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 #:** 0284 **NQF Project:** Surgery Endorsement Maintenance 2010
MEASURE DESCRIPTIVE INFORMATION
De.1 **Measure Title:** Surgery patients on beta blocker therapy prior to admission who received a beta blocker during the perioperative period
De.2 **Brief description of measure:** Percentage of patients on beta blocker therapy prior to admission who received a beta blocker during the perioperative period. To be in the denominator, the patient must be on a beta-blocker prior to arrival. The case is excluded if the patient is not on a beta-blocker prior to arrival, as described below in 2a4.
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** NA
De.4 **National Priority Partners Priority Area:** Safety De.5 **IOM Quality Domain**: Safety De.6 **Consumer Care Need:** Staying healthy

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

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

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 1a.2 1a.3 **Summary of Evidence of High Impact:** Concerns regarding the discontinuation of beta-blocker therapy in the perioperative period have existed for several decades. Shammash and colleagues studied a total of 140 patients who received beta-blockers preoperatively. Mortality in the 8 patients who had beta-blockers discontinued postoperatively (50%) was significantly greater than in the 132 patients in whom beta-blockers were continued. Hoeks and colleagues studied 711 consecutive peripheral vascular surgery patients. After adjustment for potential confounders and the propensity of its use, continuous beta-blocker use remained significantly associated with a lower 1-year mortality than among nonusers. In contrast, beta-blocker withdrawal was associated with an increased risk of 1-year mortality compared with nonusers. 1a.4 **Citations for Evidence of High Impact:** -Hoeks SE, Scholte Op Reimer WJ, van Urk H, et al. Increase of 1-year mortality after perioperative beta-blocker withdrawal in endovascular and vascular surgery patients. Eur J Vasc Endovasc Surg 2007;33:13-9. -Shammash JB, Trost JC, Gold JM, et al. Perioperative beta-blocker withdrawal and mortality in vascular surgical patients. Am Heart J. 2001;141:148-153. PMID: 11136500.	**1a** C☐ P☐ M☐ N☐
1b. Opportunity for Improvement 1b.1 **Benefits (improvements in quality) envisioned by use of this measure:** Mortality in patients who have their routine beta-blockers discontinued postoperatively is greater than in patients in whom beta-blockers	**1b** C☐ P☐ M☐

are continued. Beta-blocker withdrawal has been associated with an increased risk of mortality compared with nonusers.

1b.2 Summary of data demonstrating performance gap (variation or overall poor performance) across providers:
Measure is reported as a rate. Measure has been collected since Q1 2009 with rates as followed:
1Q09- 89.2%
2Q09- 90.5%
3Q09- 91.5%
4Q09- 92.5%
1Q10- 93.1%

1b.3 Citations for data on performance gap:
1Q2010 data, from 3252 reporting hospitals:
Numerator: 106,625
Denominator: 114,496

1b.4 Summary of Data on disparities by population group:
A disparities report is attached to this submission.

1b.5 Citations for data on Disparities:
The attached disparities report uses 2009 data from the clinical data warehouse.

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*)**:** Monitoring whether routine beta-blocker are continued postoperatively can affect adverse cardiac events.

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

1c.4 Summary of Evidence (*as described in the criteria; for outcomes, summarize any evidence that healthcare services/care processes influence the outcome*)**:**
The American College of Cardiology/American Heart Association site continuation of beta-blocker therapy in the perioperative period as a class I indication, and accumulating evidence suggests that titration to maintain tight heart rate control should be the goal.

1c.5 Rating of strength/quality of evidence (*also provide narrative description of the rating and by whom***):**
Level c

1c.6 Method for rating evidence: Rating is based upon the estimate of certainty (Precision) of treatment effect
*Data available from clinical trials or registries about the usefulness/efficacy in different subpopulations, such as gender, age, history of diabetes, history of prior myocardial infarction, history of heart failure, and prior aspirin use. A recommendation with Level of Evidence B or C does not imply that the recommendation is weak. Many important clinical questions addressed in the guidelines do not lend themselves to clinical trials. Even though randomized trials are not available, there may be a very clear clinical consensus that a particular test or therapy is useful or effective

1c.7 Summary of Controversy/Contradictory Evidence: No contradictory evidence.

1c.8 Citations for Evidence (*other than guidelines***):** Selected References:
-Manual of Medical Therapeutics. Department of Medicine Washington University, School of Medicine, St. Louis, MO, GA Ewald and CR McKenzie editors. 28th Edition, 1995. PMID: 0000000.
-Belzberg H, Rivkind AI. Preoperative cardiac preparation. Chest. 1999;115:82S-95S. PMID: 10331339.

Poldermans D, Boersma E, Bax JJ, et al, for the DECREASE Study Group. The effect of bisoprolol on perioperative mortality and myocardial infarction in high-risk patients undergoing vascular surgery. N Engl J

1c
C☐
P☐
M☐
N☐

Med. 1999;24:1789-1794. PMID: 10588963.

Shammash JB, Trost JC, Gold JM, et al. Perioperative beta-blocker withdrawal and mortality in vascular surgical patients. Am Heart J. 2001;141:148-153. PMID: 11136500.

Boersma E, Poldermans D, Bax JJ, et al, for the Dutch Echocardiographic Cardiac Risk Evaluation Applying Stress Echocardiography (DECREASE) Study Group. Predictors of cardiac events after major vascular surgery: role of clinical characteristics, dobutamine echocardiography.JAMA 2001 Apr 11;285(14):1865-73. PMID:11308400.

Pasternack PF, Imparato AM, Baumann FG, et al. The hemodynamics of beta-blockade in patients undergoing abdominal aortic aneurysm repair. Circulation. 1987;76(suppl 3, pt 2):III-1-7. PMID:3621532.

Yaeger RA, Moneta GL, Edwards JM, et al. Reducing perioperative myocardial infarction following vascular surgery. The potential role of beta-blockade. Arch Surg 1995;130(8):869. PMID:7632148.

Yusuf S, Peto R, Lewis J, Collins R, et al. Beta Blockade during and after myocardial infarction: an overview of the randomized trials. Prog Cardiovasc Dis 1985; 27: 335-371. PMID: 2858114.

McGory ML, Maggard MA, Ko CY. A meta-analysis of perioperative beta blockade: What is the actual risk reduction? Surgery. 2005 Aug;138(2):171-179. PMID: 16153424.

Goldman L. Noncardiac surgery in patients receiving propranolol. Case reports and recommended approach. Arch Intern Med 1981;141:193-6.

Hoeks SE, Scholte Op Reimer WJ, van Urk H, et al. Increase of 1-year mortality after perioperative beta-blocker withdrawal in endovascular and vascular surgery patients. Eur J Vasc Endovasc Surg 2007;33:13-9.

Lindenauer PK, Pekow P, Wang K, Mamidi DK, Gutierrez B, Benjamin EM. Perioperative beta-blocker therapy and mortality after major noncardiac surgery. N Engl J Med 2005; 353:349-361.

1c.9 Quote the Specific guideline recommendation (*including guideline number and/or page number***):**
Beta blockers should be continued in patients undergoing surgery who are receiving beta blockers to treat angina, symptomatic arrhythmias, hypertension, or other ACC/AHA Class I guideline indications. (Level of Evidence: C)

1c.10 Clinical Practice Guideline Citation: Fleisher LA, Beckman JA, Brown KA, Calkins H, et al. ACC/AHA 2007
Specifications Manual for National Hospital Inpatient Quality Measures
Discharges 10-01-10 (4Q10) through 03-31-11 (1Q11) SCIP-Card-2-3
Guidelines on perioperative cardiovascular evaluation and care for noncardiac surgery: a report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines (Writing Committee to Revise the 2002 Guidelines on Perioperative Cardiovascular Evaluation for Noncardiac Surgery). J Am Coll Cardiol 2007; 50: e159-241.
1c.11 National Guideline Clearinghouse or other URL: http://www.guideline.gov/content.aspx?id=11510

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

1c.13 Method for rating strength of recommendation (*If different from USPSTF system, also describe rating and how it relates to USPSTF)*:
CLASS I

Benefit >>> Risk
Procedure/Treatment SHOULD be performed/ administered
CLASS IIa
Benefit >> Risk

Additional studies with focused objectives needed IT IS REASONABLE to perform procedure/ administer treatment CLASS IIb Benefit > Risk Additional studies with broad objectives needed; additional registry data would be helpful Procedure/Treatment MAY BE CONSIDERED CLASS III Risk > Benefit No additional studies needed Procedure/Treatment should NOT be performed/ administered SINCE IT IS NOT HELPFUL AND MAY BE HARMFUL The American College of Cardiology/American Heart Association (ACC/AHA) classification of the recommendations for patient evaluation and treatment (classes I-III) and the levels of evidence (A-C) are defined 1c.14 **Rationale for using this guideline over others:** Experts in the subject under consideration have been selected from the American College of Cardiology (ACC) Foundation and the American Heart Association (AHA) to examine subject-specific data and write guidelines. The process includes additional representatives from other medical practitioner and specialty groups when appropriate. Writing groups are specifically charged to perform a formal literature review, weigh the strength of evidence for or against a particular treatment or procedure, and include estimates of expected health outcomes where data exist. Patient-specific modifiers, comorbidities, and issues of patient preference that may influence the choice of particular tests or therapies are considered, as well as frequency of follow-up and cost-effectiveness.	
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***):** Surgery patients on beta blocker therapy prior to admission who receive a beta blocker during the perioperative period 2a.2 **Numerator Time Window (***The time period in which cases are eligible for inclusion in the numerator***):** The perioperative period for the currently endorsed measure has been expanded. NOTE: After input from the TEP, there are changes proposed to this measure. The perioperative timeframe will be expanded and the hourly parameters removed. The perioperative period for the SCIP Cardiac measures is defined as the day prior to surgery through postoperative day two (POD 2) with day of surgery being day zero. If the postoperative length of stay = 2 days, the measure evaluates the administration of more than one dose of a beta-blocker: the day prior to or the day of surgery and on postoperative day one (POD 1) or postoperative day two (POD 2) unless reasons for not administering the medication were documented. If the	**2a-specs** **C☐** **P☐** **M☐** **N☐**

postoperative length of stay was < 2 days, the measure will evaluate the administration of the beta-blocker on the day prior to or the day of surgery only, unless reasons for not administering the medication were documented.

2a.3 Numerator Details (*All information required to collect/calculate the numerator, including all codes, logic, and definitions***):**
Data element:
Beta-Blocker Perioperative

2a.4 Denominator Statement (*Brief, text description of the denominator - target population being measured***):**
All surgery patients on daily beta blocker therapy prior to arrival

Data Element Data Collection Question: Is there documentation that the patient was on a daily beta-blocker therapy prior to arrival? Yes/No
Notes for Abstraction:
• If there is documentation that the beta-blocker was taken daily at "home" or is a "current" medication, select "Yes".
• If a beta-blocker is listed as a home medication without designation of how often or when it is taken, select "Yes".
• If there is documentation that the beta-blocker is a home/current medication and additional documentation indicates the beta-blocker was not taken daily, e.g., the medication reconciliation form lists a beta-blocker as a home/current medication, but documentation in the nurses notes state "patient denies taking beta-blocker every day", select "No".
• If there is documentation that the beta-blocker is on a schedule other than daily, select "No".
• If there is documentation that the beta-blocker was given on a "prn" basis for cardiac or non-cardiac reasons, select "No".

2a.5 Target population gender: Female, Male
2a.6 Target population age range: Patients >/= 18 years of age

2a.7 Denominator Time Window (*The time period in which cases are eligible for inclusion in the denominator***):**
Entire inpatient acute admission

2a.8 Denominator Details (*All information required to collect/calculate the denominator - the target population being measured - including all codes, logic, and definitions***):**
Data Elements:
Admission Date
Anesthesia Start Date
Beta-Blocker Current Medication
Beta-Blocker During Pregnancy
Birthdate
Clinical Trial
Discharge Date
ICD-9-CM Principal Procedure Code
Laparoscope
Perioperative Death
Reason for Not Administering Beta-Blocker-Perioperative
Sex

2a.9 Denominator Exclusions (*Brief text description of exclusions from the target population***):** •
Patients less than 18 years of age
• Patients who have a Length of Stay greater than 120 days
• Patients enrolled in clinical trials
• Patients whose ICD-9-CM principal procedure occurred prior to the date of admission
• Patients who expired during the perioperative period
• Pregnant patients taking a beta-blocker prior to arrival
• Patients with a documented Reason for Not Administering Beta-Blocker-Perioperative

- Patients with Ventriular Assist Devices or Heart Transplantation

2a.10 Denominator Exclusion Details (*All information required to collect exclusions to the denominator, including all codes, logic, and definitions***):**
Data Elements:
Beta-Blocker During Pregnancy
Clinical Trial

Perioperative Death
Reason for Not Administering Beta-Blocker-Perioperative

2a.11 Stratification Details/Variables (*All information required to stratify the measure including the stratification variables, all codes, logic, and definitions***):**
No stratification

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

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

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

2a.18-19 Type of Score: Rate/proportion
2a.20 Interpretation of Score: Better quality = Higher score
2a.21 Calculation Algorithm (*Describe the calculation of the measure as a flowchart or series of steps***):**
Variable Key: Patient Age, Surgery Days
1.Start processing. Run cases that are included in the Surgical Care Improvement Project (SCIP) Initial Patient Population and pass the edits defined in the Transmission Data Processing Flow: Clinical through this measure.
2.Calculate Patient Age. The Patient Age, in years, is equal to the Admission Date minus the Birthdate. Use the month and day portion of admission date and birthdate to yield the most accurate age.
3.Check Patient Age
a.If Patient Age is less than 18 years, the case will proceed to a Measure Category Assignment of B and will not be in the Measure Population. Stop processing.
b.If Patient Age is greater than or equal to 18 years, continue processing and proceed to Laparoscope.
4.Check Laparoscope
a.If Laparoscope is missing, the case will proceed to a Measure Category Assignment of X and will be rejected. Stop processing.
b.If Laparoscope equals 1 or 3, the case will proceed to a Measure Category Assignment of B and will not be in the Measure Population. Stop processing.
c.If Laparoscope equals 2, continue processing and proceed to Clinical Trial.
5.Check Clinical Trial
a.If Clinical Trial is missing, the case will proceed to a Measure Category Assignment of X and will be rejected. Stop processing.
b.If Clinical Trial equals Yes, the case will proceed to a Measure Category Assignment of B and will not be in the Measure Population. Stop processing.
c.If Clinical Trial equals No, continue processing and proceed to Anesthesia Start Date.
6.Check Anesthesia Start Date
a.If the Anesthesia Start Date is missing, the case will proceed to a Measure Category Assignment of X and will be rejected. Stop processing.
b.If the Anesthesia Start Date equals Unable To Determine, the case will proceed to a Measure Category Assignment of D and will be in the Measure Population. Stop processing.
c.If Anesthesia Start Date equals a Non Unable To Determine Value, continue processing and proceed to the Surgery Days calculation.
7.Calculate Surgery Days. Surgery Days, in days, is equal to the Anesthesia Start Date minus the Admission Date.
8.Check Surgery Days
a.If the Surgery Days is less than zero, the case will proceed to a Measure Category Assignment of B and will not be in the Measure Population. Stop processing.

b.If the Surgery Days is greater than or equal to zero, continue processing and proceed to Perioperative Death.
9.Check Perioperative Death
a.If Perioperative Death is missing, the case will proceed to a Measure Category Assignment of X and will be rejected. Stop processing.
b.If Perioperative Death equals Yes, the case will proceed to a Measure Category Assignment of B and will not be in the Measure Population. Stop processing.
c.If Perioperative Death equals No, continue processing and proceed to Beta-Blocker Current Medication.
10.Check Beta-Blocker Current Medication
a.If the Beta-Blocker Current Medication is missing, the case will proceed to a Measure Category Assignment of X and will be rejected. Stop processing.
b.If the Beta-Blocker Current Medication equals No, the case will proceed to a Measure Category Assignment of B and will not be in the Measure Population. Stop processing.
c.If the Beta-Blocker Current Medication equals Yes, continue processing and proceed to Sex.
11.Check Sex
a.If Sex is missing, the case will proceed to a Measure Category Assignment of X and will be rejected. Stop processing.
b.If Sex equals Female, continue processing and check Beta-Blocker During Pregnancy.
1.If Beta-Blocker During Pregnancy is missing, the case will proceed to a Measure Category Assignment of X and will be rejected. Stop processing.
2.If Beta-Blocker During Pregnancy equals 1 or 3, the case will proceed to a Measure Category Assignment of B and will not be in the Measure Population. Stop processing.
3.If Beta-Blocker During Pregnancy equals 2, continue processing and proceed to Beta-Blocker Preoperative.
c.If Sex equals Male or Unknown, continue processing and proceed to Beta-Blocker Perioperative.
12.Check Beta-Blocker Perioperative
a.If Beta-Blocker Perioperative is missing, the case will proceed to a Measure Category Assignment of X and will be rejected. Stop processing.
b.If Beta-Blocker Perioperative equals Yes, the case will proceed to a Measure Category Assignment of E and will be in the Numerator Population. Stop processing.
c.If Beta-Blocker Perioperative equals No, continue processing and check Reason for Not Administering Beta-Blocker Perioperative.
13.Check Reason for Not Administering Beta-Blocker Perioperative
a.If Reason for Not Administering Beta-Blocker Perioperative is missing, the case will proceed to a Measure Category Assignment of X and will be rejected. Stop processing.
b.If Reason for Not Administering Beta-Blocker Perioperative equals Yes, the case will proceed to a Measure Category Assignment of B and will not be in the Measure Population. Stop processing.
c.If Reason for Not Administering Beta-Blocker Perioperative equals No, the case will proceed to a Measure Category Assignment of D and will be in the Measure Population. Stop processing.

2a.22 **Describe the method for discriminating performance** *(e.g., significance testing)*:
Benchmarks are established using the ABC methodology, based on the actual performance of the top facilities. ABC benchmarks identify superior performance and encourage poorer performers to improve. It is data-driven, peer-group performance feedback.
Achievable Benchmarks of Care TM: developed at the University of Alabama at Birmingham for AHRQ. This methodology identifies benchmark care levels already achieved by “best-in-class” care givers. Development of benchmarks that are realistic and achievable may help to motivate providers that are having difficulty improving care. The benchmarks represent a measureable level of excellence that always exceeds average performance. It ensures that all superior providers contribute to the benchmark but also ensures that providers with high performance but very low numbers of cases do not unduly influence benchmark levels. Additional information can be found at http://main.uab.edu/show.asp?durki=14527

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)*:
The SCIP Topic Population (common to all SCIP measures) is defined as patients admitted to the hospital for inpatient acute care with an ICD-9-CM Principal Procedure Code for SCIP as defined in Appendix A, Table 5.10 and a Length of Stay (Discharge Date - Admission Date) <= 120 days. There are eight distinct strata or sub-populations within the SCIP Topic Population, each identified by a specific group of procedure codes. The patients in each stratum are counted in the Initial Patient Population of multiple measures.

The following sample size tables for each option automatically build in the number of cases needed to obtain the required sample sizes.

Quarterly Sampling

For hospitals selecting sample cases for SCIP, a modified sampling procedure is required. Hospitals selecting sample cases for this set must ensure that each individual stratum's population and quarterly sample size meets the following conditions:

- Select within each of the seven individual measure stratum (e.g., colorectal surgery, hip arthroplasty, etc.) and the 8th SCIP stratum (Table 5.25 in Appendix A).

Quarterly Sample Size
Based on Initial Patient Population Size for the SCIP Measure Set

Hospital's Measure Average Quarterly Stratum Initial Patient Population Size "N"	Minimum Required Stratum Sample Size "n"
>/= 481	49
171-480	10% of Initial Patient Population size
17-170	17
< 17	No sampling; 100% Initial Patient Population required

Monthly Sampling

For hospitals selecting sample cases for SCIP, a modified sampling procedure is required. Hospitals selecting sample cases for this set must ensure that each individual strata population and monthly sample size meets the following conditions:

- Select within each of the seven individual measure stratum (e.g., colorectal surgery, hip arthroplasty, etc.) and the 8th SCIP stratum (Table 5.25 in Appendix A).

Monthly Sample Size
Based on Initial Patient Population Size for the SCIP Measure Set

Hospital's Measure Average Monthly Stratum Initial Patient Population Size "N"	Minimum Required Stratum Sample Size "n"
>/= 151	16
61-150	10% of Initial Patient Population size
6-60	6
<6	No sampling; 100% Initial Patient Population required

All of the SCIP measures´ specific exclusion criteria are used to filter out cases that do not belong in the measure denominator. Using SCIP-Inf-4 as an example, include cases covering all sampled strata, although the measure-specific exclusion criteria would only allow cases in the cardiac surgery stratum to be included in the denominator.

2a.24 Data Source (*Check the source(s) for which the measure is specified and tested)*
Administrative claims, Paper Records

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.***):**
Vendor tools (electronic) or CART. CART is available for download free at http://www.qualitynet.org/dcs/ContentServer?c=Page&pagename=QnetPublic%2FPage%2FQnetTier2&cid=1138900279093

2a.26-28 Data source/data collection instrument reference web page URL or attachment: URL
http://www.qualitynet.org/dcs/ContentServer?c=Page&pagename=QnetPublic%2FPage%2FQnetTier2&cid=1138900279093

2a.29-31 Data dictionary/code table web page URL or attachment: URL
http://www.qualitynet.org/dcs/ContentServer?c=Page&pagename=QnetPublic%2FPage%2FQnetTier4&cid=1228754600169

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

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

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

TESTING/ANALYSIS

2b. Reliability testing

2b.1 Data/sample *(description of data/sample and size)*: Pilot tested during 3-state Pilot in 2004-2005. Also collected as an optional SIP data element since 2001. Pilot QIOs performed interrater reliability testing on a minimum of 5% of the cases collected for each of the 4 quarters.OH/OK:The overall percentage of agreement for the # charts was 87.49%. Ohio had an 84.61% agreement rate for 60 charts and Oklahoma had a 89.94% agreement for 51charts. KY: The average validation rate for the first period was 90%, and the third period was 95%. Our overall IRR validation rate for all hospitals combined is 93%
Has been continuously collected for the pay-for-reporting program for CMS since first quarter 2009 and is independently tested for IRR with the CDAC contractor.

2b.2 Analytic Method *(type of reliability & rationale, method for testing)*:
Reports on mismatches between national abstractors and the independent abstraction/validation contractor are reviewed quarterly. Because this is use in the pay for reporting program, those rates are monitored by the CMS contractor responsible for validation.

2b.3 Testing Results *(reliability statistics, assessment of adequacy in the context of norms for the test conducted)*:
Feedback from the hospital abstractors and the independent validation contractor is collected and incorporated.

2b
C☐
P☐
M☐
N☐

2c. Validity testing

2c.1 Data/sample *(description of data/sample and size)*: The measure is reviewed by a Technical Expert Panel quarterly for validity. Specifications (including codes and data elements) are modified every six months according to feedback provided by clinicians and hospital staff collecting data for the measure. National performance of the measure is monitored by the measure steward with quarterly benchmarks of hospital submitted data developed for distribuation by QIOs.

2c.2 Analytic Method *(type of validity & rationale, method for testing)*:
Face validity is systematically assessed by the Technical Expert Panels and the measure is judged to assess the provision of appropriate care for the target population.

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

2c
C☐
P☐
M☐
N☐

2d. Exclusions Justified

2d.1 Summary of Evidence supporting exclusion(s):

2d
C☐
P☐

The exclusions to this measure were suggested by the TEP or are routine exclusions used by the SCIP measure set. 2d.2 **Citations for Evidence:** NA 2d.3 **Data/sample** *(description of data/sample and size)*: NA 2d.4 **Analytic Method** *(type analysis & rationale)*: NA 2d.5 **Testing Results** *(e.g., frequency, variability, sensitivity analyses)*: NA	M☐ N☐ NA ☐
2e. Risk Adjustment for Outcomes/ Resource Use Measures 2e.1 **Data/sample** *(description of data/sample and size)*: No risk adjustment performed. 2e.2 **Analytic Method** *(type of risk adjustment, analysis, & rationale)*: NA 2e.3 **Testing Results** *(risk model performance metrics)*: NA 2e.4 **If outcome or resource use measure is not risk adjusted, provide rationale:** NA	**2e** C☐ P☐ M☐ N☐ NA ☐
2f. Identification of Meaningful Differences in Performance 2f.1 **Data/sample from Testing or Current Use** *(description of data/sample and size)*: All submitted data to the clinical warehouse is reviewed each quarter. 2f.2 **Methods to identify statistically significant and practically/meaningfully differences in performance** *(type of analysis & rationale)*: Analysts review quarterly benchmarks and trends to identify differences in performance scores and investigate the possible causes. If measure specifications (algorithms, data elements) are causing the variation in performance, they are reviewed for possible updates. 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)*: Current measure rate is 93.1%. The benchmark is 99.8%.	**2f** C☐ P☐ M☐ N☐
2g. Comparability of Multiple Data Sources/Methods 2g.1 **Data/sample** *(description of data/sample and size)*: At this time, the data source is the inpatient medical record only. 2g.2 **Analytic Method** *(type of analysis & rationale)*: NA 2g.3 **Testing Results** *(e.g., correlation statistics, comparison of rankings)*: NA	**2g** C☐ P☐ M☐ N☐ NA ☐
2h. Disparities in Care 2h.1 **If measure is stratified, provide stratified results** *(scores by stratified categories/cohorts)*: An updated disparities report has been submitted to NQF for review. Data on the range of performance values by decile for the hospital process measures was provided also. 2h.2 **If disparities have been reported/identified, but measure is not specified to detect disparities,**	**2h** C☐ P☐ M☐ N☐ NA ☐

provide follow-up plans: All of the inpatient quality reporting measures collect this information: Birthdate, Hispanic Ethnicity, Payment Source, Race and Sex. Additional analysis was performed to determine disparities in US region and urban vs rural.	
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*)**:** Measure is used in Hospital Inpatient Quality Reporting Program (formerly RHQDAPU) 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***):** Measure is also used for accreditation by the Joint Commission. **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)***:** Measure is reported on a public website (Hospital Compare). Feedback on this website is collected through another contractor. 3a.5 **Methods** *(e.g., focus group, survey, QI project)***:** NA 3a.6 **Results** *(qualitative and/or quantitative results and conclusions)***:** NA	**3a** **C☐** **P☐** **M☐** **N☐**
3b/3c. Relation to other NQF-endorsed measures 3b.1 **NQF # and Title of similar or related measures:**	
(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?**	**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:**	**3c** **C☐** **P☐** **M☐**

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: There are measures on the same topic: beta-blocker administration, but not to continue beta-blocker after surgery.	**N☐ NA☐**
TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Usability?*	**3**
Steering Committee: Overall, to what extent was the criterion, *Usability*, met? **Rationale:**	**3** **C☐** **P☐** **M☐** **N☐**
4. FEASIBILITY	
Extent to which the required data are readily available, retrievable without undue burden, and can be implemented for performance measurement. (evaluation criteria)	**Eval Rating**
4a. Data Generated as a Byproduct of Care Processes **4a.1-2 How are the data elements that are needed to compute measure scores generated?** Coding/abstraction performed by someone other than person obtaining original information (E.g., DRG, ICD-9 codes on claims, chart abstraction for quality measure or registry)	**4a** **C☐** **P☐** **M☐** **N☐**
4b. Electronic Sources **4b.1 Are all the data elements available electronically?** (*elements that are needed to compute measure scores are in defined, computer-readable fields, e.g., electronic health record, electronic claims*) No **4b.2 If not, specify the near-term path to achieve electronic capture by most providers.** There are several inpatient measures being retooled for EHR use. This measure is not included in that list for near future retooling.	**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.** No unintended consequences reported with this measure.	**4d** **C☐** **P☐** **M☐** **N☐**
4e. Data Collection Strategy/Implementation **4e.1 Describe what you have learned/modified as a result of testing and/or operational use of the measure regarding data collection, availability of data/missing data, timing/frequency of data collection, patient confidentiality, time/cost of data collection, other feasibility/ implementation issues:** There have been no implementation issues identified. **4e.2 Costs to implement the measure** (*costs of data collection, fees associated with proprietary measures*)**:** No information has been collected or reported related to costs to implement the measure. **4e.3 Evidence for costs:** Data abstraction is usually performed by nurses in the Quality Improvement department of the facility.	**4e** **C☐** **P☐** **M☐** **N☐**

4e.4 **Business case documentation:** There have been no additions to the business case to support this measure since its implementation.	
TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Feasibility?*	**4**
Steering Committee: Overall, to what extent was the criterion, *Feasibility*, met? **Rationale:**	**4** **C☐** **P☐** **M☐** **N☐**
RECOMMENDATION	
(for NQF staff use) **Check if measure is untested and only eligible for time-limited endorsement.**	**Time-limited ☐**
Steering Committee: Do you recommend for endorsement? **Comments:**	**Y☐** **N☐** **A☐**

CONTACT INFORMATION

Co.1 **Measure Steward (Intellectual Property Owner)**
Co.1 **Organization**
Centers for Medicare & Medicaid Services, 7500 Security Boulevard , Mail Stop S3-01-02, Baltimore, Maryland, 21244-1850

Co.2 **Point of Contact**
Edward Q., Garcia III, MHS, Health Policy Analyst, MMSNQF@hsag.com, 410-786-6738-

Measure Developer If different from Measure Steward
Co.3 **Organization**
Centers for Medicare & Medicaid Services, 7500 Security Boulevard, Mail Stop S3-01-02, Baltimore, Maryland, 21244-1850

Co.4 **Point of Contact**
Kristie, Baus, RN, MSN, kristie.baus@cms.hhs.gov, 410-786-8161-

Co.5 **Submitter If different from Measure Steward POC**
Wanda, Johnson, RN, wjohnson@ofmq.com, 405-840-2891-278, Centers for Medicare & Medicaid Services

Co.6 **Additional organizations that sponsored/participated in measure development**
The measure was developed by Oklahoma Foundation for Medical Quality under contract to the Centers for Medicare & Medicaid Services.

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.**
The Surgical Care Improvement Project´s TEP is facilitated by OFMQ for CMS and a list is available. The leading guideline author (Lee Fleisher, MD) from the ACC/AHA was instrumental in the development and maintenance of this measure.

Ad.2 **If adapted, provide name of original measure:** Revisions have been suggested by the TEP. The timeframe for evaluating the administration of the beta-blocker in the perioperative period is being updated. The link to the original specifications was provided under Specifications. NOTE: The modified specifications are attached below. The original specifications are posted on QualityNet, but the revisions have not been posted to the QualityNet website.
This is the change proposed:

Surgery patients on beta-blocker therapy prior to arrival who received a beta-blocker during the perioperative period. The perioperative period for the SCIP Cardiac measures is defined as the day prior to surgery through postoperative day two (POD 2) with day of surgery being day zero.

If the postoperative length of stay = 2 days, the measure evaluates the administration of more than one dose of a beta-blocker: the day prior to or the day of surgery and on postoperative day one (POD 1) or postoperative day two (POD 2) unless reasons for not administering the medication were documented. If the postoperative length of stay was < 2 days, the measure will evaluate the administration of the beta-blocker on the day prior to or the day of surgery only, unless reasons for not administering the medication were documented.

Ad.3-5 If adapted, provide original specifications URL or attachment Attachment SCIP Card2_MIFplusDEs 12.13.10-634279208250341226.doc

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: 10, 2010

Ad.8 What is your frequency for review/update of this measure? Every 6 months

Ad.9 When is the next scheduled review/update for this measure? 04, 2011

Ad.10 Copyright statement: Trend Report (BM= Benchmark, rate = national score)
Q209
BM: 99.7 Rate: 90.5
Q309
BM: 99.7 Rate 91.5
Q409
BM: 99.8 Rate 92.5
Q110
BM: 99.8 Rate 93.1
Q210
BM: 99.7 Rate 93.8

Ad.11 Disclaimers:

Ad.12 -14 Additional Information web page URL or attachment: Attachment IP Measures Disp_2009-634369262845786441.xls

Date of Submission (*MM/DD/YY*)**:** 12/14/2010

Disparities analysis for 26 performance measures using 2009 Clinical Data Warehouse

By Race/Ethnicity (3% of cases were excluded due to missing data on race/ethnicity)

Measures and Race/ethnicity group	Num	Den	Percent	Unadjusted OR (95%CI)	p-value
AMI1: Aspirin at arrival					
Caucasian	247,145	251,158	98.4	ref.	ref.
African-American	36,868	37,747	97.7	0.68 (0.63-0.73)	<0.001
Hispanic	26,561	27,316	97.2	0.57 (0.53-0.62)	<0.001
Asian/Pacific Islander	7,346	7,472	98.3	0.95 (0.79-1.13)	0.548
Native American	1,074	1,087	98.8	1.34 (0.78-2.32)	0.293
AMI2: Aspirin at discharge					
Caucasian	305,754	310,489	98.5	ref.	ref.
African-American	39,545	40,591	97.4	0.59 (0.55-0.63)	<0.001
Hispanic	27,791	28,805	96.5	0.42 (0.40-0.45)	<0.001
Asian/Pacific Islander	7,694	7,854	98.0	0.74 (0.64-0.87)	<0.001
Native American	1,908	1,935	98.6	1.09 (0.75-1.60)	0.643
AMI3: ACEI or ARB for LVSD					
Caucasian	54,767	57,482	95.3	ref.	ref.
African-American	8,642	9,024	95.8	1.12 (1.01-1.25)	0.040
Hispanic	5,591	5,896	94.8	0.91 (0.80-1.03)	0.123
Asian/Pacific Islander	1,302	1,372	94.9	0.92 (0.72-1.18)	0.514
Native American	371	393	94.4	0.84 (0.54-1.29)	0.416
AMI4: Smoking cessation counseling					
Caucasian	103,977	104,611	99.4	ref.	ref.
African-American	16,611	16,741	99.2	0.78 (0.64-0.94)	0.010
Hispanic	7,671	7,757	98.9	0.54 (0.43-0.68)	<0.001
Asian/Pacific Islander	1,720	1,747	98.5	0.39 (0.26-0.57)	<0.001
Native American	753	767	98.2	0.33 (0.19-0.56)	<0.001
AMI5: Beta-blocker at discharge					
Caucasian	298,954	304,013	98.3	ref.	ref.
African-American	39,112	40,008	97.8	0.74 (0.69-0.79)	<0.001
Hispanic	27,331	28,382	96.3	0.44 (0.41-0.47)	<0.001

Asian/Pacific Islander	7,602	7,738	98.2	0.95 (0.80-1.12)	0.526
Native American	1,841	1,882	97.8	0.76 (0.56-1.04)	0.083
AMI7a: Fibrinolytic within 30 minutes					
Caucasian	651	1,169	55.7	ref.	ref.
African-American	73	157	46.5	0.69 (0.50-0.97)	0.030
Hispanic	190	417	45.6	0.67 (0.53-0.83)	<0.001
Asian/Pacific Islander	36	61	59.0	1.15 (0.68-1.93)	0.610
Native American	1	3	33.3	0.40 (0.04-4.40)	0.452
AMI8a: PCI within 90 minutes					
Caucasian	38,044	43,171	88.1	ref.	ref.
African-American	3,448	4,234	81.4	0.59 (0.54-0.64)	<0.001
Hispanic	3,297	3,936	83.8	0.70 (0.64-0.76)	<0.001
Asian/Pacific Islander	1,079	1,237	87.2	0.92 (0.78-1.09)	0.337
Native American	160	189	84.7	0.74 (0.50-1.11)	0.143
HF1: Discharge instructions					
Caucasian	357,746	414,742	86.3	ref.	ref.
African-American	124,070	143,689	86.3	1.01 (0.99-1.03)	0.400
Hispanic	44,786	51,690	86.6	1.03 (1.01-1.06)	0.016
Asian/Pacific Islander	9,895	11,375	87.0	1.07 (1.01-1.13)	0.025
Native American	2,351	3,083	76.3	0.51 (0.47-0.56)	<0.001
HF2: Evaluation of LV function					
Caucasian	521,142	535,940	97.2	ref.	ref.
African-American	159,661	163,219	97.8	1.27 (1.23-1.32)	<0.001
Hispanic	55,388	57,714	96.0	0.68 (0.65-0.71)	<0.001
Asian/Pacific Islander	12,720	13,004	97.8	1.27 (1.13-1.43)	<0.001
Native American	3,201	3,416	93.7	0.42 (0.37-0.49)	<0.001
HF3: ACEI or ARB for LVSD					
Caucasian	145,067	155,808	93.1	ref.	ref.
African-American	66,217	69,597	95.1	1.45 (1.39-1.51)	<0.001
Hispanic	18,769	20,068	93.5	1.07 (1.01-1.14)	0.026
Asian/Pacific Islander	3,777	3,962	95.3	1.51 (1.30-1.75)	<0.001
Native American	1,173	1,278	91.8	0.83 (0.68-1.01)	0.064
HF4: Smoking cessation counseling					
Caucasian	76,177	77,858	97.8	ref.	ref.

African-American	44,071	44,760	98.5	1.41 (1.29-1.54)	<0.001
Hispanic	7,273	7,423	98.0	1.07 (0.90-1.27)	0.432
Asian/Pacific Islander	1,375	1,413	97.3	0.80 (0.58-1.11)	0.176
Native American	692	732	94.5	0.38 (0.28-0.53)	<0.001
PN2: Pnemococal vaccination given or screened for					
Caucasian	378,259	408,034	92.7	ref.	ref.
African-American	34,705	39,186	88.6	0.61 (0.59-0.63)	<0.001
Hispanic	24,135	28,528	84.6	0.43 (0.42-0.45)	<0.001
Asian/Pacific Islander	8,804	9,900	88.9	0.63 (0.59-0.67)	<0.001
Native American	2,310	2,640	87.5	0.55 (0.49-0.62)	<0.001
PN3a: Initial blood culture within 24 hours - ICU only					
Caucasian	78,108	82,387	94.8	ref.	ref.
African-American	12,551	13,078	96.0	1.30 (1.19-1.43)	<0.001
Hispanic	7,338	7,863	93.3	0.77 (0.70-0.84)	<0.001
Asian/Pacific Islander	2,199	2,271	96.8	1.67 (1.32-2.12)	<0.001
Native American	776	846	91.7	0.61 (0.47-0.78)	<0.001
PN3b: Initial blood culture before first antibiotic dose - ED only					
Caucasian	361,802	380,083	95.2	ref.	ref.
African-American	56,541	60,416	93.6	0.74 (0.71-0.76)	<0.001
Hispanic	34,169	37,132	92.0	0.58 (0.56-0.61)	<0.001
Asian/Pacific Islander	9,388	9,889	94.9	0.95 (0.86-1.04)	0.240
Native American	3,058	3,402	89.9	0.45 (0.40-0.50)	<0.001
PN4: Smoking cessation counseling					
Caucasian	153,759	158,876	96.8	ref.	ref.
African-American	30,859	31,710	97.3	1.21 (1.12-1.30)	<0.001
Hispanic	9,885	10,230	96.6	0.95 (0.85-1.07)	0.400
Asian/Pacific Islander	1,689	1,759	96.0	0.80 (0.63-1.02)	0.074
Native American	1,722	1,940	88.8	0.26 (0.23-0.30)	<0.001
PN5c: First antibiotic dose within 6 hours					
Caucasian	402,180	421,893	95.3	ref.	ref.
African-American	60,989	66,036	92.4	0.59 (0.57-0.61)	<0.001
Hispanic	35,145	39,094	89.9	0.44 (0.42-0.45)	<0.001
Asian/Pacific Islander	9,399	9,865	95.3	0.99 (0.90-1.09)	0.812
Native American	3,430	3,752	91.4	0.52 (0.47-0.59)	<0.001

PN6: Antibioti selection consistent with guidelines					
Caucasian	254,116	279,291	91.0	ref.	ref.
African-American	35,023	38,201	91.7	1.09 (1.05-1.13)	<0.001
Hispanic	25,350	28,361	89.4	0.83 (0.80-0.87)	<0.001
Asian/Pacific Islander	6,093	6,689	91.1	1.01 (0.93-1.10)	0.770
Native American	2,570	2,922	88.0	0.72 (0.65-0.81)	<0.001
PN7: Influenza vaccination given or screened for					
Caucasian	266,920	293,208	91.0	ref.	ref.
African-American	31,910	37,007	86.2	0.62 (0.60-0.64)	<0.001
Hispanic	18,854	22,505	83.8	0.51 (0.49-0.53)	<0.001
Asian/Pacific Islander	5,702	6,539	87.2	0.67 (0.62-0.72)	<0.001
Native American	1,927	2,405	80.1	0.40 (0.36-0.44)	<0.001
SCIP1: Antibiotic within 1 hour before incision or 2 hours for vancomycin or quinolone					
Caucasian	827,536	860,067	96.2	ref.	ref.
African-American	95,484	99,527	95.9	0.93 (0.90-0.96)	<0.001
Hispanic	60,439	64,806	93.3	0.54 (0.53-0.56)	<0.001
Asian/Pacific Islander	14,743	15,282	96.5	1.08 (0.99-1.17)	0.101
Native American	4,037	4,325	93.3	0.55 (0.49-0.62)	<0.001
SCIP2: Prophylactic antibiotic consistent with guidelines					
Caucasian	848,411	868,974	97.6	ref.	ref.
African-American	97,576	100,464	97.1	0.82 (0.79-0.85)	<0.001
Hispanic	62,778	64,991	96.6	0.69 (0.66-0.72)	<0.001
Asian/Pacific Islander	15,171	15,547	97.6	0.98 (0.88-1.08)	0.672
Native American	4,230	4,360	97.0	0.79 (0.66-0.94)	0.008
SCIP3: Prophylactic ABX discontinued within 24 h. of surgery end time or 48 h. for cardiac surgery					
Caucasian	766,551	819,715	93.5	ref.	ref.
African-American	87,315	94,468	92.4	0.85 (0.83-0.87)	<0.001
Hispanic	54,461	61,420	88.7	0.54 (0.53-0.56)	<0.001
Asian/Pacific Islander	13,218	14,358	92.1	0.80 (0.76-0.85)	<0.001
Native American	3,812	4,103	92.9	0.91 (0.81-1.02)	0.116
SCIP4: Controlled 6 AM postoperative serum glucose - cardiac surgery					
Caucasian	134,822	144,908	93.0	ref.	ref.
African-American	10,742	11,722	91.6	0.82 (0.77-0.88)	<0.001
Hispanic	11,031	12,520	88.1	0.55 (0.52-0.59)	<0.001

Asian/Pacific Islander	3,437	3,773	91.1	0.77 (0.68-0.86)	<0.001
Native American	706	766	92.2	0.88 (0.68-1.15)	0.344
SCIP6: appropriate hair removal					
Caucasian	1,222,603	1,232,305	99.2	ref.	ref.
African-American	149,984	151,395	99.1	0.84 (0.80-0.89)	<0.001
Hispanic	95,326	97,273	98.0	0.39 (0.37-0.41)	<0.001
Asian/Pacific Islander	23,368	23,575	99.1	0.90 (0.78-1.03)	0.119
Native American	6,390	6,543	97.7	0.33 (0.28-0.39)	<0.001
SCIPCARD2: Perioperative period beta blocker					
Caucasian	327,860	359,462	91.2	ref.	ref.
African-American	34,505	38,004	90.8	0.95 (0.92-0.99)	0.007
Hispanic	17,805	20,128	88.5	0.74 (0.71-0.77)	<0.001
Asian/Pacific Islander	5,128	5,770	88.9	0.77 (0.71-0.84)	<0.001
Native American	1,312	1,493	87.9	0.70 (0.60-0.82)	<0.001
SCIPVTE1: Recommended VTE prophylaxis ordered during admission					
Caucasian	343,547	367,129	93.6	ref.	ref.
African-American	49,075	52,658	93.2	0.94 (0.91-0.98)	<0.001
Hispanic	27,199	30,224	90.0	0.62 (0.59-0.64)	<0.001
Asian/Pacific Islander	7,406	8,195	90.4	0.64 (0.60-0.69)	<0.001
Native American	1,999	2,208	90.5	0.66 (0.57-0.76)	<0.001
SCIPVTE2: Received VTE prophylaxis within 24 hours prior to or after surgery					
Caucasian	334,443	365,471	91.5	ref.	ref.
African-American	47,804	52,220	91.5	1.00 (0.97-1.04)	0.798
Hispanic	26,376	29,811	88.5	0.71 (0.69-0.74)	<0.001
Asian/Pacific Islander	7,241	8,126	89.1	0.76 (0.71-0.81)	<0.001
Native American	1,942	2,183	89.0	0.75 (0.65-0.86)	<0.001

Disparities analysis for 26 performance measures using 2009 Clinical Data Warehouse

By Gender (less than 0.1% of cases were excluded due to missing data on gender)

Measures and gender	Num	Den	Percent	Unadjusted OR (95%CI)	p-value
AMI1: Aspirin at arrival					
Female	132,222	135,450	97.6	ref.	ref.
Male	197,136	199,829	98.7	1.79 (1.70-1.88)	<0.001
AMI2: Aspirin at discharge					
Female	150,930	154,577	97.6	ref.	ref.
Male	247,653	251,152	98.6	1.71 (1.63-1.79)	<0.001
AMI3: ACEI or ARB for LVSD					
Female	26,127	27,376	95.4	ref.	ref.
Male	47,156	49,502	95.3	0.96 (0.90-1.03)	0.269
AMI4: Smoking cessation counseling					
Female	42,885	43,241	99.2	ref.	ref.
Male	93,180	93,741	99.4	1.38 (1.21-1.58)	<0.001
AMI5: Beta-blocker at discharge					
Female	149,171	152,804	97.6	ref.	ref.
Male	240,965	244,715	98.5	1.56 (1.49-1.64)	<0.001
AMI7a: Fibrinolytic within 30 minutes					
Female	254	523	48.6	ref.	ref.
Male	730	1,347	54.2	1.25 (1.02-1.53)	0.029
AMI8a: PCI within 90 minutes					
Female	12,629	15,029	84.0	ref.	ref.
Male	35,545	40,118	88.6	1.48 (1.40-1.56)	<0.001
HF1: Discharge instructions					
Female	264,674	308,679	85.7	ref.	ref.
Male	286,692	330,544	86.7	1.09 (1.07-1.10)	<0.001
HF2: Evaluation of LV function					
Female	391,232	403,675	96.9	ref.	ref.
Male	378,142	387,472	97.6	1.29 (1.25-1.32)	<0.001
HF3: ACEI or ARB for LVSD					
Female	92,111	98,257	93.7	ref.	ref.
Male	148,513	158,409	93.8	1.00 (0.97-1.03)	0.936
HF4: Smoking cessation counseling					

Female	51,445	52,630	97.7	ref.	ref.
Male	80,801	82,294	98.2	1.25 (1.15-1.35)	<0.001
PN2: Pnemococal vaccination given or screened for					
Female	247,221	269,382	91.8	ref.	ref.
Male	212,145	231,563	91.6	0.98 (0.96-1.00)	0.042
PN3a: Initial blood culture within 24 hours - ICU only					
Female	50,079	52,932	94.6	ref.	ref.
Male	53,544	56,305	95.1	1.10 (1.05-1.17)	<0.001
PN3b: Initial blood culture before first antibiotic dose - ED only					
Female	246,104	260,181	94.6	ref.	ref.
Male	230,916	243,503	94.8	1.05 (1.02-1.08)	<0.001
PN4: Smoking cessation counseling					
Female	103,237	106,615	96.8	ref.	ref.
Male	99,296	102,754	96.6	0.94 (0.90-0.99)	0.011
PN5c: First antibiotic dose within 6 hours					
Female	272,016	288,698	94.2	ref.	ref.
Male	252,643	266,222	94.9	1.14 (1.11-1.17)	<0.001
PN6: Antibioti selection consistent with guidelines					
Female	175,954	193,373	91.0	ref.	ref.
Male	156,410	172,235	90.8	0.98 (0.96-1.00)	0.059
PN7: Influenza vaccination given or screened for					
Female	180,348	200,180	90.1	ref.	ref.
Male	153,242	170,972	89.6	0.95 (0.93-0.97)	<0.001
SCIP1: Antibiotic within 1 hour before incision or 2 hours for vancomycin or quinolone					
Female	660,133	687,675	96.0	ref.	ref.
Male	383,816	399,901	96.0	1.00 (0.98-1.02)	0.660
SCIP2: Prophylactic antibiotic consistent with guidelines					
Female	672,428	691,674	97.2	ref.	ref.
Male	398,658	406,588	98.0	1.44 (1.40-1.48)	<0.001
SCIP3: Prophylactic ABX discontinued within 24 h. of surgery end time or 48 h. for cardiac surgery					
Female	613,378	657,129	93.3	ref.	ref.
Male	351,165	378,744	92.7	0.91 (0.89-0.92)	<0.001
SCIP4: Controlled 6 AM postoperative serum glucose - cardiac surgery					
Female	52,328	56,457	92.7	ref.	ref.
Male	114,589	124,004	92.4	0.96 (0.92-1.00)	0.038

SCIP6: appropriate hair removal					
Female	944,375	951,265	99.3	ref.	ref.
Male	613,124	620,263	98.8	0.63 (0.61-0.65)	<0.001
SCIPCARD2: Perioperative period beta blocker					
Female	210,810	232,468	90.7	ref.	ref.
Male	189,354	207,438	91.3	1.08 (1.05-1.10)	<0.001
SCIPVTE1: Recommended VTE prophylaxis ordered during admission					
Female	266,908	284,212	93.9	ref.	ref.
Male	177,139	192,153	92.2	0.76 (0.75-0.78)	<0.001
SCIPVTE2: Received VTE prophylaxis within 24 hours prior to or after surgery					
Female	260,379	282,821	92.1	ref.	ref.
Male	171,935	190,847	90.1	0.78 (0.77-0.80)	<0.001

Disparities analysis for 26 performance measures using 2009 Clinical Data Warehouse

By Age-Group

Measures and age group	Num	Den	Percent	Unadjusted OR (95%CI)	p-value
AMI1: Aspirin at arrival					
under 65 years	141,150	142,677	98.9	ref.	ref.
65 to 74 years	69,462	70,636	98.3	0.64 (0.59-0.69)	<0.001
75 to 84 years	68,661	70,270	97.7	0.46 (0.43-0.50)	<0.001
85 or older	50,094	51,705	96.9	0.34 (0.31-0.36)	<0.001
AMI2: Aspirin at discharge					
under 65 years	188,910	191,432	98.7	ref.	ref.
65 to 74 years	86,865	88,378	98.3	0.77 (0.72-0.82)	<0.001
75 to 84 years	76,528	78,185	97.9	0.62 (0.58-0.66)	<0.001
85 or older	46,290	47,744	97.0	0.42 (0.40-0.45)	<0.001
AMI3: ACEI or ARB for LVSD					
under 65 years	30,729	31,955	96.2	ref.	ref.
65 to 74 years	16,782	17,608	95.3	0.81 (0.74-0.89)	<0.001
75 to 84 years	16,144	17,053	94.7	0.71 (0.65-0.77)	<0.001
85 or older	9,631	10,265	93.8	0.61 (0.55-0.67)	<0.001
AMI4: Smoking cessation counseling					
under 65 years	101,819	102,305	99.5	ref.	ref.
65 to 74 years	23,569	23,794	99.1	0.50 (0.43-0.59)	<0.001
75 to 84 years	8,919	9,074	98.3	0.27 (0.23-0.33)	<0.001
85 or older	1,762	1,813	97.2	0.16 (0.12-0.22)	<0.001
AMI5: Beta-blocker at discharge					
under 65 years	181,451	184,294	98.5	ref.	ref.
65 to 74 years	85,291	86,894	98.2	0.83 (0.78-0.89)	<0.001
75 to 84 years	76,749	78,361	97.9	0.75 (0.70-0.79)	<0.001
85 or older	46,654	47,979	97.2	0.55 (0.52-0.59)	<0.001
AMI7a: Fibrinolytic within 30 minutes					
under 65 years	648	1,212	53.5	ref.	ref.
65 to 74 years	194	358	54.2	1.03 (0.81-1.30)	0.810
75 to 84 years	93	202	46.0	0.74 (0.55-1.00)	0.051
85 or older	49	98	50.0	0.87 (0.58-1.31)	0.508
AMI8a: PCI within 90 minutes					
under 65 years	31,621	35,686	88.6	ref.	ref.
65 to 74 years	9,116	10,546	86.4	0.82 (0.77-0.87)	<0.001
75 to 84 years	5,398	6,466	83.5	0.65 (0.60-0.70)	<0.001
85 or older	2,040	2,451	83.2	0.64 (0.57-0.71)	<0.001
HF1: Discharge instructions					
under 65 years	178,658	207,594	86.1	ref.	ref.
65 to 74 years	123,528	143,712	86.0	0.99 (0.97-1.01)	0.373
75 to 84 years	151,451	175,244	86.4	1.03 (1.01-1.05)	0.001
85 or older	97,755	112,707	86.7	1.06 (1.04-1.08)	<0.001
HF2: Evaluation of LV function					

under 65 years	216,443	221,533	97.7	ref.	ref.
65 to 74 years	162,507	166,888	97.4	0.87 (0.84-0.91)	<0.001
75 to 84 years	220,926	227,028	97.3	0.85 (0.82-0.88)	<0.001
85 or older	169,548	175,750	96.5	0.64 (0.62-0.67)	<0.001
HF3: ACEI or ARB for LVSD					
under 65 years	95,238	99,651	95.6	ref.	ref.
65 to 74 years	52,803	56,622	93.3	0.64 (0.61-0.67)	<0.001
75 to 84 years	58,917	63,666	92.5	0.57 (0.55-0.60)	<0.001
85 or older	33,681	36,742	91.7	0.51 (0.49-0.53)	<0.001
HF4: Smoking cessation counseling					
under 65 years	78,879	80,061	98.5	ref.	ref.
65 to 74 years	31,278	32,007	97.7	0.64 (0.59-0.71)	<0.001
75 to 84 years	17,689	18,260	96.9	0.46 (0.42-0.51)	<0.001
85 or older	4,402	4,599	95.7	0.33 (0.29-0.39)	<0.001
PN2: Pnemococal vaccination given or screened for					
under 65 years	--	--	--	--	--
65 to 74 years	154,049	168,347	91.5	ref.	ref.
75 to 84 years	180,579	195,787	92.2	1.10 (1.08-1.13)	<0.001
85 or older	124,772	136,849	91.2	0.96 (0.93-0.98)	0.001
PN3a: Initial blood culture within 24 hours - ICU only					
under 65 years	43,154	45,370	95.1	ref.	ref.
65 to 74 years	23,165	24,488	94.6	0.90 (0.84-0.96)	0.003
75 to 84 years	23,777	25,070	94.8	0.94 (0.88-1.01)	0.111
85 or older	13,530	14,312	94.5	0.89 (0.82-0.97)	0.006
PN3b: Initial blood culture before first antibiotic dose - ED only					
under 65 years	180,506	192,602	93.7	ref.	ref.
65 to 74 years	92,223	97,052	95.0	1.28 (1.24-1.32)	<0.001
75 to 84 years	116,268	121,901	95.4	1.38 (1.34-1.43)	<0.001
85 or older	88,051	92,159	95.5	1.44 (1.39-1.49)	<0.001
PN4: Smoking cessation counseling					
under 65 years	138,481	142,258	97.3	ref.	ref.
65 to 74 years	39,066	40,713	96.0	0.65 (0.61-0.69)	<0.001
75 to 84 years	20,330	21,389	95.0	0.52 (0.49-0.56)	<0.001
85 or older	4,673	5,027	93.0	0.36 (0.32-0.40)	<0.001
PN5c: First antibiotic dose within 6 hours					
under 65 years	196,974	210,170	93.7	ref.	ref.
65 to 74 years	103,529	109,243	94.8	1.21 (1.18-1.25)	<0.001
75 to 84 years	128,404	134,912	95.2	1.32 (1.28-1.36)	<0.001
85 or older	95,798	100,641	95.2	1.33 (1.28-1.37)	<0.001
PN6: Antibioti selection consistent with guidelines					
under 65 years	145,078	158,844	91.3	ref.	ref.
65 to 74 years	60,719	67,599	89.8	0.84 (0.81-0.86)	<0.001
75 to 84 years	74,042	81,558	90.8	0.93 (0.91-0.96)	<0.001
85 or older	52,553	57,638	91.2	0.98 (0.95-1.01)	0.255
PN7: Influenza vaccination given or screened for					
under 65 years	92,150	105,920	87.0	ref.	ref.
65 to 74 years	80,824	89,267	90.5	1.43 (1.39-1.47)	<0.001

75 to 84 years	94,637	103,395	91.5	1.61 (1.57-1.66)	<0.001
85 or older	65,988	72,586	90.9	1.49 (1.45-1.54)	<0.001
SCIP1: Antibiotic within 1 hour before incision or 2 hours for vancomycin or quinolone					
under 65 years	543,747	565,392	96.2	ref.	ref.
65 to 74 years	264,596	275,189	96.2	0.99 (0.97-1.02)	0.637
75 to 84 years	185,731	194,018	95.7	0.89 (0.87-0.92)	<0.001
85 or older	49,930	53,035	94.1	0.64 (0.62-0.67)	<0.001
SCIP2: Prophylactic antibiotic consistent with guidelines					
under 65 years	554,132	569,841	97.2	ref.	ref.
65 to 74 years	272,719	278,267	98.0	1.39 (1.35-1.44)	<0.001
75 to 84 years	192,365	196,738	97.8	1.25 (1.21-1.29)	<0.001
85 or older	51,927	53,474	97.1	0.95 (0.90-1.00)	0.066
SCIP3: Prophylactic ABX discontinued within 24 h. of surgery end time or 48 h. for cardiac surgery					
under 65 years	509,115	543,621	93.7	ref.	ref.
65 to 74 years	243,668	262,144	93.0	0.89 (0.88-0.91)	<0.001
75 to 84 years	168,265	182,048	92.4	0.83 (0.81-0.84)	<0.001
85 or older	43,548	48,116	90.5	0.65 (0.63-0.67)	<0.001
SCIP4: Controlled 6 AM postoperative serum glucose - cardiac surgery					
under 65 years	72,979	79,327	92.0	ref.	ref.
65 to 74 years	52,359	56,792	92.2	1.03 (0.99-1.07)	0.185
75 to 84 years	36,879	39,404	93.6	1.27 (1.21-1.33)	<0.001
85 or older	4,704	4,942	95.2	1.72 (1.51-1.96)	<0.001
SCIP6: appropriate hair removal					
under 65 years	810,303	818,220	99.0	ref.	ref.
65 to 74 years	380,445	383,750	99.1	1.12 (1.08-1.17)	<0.001
75 to 84 years	279,516	281,752	99.2	1.22 (1.17-1.28)	<0.001
85 or older	87,319	87,891	99.3	1.49 (1.37-1.62)	<0.001
SCIPCARD2: Perioperative period beta blocker					
under 65 years	143,202	157,742	90.8	ref.	ref.
65 to 74 years	125,183	136,865	91.5	1.09 (1.06-1.12)	<0.001
75 to 84 years	101,842	111,827	91.1	1.04 (1.01-1.06)	0.010
85 or older	29,959	33,499	89.4	0.86 (0.83-0.89)	<0.001
SCIPVTE1: Recommended VTE prophylaxis ordered during admission					
under 65 years	204,866	222,992	91.9	ref.	ref.
65 to 74 years	111,168	117,886	94.3	1.46 (1.42-1.51)	<0.001
75 to 84 years	92,459	97,769	94.6	1.54 (1.49-1.59)	<0.001
85 or older	35,581	37,747	94.3	1.45 (1.39-1.52)	<0.001
SCIPVTE2: Received VTE prophylaxis within 24 hours prior to or after surgery					
under 65 years	199,284	221,436	90.0	ref.	ref.
65 to 74 years	108,467	117,367	92.4	1.35 (1.32-1.39)	<0.001
75 to 84 years	90,083	97,336	92.5	1.38 (1.34-1.42)	<0.001
85 or older	34,507	37,557	91.9	1.26 (1.21-1.31)	<0.001

Disparities analysis for 26 performance measures using 2009 Clinical Data Warehouse

By Census Region

Measures and census region	Num	Den	Percent	Unadjusted OR (95%CI)	p-value
AMI1: Aspirin at arrival					
South	126,608	129,145	98.0	ref.	ref.
Midwest	75,072	76,242	98.5	1.29 (1.20-1.38)	<0.001
Northeast	62,335	63,302	98.5	1.29 (1.20-1.39)	<0.001
West	61,600	62,432	98.7	1.48 (1.37-1.61)	<0.001
US Territories	3,752	4,167	90.0	0.18 (0.16-0.20)	<0.001
AMI2: Aspirin at discharge					
South	154,361	157,475	98.0	ref.	ref.
Midwest	96,702	98,082	98.6	1.41 (1.33-1.51)	<0.001
Northeast	72,945	73,951	98.6	1.46 (1.36-1.57)	<0.001
West	71,443	72,548	98.5	1.30 (1.22-1.40)	<0.001
US Territories	3,142	3,683	85.3	0.12 (0.11-0.13)	<0.001
AMI3: ACEI or ARB for LVSD					
South	30,162	31,629	95.4	ref.	ref.
Midwest	17,573	18,369	95.7	1.07 (0.98-1.17)	0.114
Northeast	13,443	14,124	95.2	0.96 (0.87-1.05)	0.392
West	11,325	11,875	95.4	1.00 (0.91-1.11)	0.977
US Territories	783	884	88.6	0.38 (0.30-0.47)	<0.001
AMI4: Smoking cessation counseling					
South	59,052	59,326	99.5	ref.	ref.
Midwest	34,282	34,529	99.3	0.64 (0.54-0.77)	<0.001
Northeast	21,314	21,497	99.1	0.54 (0.45-0.65)	<0.001
West	20,782	20,940	99.2	0.61 (0.50-0.74)	<0.001
US Territories	639	694	92.1	0.05 (0.04-0.07)	<0.001
AMI5: Beta-blocker at discharge					
South	150,602	153,698	98.0	ref.	ref.
Midwest	94,600	96,058	98.5	1.33 (1.25-1.42)	<0.001
Northeast	72,919	73,919	98.6	1.50 (1.40-1.61)	<0.001
West	68,776	70,048	98.2	1.11 (1.04-1.19)	0.002
US Territories	3,248	3,805	85.4	0.12 (0.11-0.13)	<0.001
AMI7a: Fibrinolytic within 30 minutes					
South	386	691	55.9	ref.	ref.
Midwest	71	157	45.2	0.65 (0.46-0.92)	0.016
Northeast	114	221	51.6	0.84 (0.62-1.14)	0.266
West	325	577	56.3	1.02 (0.82-1.27)	0.868
US Territories	88	224	39.3	0.51 (0.38-0.70)	<0.001
AMI8a: PCI within 90 minutes					
South	18,249	21,033	86.8	ref.	ref.
Midwest	12,047	13,530	89.0	1.24 (1.16-1.33)	<0.001
Northeast	7,776	8,945	86.9	1.01 (0.94-1.09)	0.695
West	10,077	11,545	87.3	1.05 (0.98-1.12)	0.182

US Territories	26	96	27.1	0.06 (0.04-0.09)	<0.001
HF1: Discharge instructions					
South	230,620	268,753	85.8	ref.	ref.
Midwest	123,214	142,800	86.3	1.04 (1.02-1.06)	<0.001
Northeast	104,441	118,681	88.0	1.21 (1.19-1.24)	<0.001
West	87,789	101,987	86.1	1.02 (1.00-1.04)	0.037
US Territories	5,328	7,036	75.7	0.52 (0.49-0.55)	<0.001
HF2: Evaluation of LV function					
South	313,881	323,530	97.0	ref.	ref.
Midwest	177,519	182,711	97.2	1.05 (1.02-1.09)	0.004
Northeast	154,546	157,057	98.4	1.89 (1.81-1.98)	<0.001
West	117,503	120,882	97.2	1.07 (1.03-1.11)	0.001
US Territories	5,975	7,019	85.1	0.18 (0.16-0.19)	<0.001
HF3: ACEI or ARB for LVSD					
South	102,341	109,272	93.7	ref.	ref.
Midwest	54,335	57,985	93.7	1.01 (0.97-1.05)	0.700
Northeast	44,314	47,239	93.8	1.03 (0.98-1.07)	0.259
West	37,449	39,660	94.4	1.15 (1.09-1.21)	<0.001
US Territories	2,200	2,525	87.1	0.46 (0.41-0.52)	<0.001
HF4: Smoking cessation counseling					
South	60,779	61,825	98.3	ref.	ref.
Midwest	30,645	31,366	97.7	0.73 (0.66-0.81)	<0.001
Northeast	20,880	21,315	98.0	0.83 (0.74-0.92)	<0.001
West	19,359	19,792	97.8	0.77 (0.69-0.86)	<0.001
US Territories	585	629	93.0	0.23 (0.17-0.31)	<0.001
PN2: Pnemococal vaccination given or screened for					
South	179,960	194,612	92.5	ref.	ref.
Midwest	114,202	124,453	91.8	0.91 (0.88-0.93)	<0.001
Northeast	88,746	95,893	92.5	1.01 (0.98-1.04)	0.466
West	75,360	83,017	90.8	0.80 (0.78-0.82)	<0.001
US Territories	1,132	3,008	37.6	0.05 (0.05-0.05)	<0.001
PN3a: Initial blood culture within 24 hours - ICU only					
South	41,731	43,940	95.0	ref.	ref.
Midwest	24,196	25,563	94.7	0.94 (0.87-1.00)	0.065
Northeast	16,787	17,632	95.2	1.05 (0.97-1.14)	0.225
West	20,703	21,725	95.3	1.07 (0.99-1.16)	0.072
US Territories	209	380	55.0	0.06 (0.05-0.08)	<0.001
PN3b: Initial blood culture before first antibiotic dose - ED only					
South	187,438	197,520	94.9	ref.	ref.
Midwest	110,172	115,477	95.4	1.12 (1.08-1.16)	<0.001
Northeast	93,600	98,873	94.7	0.95 (0.92-0.99)	0.008
West	83,935	89,171	94.1	0.86 (0.83-0.89)	<0.001
US Territories	1,903	2,673	71.2	0.13 (0.12-0.14)	<0.001
PN4: Smoking cessation counseling					
South	91,072	93,604	97.3	ref.	ref.
Midwest	48,987	51,087	95.9	0.65 (0.61-0.69)	<0.001
Northeast	32,410	33,325	97.3	0.98 (0.91-1.06)	0.695

West	29,466	30,694	96.0	0.67 (0.62-0.72)	<0.001
US Territories	615	677	90.8	0.28 (0.21-0.36)	<0.001
PN5c: First antibiotic dose within 6 hours					
South	208,883	220,861	94.6	ref.	ref.
Midwest	128,036	134,173	95.4	1.20 (1.16-1.23)	<0.001
Northeast	96,895	102,680	94.4	0.96 (0.93-0.99)	0.014
West	88,422	93,297	94.8	1.04 (1.01-1.08)	0.024
US Territories	2,469	3,955	62.4	0.10 (0.09-0.10)	<0.001
PN6: Antibioti selection consistent with guidelines					
South	134,164	147,904	90.7	ref.	ref.
Midwest	78,294	86,405	90.6	0.99 (0.96-1.02)	0.434
Northeast	59,152	63,980	92.5	1.25 (1.21-1.30)	<0.001
West	58,295	63,887	91.2	1.07 (1.03-1.10)	<0.001
US Territories	2,487	3,463	71.8	0.26 (0.24-0.28)	<0.001
PN7: Influenza vaccination given or screened for					
South	136,798	151,103	90.5	ref.	ref.
Midwest	82,023	90,887	90.2	0.97 (0.94-0.99)	0.021
Northeast	60,341	66,389	90.9	1.04 (1.01-1.08)	0.008
West	53,674	60,817	88.3	0.79 (0.76-0.81)	<0.001
US Territories	763	1,972	38.7	0.07 (0.06-0.07)	<0.001
SCIP1: Antibiotic within 1 hour before incision or 2 hours for vancomycin or quinolone					
South	394,545	409,842	96.3	ref.	ref.
Midwest	266,459	276,954	96.2	0.98 (0.96-1.01)	0.223
Northeast	193,461	200,392	96.5	1.08 (1.05-1.11)	<0.001
West	183,368	192,227	95.4	0.80 (0.78-0.82)	<0.001
US Territories	6,171	8,219	75.1	0.12 (0.11-0.12)	<0.001
SCIP2: Prophylactic antibiotic consistent with guidelines					
South	403,132	414,194	97.3	ref.	ref.
Midwest	273,589	279,578	97.9	1.25 (1.21-1.29)	<0.001
Northeast	197,917	202,575	97.7	1.17 (1.13-1.21)	<0.001
West	189,102	194,077	97.4	1.04 (1.01-1.08)	0.015
US Territories	7,403	7,896	93.8	0.41 (0.38-0.45)	<0.001
SCIP3: Prophylactic ABX discontinued within 24 h. of surgery end time or 48 h. for cardiac surgery					
South	361,060	388,513	92.9	ref.	ref.
Midwest	248,442	264,681	93.9	1.16 (1.14-1.19)	<0.001
Northeast	180,683	191,769	94.2	1.24 (1.21-1.27)	<0.001
West	169,118	183,133	92.3	0.92 (0.90-0.94)	<0.001
US Territories	5,293	7,833	67.6	0.16 (0.15-0.17)	<0.001
SCIP4: Controlled 6 AM postoperative serum glucose - cardiac surgery					
South	66,018	71,829	91.9	ref.	ref.
Midwest	40,808	44,136	92.5	1.08 (1.03-1.13)	<0.001
Northeast	29,288	30,993	94.5	1.51 (1.43-1.60)	<0.001
West	29,005	31,251	92.8	1.14 (1.08-1.20)	<0.001
US Territories	1,802	2,256	79.9	0.35 (0.31-0.39)	<0.001
SCIP6: appropriate hair removal					
South	587,629	592,145	99.2	ref.	ref.
Midwest	385,646	388,859	99.2	0.92 (0.88-0.97)	<0.001

Northeast	297,284	299,532	99.2	1.02 (0.97-1.07)	0.532
West	279,180	282,116	99.0	0.73 (0.70-0.77)	<0.001
US Territories	7,844	8,961	87.5	0.05 (0.05-0.06)	<0.001
SCIPCARD2: Perioperative period beta blocker					
South	147,784	162,051	91.2	ref.	ref.
Midwest	106,546	117,054	91.0	0.98 (0.95-1.01)	0.113
Northeast	85,381	92,184	92.6	1.21 (1.18-1.25)	<0.001
West	59,482	67,099	88.6	0.75 (0.73-0.78)	<0.001
US Territories	993	1,545	64.3	0.17 (0.16-0.19)	<0.001
SCIPVTE1: Recommended VTE prophylaxis ordered during admission					
South	169,988	182,774	93.0	ref.	ref.
Midwest	99,327	106,377	93.4	1.06 (1.03-1.09)	<0.001
Northeast	96,401	100,803	95.6	1.65 (1.59-1.71)	<0.001
West	76,837	84,597	90.8	0.74 (0.72-0.77)	<0.001
US Territories	1,521	1,843	82.5	0.36 (0.31-0.40)	<0.001
SCIPVTE2: Received VTE prophylaxis within 24 hours prior to or after surgery					
South	164,922	181,622	90.8	ref.	ref.
Midwest	96,639	105,893	91.3	1.06 (1.03-1.09)	<0.001
Northeast	94,639	100,532	94.1	1.63 (1.58-1.68)	<0.001
West	74,698	83,964	89.0	0.82 (0.79-0.84)	<0.001
US Territories	1,443	1,685	85.6	0.60 (0.53-0.69)	<0.001

Disparities analysis for 26 performance measures using 2009 Clinical Data Warehouse

By Hospital Rural/Urban Location (less than 0.1 of cases were excluded due to missing data on hospital rural/urban location)

Measures and hospital rural/urban location	Num	Den	Percent	Unadjusted OR (95%CI)	p-value
AMI1: Aspirin at arrival					
Urban	291,143	295,802	98.4	ref.	ref.
Rural	38,206	39,467	96.8	0.48 (0.46-0.52)	<0.001
AMI2: Aspirin at discharge					
Urban	358,943	364,751	98.4	ref.	ref.
Rural	39,639	40,973	96.7	0.48 (0.45-0.51)	<0.001
AMI3: ACEI or ARB for LVSD					
Urban	65,715	68,816	95.5	ref.	ref.
Rural	7,570	8,064	93.9	0.72 (0.66-0.80)	<0.001
AMI4: Smoking cessation counseling					
Urban	122,296	123,021	99.4	ref.	ref.
Rural	13,772	13,964	98.6	0.43 (0.36-0.50)	<0.001
AMI5: Beta-blocker at discharge					
Urban	350,908	356,917	98.3	ref.	ref.
Rural	39,223	40,596	96.6	0.49 (0.46-0.52)	<0.001
AMI7a: Fibrinolytic within 30 minutes					
Urban	743	1,378	53.9	ref.	ref.
Rural	241	491	49.1	0.82 (0.67-1.01)	0.066
AMI8a: PCI within 90 minutes					
Urban	44,330	50,581	87.6	ref.	ref.
Rural	3,845	4,568	84.2	0.75 (0.69-0.82)	<0.001
HF1: Discharge instructions					
Urban	462,198	530,366	87.1	ref.	ref.
Rural	89,161	108,850	81.9	0.67 (0.66-0.68)	<0.001
HF2: Evaluation of LV function					
Urban	640,201	651,626	98.2	ref.	ref.
Rural	129,180	139,524	92.6	0.22 (0.22-0.23)	<0.001
HF3: ACEI or ARB for LVSD					
Urban	204,835	216,883	94.4	ref.	ref.
Rural	35,794	39,788	90.0	0.53 (0.51-0.55)	<0.001

HF4: Smoking cessation counseling					
Urban	109,946	111,420	98.7	ref.	ref.
Rural	22,294	23,495	94.9	0.25 (0.23-0.27)	<0.001
PN2: Pnemococal vaccination given or screened for					
Urban	343,445	372,029	92.3	ref.	ref.
Rural	115,907	128,899	89.9	0.74 (0.73-0.76)	<0.001
PN3a: Initial blood culture within 24 hours - ICU only					
Urban	82,609	86,195	95.8	ref.	ref.
Rural	21,017	23,045	91.2	0.45 (0.43-0.48)	<0.001
PN3b: Initial blood culture before first antibiotic dose - ED only					
Urban	370,713	390,752	94.9	ref.	ref.
Rural	106,285	112,910	94.1	0.87 (0.84-0.89)	<0.001
PN4: Smoking cessation counseling					
Urban	153,343	157,007	97.7	ref.	ref.
Rural	49,195	52,364	93.9	0.37 (0.35-0.39)	<0.001
PN5c: First antibiotic dose within 6 hours					
Urban	391,112	414,535	94.3	ref.	ref.
Rural	133,539	140,375	95.1	1.17 (1.14-1.20)	<0.001
PN6: Antibioti selection consistent with guidelines					
Urban	244,813	267,228	91.6	ref.	ref.
Rural	87,548	98,376	89.0	0.74 (0.72-0.76)	<0.001
PN7: Influenza vaccination given or screened for					
Urban	250,927	277,437	90.4	ref.	ref.
Rural	82,639	93,694	88.2	0.79 (0.77-0.81)	<0.001
SCIP1: Antibiotic within 1 hour before incision or 2 hours for vancomycin or quinolone					
Urban	873,006	907,766	96.2	ref.	ref.
Rural	170,887	179,749	95.1	0.77 (0.75-0.79)	<0.001
SCIP2: Prophylactic antibiotic consistent with guidelines					
Urban	895,997	917,696	97.6	ref.	ref.
Rural	175,035	180,505	97.0	0.77 (0.75-0.80)	<0.001
SCIP3: Prophylactic ABX discontinued within 24 h. of surgery end time or 48 h. for cardiac surgery					
Urban	805,137	863,438	93.2	ref.	ref.
Rural	159,351	172,373	92.4	0.89 (0.87-0.90)	<0.001
SCIP4: Controlled 6 AM postoperative serum glucose - cardiac surgery					
Urban	155,675	168,209	92.5	ref.	ref.
Rural	11,246	12,256	91.8	0.90 (0.84-0.96)	0.001

SCIP6: appropriate hair removal					
Urban	1,304,767	1,316,311	99.1	ref.	ref.
Rural	252,581	255,064	99.0	0.90 (0.86-0.94)	<0.001
SCIPCARD2: Perioperative period beta blocker					
Urban	341,816	374,870	91.2	ref.	ref.
Rural	58,327	65,020	89.7	0.84 (0.82-0.87)	<0.001
SCIPVTE1: Recommended VTE prophylaxis ordered during admission					
Urban	368,551	393,488	93.7	ref.	ref.
Rural	75,501	82,880	91.1	0.69 (0.67-0.71)	<0.001
SCIPVTE2: Received VTE prophylaxis within 24 hours prior to or after surgery					
Urban	358,864	391,436	91.7	ref.	ref.
Rural	73,455	82,235	89.3	0.76 (0.74-0.78)	<0.001

NQF-ENDORSED VOLUNTARY CONSENSUS STANDARDS FOR HOSPITAL CARE

Measure Information Form

Measure Set: Surgical Care Improvement Project (SCIP)

Set Measure ID#: SCIP-Card-2

Performance Measure Name: Surgery Patients on Beta-Blocker Therapy Prior to Arrival Who Received a Beta-Blocker During the Perioperative Period

Description: Surgery patients on beta-blocker therapy prior to arrival who received a beta-blocker during the perioperative period. The perioperative period for the SCIP Cardiac measure~~s~~ is defined as the day prior to surgery through postoperative day two (POD 2) with day of surgery being day zero.

If the postoperative length of stay ≥ 2 days, the measure evaluates the administration of more than one dose of a beta-blocker: the day prior to or the day of surgery **and** on postoperative day one (POD 1) or postoperative day two (POD 2) unless reasons for not administering the medication were documented. If the postoperative length of stay was < 2 days, the measure will evaluate the administration of the beta-blocker on the day prior to or the day of surgery only, unless reasons for not administering the medication were documented.

Rationale: Concerns regarding the discontinuation of beta-blocker therapy in the perioperative period have existed for several decades. Shammash and colleagues studied a total of 140 patients who received beta-blockers preoperatively. Mortality in the 8 patients who had beta-blockers discontinued postoperatively (50%) was significantly greater than in the 132 patients in whom beta-blockers were continued. Hoeks and colleagues studied 711 consecutive peripheral vascular surgery patients. After adjustment for potential confounders and the propensity of its use, continuous beta-blocker use remained significantly associated with a lower 1-year mortality than among nonusers. In contrast, beta-blocker withdrawal was associated with an increased risk of 1-year mortality compared with nonusers. The American College of Cardiology/American Heart Association site continuation of beta-blocker therapy in the perioperative period as a class I indication. They also recommend the use of beta blockers for titrated heart rate control during the intraoperative and postoperative periods to maintain a rate of 60 to 80 bpm in the absence of hypotension.~~, and accumulating evidence suggests that titration to maintain tight heart rate control should be the goal.~~

Type of Measure: Process
Improvement Noted As: An increase in the rate.

Numerator Statement: Surgery patients on beta-blocker therapy prior to arrival who receive a beta-blocker during the perioperative period.
Included Populations: Not applicable
Excluded Populations: None

Data Elements:

- *Beta-Blocker Perioperative*

Denominator Statement: All surgery patients on beta-blocker therapy prior to arrival.

Included Populations:

- *ICD-9-CM Principal Procedure Code* of selected surgeries (as defined in Appendix A, Table 5.10 for ICD-9-CM codes).

Excluded Populations:

- Patients less than 18 years of age
- Patients who have a Length of Stay greater than 120 days
- Patients whose ICD-9-CM principal procedure was performed entirely by *Laparoscope*
- Patients enrolled in clinical trials
- Patients whose ICD-9-CM principal procedure occurred prior to the date of admission
- Patients who expired during the perioperative period
- Pregnant patients taking a beta-blocker prior to arrival
- Patients with a documented *Reason for Not Administering Beta-Blocker-Perioperative*

Data Elements:

- *Admission Date*
- *Anesthesia Start Date*
- *Beta-Blocker Current Medication*
- *Beta-Blocker During Pregnancy*
- *Birthdate*
- *Clinical Trial*
- *Discharge Date*
- *ICD-9-CM Principal Procedure Code*
- *Laparoscope*
- *Perioperative Death*
- *Reason for Not Administering Beta-Blocker-Perioperative*
- *Sex*

Risk Adjustment: No

Data Collection Approach: Retrospective data sources for required data elements include administrative data and medical records.

Data Accuracy: Variation may exist in the assignment of ICD-9-CM codes; therefore, coding practices may require evaluation to ensure consistency.

Measure Analysis Suggestions: This measure seeks to identify surgery patients who were on beta-blocker therapy prior to arrival that received a perioperative beta-blocker. Health care organizations can identify patients who were on beta-blocker therapy for an extended period of time and compare them to those who received beta-blockers perioperatively, or those who did not receive the medication due to other reasons, i.e., complications or early discharges. An additional step would be to correlate the post hospital stay period to the beta-blocker administration during the pre/perioperative period. This will allow health care organization to take appropriate steps to ensure that patients receive the necessary care to reduce the risk of cardiovascular complications in the postoperative period.

Sampling: Yes, please refer to the measure set specific sampling requirements and for additional information see the Population and Sampling Specifications Section.

Data Reported As: Aggregate rate generated from count data reported as a proportion.

Selected References:

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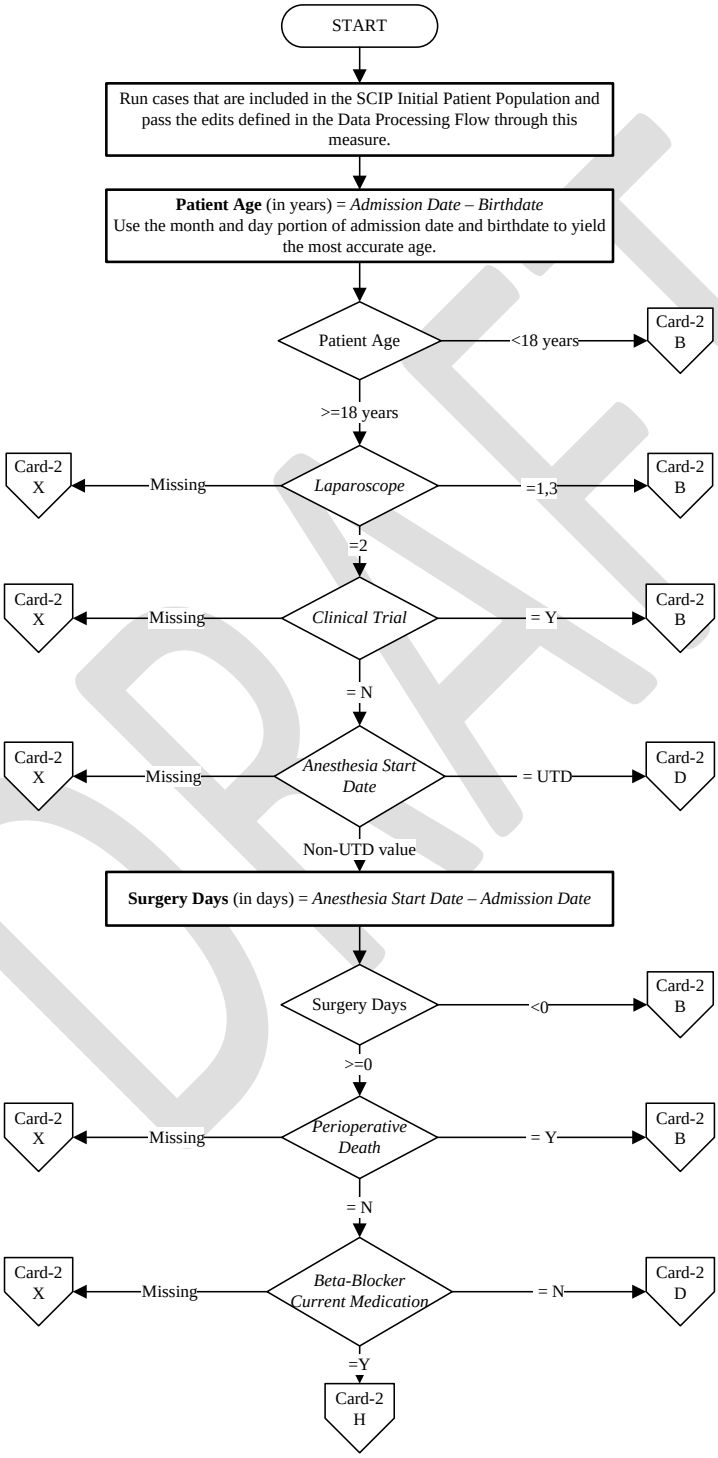
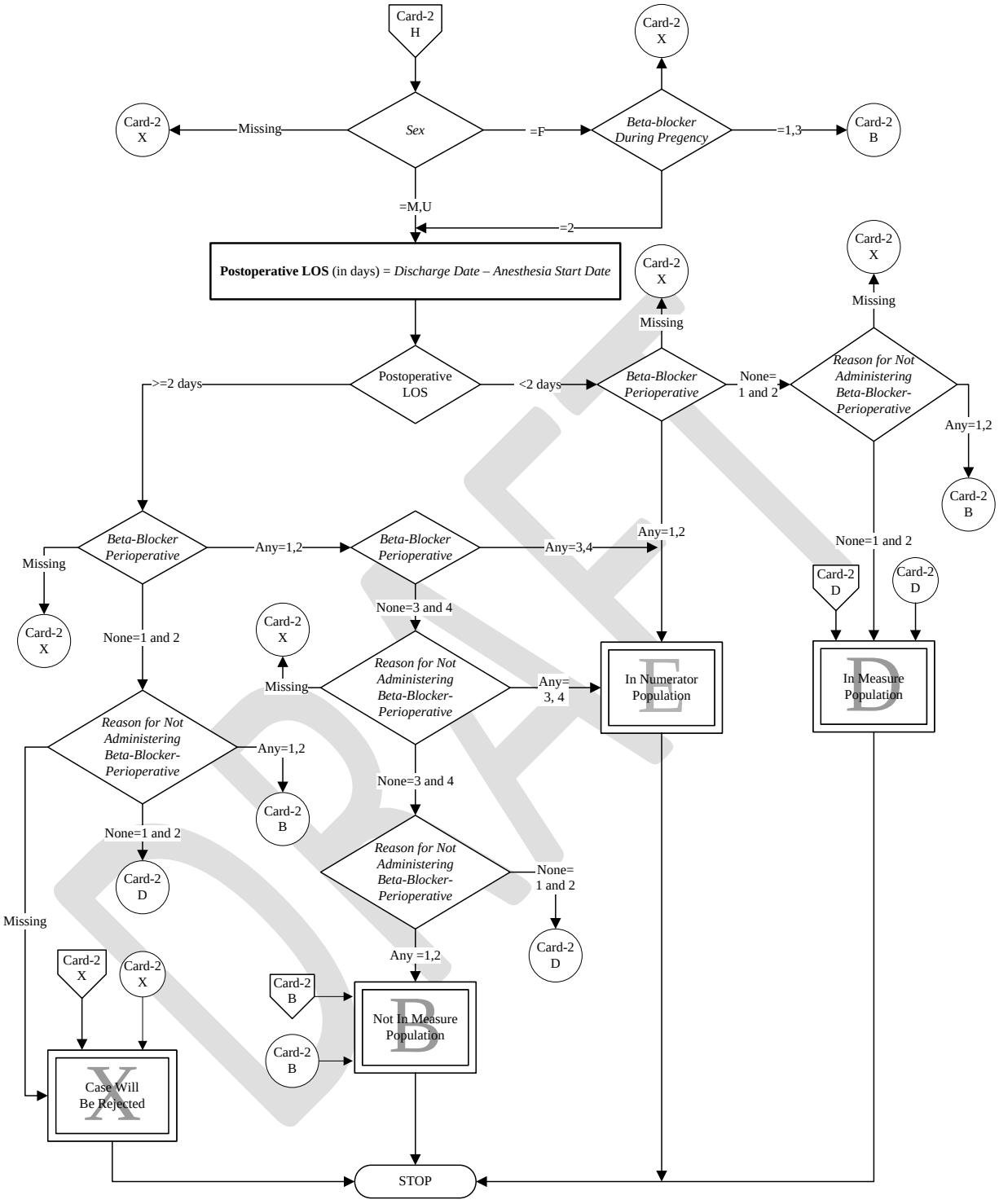
SCIP-Card-2: Surgery Patients on Beta-Blocker Therapy Prior to Arrival Who Received a Beta-Blocker During the Perioperative Period

Numerator: Surgery patients on beta-blocker therapy prior to arrival who receive a beta-blocker during the perioperative period.

Denominator: All surgery patients on beta-blocker therapy prior to arrival.

Variable Key:
Patient Age
Surgery Days
Postoperative LOS




Card-2 H
Card-2 X
Sex
Missing
=F
Beta-blocker During Pregency
=1,3
Card-2 B
=M,U
=2
Postoperative LOS Date – Anesthesia Start Date
Card-2 X
Missing
Card-2 X
Missing
Postoperative LOS
>=2 days
<2 days
Beta-Blocker Perioperative
None= 1 and 2
Reason for Not Administering Beta-Blocker-Perioperative
Any=1,2
Card-2 B
Beta-Blocker Perioperative
Missing
Any=1,2
Beta-Blocker Perioperative
Any=3,4
Any=1,2
None=1 and 2
Card-2 D
Card-2 D
Card-2 X
None=1 and 2
None=3 and 4
Card-2 X
Missing
Reason for Not Administering Beta-Blocker-Perioperative
Any= 3, 4
In Numerator Population
E
In Measure Population
D
Reason for Not Administering Beta-Blocker-Perioperative
Any=1,2
None=3 and 4
Card-2 B
None=1 and 2
Card-2 D
Reason for Not Administering Beta-Blocker-Perioperative
None= 1 and 2
Card-2 D
Missing
Any =1,2
Card-2 X
Card-2 X
Card-2 B
Card-2 B
Not In Measure Population
B
Case Will Be Rejected
X
STOP

Last Updated: Version X.X

Data Element Name: *Beta-Blocker Perioperative*

Collected For: CMS/The Joint Commission: SCIP-Card-2

Definition: Beta-blocker was received during the perioperative period. Beta-blockers are agents which block beta-adrenergic receptors, thereby decreasing the rate and force of heart contractions, and reducing blood pressure. Beta-blockers given perioperatively reduce the risk of cardiovascular complications.

Suggested Data Collection Question: Is there documentation that a beta-blocker was received during the perioperative period?

Format:

Length: 1
Type: Alphanumeric
Occurs: 1-4

Allowable Values: Select all that apply

1. There is documentation that a beta-blocker was received on the day prior to surgery.
2. There is documentation that the beta-blocker was received on the day of surgery.
3. There is documentation that a beta-blocker was received on POD 1 with day of surgery being day zero.
4. There is documentation that a beta-blocker was received on POD 2 with day of surgery being day zero.
5. There is NO documentation that a beta-blocker was received during the perioperative period (the day prior to surgery through POD 2 with day of surgery being day zero) or unable to determine from medical record documentation.

.

Notes for Abstraction:

- The perioperative period for the SCIP cardiac measure is defined as the day prior to surgery through postoperative day two (POD 2) with the day of surgery being day zero.
- There must be documentation that reflects that the beta-blocker was taken on the days specified in each allowable value to select that specific value.
- If the patient received a beta-blocker on the day prior to surgery or the day of surgery **and also** received a beta-blocker on POD 1 or POD 2, select the

appropriate values. Abstractors have the opportunity to select one or more of the allowable values. No value should be recorded more than once.

- To select Value 5, there must be **NO** documentation that a beta-blocker was received during the perioperative period (the day prior to surgery through POD 2 with day of surgery being day zero). If Value 5 is selected, no other selections should be recorded.

Suggested Data Sources:

- Anesthesia record
- Consultation notes
- History and physical
- Medication administration record
- Medication reconciliation record
- Nursing admission assessment
- Operative report
- Preoperative record
- Procedure notes
- Progress notes

Inclusion Guidelines for Abstraction:

Refer to Appendix C, Table 1.3 for a comprehensive list of Beta-Blocker medications.

Exclusion Guidelines for Abstraction:

Eye drops containing beta-blocker (e.g., Cosopt)

Last Updated: Version 3.1

Data Element name: *Beta-Blocker Current Medication*

Collected For: CMS/The Joint Commission: SCIP-Card-2

Definition: Documentation in the medical record that the patient was on daily beta-blocker therapy prior to arrival. Beta-blockers are agents which block beta-adrenergic receptors, thereby decreasing the rate and force of heart contractions, and reducing blood pressure.

Suggested Data Collection Question: Is there documentation that the patient was on daily beta-blocker therapy prior to arrival?

Format:

Length: 1
Type: Alphanumeric
Occurs: 1

Allowable Values:

Y (Yes)	There is documentation that the patient was on daily beta-blocker therapy prior to arrival.
N (No)	There is no documentation that the patient was on daily beta-blocker therapy prior to arrival or unable to determine from medical record documentation.

Notes for Abstraction:

- If there is documentation that the beta-blocker was taken daily at “home” or is a “current” medication, select “Yes.”
- If a beta-blocker is listed as a home medication without designation of how often or when it is taken, select “Yes.”
- If there is documentation that the beta-blocker is a home/current medication and additional documentation indicates the beta-blocker was not taken daily, e.g., the medication reconciliation form lists a beta-blocker as a home/current medication, but documentation in the nurses notes state “patient denies taking beta-blocker every day," select “No.”
- If there is documentation that the beta-blocker is on a schedule other than daily, select “No.”
- If there is documentation that the beta-blocker was given on a “prn” basis for cardiac or non-cardiac reasons, select “No.”
- If there is documentation that the patient is taking a daily beta-blocker and it is specified as taken for non-cardiac reasons (migraine, benign essential tremor, pheochromocytoma), select “No.”

- If a beta-blocker is listed as a daily “home” or “current” medication, but the physician writes an order to hold or discontinue the beta-blocker before surgery because of a contraindication (reasons for not administering), select “No.”
- If the patient stopped taking the beta-blocker prior to arrival but was started on one in the hospital prior to surgery, select “No.” If a beta-blocker is not listed as a daily “home” medication upon admission prior to surgery, but a beta-blocker is added during the hospitalization, select “No.”
- If there is documentation that the patient is not taking the beta-blocker prior to arrival, select “No.” Example: On the patient’s list of medications from home, Atenolol is listed, but the nurse notes that the patient is not taking the medication. Select “No.”

Suggested Data Sources:

- Admitting record
- Anesthesia records
- Consultation notes
- Medication reconciliation form
- History and physical
- Nursing admission assessment
- Preoperative record
- Progress notes

Inclusion Guidelines for Abstraction:

Refer to Appendix C, Table 1.3 for a comprehensive list of Beta-Blocker medications.

Exclusion Guidelines for Abstraction:

- Eye drops containing beta-blocker (e.g., Cosopt)
- “PRN” beta-blocker
- Beta-blockers taken daily for non-cardiac reasons

Last Updated: Version 3.1

Data Element Name: *Reason for Not Administering Beta-Blocker - Perioperative*

Collected For: CMS/The Joint Commission: SCIP-Card-2

Definition: Reasons for not administering a beta-blocker during the perioperative period:Bradycardia (heart rate less than 50 bpm)

- Hypotension (systolic ≤ 100 mm/Hg)
- Concurrent use of intravenous inotropic medications during the perioperative period
- Other reasons documented by physician/APN/PA or pharmacist

Beta-blockers are agents which block beta-adrenergic receptors, thereby decreasing the rate and force of heart contractions, and reducing blood pressure. Over time beta-blockers improve the heart's pumping ability.

Suggested Data Collection Question: Was there physician/ APN/PA or pharmacist documentation of reasons for not administering a beta-blocker during the perioperative period?

Format:

Length: 1
Type: Alphanumeric
Occurs: 1-4

Allowable Values: Select all that apply.

1. There is documentation of a reason for not administering a beta- blocker on the day prior to surgery.
2. There is documentation of a reason for not administering a beta- blocker on the day of surgery.
3. There is documentation of a reason for not administering a beta-blocker on postoperative day 1 (POD 1).
4. There is documentation of a reason for not administering a beta-blocker on postoperative day 2 (POD 2).
5. There is **NO** documentation of a reason for not administering a beta-blocker during the perioperative period (day prior to surgery through POD 2 with day of surgery being day zero) or unable to determine from medical record documentation.

Notes for Abstraction:

- The perioperative period for the SCIP cardiac measure is defined as the day prior to surgery through postoperative day two (POD 2) with the day of surgery being day zero.

- Documentation of reasons for not administering a beta-blocker must be found during the period defined in the allowable value to select that value. If the physician writes a specific reason for not administering beta- blockers during the defined period, select the appropriate value. Example: The physician documents on POD 1: Will hold beta-blockers today since the patient is hemodynamically unstable. Select value 3. The documentation must be made on the day corresponding to the value.
- Preoperative documentation that the patient is NPO or due to NPO status alone is not acceptable to select value 1 or 2. Documentation to hold all meds or to hold all PO meds, alone, is not acceptable to select allowable values 1-4. Documentation to hold the beta-blocker must include the reason it is being held. Example: Hold beta-blocker until cardiac consult.
- Bradycardia must be substantiated by documentation of a heart rate of less than 50 bpm during the perioperative period. Vital signs obtained while patient is on cardiopulmonary bypass machine cannot be used to determine bradycardia.
- Hypotension must be substantiated by documentation of a systolic pressure ≤ 100 mm/Hg during the perioperative period.
- If the physician writes an order to hold the beta-blocker when the patient's vital signs are outside certain parameters and there is documentation that the beta-blocker was held because the vital signs were outside the parameters during one of the periods specified in the allowable values, select the appropriate value. The vital signs to support this documentation are required. Example: The physician writes the order, "Hold atenolol for SBP less than 100" and the nurse documents that the atenolol was held for a blood pressure of 90/50 on POD 2. Select value 4. If it is apparent on the MAR that the medication was held during the perioperative period, a notation on the MAR or in the nursing narrative is acceptable to select the appropriate value.
- If intravenous use of inotropic medication (Appendix C, Table 3.14) is initiated at any time during the time period represented in an allowable value, select the value that represents that timeframe in the perioperative period.
- Abstractors have the opportunity to select one or more of the allowable values. No value should be recorded more than once. If value 5 is selected, no other selections should be recorded.

Suggested Data Sources:

- Anesthesia record
- Consultation notes
- Discharge summary
- ECG reports
- Emergency department record
- History and physical
- Medication administration record
- Nursing notes
- Physician orders

- Progress notes
- Vital signs/graphic record

Inclusion Guidelines for Abstraction:
Refer to Appendix C, Table 1.3 for a comprehensive list of Beta-Blockers.
Refer to Appendix C, Table 3.14 for a comprehensive list of inotropic medications.

Exclusion Guidelines for Abstraction:
None