NATIONAL QUALITY FORUM

TO: Consensus Standards Approval Committee (CSAC)

FR: Melinda Murphy and Alexis Forman

RE: Result of Voting for *National Voluntary Consensus Standards: Surgery Endorsement Maintenance 2010, Phase I: A Consensus Report*

DA: September 2, 2011

The CSAC will review the recommendations from the project, *National Voluntary Consensus Standards: Surgery Endorsement Maintenance 2010, Phase I* on the September 12 call. This memo includes the list of recommended measures, summary information about the project, and the Member voting results. The individual measure evaluation summary tables from the draft report are in the Appendix. The complete voting draft report and detailed measure information are available on the project webpage.

CSAC ACTION REQUIRED

Pursuant to the Consensus Development Process (CDP), the CSAC may consider approval of 18 candidate consensus standards of which one was recommended for placement in "reserve status" as specified in the "voting draft" of the *National Voluntary Consensus Standards: Surgery Endorsement Maintenance 2010, Phase I* report. All are National Quality Forum (NQF)-endorsed® measures that have been updated as part of the maintenance process.

Cardiac-CABG

- 0114 Risk-adjusted post-operative renal failure (STS)
- 0115 Risk-adjusted surgical re-exploration (STS)
- 0129 Risk-adjusted prolonged intubation (ventilation) (STS)
- 0131 Risk-adjusted stroke/cerebrovascular accident (STS)
- 0119 Risk-adjusted operative mortality for CABG (STS)
- 0113 Participation in a systematic database for cardiac surgery (STS) **(reserve status)**

Cardiac-CABG: Valve Replacement/Repair

- 0120 Risk-adjusted operative mortality for aortic valve replacement (AVR) (STS)
- 0121 Risk-adjusted operative mortality for mitral valve (MV) replacement (STS)
- 0122 Risk-adjusted operative mortality MV replacement + CABG surgery (STS)
- 0123 Risk-adjusted operative mortality for aortic valve replacement (AVR) + CABG surgery (STS)
- 1501 Risk-adjusted operative mortality for mitral valve (MV) repair (STS)
- 1502 Risk-adjusted operative mortality for MV repair + CABG surgery (STS)

Esophageal Resection and Transfusion

- 0360 Esophageal resection mortality rate (IQI 8) (AHRQ)
- 0361 Esophageal resection volume (IQI 1) (AHRQ)

Cardiac-CABG

- 0116 Anti-platelet medication at discharge (STS)
- 0118 Anti-lipid treatment discharge (STS)
- 0130 Risk-adjusted deep sternal wound infection rate (STS)

Venous Thromboembolism (VTE)

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

PROCESS

This project followed the National Quality Forum's (NQF's) version 1.8 of the CDP with the exception of the newly implemented 15-day voting period. All CDP steps were adhered to, and no concerns regarding the process were received. Of the measures submitted in this phase, thirty were considered of which seven were withdrawn by the measure developer and three were not recommended by the Committee.

Measure Evaluation

The measures were evaluated against the 2009 version of the measure evaluation criteria (prior to implementing the task force recommendations). The Steering Committee encountered several overarching issues during its discussions and evaluations of the measures. These issues were factored into the Committee's ratings and recommendations for multiple measures and are explained below.

Clarity of Measure Specifications

Committee members requested clarification of a number of measure specifications related to incompleteness of specifications, inconsistencies in language, and construction of algorithms. The Committee considered the documents and appendices that were provided as attachments to the measure submissions to be useful in evaluating the measures; however, it urged measure developers to include all pertinent information within the submission forms to ensure accurate understanding of the measures for potential users and to provide clarity to the public.

Participation in Proprietary Registries

A number of measures that are advanced for continued endorsement rely on registry data; although, they are specified such that they do not require participation in the identified registry. The Committee took the position that endorsing a measure that requires use of registry data is of concern because by default it requires participation in the registry. Furthermore, the data for a number of measures are not routinely collected outside the registry, which adds to the burden of collection for organizations. Finally, the use of such measures makes it essential that the specifications are fully detailed in a transparent fashion and that required data elements are standardized.

Topped Out Measures

The Committee debated the definition of "topped out." It agreed that some measures are performing at such a high level that continued efforts to improve performance are probably not

warranted. With an NQF draft proposal for special designation, later presented and approved by the NQF Board of Directors, as a starting point, the Committee agreed that such measures should be maintained in the NQF portfolio with some specific designation provided they address important aspects of quality that should be sustained and fully meet all endorsement criteria with the exception of "importance" as long as failure to meet this criterion was due only to a high level of performance with little to no variation. The Committee wanted to ensure that performance among the subpopulations included in measures was high; in some cases there were disparities that suggested a need to continue specific measures. Also, there was concern that failing to continue endorsement of maintenance measures that meet all evaluation criteria but are not viewed as important for regular continued monitoring because of a high level of performance could result in inattention to the process or outcome and consequently to reduced levels of performance and potentially poor patient outcomes. This latter concern prompted the Committee to support the proposal to place high-performing measures in "Reserve Status," that is, they retain endorsement but do not have to be regularly reported.

Failure to Provide Information about Disparities and Public Reporting
The Committee noted that many measure submission forms lacked information about disparities and current uses of the measures, including public reporting. In each case where information about disparities was not included, reporting was not currently occurring, or plans were not in place to begin reporting, the Committee asked that such information be provided prior to endorsement recommendations.

Impact on Quality
The Committee suggested measure developers provide detail on how their NQF-endorsed measure(s) have impacted quality since initial endorsement. The Committee considered such information as vital to the process of deciding whether a measure should retain endorsement.

Current Evidence and Relationship to Outcomes
The Committee expressed its preference for measures that provide clear and direct evidence of the measure's proximity to an improved outcome. Ensuring that the evidence provided to support the measure is current was highlighted, particularly for measures undergoing maintenance.

Related and Competing Measures
A subset of the candidate consensus standards was related or competing with other candidate or NQF-endorsed measures. The Steering Committee first evaluated each candidate standard on its own merits and then compared the measures that met NQF evaluation criteria with the related or competing measures using NQF's harmonization and competing measures guidance.

COMMENTS ON THE DRAFT REPORT AND THEIR DISPOSITION

The comment period for the draft report, *National Voluntary Consensus Standards: Surgery Endorsement Maintenance 2010, Phase I: A Consensus Report,* concluded on July 12, 2011. NQF received 35 comments from 11 individuals and organizations. A table of detailed comments submitted during the review period, with responses and actions taken by the Steering Committee and measure developers, is posted on the NQF project page under the Public and Member-Phase I comment section. A summary of comments and responses for each measure are also provided in the evaluation summary tables in the Appendix.

Comments about specific measure specifications were forwarded to the developers, who were invited to respond.

Several themes emerged in the comments including:

- extension of clinician group measures to include individual clinician level of measurement;
- use of hierarchical logistic regression modeling;
- including age specifications in measure descriptions and denominator statements;
- opposition to recommendation of endorsement and placement in reserve status for measure 0113: Participation in a systematic database for cardiac surgery (STS); and
- encouragement to recommend measure 0124: Surgical volume-a. isolated coronary artery bypass graft (CABG) surgery, b. valve surgery, c. CABG + valve surgery for NQF endorsement

At its review of all comments, the Steering Committee had the benefit of developer responses. Committee members focused their discussion on recurring concerns and specific measures and topic areas that were most controversial or that questioned positions they had taken. Ultimately, the Committee made no changes to its measure recommendations.

General Comments

Inclusion of individual clinician level of measurement

Commenters suggested that the Society of Thoracic Surgeons (STS) report the performance of individual clinicians to provide consumers with information to make educated decisions about their healthcare and to advance the quality of care at the clinician level. The measure developer indicated that the number of procedures performed by individual surgeons is low and, for CABG, continues to decline such that ability to discriminate performance is not reliable; that selection of providers for CABG surgery should be based on competence of the entire team; and that clinician level reporting could produce risk aversion. The Committee agreed that where appropriate, reporting at the clinician level is important but should be done only where the issues are carefully considered. It noted that groups and hospitals can generate individual clinician information from the STS measures for use in quality improvement activities.

Use of hierarchical logistic regression modeling

Multiple comments were submitted with the concern of risk adjustment models not accounting for patient risk factors and variation of care. The Committee believes it is important that measures take into account patient risk factors while ensuring that variations in care are not obscured by risk adjustment. The CSAC will further address the risk modeling issue in November 2011.

Comments on Measures Recommended for Endorsement

Inclusion of age specifications

Comments were submitted regarding the need to include the age range of the target population in the measure descriptions and denominator statements in addition to further into the

specifications. STS has added the age range to each of their measures in the requested location within the specifications. CMS has been encouraged to do so as well. NQF is working to develop additional guidance to measure developers to encourage greater standardization on how measure specifications are defined.

Comments on Measures Recommended for Endorsement and Placement in Reserve Status

Opposition of recommendation of measure 0113
Several comments were put forward concerning the Committee's recommendation regarding measure 0113: Participation in a systematic database for cardiac surgery. Commenters indicated that the measure has a performance rate of 95 percent and there is a lack of evidence on whether participation in a registry alone improves quality of care. The measure developer noted that there are observational data that registries do make contributions to quality improvement. The Committee maintained its recommendation for continued endorsement with placement in reserve status based on its determination that this measure is highly credible, reliable and valid and provides a way to collect and benchmark facility data to improve healthcare quality.

Comments on Measures Not Recommended for Endorsement

Encouragement to recommend measure 0124
Numerous comments were received asking the Committee to reconsider its decision to not recommend measure 0124: Surgical volume-a. isolated coronary artery bypass graft (CABG) surgery, b. valve surgery, c. CABG + valve surgery for NQF endorsement. Commenters believe volume is linked to providing a higher quality of care and patient outcomes. The Committee, as well as the developer, noted that there is not a strong volume/outcome relationship for CABG and maintained its recommendation.

NQF MEMBER VOTING

Effective July 1, 2011, the voting cycle changed from 30 days to **15 days** for NQF members to submit their votes. The 15-day voting period for the Surgery Endorsement Maintenance 2010, Phase I project concluded on August 30, 2011. Representatives of twenty-four member organizations voted; no votes were received from the Public/Community Health Agency and Supplier/Industry councils.

All measures were approved with total approval ranging from 74% to 100%. Within the Councils, the lowest approval percentage was for measure 0113 Participation in a systematic database for cardiac surgery (recommended for placement in reserve status) (Consumer Council 50% - 1 Yes, 1 No; Provider Council 71% - 5 Yes, 2 No; Purchaser Council 33% - 1 Yes, 2 No; QMRI Council 0% - 0 Yes, 1 No). The following comment regarding measure 0113 was received:

- "Intermountain Healthcare does not support the use of registry database participation as a single measure. This measure is now publically reported and does not provide the public with information that is of value. This measure supports proprietary data base usage which, in a public reporting setting, Intermountain has strong concerns."

The issue of participating in proprietary registries received significant attention during the measure evaluation and comment period. However, while the expressed concerns have merit, the Steering Committee opined that registries continue to provide a way to collect, benchmark, and report back to participants to facilitate appreciation of levels of performance and potential for improvement.

Three additional organizations submitted 8 voting comments. Below are the comments:

- Atlantic Health submitted comments indicating their disapproval of endorsement on four specific measures:
    - Measure 0114 Risk-adjusted post-operative renal failure (STS)
        - "The definition of post-op renal failure (Crt > 4 or 3x most recent baseline), and the exclusion for pre-existing renal failure (Crt>4) are burdensome. A patient with a baseline Crt of .7 who develops ATN for a day or two after surgery, could easily bump his/her Crt to >2.1 temporarily ... this is ATN, and should not be considered renal failure. Similarly, a patient with a Crt of 3.7 who needs transient hemodialysis after surgery (having not undergone hemodialysis in the past), should be considered to have an exacerbation of pre-existing renal failure, not new-onset renal failure. We feel that the baseline Crt for exclusion should be lower (ie 2-3 vs. 4), and the definition for post-op renal failure be re-evaluated to exclude cases of ATN."

          The issue of providing a more detailed definition of renal failure was addressed during measure evaluation. The Committee requested, and the developer agreed to, use the RIFLE criteria definition of renal failure.

    - Measure 0115 Risk-adjusted surgical re-exploration (STS)
        - "We feel that the measure developers should change the definition of re-exploration to include mediastinal re-exploration for ANY reason. Not uncommonly, we have patients who have slow insidious clinically insignificant bleeds overnight that might result in a hemothorax that requires re-exploration the following morning ... based on their definition, technically, this is not considered a re-exploration. Furthermore, in an effort to "pad their numbers", a number of cardiac programs will re-explore their patients IN the CPACU ... technically this is not a return to the operating room and therefore not considered a re-exploration ... we could play this game too, but choose not to. This needs to be changed."

          The issue of the potential of 'gaming' to fulfill the requirements of the measure was discussed during measure evaluation. The Committee accepted that such behaviors can occur across measures.

    - Measure 0129 Risk-adjusted prolonged intubation (ventilation) (STS)

        - "The definition of prolonged intubation (>24 hours) is burdensome. Granted, the majority of patients SHOULD be extubated well within 24 hours from surgery, based on the acuity of our patient population, we may choose (for the patient's own benefit) to keep them intubated for > 24 hours for a variety of reasons (recent large MI, multiple pressors, indwelling IABP, etc.). There should be exclusion criteria considered for this item."

          The Committee asked the developer to consider changing the time limit to a period that was less than 24 hours. The developer felt a time period less than 24 hours would not be appropriate as a routine performance measure given the increased complexity of cardiothoracic patients. The Committee suggested the developer submit a complementary measure in the future that focuses on the appropriate intubation time for patients.

    - Measure 0130 Risk-adjusted deep sternal wound infection rate (STS)
        - "The definition is unclear, defined, in part, as an opened wound with excision of tissue, which is called "I and D". I and D is incision and "drainage", which is different than "excision of tissue" ... the measure should be consistent ... one or the other. Furthermore, the definition of a deep sternal wound infection is too burdensome ... opening a sternal wound for 2-3 cm, and packing it superficially (where no bone, sternal wires, or muscle are exposed) is NOT a deep sternal wound ... yet in the definition, ANY wound that is opened (and "drained" or "tissue excised"), is considered a "deep" infection ... this is incorrect."

          The Committee did not discuss the definition of a deep sternal wound infection during its measure evaluation. It had information from the developer that they did harmonize their definition of surgical site infection with CDC's definition.

- Association for Professionals in Infection Control and Epidemiology submitted one comment indicating their disapproval of endorsement on the following measure:

    - Measure 0130 Risk-adjusted deep sternal wound infection rate (STS)
        - "The Association for Professionals in Infection Control and Epidemiology (APIC) does not approve the endorsement of measure 0130 Risk-adjusted deep sternal wound infection rate. Instead APIC supports the previous supported NQF endorsed measure for public reporting of surgical site infection (SSI) rate of deep sternal wound infection rates for CABG using the Centers for Disease Control & Prevention's National Healthcare Safety Network (NHSN) criteria. This was endorsed in the NQF Cardiac Surgery project in 2004. APIC supports the previous measure, rather than the Society for Thoracic Surgeons (STS) definition of deep sternal wound infection rate for the following reasons: i) The major difference between the NHSN and STS metric is the duration of surveillance for possible SSIs

involving in which a deep or organ/space infection (mediastinitis/osteomyelitis) infection can be identified. Sternal wires or other devices that approximate the sternum are considered a non-human implant and as a result NHSN criteria require surveillance for up to one year from the date of surgery. STS limits the scope of surveillance to 30 days after the CABG procedure. In addition, in 2010, NHSN recommended, and APIC supports a newer metric, the standardized infection ratio (SIR) for reporting, which also contains robust risk-adjustment. Rather than calculate rates for each risk category, the SIR takes the risk adjustment into consideration and then calculates one number. This number reflects the observed number of infections over the number of infections expected. The CABG SIR excludes superficial surgical site infections as well as secondary (donor site) surgical site infections. SIR is being successfully used by other organizations as a metric to assess patient care performance.1 ii) The NHSN definition of deep sternal wound infection rates for CABG is risk-adjusted and has been selected by several states, including California and New York2, for public reporting. This measure captures infections within but also beyond 30 days from the date of original surgery. The NHSN CABG SIR will reflect a higher percentage of infections; the STS definition would not capture some infections because of the time limit imposed by their definition. To have two different measures reported to the public could potentially be confusing to the healthcare consumer and the broader universe of providers, payers, etc., who share the single goal of optimizing surgical care. iii) The NHSN data is in the public domain whereas STS database is proprietary. APIC agrees the STS database is invaluable to the surgeons caring for patients undergoing CABG. However there is an element of objectivity that its members bring to surveillance of SSIs by serving in a "third party capacity" that is reflected in NHSN database. It is for these reasons that APIC does not support measure 0130 for selection for the National Voluntary Consensus Standards: Surgery Endorsement Maintenance 2010, Phase I for Cardiac – CABG. Footnotes: 1. Ingraham AM, Cohen ME, Ko CY, Hall BL. A current profile and assessment of north american cholecystectomy: results from the american college of surgeons national surgical quality improvement program. J Am Coll Surg. 2010 Aug;211(2):176-86 2.NY State Dept. of Health. Hospital-Acquired Infection (HAI) Rates in New York State Hospitals. Available at: http://health.ny.gov/statistics/facilities/hospital/hospital_acquired_infections/."

As noted above, the developer indicated that they did harmonize their definition of surgical site infection with CDC's definition. Measure 0130 is the measure that was originally endorsed under the *National Voluntary Consensus Standards for Cardiac Surgery* in 2004.

- America's Health Insurance Plans (AHIP) submitted comments on three specific measures; all measures below were approved by AHIP:

    - Measure 0360 Esophageal resection mortality rate (IQI 8) (AHRQ)
        - "While we support the importance of this measure, there has been limited experience with this AHRQ measure both in use and number of reported cases."

          The Committee discussed the issue of the relatively low volume of esophagectomies performed on an annual basis. Nonetheless, given the complexity and risks to the population associated with the procedure, the Committee decided it was an important measure to continue reporting. For reporting, this measure is to be paired with 0361 Esophageal resection volume (IQI 1).

    - Measure 0361 Esophageal resection volume (IQI 1) (AHRQ)
        - "While we support the importance of this measure, there has been limited experience with this AHRQ measure both in use and number of reported cases."

          The Committee discussed the issue of the relatively low volume of esophagectomies performed on an annual basis. Nonetheless, given the complexity and risks to the population associated with the procedure, the Committee decided it was an important measure to continue reporting. For reporting, this measure is to be paired with 0360 Esophageal resection mortality rate (IQI 8).

    - Measure 0218 Surgery patients who received appropriate venous thromboembolism (VTE) prophylaxis within 24 hours prior to surgery to 24 hours after surgery end time (CMS)
        - "While we support this measure, it may be challenging to report this metric accurately due to the complexity of the measure. It would be ideal to streamline the measure to enhance reliability."

          The specific concern and recommendation embedded in the comment is not clear. The time period and availability of widely accepted guidelines for prophylaxis was deemed to enable use of the measure.

Voting Results

Voting results for the 18 candidate consensus standards are provided below. (Links are provided to the full measure summary evaluation tables.)

Measure 0114: Risk-adjusted post-operative renal failure

Measure Council	Yes	No	Abstain	Total Votes	% Approval*
Consumer	2	0	0	2	100%
Health Plan	4	0	0	4	100%
Health Professional	5	0	2	7	100%
Provider Organizations	6	1	0	7	86%
Public/Community Health Agency	0	0	0	0	
Purchaser	3	0	0	3	100%
QMRI	1	0	0	1	100%
Supplier/Industry	0	0	0	0	
All Councils	**21**	**1**	**2**	**24**	**95%**
Percentage of councils approving (>50%)					100%
Average council percentage approval					98%

*equation: Yes/ (Total-Abstain)

Measure 0115: Risk-adjusted surgical re-exploration

Measure Council	Yes	No	Abstain	Total Votes	% Approval*
Consumer	2	0	0	2	100%
Health Plan	4	0	0	4	100%
Health Professional	5	0	2	7	100%
Provider Organizations	6	1	0	7	86%
Public/Community Health Agency	0	0	0	0	
Purchaser	3	0	0	3	100%
QMRI	1	0	0	1	100%
Supplier/Industry	0	0	0	0	
All Councils	**21**	**1**	**2**	**24**	**95%**
Percentage of councils approving (>50%)					100%
Average council percentage approval					98%

*equation: Yes/ (Total-Abstain)

Measure 0129: Risk-adjusted prolonged intubation (ventilation)

Measure Council	Yes	No	Abstain	Total Votes	% Approval*
Consumer	2	0	0	2	100%
Health Plan	4	0	0	4	100%
Health Professional	5	0	2	7	100%
Provider Organizations	6	1	0	7	86%
Public/Community Health Agency	0	0	0	0	
Purchaser	3	0	0	3	100%
QMRI	1	0	0	1	100%
Supplier/Industry	0	0	0	0	
All Councils	**21**	**1**	**2**	**24**	**95%**
Percentage of councils approving (>50%)					100%
Average council percentage approval					98%

*equation: Yes/ (Total-Abstain)

Measure 0131: Risk-adjusted stroke/cerebrovascular accident

Measure Council	Yes	No	Abstain	Total Votes	% Approval*
Consumer	2	0	0	2	100%
Health Plan	4	0	0	4	100%
Health Professional	5	0	2	7	100%
Provider Organizations	7	0	0	7	100%
Public/Community Health Agency	0	0	0	0	
Purchaser	3	0	0	3	100%
QMRI	1	0	0	1	100%
Supplier/Industry	0	0	0	0	
All Councils	**22**	**0**	**2**	**24**	**100%**
Percentage of councils approving (>50%)					100%
Average council percentage approval					100%

*equation: Yes/ (Total-Abstain)

Measure 0119: Risk-adjusted operative mortality for CABG

Measure Council	Yes	No	Abstain	Total Votes	% Approval*
Consumer	2	0	0	2	100%
Health Plan	4	0	0	4	100%
Health Professional	5	0	2	7	100%
Provider Organizations	7	0	0	7	100%
Public/Community Health Agency	0	0	0	0	
Purchaser	3	0	0	3	100%
QMRI	1	0	0	1	100%
Supplier/Industry	0	0	0	0	
All Councils	**22**	**0**	**2**	**24**	**100%**
Percentage of councils approving (>50%)					100%
Average council percentage approval					100%

*equation: Yes/ (Total-Abstain)

Measure 0120: Risk-adjusted operative mortality for aortic valve replacement (AVR)

Measure Council	Yes	No	Abstain	Total Votes	% Approval*
Consumer	2	0	0	2	100%
Health Plan	4	0	0	4	100%
Health Professional	5	0	2	7	100%
Provider Organizations	7	0	0	7	100%
Public/Community Health Agency	0	0	0	0	
Purchaser	3	0	0	3	100%
QMRI	1	0	0	1	100%
Supplier/Industry	0	0	0	0	
All Councils	**22**	**0**	**2**	**24**	**100%**
Percentage of councils approving (>50%)					100%
Average council percentage approval					100%

*equation: Yes/ (Total-Abstain)

Measure 0121: Risk-adjusted operative mortality for mitral valve replacement

Measure Council	Yes	No	Abstain	Total Votes	% Approval*
Consumer	2	0	0	2	100%
Health Plan	4	0	0	4	100%
Health Professional	5	0	2	7	100%
Provider Organizations	7	0	0	7	100%
Public/Community Health Agency	0	0	0	0	
Purchaser	3	0	0	3	100%
QMRI	1	0	0	1	100%
Supplier/Industry	0	0	0	0	
All Councils	**22**	**0**	**2**	**24**	**100%**
Percentage of councils approving (>50%)					100%
Average council percentage approval					100%

*equation: Yes/ (Total-Abstain)

Measure 0122: Risk-adjusted operative mortality MV replacement + CABG surgery

Measure Council	Yes	No	Abstain	Total Votes	% Approval*
Consumer	2	0	0	2	100%
Health Plan	4	0	0	4	100%
Health Professional	5	0	2	7	100%
Provider Organizations	7	0	0	7	100%
Public/Community Health Agency	0	0	0	0	
Purchaser	3	0	0	3	100%
QMRI	1	0	0	1	100%
Supplier/Industry	0	0	0	0	
All Councils	**22**	**0**	**2**	**24**	**100%**
Percentage of councils approving (>50%)					100%
Average council percentage approval					100%

*equation: Yes/ (Total-Abstain)

Measure 0123: Risk-adjusted operative mortality for AVR + CABG

Measure Council	Yes	No	Abstain	Total Votes	% Approval*
Consumer	2	0	0	2	100%
Health Plan	4	0	0	4	100%
Health Professional	5	0	2	7	100%
Provider Organizations	7	0	0	7	100%
Public/Community Health Agency	0	0	0	0	
Purchaser	3	0	0	3	100%
QMRI	1	0	0	1	100%
Supplier/Industry	0	0	0	0	
All Councils	**22**	**0**	**2**	**24**	**100%**
Percentage of councils approving (>50%)					100%
Average council percentage approval					100%

*equation: Yes/ (Total-Abstain)

Measure 1501: Risk-adjusted operative mortality for MV repair

Measure Council	Yes	No	Abstain	Total Votes	% Approval*
Consumer	2	0	0	2	100%
Health Plan	4	0	0	4	100%
Health Professional	5	0	2	7	100%
Provider Organizations	7	0	0	7	100%
Public/Community Health Agency	0	0	0	0	
Purchaser	3	0	0	3	100%
QMRI	1	0	0	1	100%
Supplier/Industry	0	0	0	0	
All Councils	**22**	**0**	**2**	**24**	**100%**
Percentage of councils approving (>50%)					100%
Average council percentage approval					100%

*equation: Yes/ (Total-Abstain)

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

Measure Council	Yes	No	Abstain	Total Votes	% Approval*
Consumer	2	0	0	2	100%
Health Plan	4	0	0	4	100%
Health Professional	5	0	2	7	100%
Provider Organizations	7	0	0	7	100%
Public/Community Health Agency	0	0	0	0	
Purchaser	3	0	0	3	100%
QMRI	1	0	0	1	100%
Supplier/Industry	0	0	0	0	
All Councils	**22**	**0**	**2**	**24**	**100%**
Percentage of councils approving (>50%)					100%
Average council percentage approval					100%

*equation: Yes/ (Total-Abstain)

Measure 0360: Esophageal resection mortality rate (IQI 8)

Measure Council	Yes	No	Abstain	Total Votes	% Approval*
Consumer	2	0	0	2	100%
Health Plan	4	0	0	4	100%
Health Professional	5	0	2	7	100%
Provider Organizations	7	0	0	7	100%
Public/Community Health Agency	0	0	0	0	
Purchaser	2	0	1	3	100%
QMRI	1	0	0	1	100%
Supplier/Industry	0	0	0	0	
All Councils	**21**	**0**	**3**	**24**	**100%**
Percentage of councils approving (>50%)					100%
Average council percentage approval					100%

*equation: Yes/ (Total-Abstain)

Measure 0361: Esophageal resection volume (IQI 1)

Measure Council	Yes	No	Abstain	Total Votes	% Approval*
Consumer	2	0	0	2	100%
Health Plan	4	0	0	4	100%
Health Professional	5	0	2	7	100%
Provider Organizations	7	0	0	7	100%
Public/Community Health Agency	0	0	0	0	
Purchaser	2	0	1	3	100%
QMRI	1	0	0	1	100%
Supplier/Industry	0	0	0	0	
All Councils	**21**	**0**	**3**	**24**	**100%**
Percentage of councils approving (>50%)					100%
Average council percentage approval					100%

*equation: Yes/ (Total-Abstain)

Measure 0116: Anti-platelet medication at discharge

Measure Council	Yes	No	Abstain	Total Votes	% Approval*
Consumer	2	0	0	2	100%
Health Plan	4	0	0	4	100%
Health Professional	5	0	2	7	100%
Provider Organizations	7	0	0	7	100%
Public/Community Health Agency	0	0	0	0	
Purchaser	3	0	0	3	100%
QMRI	1	0	0	1	100%
Supplier/Industry	0	0	0	0	
All Councils	**22**	**0**	**2**	**24**	**100%**
Percentage of councils approving (>50%)					100%
Average council percentage approval					100%

*equation: Yes/ (Total-Abstain)

Measure 0118: Anti-lipid treatment discharge

Measure Council	Yes	No	Abstain	Total Votes	% Approval*
Consumer	2	0	0	2	100%
Health Plan	4	0	0	4	100%
Health Professional	5	0	2	7	100%
Provider Organizations	7	0	0	7	100%
Public/Community Health Agency	0	0	0	0	
Purchaser	3	0	0	3	100%
QMRI	1	0	0	1	100%
Supplier/Industry	0	0	0	0	
All Councils	**22**	**0**	**2**	**24**	**100%**
Percentage of councils approving (>50%)					100%
Average council percentage approval					100%

*equation: Yes/ (Total-Abstain)

Measure 0130: Risk-adjusted deep sternal wound infection rate

Measure Council	Yes	No	Abstain	Total Votes	% Approval*
Consumer	2	0	0	2	100%
Health Plan	4	0	0	4	100%
Health Professional	5	1	1	7	83%
Provider Organizations	6	1	0	7	86%
Public/Community Health Agency	0	0	0	0	
Purchaser	3	0	0	3	100%
QMRI	1	0	0	1	100%
Supplier/Industry	0	0	0	0	
All Councils	**21**	**2**	**1**	**24**	**91%**
Percentage of councils approving (>50%)					100%
Average council percentage approval					95%

*equation: Yes/ (Total-Abstain)

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

Measure Council	Yes	No	Abstain	Total Votes	% Approval*
Consumer	1	1	0	2	50%
Health Plan	3	0	1	4	100%
Health Professional	6	0	1	7	100%
Provider Organizations	7	0	0	7	100%
Public/Community Health Agency	0	0	0	0	
Purchaser	2	1	0	3	67%
QMRI	1	0	0	1	100%
Supplier/Industry	0	0	0	0	
All Councils	**20**	**2**	**2**	**24**	**91%**
Percentage of councils approving (>50%)					83%
Average council percentage approval					86%

*equation: Yes/ (Total-Abstain)

Measure 0113: Participation in a systematic database for cardiac surgery

Measure Council	Yes	No	Abstain	Total Votes	% Approval*
Consumer	1	1	0	2	50%
Health Plan	4	0	0	4	100%
Health Professional	6	0	1	7	100%
Provider Organizations	5	2	0	7	71%
Public/Community Health Agency	0	0	0	0	
Purchaser	1	2	0	3	33%
QMRI	0	1	0	1	0%
Supplier/Industry	0	0	0	0	
All Councils	**17**	**6**	**1**	**24**	**74%**
Percentage of councils approving (>50%)					50%
Average council percentage approval					59%

*equation: Yes/ (Total-Abstain)

Appendix

Evaluation Summary—Candidate Consensus Standards Recommended for Endorsement

0114 Risk-adjusted post-operative renal failure

For More Information: Detailed Measure Specifications (Draft Report); Complete Measure Submission; Meeting/Call Proceedings

Description: Percent of patients aged 18 years and older 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: Y-17; N-1; A-1
Rationale: This is an important metric for benchmarking data on patients undergoing isolated CABG who develop post-operative renal failure or require dialysis.

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.

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

0114 Risk-adjusted post-operative renal failure
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 abstraction was not clearly indicated. The developer did not provide the cost of hiring employees to perform data abstraction.
Public and Member Comments General Comments included: • level of analysis should be reported at the individual surgeon level when sample sizes are sufficient; • support for and against risk adjustment; and • requests to reconsider endorsement based on bundling of outcomes. The Steering Committee discussed the level of analysis and was sensitive to a number of issues that should be considered as organizations determine how measures should be structured and reported, including small sample sizes and potential for risk aversion. The Steering Committee stated it was appropriate to consider clinician level reporting where appropriate after consideration of the attendant issues. It noted that it was important for measures to take into account patient risk factors while ensuring that variations in care are not obscured by risk adjustment. It also clarified with the developer that individual clinician information can be generated at the group or hospital level for use in quality improvement. Comments specific to the measure included concern that risk-adjusted post operative renal failure may not be modifiable without affecting other outcomes measures and may be confusing for public reporting. The Steering Committee reaffirmed its endorsement of this measure for quality improvement and public reporting. Bundling complications can add power to the ability for greater discrimination thus there is value in portraying things such as complications in this way. The reporting approach is not delineated though NQF-endorsed® guidance for reporting is included in the report titled National Voluntary Consensus Standards for Public Reporting of Patient Safety Event Information.
Voting: Total Approval: 95% Comments received: "The definition of post-op renal failure (Crt > 4 or 3x most recent baseline), and the exclusion for pre-existing renal failure (Crt>4) are burdensome. A patient with a baseline Crt of .7 who develops ATN for a day or two after surgery, could easily bump his/her Crt to >2.1 temporarily ... this is ATN, and should not be considered renal failure. Similarly, a patient with a Crt of 3.7 who needs transient hemodialysis after surgery (having not undergone hemodialysis in the past), should be considered to have an exacerbation of pre-existing renal failure, not new-onset renal failure. We feel that the baseline Crt for exclusion should be lower (ie 2-3 vs. 4), and the definition for post-op renal failure be re-evaluated to exclude cases of ATN." **CSAC Approval:** **Board Endorsement:**

0115 Risk-adjusted surgical re-exploration

For More Information: Detailed Measure Specifications (Draft Report); Complete Measure Submission; Meeting/Call Proceedings

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: Y-19; N-0; A-1
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.

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.

Public and Member Comments
General Comments included:

- level of analysis should be reported at the individual surgeon level when sample sizes are sufficient; and
- support for and against risk adjustment.

The Steering Committee discussed the level of analysis and was sensitive to a number of issues that should be considered as organizations determine how measures should be structured and reported, including small sample sizes and potential for risk aversion. The Steering Committee stated it was appropriate to consider clinician level reporting where appropriate after consideration of the attendant issues. It noted that it was important for measures to take into account patient risk factors while ensuring that variations in care are not obscured by risk adjustment. It also clarified with the developer that individual clinician information can be generated at the

0115 Risk-adjusted surgical re-exploration
group or hospital level for use in quality improvement. Comments specific to the measure suggested it would be more informative to separate re-exploration for bleeding from re-exploration for other causes. The Committee determined this measure addresses surgical re-exploration as a complication of the surgical procedure and acknowledged that bleeding is one of the major causes.
Voting: Total Approval: 95% Comments received: "We feel that the measure developers should change the definition of re-exploration to include mediastinal re-exploration for ANY reason. Not uncommonly, we have patients who have slow insidious clinically insignificant bleeds overnight that might result in a hemothorax that requires re-exploration the following morning ... based on their definition, technically, this is not considered a re-exploration. Furthermore, in an effort to "pad their numbers", a number of cardiac programs will re-explore their patients IN the CPACU ... technically this is not a return to the operating room and therefore not considered a re-exploration ... we could play this game too, but choose not to. This needs to be changed." **CSAC Approval:** **Board Endorsement:**

0129 Risk-adjusted prolonged intubation (ventilation)

For More Information: Detailed Measure Specifications (Draft Report); Complete Measure Submission; Meeting/Call Proceedings

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: Y-15; N-4; A-1
Rationale: Intubation is linked to morbidty, and an increase in length-of-stay, cost and resource utilization. The Committee suggested in the future the developer submit a companion measure at the next maintenance review that focuses on the median time to extubation for patients with whom are intubated for less than 24 hours.

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.

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.

Public and Member Comments
General Comments included:

- level of analysis should be reported at the individual surgeon level when sample sizes are sufficient; and
- support for and against risk adjustment.

The Steering Committee discussed the level of analysis and was sensitive to a number of issues that should be considered as organizations determine how measures should be structured and reported, including small sample sizes and potential for risk aversion. The Steering Committee stated it was appropriate to consider clinician level reporting where appropriate after consideration of the attendant issues. It noted that it was important for measures to take into account patient risk factors while ensuring that variations in

0129 Risk-adjusted prolonged intubation (ventilation)
care are not obscured by risk adjustment. It also clarified with the developer that individual clinician information can be generated at the group or hospital level for use in quality improvement.
Voting: Total Approval: 95% Comments received: "The definition of prolonged intubation (>24 hours) is burdensome. Granted, the majority of patients SHOULD be extubated well within 24 hours from surgery, based on the acuity of our patient population, we may choose (for the patient's own benefit) to keep them intubated for > 24 hours for a variety of reasons (recent large MI, multiple pressors, indwelling IABP, etc.). There should be exclusion criteria considered for this item." **CSAC Approval:** **Board Endorsement:**

0131 Risk-adjusted stroke/cerebrovascular accident

For More Information: Detailed Measure Specifications (Draft Report); Complete Measure Submission; Meeting/Call Proceedings

Description: Percent of patients aged 18 years and older 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
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: Y-20; N-1; A-0
Rationale: It is an important clinical condition to publicly report.

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.

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 25th and 75th 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.

Public and Member Comments
General Comments included:

- level of analysis should be reported at the individual surgeon level when sample sizes are sufficient;
- support for and against risk adjustment; and
- requests to reconsider endorsement based on bundling of outcomes.

0131 Risk-adjusted stroke/cerebrovascular accident
The Steering Committee discussed the level of analysis and was sensitive to a number of issues that should be considered as organizations determine how measures should be structured and reported, including small sample sizes and potential for risk aversion. The Steering Committee stated it was appropriate to consider clinician level reporting where appropriate after consideration of the attendant issues. It noted that it was important for measures to take into account patient risk factors while ensuring that variations in care are not obscured by risk adjustment. It also clarified with the developer that individual clinician information can be generated at the group or hospital level for use in quality improvement. Comments specific to the measure included concern that risk-adjusted stroke/cerebrovascular accident may not be modifiable without affecting other outcomes measures and may be confusing for public reporting. The Steering Committee reaffirmed its endorsement of this measure for quality improvement and public reporting. Bundling complications can add power to the ability for greater discrimination thus there is value in portraying things such as complications in this way. The reporting approach is not delineated though NQF-endorsed® guidance for reporting is included in the report titled National Voluntary Consensus Standards for Public Reporting of Patient Safety Event Information.
Voting: Total Approval: 100% Comments received: None **CSAC Approval:** **Board Endorsement:**

0119 Risk-adjusted operative mortality for CABG

For More Information: Detailed Measure Specifications (Draft Report); Complete Measure Submission; Meeting/Call Proceedings

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, including both 1) all deaths occurring during the hospitalization in which the operation 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: Y-19; N-1; 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.

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.

Public and Member Comments:
General Comments included:

- level of analysis should be reported at the individual surgeon level when sample sizes are sufficient; and
- support for and against risk adjustment.

The Steering Committee discussed the level of analysis and was sensitive to a number of issues that should be considered as organizations determine how measures should be structured and reported, including small sample sizes and potential for risk aversion. The Steering Committee stated it was appropriate to consider clinician level reporting where appropriate after consideration of the attendant issues. It noted that it was important for measures to take into account patient risk factors while ensuring that variations in care are not obscured by risk adjustment. It also clarified with the developer that individual clinician information can be generated at the group or hospital level for use in quality improvement.

Voting: Total Approval: 100%

0119 Risk-adjusted operative mortality for CABG
Comments received: None **CSAC Approval:** **Board Endorsement:**

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

For More Information: Detailed Measure Specifications (Draft Report); Complete Measure Submission; Meeting/Call Proceedings

Description: Percent of patients aged 18 years and older 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 AVR who die, including both 1) all deaths occurring during the hospitalization in which the operation 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 aged 18 years and older 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: Y-19; N-1; 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.

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.

Public and Member Comments

General Comments included:

- level of analysis should be reported at the individual surgeon level when sample sizes are sufficient; and
- support for and against risk adjustment.

The Steering Committee discussed the level of analysis and was sensitive to a number of issues that should be considered as organizations determine how measures should be structured and reported, including small sample sizes and potential for risk aversion. The Steering Committee stated it was appropriate to consider clinician level reporting where appropriate after consideration of the attendant issues. It noted that it was important for measures to take into account patient risk factors while ensuring that variations in care are not obscured by risk adjustment. It also clarified with the developer that individual clinician information can be generated at the group or hospital level for use in quality improvement. The Steering Committee supported changes to the measure descriptions and denominator statements that were requested.

Comments specific to the measure included a request that age specification be included in the measure description and denominator statements.

0120 Risk-adjusted operative mortality for aortic valve replacement (AVR)
The Steering Committee supported the change and the measure developer agreed to modify the measure descriptions and denominator statements to include age specifications.
Voting: Total Approval: 100% Comments received: None **CSAC Approval:** **Board Endorsement:**

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

For More Information: Detailed Measure Specifications (Draft Report); Complete Measure Submission; Meeting/Call Proceedings

Description: Percent of patients aged 18 years and older 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 aged 18 years and older 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: Y-19; N-1; 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.

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.

Public and Member Comments
General Comments included:

- level of analysis should be reported at the individual surgeon level when sample sizes are sufficient; and,
- support for and against risk adjustment.

The Steering Committee discussed the level of analysis and was sensitive to a number of issues that should be considered as organizations determine how measures should be structured and reported, including small sample sizes and potential for risk aversion. The Steering Committee stated it was appropriate to consider clinician level reporting where appropriate after consideration of the attendant issues. It noted that it was important for measures to take into account patient risk factors while ensuring that variations in care are not obscured by risk adjustment. It also clarified with the developer that individual clinician information can be generated at the group or hospital level for use in quality improvement. The Steering Committee supported changes to the measure descriptions and denominator statements that were requested.

0121 Risk-adjusted operative mortality for mitral valve (MV) replacement
Comments specific to the measure included a request that age specification be included in the measure description and denominator statements. The Steering Committee supported the change and the measure developer agreed to modify the measure descriptions and denominator statements to include age specifications.
Voting: Total Approval: 100% Comments received: None **CSAC Approval:** **Board Endorsement:**

0122 Risk-adjusted operative mortality MV replacement + CABG surgery

For More Information: Detailed Measure Specifications (Draft Report); Complete Measure Submission; Meeting/Call Proceedings

Description: Percent of patients aged 18 years and older 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 aged 18 years and older 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: Y-19; N-1; 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.

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.

Public and Member Comments
General Comments included:

- level of analysis should be reported at the individual surgeon level when sample sizes are sufficient; and
- support for and against risk adjustment.

The Steering Committee discussed the level of analysis and was sensitive to a number of issues that should be considered as organizations determine how measures should be structured and reported, including small sample sizes and potential for risk aversion. The Steering Committee stated it was appropriate to consider clinician level reporting where appropriate after consideration of the attendant issues. It noted that it was important for measures to take into account patient risk factors while ensuring that variations in care are not obscured by risk adjustment. It also clarified with the developer that individual clinician information can be generated at the group or hospital level for use in quality improvement. The Steering Committee supported changes to the measure descriptions and denominator statements that were requested.

Comments specific to the measure included a request that age specification be included in the measure description and denominator statements.

0122 Risk-adjusted operative mortality MV replacement + CABG surgery
The Steering Committee supported the change and the measure developer agreed to modify the measure descriptions and denominator statements to include age specifications.
Voting: Total Approval: 100% Comments received: None **CSAC Approval:** **Board Endorsement:**

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

For More Information: Detailed Measure Specifications (Draft Report); Complete Measure Submission; Meeting/Call Proceedings

Description: Percent of patients aged 18 years and older 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 aged 18 years and older 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: Y-19; N-1; 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.

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.

Public and Member Comments
General Comments included:

- level of analysis should be reported at the individual surgeon level when sample sizes are sufficient; and
- support for and against risk adjustment.

The Steering Committee discussed the level of analysis and was sensitive to a number of issues that should be considered as organizations determine how measures should be structured and reported, including small sample sizes and potential for risk aversion. The Steering Committee stated it was appropriate to consider clinician level reporting where appropriate after consideration of the attendant issues. It noted that it was important for measures to take into account patient risk factors while ensuring that variations in care are not obscured by risk adjustment. It also clarified with the developer that individual clinician information can be generated at the group or hospital level for use in quality improvement. The Steering Committee supported changes to the measure descriptions and denominator statements that were requested.

Comments specific to the measure included a request that age specification be included in the measure description and denominator statements.

0123 Risk-adjusted operative mortality for aortic valve replacement (AVR) + CABG surgery
The Steering Committee supported the change and the measure developer agreed to modify the measure descriptions and denominator statements to include age specifications.
Voting: Total Approval: 100% Comments received: None **CSAC Approval:** **Board Endorsement:**

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

For More Information: Detailed Measure Specifications (Draft Report); Complete Measure Submission; Meeting/Call Proceedings

Description: Percent of patients aged 18 years and older 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 aged 18 years and older 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: 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.

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: C-19; 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: The measure is precisely specified.

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: 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.

Public and Member Comments
General Comments included:

- level of analysis should be reported at the individual surgeon level when sample sizes are sufficient; and
- support for and against risk adjustment.

The Steering Committee discussed the level of analysis and was sensitive to a number of issues that should be considered as organizations determine how measures should be structured and reported, including small sample sizes and potential for risk aversion. The Steering Committee stated it was appropriate to consider clinician level reporting where appropriate after consideration of the attendant issues. It noted that it was important for measures to take into account patient risk factors while ensuring that variations in care are not obscured by risk adjustment. It also clarified with the developer that individual clinician information can be generated at the group or hospital level for use in quality improvement. The Steering Committee supported changes to the measure descriptions and denominator statements that were requested.

1501 Risk-adjusted operative mortality for mitral valve (MV) repair
Comments specific to the measure included a request that age specification be included in the measure description and denominator statements. The Steering Committee supported the change and the measure developer agreed to modify the measure descriptions and denominator statements to include age specifications.
Voting: Total Approval: 100% Comments received: None **CSAC Approval:** **Board Endorsement:**

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

For More Information: Detailed Measure Specifications (Draft Report); Complete Measure Submission; Meeting/Call Proceedings

Description: Percent of patients aged 18 years and older 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 aged 18 years and older 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: 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.

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.

Public and Member Comments

Comments included:

- level of analysis should be reported at the individual surgeon level when sample sizes are sufficient; and
- support for and against risk adjustment.

The Steering Committee discussed the level of analysis and was sensitive to a number of issues that should be considered as organizations determine how measures should be structured and reported, including small sample sizes and potential for risk aversion. The Steering Committee stated it was appropriate to consider clinician level reporting where appropriate after consideration of the attendant issues. It noted that it was important for measures to take into account patient risk factors while ensuring that variations in care are not obscured by risk adjustment. It also clarified with the developer that individual clinician information can be generated at the group or hospital level for use in quality improvement. The Steering Committee supported changes to the measure descriptions and denominator statements that were requested.

Comments specific to the measure included a request that age specification be included in the measure description and denominator statements.

The Steering Committee supported the change and the measure developer agreed to modify the measure descriptions and denominator

1502 Risk-adjusted operative mortality for MV repair + CABG surgery
statements to include age specifications.
Voting: Total Approval: 100% Comments received: None **CSAC Approval:** **Board Endorsement:**

0360 Esophageal resection mortality rate (IQI 8)
For More Information: Detailed Measure Specifications (Draft Report); Complete Measure Submission; Meeting/Call Proceedings
Description: Number of inpatient deaths per 100 discharges with a procedure for esophageal resection **Numerator Statement:** Number of deaths among cases meeting the inclusion and exclusion rules for the denominator. **Denominator Statement:** Discharges, age 18 years and older, with ICD-9-CM esophageal resection procedure code and a diagnosis code of esophageal cancer in any field OR gastrectomy procedure code ONLY if accompanied by selected diagnosis codes. **Exclusions:** Exclude discharges with pregnancy, discharge to a short term hospital or missing information for discharge disposition, age or sex. **Adjustment/Stratification:** case mix adjustment/Observed rates may be stratified by age group, race/ethnicity categories, payer categories and sex. **Level of Analysis:** Facility/Agency **Type of Measure:** Outcome **Data Source:** Electronic administrative data/claims **Measure Steward:** Agency for Healthcare Research and Quality | 540 Gaither Road | Rockville | Maryland | 20850
Steering Committee Recommendation for Endorsement: Y-20; N-0; A-0 **Rationale:** Numerous studies have demonstrated a high variability in surgical mortality, largely influenced by hospital volume. The adoption of such a measure would encourage quality improvement at low-volume centers, or patients seeking care at centers with better results. Continued measurement and reporting of this measure is warranted as it will help advance the understanding of variations in outcome for esophageal resection and identify best practices. For reporting, this measure is to be paired with 0361, Esophageal resection volume . In considering potential harmonization with NQF-endorsed™ Measure 0737, Survival predictor for esophagectomy surgery, the Committee determined that the measure differences support maintaining the measures without harmonization work at this time.
If applicable, Conditions/Questions for Developer: Endorsement recommendation is based on developer commitment to ensure that the 0360 and 0361 are harmonized and reported as a pair.
1. Importance to Measure and Report: Y-18; N-4 *(1a. Impact; 1b. Performance gap; 1c. Outcome or Evidence)* **Rationale:** Esophagectomy for cancer carries a high risk of mortality given the magnitude of the procedure and the high risk population in which it is performed.
2. Scientific Acceptability of Measure Properties: C-3; P-16; M-2; N-1 *(2a. Precise specifications; 2b. Reliability testing; 2c. Validity testing; 2d. Exclusions justified; 2e. Risk adjustment/stratification; 2f. Meaningful differences; 2g. Comparability; 2h. Disparities)* **Rationale:** While this is an important measure, the relatively low volume of esophagectomies performed on an annual basis will make inter-hospital comparisons statistically difficult, especially for low-volume centers.
3. Usability: C-6; P-13; M-1; N-2 *(3a. Meaningful/useful for public reporting and quality improvement; 3b. Harmonized; 3c. Distinctive or additive value to existing measures)* **Rationale:** The Committee discussed the issue of low-volume centers and if their mortality could adequately predict future mortality. Concerns of consumers misinterpreting the data of low-volume centers were expressed.
4. Feasibility: C-17; P-4; 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:** The information is derived from electronic administrative data/claims.
Public and Member Comments No comments were received on this measure.
Voting: Total Approval: 100% Comments received: "While we support the importance of this measure, there has been limited experience with this AHRQ measure both in use and number of reported cases." **CSAC Approval:** **Board Endorsement:**

0361 Esophageal resection volume (IQI 1)
For More Information: Detailed Measure Specifications (Draft Report); Complete Measure Submission; Meeting/Call Proceedings
Description: Number of discharges with a procedure for esophageal resection. **Numerator Statement:** Discharges, age 18 years and older, with ICD-9-CM code for esophageal resection in any procedure field OR gastrectomy procedure code ONLY if accompanied by selected diagnosis codes. **Denominator Statement:** N/A **Exclusions:** N/A **Adjustment/Stratification:** no risk adjustment necessary/No stratification is required for this measure. **Level of Analysis:** Facility/Agency **Type of Measure:** Structure/management **Data Source:** Electronic administrative data/claims **Measure Steward:** Agency for Healthcare Research and Quality | 540 Gaither Road | Rockville | Maryland | 20850
Steering Committee Recommendation for Endorsement: Y-20; N-0; A-0 **Rationale:** Numerous studies have demonstrated high variability in surgical mortality, largely influenced by hospital volume. The adoption of such a measure would encourage quality improvements at low-volume centers, or patients seeking care at centers with better results. Continued measurement and reporting of this measure is warranted as it will help advance our understanding of variations in outcome for esophageal resection and identify best practices. For reporting, this measure is to be paired with 0360, Esophageal resection mortality rate..
If applicable, Conditions/Questions for Developer: Endorsement recommendation is based on developer commitment to ensure that the 0360 and 0361 are harmonized and reported as a pair.
1. Importance to Measure and Report: Y-18; N-4 *(1a. Impact; 1b. Performance gap; 1c. Outcome or Evidence)* **Rationale:** Esophagectomy for cancer carries a high risk of mortality given the magnitude of the procedure and the high risk population in which it is performed.
2. Scientific Acceptability of Measure Properties: C-8; P-11; M-3; 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:** Mortality rates provide more valuable information than volume. The Committee questioned if this measure was necessary since volume is a proxy for mortality and decided the measure is appropriately used and reported but should remain paired with 0360 and not reported as a stand-alone.
3. Usability: C-7; P-14; M-1; N-0 *(3a. Meaningful/useful for public reporting and quality improvement; 3b. Harmonized; 3c. Distinctive or additive value to existing measures)* **Rationale:** Concerns of consumers misinterpreting the data of low-volume centers were expressed.
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:** The information is derived from electronic administrative data/claims.
Public and Member Comments No comments were received on this measure.
Voting: Total Approval: 100% Comments received: "While we support the importance of this measure, there has been limited experience with this AHRQ measure both in use and number of reported cases." **CSAC Approval:** **Board Endorsement:**

0116 Anti-platelet medication at discharge

For More Information: Detailed Measure Specifications (Draft Report); Complete Measure Submission; Meeting/Call Proceedings

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: Y-20; 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.

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.

Public and Member Comments
General Comments included:

- level of analysis should be reported at the individual surgeon level when sample sizes are sufficient.

0116 Anti-platelet medication at discharge
The Steering Committee discussed the level of analysis and was sensitive to a number of issues that should be considered as organizations determine how measures should be structured and reported, including small sample sizes and potential for risk aversion. The Steering Committee stated it was appropriate to consider clinician level reporting where appropriate after consideration of the attendant issues. It noted that it was important for measures to take into account patient risk factors while ensuring that variations in care are not obscured by risk adjustment. It also clarified with the developer that individual clinician information can be generated at the group or hospital level for use in quality improvement.
Voting: Total Approval: 100% Comments received: None **CSAC Approval:** **Board Endorsement:**

0118 Anti-lipid treatment discharge

For More Information: Detailed Measure Specifications (Draft Report); Complete Measure Submission; Meeting/Call Proceedings

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: Y-20; 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.

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

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.

Public and Member Comments
General Comments included:

- level of analysis should be reported at the individual surgeon level when sample sizes are sufficient.

The Steering Committee discussed the level of analysis and was sensitive to a number of issues that should be considered as organizations determine how measures should be structured and reported, including small sample sizes and potential for risk aversion. The Steering Committee stated it was appropriate to consider clinician level reporting where appropriate after consideration of the attendant issues. It noted that it was important for measures to take into account patient risk factors while ensuring that variations in care are not obscured by risk adjustment. It also clarified with the developer that individual clinician information can be generated at the group or hospital level for use in quality improvement.

Voting: Total Approval: 100%
Comments received: None
CSAC Approval:
Board Endorsement:

0130 Risk-adjusted deep sternal wound infection rate

For More Information: Detailed Measure Specifications (Draft Report); Complete Measure Submission; Meeting/Call Proceedings

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/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: Y-19; N-0; A-1
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.

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

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.

Public and Member Comments
General Comments included:

- level of analysis should be reported at the individual surgeon level when sample sizes are sufficient;
- support for and against risk adjustment; and
- request for transparency of the validation methodology.

The Steering Committee discussed the level of analysis and was sensitive to a number of issues that should be considered as organizations determine how measures should be structured and reported, including small sample sizes and potential for risk aversion. The Steering Committee stated it was appropriate to consider clinician level reporting where appropriate after consideration of the attendant issues. It noted that it was important for measures to take into account patient risk factors while ensuring that variations in care are not obscured by risk adjustment. It also clarified with the developer that individual clinician information can be generated at the group or hospital level for use in quality improvement. The Steering Committee agreed that transparency is important for all users' proper use and understanding of the measure and results of its use.

0130 Risk-adjusted deep sternal wound infection rate

Voting: Total Approval: 91%

Comments received:

- "The definition is unclear, defined, in part, as an opened wound with excision of tissue, which is called "I and D". I and D is incision and "drainage", which is different than "excision of tissue" ... the measure should be consistent ... one or the other. Furthermore, the definition of a deep sternal wound infection is too burdensome ... opening a sternal wound for 2-3 cm, and packing it superficially (where no bone, sternal wires, or muscle are exposed) is NOT a deep sternal wound ... yet in the definition, ANY wound that is opened (and "drained" or "tissue excised"), is considered a "deep" infection ... this is incorrect."
- "The Association for Professionals in Infection Control and Epidemiology (APIC) does not approve the endorsement of measure 0130 Risk-adjusted deep sternal wound infection rate. Instead APIC supports the previous supported NQF endorsed measure for public reporting of surgical site infection (SSI) rate of deep sternal wound infection rates for CABG using the Centers for Disease Control & Prevention's National Healthcare Safety Network (NHSN) criteria. This was endorsed in the NQF Cardiac Surgery project in 2004. APIC supports the previous measure, rather than the Society for Thoracic Surgeons (STS) definition of deep sternal wound infection rate for the following reasons: i) The major difference between the NHSN and STS metric is the duration of surveillance for possible SSIs involving in which a deep or organ/space infection (mediastinitis/osteomyelitis) infection can be identified. Sternal wires or other devices that approximate the sternum are considered a non-human implant and as a result NHSN criteria require surveillance for up to one year from the date of surgery. STS limits the scope of surveillance to 30 days after the CABG procedure. In addition, in 2010, NHSN recommended, and APIC supports a newer metric, the standardized infection ratio (SIR) for reporting, which also contains robust risk-adjustment. Rather than calculate rates for each risk category, the SIR takes the risk adjustment into consideration and then calculates one number. This number reflects the observed number of infections over the number of infections expected. The CABG SIR excludes superficial surgical site infections as well as secondary (donor site) surgical site infections. SIR is being successfully used by other organizations as a metric to assess patient care performance.1 ii) The NHSN definition of deep sternal wound infection rates for CABG is risk-adjusted and has been selected by several states, including California and New York2, for public reporting. This measure captures infections within but also beyond 30 days from the date of original surgery. The NHSN CABG SIR will reflect a higher percentage of infections; the STS definition would not capture some infections because of the time limit imposed by their definition. To have two different measures reported to the public could potentially be confusing to the healthcare consumer and the broader universe of providers, payers, etc., who share the single goal of optimizing surgical care. iii) The NHSN data is in the public domain whereas STS database is proprietary. APIC agrees the STS database is invaluable to the surgeons caring for patients undergoing CABG. However there is an element of objectivity that its members bring to surveillance of SSIs by serving in a "third party capacity" that is reflected in NHSN database. It is for these reasons that APIC does not support measure 0130 for selection for the National Voluntary Consensus Standards: Surgery Endorsement Maintenance 2010, Phase I for Cardiac – CABG. Footnotes: 1. Ingraham AM, Cohen ME, Ko CY, Hall BL. A current profile and assessment of north american cholecystectomy: results from the american college of surgeons national surgical quality improvement program. J Am Coll Surg. 2010 Aug;211(2):176-86 2.NY State Dept. of Health. Hospital-Acquired Infection (HAI) Rates in New York State Hospitals. Available at: http://health.ny.gov/statistics/facilities/hospital/hospital_acquired_infections/."

CSAC Approval:

Board Endorsement:

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

For More Information: Detailed Measure Specifications (Draft Report); Complete Measure Submission; Meeting/Call Proceedings

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 prophylaxis

Any 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)

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

• 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/No stratification except by surgery type and those are Intracranial Neurosurgery Appendix A,Table 5.17
General Surgery Appendix A, Table 5.19
Gynecologic Surgery Appendix A, Table 5.20
Urologic Surgery Appendix A,Table 5.21
Elective Total Hip Replacement Appendix A,Table 5.22
Elective Total Knee Replacement Appendix A,Table 5.23
Hip Fracture Surgery Appendix A,Table 5.24
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: Y-17; N-2; 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. In discussion of potential harmonization of related measure 0371, the Committee agreed that the differences in populations, and guidelines for prophylaxis for those populations, warrant continuation of both measures as specified at present; however, members requested that the population of patients targeted by the measures be further reviewed for harmonization by the next maintenance review of the measures.

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:

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

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.

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.

Public and Member Comments
Comments included:

- identify age group in the measure description and denominator statements
- change "Factor Xa Inhibitor (Fondaparinux)" to "Factor Xa Inhibitor with VTE prophylaxis indication" to create more flexibility in the measure;
- clarify "appropriate venous thromboembolism prophylaxis"; and
- include otolaryngology-head and neck surgery procedures in measure specifications.

The Steering Committee supported the change proposed by the measure developer with respect to integrating language into the specification to allow abstractors to select a pharmacologic agent that may be newly approved for a clinical indication; accepts the rationale for not including prophylaxis for head and neck surgery at this time; and encouraged the developer to make the requested change to the measure descriptions and denominator.

Voting: Total Approval: 91%
Comments received: "While we support this measure, it may be challenging to report this metric accurately due to the complexity of the measure. It would be ideal to streamline the measure to enhance reliability."
CSAC Approval:
Board Endorsement:

Evaluation Summary—Candidate Consensus Standards Recommended for Endorsement and Placement in Reserve Status

0113 Participation in a systematic database for cardiac surgery

For More Information: Detailed Measure Specifications (Draft Report); Complete Measure Submission; Meeting/Call Proceedings

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: Reserve Status Y-20; N-0; A-1
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. Consideration of related measures 0456, Participation in a systematic national database for general thoracic surgery and 0493, Participation by a hospital, physican or other clinician in systematic clinical database registry that includes consensus endorsed quality measures was overtaken by the recommendation for reserve status.

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 the developer could provide additional information regarding characteristics of organizations that participate in the registry and whether the organizations that did not participate had any commonalities.

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.

0113 Participation in a systematic database for cardiac surgery
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.
Public and Member Comments Comments included: • support for "reserve status"; and • question about whether the measure meets the NQF criterion of Importance to Measure and Report because it has a performance level of 95% for participating institutions and lack of convincing evidence of a strong link between participating in a clinical registry and quality of care. The Steering Committee noted that registries continue to provide a way to collect, benchmark, and report back to participants to facilitate appreciation of levels of performance and potential for improvement. To address the situation where reliable, valid and important measures have high levels of performance with little variability, NQF offers "inactive endorsement with reserve status" to retain endorsement so that performance could be monitored in the future to ensure that performance does not decline. The Committee affirmed its recommendation that this measure be placed in reserve status.
Voting: Total Approval: 74% Comments received: "Intermountain Healthcare does not support the use of registry database participation as a single measure. This measure is now publically reported and does not provide the public with information that is of value. This measure supports proprietary data base usage which, in a public reporting setting, Intermountain has strong concerns." **CSAC Approval:** **Board Endorsement:**