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 #:** 1528 **NQF Project:** Cardiovascular Endorsement Maintenance 2010
MEASURE DESCRIPTIVE INFORMATION
De.1 **Measure Title:** Beta Blocker at Discharge for ICD implant patients with a previous MI
De.2 **Brief description of measure***:* Proportion of ICD implant patients with a diagnosis of previous MI who are prescribed a Beta Blocker 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. *Public domain only applies to governmental organizations. All non-government organizations must sign a measure steward agreement even if measures are made publicly and freely available.* A.1 **Do you attest that the measure steward holds intellectual property rights to the measure and the right to use aspects of the measure owned by another entity (e.g., risk model, code set)?** Yes A.2 **Indicate if Proprietary Measure** (*as defined in measure steward agreement*)**:** A.3 **Measure Steward Agreement:** Agreement will be signed and submitted prior to or at the time of measure submission A.4 **Measure Steward Agreement attached:** NQF - signed-634272258470379690.pdf	**A** **Y**☒ **N**☐
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☒ N☐
C. The intended use of the measure includes both public reporting and quality improvement. ►**Purpose:** Public reporting, Internal quality improvement Accountability, Payment incentive, Accreditation	**C** Y☒ N☐
D. The requested measure submission information is complete. Generally, measures should be fully developed and tested so that all the evaluation criteria have been addressed and information needed to evaluate the measure is provided. Measures that have not been tested are only potentially eligible for a time-limited endorsement and in that case, measure owners must verify that testing will be completed within 12 months of endorsement. D.1**Testing:** Yes, fully developed and tested D.2 **Have NQF-endorsed measures been reviewed to identify if there are similar or related measures?** Yes	**D** Y☒ N☐
(for NQF staff use**)** **Have all conditions for consideration been met?** **Staff Notes to Steward** (*if submission returned*)**:**	**Met** Y☒ N☐
Staff Notes to Reviewers (*issues or questions regarding any criteria*)**:** Are two separate measures needed for beta blocker use? Could 1528 and 1529 be combined?	
Staff Reviewer Name(s): RWinkler	

TAP/Workgroup Reviewer Name:	
Steering Committee Reviewer Name:	
1. IMPORTANCE TO MEASURE AND REPORT	
Extent to which the specific measure focus is important to making significant gains in health care quality (safety, timeliness, effectiveness, efficiency, equity, patient-centeredness) and improving health outcomes for a specific high impact aspect of healthcare where there is variation in or overall poor performance. *Measures must be judged to be important to measure and report in order to be evaluated against the remaining criteria.* (evaluation criteria) **1a. High Impact**	**Eval Rating**
(for NQF staff use) **Specific NPP goal**:	
1a.1 **Demonstrated High Impact Aspect of Healthcare:** Affects large numbers, 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. Coronary heart disease caused approximately 1 of every 6 deaths in the US in 2006. Coronary heart disease mortality in 2006 was 425,425. In 2010, an estimated 785,000 Americans will have a new coronary attack, and approximately 470,000 will have a recurrent attack. Over half of ICD implant patients have a previous myocardial infarction (MI). Therefore, it is critical that these patients be prescribed or continued on guideline-based medical therapy for a previous MI. Optimal medical therapy for these patients improves rates of mortality and morbidity, as well as associated hospitalizations and repeat interventional 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☐ P☐ M☐ N☐

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

1b. Opportunity for Improvement

1b.1 Benefits (improvements in quality) envisioned by use of this measure: 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.

1b.2 Summary of data demonstrating performance gap (variation or overall poor performance) across providers:
Mean: 0.874
SD: 0.137

Quartile 1: 0.833
Median: 0.903
Quartile 3: 0.955
95%: 1.00

1b.3 Citations for data on performance gap:
Unpublished NCDR data

1b.4 Summary of Data on disparities by population group:
Mean by hospital SES (proportion white patients):
0-80.6% white:86.9%
80.6-91.9% white:87.5%
91.9-98.8% white:89.2
98.8-100% white:86.0

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: 87.3%
Safety net hospital: 87.9%

1b.5 Citations for data on Disparities:
Unpublished NCDR data

1b
C☐
P☐
M☐
N☐

1c. Outcome or Evidence to Support Measure Focus

1c.1 Relationship to Outcomes (*For non-outcome measures, briefly describe the relationship to desired outcome. For outcomes, describe why it is relevant to the target population*)**:** The benefits of beta blocker therapy in patients without contraindications have been demonstrated with or without reperfusion, initiated early or later in the clinical course, and for all age groups. The greatest mortality benefit is seen in patients with the greatest baseline risk: those with impaired ventricular function or ventricular arrhythmias and those who do not undergo reperfusion. The benefits of beta-blocker therapy for secondary prevention are well established.

1c.2-3. Type of Evidence: Observational study, Evidence-based guideline, Randomized controlled trial, Expert opinion, Systematic synthesis of research

1c.4 Summary of Evidence (*as described in the criteria; for outcomes, summarize any evidence that healthcare services/care processes influence the outcome*)**:**
Many large studies have demonstrated the benefit of beta blocker therapy for coronary artery disease. Meta analyses of randomized trials and observational studies have shown a substantial reduction in mortality as a result of beta blocker therapy. These studies have shown that beta blockers reduce mortality by approximately 23% in prospective trials and up to 40% in observational studies.

1c.5 Rating of strength/quality of evidence (*also provide narrative description of the rating and by whom*)**:**
Level of Evidence A: Data derived from multiple randomized clinical trials or meta-analyses.

1c.6 Method for rating evidence: The weight of evidence in support of the recommendation is listed as

1c
C☐
P☐
M☐
N☐

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

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

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

OR
- if an intermediate outcome, process, structure, etc., there is **evidence** that supports the specific measure focus as follows:
  - Intermediate outcome – evidence that the measured intermediate outcome (e.g., blood pressure, Hba1c) leads to improved health/avoidance of harm or cost/benefit.
  - Process – evidence that the measured clinical or administrative process leads to improved health/avoidance of harm and if the measure focus is on one step in a multi-step care process, it measures the step that has the greatest effect on improving the specified desired outcome(s).
  - Structure – evidence that the measured structure supports the consistent delivery of effective processes or access that lead to improved health/avoidance of harm or cost/benefit.

... [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***):** Yusuf S, Peto R, Lewis J, et al. Beta blockade during and after myocardial infarction: an overview of the randomized trials. Prog Cardiovasc Dis. 1985;27:335-71. Gottlieb SS, McCarter RJ, Vogel RA. Effect of beta-blockade on mortality among high-risk and low-risk patients after myocardial infarction. N Engl J Med. 1998;339:489-97.

1c.9 Quote the Specific guideline recommendation (*including guideline number and/or page number***):**
ACC/AHA STEMI Guidelines (2004)
Class I
1. All patients after STEMI except those at low risk (normal or near-normal ventricular function, successful reperfusion, absence of significant ventricular arrhythmias) and those with contraindications should receive beta-blocker therapy. Treatment should begin within a few days of the event, if not initiated acutely, and continue indefinitely. (Level of Evidence: A)

2. Patients with moderate or severe LV failure should receive beta-blocker therapy with a gradual titration scheme. (Level of Evidence: B)

Class IIa
It is reasonable to prescribe beta-blockers to low-risk patients after STEMI who have no contraindications to that class of medications. (Level of Evidence: A)
(Page e147)

ACC/AHA NSTEMI Guidelines (2007)
CLASS I
1. Beta blockers are indicated for all patients recovering from UA/
NSTEMI unless contraindicated. (For those at low risk, see Class IIa recommendation below). Treatment should begin within a few days of the event, if not initiated acutely, and should be continued indefinitely. (Level of Evidence: B)
2. Patients recovering from UA/NSTEMI with moderate or severe LV failure should receive beta-blocker therapy with a gradual titration scheme. (Level of Evidence: B)
CLASS IIa
It is reasonable to prescribe beta blockers to low-risk patients (i.e.,
normal LV function, revascularized, no high-risk features) recovering from UA/NSTEMI in the absence of absolute contraindications. (Level
of Evidence: B)
(Page e91)

ACC/AHA Secondary Prevention Guidelines (2006), Beta Blockers:
Start and continue indefinitely in all patients who have had myocardial infarction, acute coronary syndrome, or left ventricular dysfunction with or without heart failure symptoms, unless contraindicated. I (A)
Consider chronic therapy for all other patients with coronary or other vascular disease or diabetes unless contraindicated. IIa (C) (Page 2132)

1c.10 Clinical Practice Guideline Citation: 1. Antman EM, Anbe DT, Armstrong PW, et al. ACC/AHA guidelines for the management of patients with ST-elevation myocardial infarction: a report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines (Committee to Revise the 1999 Guidelines for the Management of Patients with Acute Myocardial Infarction). Circulation. 2004;110:e82-292.

2. 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.

3. Anderson JL, Adams CD, Antman EM, et al. ACC/AHA 2007 guidelines for the management of patients with unstable angina/non-ST-Elevation myocardial infarction: a report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines (Writing Committee to Revise the 2002 Guidelines for the Management of Patients With Unstable Angina/Non-ST-Elevation Myocardial Infarction) developed in collaboration with the American College of Emergency Physicians, the Society for Cardiovascular Angiography and Interventions, and the Society of Thoracic Surgeons endorsed by the American Association of Cardiovascular and Pulmonary Rehabilitation and the Society for Academic Emergency Medicine. J Am Coll Cardiol. 2007;50:e1-e157.

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***):**
Class I: Conditions for which there is evidence for and/or general agreement that a given procedure or treatment is beneficial, useful, and effective.

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:

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:

Class I: Conditions for which there is evidence for and/or general agreement that a given procedure or treatment is beneficial, useful, and effective.

Class II: Conditions for which there is conflicting evidence and/or a divergence of opinion about the usefulness/efficacy of a procedure or treatment.

Class IIa: Weight of evidence/opinion is in favor of usefulness/efficacy.

Class IIb: Usefulness/efficacy is less well established by evidence/opinion.

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.

1c.14 Rationale for using this guideline over others:
These guidelines is the most widely recognized professional guideline in the US for cardiovascular medicine for patients with coronary artery disease.

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.

TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Importance to Measure and Report?*	**1**
Steering Committee: Was the threshold criterion, *Importance to Measure and Report***, met?** **Rationale:**	**1** **Y☐** **N☐**
2. SCIENTIFIC ACCEPTABILITY OF MEASURE PROPERTIES	
Extent to which the measure, as specified, produces consistent (reliable) and credible (valid) results about the quality of care when implemented. (evaluation criteria)	**Eval Rating**
2a. MEASURE SPECIFICATIONS	

S.1 Do you have a web page where current detailed measure specifications can be obtained?
S.2 If yes, provide web page URL:

2a. Precisely Specified

2a.1 Numerator Statement (*Brief, text description of the numerator - what is being measured about the target population, e.g. target condition, event, or outcome***):**
Count of patients discharged on beta-blocker therapy.

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 medication of beta blocker (any)= yes

2a.4 Denominator Statement (*Brief, text description of the denominator - target population being measured***):**
Count of patients with an ICD implant without contraindication to beta-blockers

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
Previous MI= yes

2a.9 Denominator Exclusions (*Brief text description of exclusions from the target population***):** -Patients who expired
-Beta-blocker therapy 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.10 Denominator Exclusion Details (*All information required to collect exclusions to the denominator, including all codes, logic, and definitions***):**
Discharge status=deceased
Beta blocker (any)= contraindicated or blinded

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-specs
C ☐
P ☐
M ☐
N ☐

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

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.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 prior MI=no
4. Exclude patients with discharge status=deceased
5. Exclude patients with Beta blocker (any)= contraindicated or blinded

Numerator Calculation:
6. From denominator population, count of patients with discharge medication of Beta Blocker (any)=yes.

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

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 RegistryTM

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

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.

hospitals in the derivation cohort was 89.2% with the lowest decile 70.6% and highest decile 100%. This is similar to that observed in the testing cohort (median 91.7%, lowest decile 66.7%, highest decile 100%).

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 more than one is used
List: Missing data in the Medications or either Device lists1

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☐ P☐ M☐ N☐

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.5 **Testing Results** *(e.g., frequency, variability, sensitivity analyses)*:
Deceased: 0.32%
Beta blocker contraindicated or blinded: 1.25%

2d C☐ P☐ M☐ N☐ NA☐

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.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

2e C☐ P☐ M☐ N☐ NA☐

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

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

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

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

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

AND
- precisely defined and specified:
  - if there is substantial variability in exclusions across providers, the measure is specified so that exclusions are computable and the effect on the measure is transparent (i.e., impact clearly delineated, such a ... [4]

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

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

rationale/data support no risk adjustment.

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

2f. Identification of Meaningful Differences in Performance

2f.1 Data/sample from Testing or Current Use *(description of data/sample and size)*: 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: 0.874
SD: 0.137

Quartile 1: 0.833
Median: 0.903
Quartile 3: 0.955
95%: 1.00

2f C☐ P☐ M☐ N☐

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 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.

2g. Comparability of Multiple Data Sources/Methods

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

2g.2 Analytic Method *(type of analysis & rationale)*:
N/A

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

2g C☐ P☐ M☐ N☐ NA☐

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

2h. Disparities in Care

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:
No disparities have been reported for this measure.

2h C☐ P☐ M☐ N☐ NA☐

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.

TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Scientific Acceptability of Measure Properties?*

2

Steering Committee: Overall, to what extent was the criterion, *Scientific Acceptability of Measure Properties*, **met?**
Rationale:

2 C☐ P☐ M☐ N☐

3. USABILITY

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

Eval Rating

3a. Meaningful, Understandable, and Useful Information

3a.1 Current Use: In use

3a.2 Use in a public reporting initiative (disclosure of performance results to the public at large) *(If used in a public reporting initiative, provide name of initiative(s), locations, Web page URL(s). If not publicly reported, state the plans to achieve public reporting within 3 years)*:
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 C☐ P☐ M☐ N☐

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

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 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.

This measure is also provided to Hospital Corporation of America (HCA) for incorporation in their QI program efforts.

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.

Testing of Interpretability (*Testing that demonstrates the results are understood by the potential users for public reporting and quality improvement*)
3a.4 Data/sample *(description of data/sample and size)***:** 849 ICD registry participants, fall 2010.

3a.5 Methods *(e.g., focus group, survey, QI project)***:**
Online survey

3a.6 Results *(qualitative and/or quantitative results and conclusions)***:**
75% of survey participants answered yes to the question "Will the following metrics provide information that will be valuable for quality improvement at your institution?"

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

3b.1 NQF # and Title of similar or related measures:
#117: Beta Blockade at Discharge, #160 Beta blocker prescribed at discharge for AMI, #238 Beta blocker on discharge

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

3b. Harmonization
If this measure is related to measure(s) already endorsed by NQF (e.g., same topic, but different target population/setting/data source or different topic but same target population):
3b.2 Are the measure specifications harmonized? If not, why?
This measure is aligned with the CMS measure #160, except that it does not include exclusions for discharge to hospice, against medical advice, or patients with comfort care measures only. 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

3b
C☐ P☐ M☐ N☐ NA☐

3c. Distinctive or Additive Value
3c.1 Describe the distinctive, improved, or additive value this measure provides to existing NQF-endorsed measures:
This measure provides additive value to existing NQF-endorsed measures. #117 and #238 apply to CABG patients, while #160 applies to AMI patients. There is currently not an endorsed measure for beta blocker prescribed at discharge for ICD patients with a previous MI. This measure uses a different data source (registry) than the CMS measure (medical record).

3c
C☐ P☐ M☐ N☐ NA☐

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).

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:	
TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Usability*?	**3**
Steering Committee: Overall, to what extent was the criterion, *Usability*, met? **Rationale:**	**3** **C☐** **P☐** **M☐** **N☐**
4. FEASIBILITY	
Extent to which the required data are readily available, retrievable without undue burden, and can be implemented for performance measurement. (evaluation criteria)	**Eval Rating**
4a. Data Generated as a Byproduct of Care Processes **4a.1-2 How are the data elements that are needed to compute measure scores generated?** Data generated as byproduct of care processes during care delivery (Data are generated and used by healthcare personnel during the provision of care, e.g., blood pressure, lab value, medical condition), Coding/abstraction performed by someone other than person obtaining original information (E.g., DRG, ICD-9 codes on claims, chart abstraction for quality measure or registry)	**4a** **C☐** **P☐** **M☐** **N☐**
4b. Electronic Sources **4b.1 Are all the data elements available electronically?** (*elements that are needed to compute measure scores are in defined, computer-readable fields, e.g., electronic health record, electronic claims*) Yes **4b.2 If not, specify the near-term path to achieve electronic capture by most providers.**	**4b** **C☐** **P☐** **M☐** **N☐**
4c. Exclusions **4c.1 Do the specified exclusions require additional data sources beyond what is required for the numerator and denominator specifications?** No **4c.2 If yes, provide justification.**	**4c** **C☐** **P☐** **M☐** **N☐** **NA☐**
4d. Susceptibility to Inaccuracies, Errors, or Unintended Consequences **4d.1 Identify susceptibility to inaccuracies, errors, or unintended consequences of the measure and describe how these potential problems could be audited. If audited, provide results.** 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.	**4d** **C☐** **P☐** **M☐** **N☐**

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.

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.

4e. Data Collection Strategy/Implementation

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).

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 public comment period.

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:

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.

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.

4e.3 **Evidence for costs:**
http://www.ncdr.com/WebNCDR/ncdrdocuments/B08352N%20ICD%20Registry%20Enrollment%20Packet%20Complete.pdf

4e.4 **Business case documentation:**

4e
C☐
P☐
M☐
N☐

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

4

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

4
C☐
P☐
M☐
N☐

RECOMMENDATION

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

Time-limited
☐

Steering Committee: Do you recommend for endorsement?
Comments:

Y☐
N☐
A☐

CONTACT INFORMATION

Co.1 **Measure Steward (Intellectual Property Owner)**
Co.1 **Organization**
American College of Cardiology Foundation (ACCF), 2400 N Street NW, Washington, District Of Columbia, 20037

Co.2 **Point of Contact**
Kristyne, McGuinn, kmcguinn@acc.org, 202-375-6529-

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

Co.4 **Point of Contact**
Kristyne, McGuinn, kmcguinn@acc.org, 202-375-6529-

Co.5 **Submitter If different from Measure Steward POC**
Kristyne, McGuinn, kmcguinn@acc.org, 202-375-6529-, American College of Cardiology Foundation (ACCF)

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
Illeana 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:**

Ad.11 -13 Additional Information web page URL or attachment: Attachment ICDbetablockerMITesting.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:
  - Intermediate outcome – evidence that the measured intermediate outcome (e.g., blood pressure, Hba1c) leads to improved health/avoidance of harm or cost/benefit.
  - Process – evidence that the measured clinical or administrative process leads to improved health/avoidance of harm and
    if the measure focus is on one step in a multi-step care process, it measures the step that has the greatest effect on improving the specified desired outcome(s).
  - Structure – evidence that the measured structure supports the consistent delivery of effective processes or access that lead to improved health/avoidance of harm or cost/benefit.
  - Patient experience – evidence that an association exists between the measure of patient experience of health care and the outcomes, values and preferences of individuals/ the public.
  - Access – evidence that an association exists between access to a health service and the outcomes of, or experience with, care.
  - Efficiency – demonstration of an association between the measured resource use and level of performance with respect to one or more of the other five IOM aims of quality.

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).

Beta Blocker at Discharge, MI patients: Testing Results

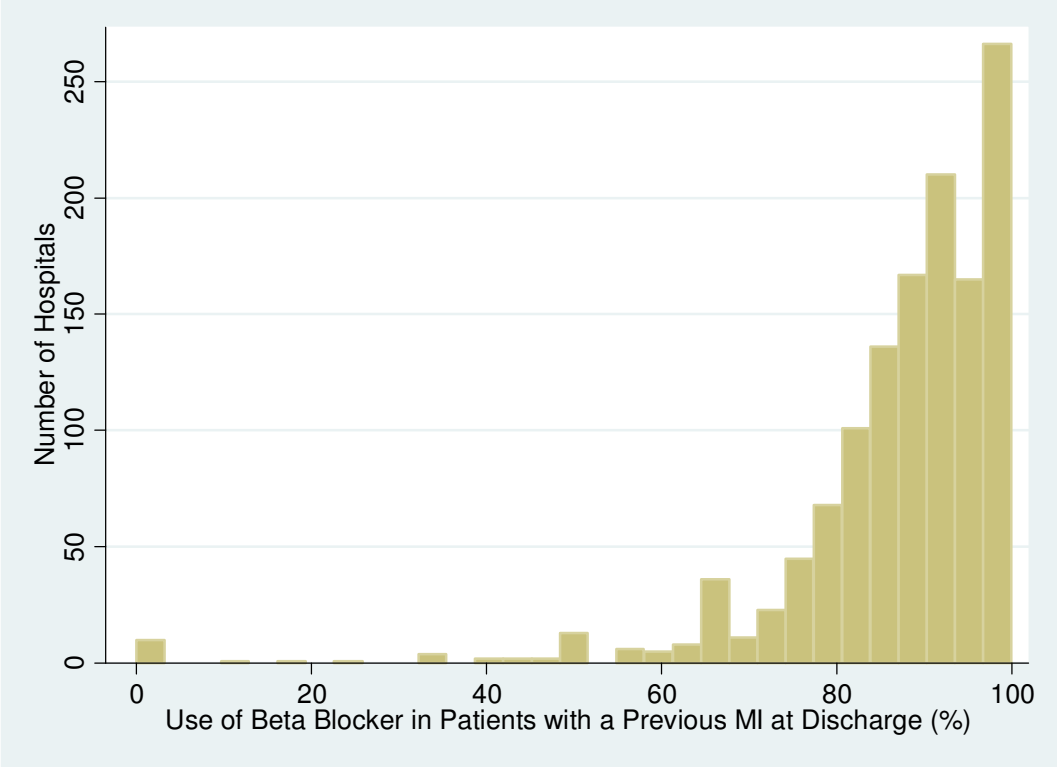
Table Study Sample (ICD 2009)

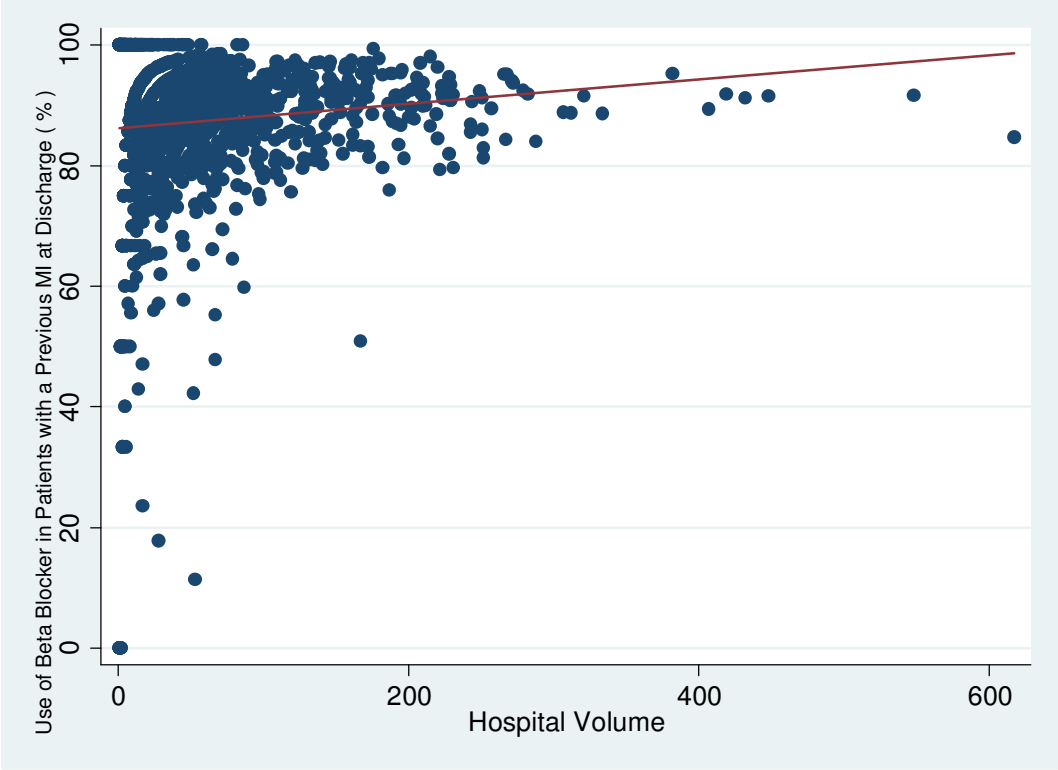
Exclusions	Hospitals		Patients		Facilities	
	#	%	#	%	#	%
Sample from01/01/2009 to 12/31/2009	144538	100	143653	100	1305	100
excluding deceased patients	457	0.32	455	0.32	0	0
Remaining	144081	99.68	143198	99.68	1305	100
Excluding no history of previous MI+missing	69984	48.57	69476	48.52	22	1.69
Remaining	74097	51.43	73722	51.48	1283	98.31
contraindicated or blinded	923	1.25	914	1.24	0	100.00
Study Sample	73174	98.75	72808	98.76	1283	100.00
beta blocker use at discharge	65088	88.95	64780	88.97	1273	99.22

Distribution of Beta blocker use in patients with a previous MI at Discharge

Description	Hospital volume	% patients received beta blocker at discharge
N	1283	1283
Mean	57.03	0.8741
Std Deviation	66.10	0.1367
100% Max	617	1.0000
99%	282	1.0000
95%	192	1.0000
90%	141	1.0000
75% Q3	76	0.9546
50% Median	**34**	**0.9032**
25% Q1	12	0.8333
10%	4	0.7500
5%	2	0.6667
1%	1	0.2353
0% Min	1	0.0000

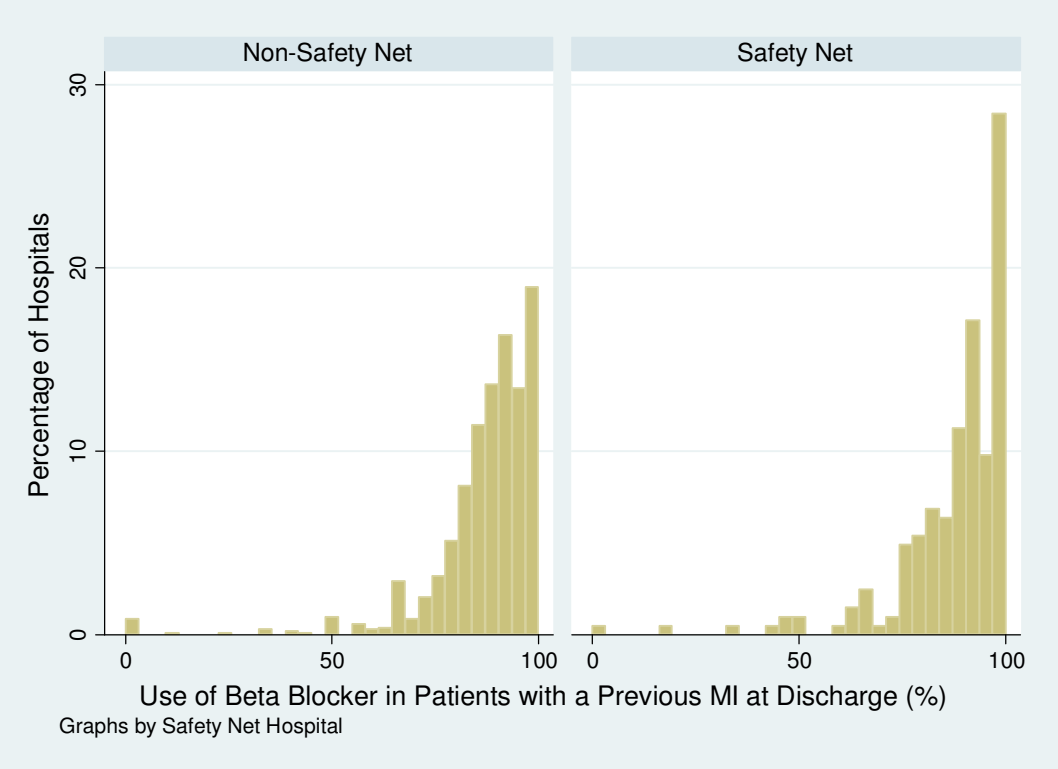
Among patients with previous MI , who are eligible for beta blockers

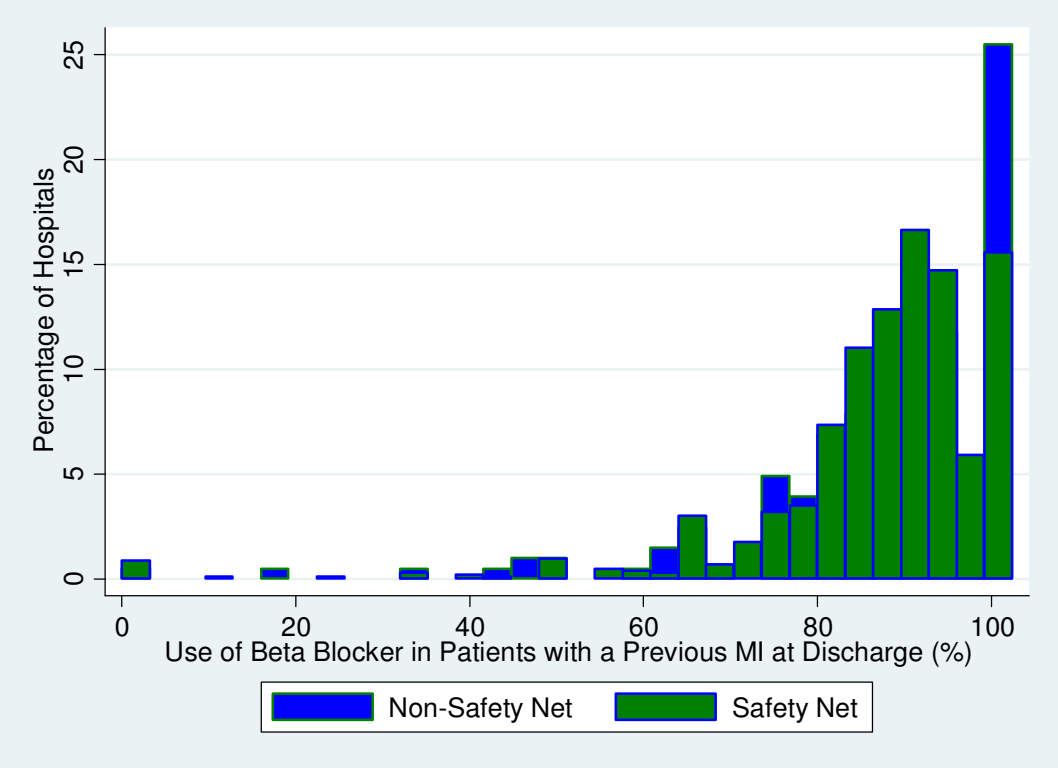

Number of Hospitals
0
50
100
150
200
250
0
20
40
60
80
100
Use of Beta Blocker in Patients with a Previous MI at Discharge (%)


Use of Beta Blocker in Patients with a Previous MI at Discharge (%)
0
20
40
60
80
100
0
200
400
600
Hospital Volume

Distribution of Beta blocker use in Patients with a previous MI at Discharge Stratified by Safety Net Status				
Description	**Safety Net Status***			
	No		**Yes**	
	Volume	**beta blocker**	**Volume**	**beta blocker**
N	1033	1033	204	204
Mean	58.63	0.8731	49.79	0.8786
Std Deviation	66.83	0.1360	60.18	0.1442
100% Max	617	1.0000	321	1.0000
99%	282	1.0000	251	1.0000
95%	192	1.0000	195	1.0000
90%	145	1.0000	135	1.0000
75% Q3	80	0.9512	66.5	0.9972
50% Median	**36**	**0.9000**	**26.5**	**0.9143**
25% Q1	13	0.8333	9	0.8333
10%	4	0.7500	3	0.7458
5%	2	0.6667	2	0.6364
1%	1	0.2353	1	0.3333
0% Min	1	0.0000	1	0.0000

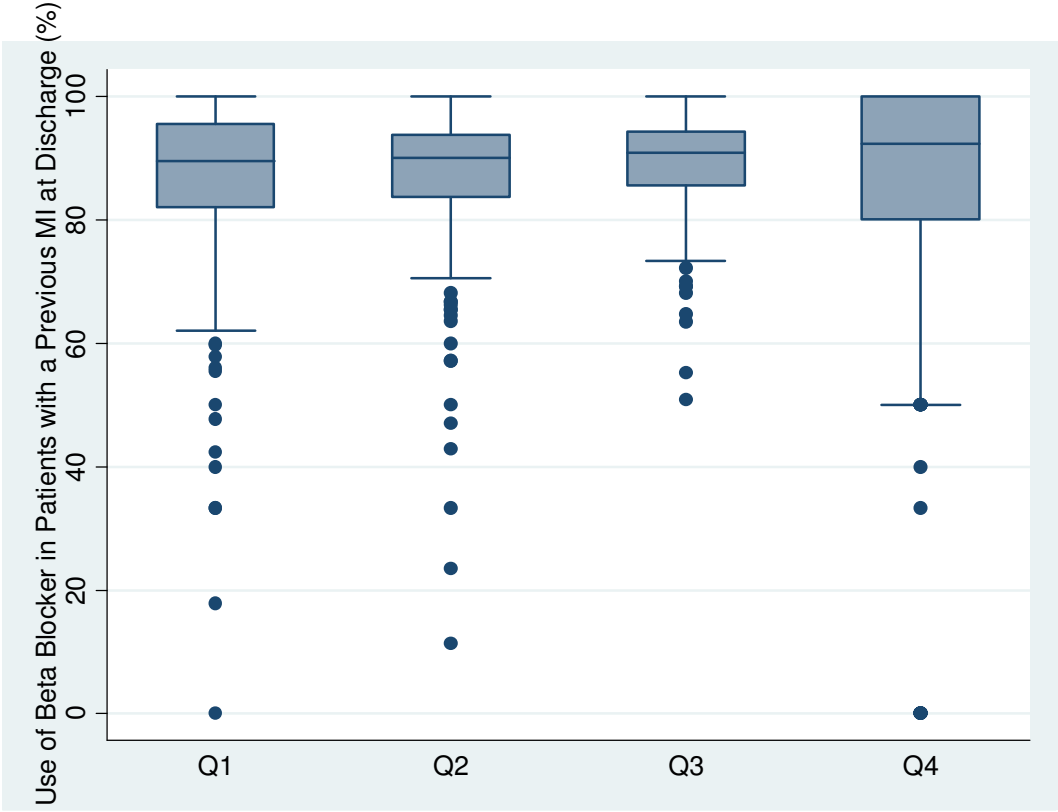
* Defined as government hospitals or non-government hosptials with high medicaid caseload using AHA 2008 Data.


Non-Safety Net
Safety Net
Percentage of Hospitals
0
10
20
30
0
50
100
Use of Beta Blocker in Patients with a Previous MI at Discharge (%)
Graphs by Safety Net Hospital

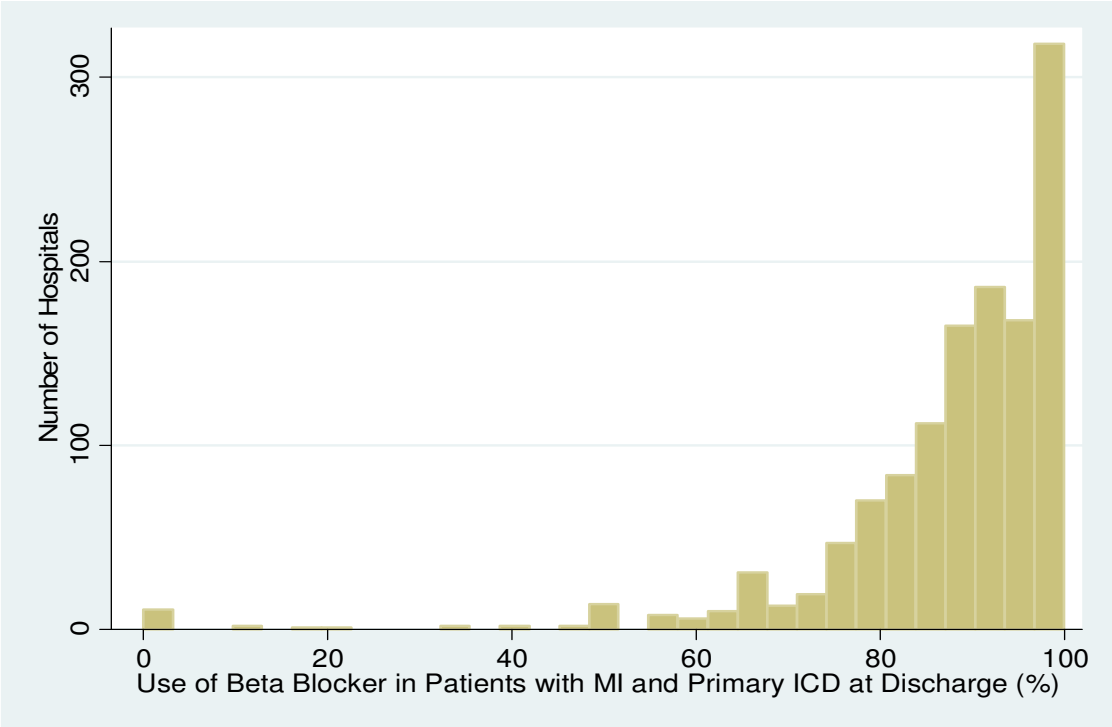

Percentage of Hospitals
0
5
10
15
20
25
0
20
40
60
80
100
Use of Beta Blocker in Patients with a Previous MI at Discharge (%)
Non-Safety Net
Safety Net

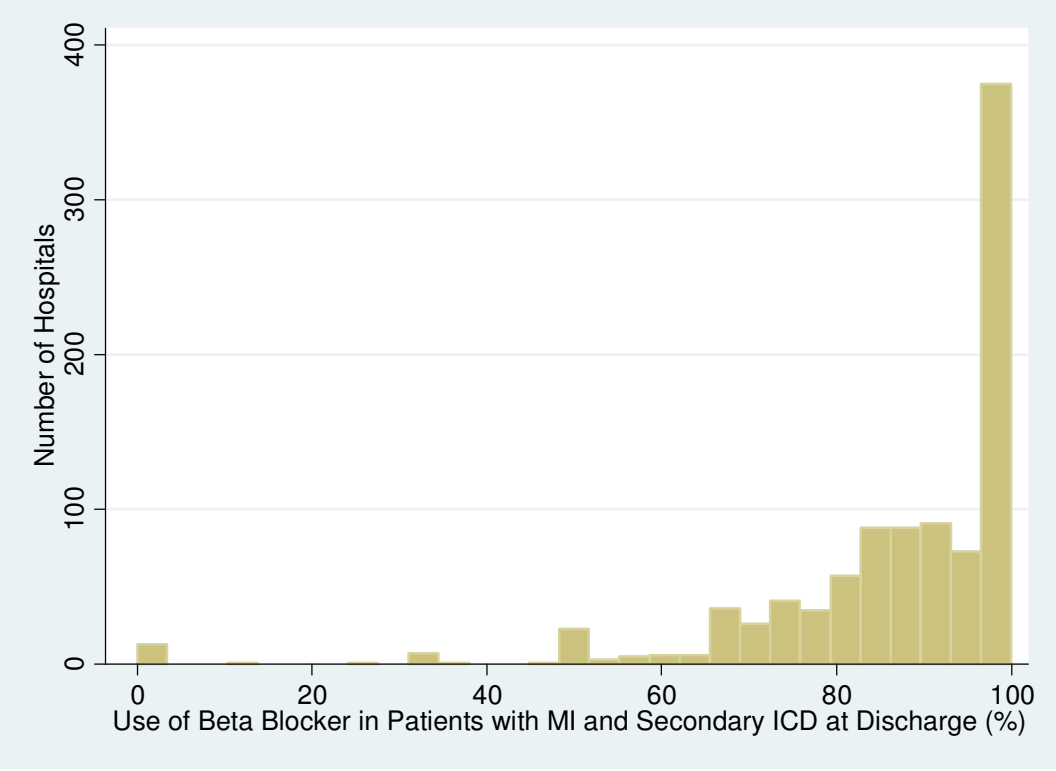
Distribution of Beta blocker use in Patients with a previous MI at Discharge Stratified by % White

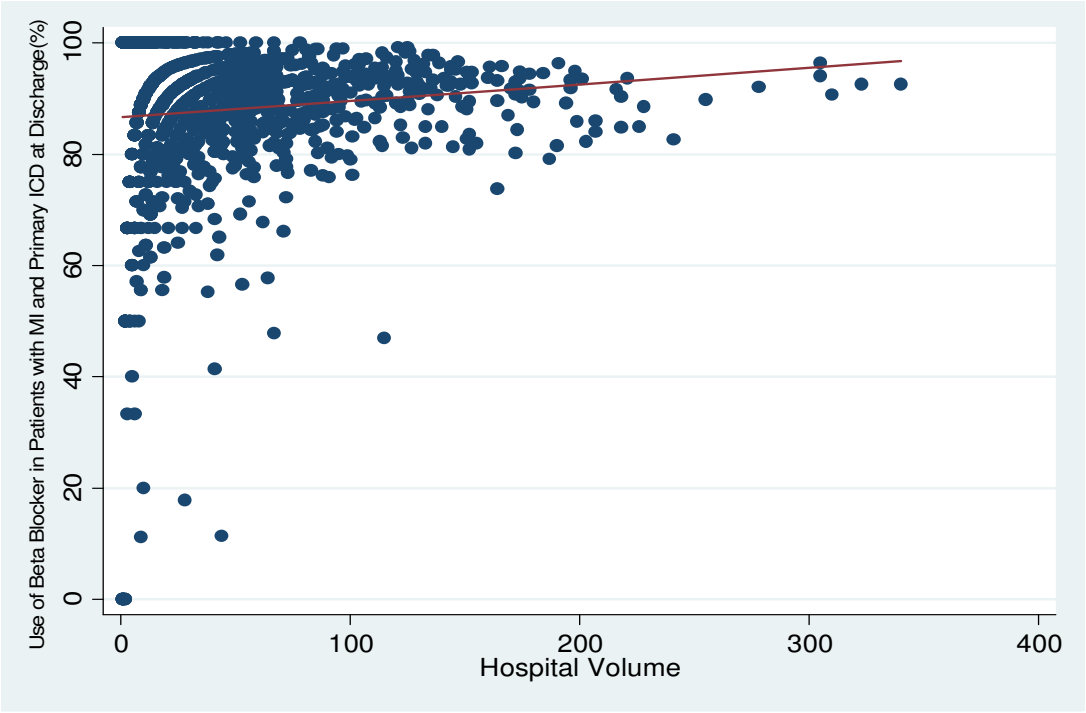
Description	%White	%White							
		Q1 (0.00% to 80.56%)		Q2 80.57% to 91.92%)		Q3 (91.93% to 98.80%)		Q4 (98.81% to 100.00%)	
		Volume	beta blocker	Volume	beta blocker	Volume	beta blocker	Volume	beta blocker
N	1283	320	320	321	321	321	321	321	321
Mean	0.8530	47.54	0.8686	74.16	0.8751	82.93	0.8923	23.48	0.8603
Std Deviation	0.1930	64.02	0.1336	71.91	0.1105	70.00	0.0742	34.12	0.1971
100% Max	1.0000	548	1.0000	448	1.0000	617	1.0000	215	1.0000
99%	1.0000	282	1.0000	321	1.0000	271	1.0000	164	1.0000
95%	1.0000	179	1.0000	212	1.0000	220	1.0000	99	1.0000
90%	1.0000	123	1.0000	170	0.9740	173	0.9711	63	1.0000
75% Q3	0.9880	60.5	0.9555	97	0.9381	103	0.9434	26	1.0000
50% Median	**0.9192**	**25**	**0.8947**	**53**	**0.9000**	**64**	**0.9082**	**11**	**0.9231**
25% Q1	0.8056	8.5	0.8210	23	0.8361	35	0.8560	4	0.8000
10%	0.6191	3	0.7123	10	0.7683	23	0.7959	1	0.6667
5%	0.4831	2	0.6603	7	0.6818	17	0.7692	1	0.5000
1%	0.0000	1	0.3333	6	0.4286	13	0.6471	1	0.0000
0% Min	0.0000	1	0.0000	6	0.1132	13	0.5090	1	0.0000


Use of Beta Blocker in Patients with a Previous MI at Discharge (%)
0
20
40
60
80
100
Q1
Q2
Q3
Q4

Distribution of Beta Blocker use in Patients with a previous MI at Discharge Stratified				
	ICD Indication			
Description	Priamry		Secondary	
	Volume	Beta Blocker	Volume	Beta Blocker
N	1272	1272	977	977
Mean	43.69	0.8789	18.01	0.8721
Std Deviation	47.97	0.1415	26.93	0.1699
100% Max	340	1.0000	515	1.0000
99%	218	1.0000	100	1.0000
95%	144	1.0000	57	1.0000
90%	106	1.0000	41	1.0000
75% Q3	59.5	0.9680	23	1.0000
50% Median	28	0.9091	10	0.9167
25% Q1	10	0.8360	4	0.8125
10%	4	0.7500	1	0.6667
5%	2	0.6667	1	0.5417
1%	1	0.1136	1	0.0000
0% Min	1	0.0000	1	0.0000


Number of Hospitals
0
100
200
300
0
20
40
60
80
100
Use of Beta Blocker in Patients with MI and Primary ICD at Discharge (%)


Number of Hospitals
0
100
200
300
400
0
20
40
60
80
100
Use of Beta Blocker in Patients with MI and Secondary ICD at Discharge (%)


Use of Beta Blocker in Patients with MI and Primary ICD at Discharge(%)
0
20
40
60
80
100
0
100
200
300
400
Hospital Volume

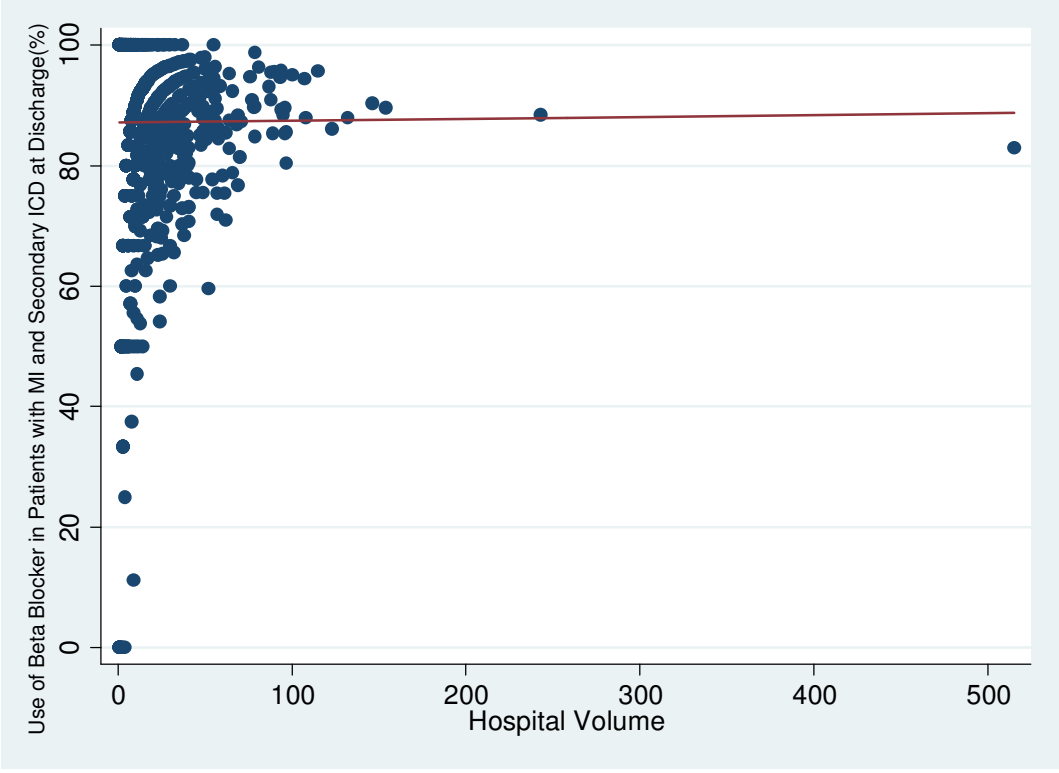

Use of Beta Blocker in Patients with MI and Secondary ICD at Discharge(%)
0
20
40
60
80
100
0
100
200
300
400
500
Hospital Volume

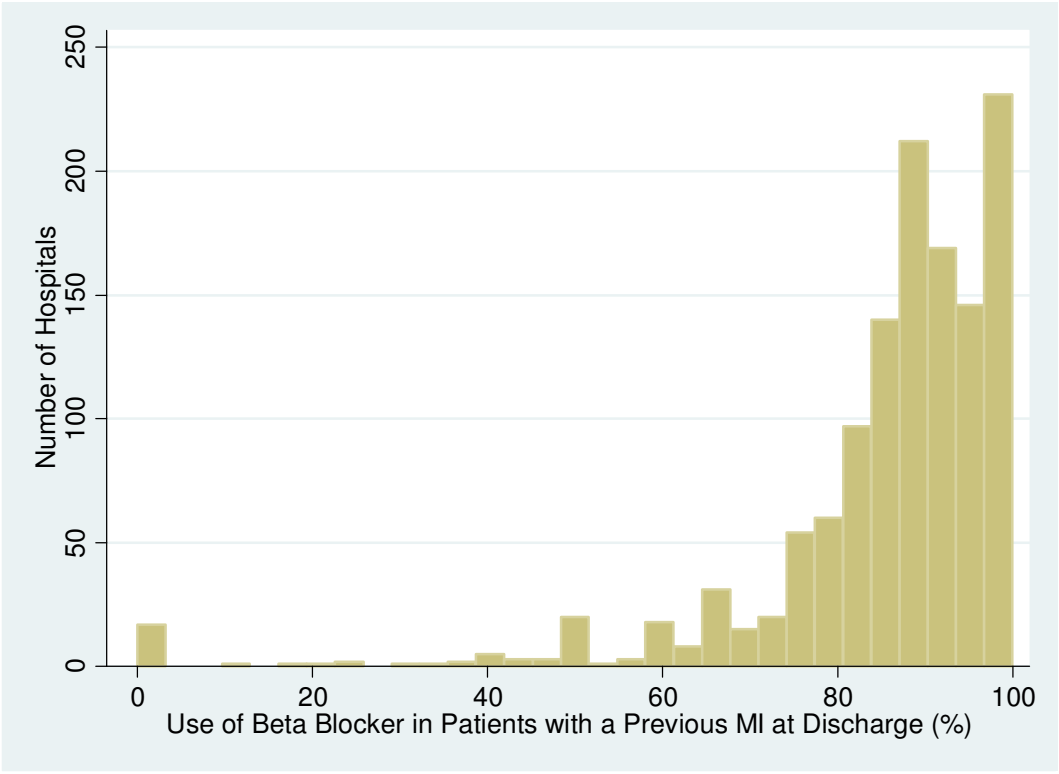
Table Study Sample (ICD 2008)

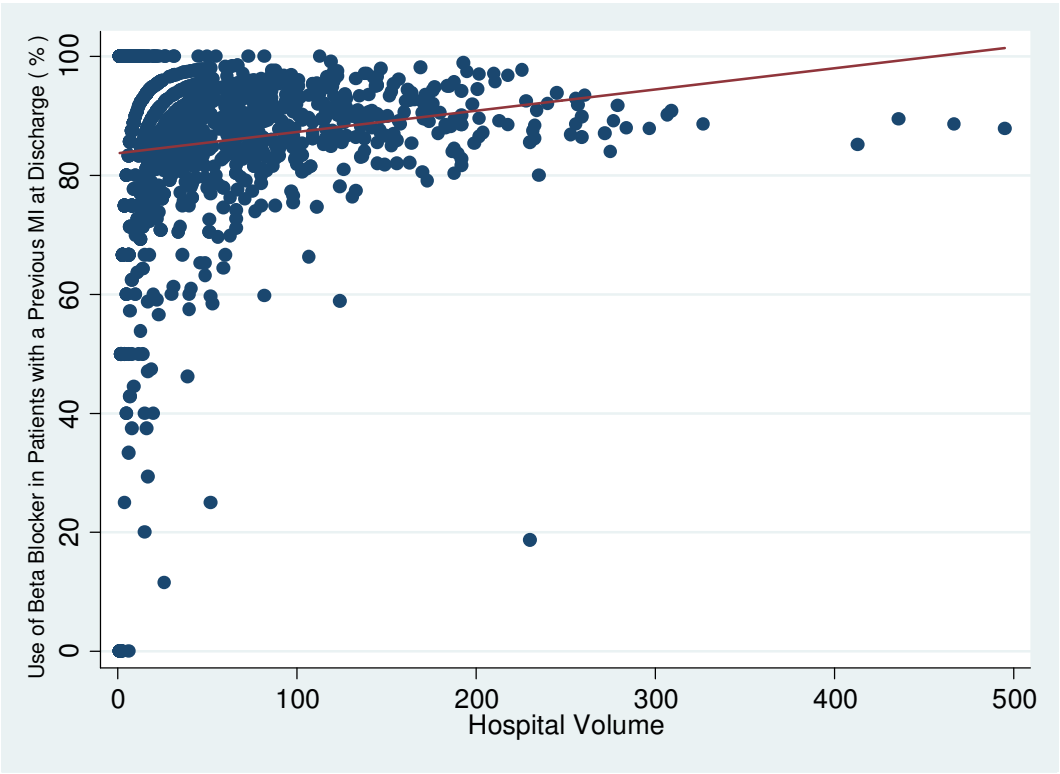
Exclusions	Hospital stays		Patients		Facilities	
	#	%	#	%	#	%
Sample from01/01/2008 to 12/31/2008	131371	100	130593	100	1283	100
excluding deceased patients	500	0.38	494	0.38	0	0
Remaining	130871	99.62	130099	99.62	1283	100
Excluding no history of previous MI+missing	61556	47.04	61134	46.99	21	1.64
Remaining	69315	52.96	68965	53.01	1262	98.36
contraindicated or blinded	829	1.20	817	1.18	0	100.00
Study Sample	68486	98.80	68148	98.82	1262	100.00
beta blocker use at discharge	60350	88.12	60072	88.15	1245	98.65

Distribution of Beta blocker use in patients with a previous MI at Discharge

Description	Hospital volume	% patients received beta blocker at discharge
N	1262	1262
Mean	54.27	0.8569
Std Deviation	60.89	0.1584
100% Max	495	1.0000
99%	272	1.0000
95%	180	1.0000
90%	135	1.0000
75% Q3	76	0.9487
50% Median	34	0.8918
25% Q1	13	0.8276
10%	4	0.7059
5%	2	0.5887
1%	1	0.0000
0% Min	1	0.0000

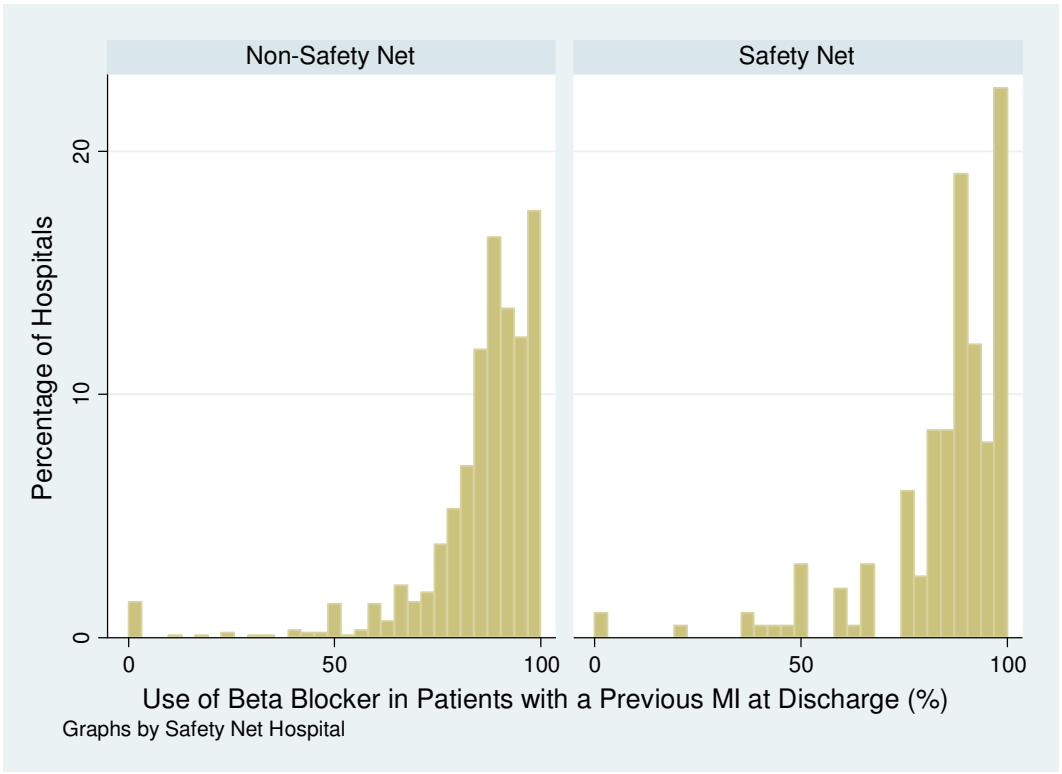
Among patients with previous MI , who are eligible for beta blockers

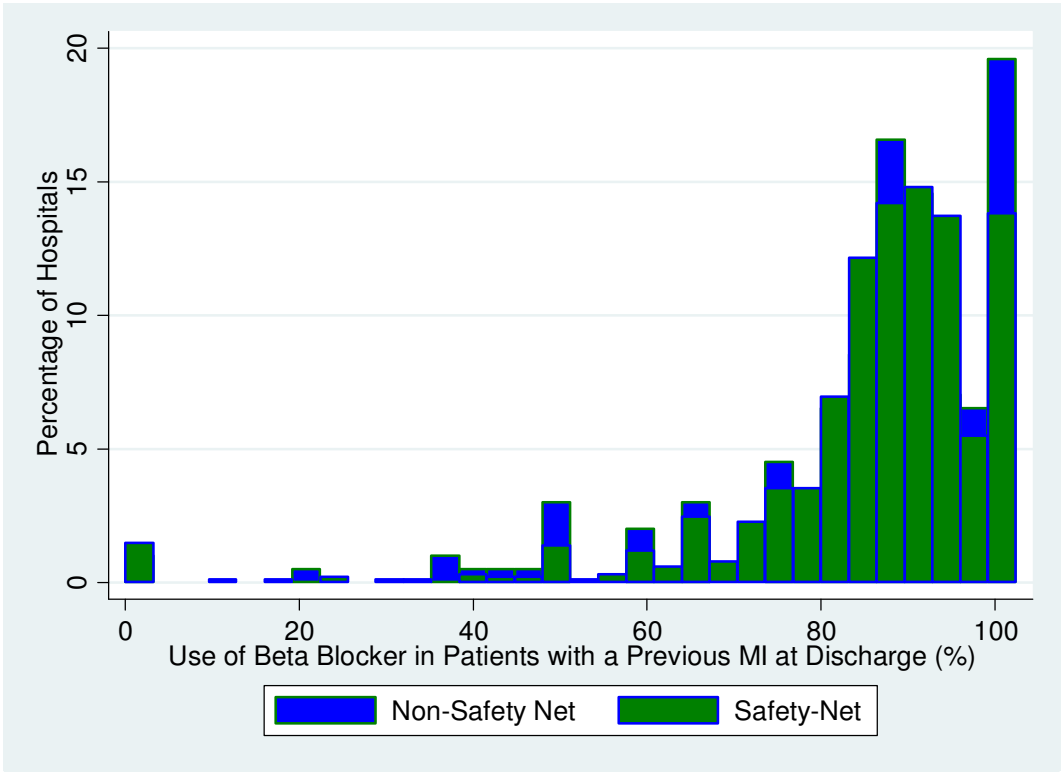

Number of Hospitals
0
50
100
150
200
250
0
20
40
60
80
100
Use of Beta Blocker in Patients with a Previous MI at Discharge (%)


Use of Beta Blocker in Patients with a Previous MI at Discharge (%)
0
20
40
60
80
100
0
100
200
300
400
500
Hospital Volume

Distribution of Beta blocker use in Patients with a previous MI at Discharge Stratified by Safety Net Status				
Description	**Safety Net Status***			
	No		**Yes**	
	Volume	**beta blocker**	**Volume**	**beta blocker**
N	1020	1020	199	199
Mean	56.28	0.8574	44.94	0.8530
Std Deviation	62.44	0.1582	51.81	0.1676
100% Max	495	1.0000	261	1.0000
99%	275	1.0000	226	1.0000
95%	184.5	1.0000	171	1.0000
90%	138	1.0000	122	1.0000
75% Q3	79	0.9474	63	0.9608
50% Median	36	0.8920	25	0.8920
25% Q1	13	0.8282	8	0.8182
10%	4	0.7083	2	0.6667
5%	2	0.6000	2	0.5000
1%	1	0.0000	1	0.0000
0% Min	1	0.0000	1	0.0000

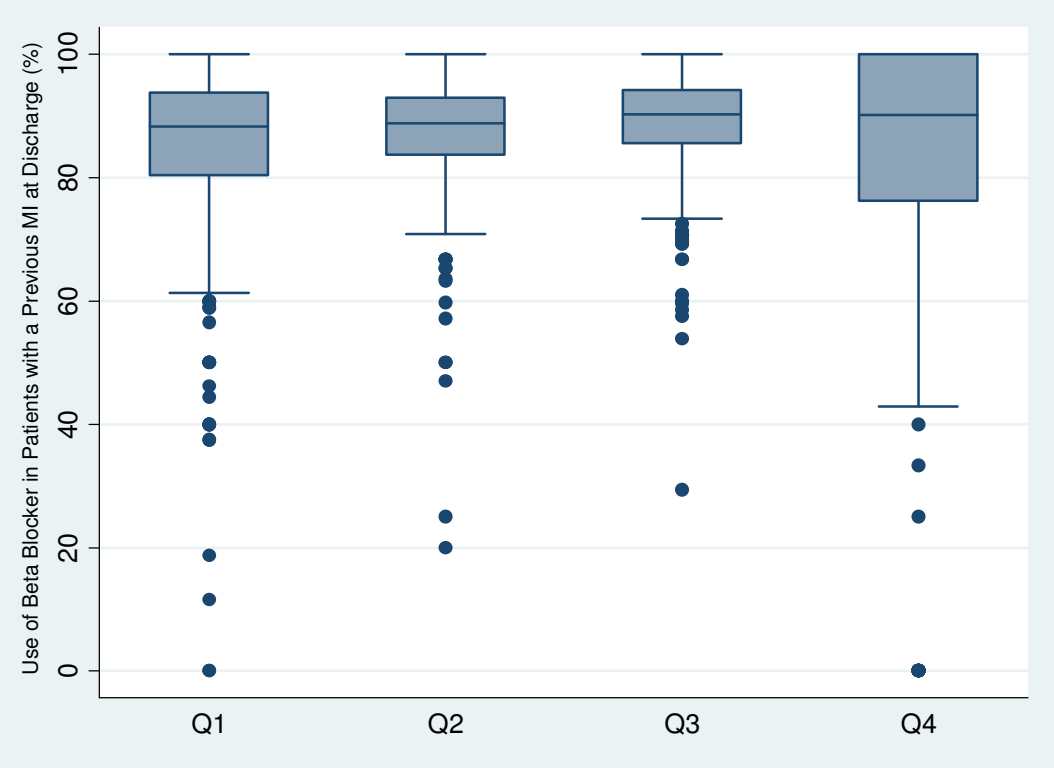
* Defined as government hospitals or non-government hosptials with high medicaid caseload using AHA 2008 Data.


Non-Safety Net
Safety Net
Percentage of Hospitals
0
10
20
0
50
100
Use of Beta Blocker in Patients with a Previous MI at Discharge (%)
Graphs by Safety Net Hospital

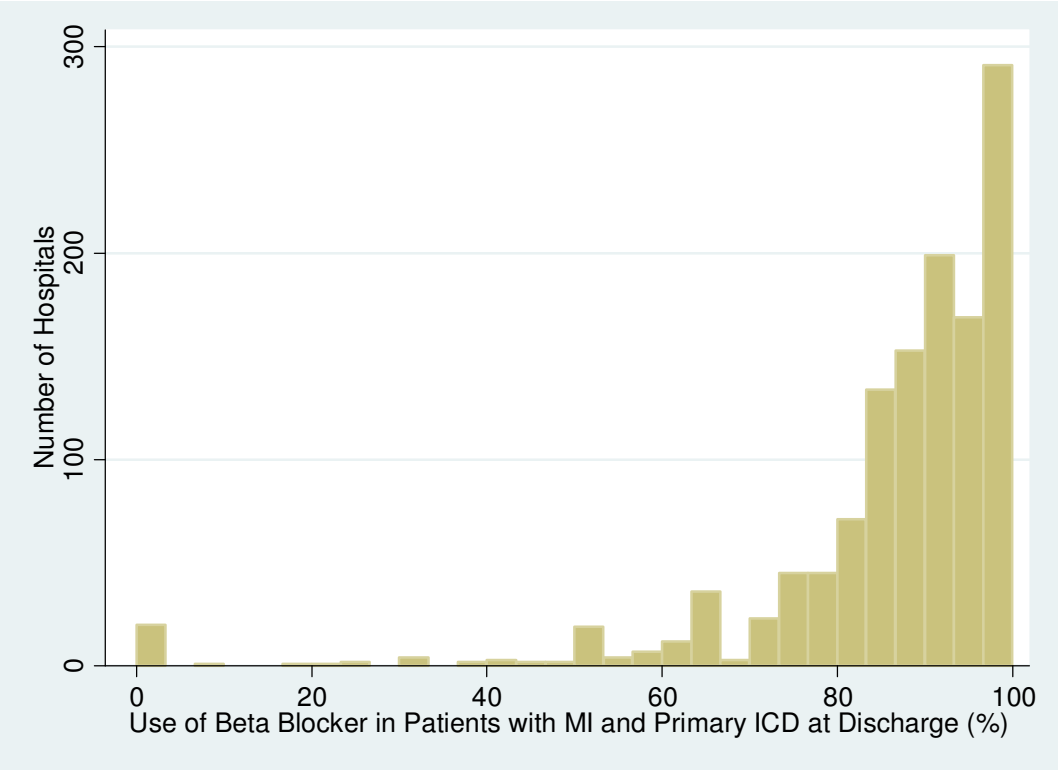

Percentage of Hospitals
0
5
10
15
20
0
20
40
60
80
100
Use of Beta Blocker in Patients with a Previous MI at Discharge (%)
Non-Safety Net
Safety-Net

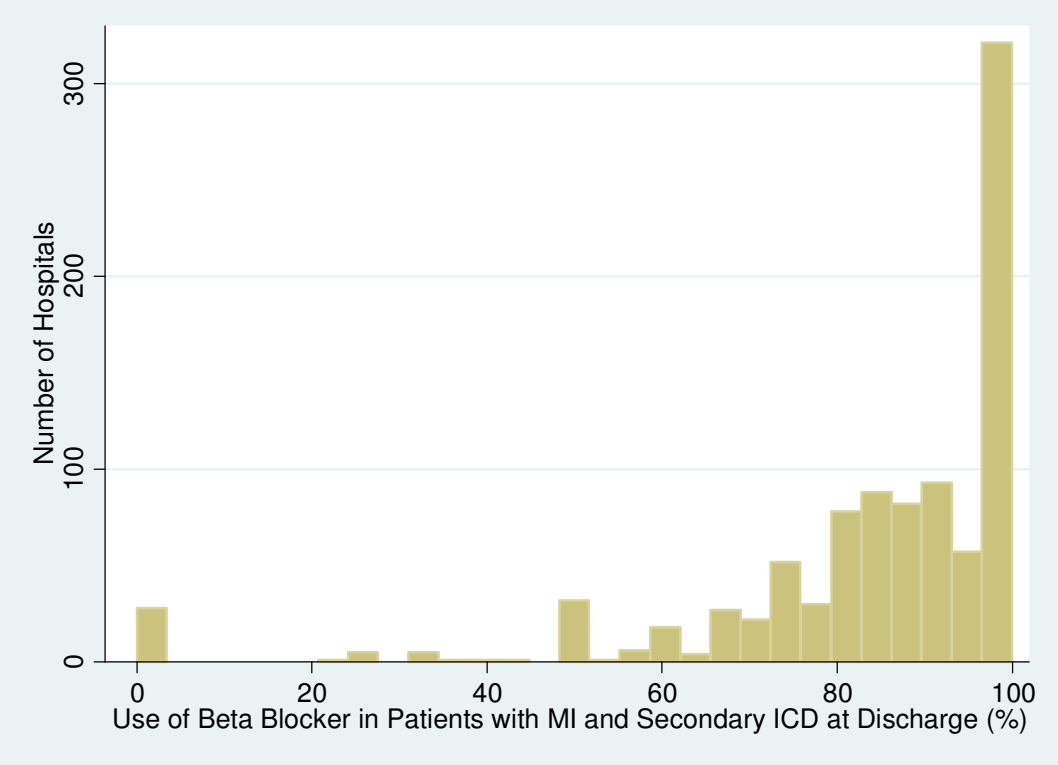
Distribution of Beta blocker use in Patients with a previous MI at Discharge Stratified by % White

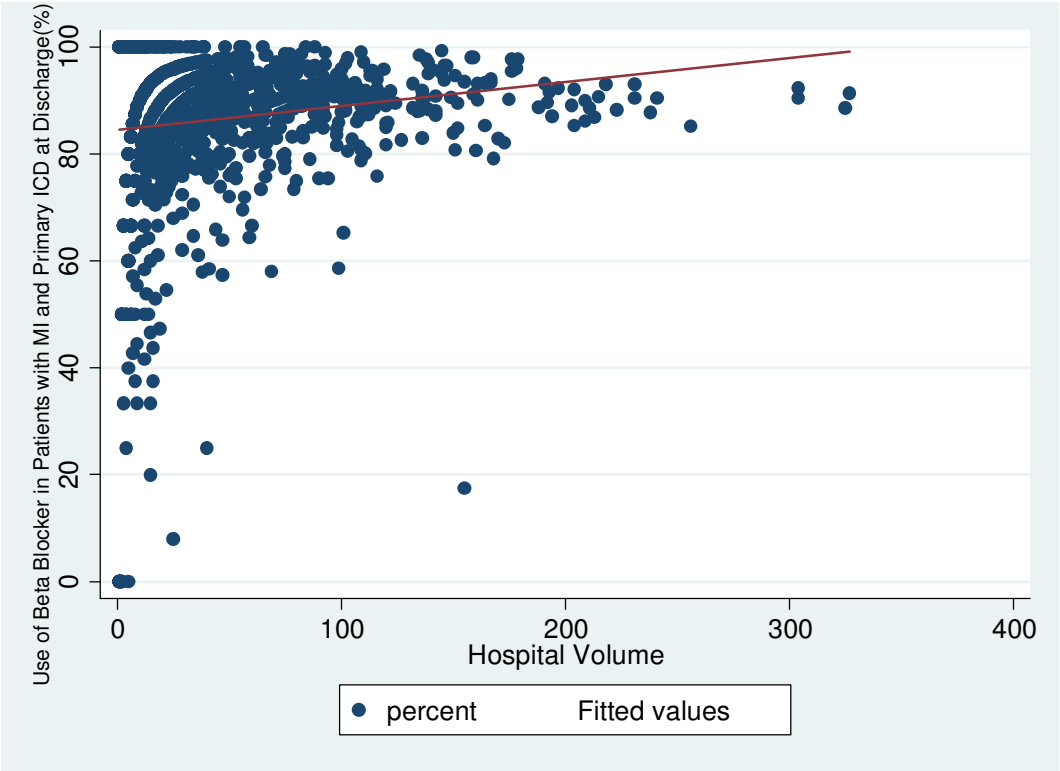
Description	%White	%White							
		Q1 (0.00% to 80.56%)		Q2 80.57% to 91.92%)		Q3 (91.93% to 98.80%)		Q4 (98.81% to 100.00%)	
		Volume	beta blocker	Volume	beta blocker	Volume	beta blocker	Volume	beta blocker
N	1262	315	315	316	316	316	316	315	315
Mean	0.8581	48.92	0.8457	70.79	0.8712	74.37	0.8833	22.87	0.8270
Std Deviation	0.1849	62.19	0.1590	65.99	0.0998	60.74	0.0879	35.39	0.2363
100% Max	1.0000	495	1.0000	436	1.0000	467	1.0000	218	1.0000
99%	1.0000	272	1.0000	297	1.0000	275	1.0000	170	1.0000
95%	1.0000	173	1.0000	193	1.0000	192	0.9779	95	1.0000
90%	1.0000	125	1.0000	164	0.9655	152	0.9672	66	1.0000
75% Q3	0.9860	66	0.9381	96	0.9291	97	0.9421	27	1.0000
50% Median	0.9224	26	0.8824	50	0.8881	55.5	0.9021	8	0.9010
25% Q1	0.8101	9	0.8030	23	0.8358	32.5	0.8557	3	0.7619
10%	0.6364	3	0.6636	11	0.7778	19	0.7744	1	0.5000
5%	0.5000	2	0.5000	8	0.6667	15	0.7059	1	0.2500
1%	0.0000	1	0.1870	6	0.5000	13	0.5849	1	0.0000
0% Min	0.0000	1	0.0000	6	0.2000	13	0.2941	1	0.0000

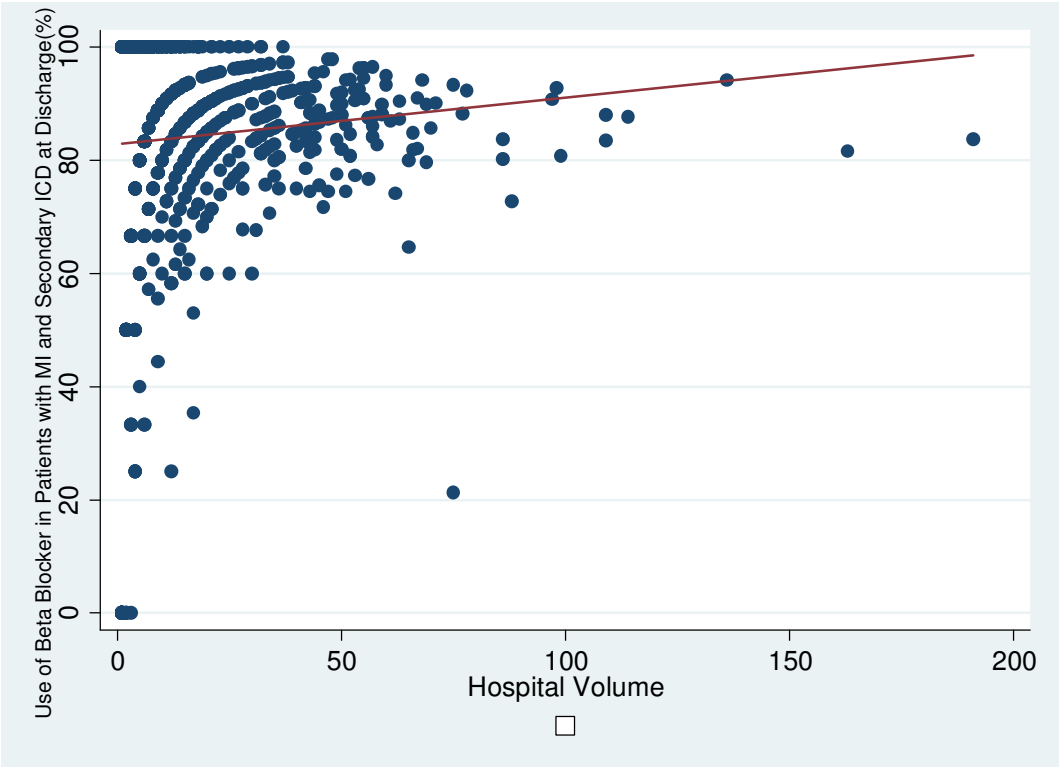

Use of Beta Blocker in Patients with a Previous MI at Discharge (%)
0
20
40
60
80
100
Q1
Q2
Q3
Q4

Distribution of Beta Blocker use in Patients with a previous MI at Discharge Stratified by ICD indication				
	ICD Indication			
Description	Priamry		Secondary	
	Volume	Beta Blocker	Volume	Beta Blocker
N	1249	1249	953	953
Mean	42.00	0.8643	16.82	0.8421
Std Deviation	46.47	0.1661	19.73	0.2060
100% Max	327	1.0000	191	1.0000
99%	213	1.0000	88	1.0000
95%	139	1.0000	55	1.0000
90%	102	1.0000	42	1.0000
75% Q3	57	0.9630	22	1.0000
50% Median	27	0.9032	10	0.8889
25% Q1	9	0.8333	4	0.8000
10%	3	0.7143	1	0.6000
5%	2	0.5745	1	0.5000
1%	1	0.0000	1	0.0000
0% Min	1	0.0000	1	0.0000


Number of Hospitals
0
100
200
300
0
20
40
60
80
100
Use of Beta Blocker in Patients with MI and Primary ICD at Discharge (%)


Number of Hospitals
0
100
200
300
0
20
40
60
80
100
Use of Beta Blocker in Patients with MI and Secondary ICD at Discharge (%)


Use of Beta Blocker in Patients with MI and Primary ICD at Discharge(%)
0
20
40
60
80
100
0
100
200
300
400
Hospital Volume
percent
Fitted values


Use of Beta Blocker in Patients with MI and Secondary ICD at Discharge(%)
0
20
40
60
80
100
0
50
100
150
200
Hospital Volume

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.

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: Thomas E. Arend

Name: THOMAS E. AREND, JR

Title: General Counsel + CAO

10/8/09

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:_____

EXHIBIT B

PRICING STRUCTURE

EXHIBIT C

FEES OR CHARGES TO OTHER ORGANIZATIONS