**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 measures is defined as 24 hours prior to surgical incision through discharge from post-anesthesia care/recovery area.

**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, 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:

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
- Non-UTD Value
- Missing
- Anesthesia Start Date
- Surgery Days (in days) = Anesthesia Start Date – Admission Date
- Patient Age (in years) = Admission Date – Birthdate
- Use the month and day portion of admission date and birthdate to yield the most accurate age.
- Patient Age >= 18 years
- Beta-Blocker Current Medication
- Perioperative Death
- Beta-Blocker BMI

Specifications Manual for National Hospital Inpatient Quality Measures
Discharges 10-01-10 (4Q10) through 03-31-11 (1Q11)
In Numerator Population

Case Will Be Rejected

Stop

In Measure Population

Not In Measure Population

Missing

Beta-Blocker During Pregnancy

= 1, 3

Missing

Beta-Blocker Perioperative

= Y

Missing

Reason for not Administering Beta-Blocker Perioperative

= N

Missing

Sex

= F

Missing

= M, U

Missing

= N

Card-2

H

Card-2

B

Card-2

X

Card-2

X

Card-2

B

Card-2

B

Card-2

B

Specifications Manual for National Hospital Inpatient Quality Measures
Discharges 10-01-10 (4Q10) through 03-31-11 (1Q11)  
SCIP-Card-2-6
SCIP-Cardiac (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 received a beta-blocker during the perioperative period.

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

**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 Preoperative.

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.