NATIONAL QUALITY FORUM

CONFERENCE CALL OF THE SURGERY STEERING COMMITTEE

March 31, 2011

Committee Members Present: Arden Morris, MD, MPH (Co-chair), Ann Arbor Veterans Affairs Medical Center; David Torchiana, MD (Co-chair), Massachusetts General Physicians Organization; James Carpenter, MD, University of Michigan; Curtis Collins, PharmD, MS, University of Michigan Health System; Richard Dutton, MD, MBA, Anesthesia Quality Institute; Paula Graling, DNP, RN, CNS, CNOR, INOVA Fairfax Hospital; John Morton, MD, MPH, Stanford University; Dennis Rivenburgh, MS, ATC, PA-C, St. Anthony's Primary Care; Terry Rogers, MD, The Foundation for Health Care Quality; Nicholas Sears, MD, MedAssets, Inc.; Allan Siperstein, MD, Cleveland Clinic; Renae Stafford, MD, MPH, University of North Carolina-Chapel Hill; Connie Steed, MSN, RN, Greenville Hospital System University Medical Center; Christine Zambricki, CRNA, MS, American Association of Nurse Anesthetists

NQF Staff Presents: Melinda Murphy, RN, MS, Senior Director; Alexis Forman, MPH, Project Manager; Jessica Weber, MPH, Research Analyst

Others Present: Kristie Baus, Centers for Medicare & Medicaid Services; Dale Bratzler, Oklahoma Foundation for Medical Quality; Carla Chronister, Oklahoma Foundation for Medical Quality; Maureen Daily, American Medical Association; Laura Grosso, Yale University; Jane Han, The Society of Thoracic Surgeons; Wanda Johnson, Oklahoma Foundation for Medical Quality; David Shahian, The Society of Thoracic Surgeons; Smitha Vellanky, Yale University

MEETING PROCESS

Dr. Torchiana (co-chair) welcomed the Steering Committee members and thanked them for their participation. The purpose of this follow-up conference call was to address outstanding agenda items from the in-person meeting held on February 28 and March 1, 2011, including:

- review measure developer responses to questions and proposed conditions for those measures conditionally recommended for endorsement in preparation for final recommendation; and
- review any additional questions or issues.

The measure developers and stewards were available on the call to respond to questions from the Committee as needed. An NQF Member and public comment period occurred at the end of the call; no comments were made at that time. The audio recordings from the conference call can be found at the project web page.

MEASURE EVALUATION SUMMARY

The following summary follows up on items from the in-person meeting, including action on conditional recommendations or preliminary review. The Steering Committee evaluated 30 measures and recommended 20 for full endorsement. (See the summary of the February 28-March 1, 2011, meeting for the original evaluation of all measures.) One measure, measure 300, will be evaluated at the May 4-5, 2011, in-person meeting.

As part of the requested follow-up, representatives from The Society of Thoracic Surgeons (STS) outlined their plan for public reporting. They explained that information about certain coronary artery bypass graft (CABG) measures became publicly available in 2010 through *Consumer Reports*. Additionally, one composite is now reported on the STS website, and STS anticipates providing public reporting on additional measures on an annual basis going forward.

Information related to the measures that were discussed on this call are highlighted.

Measures and Evaluations

LEGEND: Y= Yes; N = No; A = Abstain; C = Completely; P = Partially; M = Minimally; N = Not at all

0113 Participation in a systematic datasbase for cardiac surgery

Description: Participation in a clinical database with broad state, regional, or national representation, that provides regular performance reports based on benchmarked data
Numerator Statement: Does the facility participate in a clinical database with broad state, regional, or national representation, that provides regular performance reports based on benchmarked data? (y/n)
Denominator Statement: N/A.
Exclusions: N/A
Adjustment/Stratification: no risk adjustment necessary No stratification is required for this measure.
Level of Analysis: Clinicians: Group; Facility/Agency; Population: National, regional/network, states, counties or cities
Type of Measure: Structure/management
Data Source: Registry data-STS Adult Cardiac Surgery Database, Version 2.73
Measure Steward: Society of Thoracic Surgeons | 633 North Saint Clair Street, Suite 2320 | Chicago | Illinois | 60611

Steering Committee Recommendation for Endorsement: Preliminary Y-11; N-11; A-0
Rationale: Participation in a registry allows benchmarking of data and leads to quality improvement. At present, 95 percent of eligible institutions participate in the registry; this number has remained at a high level over time. Additionally, the data drawn from the registry is used to report quality performance of the institutions for a number of process and outcome measures. Pending Committee's official vote.

If applicable, Conditions/Questions for Developer:

1. De.2 Measure Description: Please provide a more detailed description that addresses requirement for participation in the STS database/registry.
2. 1b.4 Summary of Data on Disparities by Population Group: Please provide data on disparities.
3. 2a.1 Numerator Statement: The statement does not indicate participation in the STS database is required.
4. 2a.3 Numerator Details: Are hospitals required to report 100% of cases? Please define what qualifies as participation in the registry.

Developer Response:

1. Participation in the STS Database is not required. Measure description will read: Participation in a clinical database with broad state, regional, or national representation, that provides regular performance reports based on benchmarked data
2. STS is not sure how to provide disparities data on this measure. If NQF is interested, STS can provide the number of STS Participants who report data on at least one patient in each subgroup (e.g., male, female, white, etc), but this information would look very similar to the data already provided in the measure form
3. Participation in the STS Database is not required. Numerator statement has been modified to read: Whether or not the facility participates in a clinical database with broad state, regional, or national representation that provides regular performance reports based on benchmarked data.
4. Numerator Details: Participation in a clinical database with broad state, regional, or national representation, that provides regular performance reports based on benchmarked data. For example, as described in the measure form, participation in the STS Adult Cardiac Surgery Database is initiated by the surgeons and/or hospital and is defined as quarterly submission of 100% of cases via an approved software system to the Duke Clinical Research Institute. STS's audit cross-checks submitted cases against hospital logs to assure all cases have been captured.

Steering Committee Follow-up:

The Steering Committee agreed that the response from the developer was adequate. The Steering Committee stated the revised description supported the importance of broad database registries, while appropriately avoiding endorsement of a specific vendor. The summary of data disparities was not provided, but it was suggested that STS could provide additional information regarding characteristics of organizations that participate in the registry and whether the organizations that did not participate had

any commonalities. The Steering Committee determined it will further discuss this measure at the May in-person meeting.

If applicable, Questions to the Steering Committee:

1. Importance to Measure and Report: Y-18; N-4
(1a. Impact; 1b. Performance gap; 1c. Outcome or Evidence)
Rationale: Participation in the database for benchmarking and quality improvement has been shown to improve outcomes and enhance patient safety. Although 90 pecent of centers already report, the Committee felt that participation should be closer to 100 percent.

2. Scientific Acceptability of Measure Properties: C-4; P-15; M-1; N-2
(2a. Precise specifications; 2b. Reliability testing; 2c. Validity testing; 2d. Exclusions justified; 2e. Risk adjustment/stratification; 2f. Meaningful differences; 2g. Comparability; 2h. Disparities)
Rationale: Participation in the registry was not defined. The Committee questioned if submitting one case fullfil the criteria requirement or is an organization required to submitt 100 percent of their cases in order to meet the requirement.

3. Usability: C-9; P-13; M-0; N-0
(3a. Meaningful/useful for public reporting and quality improvement; 3b. Harmonized; 3c. Distinctive or additive value to existing measures)
Rationale: The Committee questioned if the measure remains useful with the addition of other indicators that are dependent upon participation.

4. Feasibility: C-17; P-5; M-0; N-0
(4a. Clinical data generated during care process; 4b. Electronic sources; 4c. Exclusions – no additional data source; 4d. Susceptibility to inaccuracies/ unintended consequences identified 4e. Data collection strategy can be implemented)
Rationale: All data elements are available electronically.

0114 Risk-adjusted post-operative renal failure

Description: Percent of patients undergoing isolated CABG (without pre-existing renal failure) who develop post-operative renal failure or require dialysis.
Numerator Statement: Number of patients undergoing isolated CABG (without pre-existing renal failure)who develop post-operative renal failure or require dialysis
Denominator Statement: All patients undergoing isolated CABG.
Exclusions: Patients with documented history of renal failure, baseline serum creatinine of 4.0 or higher; prior renal transplants are not considered pre-operative renal failure unless since transplantation their Cr has been or is 4.0 or higher
Adjustment/Stratification: case-mix adjustment No stratification is required for this measure.
Level of Analysis: Clinicians: Group; Facility/Agency; Population: National, regional/network, states, counties or cities
Type of Measure: Outcome
Data Source: Registry data-STS Adult Cardiac Surgery Database, Version 2.73
Measure Steward: Society of Thoracic Surgeons | 633 North Saint Clair Street, Suite 2320 | Chicago | Illinois | 60611

Steering Committee Recommendation for Endorsement: Preliminary Y-12; N-10; A-0
Rationale: This is an important metric for benchmarking data on patients undergoing isolated CABG who develop post-operative renal failure or require dialysis.Pending Committee's official vote.

If applicable, Conditions/Questions for Developer:

1. 1b.4 Summary of Data on Disparities by Population Group: Please provide data on disparities.
2. 2a.1 Numerator Statement: The statement does not indicate participation in the STS database is required.
3. 2a.2 Numerator Time Window: Provide the time period in which cases are eligible for inclusion in the numerator.

4. 2a.3 Numerator Details: Provide a more detailed definition of renal failure. Consideration should be given to using the RIFLE criteria.
5. 2a.8 Denominator Details: Are re-operated patients included?
6. 4e.2 Costs to Implement the Measure: The cost of data abstraction needs to be clearer.

Developer Response:

1. Data on disparities are provided in the form.
2. Participation in the STS Database is not required
3. During the hospitalization for surgery, which includes the entire postoperative period up to discharge, even if over 30 days.
4. STS will use the RIFLE criteria in its analyses and report of the renal failure measure. The renal failure section of the STS Adult Cardiac Surgery Database, v2.73 Training Manual will be harmonized with the risk, injury and failure categories of the RIFLE criteria. For cases entered in the STS Database from July 2011 onward, renal failure rates reported quarterly to STS Database Participants will reflect the RIFLE criteria definition. Please note that due to the specification upgrade schedule for the STS Adult Cardiac Surgery Database, the RIFLE categories of loss and ESKD cannot be captured at this time. STS intends to make these changes during the next specification upgrade scheduled to take place in 2013.

   New numerator details:

   Definition of renal failure/dialysis requirement – Patients with acute renal failure or worsening renal function resulting in one or both of the following:

   - Increase of serum creatinine to ≥ 4.0 or 3x the most recent preoperative creatinine level
   - New requirement for dialysis postoperatively

5. Yes, re-operated patients are included
6. Approximately one FTE per 500 cases

Steering Committee Follow-up:

The Steering Committee agreed that the response from the developer was adequate, including that related to the fact that long term data from use of the RIFLE criteria will not be available until sometime after implementation.

If applicable, Questions to the Steering Committee:

1. Importance to Measure and Report: Y-22; N-0

(1a. Impact; 1b. Performance gap; 1c. Outcome or Evidence)

Rationale: Patients with post-operative renal failure are a high-risk group.

2. Scientific Acceptability of Measure Properties: C-3; P-18; M-1; N-0

(2a. Precise specifications; 2b. Reliability testing; 2c. Validity testing; 2d. Exclusions justified; 2e. Risk adjustment/stratification; 2f. Meaningful differences; 2g. Comparability; 2h. Disparities)

Rationale: Specifications were incomplete. There is no stated numerator time window. Without a specified time period, this becomes open to interpretation by coders. The Committee suggested the developer used the RIFLE criteria when defining renal failure. There was not an exclusion for emergency CABG cases, which are more susceptible to the development of renal failure due to pateints being sicker to begin with and the need for blood transfusions.

3. Usability: C-12; P-9; M-0; N-1

(3a. Meaningful/useful for public reporting and quality improvement; 3b. Harmonized; 3c. Distinctive or additive value to existing measures)

Rationale: This measure seemed valuable from the quality improvement perspective.

4. Feasibility: C-14; P-8; M-0; N-0

(4a. Clinical data generated during care process; 4b. Electronic sources; 4c. Exclusions – no additional data source; 4d. Susceptibility to inaccuracies/ unintended consequences identified 4e. Data collection strategy can be implemented)

Rationale: The cost of data absraction was not clearly indicated. The developer did not provide the cost of hiring employees to perform data abstraction.

0115 Risk-adjusted surgical re-exploration

Description: Percent of patients aged 18 years and older undergoing isolated CABG who require a return to the operating room for bleeding with or without tamponade, graft occlusion, valve dysfunction, or other cardiac reason.
Numerator Statement: Number of patients undergoing isolated CABG who require return to the operating room for mediastinal bleeding with or without tamponade, graft occlusion, valve dysfunction, or other cardiac reason.
Denominator Statement: All patients undergoing isolated CABG.
Exclusions: N/A
Adjustment/Stratification: case-mix adjustment. No stratification is required for this measure.
Level of Analysis: Clinicians: Group; Facility/Agency; Population: National, regional/network, states, counties or cities
Type of Measure: Outcome
Data Source: Registry data-STS Adult Cardiac Surgery Database, Version 2.73
Measure Steward: Society of Thoracic Surgeons | 633 North Saint Clair Street, Suite 2320 | Chicago | Illinois | 60611

Steering Committee Recommendation for Endorsement: Preliminary Y-22; N-0; A-0
Rationale: This is an important internal metric for cardiothoracic surgery practices to help focus supportive efforts on surgical and anesthesia providers with a high rate of required re-operation.

If applicable, Conditions/Questions for Developer:

1. 1b.4 Summary of Data on Disparities by Population Group: Please provide data on disparities.
2. 2a.2 Numerator Time Window: Provide the time period in which cases are eligible for inclusion in the numerator.

Developer Response:

1. Data on disparities are provided in the form.
2. During the hospitalization for surgery, which includes the entire postoperative period up to discharge, even if over 30 days.

Steering Committee Follow-up:

The Steering Committee agreed that the response from the developer was adequate.

If applicable, Questions to the Steering Committee:

1. Importance to Measure and Report: Y-22; N-0
(1a. Impact; 1b. Performance gap; 1c. Outcome or Evidence)
Rationale: Though it is unproven as to whether surgical re-exploration has a direct impact on outcomes; from the patient perspective, an additional surgical procedure is itself an important and adverse outcome.

2. Scientific Acceptability of Measure Properties: C-19; P-3; M-0; N-0
(2a. Precise specifications; 2b. Reliability testing; 2c. Validity testing; 2d. Exclusions justified; 2e. Risk adjustment/stratification; 2f. Meaningful differences; 2g. Comparability; 2h. Disparities)
Rationale: This is easy to measure accurately. The measure has face validity in that any return to the OR is considered a complication of the surgical procedure. The Committee questioned why the return to the OR was only for cardiac reasons. Evidence indicates that approximately 80 percent of the reasons for an OR return is because of bleeding or graft occulusion. The issue of risk adjustment was discussed. It was indicated that the measure should not be risk adjusted. If the measure is risk-adjusted then it is hard to find out exactly which specific conditions or procedure will lead to an OR return.

3. Usability: C-20; P-2; M-0; N-0
(3a. Meaningful/useful for public reporting and quality improvement; 3b. Harmonized; 3c. Distinctive or additive value to existing measures)
Rationale: The measure is meaningful for public reporting and quality improvement. Committee members discussed the potential of 'gaming' to fullfil the requirements of the measure. The Committee recognized there isn't a way to prevent gaming and trusts that gaming will not become an issue.

4. Feasibility: C-21; P-1; M-0; N-0

(4a. Clinical data generated during care process; 4b. Electronic sources; 4c. Exclusions – no additional data source; 4d. Susceptibility to inaccuracies/ unintended consequences identified 4e. Data collection strategy can be implemented)
Rationale: All data elements are available electronically.

0129 Risk-adjusted prolonged intubation (ventilation)

Description: Percent of patients aged 18 years and older undergoing isolated CABG who require intubation for more than 24 hours
Numerator Statement: Number of patients undergoing isolated CABG who require intubation > 24 hours.
Denominator Statement: All patients undergoing isolated CABG.
Exclusions: N/A
Adjustment/Stratification: case-mix adjustment No stratification is required for this measure.
Level of Analysis: Clinicians: Group; Facility/Agency; Population: National, regional/network, states, counties or cities
Type of Measure: Outcome
Data Source: Registry data-STS Adult Cardiac Surgery Database, Version 2.73
Measure Steward: Society of Thoracic Surgeons | 633 North Saint Clair Street, Suite 2320 | Chicago | Illinois | 60611

Steering Committee Recommendation for Endorsement: Conditional Y-21; N-1; A-0
Rationale: Intubation is linked to morbidty, and an increase in length-of-stay, cost and resource utilization. Pending Committee's official vote.

If applicable, Conditions/Questions for Developer:

1. De.2 Measure Description: Please consider change in time limit to a period that is less than 24 hours
2. 1b.4 Summary of Data on Disparities by Population Group: Please provide data on disparities.

Developer Response:

1. Considering the increased complexity of current CT patients, a time period significantly less than 24 hrs (e.g. 6 or 12 hours) would not be appropriate as a *routine performance measure*, even though that is achievable in many patients. In some patients, such a measure could result in the adverse unintended consequences of premature extubation, subsequent ventilatory failure, and re-intubation.
2. Data on disparities are provided in the form.

Steering Committee Follow-up:

The Steering Committee agreed that the response from the developer was adequate though lacks some discriminatory power and suggested that in the future STS should submit a complementary measure that focuses on appropriate intubation time for patients.

If applicable, Questions to the Steering Committee:

1. Importance to Measure and Report: Y-22; N-0
(1a. Impact; 1b. Performance gap; 1c. Outcome or Evidence)
Rationale: Although the measure compliance is above 90 percent, the Committee felt compliance should be closer to 100 percent.

2. Scientific Acceptability of Measure Properties: C-17; P-5; M-0; N-0
(2a. Precise specifications; 2b. Reliability testing; 2c. Validity testing; 2d. Exclusions justified; 2e. Risk adjustment/stratification; 2f. Meaningful differences; 2g. Comparability; 2h. Disparities)
Rationale: One potential confounder is the post-CABG patient who is extubatable by clinical criteria but is kept intubated beyond 24 hours due an unrelated unscheduled second surgery the next day. The Committee questioned the developer as to why 24 hours was selected as the standard as opposed to a shorter time period. The literature identifies a range of times, associated with length of stay in ICU and hospital as well as relationship to anesthesia. One study reported that 39 percent of all patients were extubated within 6 hours, 89 percent within 24 hours and 95 percent within 48 hours. Committee members indicated that in their experience the majority of patients are off ventilators sooner than 24 hours.

3. Usability: C-20; P-2; M-0; N-0

(3a. Meaningful/useful for public reporting and quality improvement; 3b. Harmonized; 3c. Distinctive or additive value to existing measures)
Rationale: The measure is meaningful for public reporting and quality improvement.

4. Feasibility: C-20; P-1; M-1; N-0
(4a. Clinical data generated during care process; 4b. Electronic sources; 4c. Exclusions – no additional data source; 4d. Susceptibility to inaccuracies/ unintended consequences identified 4e. Data collection strategy can be implemented)
Rationale: Easily captured and derived from electronic sources.

0131 Risk-adjusted stroke/cerebrovascular accident

Description: Percent of patients aged 18 yeard and older undergoing isolated CABG (without pre-existing neurologic deficit) who have a postoperative stroke (i.e., any confirmed neurological deficit of abrupt onset caused by a disturbance in blood supply to the brain) that did not resolve within 24 hours.
Numerator Statement: Number of patients undergoing isolated CABG who have a postoperative stroke (i.e., any confirmed neurological deficit of abrupt onset caused by a disturbance in blood supply to the brain) that did not resolve within 24 hours.
Denominator Statement: All patients undergoing isolated CABG.
Exclusions: N/A
Adjustment/Stratification: case-mix adjustment No stratification is required for this measure.
Level of Analysis: Clinicians: Group; Facility/Agency; Population: National, regional/network, states, counties or cities
Type of Measure: Outcome
Data Source: Registry data-STS Adult Cardiac Surgery Database, Version 2.73
Measure Steward: Society of Thoracic Surgeons | 633 North Saint Clair Street, Suite 2320 | Chicago | Illinois | 60611

Steering Committee Recommendation for Endorsement: Conditional Y-22; N-0; A-0
Rationale: It is an important clinical condition to publicly report. Pending Committee's official vote.

If applicable, Conditions/Questions for Developer:

1. 1b.4 Summary of Data on Disparities by Population Group: Please provide data on disparities.
2. 2a.2 Numerator Time Window: Provide the time period in which cases are eligible for inclusion in the numerator.
3. 2a.9 Denominator Exclusions: Please reconsider exclusion of patients with prior CVA; suggest this exclusion be removed or rationale for retaining it be provided in more detail.

Developer Response:

1. Data on disparities are provided in the form.
2. During the hospitalization for surgery, which includes the entire postoperative period up to discharge, even if over 30 days.
3. STS will remove this exclusion. STS adjusts for prior CVA in the STS risk model.

Steering Committee Follow-up:
The Steering Committee agreed that the response from the developer was adequate.

If applicable, Questions to the Steering Committee:

1. Importance to Measure and Report: Y-22; N-0
(1a. Impact; 1b. Performance gap; 1c. Outcome or Evidence)
Rationale: Measuring the number of patients whose postoperative stroke was not resolved within 24 hours will provide the opportunity to improve quality of care. With 1.0 as the median, STS data shows an incidence range from 0.6 – 2.1 with 1.2 and 0.8 at the 25^{th} and 75^{th} quartiles respectively. Up to a 13+ percent incidence of stroke has been reported.

2. Scientific Acceptability of Measure Properties: C-12; P-10; M-0; N-0
(2a. Precise specifications; 2b. Reliability testing; 2c. Validity testing; 2d. Exclusions justified; 2e. Risk adjustment/stratification; 2f. Meaningful differences; 2g. Comparability; 2h. Disparities)

Rationale: This measure has significant face validity. Because it is a low-incidence event, large numbers are required for effective interpretation. The reproducibility of reporting centers from year to year is low. A center could have an excellent score one year and a bad score the following year. There was concern as to whether this truly represents the care at individual hospitals. The Committee questioned how the exclusion of a prior CVA is calculated. The Committee recommended that patients with a prior CVA should be included to see if prior CVA had worsened as a result of the CABG operation.

3. Usability: C-17; P-5; M-0; N-0

(3a. Meaningful/useful for public reporting and quality improvement; 3b. Harmonized; 3c. Distinctive or additive value to existing measures)

Rationale: Useful as a measure where the data is aggregated nationally. Due to this being a low frequency event, it will be hard to directly apply the results at the provider level or in an individual practice or hospital though it can prove useful as a trigger tool.

4. Feasibility: C-18; P-4; M-0; N-0

(4a. Clinical data generated during care process; 4b. Electronic sources; 4c. Exclusions – no additional data source; 4d. Susceptibility to inaccuracies/ unintended consequences identified 4e. Data collection strategy can be implemented)

Rationale: The Committee was not sure how well automated electronic data (such as ICD-9 codes) can be used to define this measure. Cognitive defects can be subtle, and may require more focused testing that would increase the cost of data collection and complexity of this measure.

0134 Use of internal mammary artery (IMA) in coronary artery bypass graft (CABG)

Description: Percentage of patients aged 18 years and older undergoing isolated coronary artery bypass graft (CABG) who received an internal mammary artery (IMA) graft.

Numerator Statement: Number of patients undergoing isolated coronary artery bypass graft (CABG) who received an internal mammary artery (IMA) graft.

Denominator Statement: All patients undergoing isolated CABG.

Exclusions: Cases are removed from the denominator if the patient had a previous CABG prior to the current admission or if IMA was not used and one of the following reasons was provided:

- Subclavian stenosis
- Previous cardiac or thoracic surgery
- Previous mediastinal radiation
- Emergent or salvage procedure
- No LAD disease

Adjustment/Stratification: no risk adjustment necessary No stratification is required for this measure.

Level of Analysis: Clinicians: Group; Facility/Agency; Population: National, regional/network, states, counties or cities

Type of Measure: Process

Data Source: Registry data-STS Adult Cardiac Surgery Database, Version 2.73

Measure Steward: Society of Thoracic Surgeons | 633 North Saint Clair Street, Suite 2320 | Chicago | Illinois | 60611

Steering Committee Recommendation for Endorsement: Conditional Y-21; N-0; A-0

Rationale: This measure is tied to improved outcomes due to high patency rates of the IMA. The current compliance is 95 percent; however variation among programs exists; i.e., compliance rates as low as 80 percent. Pending Committee's official vote.

If applicable, Conditions/Questions for Developer:

1. 1b.4 Summary of Data on Disparities by Population Group: Please provide data on disparities.
2. 2a.9 Denominator Exclusions: Please remove "the IMA is not a suitable conduit due to size or flow" from the exclusions.

Developer Response:

1. Data on disparities are provided in the form.
2. STS staff reiterated the agreement to remove the statement regarding IMA suitability made during the

February 28- March 1Steering Committee meeting. The form has been modified to reflect this.

Steering Committee Follow-up:

The Steering Committee agreed that the response from the developer was adequate.

If applicable, Questions to the Steering Committee:

1. Importance to Measure and Report: Y-20; N-1

(1a. Impact; 1b. Performance gap; 1c. Outcome or Evidence)

Rationale: The literature points to disparities amongst women, with IMA used less often in women. The developer did not provide information or data on disparities related to performance on the measure.

2. Scientific Acceptability of Measure Properties: C-14; P-7; M-0; N-0

(2a. Precise specifications; 2b. Reliability testing; 2c. Validity testing; 2d. Exclusions justified; 2e. Risk adjustment/stratification; 2f. Meaningful differences; 2g. Comparability; 2h. Disparities)

Rationale: The exclusion 'IMA not suitable,' can lead to the issue of gaming. This causes apprehension as to who determines if the IMA is not suitable. Currently, there is no criteria that classifies the IMA as suitable. The Committee requested this exclusion be removed.

3. Usability: C-20; P-1; M-0; N-0

(3a. Meaningful/useful for public reporting and quality improvement; 3b. Harmonized; 3c. Distinctive or additive value to existing measures)

Rationale: The information obtained is meaningful and useful.

4. Feasibility: C-20; P-1; M-0; N-0

(4a. Clinical data generated during care process; 4b. Electronic sources; 4c. Exclusions – no additional data source; 4d. Susceptibility to inaccuracies/ unintended consequences identified 4e. Data collection strategy can be implemented)

Rationale: The information can be derived from electronic sources.

0119 Risk-adjusted operative mortality for CABG

Description: Percent of patients aged 18 years and older undergoing isolated CABG who die, including both 1) all deaths occurring during the hospitalization in which the CABG was performed, even if after 30 days, and 2) those deaths occurring after discharge from the hospital, but within 30 days of the procedure.

Numerator Statement: Number of patients undergoing isolated CABG who die, both 1) all deaths occurring during the hospitalization in which the CABG was performed, even if after 30 days, and 2) those deaths occurring after discharge from the hospital, but within 30 days of the procedure.

Denominator Statement: All patients undergoing isolated CABG.

Exclusions: N/A

Adjustment/Stratification: case-mix adjustment No stratification is required for this measure.

Level of Analysis: Clinicians: Group; Facility/Agency; Population: National, regional/network, states, counties or cities

Type of Measure: Outcome

Data Source: Registry data-STS Adult Cardiac Surgery Database, Version 2.73

Measure Steward: Society of Thoracic Surgeons | 633 North Saint Clair Street, Suite 2320 | Chicago | Illinois | 60611

Steering Committee Recommendation for Endorsement: Preliminary Y-22; N-0; A-0

Rationale: Mortality is an important concept to measure and report.

If applicable, Conditions/Questions for Developer:

1. 1b.4 Summary of Data on Disparities by Population Group: Please provide data on disparities.

Developer Response:

1. Data on disparities are provided in the form.

Steering Committee Follow-up:

The Steering Committee agreed that the response from the developer was adequate.

If applicable, Questions to the Steering Committee:

1. Importance to Measure and Report: Y-21; N-1
(1a. Impact; 1b. Performance gap; 1c. Outcome or Evidence)
Rationale: Understanding how to prevent mortality will provide better clinical outcomes. Data from the STS database reviewed and published reports a 30 day operative death rate of 3.05% and suggests that such site specific data can be useful to evaluate care quality and focus on areas for improvement. The developer was asked to provide data regarding disparities that will be considered prior to final action by the committee.

2. Scientific Acceptability of Measure Properties: C-17; P-5; M-0; N-0
(2a. Precise specifications; 2b. Reliability testing; 2c. Validity testing; 2d. Exclusions justified; 2e. Risk adjustment/stratification; 2f. Meaningful differences; 2g. Comparability; 2h. Disparities)
Rationale: The Committee discussed the risk-adjusted mortality rate and if it identified whether patients who should be doing well are actually doing well within institutions. The Committee expressed interest in being able to obtain the volume of surgeries performed in an institution stratified in terms of actual risk for individual patients and whether those patients who, statistically, are expected to survive actually survive. The measure does not consider the volume of the programs.

3. Usability: C-20; P-2; M-0; N-0
(3a. Meaningful/useful for public reporting and quality improvement; 3b. Harmonized; 3c. Distinctive or additive value to existing measures)
Rationale: The measure is meaningful and useful for public reporting and quality improvement.

4. Feasibility: C-20; P-2; M-0; N-0
(4a. Clinical data generated during care process; 4b. Electronic sources; 4c. Exclusions – no additional data source; 4d. Susceptibility to inaccuracies/ unintended consequences identified 4e. Data collection strategy can be implemented)
Rationale: The data can be derived from electronic sources.

0120 Risk-adjusted operatove mortality for aortic valve replacement (AVR)

Description: Percent of patients undergoing aortic valve replacement (AVR) who die, including both 1) all deaths occurring during the hospitalization in which the procedure was performed, even if after 30 days, and 2) those deaths occurring after discharge from the hospital, but within 30 days of the procedure.
Numerator Statement: Number of patients undergoing aortic valve replacement (AVR) who die, including both 1) all deaths occurring during the hospitalization in which the procedure was performed, even if after 30 days, and 2) those deaths occurring after discharge from the hospital, but within 30 days of the procedure.
Denominator Statement: All patients undergoing isolated AVR surgery.
Exclusions: N/A.
Adjustment/Stratification: case-mix adjustment No stratification is required for this measure.
Level of Analysis: Clinicians: Group; Facility/Agency; Population: National, regional/network, states, counties or cities
Type of Measure: Outcome
Data Source: Registry data-STS Adult Cardiac Surgery Database, Version 2.73
Measure Steward: Society of Thoracic Surgeons | 633 North Saint Clair Street, Suite 2320 | Chicago | Illinois | 60611

Steering Committee Recommendation for Endorsement: Preliminary Y-21; N-0; A-0
Rationale: Aortic valve replacement is a high risk surgery and factors that can improve outcomes can be studied from this measure.

If applicable, Conditions/Questions for Developer:
1. 1b.4 Summary of Data on Disparities by Population Group: Please provide data on disparities.

Developer Response:
1. Data on disparities are provided in the form.

Steering Committee Follow-up:
The Steering Committee agreed that the response from the developer was adequate.

If applicable, Questions to the Steering Committee:

1. Importance to Measure and Report: Y-20; N-0
(1a. Impact; 1b. Performance gap; 1c. Outcome or Evidence)
Rationale: Important measure for determining the delivery of care in a cardiac program. The summary of evidence of high impact is strong.

2. Scientific Acceptability of Measure Properties: C-20; P-1; M-0; N-0
(2a. Precise specifications; 2b. Reliability testing; 2c. Validity testing; 2d. Exclusions justified; 2e. Risk adjustment/stratification; 2f. Meaningful differences; 2g. Comparability; 2h. Disparities)
Rationale: Specifications are well defined and the risk adjustment methodology is appropriate and clearly described.

3. Usability: C-20; P-1; M-0; N-0
(3a. Meaningful/useful for public reporting and quality improvement; 3b. Harmonized; 3c. Distinctive or additive value to existing measures)
Rationale: The measure is straightforward and easy to understand. It is focused on one, clearly defined procedure, and the outcome (mortality) is determined by multiple contributing factors that when identified can be targets of quality improvement initiatives. This measure is currently not being publicly reported; reporting is expected within 12 months.

4. Feasibility: C-21; P-0; M-0; N-0
(4a. Clinical data generated during care process; 4b. Electronic sources; 4c. Exclusions – no additional data source; 4d. Susceptibility to inaccuracies/ unintended consequences identified 4e. Data collection strategy can be implemented)
Rationale: The data capture process for the database is extensive and well constructed.

0121 Risk-adjusted operative mortality for mitral valve (MV) replacement

Description: Percent of patients undergoing MV replacement who die, including both 1) all deaths occurring during the hospitalization in which the procedure was performed, even if after 30 days, and 2) those deaths occurring after discharge from the hospital, but within 30 days of the procedure.
Numerator Statement: Number of patients undergoing MV replacement who die, including both 1) all deaths occurring during the hospitalization in which the procedure was performed, even if after 30 days, and 2) those deaths occurring after discharge from the hospital, but within 30 days of the procedure.
Denominator Statement: All patients undergoing isolated MV replacement surgery.
Exclusions: N/A
Adjustment/Stratification: case-mix adjustment No stratification is required for this measure.
Level of Analysis: Clinicians: Group; Facility/Agency; Population: National, regional/network, states, counties or cities
Type of Measure: Outcome
Data Source: Registry data-STS Adult Cardiac Surgery Database, Version 2.73
Measure Steward: Society of Thoracic Surgeons | 633 North Saint Clair Street, Suite 2320 | Chicago | Illinois | 60611

Steering Committee Recommendation for Endorsement: Preliminary Y-21; N-0; A-0
Rationale: The measure was well defined and constructed providing ability to drill down for information regarding in hospital and post discharge deaths. Having such data at the levels of analysis can help planning toward strategies to prevent mortality and ultimately provide better clinical outcomes.

If applicable, Conditions/Questions for Developer:
1. 1b.4 Summary of Data on Disparities by Population Group: Please provide data on disparities.

Developer Response:
1. Data on disparities are provided in the form.

Steering Committee Follow-up:
The Steering Committee agreed that the response from the developer was adequate.

If applicable, Questions to the Steering Committee:

1. Importance to Measure and Report: Y-21; N-0

(1a. Impact; 1b. Performance gap; 1c. Outcome or Evidence)
Rationale: The procedure is important to measure and report. Having the ability to review organizational performance against that of peers and against oneself over time has been shown to facilitate insights that can result in improvement in risk assessment, patient selection and ultimately outcomes.

2. Scientific Acceptability of Measure Properties: C-20; P-1; M-0; N-0
(2a. Precise specifications; 2b. Reliability testing; 2c. Validity testing; 2d. Exclusions justified; 2e. Risk adjustment/stratification; 2f. Meaningful differences; 2g. Comparability; 2h. Disparities)
Rationale: The specifications are well defined.

3. Usability: C-21; P-0; M-0; N-0
(3a. Meaningful/useful for public reporting and quality improvement; 3b. Harmonized; 3c. Distinctive or additive value to existing measures)
Rationale: The measure is straightforward and easy to understand. This measure is currently not being publicly reported; reporting is expected within 12 months.

4. Feasibility: C-21; P-0; M-0; N-0
(4a. Clinical data generated during care process; 4b. Electronic sources; 4c. Exclusions – no additional data source; 4d. Susceptibility to inaccuracies/ unintended consequences identified 4e. Data collection strategy can be implemented)
Rationale: The data is derived from electronic sources.

0122 Risk-adjusted operative mortality MV replacement + CABG surgery

Description: Percent of patients undergoing combined MV replacement and CABG who die, including both 1) all deaths occurring during the hospitalization in which the procedure was performed, even if after 30 days, and 2) those deaths occurring after discharge from the hospital, but within 30 days of the procedure.
Numerator Statement: Number of patients undergoing combined MV replacement and CABG who die, including both 1) all deaths occurring during the hospitalization in which the procedure was performed, even if after 30 days, and 2) those deaths occurring after discharge from the hospital, but within 30 days of the procedure.
Denominator Statement: All patients undergoing combined MV replacement + CABG.
Exclusions: N/A
Adjustment/Stratification: case-mix adjustment No stratification is required for this measure.
Level of Analysis: Clinicians: Group; Facility/Agency; Population: National, regional/network, states, counties or cities
Type of Measure: Outcome
Data Source: Registry data-STS Adult Cardiac Surgery Database, Version 2.73
Measure Steward: Society of Thoracic Surgeons | 633 North Saint Clair Street, Suite 2320 | Chicago | Illinois | 60611

Steering Committee Recommendation for Endorsement: Preliminary Y-19; N-0; A-0
Rationale: Signifcant procedure in cardiac surgery.

If applicable, Conditions/Questions for Developer:
1. 1b.4 Summary of Data on Disparities by Population Group: Please provide data on disparities.

Developer Response:
1. Data on disparities are provided in the form.

Steering Committee Follow-up:
The Steering Committee agreed that the response from the developer was adequate.

If applicable, Questions to the Steering Committee:

1. Importance to Measure and Report: Y-19; N-0
(1a. Impact; 1b. Performance gap; 1c. Outcome or Evidence)
Rationale: Important measure for the relatively small number of centers that perform this type of surgery given the increasing use in an older population with greater numbers and more severe co-morbid risk factors.

2. Scientific Acceptability of Measure Properties: C-16; P-3; M-0; N-0

(2a. Precise specifications; 2b. Reliability testing; 2c. Validity testing; 2d. Exclusions justified; 2e. Risk adjustment/stratification; 2f. Meaningful differences; 2g. Comparability; 2h. Disparities)
Rationale: The measure is precisely specified.

3. Usability: C-16; P-3; M-0; N-0
(3a. Meaningful/useful for public reporting and quality improvement; 3b. Harmonized; 3c. Distinctive or additive value to existing measures)
Rationale: The question of whether the measure is useful due to the small number of centers that perform the surgery was discussed and decided in favor of the measure's use. This measure is currently not being publicly reported; reporting is expected within 12 months.

4. Feasibility: C-18; P-1; M-0; N-0
(4a. Clinical data generated during care process; 4b. Electronic sources; 4c. Exclusions – no additional data source; 4d. Susceptibility to inaccuracies/ unintended consequences identified 4e. Data collection strategy can be implemented)
Rationale: Audit process is well structured.

0123 Risk-adjusted operative mortality for aortic valve replacement (AVR) + CABG surgery

Description: Percent of patients undergoing combined AVR and CABG who die, including both 1) all deaths occurring during the hospitalization in which the procedure was performed, even if after 30 days, and 2) those deaths occurring after discharge from the hospital, but within 30 days of the procedure.
Numerator Statement: Number of patients undergoing combined AVR and CABG who die, including both 1) all deaths occurring during the hospitalization in which the procedure was performed, even if after 30 days, and 2) those deaths occurring after discharge from the hospital, but within 30 days of the procedure.
Denominator Statement: All patients undergoing combined AVR + CABG.
Exclusions: N/A
Adjustment/Stratification: case-mix adjustment No stratification is required for this measure.
Level of Analysis: Clinicians: Group; Facility/Agency; Population: National, regional/network, states, counties or cities
Type of Measure: Outcome
Data Source: Registry data-STS Adult Cardiac Surgery Database, Version 2.73
Measure Steward: Society of Thoracic Surgeons | 633 North Saint Clair Street, Suite 2320 | Chicago | Illinois | 60611

Steering Committee Recommendation for Endorsement: Conditional Y-21; N-0; A-0
Rationale: The performance gap varies by facility.

If applicable, Conditions/Questions for Developer:
1. 1b.4 Summary of Data on Disparities by Population Group: Please provide data on disparities.

Developer Response:
1. Data on disparities are provided in the form.

Steering Committee Follow-up:
The Steering Committee agreed that the response from the developer was adequate.

If applicable, Questions to the Steering Committee:

1. Importance to Measure and Report: Y-20; N-0
(1a. Impact; 1b. Performance gap; 1c. Outcome or Evidence)
Rationale: It is a critical outcome that varies in performance.

2. Scientific Acceptability of Measure Properties: C-18; P-2; M-0; N-0
(2a. Precise specifications; 2b. Reliability testing; 2c. Validity testing; 2d. Exclusions justified; 2e. Risk adjustment/stratification; 2f. Meaningful differences; 2g. Comparability; 2h. Disparities)
Rationale: A higher risk population is undergoing this surgery; the case mix risk model is appropriate for the population. The reliability and validity testing will allow organizations to provide consistent and credible results

3. Usability: C-19; P-2; M-0; N-0
(3a. Meaningful/useful for public reporting and quality improvement; 3b. Harmonized; 3c. Distinctive or

additive value to existing measures)
Rationale: This measure is currently not being publicly reported; strategy for reporting puts CABG procedures out first with other to follow. This and related measures are expected to be publicly reported within 24-36 months.

4. Feasibility: C-21; P-0; M-0; N-0
(4a. Clinical data generated during care process; 4b. Electronic sources; 4c. Exclusions – no additional data source; 4d. Susceptibility to inaccuracies/ unintended consequences identified 4e. Data collection strategy can be implemented)
Rationale: The information can be derived from electronic sources.

1501 Risk-adjusted operative mortality for mitral valve (MV) repair

Description: Percent of patients undergoing MV Repair who die, including both 1) all deaths occurring during the hospitalization in which the procedure was performed, even if after 30 days, and 2) those deaths occurring after discharge from the hospital, but within 30 days of the procedure.
(This measure applies to the procedure of MV repair, regardless of approach) *Note: This measure was formerly endorsed as a component of Measure 0121.*
Numerator Statement: Number of patients undergoing MV repair who die, including both 1) all deaths occurring during the hospitalization in which the procedure was performed, even if after 30 days, and 2) those deaths occurring after discharge from the hospital, but within 30 days of the procedure.
Denominator Statement: All patients undergoing isolated MV Repair surgery
(This measure applies to the procedure of MV repair, regardless of approach)
Exclusions: N/A
Adjustment/Stratification: case-mix adjustment No stratification is required for this measure.
Level of Analysis: Clinicians: Group; Facility/Agency; Population: National, regional/network, states, counties or cities
Type of Measure: Outcome
Data Source: Registry data-STS Adult Cardiac Surgery Database, Version 2.73
Measure Steward: Society of Thoracic Surgeons | 633 North Saint Clair Street, Suite 2320 | Chicago | Illinois | 60611

Steering Committee Recommendation for Endorsement: Preliminary Y-21; N-0; A-0
Rationale: The measure provides an additive value to measures on cardiac surgical care.

If applicable, Conditions/Questions for Developer:
1. De.2 Measure Description & 2a.4 Denominator Statement: Please clarify that the measure applies to open chest procedures.
2. 1b.4 Summary of Data on Disparities by Population Group: Please provide data on disparities.

Developer Response:
1. The measure applies to the procedure of MV repair, regardless of approach.
2. Data on disparities are provided in the form.

Steering Committee Follow-up:
The Steering Committee agreed that the response from the developer was adequate.

If applicable, Questions to the Steering Committee:

1. Importance to Measure and Report: Y-21; N-0
(1a. Impact; 1b. Performance gap; 1c. Outcome or Evidence)
Rationale: This procedure is important to measure and report.

2. Scientific Acceptability of Measure Properties:
(2a. Precise specifications; 2b. Reliability testing; 2c. Validity testing; 2d. Exclusions justified; 2e. Risk adjustment/stratification; 2f. Meaningful differences; 2g. Comparability; 2h. Disparities)
Rationale: The measure is precisely specified.

3. Usability:
(3a. Meaningful/useful for public reporting and quality improvement; 3b. Harmonized; 3c. Distinctive or additive value to existing measures)

Rationale: The measure is easy to understand.

4. Feasibility:
(4a. Clinical data generated during care process; 4b. Electronic sources; 4c. Exclusions – no additional data source; 4d. Susceptibility to inaccuracies/ unintended consequences identified 4e. Data collection strategy can be implemented)
Rationale: Easily measured and derived from electronic sources.

1502 Risk-adjusted operative mortality for MV repair + CABG surgery

Description: Percent of patients undergoing combined MV repair and CABG who die, including both 1) all deaths occurring during the hospitalization in which the procedure was performed, even if after 30 days, and 2) those deaths occurring after discharge from the hospital, but within 30 days of the procedure.
Note: This measure was formerly endorsed as a component of Measure 0122.
Numerator Statement: Number of patients undergoing combined MV repair and CABG who die, including both 1) all deaths occurring during the hospitalization in which the procedure was performed, even if after 30 days, and 2) those deaths occurring after discharge from the hospital, but within 30 days of the procedure.
Denominator Statement: All patients undergoing combined MV repair + CABG
Exclusions: N/A
Adjustment/Stratification: case-mix adjustment No stratification is required for this measure.
Level of Analysis: Clinicians: Group; Facility/Agency; Population: National, regional/network, states, counties or cities
Type of Measure: Outcome
Data Source: Registry data-STS Adult Cardiac Surgery Database, Version 2.73
Measure Steward: Society of Thoracic Surgeons | 633 North Saint Clair Street, Suite 2320 | Chicago | Illinois | 60611

Steering Committee Recommendation for Endorsement: Preliminary Y-21; N-0; A-0
Rationale: Important measure with variation of performance.

If applicable, Conditions/Questions for Developer:
1. 1b.4 Summary of Data on Disparities by Population Group: Please provide data on disparities.

Developer Response:
1. Data on disparities are provided in the form.

Steering Committee Follow-up:
The Steering Committee agreed that the response from the developer was adequate.

If applicable, Questions to the Steering Committee:

1. Importance to Measure and Report: Y-21: N-0
(1a. Impact; 1b. Performance gap; 1c. Outcome or Evidence)
Rationale: Mortality varies for this procedure.

2. Scientific Acceptability of Measure Properties: C-16; P-4; M-0; N-0
(2a. Precise specifications; 2b. Reliability testing; 2c. Validity testing; 2d. Exclusions justified; 2e. Risk adjustment/stratification; 2f. Meaningful differences; 2g. Comparability; 2h. Disparities)
Rationale: The measure is precisely specified.

3. Usability: C-20; P-1; M-0; N-0
(3a. Meaningful/useful for public reporting and quality improvement; 3b. Harmonized; 3c. Distinctive or additive value to existing measures)
Rationale: The measure is easy to understand.

4. Feasibility: C-21; P-0; M-0; N-0
(4a. Clinical data generated during care process; 4b. Electronic sources; 4c. Exclusions – no additional data source; 4d. Susceptibility to inaccuracies/ unintended consequences identified 4e. Data collection strategy can be implemented)
Rationale: Easily measured and derived from electronic sources.

0116 Anti-platelet medication at discharge

Description: Percent of patients aged 18 years and older undergoing isolated CABG who were discharged on anti-platelet medication.
Numerator Statement: Number of patients undergoing isolated CABG who were discharged on anti-platelet medication.
Denominator Statement: All patients undergoing isolated CABG.
Exclusions: Cases are removed from the denominator if there was an in-hospital mortality or if discharge aspirin was contraindicated. In other words, if discharge aspirin is marked contraindicated or there is an in-hospital mortality, the patient is excluded from the denominator, and therefore, the measure is calculated without those patients.
Adjustment/Stratification: no risk adjustment necessary No stratification is required for this measure.
Level of Analysis: Clinicians: Group; Facility/Agency; Population: National, regional/network, states, counties or cities
Type of Measure: Process
Data Source: Registry data-STS Adult Cardiac Surgery Database, Version 2.73
Measure Steward: Society of Thoracic Surgeons | 633 North Saint Clair Street, Suite 2320 | Chicago | Illinois | 60611

Steering Committee Recommendation for Endorsement: Preliminary Y-21; N-0; A-0
Rationale: Though the measure has been in use for multiple years, there is still a performance gap; provider organizations ranges from 85-100 percent.

If applicable, Conditions/Questions for Developer:

1. 1b.4 Summary of Data on Disparities by Population Group: Please provide data on disparities.
2. 2a Measure Specifications: When are denominator exclusions with respect to calculating the numerator?
3. 2a.2 Numerator Time Window: Provide the time period in which cases are eligible for inclusion in the numerator.
4. Indicate acceptability of Plavix/clopidogrel, where applicable, throughout. The numerator statement includes anti-platelet medications; however, the denominator excludes those with an aspirin contraindication. Is a patient who is on Plavix because of an aspirin contraindication counted in the numerator or excluded from the denominator?

Developer Response:

1. Data on disparities are provided in the form.
2. If discharge aspirin is marked contraindicated or there is an in-hospital mortality, the patient is excluded from the denominator, and therefore, the measure is calculated without those patients.
3. Indicated in the measure
4. Existing numerator details state that either discharge aspirin or ADP inhibitors are acceptable. If a patient is on Plavix due to an aspirin contraindication, s/he is counted in the numerator because STS accepts either ASA or ADP inhibitors for the numerator (i.e., Number of isolated CABG procedures in which discharge aspirin [DCASA] or discharge ADP inhibitors [DCADP] is marked "yes").

Steering Committee Follow-up:

The Steering Committee agreed that the response from the developer was adequate.

If applicable, Questions to the Steering Committee:

1. Importance to Measure and Report: Y-21; N-0
(1a. Impact; 1b. Performance gap; 1c. Outcome or Evidence)
Rationale: The use of anti-platelet therapy at discharge is currently an accepted standard of care to improve bypass graft patency and promote secondary prevention of coronary artery disease and performance gap remains.

2. Scientific Acceptability of Measure Properties: C-18; P-3; M-0; N-0
(2a. Precise specifications; 2b. Reliability testing; 2c. Validity testing; 2d. Exclusions justified; 2e. Risk adjustment/stratification; 2f. Meaningful differences; 2g. Comparability; 2h. Disparities)
Rationale: The Committee was uncertain as to when exclusions were applied. The Committee questioned if

Plavix was an acceptable alternative if aspirin is contraindicated.

3. Usability: C-21; P-0; M-0; N-0
(3a. Meaningful/useful for public reporting and quality improvement; 3b. Harmonized; 3c. Distinctive or additive value to existing measures)
Rationale: The measure is currently widely used both as a CMS PQRI measure (measure 169) and at hospitals that are participating in the STS Adult Cardiac Surgery Database providing information that providers can use to analyze and improve anti-platelet use practices.

4. Feasibility: C-20; P-1; M-0; N-0
(4a. Clinical data generated during care process; 4b. Electronic sources; 4c. Exclusions – no additional data source; 4d. Susceptibility to inaccuracies/ unintended consequences identified 4e. Data collection strategy can be implemented)
Rationale: The measure can be easily implemented.

0118 Anti-lipid treatment discharge

Description: Percent of patients aged 18 years and older undergoing isolated CABG who were discharged on a statin or other lipid-lowering regimen.
Numerator Statement: Number of patients undergoing isolated CABG who were discharged on a statin or other lipid-lowering regimen.
Denominator Statement: All patients undergoing isolated CABG.
Exclusions: Cases are removed from the denominator if there was an in-hospital mortality or if discharge anti-lipid treatment was contraindicated.
Adjustment/Stratification: no risk adjustment necessary No stratification is required for this measure.
Level of Analysis: Clinicians: Group; Facility/Agency; Population: National, regional/network, states, counties or cities
Type of Measure: Process
Data Source: Registry data-STS Adult Cardiac Surgery Database, Version 2.73
Measure Steward: Society of Thoracic Surgeons | 633 North Saint Clair Street, Suite 2320 | Chicago | Illinois | 60611

Steering Committee Recommendation for Endorsement: Preliminary Y-21; N-0; A-0
Rationale: Although the current compliance rate is 98 percent, there is still regional variation where performance is low.

If applicable, Conditions/Questions for Developer:
1. 1b.4 Summary of Data on Disparities by Population Group: Please provide data on disparities.

Developer Response:
1. Data on disparities are provided in the form.

If applicable, Questions to the Steering Committee:

1. Importance to Measure and Report: Y-21; N-0
(1a. Impact; 1b. Performance gap; 1c. Outcome or Evidence)
Rationale: Strong clinical evidence indicates that a lipid-lowering regime is of benefit to patients post-CABG.

2. Scientific Acceptability of Measure Properties: C-20; P-1; M-0; N-0
(2a. Precise specifications; 2b. Reliability testing; 2c. Validity testing; 2d. Exclusions justified; 2e. Risk adjustment/stratification; 2f. Meaningful differences; 2g. Comparability; 2h. Disparities)
Rationale: Specifications are well defined. Reliability and validity testing results are reported with rates of p=0.76 and 96.5% agreement respectively.

3. Usability: C-20; P-0; M-1; N-0
(3a. Meaningful/useful for public reporting and quality improvement; 3b. Harmonized; 3c. Distinctive or additive value to existing measures)
Rationale: The Committee would like to see an increase in utilization of the measure and eventually become a standard practice of care.

4. Feasibility: C-21; P-0; M-0; N-0

(4a. Clinical data generated during care process; 4b. Electronic sources; 4c. Exclusions – no additional data source; 4d. Susceptibility to inaccuracies/ unintended consequences identified 4e. Data collection strategy can be implemented)
Rationale: The measure can be easily implemented.

0130 Risk-adjusted deep sternal wound infection rate

Description: Percent of patients aged 18 years and older undergoing isolated CABG who, within 30 days postoperatively, develop deep sternal wound infection involving muscle, bone, and/or mediastinum requiring operative intervention.
Numerator Statement: Number of patients who, within 30 days postoperatively, develop deep sternal wound infection involving muscle, bone, and/or mediastinum requiring operative intervention.
Must have all of the following conditions:
- Wound opened with excision of tissue (I&D) or re-exploration of mediastinum
- Positive culture unless patient on antibiotics at time of culture or no culture obtained
- Treatment with antibiotics beyond perioperative prophylaxis

Denominator Statement: All patients undergoing isolated CABG
Exclusions: N/A
Adjustment/Stratification: case-mix adjustment necessary No stratification is required for this measure
Level of Analysis: Clinicians: Group; Facility/Agency; Population: National, regional/network, states, counties or cities
Type of Measure: Outcome
Data Source: Registry data-STS Adult Cardiac Surgery Database, Version 2.73
Measure Steward: Society of Thoracic Surgeons | 633 North Saint Clair Street, Suite 2320 | Chicago | Illinois | 60611

Steering Committee Recommendation for Endorsement: Preliminary Y-20; N-1; A-0
Rationale: There is an opportunity for improvement due to the presence of variation within the performance gap.

If applicable, Conditions/Questions for Developer:
1. 1b.4 Summary of Data on Disparities by Population Group: Please provide data on disparities.

Developer Response:
1. Data on disparities are provided in the form.

If applicable, Questions to the Steering Committee:

1. Importance to Measure and Report: Y-21; N-0
(1a. Impact; 1b. Performance gap; 1c. Outcome or Evidence)
Rationale: There is significant morbidity and mortality associated with this condition.

2. Scientific Acceptability of Measure Properties: C-20; P-1; M-0; N-0
(2a. Precise specifications; 2b. Reliability testing; 2c. Validity testing; 2d. Exclusions justified; 2e. Risk adjustment/stratification; 2f. Meaningful differences; 2g. Comparability; 2h. Disparities)
Rationale: The measure is important based on surgical wound infection as an important indicator of performance; the specifications are clearly and fully defined. The 30 day time interval for occurrence of sternal wound infection is appropriate.

3. Usability: C-19; P-2; M-0; N-0
(3a. Meaningful/useful for public reporting and quality improvement; 3b. Harmonized; 3c. Distinctive or additive value to existing measures)
Rationale: STS reports it has worked to harmonize its definition of surgical site infection with CDC's definition and has done so except with respect to the time interval. At present, STS believes the 30 day time interval for the measure vs. the CDC 12 months outer limit is most appropriate.

4. Feasibility: C-19; P-2; M-0; N-0
(4a. Clinical data generated during care process; 4b. Electronic sources; 4c. Exclusions – no additional data source; 4d. Susceptibility to inaccuracies/ unintended consequences identified 4e. Data collection strategy can

be implemented)
Rationale: The measure can be easily implemented.

0300 Cardiac patients with controlled 6 am postoperative serum glucose

Description: Percentage of cardiac surgery patients with controlled 6 am serum glucose (≤200 mg/dl) on postoperative day (POD) 1 and POD 2.
Numerator Statement: Surgery patients with controlled 6 am serum glucose (≤200 mg/dl) on postoperative day (POD) 1 and POD 2.
Denominator Statement: Cardiac surgery patients with no evidence of prior infection. Include patients with an ICD-9-CM Principle Procedure code or ICD-9-CM Other Procedure codes of selected surgeries AND an ICD-9-CM for ICD-9-CM codes Principle Procedure code or ICD-9-CM Other Procedure codes of selected surgeries.
Exclusions: Excluded Populations:
• Patients less than 18 years of age
• Patients who have a length of Stay greater than 120 days
• Patients who had a principal diagnosis suggestive of preoperative infectious diseases (as defined in Appendix A, Table 5.09 for ICD-9-CM codes)
• Burn and transplant patients (as defined in Appendix A, Tables 5.14 and 5.15 for ICD-9-CM codes)
• 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 with physician/advanced practice nurse/physician assistant (physician/APN/PA) documented infection prior to surgical procedure of interest
• Patients who expired perioperatively
Adjustment/Stratification: no risk adjustment necessary No stratification is required for this measure.
Level of Analysis: Facility/Agency; Population: national; Program: QIO; can be measured at all levels
Type of Measure: Process
Data Source: Electronic administrative data/claims; paper medical record/flow-sheet. Vendor tools or CART. CART is available for download free at http://www.qualitynet.org/dcs/ContentServer?c=Page&pagename=QnetPublic%2FPage%2FQnetTier2&cid=1138900279093
Measure Steward: Centers for Medicare & Medicaid Services | 7500 Security Boulevard | Baltimore | Maryland | 21244

Steering Committee Recommendation for Endorsement: Preliminary Y-9; N-10; A-2
Rationale: The Committee suggested the developer change the timeframe from 6 am to 24 hours due to variation in time of surgery. Pending response from the developer's expert panel.

If applicable, Conditions/Questions for Developer:
1. 2a.1 Numerator Statement: The timeframe should be within 24 hours after surgery instead of 6 am.
2. 2a.10 Denominator Exclusion Details: Provide a more detailed definition of perioperative death.

Developer Response:
1. This recommendation is being presented to the SCIP Infection TEP on April 6, 2011. The measure will be reviewed at the next in-person Steering Committee meeting May 4-5, 2011.
2. Patients that expire during the perioperative period are excluded from this measure, as they should not be held accountable for glucose values on POD 1 or 2. The data element has this definition: The patient expired during the timeframe from surgical incision through discharge from the post anesthesia care/recovery area. Additional abstraction instructions include:
   For patients discharged from surgery and admitted to the PACU: The end of the perioperative period occurs when the patient is discharged from the PACU.
   For patients discharged from surgery and admitted to locations other than the PACU (e.g., ICU): The perioperative period would end a maximum of six hours after arrival to the recovery area.

Steering Committee Follow-up:
The Steering Committee agreed that the response from the developer regarding POD was adequate.

If applicable, Questions to the Steering Committee:

1. Importance to Measure and Report: Y-16; N-5
(1a. Impact; 1b. Performance gap; 1c. Outcome or Evidence)
Rationale: The goal of the measure, to improve patient's blood sugar, is important. Performance at the aggregate is 93.4%; disparity information requested to understand if there are subpopulation disparities.

2. Scientific Acceptability of Measure Properties: C-2; P-12; M-7; N-0
(2a. Precise specifications; 2b. Reliability testing; 2c. Validity testing; 2d. Exclusions justified; 2e. Risk adjustment/stratification; 2f. Meaningful differences; 2g. Comparability; 2h. Disparities)
Rationale: There is a need for more flexibility in the timeframe to allow comparability since variation in patient times of departure from the operating room. Both the committee and developer have heard anecdotal reports that clinical staff is leaving patients on insulin drips to meet the criteria of the measure. Assuming this to be accurate, the timeframe change will address such an unintended consequence of the measure.

3. Usability: C-5; P-6; M-10; N-0
(3a. Meaningful/useful for public reporting and quality improvement; 3b. Harmonized; 3c. Distinctive or additive value to existing measures)
Rationale: The Committee was unsure if this measure would provide additive value if the timeframe remains at 6 am.

4. Feasibility: C-5; P-9; M-7; N-0
(4a. Clinical data generated during care process; 4b. Electronic sources; 4c. Exclusions – no additional data source; 4d. Susceptibility to inaccuracies/ unintended consequences identified 4e. Data collection strategy can be implemented)
Rationale: The measure cannot be easily implemented using the current timeframe.

0218 Surgery patients who received appropriate venous thromboembolism (VTE) prophylaxis within 24 hours prior to surgery to 24 hours after surgery end time

Description: Percentage of surgery patients who received appropriate venous thromboembolism (VTE) prophylaxis within 24 hours prior to surgery to 24 hours after surgery end time.
Numerator Statement: Surgery patients who received appropriate VTE prophylaxis within 24 hours prior to Surgical Incision Time to 24 hours after Surgery End Time
Appropriate prophylaxis according to Surgery Type:
Intracranial Neurosurgery
Any of the following:
• Intermittent pneumatic compression devices (IPC) with or without graduated compression stockings (GCS)
• Low-dose unfractionated heparin (LDUH)
Low molecular weight heparin (LMWH)2
• LDUH or LMWH2 combined with IPC or GCS
General Surgery
Any of the following:
• Low-dose unfractionated heparin (LDUH)
• Low molecular weight heparin (LMWH)
• Factor Xa Inhibitor (Fondaparinux)
• LDUH or LMWH or Factor Xa Inhibitor (fondaparinux) combined with IPC or GCS
General Surgery with a reason for not administering pharmacological prophylaxisAny of the following:
• Graduated Compression stockings (GCS)
• Intermittent pneumatic compression devices (IPC)
Gynecologic Surgery
Any of the following:
• Low-dose unfractionated heparin (LDUH)
• Low molecular weight heparin (LMWH)
• Factor Xa Inhibitor (fondaparinux)

• Intermittent pneumatic compression devices (IPC)
• LDUH or LMWH or Factor Xa Inhibitor (fondaparinux) combined with IPC or GCS
Urologic Surgery
Any of the following:
• Low-dose unfractionated heparin (LDUH)
• Low molecular weight heparin (LMWH)
• Factor Xa Inhibitor (fondaparinux)
• Intermittent pneumatic compression devices (IPC)
• Graduated compression stockings (GCS)
• LDUH or LMWH or Factor Xa Inhibitor (fondaparinux) combined with IPC or GCS
Elective Total Hip Replacement
Any of the following started within 24 hours of surgery:
• Low molecular weight heparin (LMWH)
• Factor Xa Inhibitor (Fondaparinux)
• Warfarin
Elective Total Knee Replacement
Any of the following:
• Low molecular weight heparin (LMWH)
• Factor Xa Inhibitor (Fondaparinux)
• Warfarin
• Intermittent pneumatic compression devices (IPC)
• Venous foot pump (VFP)
Hip Fracture Surgery
Any of the following:
• Low-dose unfractionated heparin (LDUH)
• Low molecular weight heparin (LMWH)
• Factor Xa Inhibitor (Fondaparinux)
• Warfarin
Elective Total Hip Replacement with a reason for not administering pharmacological prophylaxis
Any of the following:
• Intermittent pneumatic compression devices (IPC)
• Venous foot pump (VFP)
Hip Fracture Surgery with a reason for not administering pharmacological prophylaxis
Any of the following:
• Graduated Compression Stockings (GCS)
• Intermittent pneumatic compression devices (IPC)
• Venous foot pump (VFP)
Denominator Statement: All selected surgery patients.
Exclusions: Data elements: clinical trial, laparoscope, perioperative death, preadmission warfarin, reason for not administering VTE prophylaxis
Adjustment/Stratification: no risk adjustment necessary/Stratifed by surgery type and those are intracranial neurosurgery, general surgery, gynecologic surgery, urologic surgery, elective total hip replacement
Level of Analysis: Facility/Agency; Program: QIO; can be measured at all levels
Type of Measure: Process
Data Source: Electronic clinical data; electronic health/medical record; paper medical record/flow-sheet. Vendor tools or CART.
CART is available for download free at http://www.qualitynet.org/dcs/ContentServer?c=Page&pagename=QnetPublic%2FPage%2FQnetTier2&cid=1138900279093
Measure Steward: Centers for Medicare & Medicaid Services | 7500 Security Boulevard | Baltimore | Maryland | 21244

Steering Committee Recommendation for Endorsement: Preliminary Y-16; N-3; A-1
Rationale: The large number of patients at risk and rate of death demonstrates the importance of continuing to strive for 100 percent compliance since VTE is one of the most common preventable causes of hospital death with about 1/3 of such occurrences being fatal.

If applicable, Conditions/Questions for Developer:

1. 2a Measure Specifications: The length-of-stay indicated in the form is inconsistent. Length-of-stay is listed as three calendar days in some areas of the form and 24 hours in other areas.
2. 2a.3 Numerator Details: Provide a more detailed definition of what constitutes 'appropriate VTE prophylaxis' and attempt to reconcile ACCP guidelines with other evidence based guidelines for relevant populations (e.g. AAOS for orthopedic procedures).
3. 2a.10 Denominator Exclusion Details: Provide a more detailed definition of the laparoscopic exclusion or remove laparoscopic procedures from the denominator exclusions.

Developer Response:

1. The numerator time window (section 2a.2) is 24 hours prior to incision to 24 hours after surgery end time. Included in the measure submission is an exclusion statement "Patients with hospital length of stay less than or equal to 3 calendar days" that was not consistent with the exclusion statements in the paired measure, #217. All of the information about length of stay in #218 is correct. Measure #217 contains an incorrect statement about length of stay, but that measure is not being considered for re-endorsement, so it will not be corrected.
2. The submission form requests a link to the specifications and specifically recommends against the use of attachments. The Measure Information Form on the QualityNet website provides a very detailed table listing the procedure type and the appropriate VTE prophylaxis. That table is below. The recommendations in the measure are based on Level I evidence, per the ACCP Guidelines. The AAOS has this recommendation for prevention of symptomatic PE in patients undergoing hip/knee arthroplasty, with a Level III rating. *The use of aspirin as a monotherapy is the only recommendation that does not agree with the ACCP Guidelines.* The recommendation from AAOS is listed below:
   Recommendation 3.3
   Chemoprophylaxis of patients undergoing hip or knee replacement
   Recommendation 3.3.1
   Patients at standard risk of both PE and major bleeding should be considered for one of the chemoprophylactic agents evaluated in this guideline, including—in alphabetical order: Aspirin, low molecular-weight heparin (LMWH), synthetic pentasaccharides, and warfarin. (Level III, Grade B [choice of prophylactic agent], Grade C [dosage and timing])
   Note: The grade of recommendation was reduced from B to C for dosage and timing because of the lack of consistent evidence in the literature defining a clearly superior regime.
3. The exclusion for laparoscopic procedures is being removed for discharges beginning 1/1/2012.

Steering Committee Follow-up:

The Steering Committee agreed that the response from the developer was adequate. The Steering Committee expressed that in the future they would like to see ACCP and AAOS work together to create appropriate and standardized guidelines.

If applicable, Questions to the Steering Committee:

1. Importance to Measure and Report: Y-20; N-0
(1a. Impact; 1b. Performance gap; 1c. Outcome or Evidence)
Rationale: Performance in qtr 1, 2010 was 92.5%, up from 69.79% in 2005 with significant remaining opportunity for improvement. Studies have indicated that the number one cause of 30-day mortality in cancer patients after surgery is related to venous thromboembolism.

2. Scientific Acceptability of Measure Properties: C-6; P-13; M-1; N-0
(2a. Precise specifications; 2b. Reliability testing; 2c. Validity testing; 2d. Exclusions justified; 2e. Risk adjustment/stratification; 2f. Meaningful differences; 2g. Comparability; 2h. Disparities)
Rationale: The numerator is not harmonized with other evidence-based guidelines. Laparoscopic surgery is not

well defined and should be removed from the list of exclusions as they are high risk patients.
3. Usability: C-9; P-11; M-0; N-0 *(3a. Meaningful/useful for public reporting and quality improvement; 3b. Harmonized; 3c. Distinctive or additive value to existing measures)* **Rationale:** The data sources include electronic clinical data, the electronic medical record where in use and paper medical record abstraction. It is in use in U.S. hospitals receiving Medicare reimbursement nationally.
4. Feasibility: C-13; P-7; M-0; N-0 *(4a. Clinical data generated during care process; 4b. Electronic sources; 4c. Exclusions – no additional data source; 4d. Susceptibility to inaccuracies/ unintended consequences identified 4e. Data collection strategy can be implemented)* **Rationale:** The measure can be easily implemented.

NEXT STEPS

Ms. Murphy indicated that project staff will continue with preparations for the next in-person Steering Committee meeting on May 4-5, 2011. At that time, CMS will present the results from its expert panel discussion regarding changing the timeframe of the numerator statement of measure 300, Cardiac patients with controlled 6 am postoperative serum glucose. The Steering Committee requested that the discussion of related and competing measures and follow-up votes for endorsement be carried out then as well. Staff is currently putting together a gaps analysis to assist the Steering Committee in examining opportunities for NQF to reduce disparities through the endorsement of new measures or by adding discriminating information to existing measures.

Ms. Forman stated that the Phase II process would follow the same process as Phase I but clarified that additional information had been sought from developers based on themes that emerged from the Phase I meeting. The Phase II measure submission forms and assignments will be sent to the Steering Committee during the first week of April. Preliminary evaluations will be submitted via Survey Monkey for discussion on workgroup conference calls.