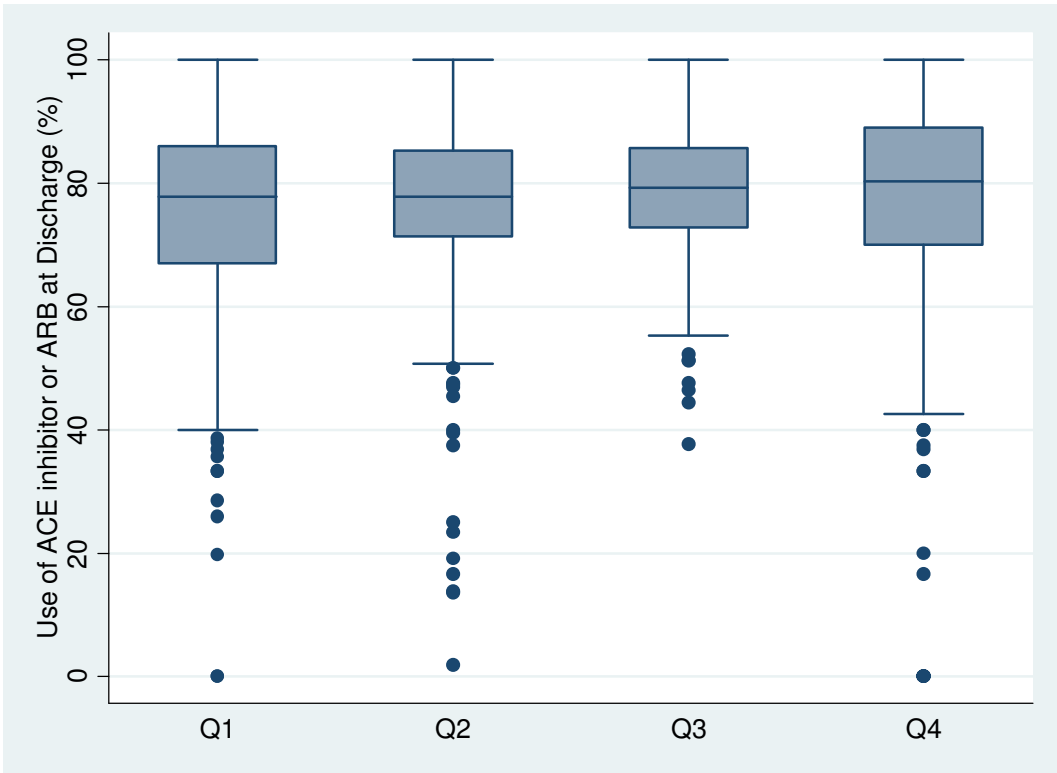
Distribution of AEC inhibitor or ARB use at Discharge Stratified by Safety Net Status				
Description	Safety Net Status*			
	No		Yes	
	Volume	ACEI or ARB	Volume	ACEI or ARB
N	1032	1032	202	202
Mean	82.94	0.7668	74.34	0.7803
Std Deviation	88.84	0.1577	81.75	0.1705
100% Max	660	1.0000	387	1.0000
99%	386	1.0000	318	1.0000
95%	268	1.0000	254	1.0000
90%	196	0.9362	197	0.9722
75% Q3	113.5	0.8593	109	0.8846
50% Median	53	0.7882	44	0.8070
25% Q1	20	0.7039	14	0.7288
10%	6	0.5909	4	0.6000
5%	3	0.5000	3	0.4690
1%	1	0.0196	1	0.1389
0% Min	1	0.0000	1	0.0000

* Defined as government hospitals or non-government hospitals with high medicaid caseload using AHA 2008 Data.

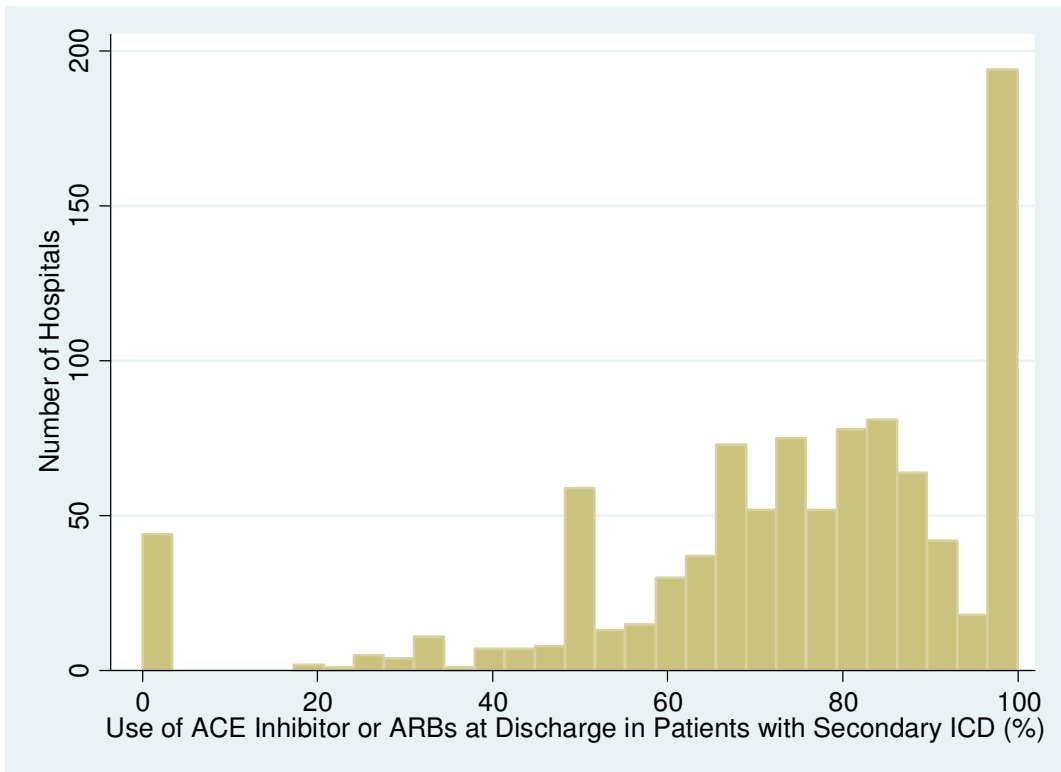
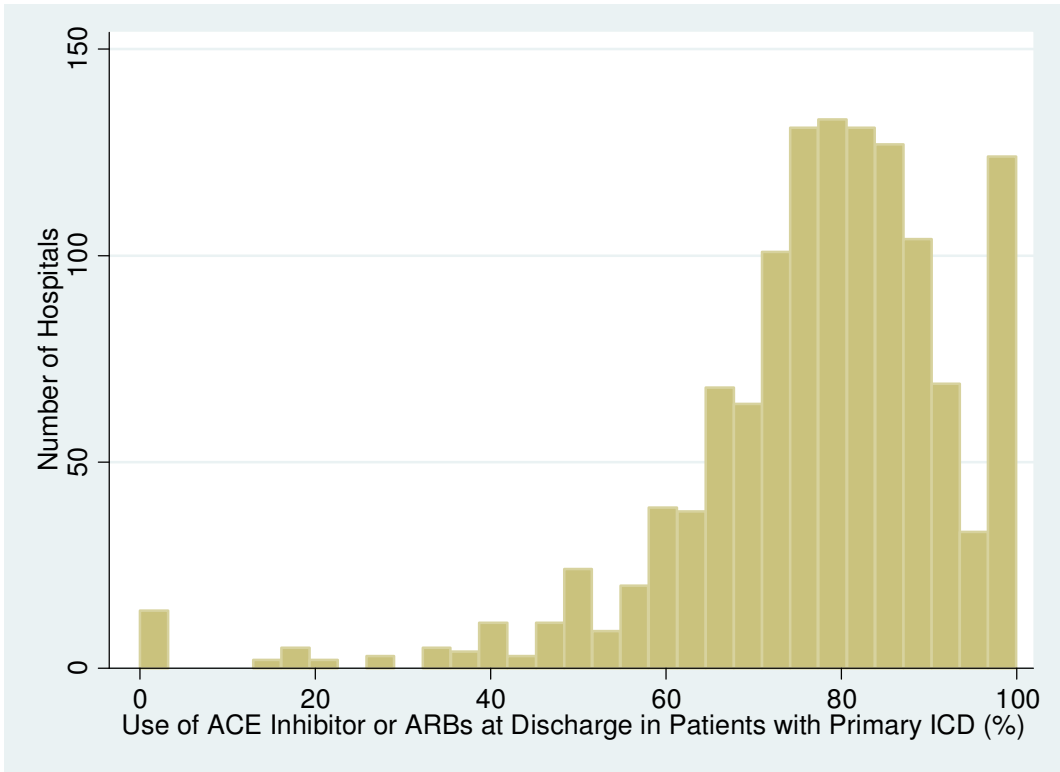


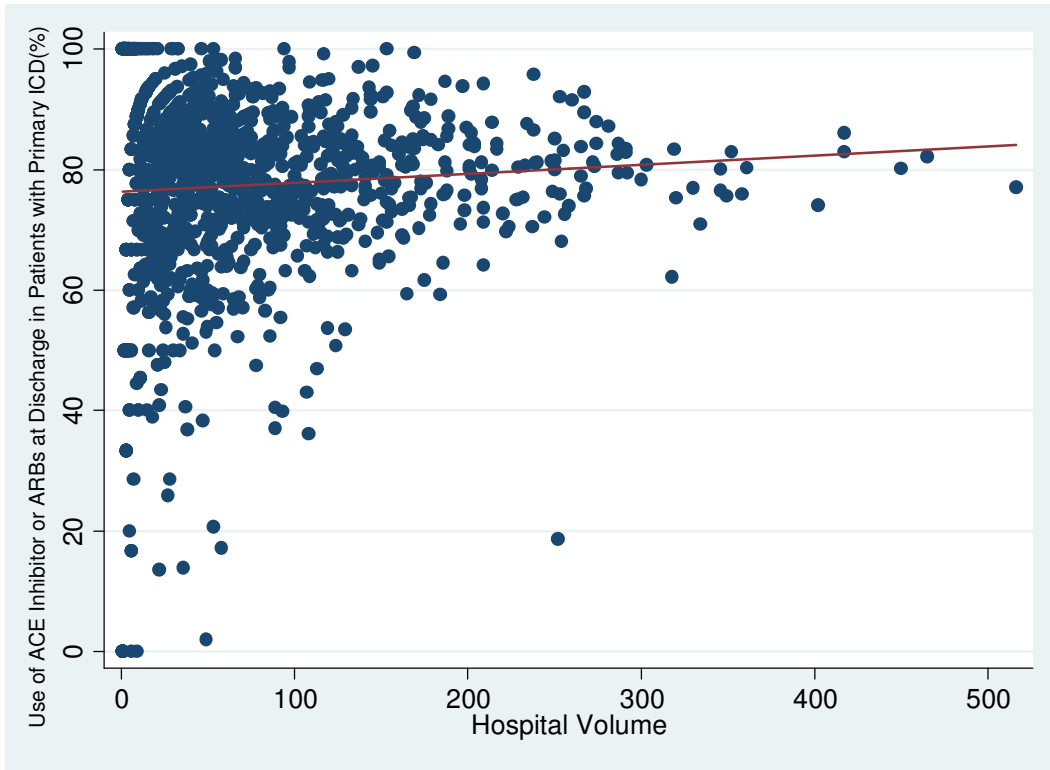


Distribution of AEC inhibitor or ARB use at Discharge Stratified by % White									
Description	%White	%White							
		Q1 (0.00% to 72.73%)		Q2 (72.74% to 87.69%)		Q3 (87.70% to 96.12%)		Q4 (96.13% to 100.00%)	
		Volume	ACEI or ARB	Volume	ACEI or ARB	Volume	ACEI or ARB	Volume	ACEI or ARB
N	1278	321	321	321	321	316	316	320	320
Mean	0.8138	78.21	0.7593	98.24	0.7614	96.15	0.7851	52.55	0.7670
Std Deviation	0.2007	94.53	0.1649	95.01	0.1473	84.07	0.1064	65.59	0.2039
100% Max	1.0000	660	1.0000	618	1.0000	552	1.0000	348	1.0000
99%	1.0000	409	1.0000	403	1.0000	340	1.0000	320	1.0000
95%	1.0000	272	1.0000	281	0.9451	287	0.9429	184.5	1.0000
90%	1.0000	206	0.9571	245	0.9167	202	0.9167	137.5	1.0000
75% Q3	0.9613	106	0.8603	133	0.8529	131	0.8564	75.5	0.8904
50% Median	0.8750	43	0.7778	71	0.7778	68	0.7928	29	0.8035
25% Q1	0.7333	15	0.6707	29	0.7143	35.5	0.7273	6	0.7000
10%	0.5306	5	0.5556	9	0.6000	20	0.6400	2	0.5000
5%	0.3810	3	0.4737	6	0.5075	17	0.5918	1	0.4000
1%	0.0909	1	0.2593	4	0.1667	11	0.4762	1	0.0000
0% Min	0.0000	1	0.0000	4	0.0196	9	0.3763	1	0.0000



Distribution of AEC inhibitor or ARB use at Discharge Stratified by ICD indication				
Description	ICD Indication			
	Priamry		Secondary	
	Volume	ACEI or ARB	Volume	ACEI or ARB
N	1275	1275	973	973
Mean	67.85	0.7734	17.81	0.7421
Std Deviation	72.76	0.1652	21.26	0.2366
100% Max	516	1.0000	210	1.0000
99%	334	1.0000	91	1.0000
95%	222	1.0000	59	1.0000
90%	166	0.9600	46	1.0000
75% Q3	92	0.8750	24	0.9020
50% Median	44	0.7979	10	0.7857
25% Q1	16	0.7089	4	0.6539
10%	5	0.5924	1	0.5000
5%	3	0.5000	1	0.2500
1%	1	0.0000	1	0.0000
0% Min	1	0.0000	1	0.0000





NQF

THE NATIONAL QUALITY FORUM

Agreement with Measure Stewards

AGREEMENT BETWEEN

NATIONAL QUALITY FORUM

AND

The American College of Cardiology

This Agreement (this "Agreement") between the National Quality Forum, a District of Columbia not-for-profit corporation ("NQF") and The American College of Cardiology (the "Steward") is entered into on this 8 day of October, 2009.

Whereas, NQF is an organization created to develop and implement a national strategy for health care performance measurement and reporting.

Whereas, NQF has adopted a policy with respect to endorsement of healthcare performance measures that have proprietary components, including but not limited to specifications, groupers, risk adjustment methodologies and data collection instruments.

Whereas, the Steward wishes to submit its performance measure, including its proprietary components, which may include but not be limited to specifications, groupers, risk adjustment methodologies and data collection instrument for the purpose of seeking NQF endorsement for such measure.

Whereas, the Steward acknowledges and agrees that it shall benefit from NQF endorsement of its measure, but that endorsement by NQF of the Steward's measure may require disclosure of the proprietary components of the measure and the Steward's pricing structure for its measure in accordance with NQF's mission and policies.

Whereas, NQF and the Steward acknowledge that the purpose of this Agreement is to (i) provide for the disclosure of information regarding the Steward's measure to NQF for review and consideration for endorsement, (ii) identify conditions for NQF endorsement, including, without limitation, covenants on the part of the Steward with respect to the dissemination of the Steward's measure and (iii) provide for the protection of the Steward's intellectual property associated with the Steward's measure, including, but not limited to, the Steward's right to develop derivative works from the Steward's measure.

Whereas, NQF and the Steward desire that this Agreement provide for the submission by the Steward of multiple performance measures over time.

DC:1513442v11

The National Quality Forum
601 Thirteenth Street, NW • Suite 500 North • Washington, DC • 20005
Phone 202.783.1300 • Fax 202.783.3434
www.qualityforum.org

Now, therefore, in consideration of the foregoing, and such other agreements as are contained herein, the parties agree as follows:

SECTION 1. Definitions.

a. The term "Measure" shall have the meaning set forth on Exhibit A, and shall include "Complex Measure". Exhibit A shall be updated to the extent the Steward submits additional Measures for consideration for endorsement by NQF. Any reference to a Measure shall be a reference to each Measure submitted by the Steward under this Agreement for consideration for endorsement by NQF.

b. The term "Complex Measure" shall mean a Measure that requires the use of a proprietary (non public domain) grouper, risk adjustment or other similar methodology that is essential to calculating the result of the Measure.

c. The term "Permitted Use" shall mean the use of a Measure for the purpose of calculating and reporting performance data to: (i) the public without an associated charge or fee with respect to such reporting; (ii) public and private purchasers of, and payors for, healthcare related services and products; and (iii) federal, state, local and foreign regulatory programs and regulators. Permitted Use shall also mean the use of a Measure by an organization or individual, for the purpose of internal performance improvement or internal auditing of the assessment of any organization or individual the performance of which is being assessed by the Measure.

d. The term "Proprietary Material" shall mean all trade secrets identified by the Steward, copyrights, trademarks and service marks, patents and all other material identified by the Steward as proprietary.

SECTION 2. Disclosure for Review and Assessment.

a. Disclosures; Generally.

1. The Steward hereby agrees to disclose to NQF, for the purpose of seeking NQF endorsement, complete information concerning the Measure, including specifications, logic, beta values, standard errors, algorithms, groupers, risk adjustment methodologies and, upon request, source code or a complete definitions manual, in order to permit NQF to evaluate the technical aspects of the Measure.

2. Proprietary Material disclosed to NQF in accordance with this Agreement is and shall remain the sole and exclusive property of the Steward.

3. NQF hereby agrees that all Proprietary Material shall be utilized and disclosed by NQF solely for the purpose of evaluation for endorsement and shall not be utilized or disclosed by NQF for any other purpose. Disclosure to NQF includes disclosure to NQF committees, officers, directors and agents NQF deems appropriate for purposes of NQF's evaluation. NQF conflict of interest policies provide that any measure developer that has submitted a performance measure for NQF endorsement, and other measure developers competing with such measure developer, shall be prohibited from participating in the NQF evaluation of such performance measure for NQF endorsement. To the extent that NQF

discloses Proprietary Information to NQF committees, officers, directors and agents, NQF shall (i) inform such committees, officers, directors and agents of the restrictions contained in this Agreement and their obligation to maintain the confidentiality of the Proprietary Information; (ii) require such committee members, officers, directors and agents to sign a non-disclosure agreement with respect to their review of measures submitted to NQF for review and (iii) maintain the confidentiality of the Proprietary Information using such methods and procedures NQF uses to maintain the confidentiality of its own proprietary information.

4. With respect to any Measure that is not a Complex Measure, the Steward hereby agrees to permit full public disclosure of complete information concerning the Measure on the NQF website for purposes of public review and comment and NQF-Member voting. With respect to any Measure that is a Complex Measure, the Steward hereby agrees to permit disclosure of a detailed Measure description, Measure logic and a list of the clinical and demographic variables included in the model on the NQF website for purposes of public review and comment and NQF member voting. With respect to a Complex Measure, the Steward shall also provide a Measure calculator on its website or provide a Measure calculator for NQF to post on its website that may be utilized to measure performance related to an individual patient or healthcare event. All disclosures permitted by this subsection shall include all appropriate copyright notices and disclaimers.

b. Disclosures; Pricing Structure.

1. With respect to any Measure that is a Complex Measure, the Steward hereby agrees to disclose to NQF the pricing structure it intends to use in imposing fees or other charges on end users in connection with Permitted Uses; such disclosure to include information regarding the factors affecting the determination of the amount of the fees or charges sufficient to allow NQF to understand the general monetary range of the fees or charges (the "Pricing Structure"). The Pricing Structure shall be set forth on Exhibit B. The Pricing Structure shall be reviewed by NQF as part of its feasibility evaluation of the Measure for endorsement. The Pricing Structure shall not be treated by NQF as Proprietary Material and shall be posted on the NQF website during NQF's review of the Measure. Further, if the Measure is endorsed by NQF, NQF shall be entitled to refer to and include the Pricing Structure in any publication of NQF.

2. NQF and the Steward acknowledge and agree that the Steward may distribute the Measure to (i) private and public sector oversight organizations, including but not limited to accreditation, professional certification, and licensure programs; or (ii) health information technology companies in connection with use in electronic health records or personal health records ("Other Organizations"). NQF and the Steward acknowledge and agree that the utilization of the Measure by Other Organizations may not constitute Permitted Use in all cases. The Steward acknowledges that one of the criteria NQF will use to evaluate a Measure for endorsement is the likelihood of the widespread adoption and utilization of the Measure and that utilization of the Measure by Other Organizations could increase the widespread adoption and utilization of the Measure. Accordingly, the Steward agrees to disclose to NQF whether it intends to limit distribution of the Measure to Other Organizations and whether it intends to impose any fees or charges on Other Organizations; such disclosure to include information sufficient to allow NQF to assess whether the Steward's distribution restrictions with respect to Other Organizations (if any) or such fees are likely to impede widespread adoption of the

Measure. Such fees or charges shall be set forth on Exhibit C. Such information shall not be treated by NQF as Proprietary Material and shall be posted on the NQF website during NQF's review of the Measure. Further, if the Measure is endorsed by NQF, NQF shall be entitled to refer to and include a description of these fees and charges in any publication of NQF.

3. Under no circumstance shall NQF have any authority to require or request a change in the Pricing Structure or any other fees or charges of the Steward.

SECTION 3. Endorsement.

a. Process and Standards.

1. Upon execution of this Agreement and submission of the Measure to NQF, NQF will use commercially reasonable efforts to undertake a review of the Measure to determine whether to endorse the Measure for Permitted Uses. The Steward acknowledges that the basis and standards of NQF's evaluation of the Measure may change over time and that among the considerations that NQF may use are the following:

(a) The Measure must be broadly available for use on reasonable terms and on a non-discriminatory basis such that significant Permitted Use is reasonably anticipated; and

(b) The Measure must be available for use by all (i.e., not limited to use by only certain types of entities or users, and not limited to use with particular vendors).

2. Notwithstanding these criteria, the determination of whether to endorse the Measure and whether to withdraw endorsement shall be in the sole and unfettered discretion of NQF, and the Steward shall have no right under any circumstances to require endorsement or challenge any decision by NQF to not endorse or withdraw endorsement except through the NQF appeals process with respect to Measure endorsement. The Steward hereby acknowledges that recommendations or endorsements by NQF or its agents shall depend on the full disclosure of the Measure as provided in this Agreement, and waives any claim against NQF arising from its refusal to endorse the Measure or its subsequent withdrawal of endorsement of the Measure, irrespective of the basis of such refusal or withdrawal, except through the NQF appeals process with respect to Measure endorsement.

3. If NQF proposes changes to a Measure prior to endorsement, NQF shall notify the Steward of the proposed changes, and the Steward shall have the right to accept such proposed changes or reject such proposed changes and withdraw the Measure from consideration for endorsement. If the Steward withdraws the Measure from consideration for endorsement, NQF shall have no right to endorse the original or modified Measure without consent of the Steward.

b. The Steward hereby acknowledges and agrees that NQF endorsement is not permanent, and that NQF shall periodically review and reevaluate the effectiveness, efficiency and feasibility of the Measure with respect to the performance indicator addressed by the

Measure. At the time of such review and reevaluation, the Steward shall again disclose all the information required under and in accordance with this Agreement.

SECTION 4. Limited Use Access; Steward Covenants.

a. Upon endorsement by NQF, the Steward of a Complex Measure shall, upon request, disclose to all end-users wishing to use the Measure for a Permitted Use all of the information and material, including, without limitation, all Proprietary Material, disclosed to NQF with respect to the Measure for purposes of consideration for endorsement so that the end-user may evaluate the Measure; provided, however, that the Steward may require that such end-user enter into a commercially reasonable non-disclosure agreement, without charge or cost to the end-user, with respect to such access for evaluation purposes.

b. The Steward shall make the Measure generally available for Permitted Uses to all users wishing to use the Measure for a Permitted Use and on a non-discriminatory basis such that significant utilization by end-users is reasonably anticipated. With respect to a Measure that is not a Complex Measure, the Steward shall make the Measure available to all users for all Permitted Uses without cost. With respect to a Measure that is a Complex Measure, the Steward shall make the Measure available to all users for all Permitted Uses and shall notify NQF if the Steward imposes a fee, charge or cost that is inconsistent with the Pricing Structure.

c. Upon endorsement by NQF, the Steward shall submit the measure to National Quality Measures Clearinghouse™ as an NQF Endorsed™ measure.

d. The Steward shall maintain and update the Measure as necessary for the Measure to continue to have application, as determined in the Steward's discretion. Such updates to the Measure shall be made available to the public without cost. The Steward's website shall identify how such updates may be obtained, and NQF shall provide a link from the NQF website to the Steward's website to provide end-users with further means to ensure they are accessing and using the most current version of the Measure. The Steward shall immediately notify NQF of any change in technical aspects of the Measure including, without limitation, any and all updates to the Measure.

e. The Steward agrees that endorsement by NQF constitutes permission by the Steward for full public disclosure of the disclosure policy reflected in this Agreement. The Steward agrees that, upon final endorsement by NQF, the Steward will permit full public disclosure of the availability of the Measure from the Steward. The Measure shall not be limited to an exclusive chain of distribution nor require particular proprietary software available from a sole source unless the cost of acquisition or utilization of such proprietary software is disclosed as part of the Pricing Structure. Utilization of the Measure as contemplated by this Agreement shall not entitle end-users to alter, maintain, enhance, or otherwise modify the Measure or to disassemble, recompile, or reverse engineer the source code or object code relating to the Measure.

SECTION 5. Other Steward Activities.

a. The Steward may further develop the Measure, create derivative works from the Measure, and incorporate the Measure into other products and services ("Related Products and

Services”) without notification or approval from NQF. The Steward may distribute, license, sell and otherwise dispose of such Related Products and Services for any purpose and in any manner; provided, however, that NQF endorsement may not be associated, in any manner, with any Related Products and Services unless the Related Products and Services include the Measure as endorsed by NQF, without any alterations or modifications (except for those needed to maintain or update the Measure as necessary for the Measure to continue to have application as contemplated in this Agreement), in which case the Steward may only indicate that the Related Products and Services include an NQF-endorsed Measure. Nothing in this Agreement shall be construed to prohibit the Steward from charging fees for the use of a Measure outside of a Permitted Use or from charging fees for any derivative works or products from the Measure.

b. This Agreement shall not affect, in any manner, the ability of the Steward to charge fees for services related to Permitted Uses, such as, for example, fees related to the processing, calculation, auditing or reporting of performance data.

SECTION 6. Term and Endorsement.

a. This Agreement shall be effective as of the date first above written, and shall have a term, with respect to each Measure from the date such Measure is submitted to NQF for consideration for endorsement until the third anniversary of the date of endorsement.

b. NQF may terminate this Agreement with respect to a Measure upon ten (10)-days written notice upon any subsequent determination to withdraw its endorsement of the Measure, which determination may be made in NQF’s sole and unfettered discretion; provided, however, that prior to withdrawing endorsement of the Measure, NQF shall notify the Steward of its reasons for withdrawal, if any, and provide the Steward with a reasonable opportunity to address the reasons identified by NQF; provided further, however, that the determination of whether the Steward has sufficiently addressed the reasons identified by NQF shall be made in NQF’s sole and unfettered discretion.

c. The Steward may terminate endorsement of a Measure by NQF by providing NQF with ten (10)-days written notice. Upon any such termination, the Steward may terminate this Agreement with respect to such Measure upon ten (10)-days written notice to NQF.

d. This Agreement shall automatically terminate with respect to a Measure upon the Steward’s withdrawal of the Measure for consideration for NQF endorsement and shall automatically terminate upon NQF’s rejection of the Measure for endorsement.

e. Except as specifically provided in this Agreement, upon termination of this Agreement with respect to a Measure, all rights and obligations under this Agreement shall terminate without the need for further action on the part of either party with respect to the Measure. Upon termination, the Steward shall immediately cease all use of any references to NQF or NQF’s endorsement of the Measure or any other relationship between the parties.

f. Upon termination of the Agreement with respect to a Measure for any reason, (i) the obligations of confidentiality set forth in this Agreement shall continue and (ii) NQF agrees not

to publicly disclose Proprietary Material with respect to the Measure and to remove all information regarding the Measure from the NQF website.

SECTION 7. Limited License to Use NQF Name. If NQF determines to endorse the Measure, the Steward shall have a non-exclusive, non-transferable license to use the name "The National Quality Forum" or "NQF" in conjunction with a phrase solely to the effect that the particular Measure is endorsed by NQF. Such license shall not entitle the Steward to use or otherwise refer to NQF as to any other aspects of the Steward's enterprise. Upon termination of this Agreement, the Steward shall cease all such use of NQF or any variation thereof within a reasonable period of time after termination of this Agreement, and certify to NQF, in writing, the destruction of all materials containing references to NQF. This license and references to NQF endorsement are not assignable whether voluntarily or by operation of law. Should the Measure be transferred to any other party (either separately or in a transaction whereby there is a change in control of the Steward, by merger, consolidation sale of assets or any similar transaction), NQF's endorsement thereof shall immediately terminate and the Steward (or any acquiror of the Measure) shall immediately cease use of the NQF endorsement or any reference to NQF. NQF shall retain the right to object to any use of its name, abbreviation or designation of endorsement of the Measure, as used by the Steward. Upon receipt of written notice of such objection, the Steward shall cease such objectionable use, and the parties shall work together to develop a use acceptable to NQF.

SECTION 8. Indemnification. The Steward shall hold NQF harmless and indemnify NQF for any and all costs, damages, and expenses, including reasonable attorneys fees, incurred by NQF arising out of any suit or cause of action that is the result of (i) any breach or violation of any of the terms or provisions of this Agreement, (ii) any claim, action, suit or allegation that the Measure or use thereof infringes or constitutes a misappropriation of any trademark, patent, copyright, trade secret, proprietary right or similar property right and (iii) the gross negligence or willful misconduct of the Steward.

SECTION 9. Arbitration. In the event that there is any dispute between the parties, the parties shall attempt to resolve such dispute by negotiation and/or informal mediation. In the event that a dispute cannot be resolved in this manner, all disputes shall be resolved by binding arbitration in accordance with the Commercial Rules of the American Arbitration Association.

SECTION 10. Miscellaneous.

a. The captions herein are for reference purposes only and in no way define or limit the scope or content of this Agreement or in any way affect the interpretation of its provisions.

b. No delay or failure on the part of any party hereto in exercising any right, power, remedy or privilege hereunder, nor any course of dealing among the parties hereto, shall operate as a waiver of any right, power, remedy or privilege hereunder; nor shall any single or partial exercise of any right, power, remedy or privilege hereunder preclude any other or further exercise thereof or the exercise of any other right, power, remedy or privilege.

c. This Agreement may not be amended or modified, nor may any provision hereof be waived, except pursuant to an instrument in writing signed by all of the parties hereto, or, in the case of a waiver, pursuant to an instrument signed by the party to whom or to which the subject obligation was owed.

d. Neither this Agreement nor any rights or obligations hereunder are assignable, in whole or in part, by any party without the prior written consent of the other party.

e. This Agreement shall inure to the benefit of the parties hereto and their respective successors and permitted assigns and shall not be construed to confer any right or benefit, directly or indirect, upon any other person. This Agreement, together with its Exhibits, which are incorporated herein by this reference, constitutes the final written expression of all of the agreements between the parties regarding the subject matter hereof and is a complete and exclusive statement of those terms. This Agreement supersedes all previous understandings concerning the matters specified herein of the parties.

f. This Agreement may be signed in any number of counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument.

SECTION 11. **Notice.** Any notice, consent, request, waiver, or other communications to be given hereunder by either party shall be given in writing and will be deemed to have been given when delivered personally or by registered mail, postage prepaid and return receipt requested, if to the NQF, to The National Quality Forum, ATTN: _____ [Individual's Name], _____ [Title], 601 Thirteenth Street, NW, Suite 500 North, Washington, DC 20005, and if to the Steward, to _____, or to such other address as either party may designate by written notice to the other.

SECTION 12. **Applicable Law.** This Agreement shall be interpreted and enforced in accordance with the laws of the District of Columbia, without giving effect to any choice or conflict of law statute, provision, rule or principle.

[Intentionally Left Blank]

IN WITNESS WHEREOF, the parties do hereby execute and accept the terms and conditions of the foregoing Agreement.

[The Steward] [Legal Name]

By: Thy E. Meath

Name: THOMAS E. AREND, JR

Title: General Counsel + CEO
10/8/07

The National Qualify Forum

By: _____

Name: _____

Title: _____

EXHIBIT A

MEASURE INFORMATION

For All Measures

The term "Measure" shall mean the Steward-_____ measure as set forth in Appendix A, including, but not limited to, specifications, groupers, risk adjustment methodologies, and data collection instruments necessary to convert health care data into the measure.

For Complex Measures Only

By signing below, NQF hereby acknowledges and agrees that the Measure is, and shall be treated as, a Complex Measure:

The National Qualify Forum

By: _____

Name: _____

Title: _____

NQF Agreement with Measure Stewards: Dated - 11.12.08

EXHIBIT B
PRICING STRUCTURE

NQF Agreement with Measure Stewards: Dated - 11.12.08

EXHIBIT C

FEEES OR CHARGES TO OTHER ORGANIZATIONS