# NATIONAL QUALITY FORUM

## IN-PERSON MEETING OF THE SURGERY ENDORSEMENT MAINTENANCE 2010 STEERING COMMITTEE

**May 4- 5, 2011**

*Committee Members Present*: Arden Morris, MD, MPH, FACS (Co-chair), University of Michigan; David Torchiana, MD (Co-chair), Massachusetts General Physicians Organization; Nasim Afsar-manesh, MD, UCLA Medical Center; Howard Barnebey, MD, Specialty Eyecare Centre; James Carpenter, MD, University of Michigan; Robert Cima, MD, MA, FACS, FASCRS, Mayo Clinic; Curtis Collins, PharmD, MS, BCPS AQ-ID, University of Michigan Health System; Peter Dillon, MD, MSc, Penn State Hershey Medical Center; Richard Dutton, MD, MBA, Anesthesia Quality Institute; Steven Findlay, MPH, Consumers Union; Paula Graling, DNP, RN, CNS, CNOR, INOVA Fairfax Hospital; Vivienne Halpern, MD, FACS, Carl T Hayden VA Medical Center; Ruth Kleinpell, PhD, RN, FAAN, Rush University Medical Center; John Morton, MD, MPH, FACS, Stanford University; Dennis Rivenburgh, MS, ATC, PA-C, St. Anthony's Primary Care; Terry Rogers, MD, The Foundation for Health Care Quality; Christopher Saigal, MD, MPH, FACS, UCLA; Allan Siperstein, MD, Cleveland Clinic; Renae Stafford, MD, MPH, FACS, University of North Carolina-Chapel Hill; Carol Wilhoit, MD, MS, Blue Cross Blue Shield of Illinois; Christine Zambricki, CRNA, MS, FAAN, American Association of Nurse Anesthetists.

*Committee Members Participating via Conference Call:* Eileen Kennedy, CPA, SPHR, Pepco Holdings, Inc.; Nicholas Sears, MD, MedAssets, Inc.

*NQF Staff Present*: Heidi Bossley, MSN, MBA, Vice President for Performance Measures; Helen Burstin, MD, MPH, Senior Vice President for Performance Measures; Sarah Fanta, Project Analyst; Alexis Forman, MPH, Senior Project Manager, Melinda Murphy, RN, MS, NE-BC, Senior Director; Karen Pace, PhD, RN Senior Program Director; Jessica Weber, MPH, Project Analyst; Ashlie Wilbon, MPH, BSN, Senior Project Manager.

*Measure Developers Present:* H. Vernon Anderson, American College of Cardiology; Joel Andress, Centers for Medicare and Medicaid Services; Susannah Bernheim, Yale University; John Bott, Agency for Healthcare Research and Quality; Dale Bratzler, Oklahoma Foundation for Medical Quality; Sheryl Davies, Stanford University; Laura Eaton, Ingenix; Susan Fitzgerald, American College of Cardiology; Laura Grosso, Yale University; Jane Han, The Society of Thoracic Surgeons; Lein Han, Centers for Medicare and Medicaid Services; Jeffrey Jacobs, The Society of Thoracic Surgeons; Kathy Jenkins, Children's Hospital of Boston; Wanda Johnson, Oklahoma Foundation for Medical Quality; Tim Kresowik, Society for Vascular Surgery; Victoria Lynch, Oklahoma Foundation for Medical Quality; Flora Lum, American Academy of Ophthalmology; Kristyne McGuinn, American College of Cardiology; Patrick Romano, University of California-Davis; David Shahian, The Society of Thoracic Surgeons; David Shapiro, ASC Quality Collaboration; Jeffrey Silber, Children's Hospital of Philadelphia; Donna Slosburg, ASC Quality Collaboration; Susan White, ASC Quality Collaboration.

*Others Present:* Barbara Rudolph, The Leapfrog Group.

The full transcripts and audio recordings from the meeting can be found here.

## MEETING PROCESS

Dr. Morris (Co-chair) welcomed the Steering Committee members and thanked them for their continued participation. She then reviewed the agenda items. The Steering Committee members introduced themselves and stated any conflicts of interest. Following introductions of the audience members and participants via phone, the meeting was turned over to Dr. Morris, to begin the formal activities of the Steering Committee. The purpose of the meeting was to:

- Review, discuss, and finalize action related to follow-up issues for Phase I measures;
- Make recommendations related to endorsement of remaining Phase I measures as voluntary consensus standards;
- Evaluate Phase II measures to determine if they meet measure evaluation criteria;
- Review Phases I and II measures as well as pediatric and congenital cardiac surgery-related and competing measures to facilitate harmonization of related measures and to select the best measure from among competing measures;
- Make recommendations related to endorsement of Phase II measures as voluntary consensus standards; and
- Identify gaps in performance measures for surgical care.

Ms. Murphy provided a project overview, including meeting objectives, and reviewed NQF's measure evaluation criteria and its application. Project staff provided a recap of work to date and specific meeting activities, including the voting process.

At the start of both meeting days, measure developers were invited to provide a brief introduction of their measure(s) that were being reviewed that day. Measure developers were available to respond to the Committee's questions throughout the measure evaluation.

The Steering Committee reviewed the Phase I measure follow-up and discussed related and competing measures. They voted on final recommendations for endorsement, with the exception of two measures, which were remitted to the measure developers for additional changes and/ or harmonization. The final recommendations regarding these two measures will be incorporated into Phase II of the project.

During the discussion of Phase I measures, the Committee reviewed related and competing measures. They determined whether measures were actually related and competing and if they could be harmonized. Ultimately, the Steering Committee decided that none of the Phase I measures were competing.

- The Committee requested that measure *0113: Participation in a systematic database for cardiac surgery* be recommended for endorsement and placed reserve status, it was removed from related measure consideration.
- It was decided, and the developer agreed, that measure *0134: Use of internal mammary artery (IMA) in coronary artery bypass graft (CABG)* should be harmonized with measure *0516: Use of IMA in isolated CABG* by combining them into a single measure which will allow reporting at the provider and institutional level.
- The Committee concluded that measure *0218: Surgery patients who received appropriate venous thromboembolism (VTE) prophylaxis within 24 hours prior to surgery to 24 hours after surgery end time* and measure *0371: Venous thromboembolism (VTE) prophylaxis* did not need to be harmonized because of the differences in populations and differences in guidelines for prophylaxis for those populations.

- Measures *0360: Esophageal resection mortality rate (IQI 8)* and *0361: Esophageal resection volume (IQI1)* were recommended by the Committee to be continued as paired measures. 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 at this time.

The Steering Committee then began review of the Phase II measures. The measures were grouped into several broad topic areas:

- Cardiac, Appendectomy and Pancreatic Resection
- Cardiac and Vascular
- General, Ophthalmology, Orthopedics and Pediatrics
- General, Prophylaxis and Wound Dehiscence

Each measure was introduced by a Committee member who briefly described the measure and summarized preliminary Committee evaluations with particular attention to areas of concern or differences in the ratings. This introduction was followed with discussion by the entire Committee with response to questions and clarification by measure developers. After full discussion, the Committee voted on ratings for each of the major criteria (*Importance to Measure and Report, Scientific Acceptability of Measure Properties, Usability,* and *Feasibility*), and whether the measure met NQF criteria for endorsement.

On each meeting day, NQF Member and public comment periods occurred after groups of measures were discussed. On the second day of the meeting, a commenter asked that the Committee consider the fact that some of the measures submitted by the Agency for Healthcare Research and Quality (AHRQ), which the Committee indicated did not meet NQF criteria, are being widely used by state health data organization and state Medicaid programs because they have access to discharge data. Additionally, the Committee was urged not to merge or pair 30 day mortality measures where doing such would require longitudinal data since such data is currently only available from Medicare datasets. The commenter also discussed the Centers for Medicare & Medicaid Services (CMS) use of clustered hierarchical models, which uses random rather than fixed effects for estimation. The commenter was concerned that this approach focuses only on the specificity of the measure without balancing it with the sensitivity of the measure.

At the end of the second day, the Committee was asked to brainstorm topic areas in which further surgery-related measure development would be useful for quality improvement and public reporting. In its brief discussion, the Committee suggested new measures on anesthesia and pain management would be useful. Members will provide additional suggestions after they have time to reflect on what might be needed.

**EVALUATION OF SURGERY ENDORSEMENT MAINTENANCE 2010 MEASURES**

The Steering Committee reviewed its evaluation of 20 Phase I measures and evaluated 38 Phase II measures. Final recommendations for 18 Phase I measures and preliminary recommendations for 40 (Phases I and II) measures were provided:

**Phase I**

- **0113:** Participation in a systematic database for cardiac surgery
- **0114:** Risk-adjusted post-operative renal failure
- **0115:** Risk-adjusted surgical re-exploration

- **0116:** Anti-platelet medication at discharge
- **0118:** Anti-lipid treatment discharge
- **0119:** Risk-adjusted operative mortality for CABG
- **0120:** Risk-adjusted operative mortality for aortic valve replacement (AVR)
- **0121:** Risk-adjusted operative mortality for mitral valve (MV) replacement
- **0122:** Risk-adjusted operative mortality MV replacement + CABG surgery
- **0123:** Risk-adjusted operative mortality for (AVR) + CABG
- **0129:** Risk-adjusted prolonged intubation (ventilation)
- **0130:** Risk-adjusted deep sterna wound infection rate
- **0131:** Risk-adjusted stroke/cerebrovascular accident
- **0134:** Use of internal mammary artery (IMA) in coronary artery bypass graft (CABG)
- **0218:** Surgery patients who received appropriate venous thromboembolism (VTE) prophylaxis within 24 hours prior to surgery to 24 hours after surgery end time
- **0300:** Cardiac patients with controlled 6 am postoperative serum glucose
- **0360:** Esophageal resection mortality rate (IQI 8)
- **0361:** Esophageal resection volume (IQI 1)
- **1501:** Risk-adjusted operative mortality for mitral valve (MV) repair
- **1502:** Risk-adjusted operative mortality for MV repair + CABG surgery

**Phase II**

- **0127:** Pre-operative beta blockade
- **0284:** Surgery patients on beta blocker therapy prior to admission who received a beta blocker during the perioperative period
- **0117:** Beta blockade at discharge
- **1480:** Patient(s) 18 years of age and older on a beta-blocker at admission or within seven days of discharge of an isolated CABG procedure
- **0365:** Pancreatic resection mortality rate (IQI 9)
- **0366:** Pancreatic resection volume (IQI 2)
- **0273:** Perforated appendix admission rate (PQI 2)
- **0364:** Incidental appendectomy in the elderly rate (IQI 24)
- **0265:** Hospital transfer/admission
- **1519:** Statin therapy at discharge after lower extremity bypass (LEB)
- **0357:** Abdominal aortic aneurysm volume (AAA) (IQI 4**)**
- **0359:** Abdominal aortic artery (AAA) repair mortality rate (IQI 11)
- **1523:** In-hospital mortality following elective open repair of small AAAs
- **1534:** In-hospital mortality following elective EVAR of small AAAs
- **1548:** Surveillance after endovascular abdominal aortic aneurysm repair (EVAR)
- **1540:** Postoperative stroke or death in asymptomatic patients undergoing carotid endarterectomy
- **1543:** Postoperative stroke or death in asymptomatic patients undergoing carotid artery stenting
- **1531:** Follow-up assessment of stroke or death after carotid revascularization
- **0339:** Pediatric heart surgery mortality (PDI 6)
- **0340:** Pediatric heart surgery volume (PDI 7)
- **0352:** Failure to rescue in-hospital mortality (risk adjusted)
- **0353:** Failure to rescue 30-day mortality (risk adjusted)
- **0351:** Death among surgical inpatients with serious, treatable complications (PSI 4)

- **0515:** Ambulatory surgery patients with appropriate method of hair removal
- **0301:** Surgery patients with appropriate hair removal
- **1550:** Hospital-level risk-standardized complication rate (RSCR) following elective primary total hip arthroplasty (THA) and total knee arthroplasty (TKA)
- **1551:** Hospital-level 30-day all-cause risk-standardized readmission rate (RSRR) following elective primary total hip arthroplasty (THA) and total knee arthroplasty (TKA)
- **1536:** Cataracts: Improvement in patient's visual function within 90 days following cataract surgery
- **1549:** Cataracts: Patient satisfaction within 90 days following cataract surgery
- **0528:** Prophylactic antibiotic selection for surgical patients
- **0126:** Selection of antibiotic prophylaxis for cardiac surgery patients
- **0128:** Duration of prophylaxis for cardiac surgery patients
- **0125:** Timing of antibiotic prophylaxis for cardiac surgery patients
- **0264:** Prophylactic intravenous (IV) antibiotic timing
- **0527:** Prophylactic antibiotic received within 1 hour prior to surgical incision
- **0529:** Prophylactic antibiotics discontinued within 24 hours after surgery end time
- **0367:** Post operative wound dehiscence (PDI 11)
- **0368:** Post operative wound dehiscence (PSI 14)

**Overarching Issues**

During the Steering Committee's discussion of the measures, several overarching issues emerged and were discussed. These issues factored into the Committee's ratings and recommendations for multiple measures.

***Clarity of Measure Specifications***

The Committee requested clarification of a number of measures' specifications related to data, inconsistencies in language, and lack of complete specifications cited within the measure submission form. Attached documents and appendices were considered useful in evaluating the measures, but the Steering Committee urged measure developers to include all pertinent information within the submission forms to provide full detail to potential users and clarity to the public.

***Disparities***

The Committee noted that a number of measure submissions provided negligible information on disparities. In response, the Committee requested measure developers to submit additional information or, in the absence of disparities information, a plan to collect data in a way that permits disparities analyses in the future.

***Impact on Quality***

The Committee suggested measure developers provide detail on how their currently NQF-endorsed measures have impacted quality since initial endorsement. The Committee specified that this is vital information when deciding if the measure should maintain endorsement.

***Measures Recommended for Endorsement and Placement in Reserve Status***

The Committee reviewed the NQF criteria for endorsed measures that continue to meet endorsement criteria during maintenance review but are deemed not to meet the criterion of "importance" due to having such a high rate of performance with little to no variation as outlined in subcriterion 1b. Discussed tentatively as an inactive status, such measures will be considered placed in "Reserve

Status" signifying that they remained endorsed and in reserve until such time that they should be put back in use. There was concern that not continuing endorsement of a maintenance measure with a small performance gap could lead to reduced attention and decreased compliance with the measure. NQF will monitor the implications of the new status. The Committee noted that several maintenance measures could be considered for this status.

***Participation in Registries***

The Committee discussed the implication of measures that use proprietary registry data. It was noted that, for each measure using registry data, the specifications of the measure should clearly state that participation in the particular registry is not required. It is acceptable to indicate which registries contain the data elements and can provide performance data; however, the specifications must be clear and complete, with standardized data elements, so that the measure can be used with non-proprietary or generic databases and provide results comparable to that obtained from the registry. Endorsing a measure that requires use of an organization's database (registry) is the equivalent of picking a 'winner' and could impose a significant burden to non-participants.

***Public Reporting***

The NQF endorsement criteria specify that measures submitted for endorsement must be intended for use for quality improvement and public reporting. The Committee noted that measure submission forms require and are expected to include public reporting plans. To that end, additional information was requested from developers that did not provide them. Additionally, the Committee asked developers to explain how measure information was conveyed to the public, in order to assess how a measure may be perceived.

***Relationship to Outcomes***

The Committee indicated its preference for measures that provided clear and direct evidence of the measure's proximity to an improved outcome and in some cases asked measure developers to consider development of such measures as replacements for existing measures. The importance of updated evidence was highlighted for maintenance measures.

***Unintended Consequences***

Committee members noted measures that could produce unintended consequences on patient care. They indicated that, where relevant, the care provided in healthcare institutions should be linked with patient outcome after discharge.

**Measures and Evaluations**

Following are brief descriptions of the 20 measures from Phase I and 38 measures from Phase II that were reviewed, along with the Steering Committee's votes and rationale. Questions to and answers from the measure developers are also included.

General, Opthalmology, Orthopedics and Pediatrics



General, Prophylaxis and Wound Dehiscence



Phase I

| 0113 Participation in a systematic datasbase for cardiac surgery |
|---|
| **Description:** Participation in a clinical database with broad state, regional, or national representation, that provides regular performance reports based on benchmarked data.<br>**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).<br>**Denominator Statement:** N/A.<br>**Exclusions:** N/A<br>**Adjustment/Stratification:** no risk adjustment necessary/No stratification is required for this measure.<br>**Level of Analysis:** Clinicians: Group; Facility/Agency; Population: National, regional/network, states, counties or cities<br>**Type of Measure:** Structure/management<br>**Data Source:** Registry data-STS Adult Cardiac Surgery Database, Version 2.73<br>**Measure Steward:** Society of Thoracic Surgeons \| 633 North Saint Clair Street, Suite 2320 \| Chicago \| Illinois \| 60611 |
| **Steering Committee Recommendation for Endorsement:** Recommended and placement in **Reserve Status** Y-20; N-0; A-1<br>**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 tabled due to |

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

1. Importance to Measure and Report: Y-18; N-4

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

Rationale: Participation in the database for benchmarking and quality improvement has been shown to improve outcomes and enhance patient safety. Although 90 pecent of centers already report, the Committee felt that participation should be closer to 100 percent.

2. Scientific Acceptability of Measure Properties: C-4; P-15; M-1; N-2

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

Rationale: Participation in the registry was not defined. The Committee questioned if submitting one case fullfil the criteria requirement or is an organization required to submit 100 percent of their cases in order to meet the requirement.

3. Usability: C-9; P-13; M-0; N-0

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

Rationale: The Committee questioned if the measure remains useful with the addition of other indicators that are dependent upon participation.

4. Feasibility: C-17; P-5; M-0; N-0

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

Rationale: All data elements are available electronically.

0114 Risk-adjusted post-operative renal failure

Description: Percent of patients 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: Recommended 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 if 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 the fact that initially longitudinal data from use of the RIFLE criteria will not be available.

1. Importance to Measure and Report: Y-22; N-0
*(1a. Impact; 1b. Performance gap; 1c. Outcome or Evidence)*
Rationale: Patients with post-operative renal failure are a high-risk group.

2. Scientific Acceptability of Measure Properties: C-3; P-18; M-1; N-0
*(2a. Precise specifications; 2b. Reliability testing; 2c. Validity testing; 2d. Exclusions justified; 2e. Risk adjustment/stratification; 2f. Meaningful differences; 2g. Comparability; 2h. Disparities)*
Rationale: Specifications were incomplete. There is no stated numerator time window. Without a specified time period, this becomes open to interpretation by coders. The Committee suggested the developer used the RIFLE criteria when defining renal failure. There was not an exclusion for emergency CABG cases, which are more susceptible to the development of renal failure due to pateints being sicker to begin with and the need for blood transfusions.

3. Usability: C-12; P-9; M-0; N-1
*(3a. Meaningful/useful for public reporting and quality improvement; 3b. Harmonized; 3c. Distinctive or additive value to existing measures)*
Rationale: This measure seemed valuable from the quality improvement perspective.

4. Feasibility: C-14; P-8; M-0; N-0
*(4a. Clinical data generated during care process; 4b. Electronic sources; 4c. Exclusions – no additional data source; 4d. Susceptibility to inaccuracies/ unintended consequences identified 4e. Data collection strategy can be implemented)*
Rationale: The cost of data abstraction was not clearly indicated. The developer did not provide the cost of hiring employees to perform data abstraction.

0115 Risk-adjusted surgical re-exploration

Description: Percent of patients aged 18 years and older undergoing isolated CABG who require a return to the operating room for bleeding with or without tamponade, graft occlusion, valve dysfunction, or other cardiac reason.

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

Steering Committee Recommendation for Endorsement: Recommended Y-19; N-0; A-1
Rationale: This is an important 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 that gaming cannot always be prevented and trusts that gaming will not become an issue.

4. Feasibility: C-21; P-1; M-0; N-0
*(4a. Clinical data generated during care process; 4b. Electronic sources; 4c. Exclusions – no additional data source; 4d. Susceptibility to inaccuracies/ unintended consequences identified 4e. Data collection strategy can be implemented)*
Rationale: All data elements are available electronically.

0129 Risk-adjusted prolonged intubation (ventilation)

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

Steering Committee Recommendation for Endorsement: Recommended Y-15; N-4; A-1
Rationale: Intubation is linked to morbidity, and an increase in length-of-stay, cost and resource utilization. The Committee suggested the developer submit a companion measure at the next maintenance review that focuses on the median time to extubation for patients who 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.

0131 Risk-adjusted stroke/cerebrovascular accident

Description: Percent of patients aged 18 years and older undergoing isolated CABG (without pre-existing neurologic deficit) who have a postoperative stroke (i.e., any confirmed neurological deficit of abrupt onset caused by a disturbance in blood supply to the brain) that did not resolve within 24 hours.

Numerator Statement: Number of patients undergoing isolated CABG who have a postoperative stroke (i.e., any confirmed neurological deficit of abrupt onset caused by a disturbance in blood supply to the brain) that did not resolve within 24 hours.

Denominator Statement: All patients undergoing isolated CABG.

Exclusions: N/A.

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

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

Type of Measure: Outcome

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

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

Steering Committee Recommendation for Endorsement: Recommended Y-20; N-1; A-0

Rationale: It is an important clinical complication 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.

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

Description: Percentage of patients aged 18 years and older undergoing isolated coronary artery bypass graft (CABG) who received an internal mammary artery (IMA) graft.
Numerator Statement: Number of patients undergoing isolated coronary artery bypass graft (CABG) who received an internal mammary artery (IMA) graft.
Denominator Statement: All patients undergoing isolated CABG.
Exclusions: Cases are removed from the denominator if the patient had a previous CABG prior to the current admission or if IMA was not used and one of the following reasons was provided:
- Subclavian stenosis
- Previous cardiac or thoracic surgery
- Previous mediastinal radiation
- Emergent or salvage procedure
- No LAD disease

Adjustment/Stratification: no risk adjustment necessary/No stratification is required for this measure.
Level of Analysis: Clinicians: Group; Facility/Agency; Population: National, regional/network, states, counties or cities
Type of Measure: Process
Data Source: Registry data-STS Adult Cardiac Surgery Database, Version 2.73
Measure Steward: Society of Thoracic Surgeons | 633 North Saint Clair Street, Suite 2320 | Chicago | Illinois | 60611

Steering Committee Recommendation for Endorsement: Pending harmonization of 0134 and 0516
Rationale: This measure is tied to improved outcomes due to high patency rates of the IMA. The current compliance is 95 percent; however, variation among programs exists; i.e., compliance rates as low as 80 percent. Final recommendation will be included in the phase II 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.9 Denominator Exclusions: Please remove "the IMA is not a suitable conduit due to size or flow" from the exclusions.

Developer Response:
1. Data on disparities are provided in the form.
2. STS staff agreed to remove the exclusion related to IMA suitability during Steering Committee meeting. The form was modified to reflect this.

If applicable, Conditions/Questions for Developer:

1. Harmonization: As agreed, please harmonize measures 0134 and 0516 by combining into a single measure which can allow reporting at the provider or institution level.

1. Importance to Measure and Report: Y-20; N-1
*(1a. Impact; 1b. Performance gap; 1c. Outcome or Evidence)*
Rationale: The literature points to disparities amongst women, with IMA used less often in women. The developer did not provide information or data on disparities related to performance on the measure.

2. Scientific Acceptability of Measure Properties: C-14; P-7; M-0; N-0
*(2a. Precise specifications; 2b. Reliability testing; 2c. Validity testing; 2d. Exclusions justified; 2e. Risk adjustment/stratification; 2f. Meaningful differences; 2g. Comparability; 2h. Disparities)*
Rationale: The exclusion 'IMA not suitable,' can lead to the issue of gaming. This causes apprehension as to who determines if the IMA is not suitable. Currently, there is no criteria that classifies the IMA as suitable. The Committee requested this exclusion be removed.

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

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

0119 Risk-adjusted operative mortality for CABG

Description: Percent of patients aged 18 years and older undergoing isolated CABG who die, including both 1) all deaths occurring during the hospitalization in which the CABG was performed, even if after 30 days, and 2) those deaths occurring after discharge from the hospital, but within 30 days of the procedure.
Numerator Statement: Number of patients undergoing isolated CABG who die, 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.
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: Recommended 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 percent and suggests that such site specific data can be useful to evaluate care quality and focus on areas for improvement. The developer was asked to provide data regarding disparities that will be considered prior to final action by the committee

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

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

*measures)*
Rationale: The measure is meaningful and useful for public reporting and quality improvement.

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

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

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

Steering Committee Recommendation for Endorsement: Recommended 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 evidence of high impact is strong.

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

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

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

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

Description: Percent of patients undergoing MV replacement who die, including both 1) all deaths occurring during the hospitalization in which the procedure was performed, even if after 30 days, and 2) those deaths occurring after discharge from the hospital, but within 30 days of the procedure.
Numerator Statement: Number of patients undergoing MV replacement who die, including both 1) all deaths occurring during the hospitalization in which the procedure was performed, even if after 30 days, and 2) those deaths occurring after discharge from the hospital, but within 30 days of the procedure.
Denominator Statement: All patients undergoing isolated MV replacement surgery.
Exclusions: N/A
Adjustment/Stratification: case-mix adjustment/No stratification is required for this measure.

Level of Analysis: Clinicians: Group; Facility/Agency; Population: National, regional/network, states, counties or cities
Type of Measure: Outcome
Data Source: Registry data-STS Adult Cardiac Surgery Database, Version 2.73
Measure Steward: Society of Thoracic Surgeons | 633 North Saint Clair Street, Suite 2320 | Chicago | Illinois | 60611

Steering Committee Recommendation for Endorsement: Recommended Y-19; N-1; A-0
Rationale: The measure was well defined and constructed providing the 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.

0122 Risk-adjusted operative mortality MV replacement + CABG surgery

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

Steering Committee Recommendation for Endorsement: Recommended 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.

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

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

Steering Committee Recommendation for Endorsement: Recommended 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: C19-; 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 others to follow. This and related measures are expected to be publicly reported within 24-36 months.

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

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

Description: Percent of patients undergoing MV repair who die, including both 1) all deaths occurring during the hospitalization in which the procedure was performed, even if after 30 days, and 2) those deaths occurring after discharge from the hospital, but within 30 days of the procedure. *Note: This measure was formerly endorsed as a component of Measure 0121.*
Numerator Statement: Number of patients undergoing MV repair who die, including both 1) all deaths occurring during the hospitalization in which the procedure was performed, even if after 30 days, and 2) those deaths occurring after discharge from the hospital, but within 30 days of the procedure.
Denominator Statement: All patients undergoing isolated MV repair surgery.
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: Recommended 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.

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

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

Steering Committee Recommendation for Endorsement: Recommended 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.

0360 Esophageal resection mortality rate (IQI 8)

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: Recommended 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.

0361 Esophageal resection volume (IQI 1)

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: Recommended 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.

0116 Anti-platelet medication at discharge

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

Steering Committee Recommendation for Endorsement: Recommended Y-20; N-0; A-0
Rationale: Though the measure has been in use for multiple years, there is still a performance gap; performance across 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.

0118 Anti-lipid treatment discharge

Description: Percent of patients aged 18 years and older undergoing isolated CABG who were discharged on a statin or other lipid-lowering regimen.

Numerator Statement: Number of patients undergoing isolated CABG who were discharged on a statin or other lipid-lowering regimen.

Denominator Statement: All patients undergoing isolated CABG.

Exclusions: Cases are removed from the denominator if there was an in-hospital mortality or if discharge anti-lipid treatment was contraindicated.

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

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

Type of Measure: Process

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

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

Steering Committee Recommendation for Endorsement: Recommended 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 regimen 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 percent agreement respectively.

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

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

**0130 Risk-adjusted deep sternal wound infection rate**

Description: Percent of patients aged 18 years and older undergoing isolated CABG who, within 30 days postoperatively, develop deep sternal wound infection involving muscle, bone, and/or mediastinum requiring operative intervention.
Numerator Statement: Number of patients who, within 30 days postoperatively, develop deep sternal wound infection involving muscle, bone, and/or mediastinum requiring operative intervention.
Must have all of the following conditions:
- Wound opened with excision of tissue (I&D) or re-exploration of mediastinum
- Positive culture unless patient on antibiotics at time of culture or no culture obtained
- Treatment with antibiotics beyond perioperative prophylaxis
Denominator Statement: All patients undergoing isolated CABG
Exclusions: N/A
Adjustment/Stratification: case-mix adjustment necessary /No stratification is required for this measure
Level of Analysis: Clinicians: Group; Facility/Agency; Population: National, regional/network, states, counties or cities
Type of Measure: Outcome
Data Source: Registry data-STS Adult Cardiac Surgery Database, Version 2.73
Measure Steward: Society of Thoracic Surgeons | 633 North Saint Clair Street, Suite 2320 | Chicago | Illinois | 60611

Steering Committee Recommendation for Endorsement: Recommended 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.

0300 Cardiac patients with controlled 6 am postoperative serum glucose

Description: Percentage of cardiac surgery patients with controlled 6 am serum glucose (≤200 mg/dl) on postoperative day (POD) 1 and POD 2.
Numerator Statement: Surgery patients with controlled 6 am serum glucose (≤200 mg/dl) on postoperative day (POD) 1 and POD 2.
Denominator Statement: Cardiac surgery patients with no evidence of prior infection. Include patients with an ICD-9-CM Principle Procedure code or ICD-9-CM Other Procedure codes of selected surgeries AND an ICD-9-CM for ICD-9-CM codes Principle Procedure code or ICD-9-CM Other Procedure codes of selected surgeries.
Exclusions: Excluded Populations:
• Patients less than 18 years of age
• Patients who have a length of Stay greater than 120 days
• Patients who had a principal diagnosis suggestive of preoperative infectious diseases (as defined in Appendix A, Table 5.09 for ICD-9-CM codes)
• Burn and transplant patients (as defined in Appendix A, Tables 5.14 and 5.15 for ICD-9-CM codes)
• Patients whose ICD-9-CM principal procedure was performed entirely by Laparoscope
• Patients enrolled in clinical trials
• Patients whose ICD-9-CM principal procedure occurred prior to the date of admission
• Patients with physician/advanced practice nurse/physician assistant (physician/APN/PA) documented infection prior to surgical procedure of interest
• Patients who expired perioperatively
Adjustment/Stratification: no risk adjustment necessary/No stratification is required for this measure.
Level of Analysis: Facility/Agency; Population: national; Program: QIO; can be measured at all levels
Type of Measure: Process
Data Source: Electronic administrative data/claims; paper medical record/flow-sheet. Vendor tools or CART.
Vendor tools or CART (both electronic). 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: **Conditional** on updated measure submission reflecting change in numerator to patients having cardiac surgery whose highest blood sugar between 18 and 24 hours after surgery is 180mg/dl or less and any other modifications necessitated by that change as well as response to additional question and condition. Final recommendation will be included in the phase II report.
Rationale: Subsequent to developer changing the timeframe from 6 am due to variation in time of surgery, Committee indicated that a more comprehensive measure would involve monitoring a patient's blood glucose over the 18-24 hour period after surgery and allowing a 4 hour window to reduce high glucose levels to ≤ 180mg/dl.

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

Developer Response:
1. This recommendation was presented to the SCIP Infection TEP on April 6, 2011. The panel accepted changing the measure numerator to patients having cardiac surgery whose highest blood sugar, between 18 and 24 hours after surgery is 180mg/dl or less.
2. Patients that expire during the perioperative period are excluded from this measure, as they should not be held accountable for glucose values on POD 1 or 2. The data element has this definition: The patient expired during the timeframe from surgical incision through discharge from the post anesthesia care/recovery area. Additional abstraction instructions include:
   For patients discharged from surgery and admitted to the PACU: The end of the perioperative period occurs when the patient is discharged from the PACU.
   For patients discharged from surgery and admitted to locations other than the PACU (e.g., ICU): The perioperative period would end a maximum of six hours after arrival to the recovery area.

If applicable, Conditions/Questions for Developer:
1. 2a.1 Numerator Statement: Suggested modification-If serum glucose is above 180 mg/dl, was it decreased within a specific amount of time.
2. 2b Reliability Testing and 2c Validity Testing: Advise what additional testing will need to be completed in light of the suggested modification.

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

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

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

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

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

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

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

Steering Committee Recommendation for Endorsement: Recommended 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:

   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 percent, up from 69.79 percent 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.

## Phase II

**0127 Preoperative beta blockade**

Description: Percent of patients aged 18 years and older undergoing isolated CABG who received beta blockers within 24 hours preceding surgery.

Numerator Statement: Number of patients undergoing isolated CABG who received beta blockers within 24 hours preceding surgery

Denominator Statement: All patients undergoing isolated CABG

Exclusions: Cases are removed from the denominator if preoperative beta blocker was contraindicated.

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

Level of Analysis: Clinicians : Group, Facility/ Agency, Population : Counties or cities, Population : National, Population : Regional/ network, Population : states

Type of Measure: Process

Data Source: Registry data

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

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

Rationale: There was strong evidence to support this measure and it demonstrated a clear performance gap.

If applicable, Conditions/Questions for Developer:

Developer Response:

If applicable, Questions to the Steering Committee:

1. Importance to Measure and Report: Y-21, N-0; A-0
*(1a. Impact; 1b. Performance gap; 1c. Outcome or Evidence)*
Rationale: There was strong evidence to support this measure and it demonstrated a performance gap of 86.6 percent.

2. Scientific Acceptability of Measure Properties: C-16; 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: Questions regarding number of patients excluded by the measure and concerns over contraindications to preoperative beta blockers were satisfactorily addressed by additional information from the developer. Evidence in support of the measure demonstrates its value.

3. Usability: C-17; P-4; 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 as specified is usable; there may be opportunities for harmonization with other beta blocker measures.

4. Feasibility: C-17; 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 measure is meaningful for public reporting and quality improvement though cost of data extraction is of some concern.

0284 Surgery patients on beta blocker therapy prior to admission who received a beta blocker during the perioperative period

Description: Percentage of patients on beta blocker therapy prior to admission who received a beta blocker during the perioperative period
Numerator Statement: Surgery patients on beta blocker therapy prior to admission who receive a beta blocker during the perioperative period
Denominator Statement: All surgery patients on beta blocker therapy prior to arrival
Exclusions:
- Patients less than 18 years of age
- Patients who have a Length of Stay greater than 120 days
- Patients enrolled in clinical trials
- Patients whose ICD-9-CM principal procedure occurred prior to the date of admission
- Patients who expired during the perioperative period
- Pregnant patients taking a beta-blocker prior to arrival
- Patients with a documented Reason for Not Administering Beta-Blocker-Perioperative
- Patients with Ventriular Assist Devices or Heart Transplantation Data Elements:

Admission Date
Anesthesia Start Date
Birthdate
Clinical Trial
Discharge Date
ICD-9-CM Principal Procedure Code
Laparoscope
Include patients with an ICD-9-CM Principal Procedure code or ICD-9-CM Other Procedure Codes of selected surgeries.
Adjustment/Stratification: no risk adjustment necessary/No stratification is required for this measure.
Level of Analysis: Facility/ Agency, Population : National, Program : QIO
Type of Measure: Process
Data Source: Electronic administrative data/ claims, Paper medical record/ flow-sheet
Vendor tools (electronic) or CART. CART is available for download free at
http://www.qualitynet.org/dcs/ContentServer?c=Page&pagename=QnetPublic%2FPage%2FQnetTier2&cid=1138900279093
Measure Steward: Centers for Medicare & Medicaid Services | 7500 Security Blvd, Mail Stop S3-02-01 | Baltimore | Maryland | 21244

Steering Committee Recommendation for Endorsement: Conditional; Criteria for Endorsement met: Y- 19; N -2; A-0
Rationale: The measure is meaningful for public reporting and quality improvement.

If applicable, Conditions/Questions for Developer:

1. 2a.4 Denominator Statement: Include definition of 'prior to arrival' and clarify the expected beta blocker dosing during the perioperative period (e.g., beyond homeopathic dose) – should be done to a specific parameter; i.e., hear rate or blood pressure.
2. 2a.9 Denominator Exclusions: Exclusion for laparoscopy verbally reported as removed effective January 1, 2012. Please confirm.

3. 2a.9 Denominator Exclusions: Consider exclusions for patients on beta blockers for non-cardiac reasons.

Developer Response:

If applicable, Questions to the Steering Committee:

1. Importance to Measure and Report: Y-21; N-0
*(1a. Impact; 1b. Performance gap; 1c. Outcome or Evidence)*
Rationale: Performance is above 90 percent; however, concern about discontinuation of beta blockers in the post-op period remains a concern which has the potential to affect large numbers. It was noted that beta blockers had to be titrated to a certain heart rate from them to provide a beneficial result to the patient.

2. Scientific Acceptability of Measure Properties: C-10; P-10; 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 evidence, construction and testing of the measure meets requirements. The Committee questioned the period of time that was considered as part of the perioperative period and why laparoscopic procedures were included in the exclusions and set conditions related to these concerns.

3. Usability: C-12; P-9; 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-12; P-9; 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 required data are readily available; the Committee questioned whether the measure would continue to rely on paper records. It is not included in the list for electronic health records (EHR) at present; however, the developer was encouraged to consider capturing titration to heart rate when it does move to EHR. The developer was also encouraged to better convey the bradycardia exclusion.

0117 Beta blockade at discharge

Description: Percent of patients aged 18 years and older undergoing isolated CABG who were discharged on beta blockers
Numerator Statement: Number of patients undergoing isolated CABG who were discharged on beta blockers
Denominator Statement: All patients undergoing isolated CABG
Exclusions: Cases are removed from the denominator if there was an in-hospital mortality or if discharge beta blocker was contraindicated.
Adjustment/Stratification: no risk adjustment necessary/No stratification is required for this measure.
Level of Analysis: Clinicians : Group, Facility/ Agency, Population : Counties or cities, Population : National, Population : Regional/network, Population : states
Type of Measure: Process
Data Source: Registry data
Measure Steward: Society of Thoracic Surgeons | 633 North Saint Clair Street, Suite 2320 | Chicago | Illinois | 60611

Steering Committee Recommendation for Endorsement: Criteria for Endorsement met: Y-21; N-0; A-0
Rationale: The measure is important and shows a performance gap.

If applicable, Conditions/Questions for Developer:
Developer Response:
If applicable, Questions to the Steering Committee:

1. Importance to Measure and Report: Y-21; N-0
*(1a. Impact; 1b. Performance gap; 1c. Outcome or Evidence)*
Rationale: The measure is important and shows a performance gap with a mean of 95.1 percent and a median of 96.9 percent compliance; however performance drops off sharply indicating there is room for continued performance improvement.

2. Scientific Acceptability of Measure Properties: C-18; P-3; M-0; NA-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: Initial concern about patients with contraindications who were removed from the numerator and denominator and the clarity of the time window were resolved in conversation with the developer. There is a clear relationship of this measure to patient outcomes. The rationale for using eligibility and exclusion criteria in lieu of a risk model that would be difficult to construct was accepted.

3. Usability: C-17; P-4; M-0; NA-0
*(3a. Meaningful/useful for public reporting and quality improvement; 3b. Harmonized; 3c. Distinctive or additive value to existing*

*measures)*
Rationale: The measure was considered usable; no concerns were expressed.

4. Feasibility: C-18; P-3; M-0; NA-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: While there were questions about potential gaming and costs associated with data abstraction, these issues are relatively common across many measures and were not believed to compromise the feasibility of this measure.

1480 Patient(s) 18 years of age and older on a beta-blocker at admission or within seven days of discharge of an isolated CABG procedure.

Description: Patient(s) 18 years of age and older hospitalized for an isolated CABG procedure taking a beta-blocker at admission or within seven days of discharge.
Numerator Statement: Patient(s)who are taking a Beta-blocker at CABG admission date or within seven days of discharge.
Denominator Statement: People hospitalized for an isolated CABG procedure
Exclusions: 1. Exclude patients who were readmitted to an acute or non-acute care facility for any diagnosis within seven days after discharge
2. Exclude the event if the patient died during the admission
3. Exclude the patient if the patient did not have pharmacy benefits throughout the CABG event
4. Exclude patients who had a contraindication to Beta-blockers or were taking Beta-blocker exclusion medications
Adjustment/Stratification: no risk adjustment necessary/No stratification is required for this measure.
Level of Analysis: Can be measured, Clinicians : Group, Clinicians : Individual, Facility/ Agency, Health Plan, Integrated Delivery System, Multi-site/ corporate chain, Population : Counties or cities, Population : states, Program : Disease management, Program : QIO
Type of Measure: Process
Data Source: Electronic administrative data/ claims, Pharmacy data
Measure Steward: Ingenix | 12125 Technology Drive | Eden Prairie | Minnesota | 55344

Steering Committee Recommendation for Endorsement: No
Rationale: Did not pass the threshold criterion of Importance to Measure and Report thus remaining criteria were not assessed.

If applicable, Conditions/Questions for Developer:
Developer Response:
If applicable, Questions to the Steering Committee:

1. Importance to Measure and Report: Y-6; N-15
*(1a. Impact; 1b. Performance gap; 1c. Outcome or Evidence)*
Rationale: The Committee identified a number of concerns about the measure. They primarily believed that the scope of the measure was limited by the fact that it provides information on a small subset of the population, since it includes only patients with insurance and does not include those with Medicare or Medicaid. The measure relies on pharmacy claims and provision of a prescription which patients may not fill prescriptions within the seven days post-hospitalization.

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

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

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

0365 Pancreatic resection mortality rate (IQI 9)

Description: Percentage of discharges with procedure code of pancreatic resection with an in-hospital death.
Numerator Statement: Number of deaths (DISP=20) among cases meeting the inclusion and exclusion rules for the denominator.
Denominator Statement: Discharges, age 18 years and older, with ICD-9-CM pancreatic resection code procedure and a diagnosis code of pancreatic cancer in any field.
Exclusions: Exclude cases:
• missing discharge disposition (DISP=missing), gender (SEX=missing), age (AGE=missing), quarter (DQTR=missing), year (YEAR=missing) or principal diagnosis (DX1 =missing)

• transferring to another short-term hospital (DISP=2)
• MDC 14 (pregnancy, childbirth, and puerperium)
Adjustment/Stratification: risk adjustment method widely or commercially available The predicted value for each case is computed using a hierarchical model (logistic regression with hospital random effect) and covariates for gender, age in years (in 5-year age groups), All Patient Refined-Diagnosis Related Group (APR-DRG) and APR-DRG risk-of-mortality subclass. The reference population used in the model is the universe of discharges for states that participate in the HCUP State Inpatient Databases (SID) for the year 2007 (updated annually), a database consisting of 43 states and approximately 30 million adult discharges. The expected rate is computed as the sum of the predicted value for each case divided by the number of cases for the unit of analysis of interest (i.e., hospital, state, and region). The risk adjusted rate is computed using indirect standardization as the observed rate divided by the expected rate, multiplied by the reference population rate/User has the optin to stratify by gender, age (5-year age groups), race / ethnicity, primary payer, and custom stratifiers.
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: The Steering Committee will vote on this measure after receiving feedback from the developer on the denominator details and exclusions.
Rationale: The measure was considered important and was based on strong evidence.

If applicable, Conditions/Questions for Developer:
Overarching comment: Please provide feasibility of reporting mortality stratified by institutional volume (e.g., high, medium, low volume with parameters for each) rather than having rate and mortality separated.

1. De.2 Ensure measure description accurately captures measure focus.
2. 2a.8 Denominator Details: Do not limit to pancreatic resection for cancer - could stratify by malignant and benign. Also, consider providing volume as well as rate.
3. 2a.9 Denominator Exclusions: Please remove 'transferring to another short-term hospital (DISP=2)' from the exclusions.
4. 2a.9 Denominator Exclusions: Add exclusion for pancreatitis.

Measures 0365 and 0366 should be fully harmonized in order to properly report as a pair. This will involve including all pancreatic disease in both the numerator and denominator of both measures. They can then be stratified by malignant and benign disease.

Note: Discussion of Related and Competing measures may result in additional requests to developers specific to harmonization.

Developer Response:
If applicable, Questions to the Steering Committee:

1. Importance to Measure and Report:
*(1a. Impact; 1b. Performance gap; 1c. Outcome or Evidence)*
Rationale: The evidence supports the measure's focus on pancreatic resections for cancer and while it is a low volume procedure, mortality rates are high and merit tracking.

2. Scientific Acceptability of Measure Properties:
*(2a. Precise specifications; 2b. Reliability testing; 2c. Validity testing; 2d. Exclusions justified; 2e. Risk adjustment/stratification; 2f. Meaningful differences; 2g. Comparability; 2h. Disparities)*
Rationale: The measure was considered scientifically acceptable. The Committee debated the importance of separate measures focusing on a pancreatic resection for cancer and a pancreatic resection for benign disease and determined that both could be captured in a single measure that is stratified to report each.

3. Usability:
*(3a. Meaningful/useful for public reporting and quality improvement; 3b. Harmonized; 3c. Distinctive or additive value to existing measures)*
Rationale: This measure is in use in multiple states and healthcare systems and is reported on HCUPnet as well as used in the MONAHRQ system that is provided for public reporting and quality improvement.

4. Feasibility:
*(4a. Clinical data generated during care process; 4b. Electronic sources; 4c. Exclusions – no additional data source; 4d. Susceptibility to inaccuracies/ unintended consequences identified 4e. Data collection strategy can be implemented)*
Rationale: This measure was considered feasible; data is obtained from electronic claims and chart abstraction.

0366 Pancreatic resection volume (IQI 2)
Description: Number of discharges with procedure for pancreatic resection.

Numerator Statement: Discharges, age 18 years and older, with ICD-9-CM codes for pancreatic resection procedure.
Denominator Statement: not applicable
Exclusions: Not applicable
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: The Steering Committee will vote on this measure after receiving feedback from the developer on the denominator details and exclusions.
Rationale: The measure was considered important and cited strong evidence.

If applicable, Conditions/Questions for Developer:

1. De.2 Ensure measure description accurately captures measure focus.
2. 2a.3 Numerator Details: Partial resections and partial operations should be included in 0366,
3. 2a.8 Denominator Details: Do not limit to pancreatic resection for cancer.
4. 2a.9 Denominator Exclusions: Please remove 'transferring to another short-term hospital (DISP=2)' from the exclusions.
5. 2a.9 Denominator Exclusions: Add exclusion for pancreatitis.
6. 2b.3 and 2.c.3 Testing Results: Text speaks to esophageal resection. Please provide correct information and advise if there are other such errors within the submission that have required correction.

Measures 0365 and 0366 should be fully harmonized in order to properly report as a pair. This will involve including all pancreatic disease in both the numerator and denominator of both measures. They can then be stratified by malignant and benign disease.

Note: Discussion of Related and Competing measures may result in additional requests to developers specific to harmonization.

Developer Response:
If applicable, Questions to the Steering Committee:

1. Importance to Measure and Report:
*(1a. Impact; 1b. Performance gap; 1c. Outcome or Evidence)*
Rationale: The evidence supports the measure's focus on pancreatic resections for cancer and while it is a low volume procedure, the impact in terms of mortality is important to track and report.

2. Scientific Acceptability of Measure Properties:
*(2a. Precise specifications; 2b. Reliability testing; 2c. Validity testing; 2d. Exclusions justified; 2e. Risk adjustment/stratification; 2f. Meaningful differences; 2g. Comparability; 2h. Disparities)*
Rationale: The measure was considered scientifically acceptable. The Committee debated the importance of separate measures focusing on a pancreatic resection for cancer and a pancreatic resection for benign disease and determined that both could be captured in a single measure to be stratified to report each.

3. Usability:
*(3a. Meaningful/useful for public reporting and quality improvement; 3b. Harmonized; 3c. Distinctive or additive value to existing measures)*
Rationale: This measure is in use in multiple states and healthcare systems and is reported on HCUPnet as well as used in the MONAHRQ system that is provided for public reporting and quality improvement.

4. Feasibility:
*(4a. Clinical data generated during care process; 4b. Electronic sources; 4c. Exclusions – no additional data source; 4d. Susceptibility to inaccuracies/ unintended consequences identified 4e. Data collection strategy can be implemented)*
Rationale: This measure was considered feasible; data is obtained from electronic claims and chart abstraction.

0273 Perforated appendix admission rate (PQI 2)

Description: Percentage of admissions for appendicitis within county with perforated appendix.
Numerator Statement: All discharges with ICD-9-CM diagnosis code for perforations or abscesses of appendix in any field among cases meeting the inclusion rules for the denominator.
Denominator Statement: All non-maternal discharges of age 18 years and older in Metro Area1 or county with diagnosis code for appendicitis in any field.
Exclusions: Not applicable.
Adjustment/Stratification: risk adjustment method widely or commercially available The predicted value for each case is computed using a logistic regression model and covariates for gender and age in years (in 5-year age groups). The reference population used in the model is the universe of discharges for states that participate in the HCUP State Inpatient Databases (SID) for the year 2007

(updated annually), a database consisting of 43 states and approximately 30 million adult discharges. The expected rate is computed as the sum of the predicted value for each case divided by the number of cases for the unit of analysis of interest (i.e., county, state, and region). The risk adjusted rate is computed using indirect standardization as the observed rate divided by the expected rate, multiplied by the reference population rate/Observed rates may be stratified by gender, age (5-year age groups), race / ethnicity.
Level of Analysis: Population : Counties or cities, Population : states
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: Criteria for Endorsement met: Y-20; N-1; A-0
Rationale: This is a population-based measure that is scientifically valid and easy to implement with a significant performance gap. Adverse outcomes such as longer length of stay with the resulting increased resource utilization are associated with an appendix perforation.

If applicable, Conditions/Questions for Developer:
Developer Response:
If applicable, Questions to the Steering Committee:

1. Importance to Measure and Report: Y-19; N-2
*(1a. Impact; 1b. Performance gap; 1c. Outcome or Evidence)*
Rationale: The Committee indicated that the measure demonstrated that adverse outcomes are associated with an appendix perforation and disparity data suggested a gap in care. The measure is useful as a population prevention indicator.

2. Scientific Acceptability of Measure Properties: C-16; 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: This measure is scientifically acceptable, which has been confirmed through validity testing.

3. Usability: C-18; P-2; 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 is in use

4. Feasibility: C-18; P-3; 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: This measure uses claims data and is feasible to collect.

0364 Incidental appendectomy in the elderly rate (IQI 24)

Description: Percent of elderly cases with intra-abdominal procedure with an incidental appendectomy.
Numerator Statement: Number of incidental appendectomy procedures among cases meeting the inclusion and exclusion rules for the denominator.
Denominator Statement: All discharges, age 65 years and older, with ICD-9-CM codes for abdominal and pelvic surgery.
Exclusions: Exclude:
- MDC 14 (pregnancy, childbirth, and puerperium)
- cases with a code for surgical removal of the colon (colectomy) or pelvic evisceration
- cases with any diagnosis of cancer involving or adjacent to the appendix
Adjustment/Stratification: no risk adjustment necessary/User has the option to stratify by gender, age (5-year age groups), race / ethnicity, primary payer, or use custom stratifiers.
Level of Analysis: Facility/ Agency
Type of Measure: Process
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: No
Rationale: Did not pass threshold criterion of Importance to Measure and Report based on continued value and relevance thus remaining criteria were not assessed..

If applicable, Conditions/Questions for Developer:
Developer Response:
If applicable, Questions to the Steering Committee:

1. Importance to Measure and Report: Y-6; N-15
*(1a. Impact; 1b. Performance gap; 1c. Outcome or Evidence)*
Rationale: The surgery now is rarely performed and while performing an appendectomy when it is not indicated has the potential to lead to problems of contaminating a clean abdominal surgery, the rate of performing the surgery is quite low. While the rate of incidental

appendectomy is at 2 percent, the Committee clarified that its vote was related to relative lack of relevance and value.

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

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

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

0265 Hospital transfer/admission

Description: Rate of ASC admissions requiring a hospital transfer or hospital admission upon discharge from the ASC
Numerator Statement: Ambulatory surgical center (ASC) admissions requiring a hospital transfer or hospital admission upon discharge from the ASC.
Denominator Statement: All ASC admissions
Exclusions: None
Adjustment/Stratification: no risk adjustment necessary/No stratification is required for this measure.
Level of Analysis: Facility/ Agency
Type of Measure: Outcome
Data Source: Paper medical record/ flow-sheet
Measure Steward: ASC Quality Collaboration | 5686 Escondida Blvd S | St. Petersburg | Florida | 33715

Steering Committee Recommendation for Endorsement: Conditional Criteria for Endorsement met: Y-13; N-7; A-0
Rationale: This measure focus is important and will encourage reporting and provide the ability to analyze transfer rates among ASCs.

If applicable, Conditions/Questions for Developer:

1. 1b.2 Summary of Measure Results Demonstrating Performance Gap: Rates and percentages presented in the measure are confusing. Please review and revise as appropriate
2. 1b.3 Data/Sample: There is a discrepancy between the data that was collected and publicly reported. In the usability section, it states that 1,185 ASCs submitted data for 2nd quarter 2010 on this particular measure; however, in section 1b.3, it states that only 526 ASCs submitted data on this measure. Please reconcile.
3. 2a.2 Numerator Time Window: Revise numerator statement from "…discharge from the ASC" to a more appropriate interval this will also reduce potential perverse incentives. Time window should be at least 24 hours, which would also reduce potential for the unintended incentive to discharge home when admission needed.
4. 2f.2. Methods to Identify Statistically Significant and Practical or Meaningful Differences in Performance: The statistical analysis does not specify a method; validity is questioned. Please reevaluate and in doing so, be specific about what is known about what transfer rates should be expected to be.
5. 2h. Disparities in Care: Please submit any subpopulation performance data that is available for the measures. The committee understands that ASCs do not have a quality reporting system requirement; however, assessment of subpopulation data is important and should be collected and reported for this and other measures.

Developer Response:
If applicable, Questions to the Steering Committee:

1. Importance to Measure and Report: Y-15; N-5
*(1a. Impact; 1b. Performance gap; 1c. Outcome or Evidence)*
Rationale: The Committee deems the focus of the measure important but has concerns about a) the potential for the unintended consequence of discharging a patient to home when potential need for admission is relatively high which argues for modification of the measure to include a time window for admission and b) the low admission rate reflected in the data provided does not demonstrate a meaningful performance gap. Modification of the measure with a broader time window could resolve the concerns.

2. Scientific Acceptability of Measure Properties: C-2; P-10; M-6; N-2
*(2a. Precise specifications; 2b. Reliability testing; 2c. Validity testing; 2d. Exclusions justified; 2e. Risk adjustment/stratification; 2f. Meaningful differences; 2g. Comparability; 2h. Disparities)*
Rationale: The measure does not provide concise parameters for measurement benchmarking, since it does not establish an appropriate target rate of transfer. Developer has been asked to address this.

3. Usability: C-6; P-9; M-3; N-2

*(3a. Meaningful/useful for public reporting and quality improvement; 3b. Harmonized; 3c. Distinctive or additive value to existing measures)*
Rationale: The statistical analysis did not seem valid, since the outliers would vary by ambulatory surgical center. This measure may not be ready for public reporting since it does not have a specific target transfer rate. Developer has been asked to address this.

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: Data is derived from the patient medical record. The measure could have the unintended consequence of promoting a discharge to home rather than a transfer, since an admission would be viewed as "failing to meet the measure".

1519 Statin therapy at discharge after lower extremity bypass (LEB)

Description: Percentage of patients aged 18 years and older undergoing infrainguinal lower extremity bypass who are prescribed a statin medication at discharge. This measure is proposed for both hospitals and individual providers.
Numerator Statement: Patients undergoing infrainguinal lower extremity bypass who are prescribed a statin medication at discharge.
Denominator Statement: All patients aged 18 years and older undergoing lower extremity bypass as defined above who are discharged alive, excluding those patients who are intolerant to statins.
Exclusions: Chart documentation that patient was not an eligible candidate for statin therapy due to known drug intolerance, or patient died before discharge.
Adjustment/Stratification: no risk adjustment necessary/No stratification is required for this measure.
Level of Analysis: Can be measured at all levels, Clinicians : Group, Clinicians : Individual, Facility/ Agency
Type of Measure: Process
Data Source: Registry data
Measure Steward: Society for Vascular Surgery | 633 N. Saint Clair St., 22nd Floor | Chicago | Illinois | 60611

Steering Committee Recommendation for Endorsement: Conditional Criteria for Endorsement met: Y-19; N-0 ; A-1
Rationale: The focus of the measure is important and while the evidence cited speaks to statin use for LDL control, use of statins without reference to LDL is the current trend and, per the developer, it is expected that it will be supported in future guidelines.

If applicable, Conditions/Questions for Developer:
1. 2a.2 Numerator Time Window: Timeframe lacks precision. Please address.
2. 2a.7 Denominator Time Window: Timeframe lacks precision. Please address.

Note: Discussion of Related and Competing measures may result in additional requests to developers specific to harmonization
Developer Response:
If applicable, Questions to the Steering Committee:

1. Importance to Measure and Report: Y-19; N-1 ; A-0
*(1a. Impact; 1b. Performance gap; 1c. Outcome or Evidence)*
Rationale: The measure is based on a guideline which focuses on statin use for LDL control while the measure focuses on statin use regardless of the LDL control; however the current trend in practice to use of statin without reference to LDL. Performance rates have improved from 41 percent to 79 percent, still short of the 90 percent goal.

2. Scientific Acceptability of Measure Properties: C-8; P-11; 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 and denominator timeframes lack precision.

3. Usability: C-14; P-5; 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 measure, which relies on registry data, was considered usable. .

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 feasibility of implementation was questioned since the data comes from a registry. For registry participants the measure is quite feasible; a non-registry participant would have to collect manually or develop an electronic system

0357 Abdominal aortic aneurysm (AAA) repair volume (IQI 4)

Description: Count of discharges with a procedure code of provider-level AAA repair.
Numerator Statement: Discharges, age 18 years and older, with an abdominal aortic aneurysm repair procedure and a primary or secondary diagnosis of AAA.
Denominator Statement: This volume measure does not have a denominator.

Exclusions: Numerator exclusions
• MDC 14 (pregnancy, childbirth, and puerperium)
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: Conditional No
Rationale: The Committee had extensive discussion about the volume and related mortality measures before asking for additional information. Did not pass the threshold criterion of Importance to Measure and Report thus was not assessed against the remaining criteria.

If applicable, Conditions/Questions for Developer:
Overarching Comment: The Steering Committee vote regarding the NQF evaluation criterion of "Importance" was split with 10 voting yes and 11 voting no and a number of members noted the measure should only be reported with the related mortality measure. The developer will want to review the measure in its entirety in this light and provide whatever additional information/specification including value as a paired measure with mortality that it believes appropriate. Should specifications change, it is important to provide information regarding testing with the changes

2a. 11 Stratification Details/Variables: Measure should stratify the measure by endovascular and open repairs.

Note: Discussion of Related and Competing measures may result in additional requests to developers specific to harmonization. As discussed, the developer should meet with SVS to harmonize or blend measures concerning AAA

Developer Response:
If applicable, Questions to the Steering Committee:

1. Importance to Measure and Report: Y-10; N-11 *(1a. Impact; 1b. Performance gap; 1c. Outcome or Evidence)*
Rationale: The measure would provide key information to the public about AAA mortality, but does not provide separate information on EVARs and open repairs. The vote is reflective of the debate related to the value and implications of separately reporting open and endovascular repairs. AHRQ representatives indicated that the stratification is a component of the current software; however, the Committee would like to see this specifically reflected in the specifications of the measure. AHRQ representatives indicated that a separate risk adjustment model could be developed for open and endovascular procedures with both ruptured and unruptured aneurysms. The majority of AAA repairs are done endovascularly and open repairs have become more complicated.

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

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

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

0359 Abdominal aortic artery (AAA) repair mortality rate (IQI 11)

Description: Percent of discharges with procedure code of AAA repair with an in-hospital death.
Numerator Statement: Number of deaths (DISP=20) among cases meeting the inclusion and exclusion rules for the denominator.
Denominator Statement: Discharges, age 18 years and older, with ICD-9-CM AAA repair code procedure and a diagnosis of AAA in any field.
Exclusions: Exclude cases:
• missing discharge disposition (DISP=missing), gender (SEX=missing), age (AGE=missing), quarter (DQTR=missing), year (YEAR=missing) or principal diagnosis (DX1 =missing)
• transferring to another short-term hospital (DISP=2)
• MDC 14 (pregnancy, childbirth, and puerperium)
Adjustment/Stratification: risk adjustment method widely or commercially available The predicted value for each case is computed using a hierarchical model (logistic regression with hospital random effect) and covariates for gender, age in years (in 5-year age

groups), All Patient Refined-Diagnosis Related Group (APR-DRG) and APR-DRG risk-of-mortality subclass. The reference population used in the model is the universe of discharges for states that participate in the HCUP State Inpatient Databases (SID) for the year 2007 (updated annually), a database consisting of 43 states and approximately 30 million adult discharges. The expected rate is computed as the sum of the predicted value for each case divided by the number of cases for the unit of analysis of interest (i.e., hospital, state, and region). The risk adjusted rate is computed using indirect standardization as the observed rate divided by the expected rate, multiplied by the reference population rate.Risk adjustment factors: sex
age 18-24; age 25-29; age 30-34; age 35-39; age 40-44; age 45-49; age 50-54; age 55-59; age 60-64; age 65-69; age 70-74; age 75-79; age 80-84; age 85+
each age category*female
ADRG 1731 (other vascular procedures-minor)
ADRG 1732 (other vascular procedures-moderate)
ADRG 1733 (other vascular procedures-major)
ADRG 1734 (other vascular procedures-extreme)
ADRG 1691 (major thoracic and abdominal vascular procedures-minor)
ADRG 1692 (major thoracic and abdominal vascular procedures-moderate)
ADRG 1693 (major thoracic and abdominal vascular procedures-major)
ADRG 1694 (major thoracic and abdominal vascular procedures-extreme
ADRG 9999 (other)/Gender, age (5-year age groups), race / ethnicity, primary payer, custom
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: The Steering Committee engaged in extensive discussion of the volume and mortality measures, as noted in review of 0357 above, and will vote on this measure after receiving feedback from the developer on separating or stratifying the measure into open and EVAR mortality rates since the procedures and complications vary significantly.
Rationale:

If applicable, Conditions/Questions for Developer:

1. 2a.11 Stratification Details/Variables: a) Stratify the measure by endovascular and open repairs as well as emergency vs elective repair; b) specify the risk stratification model used; 3) identify settings where the model has been validated in addition to the training data set in which it was developed or provide other supporting data as to its validity.
2. 2b.3 Testing Results: Please provide information about signal to noise ratio.

Note: Discussion of Related and Competing measures may result in additional requests to developers specific to harmonization. As discussed, the developer should meet with SVS to harmonize or blend measures concerning AAA

Developer Response:
If applicable, Questions to the Steering Committee:

1. Importance to Measure and Report: Y-10; N-11; A-1
*(1a. Impact; 1b. Performance gap; 1c. Outcome or Evidence)*
Rationale: The measure would provide key information to the public about AAA volume, but does not provide separate information on EVARs and open repairs. The majority of AAA repairs are done endovascularly and open repairs have become more complicated.

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

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

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

1523 In-hospital mortality following elective open repair of small AAAs

Description: Percentage of aymptomatic patients undergoing open repair of small abdominal aortic aneurysms (AAA)who die while in hospital. This measure is proposed for both hospitals and individual providers.

Numerator Statement: Mortality following elective open repair of asymptomatic AAAs in men with < 6 cm dia and women with < 5.5 cm dia AAAs
Denominator Statement: All elective open repairs of asymptomatic AAAs in men with < 6 cm dia and women with < 5.5 cm dia AAAs
Exclusions: > 6 cm minor diameter - men
> 5.5 cm minor diameter - women
Symptomatic AAAs that required urgent/emergent (non-elective) repair
Adjustment/Stratification: no risk adjustment necessary/No stratification is required for this measure.
Level of Analysis: Can be measured at all levels, Clinicians : Group, Clinicians : Individual, Facility/ Agency
Type of Measure: Outcome
Data Source: Registry data
Measure Steward: Society for Vascular Surgery | 633 N. St. Clair, 24th floor | Chicago | Illinois | 60611

Steering Committee Recommendation for Endorsement: Conditional Y-9; N-11; A-1
Rationale: The evidence supports the measure's focus on small AAAs repairs and it provides important outcome data; however, the Committee had a number of questions for which it requested developer response before further consideration of the measure.

If applicable, Conditions/Questions for Developer:
Overall comment: Based on the narrow margin of the Steering Committee vote related to having met criteria for endorsement the measure will be reconsidered with the response to the questions and conditions below.

1. De2. Brief Description and 2a.1 Numerator Statement: Suggested addition of 30-day mortality with in-hospital mortality. Also, please clarify whether aneurysm size can be collected using administrative (i.e., is widely available outside the Northern New England registry), or available clinical data and the added burden of such collection.
2. 2a. Measure Specifications: Provide a timeframe for availability of newly created CPT2 codes to make this a universally applicable measure.
3. 2a.3 Numerator Details: Reword the numerator details here and throughout where registry is specified to be clear that a specific registry (i.e., SVS, VSGNE) is not required to collect the data.
4. 2b Reliability Testing and 2c Validity Testing: Advise what testing will be needed and completed for the suggested modification to 30 day mortality?
5. 2d. Exclusions: Provide reconcile sample size and data for what is being measured. Also reconcile aneurysm size in the population of interest and the sizes specified throughout.
6. 2h. Disparities in Care: Provide information about disparities or plans to be able to provide data.
7. 3a.2 Use in a Public Reporting Initiative: Please provide plans for public reporting (within 3 years).

Note: Discussion of Related and Competing measures may result in additional requests to developers specific to harmonization

Developer Response:
If applicable, Questions to the Steering Committee:

1. Importance to Measure and Report: Y-18; N-3; A-0
*(1a. Impact; 1b. Performance gap; 1c. Outcome or Evidence)*
Rationale: The measure provides important outcome data. More AAA repairs are being conducted; although, they may not be medically necessary. However, the data provided in the measure included both small and large aneurysms, despite the stated measure's focus on only small AAAs. High mortality levels may encourage a process review.

2. Scientific Acceptability of Measure Properties: C-2; P-16; M-2; A-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: The Committee described the importance of extending the measure to 30 day mortality to identify adverse outcomes. The Committee stated the numerator time window, while verbally explained satisfactorily, could be confusing to users. Testing was questioned; while the measure focused on small aneurysms, testing was conducted on large aneurysms.

3. Usability: C-4; P-11; M-4; A-2
*(3a. Meaningful/useful for public reporting and quality improvement; 3b. Harmonized; 3c. Distinctive or additive value to existing measures)*
Rationale: The data used for the measure is drawn from a registry that includes claims and chart abstracted data thus is usable for registry participants though for non-registry participants the data would prove challenging to collect.

4. Feasibility: C-4; P-10; M-3; A-4
*(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 registry group from which data for this measure is drawn is about 10 hospitals; thus, information about feasibility is limited both in terms of the number of facilities in which tested and testing with only registry data. At present there is no mechanism for identifying small aneurysms with administrative data. The developer is working to develop CPT II codes that would allow aneurysm size to be captured and reported with administrative data. This would require new/additional specifications for the measure. It was noted that

the measure could be revised and limited to mortality unrelated to aneurysm size which could be collected using administrative data; this would require future modification of the measure.

1534 In-hospital mortality following elective EVAR of small AAAs

Description: Percentage of patients undergoing elective endovascular repair of small asymptomatic abdominal aortic aneurysms (AAA) who die while in hospital. This measure is proposed for both hospitals and individual providers.
Numerator Statement: Mortality following elective endovascular AAA repair of asymptomatic AAAs in men with < 6 cm dia and women with < 5.5 cm dia AAAs
Denominator Statement: All elective endovascular repairs of asymptomatic AAAs in men with < 6 cm dia and women with < 5.5 cm dia AAAs
Exclusions: A registry that includes hospitalization details, AAA diameter and discharge status is required to identify patients for denominator inclusion. The Society for Vascular Surgery Vascular Quality Initiative (SVS VQI) and the Vascular Study Group of New England (VSGNE) registries records such information. Patients who underwent endovascular AAA repair are included if their aneurysm was asymptomatic and small (< 6cm dia in men, <5.5 cm dia in women, judged by preoperative imaging).
Adjustment/Stratification: no risk adjustment necessary/No stratification is required for this measure.
Level of Analysis: Can be measured at all levels, Clinicians : Group, Clinicians : Individual, Facility/ Agency
Type of Measure: Outcome
Data Source: Registry data
Measure Steward: Society for Vascular Surgery | 633 N. St. Clair, 22nd Floor | Chicago | Illinois, 60611

Steering Committee Recommendation for Endorsement: Conditional Y-9; N-12; A-0
Rationale: The evidence supports the measure's focus on small AAAs repairs and it provides important outcome data; however, the Committee has a number of questions for which it requested developer response before further consideration of the measure.

If applicable, Conditions/Questions for Developer:
Based on the narrow margin of the Steering Committee vote related to having met criteria for endorsement, the committee will reconsider the measure with the response to the questions and conditions below.

1. De2. Brief Description and 2a.1 Numerator Statement: Suggested modification- addition of 30-day mortality with in-hospital mortality. Also, please clarify whether aneurysm size can be collected using administrative (i.e., is widely available outside the Northern New England registry), or available clinical data and the added burden of such collection.
2. 2a Measure Specifications: Scope of the measure as specified will have limited impact. Please reevaluate.
3. 2b Reliability Testing and 2c Validity Testing: Identify the testing that will need to be completed for the suggested modifications?
4. 2d. Exclusions: Provide reconcile sample size and data for what is being measured. Also reconcile aneurysm size in the population of interest and the sizes specified throughout.
5. 2h. Disparities in Care: Providing information about disparities or plans to be able to provide same.
6. 3a.2 Use in a public reporting initiative: Please provide plans for public reporting (within 3 years).

Developer Response:
If applicable, Questions to the Steering Committee:

1. Importance to Measure and Report: Y-21; N-0 ; A-0
*(1a. Impact; 1b. Performance gap; 1c. Outcome or Evidence)*
Rationale: The measure provides important outcome data. More AAA repairs are being conducted; although, they may not be medically necessary. However, the data provided in the measure included both small and large aneurysms, despite the measure's focus on only small AAAs. High mortality levels may encourage a process review.

2. Scientific Acceptability of Measure Properties: C-5; P-13; 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: The Committee discussed the importance of extending the measure to 30 day mortality to identify adverse outcomes. The Committee stated that the time window may be confusing.

3. Usability: C-3; P-15; M-2; N-1
*(3a. Meaningful/useful for public reporting and quality improvement; 3b. Harmonized; 3c. Distinctive or additive value to existing measures)*
Rationale: In the future the measure could be adjusted to be applicable for other procedures.

4. Feasibility: C-5; P-10; M-5; N-1
*(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 did not provide widespread testing data and may not be feasible without the registry. The developer is attempting to create CPT II codes to facilitate use beyond the registry in the future.

1548 Surveillance after endovascular abdominal aortic aneurysm repair (EVAR)

Description: Percentage of patients 18 years of age or older undergoing endovascular abdominal aortic aneurysm repair who have at least one follow-up imaging study after 3 months and within 15 mos of EVAR placement that documents aneurysm sac diameter and endoleak status. This measure is proposed for individual providers.
Numerator Statement: Patients 18 years or older undergoing EVAR who have at least one follow-up CTA, duplex, or MRA of the abdomen and pelvis after 3 months but within 15 months of placement, assessing for sac size and endoleak
Denominator Statement: Patients 18 years or older undergoing EVAR for abdominal aortic aneurysms excluding patients who died prior to follow-up within 15 months postoperatively.
Exclusions: A registry that includes surgical details or CPT procedure codes is required to identify patients for denominator inclusion. This registry must also collect followup data based on an outpatient visit that links to the original EVAR procedure and documents aneurysm sac size and endoleak status based on an outpatient imaging study (CT, MR or ultrasound). The Society for Vascular Surgery Vascular Quality Initiative (SVS VQI) and the Vascular Study Group of New England (VSGNE) registries record this information. CPT codes that define the initial cohort of EVAR operations include: 34800, 34802, 34803, 34804, 34805, 34825, 34826, and 34900.
Adjustment/Stratification: no risk adjustment necessary/No stratification is required for this measure.
Level of Analysis: Facility/ Agency; Can be measured at all levels; Clinicians: Individual; Clinicians: Group
Type of Measure: Process
Data Source: Registry data
Measure Steward: Society for Vascular Surgery | 633 N. St. Clair, 22nd floor | Chicago | Illinois, 60611

Steering Committee Recommendation for Endorsement: Conditional Y-5; N-15; A-1
Rationale: While the measure highlights opportunities for improvement and the surveillance data could provide key information on the EVAR follow up, the reasons why surveillance is not completed are varied. As one example, patients may not report for follow up because of travel costs associated with returning for scans. The Committee expressed concern about the way the measure would be used and what its importance would be since there are many reasons (including socioeconomic) why patients do not have scans.

If applicable, Conditions/Questions for Developer:
Developer Response:
If applicable, Questions to the Steering Committee:

1. Importance to Measure and Report: Y-20; N-1
*(1a. Impact; 1b. Performance gap; 1c. Outcome or Evidence)*
Rationale: The measure cited endograft surveillance performance rates from two major medical centers. One center had a 50 percent endograph surveillance rate, while the other had a performance rate of 75 percent. These statistics indicate an opportunity for improvement.

2. Scientific Acceptability of Measure Properties: C-3; P-15; 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: The numerator is not specific to CT scan.

3. Usability: C-3; P-15; M-3; N-0
*(3a. Meaningful/useful for public reporting and quality improvement; 3b. Harmonized; 3c. Distinctive or additive value to existing measures)*
Rationale: The Committee was unclear about how the measure would be publicly reported and what unintended consequences could result given that the provider plan for follow up is subject to patient action, which can be influenced by a number of things including socioeconomic factors.

4. Feasibility: C-3; P-11; M-5; N-2
*(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 was considered feasible in that, while the measure uses registry data, it could be applied, outside the registry, using administrative data.

1540 Postoperative stroke or death in asymptomatic patients undergoing carotid endarterectomy

Description: Percentage of patients age 18 or older without carotid territory neurologic or retinal symptoms within the one year immediately preceding carotid endarterectomy (CEA) who experience stroke or death following surgery while in the hospital. This measure is proposed for both hospitals and individual surgeons.
Numerator Statement: Patients age 18 or older without preoperative carotid territory neurologic or retinal sympotoms within the one year immediately preceding CEA who experience stroke or death during their hospitalization following carotid endarterectomy

Denominator Statement: Asymptomatic patients (based on NASCET criteria) on the within one year of CEA
Exclusions: A registry that includes hospitalization details and symptom status within 120 days is required to identify patients for denominator inclusion. The Society for Vascular Surgery Vascular Quality Initiative (SVS VQI) and the Vascular Study Group of New England (VSGNE) registries records such information. Patients who were asymptomatic within one year of the CAS (CPT code 37215) are included.
Adjustment/Stratification: no risk adjustment necessary/No stratification is required for this measure.
Level of Analysis: Facility/ Agency; Can be measured at all levels; Clinicians: Individual; Clinicians: Group
Type of Measure: Outcome
Data Source: Registry data
Measure Steward: Society for Vascular Surgery | 633 N. St. Clair, 22nd St. | Chicago | Illinois, 60611

Steering Committee Recommendation for Endorsement: Conditional Y-13; N-8; A-0
Rationale: The measure will help determine the incidence of adverse outcome in the asymptomatic patient undergoing what is essentially a prophylactic procedure.

If applicable, Conditions/Questions for Developer:

1. 2a Measure Specifications: Provide information about type and accuracy of codes from registry data? Provide the codes. Diagnostic codes must be used and will need to ensure testing with these codes is complete.
2. 2h. Disparities in Care: Provide information about disparities or plans to be able to provide data.
3. 3a.2 Use in a Public Reporting Initiative: Please provide plans for public reporting (within 3 years).

Developer Response:
If applicable, Questions to the Steering Committee:

1. Importance to Measure and Report: Y-20; N-1
*(1a. Impact; 1b. Performance gap; 1c. Outcome or Evidence)*
Rationale: The Committee considered the asymptomatic patient undergoing carotid endarterectomy important to measure.

2. Scientific Acceptability of Measure Properties: C-6; P-14; 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 Committee noted the need to define and specify methods to document (e.g., ICD-9 coding, potential development and use of CPT-II codes) asymptomatic and then to standardize the definition. There was concern about whether the measure is, in fact, measuring what is intended. This relates to adequacy of testing.

3. Usability: C-5; P-14; M-1; N-1
*(3a. Meaningful/useful for public reporting and quality improvement; 3b. Harmonized; 3c. Distinctive or additive value to existing measures)*
Rationale: The Committee was unclear about the details of the measure steward's plan for publicly reporting the measure.

4. Feasibility: C-4; P-13; M-3; N-1
*(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: Concerns relate to capture of 'asymptomatic'. The Committee was interested in the potential of future CPT-II codes in this regard.

1543 Postoperative stroke or death in asymptomatic patients undergoing carotid artery stenting (CAS)

Description: Percentage of patients 18 years of age or older without carotid territory neurologic or retinal symptoms within 120 days immediately proceeding carotid angioplasty and stent (CAS) placement who experience stroke or death during their hospitalization for this procedure. This measure is proposed for both hospitals and individual interventionalists.
Numerator Statement: Patients over age 18 without preoperative carotid territory neurologic or retinal sympotoms within one year of their procedure who experience stroke or death during their hospitalization following elective carotid artery angioplasty and stent placement
Denominator Statement: Patients over age 18 without preoperative carotid territory neurologic or retinal symptoms within one year immediately preceding carotid artery stenting
Exclusions: A registry that includes hospitalization details and symptom status within one year is required to identify patients for numerator inclusion. The Society for Vascular Surgery Vascular Quality Initiative (SVS VQI) and the Vascular Study Group of New England (VSGNE) registries records such information. Patients who were asymptomatic within one year of the CAS (CPT code 37215) are included.
Adjustment/Stratification: no risk adjustment necessary/No stratification is required for this measure.
Level of Analysis: Facility/ Agency
Type of Measure: Outcome
Data Source: Registry data

Measure Steward: Society for Vascular Surgery | 633 N. St. Clair, 22nd floor | Chicago | Illinois, 60611

Steering Committee Recommendation for Endorsement: Recommended Y-15; N-6; A-0

Rationale: The measure will help determine the incidence of adverse outcome in the asymptomatic patient undergoing what is essentially a prophylactic procedure.

If applicable, Conditions/Questions for Developer:

The Committee suggested that measures related to carotid artery stenting be developed in conjunction with other specialties that perform the procedures; i.e., radiologists and cardiologists.

Developer Response:

If applicable, Questions to the Steering Committee:

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

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

Rationale: The Committee considered the asymptomatic patient undergoing carotid artery stenting important to measure.

2. Scientific Acceptability of Measure Properties: C-6; P-14; 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 Committee noted the need to define and specify methods to document (e.g., ICD-9 coding, potential development and use of CPT-II codes) asymptomatic and then to standardize the definition.

3. Usability: C-6; P-13; M-1; N-1

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

Rationale: The Committee was unclear about the public reporting plan.

4. Feasibility: C-6; P-11; M-3; N-1

*(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: Concerns relate to capture of 'asymptomatic'. The Committee was interested in the potential of future CPT-II codes in this regard.

1531 Follow-up assessment of stroke or death after carotid revascularization

Description: Proportion of patients with carotid revascularization procedures who had follow-up performed for evaluation of death and neurologic assessment with an NIH Stroke Scale (by an examiner who is certified by the American Stroke Association) after the procedure.

Numerator Statement: Patients with documentation of a follow-up assessment between 21 and 60 days after the date of carotid revascularization for both:

1. Neurologic status with an assessment using the NIH Stroke Scale (by an examiner who is certified by the American Stroke Association ), AND
2. Vital Status (alive or expired)

Denominator Statement: Patients with carotid revascularization (surgery or stent) procedures

Exclusions: Patients with pre-procedure conditions of:

1.Acute evolving stroke, or

2.Carotid artery dissection

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

Level of Analysis: Facility/ Agency

Type of Measure: Process

Data Source: Registry data

Measure Steward: American College of Cardiology Foundation (ACCF) | 2400 N Street NW | Washington | District Of Columbia, 20037

Steering Committee Recommendation for Endorsement: No

Rationale: Did not pass the threshold criterion of Importance to Measure and Report based on lack of proximate relationship to patient outcome. Additionally, two issues were key: 1) the feasibility to collect the measure with little evidence that it is strongly linked to improvement in outcome and 2) the likelihood of being able to retrieve the information and the requirement that assessment be done by an American Stroke Association certified examiner. With respect to the latter, there was question about comparability of baseline and post procedure testing.

If applicable, Conditions/Questions for Developer:

1. 2a.1 Numerator Statement: Reconsider the window of time within which assessment must be completed, including consideration of assessment prior to 21 days.
2. 2b Reliability Testing: Please provide reliability testing information addressing, with specifics, each required item.
3. 2c.3 Validity Testing Results: Please provide information regarding how the testing compares with the relevant evidence and guidelines.

Developer Response:
If applicable, Questions to the Steering Committee:

1. Importance to Measure and Report: Y-7; N-13
*(1a. Impact; 1b. Performance gap; 1c. Outcome or Evidence)*
Rationale: The Committee stated that it would not adequately measure the follow-up for, or outcome of, stroke or death. They also commented that the measure should involve agreement across the specialties that do this work.

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

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

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

0339 Pediatric heart surgery mortality (PDI 6)

Description: Percentage of cases undergoing surgery for congenital heart disease with an in-hospital death.
Numerator Statement: Number of deaths (DISP=20) among cases meeting the inclusion and exclusion rules for the denominator with a code of pediatric heart surgery with ICD-9-CM diagnosis of congenital heart disease in any field.
Denominator Statement: Discharges under age 18 with ICD-9-CM procedure codes for congenital heart disease (1P) in any field or non-specific heart surgery (2P) in any field with ICD-9-CM diagnosis of congenital heart disease (2D) in any field.
Exclusions: Exclude cases:
• MDC 14 (pregnancy, childbirth and pueperium)
• with transcatheter interventions (either 3AP, 3BP, 3CP, 3DP, 3EP with 3D, or 3FP) as single cardiac procedures, performed without bypass (5P) but with catheterization (6P)
• with septal defects (4P) as single cardiac procedures without bypass (5P)
• with diagnosis of ASD or VSD (5D) with PDA as the only cardiac procedure
• heart transplant (7P)
• premature infants (4D) with PDA closure (3D and 3EP) as only cardiac procedure;
• age less than or equal to 30 days with PDA closure as only cardiac procedure
• missing discharge disposition (DISP=missing), gender (SEX=missing), age (AGE=missing), quarter (DQTR=missing), year (YEAR=missing) or principal diagnosis (DX1 =missing)
• transferring to another short-term hospital (DISP=2)
• neonates with birth weight less than 500 grams (Birth Weight Category 1)
Adjustment/Stratification: risk adjustment method widely or commercially available PQI: The predicted value for each case is computed using a logistic regression model and covariates for gender and age in years (in 5-year age groups). The reference population used in the model is the universe of discharges for states that participate in the HCUP State Inpatient Databases (SID) for the year 2007 (updated annually), a database consisting of 43 states and approximately 30 million adult discharges. The expected rate is computed as the sum of the predicted value for each case divided by the number of cases for the unit of analysis of interest (i.e., county, state, and region). The risk adjusted rate is computed using indirect standardization as the observed rate divided by the expected rate, multiplied by the reference population rate
The model includes additional covariates for RACHS-1 risk categories.
Required data elements: CMS Diagnosis Related Group (DRG); CMS Major Diagnostic Category (MDC); age in days up to 364, then age years at admission; International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) principal and secondary diagnosis codes/The user has the option to stratify by Gender, birthweight, age in days, age in years, race / ethnicity, primary payer, and custom stratifiers.
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: Conditional Y-18; N-1; A-0
Rationale: Measuring pediatric heart surgery mortality is important and the measure is valid and meets criteria. RACHS is supported in the literature.

If applicable, Conditions/Questions for Developer:
As specified, this measure and Measure 0340 should continue to be reported as a pair. When combined into a single measure with PCS-021-09: Standardized Mortality Ratio for Congenital Heart Surgery, Risk Adjustment for Congenital Heart Surgery (RACHS-1) Adjusted as recommended, pairing will be contingent on revised specifications.

Developer Response:
If applicable, Questions to the Steering Committee:

1. Importance to Measure and Report: Y-18; N-1
*(1a. Impact; 1b. Performance gap; 1c. Outcome or Evidence)*
Rationale: The measure was considered important and the performance gap suggests room for improvement. The Committee requested timely updated citations in the future.

2. Scientific Acceptability of Measure Properties: C-13; P-6; 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 was considered scientifically acceptable.

3. Usability: C-15; P-4; 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 has been in wide use over a number of years.

4. Feasibility: C-15; P-3; 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: This measure uses claims data.

0340 Pediatric heart surgery volume (PDI 7)

Description: Number of discharges with procedure for pediatric heart surgery
Numerator Statement: Discharges under age 18 with ICD-9-CM procedure codes for either congenital heart disease (1P) in any field or non-specific heart surgery (2P) with ICD-9-CM diagnosis of congenital heart disease (2D) in any field.
Denominator Statement: This measure does not have a denominator due to the fact it is a volume measure.
Exclusions: Not applicable. This measure does not have a denominator due to the fact it is a volume measure.
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: Conditional Y-15; N-4; A-0
Rationale: The measure was considered important, valid and meets criteria.

If applicable, Conditions/Questions for Developer:
This measure and Measure 0339 should continue to be reported as a pair. Of note, Measure 0339 has been recommended for combining into a single measure with PCS-021-09: Standardized Mortality Ratio for Congenital Heart Surgery, Risk Adjustment for Congenital Heart Surgery (RACHS-1) Adjusted. Once that occurs, pairing will require reassessment based on revised specifications of the combined measure.

Developer Response:
If applicable, Questions to the Steering Committee:

1. Importance to Measure and Report: Y-14; N-5
*(1a. Impact; 1b. Performance gap; 1c. Outcome or Evidence)*
Rationale: The Committee noted the performance gap, which showed that the risk-adjusted mortality is higher at hospitals with fewer than 100 cases per year. The Committee requested timely updated citations in the future.

2. Scientific Acceptability of Measure Properties: C-10; P-8; 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: This reporting of pediatric heart surgery volume alone may not be valid since it occurs in small numbers. Additionally, pediatric heart surgery has become regionalized and is conducted at relatively few institutions.

3. Usability: C-10; P-8; M-1; N-0
*(3a. Meaningful/useful for public reporting and quality improvement; 3b. Harmonized; 3c. Distinctive or additive value to existing measures)*

Rationale: This measure has been in wide use over a number of years.

4. Feasibility: C-13; P-6; 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: This measure uses claims data.

0352 Failure to rescue in-hospital mortality (risk adjusted)

Description: Percentage of patients who died with a complications in the hospital.

Numerator Statement: Patients who died with a complication plus patients who died without documented complications. Death is defined as death in the hospital.

All patients in an FTR analysis have developed a complication (by definition).

Complicated patient has at least one of the complications defined in Appendix B(see website http://www.research.chop.edu/programs/cor/outcomes.php). Complications are defined using the secondary ICD9 diagnosis and procedure codes and the DRG code of the current admission.

Comorbidities are defined in Appendix C (see website http://www.research.chop.edu/programs/cor/outcomes.php) using secondary ICD9 diagnosis codes of the current admission and primary or secondary ICD9 diagnosis codes of previous admission within 90 days of the admission date of the current admission.

*When physician part B is available, the definition of complications and comorbidities are augmented to include CPT codes.

Denominator Statement: General Surgery, Orthopedic and Vascular patients in specific DRGs with complications plus patients who died in the hospital without complications.

Inclusions: adult patients admitted for one of the procedures in the General Surgery, Orthopedic or Vascular DRGs (see appendix A http://www.research.chop.edu/programs/cor/outcomes.php)

Exclusions: Patients over age 90, under age 18.

Adjustment/Stratification: risk-adjustment devised specifically for this measure/condition Risk Adjustment: Model was developed using logistic regression analysis.

Associated data elements: age in years, sex, race, comorbidities, DRGs (combined with and without complications) and procedure codes within DRGs, transfer status.

Failure to rescue is adjusted using a logistic regression model where y is a failure and the total N is composed of patients who develop a complication and patients who died without a complication.

According to developer: The model adjustment variables can vary. We have found that FTR results are fairly stable, even with little adjustment, since all patients in an FTR analysis have developed a complication (by definition), they are a more homogeneous group of patients than the entire population. Hence severity adjustment plays somewhat less of a role than in other outcome measures/Complicated patient has at least one of the complications defined in Appendix B (http://www.research.chop.edu/programs/cor/outcomes.php) Complications are defined using the secondary ICD9 diagnosis and procedure codes and the DRG code of the current admission. When Physician Part B file is available, the definition of complications and comorbidities are augmented to include CPT codes.

Level of Analysis: Facility/ Agency, Health Plan, Integrated Delivery System, Population : Counties or cities, Population : National, Population : Regional/ network, Population : states

Type of Measure: Outcome

Data Source: Electronic administrative data/ claims

Measure Steward: The Children´s Hospital of Philadelphia | 3535 Market Street, Suite 1029 | Philadelphia | Pennsylvania | 19104

Steering Committee Recommendation for Endorsement: Conditional Y-18; N-3; A-0

Rationale: The measure provides information about how hospitals handle patients who develop complications; i.e., whether hospital systems are in place to prevent a patient complication from progressing to death.

If applicable, Conditions/Questions for Developer:

1. 2a.6 Target Population Age Range: Reevaluate upper age limit in terms of increasing and providing exclusions to capture limited future; e.g., DNR status. In future, consider development of a companion pediatric measure.
2. 2h. Disparities in Care: Provide information about disparities or plans to be able to provide data.
3. 3a.2 Use in Public Reporting Initiative: Provide plans and expected date (within 3 years) for public reporting.

Note: Discussion of Related and Competing measures may result in additional requests to developers specific to harmonization

Developer Response:

If applicable, Questions to the Steering Committee:

1. Importance to Measure and Report: Y-18; N-3

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

Rationale: The measure complements mortality and complication statistics. It provides additional insight into statistics by looking beyond

crude mortality and assesses whether hospital systems are in place to prevent a patient complication from progressing to death. This measure is supported by the evidence.

2. Scientific Acceptability of Measure Properties: C-9; P-11; 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 measure contains updated CPT codes. The measure is risk adjusted and the population captured includes patients with and without documented complications. It assumes that if patients die post-surgery, there was an undocumented complication.

3. Usability: C-7; P-12; M-2; 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 has not yet been used in public reporting.

4. Feasibility: C-8; P-12; 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 measure will be relatively easy to collect since it uses administrative data.

0353 Failure to rescue 30-Day mortality (risk adjusted)

Description: Percentage of patients who died with a complication within 30 days from admission.
Numerator Statement: Patients who died with a complication plus patients who died without documented complications. Death is defined as death within 30 days from admission.
All patients in an FTR analysis have developed a complication (by definition).
Complicated patient has at least one of the complications defined in Appendix B(see website http://www.research.chop.edu/programs/cor/outcomes.php). Complications are defined using the secondary ICD9 diagnosis and procedure codes and the DRG code of the current admission.
Comorbidities are defined in Appendix C(see website http://www.research.chop.edu/programs/cor/outcomes.php) using secondary ICD9 diagnosis codes of the current admission and primary or secondary ICD9 diagnosis codes of previous admission within 90 days of the admission date of the current admission.
*When physician part B is available, the definition of complications and comorbidities are augmented to include CPT codes.
Denominator Statement: General Surgery, Orthopedic and Vascular patients in specific DRGs with complications plus patients who died in the hospital without complications.
Inclusions: adult patients admitted for one of the procedures in the General Surgery, Orthopedic or Vascular DRGs (see appendix A http://www.research.chop.edu/programs/cor/outcomes.php)
Inclusions: adult patients admitted for one of the procedures in the General Surgery, Orthopedic or Vascular DRGs (see appendix A)
Exclusions: Patients over age 90, under age 18.
Adjustment/Stratification: risk-adjustment devised specifically for this measure/condition Risk Adjustment: Model was developed using logistic regression analysis.
Associated data elements: age in years, sex, race, comorbidities, DRGs (combined with and without complications) and procedure codes within DRGs, transfer status.
Failure to rescue is adjusted using a logistic regression model where y is a failure and the total N is composed of patients who develop a complication and patients who died without a complication.
According to developer: The model adjustment variables can vary. We have found that FTR results are fairly stable, even with little adjustment, since all patients in an FTR analysis have developed a complication (by definition), they are a more homogeneous group of patients than the entire population. Hence severity adjustment plays somewhat less of a role than in other outcome measures/Complicated patient has at least one of the complications defined in Appendix B (http://www.research.chop.edu/programs/cor/outcomes.php) Complications are defined using the secondary ICD9 diagnosis and procedure codes and the DRG code of the current admission. When Physician Part B file is available, the definition of complications and comorbidities are augmented to include CPT codes.
Level of Analysis: Facility/ Agency, Health Plan, Integrated Delivery System, Population : Counties or cities, Population : National, Population : Regional/ network, Population : states
Type of Measure: Outcome
Data Source: Electronic administrative data/ claims
Measure Steward: The Children´s Hospital of Philadelphia | 34th St. and Civic Center Blvd. | Philadelphia | Pennsylvania | 19104

Steering Committee Recommendation for Endorsement: Conditional Y-13; N-8; A-0
Rationale: The measure provides information about how hospitals handle patients who develop complications; i.e., prevent patient complications from progressing to death. It will also track differences in length of stay that could bias statistics associated with in-hospital mortality.

If applicable, Conditions/Questions for Developer:

1. 2a.6 Target Population Age Range: Reevaluate upper age limit in terms of increasing and providing exclusions to capture limited future; e.g., DNR status. In future, consider development of a companion pediatric measure.
2. 2h. Disparities in Care: Provide information about disparities or plans to be able to provide data.
3. 3a.2 Use in Public Reporting Initiative: Provide plans and expected date (within 3 years) for public reporting.
4. Please advise how 30 day data is collected and how post-hospital care with potential for affecting outcomes is handled.

Note: Discussion of Related and Competing measures may result in additional requests to developers specific to harmonization

Developer Response:
If applicable, Questions to the Steering Committee:

1. Importance to Measure and Report: Y-17; N-3; A-0
*(1a. Impact; 1b. Performance gap; 1c. Outcome or Evidence)*
Rationale: The measure complements mortality and complication statistics. It has good face validity and provides additional insight into statistics by looking beyond crude mortality and assesses whether hospital systems are in place to prevent a patient complication from progressing to death. This measure is supported by the evidence.

2. Scientific Acceptability of Measure Properties: C-6; P-12; M-2; 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 contains updated CPT codes. The measure is risk adjusted and the population captured includes patients with and without documented complications. It assumes that if patients die post-surgery, there was an undocumented complication.

3. Usability: C-3; P-10; M-8; N-0
*(3a. Meaningful/useful for public reporting and quality improvement; 3b. Harmonized; 3c. Distinctive or additive value to existing measures)*
Rationale: This measure has not yet been used in public reporting.

4. Feasibility: C-3; P-10; M-7; N-1
*(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 uses administrative data, but it may be difficult to track given the 30 day range. There was question regarding feasibility of use of this measure for non-Medicare patients.

0351 Death among surgical inpatients with serious, treatable complications (PSI 4)

Description: Percentage of cases having developed specified complications of care with an in-hospital death.
Numerator Statement: All discharges with a disposition of "deceased" (DISP=20) among cases meeting the inclusion and exclusion rules for the denominator.
Denominator Statement: All surgical discharges age 18 years and older or MDC 14 (pregnancy, childbirth, and puerperium) defined by specific DRGs or MS-DRGs and an ICD-9-CM code for an operating room procedure, principal procedure within 2 days of admission OR admission type of elective (ATYPE=3) with potential complications of care listed in Death among Surgical definition (e.g., pneumonia, DVT/PE, sepsis, shock/cardiac arrest, or GI hemorrhage/acute ulcer).
Exclusions: Exclude cases:
• age 90 years and older
• transferred to an acute care facility (DISP = 2)
• missing discharge disposition (DISP=missing), gender (SEX=missing), age (AGE=missing), quarter (DQTR=missing), year (YEAR=missing) or principal diagnosis (DX1 =missing)
NOTE: Additional exclusion criteria is specific to each diagnosis (pneumonia, DVT/PE, sepsis, shock/cardiac arrest, or GI hemorrhage/acute ulcer). See 2a.10.
Adjustment/Stratification: risk adjustment method widely or commercially available The predicted value for each case is computed using a hierarchical model (logistic regression with hospital random effect) and covariates for gender, age in years (in 5-year age groups), modified CMS DRG and AHRQ Comorbidities. The reference population used in the model is the universe of discharges for states that participate in the HCUP State Inpatient Databases (SID) for the year 2007 (updated annually), a database consisting of 43 states and approximately 30 million adult discharges. The expected rate is computed as the sum of the predicted value for each case divided by the number of cases for the unit of analysis of interest (i.e., hospital, state, and region). The risk adjusted rate is computed using indirect standardization as the observed rate divided by the expected rate, multiplied by the reference population rate/User has an option to stratify by Gender, age (5-year age groups), race / ethnicity, primary payer, and custom stratifiers.
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: Conditional Y-18; N-1; A-0
Rationale: This measure highlights specific complications, which presents opportunities for early interventions and action.

If applicable, Conditions/Questions for Developer:

1. 2a.6 Target Population Age Range: Expand the age range to include a larger population.

Note: Discussion of Related and Competing measures may result in additional requests to developers specific to harmonization.

Developer Response:
If applicable, Questions to the Steering Committee:

1. Importance to Measure and Report: Y-19; N-1
*(1a. Impact; 1b. Performance gap; 1c. Outcome or Evidence)*
Rationale: The goal of this measure is to capture information about a specific set of surgical complications that have been determined to provide opportunity for early intervention and improvement action.

2. Scientific Acceptability of Measure Properties: C-13; P-7; M-0; N-0
*(2a. Precise specifications; 2b. Reliability testing; 2c. Validity testing; 2d. Exclusions justified; 2e. Risk adjustment/stratification; 2f. Meaningful differences; 2g. Comparability; 2h. Disparities)*
Rationale: An advantage of this measure is that it focuses on a broad population, patients 18 and over.

3. Usability: C-13; P-7; 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 being widely reported to the public.

4. Feasibility: C-14; 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: This measure uses claims data.

0515 Ambulatory surgery patients with appropriate method of hair removal

Description: Percentage of ASC admissions with appropriate surgical site hair removal.
Numerator Statement: ASC admissions with surgical site hair removal with a razor or clippers from the scrotal area, or with clippers or depilatory cream from all other surgical sites
Denominator Statement: All ASC admissions with surgical site hair removal
Exclusions: ASC admissions who perform their own hair removal
Adjustment/Stratification: no risk adjustment necessary/No stratification is required for this measure.
Level of Analysis: Facility/Agency
Type of Measure: Process
Data Source: Paper medical record/ flow-sheet
Measure Steward: ASC Quality Collaboration | 5686 Escondida Blvd S | St. Petersburg | Florida | 33715

Steering Committee Recommendation for Endorsement: Recommended and placement in Reserve Status
Rationale: This measure has high performance in the reporting populations. It would be appropriate to consider reporting the measure as part of a surgical bundle.

If applicable, Conditions/Questions for Developer:
Developer Response:
If applicable, Questions to the Steering Committee:

1. Importance to Measure and Report: Y-6; N-13
*(1a. Impact; 1b. Performance gap; 1c. Outcome or Evidence)*
Rationale: The evidence supports the measure; however, at a mean performance level of 96 percent and just over 7 percent of reporting centers with rates below 100 percent, the measure is at a high level of performance.

2. Scientific Acceptability of Measure Properties: C-5; P-13; M-0; 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: The Committee stated that the validity testing of the measure could be improved, and the measure did not present disparity data.

3. Usability: C-7; P-9; M-2; N-1
*(3a. Meaningful/useful for public reporting and quality improvement; 3b. Harmonized; 3c. Distinctive or additive value to existing measures)*
Rationale: The measure is in wide use. It was noted that this measure was harmonized with measure *0301: Surgery patients with appropriate hair removal*.

4. Feasibility: C-13; P-4; M-2; 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: Required data is generated as part of care and does not require additional sources.

0301 Surgery patients with appropriate hair removal

Description: Percentage of surgery patients with surgical hair site removal with clippers or depilatory or no surgical site hair removal.
Numerator Statement: Surgery patients with surgical hair site removal with clippers or depilatory or no surgical site hair removal
Denominator Statement: All selected surgery patients
Include patients with an ICD-9-CM Principal Procedure Codes of selected surgeries.
Exclusions: Excluded Populations:
Patients less than 18 years of age
Patients who have a length of Stay greater than 120 days
Patients whose ICD-9-CM principal procedure was performed entirely by laparoscope.
Patients enrolled in clinical trials
Patients whose ICD-9-CM principal procedure occurred prior to the date of admission
Patients who performed their own hair removal
Adjustment/Stratification: no risk adjustment necessary/No stratification is required for this measure.
Level of Analysis: Facility/ Agency, Can be measured at all levels, Population : National, Program : QIO
Type of Measure: Process
Data Source: Electronic administrative data/ claims, Electronic Health/ Medical Record: Electronic Provider Survey/ Paper medical record/ flow-sheet
Most facilities use vendors to collect the data electronically. CMS provides a free, downloadable tool called CART. A paper tool modeled after the data collected electronically is provided as an attachment. CART downloads can be found on QualityNet.org at http://www.qualitynet.org/dcs/ContentServer?c=Page&pagename=QnetPublic%2FPage%2FQnetTier2&cid=1138900279093
Measure Steward: Centers for Medicare & Medicaid Services | 7500 Security Blvd, Mail Stop S3-02-01 | Baltimore | Maryland | 21244

Steering Committee Recommendation for Endorsement: Recommended and placement in Reserve Status Y-19; N-1; A-0
Rationale: This measure is at a high level of performance but should remain available in the event periodic surveillance demonstrates a drop in performance. It addresses the important concern of surgical site infections (SSI).

If applicable, Conditions/Questions for Developer:
Developer Response:
If applicable, Questions to the Steering Committee:

1. Importance to Measure and Report: Y-4; N-15
*(1a. Impact; 1b. Performance gap; 1c. Outcome or Evidence)*
Rationale: This measure is at a high level of performance. Medicare data indicates consistent high performance with a 99.6 percent appropriate rate of hair removal in the second quarter of 2010. Concern about discontinuing regularly reporting was centered on the potential to have performance drop (e.g., return of use of razors the operating room for economic reasons). The measure is on the list of CMS measures to be retired in 2013 or 2014. It would be appropriate to consider reporting the measure as a component of a surgical bundle.

2. Scientific Acceptability of Measure Properties: C-10; P-8; M-0; 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: There is evidence from randomized trials and systematic review that support the measure focus; though, the Committee noted lack of "absolutely" clear evidence. The measure contains numerous exclusions. Both the number and some of the specific exclusions (self hair removal) were of some concern.

3. Usability: C-12; P-5; M-1; N-1
*(3a. Meaningful/useful for public reporting and quality improvement; 3b. Harmonized; 3c. Distinctive or additive value to existing measures)*
Rationale: The measure is part of a group of surgical site infection measures that are publicly reported widely.

4. Feasibility: C-13; P-5; 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 data is drawn from patient health records and claims data.

1550 Hospital-level risk-standardized complication rate (RSCR) following elective primary total hip arthroplasty (THA) and total knee arthroplasty (TKA)

Description: This measure estimates hospital risk-standardized complication rates (RSCRs) associated with primary elective THA and

TKA in patients 65 years and older. The measure uses Medicare claims data to identify complications occurring from the date of index admission to 90 days post date of the index admission.

Numerator Statement: This outcome measure does not have a traditional numerator and denominator like a core process measure (e.g., percentage of adult patients with diabetes aged 18-75 years receiving one or more hemoglobin A1c tests per year); thus, we are using this field to define the outcome (i.e. adverse events) following THA and/or TKA procedures.

The composite complication is a binary outcome (yes for any complication(s); no for no complications). Therefore, if a patient experiences 1 or more complications, the outcome variable will get coded as a "yes." Complications are counted in the measure only if they occur during the index hospital admission or during a readmission.

The complications captured in the numerator are identified during the index admission or associated with a readmission up to 90 days post date of index admission, depending on the complication. The follow-up period for complications from date of index admission is as follows:

1) Mechanical complications - 90 days
2) Periprosthetic joint infection (PJI) - 90 days
3) Wound infection - 90 days
4) Surgical site bleeding - 30 days
5) Pulmonary embolism - 30 days
6) Death - 30 days
7) AMI - 7 days
8) Pneumonia - 7 days
9) Sepsis/septicemia - 7days

Denominator Statement: The target population for this measure includes admissions for patients at least 65 years of age undergoing elective primary THA and/or TKA procedures.

Exclusions: The denominator includes patients aged 65 and older admitted to non-federal acute care hospitals for an elective, primary THA and/or TKA in 2007 and 2008. Patients are eligible for inclusion in the denominator if they had a THA and/or a TKA AND had continuous enrollment in Medicare FFS one year prior to the date of index admission.

This cohort is defined using the following ICD-9-CM procedure codes identified in Medicare Part A Inpatient claims data:

81.51 Total Hip Arthroplasty
81.54 Total Knee Arthroplasty

Adjustment/Stratification: The measure estimates hospital-level RSCRs using hierarchical logistic regression models. In brief, the approach simultaneously models outcomes at two levels (patient and hospital) to account for the variance in patient outcomes within and between hospitals (Normand et al., 2007). At the patient level, the model adjusts the log-odds of a complication for age, sex, and selected clinical covariates. The second level models the hospital-specific intercepts as arising from a normal distribution. The hospital intercept represents the underlying risk of complication at the hospital, after accounting for case mix. If there were no differences among hospitals, then after adjusting for case mix, the hospital intercepts should be identical across all hospitals. risk-adjustment devised specifically for this measure/condition/No stratification is required for this measure.

Level of Analysis: Facily/ Agency

Type of Measure: Outcome

Data Source: Electronic administrative data/ claims

The datasets used to create the measures are described below.

1. 2008 Part A (inpatient) data

Part A inpatient data includes claims paid for Medicare inpatient hospital care, skilled nursing facility care, some home health agency services, and hospice care. For purposes of this project, Part A is used to refer to inpatient services only and includes data from 2 time periods:

a. Index admission: Index admission data are based on the inclusion/exclusion criteria for THA/TKA, and comorbidities (if any) are identified from the secondary diagnoses associated with the index admission.

b. Pre-index: 12 months prior to the index admission ("pre-index").

2. 2008 Part A (outpatient) data – 12 months pre-index

Hospital outpatient refers to Medicare claims paid for the facility component of surgical or diagnostic procedures, emergency room care, and other non-inpatient services performed in a hospital outpatient department or ambulatory surgical/diagnostic center.

3. Part B data – 12 months pre-index

Part B data refers to Medicare claims for the services of physicians (regardless of setting) and other outpatient care, services, and supplies. For purposes of this project, Part B services included only face-to-face encounters between a care provider and patient. We thus do not include services such as laboratory tests, medical supplies, or other ambulatory services.

4. 2008 Medicare Enrollment Database

This database contains Medicare beneficiary demographic, benefit/coverage, enrollment status on admission, and vital status information. These data have previously been shown to accurately reflect patient vital status (Fleming Fisher et al., 1992).

Fleming C., Fisher ES, Chang CH, Bubolz D, Malenda J. Studying outcomes and hospital utilization in the elderly: The advantages of a merged data base for Medicare and Veterans Affairs Hospitals. Medical Care. 1992; 30(5): 377-91.

Measure Steward: Centers for Medicare & Medicaid Services | 7500 Security Blvd, Mail Stop S3-02-01 | Baltimore | Maryland | 21244

Steering Committee Recommendation for Endorsement: Recommended Y-20; N-0; A-0

Rationale: This is a high volume, costly procedure that has been increasingly performed and will be important to measure and report.

If applicable, Conditions/Questions for Developer:

Developer Response:

If applicable, Questions to the Steering Committee:

1. Importance to Measure and Report: Y-19; N-1

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

Rationale: This is a high volume, costly procedure that has been increasingly performed. There are a number of complications associated with this procedure.

2. Scientific Acceptability of Measure Properties: C-11; P-8; 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 measure is valid. The follow-up timing varies depending on the complication. There is a segment of patients that will not be counted with this measure based on the age range, which is limited to patients 65 and over. The risk adjustment is sophisticated. The Committee questioned why deep vein thrombosis (DVT) and urinary tract infections (UTIs) were considered exclusions and noted that the included complications are appropriate.

3. Usability: C-10; P-10; M-0; N-0

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

Rationale: Timing for the complications may make it more complicated in that there are at different intervals; i.e., 7, 30, 90 days.

4. Feasibility: C-14; P-6; 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 was considered feasible based on the use of administrative claims data.

1551 Hospital-level 30-day all-cause risk-standardized readmission rate (RSRR) following elective primary total hip arthroplasty (THA) and total knee arthroplasty (TKA)

Description: This measure estimates hospital 30-day RSRRs following elective primary THA and TKA in patients 65 years and older. The measure uses Medicare claims data to develop a hospital-level RSRR for THA and TKA and will include patients readmitted for any reason within 30 days of discharge date of the index admission. Some patients are admitted within 30 days of the index hospitalization to undergo another elective THA/TKA procedure. These are considered planned readmissions and are NOT counted in the measure as readmissions.

Numerator Statement: This outcome measure does not have a traditional numerator and denominator like a core process measure (e.g., percentage of adult patients with diabetes aged 18-75 years receiving one or more hemoglobin A1c tests per year); thus, we are using this field to define readmissions.

The outcome for this measure is a readmission to any acute care hospital, for any reason occurring within 30 days of the discharge date of the index hospitalization. We do not count planned readmissions in the outcome (see numerator details).

Denominator Statement: The target population for this measure includes admissions for patients at least 65 years of age undergoing primary THA and/or TKA procedures.

Exclusions: The denominator includes patients aged 65 and older admitted to non-federal acute care hospitals for an elective, primary THA and/or TKA in 2007 and 2008. Patients are eligible for inclusion in the denominator if they had a THA and/or a TKA AND had continuous enrollment in Medicare FFS one year prior to the date of index admission.

This cohort is defined using the following ICD-9-CM procedure codes identified in Medicare Part A Inpatient claims data:

81.51 Total Hip Arthroplasty

81.54 Total Knee Arthroplasty

Adjustment/Stratification: Risk-adjustment devised specifically for this measure/condition The measure estimates hospital-level 30-day all-cause RSRRs using hierarchical logistic regression models. In brief, the approach simultaneously models outcomes at two levels (patient and hospital) to account for the variance in patient outcomes within and between hospitals (Normand et al., 2007). To model the log-odds of 30-day all-cause readmission at the patient level, the model adjusts for age, sex, and selected clinical covariates. The second level models the hospital-specific intercepts as arising from a normal distribution. The hospital intercept represents the underlying risk of readmission at the hospital, after accounting for case mix. If there were no differences among hospitals, then after adjusting for case mix, the hospital intercepts should be identical across all hospitals. The measure adjusts for key variables that are clinically relevant and have strong relationships with the outcome (e.g. demographic factors, disease severity indicators, and indicators of frailty). For each patient, covariates are obtained from Medicare claims extending 12 months prior to and including the index admission. The model adjusts for case mix differences based on the clinical status of the patient at the time of admission. We use condition categories (CCs), which are clinically meaningful groupings of more than 15,000 ICD-9-CM diagnosis and procedure codes.

We do not risk-adjust for CCs that are possible adverse events of care and that are only recorded in the index admission. In addition, only comorbidities that convey information about the patient at that time or in the 12-months prior, and not complications that arise during the course of the hospitalization are included in the risk-adjustment. The risk adjustment model included 33 variables which are listed below:

Demographics

1. Age-65 (years above 65, continuous)
2. Sex

TKA/THA Procedure

3. THA procedure
4. Number of procedures (2 vs.1)

Clinical Risk Factors

5. History of Infection (CC 1, 3-6)
6. Metastatic cancer and acute leukemia (CC 7)
7. Cancer (CC 8-12)
8. Diabetes and DM complications (CC 15-20, 119, 120)
9. Protein-calorie malnutrition (CC 21)
10. Disorders of Fluid/Electrolyte/Acid-Base (CC 22, 23)
11. Rheumatoid Arthritis and Inflammatory Connective Tissue Disease (CC 38)
12. Severe Hematological Disorders (CC 44)
13. Dementia and senility (CC 49, 50)
14. Major psychiatric disorders (CC 54-56)
15. Hemiplegia, paraplegia, paralysis, functional disability (CC 67-69, 100-102, 177-178)
16. Polyneuropathy (CC 71)
17. Congestive Heart Failure (CC 80)
18. Chronic Atherosclerosis (CC 83-84)
19. Hypertension (CC 89, 91)
20. Arrhythmias (CC 92, 93)
21. Stroke (CC 95, 96)
22. Vascular or circulatory disease (CC 104-106)
23. COPD (CC 108)
24. Pneumonia (CC 111-113)
25. End-stage renal disease or dialysis (CC 129, 130)
26. Renal Failure (CC 131)
27. Decubitus ulcer or chronic skin ulcer (CC 148, 149)
28. Cellulitis, Local Skin Infection (CC 152)
29. Other Injuries (CC162)
30. Major Symptoms, Abnormalities (CC 166)
31. Skeletal Deformities (ICD-9 code 755.63)
32. Post Traumatic Osteoarthritis (ICD-9 codes 716.15, 716.16)
33. Morbid Obesity (ICD-9 code 278.01)/No stratification is required for this measure.

Level of Analysis: Facility/ Agency

Type of Measure: Outcome

Data Source: Electronic administrative data/ claims

We obtained index admission, readmission, and in-hospital comorbidity data from Medicare's Standard Analytic File (SAF). Comorbidities were also assessed using Part A inpatient, outpatient, and Part B office visit Medicare claims in the 12 months prior to index admission. Enrollment and post-discharge mortality status were obtained from Medicare's enrollment database which contains beneficiary demographic, benefit/coverage, and vital status information.

1. 2008 Part A (inpatient) data

Part A inpatient data includes claims for Medicare inpatient hospital care, skilled nursing facility care, some home health agency services, and hospice care. For purposes of this project, Part A is used to refer to inpatient services only and includes data from 2 time periods:

a. Index admission: Index admission data are based on the inclusion/exclusion criteria for THA/TKA, and comorbidities (if any) are identified from the secondary diagnoses associated with the index admission.

b. Pre-index: 12 months prior to the index admission ("pre-index").

2. 2008 Part A (outpatient) data – 12 months pre-index

Hospital outpatient refers to Medicare claims paid for the facility component of surgical or diagnostic procedures, emergency room care,

and other non-inpatient services performed in a hospital outpatient department or ambulatory surgical/diagnostic center.

3. Part B data – 12 months pre-index
Part B data refers to Medicare claims for the services of physicians (regardless of setting) and other outpatient care, services, and supplies. For purposes of this project, Part B services included only face-to-face encounters between a care provider and patient. We thus do not include services such as laboratory tests, medical supplies, or other ambulatory services.
Measure Steward: Centers for Medicare & Medicaid Services | 7500 Security Blvd, Mail Stop S3-02-01 | Baltimore | Maryland | 21244

Steering Committee Recommendation for Endorsement: Recommended Y-19; N-1; A-0
Rationale: This is a high volume, costly procedure that has been increasingly performed and will be important to measure and report.

If applicable, Conditions/Questions for Developer:
Developer Response:
If applicable, Questions to the Steering Committee:

1. Importance to Measure and Report: Y-20; N-0
*(1a. Impact; 1b. Performance gap; 1c. Outcome or Evidence)*
Rationale: This is a high volume, costly procedure that has been increasingly performed. There are a number of complications associated with this procedure.

2. Scientific Acceptability of Measure Properties: : C-15; 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: This was considered valid and easier to measure than *1550 Hospital-level risk-standardized complication rate (RSCR) following elective primary total hip arthroplasty (THA) and total knee arthroplasty (TKA)* since it focuses on all causes for readmission other than for elective procedures. There is a segment of patients that will not be counted within this measure based on the age range, which is limited to patients aged 65 years and over. The risk adjustment is sophisticated. The Committee questioned why deep vein thrombosis (DVT) and urinary tract infections (UTIs) were considered exclusions.

3. Usability: : C-16; P-4; 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 in wide use.

4. Feasibility: : C-14; P-6; 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: This measure is based on administrative claims data.

1536 Cataracts: Improvement in patient's visual function within 90 days following cataract surgery

Description: Percentage of patients aged 18 years and older who had cataract surgery and had improvement in visual function achieved within 90 days following the cataract surgery
Numerator Statement: Patients who had improvement in visual function achieved within 90 days following cataract surgery
Denominator Statement: All patients aged 18 years and older who had cataract surgery
Exclusions: Denominator (Eligible Population): All patients aged 18 years and older who had cataract surgery
•CPT Procedure Codes (with or without modifiers): 66840, 66850, 66852, 66920, 66930, 66940, 66982, 66983, 66984
Adjustment/Stratification: no risk adjustment necessary/This measure can be stratified into two major groups: those patients with ocular co-morbidities and those patients without ocular co-morbidities. An improvement in visual function after cataract surgery would be expected in both groups, however the magnitude of the difference would vary by group. The Cataract Patient Outcomes Research Team found that an important preoperative patient characteristic that was independently associated with failure to improve on one of the outcomes measured (including the VF-14) was ocular comorbidity. The authors explained that this was expected, because it is reasonable to assume that other diseases that impair visual function would be correlated with a reduced improvement in functional status. The National Eye Care Outcomes Network also found that there were differences in the mean postooperative VF-14 scores across groups of patients with and without ocular co-morbidities, as seen in the table below. The study involving the Rasch-scaled short version of the VF-14 also found differences between the preoperative and postoperative visual function test scores and differences between preoperative and postoperative visual function tests, as seen below.
National Eyecare Outcomes Network
Mean VF-14 (postoperative)
- Total 92.7
- With ocular comorbidity 89.9
- Without ocular comorbidity 94.6

Rasch-Scaled Short Version of the VF-14
Patients without Ocular Comorbidity - Preop VF-8R - 68.87

Postop VF-8R - 86.22
Mean Diff = 17.35
Patients with Ocular Comorbidity - Preop VF-8R - 67.71
Postop VF-8R - 81.58
Mean Diff = 13.87

A list of codes for comorbidities can be found in the AMA PCPI measure for 20/40 visual acuity after cataract surgery:

| | |
|---|---|
| Acute and subacute iridocyclitis | 364.00 |
| Acute and subacute iridocyclitis | 364.01 |
| Acute and subacute iridocyclitis | 362.02 |
| Acute and subacute iridocyclitis | 364.03 |
| Acute and subacute iridocyclitis | 364.04 |
| Acute and subacute iridocyclitis | 364.05 |
| Amblyopia | 368.01 |
| Amblyopia | 368.02 |
| Amblyopia | 368.03 |
| Burn confined to eye and adnexa | 940.0 |
| Burn confined to eye and adnexa | 940.1 |
| Burn confined to eye and adnexa | 940.2 |
| Burn confined to eye and adnexa | 940.3 |
| Burn confined to eye and adnexa | 940.4 |
| Burn confined to eye and adnexa | 940.5 |
| Burn confined to eye and adnexa | 940.9 |
| Cataract secondary to ocular disorders | 366.32 |
| Cataract secondary to ocular disorders | 366.33 |
| Certain types of iridocyclitis | 364.21 |
| Certain types of iridocyclitis | 364.22 |
| Certain types of iridocyclitis | 364.23 |
| Certain types of iridocyclitis | 364.24 |
| Certain types of iridocyclitis | 364.3 |
| Choroidal degenerations | 363.43 |
| Choroidal detachment | 363.72 |
| Choroidal hemorrhage and rupture | 363.61 |
| Choroidal hemorrhage and rupture | 363.62 |
| Choroidal hemorrhage and rupture | 363.63 |
| Chorioretinal scars | 363.30 |
| Chorioretinal scars | 363.31 |
| Chorioretinal scars | 363.32 |
| Chorioretinal scars | 363.33 |
| Chorioretinal scars | 363.35 |
| Chronic iridocyclitis | 364.10 |
| Chronic iridocyclitis | 364.11 |
| Cloudy cornea | 371.01 |
| Cloudy cornea | 371.02 |
| Cloudy cornea | 371.03 |
| Cloudy cornea | 371.04 |
| Corneal edema | 371.20 |
| Corneal edema | 371.21 |
| Corneal edema | 371.22 |
| Corneal edema | 371.23 |
| Corneal edema | 371.43 |
| Corneal edema | 371.44 |
| Corneal opacity and other disorders of cornea | 371.00 |
| Corneal opacity and other disorders of cornea | 371.03 |
| Corneal opacity and other disorders of cornea | 371.04 |
| Degenerative disorders of globe | 360.20 |
| Degenerative disorders of globe | 360.21 |
| Degenerative disorders of globe | 360.23 |
| Degenerative disorders of globe | 360.24 |

| | | | |
|---|---|---|---|
| Degenerative disorders of globe | 360.29 | | |
| Degeneration of macula and posterior pole | 362.50 | | |
| Degeneration of macula and posterior pole | 362.51 | | |
| Degeneration of macula and posterior pole | 362.52 | | |
| Degeneration of macula and posterior pole | 362.53 | | |
| Degeneration of macula and posterior pole | 362.54 | | |
| Degeneration of macula and posterior pole | 362.55 | | |
| Degeneration of macula and posterior pole | 362.56 | | |
| Degeneration of macula and posterior pole | 362.57 | | |
| Disseminated chorioretinitis and disseminated retinochoroiditis | 363.10 | | |
| Disseminated chorioretinitis and disseminated retinochoroiditis | 363.11 | | |
| Disseminated chorioretinitis and disseminated retinochoroiditis | 363.12 | | |
| Disseminated chorioretinitis and disseminated retinochoroiditis | 363.13 | | |
| Disseminated chorioretinitis and disseminated retinochoroiditis | 363.14 | | |
| Disseminated chorioretinitis and disseminated retinochoroiditis | 363.15 | | |
| Diabetic retinopathy | 362.01 | | |
| Diabetic retinopathy | 362.02 | | |
| Diabetic retinopathy | 362.03 | | |
| Diabetic retinopathy | 362.04 | | |
| Diabetic retinopathy | 362.05 | | |
| Diabetic retinopathy | 362.06 | | |
| Diabetic macular edema | 362.07 | | |
| Disorders of optic chiasm | 377.51 | | |
| Disorders of optic chiasm | 377.52 | | |
| Disorders of optic chiasm | 377.53 | | |
| Disorders of optic chiasm | 377.54 | | |
| Disorders of visual cortex | 377.75 | | |
| Focal chorioretinitis and focal retinochoroiditis | 363.00 | | |
| Focal chorioretinitis and focal retinochoroiditis | 363.01 | | |
| Focal chorioretinitis and focal retinochoroiditis | 363.03 | | |
| Focal chorioretinitis and focal retinochoroiditis | 363.04 | | |
| Focal chorioretinitis and focal retinochoroiditis | 363.05 | | |
| Focal chorioretinitis and focal retinochoroiditis | 363.06 | | |
| Focal chorioretinitis and focal retinochoroiditis | 363.07 | | |
| Focal chorioretinitis and focal retinochoroiditis | 363.08 | | |
| Glaucoma | 365.10 | | |
| Glaucoma | 365.11 | | |
| Glaucoma | 365.12 | | |
| Glaucoma | 365.13 | | |
| Glaucoma | 365.14 | | |
| Glaucoma | 365.15 | | |
| Glaucoma | 365.20 | | |
| Glaucoma | 365.21 | | |
| Glaucoma | 365.22 | | |
| Glaucoma | 365.23 | | |
| Glaucoma | 365.24 | | |
| Glaucoma | 365.31 | | |
| Glaucoma | 365.32 | | |
| Glaucoma | 365.51 | | |
| Glaucoma | 365.52 | | |
| Glaucoma | 365.59 | | |
| Glaucoma associated with congenital anomalies, dystrophies, and systemic syndromes | 365.41 | | |
| Glaucoma associated with congenital anomalies, dystrophies, and systemic syndromes | 365.42 | | |
| Glaucoma associated with congenital anomalies, dystrophies, and systemic syndromes | 365.43 | | |
| Glaucoma associated with congenital anomalies, dystrophies, and systemic syndromes | 365.44 | | |
| Glaucoma associated with congenital anomalies, dystrophies, and systemic syndromes | 365.60 | | |
| Glaucoma associated with congenital anomalies, dystrophies, and systemic syndromes | 365.61 | | |
| Glaucoma associated with congenital anomalies, dystrophies, and systemic syndromes | 365.62 | | |

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|---|---|
| Glaucoma associated with congenital anomalies, dystrophies, and systemic syndromes | 365.63 |
| Glaucoma associated with congenital anomalies, dystrophies, and systemic syndromes | 365.64 |
| Glaucoma associated with congenital anomalies, dystrophies, and systemic syndromes | 365.65 |
| Glaucoma associated with congenital anomalies, dystrophies, and systemic syndromes | 365.81 |
| Glaucoma associated with congenital anomalies, dystrophies, and systemic syndromes | 365.82 |
| Glaucoma associated with congenital anomalies, dystrophies, and systemic syndromes | 365.83 |
| Glaucoma associated with congenital anomalies, dystrophies, and systemic syndromes | 365.89 |
| Glaucoma associated with congenital anomalies, dystrophies, and systemic syndromes | 365.9 |
| Hereditary corneal dystrophies | 371.50 |
| Hereditary corneal dystrophies | 371.51 |
| Hereditary corneal dystrophies | 371.52 |
| Hereditary corneal dystrophies | 371.53 |
| Hereditary corneal dystrophies | 371.54 |
| Hereditary corneal dystrophies | 371.55 |
| Hereditary corneal dystrophies | 371.56 |
| Hereditary corneal dystrophies | 371.57 |
| Hereditary corneal dystrophies | 371.58 |
| Hereditary choroidal dystrophies | 363.50 |
| Hereditary choroidal dystrophies | 363.51 |
| Hereditary choroidal dystrophies | 363.52 |
| Hereditary choroidal dystrophies | 363.53 |
| Hereditary choroidal dystrophies | 363.54 |
| Hereditary choroidal dystrophies | 363.55 |
| Hereditary choroidal dystrophies | 363.56 |
| Hereditary choroidal dystrophies | 363.57 |
| Hereditary retinal dystrophies | 362.70 |
| Hereditary retinal dystrophies | 362.71 |
| Hereditary retinal dystrophies | 362.72 |
| Hereditary retinal dystrophies | 362.73 |
| Hereditary retinal dystrophies | 362.74 |
| Hereditary retinal dystrophies | 362.75 |
| Hereditary retinal dystrophies | 362.76 |
| High myopia | 360.20 |
| High myopia | 360.21 |
| Injury to optic nerve and pathways | 950.0 |
| Injury to optic nerve and pathways | 950.1 |
| Injury to optic nerve and pathways | 950.2 |
| Injury to optic nerve and pathways | 950.3 |
| Injury to optic nerve and pathways | 950.9 |
| Keratitis | 370.03 |
| Moderate or severe impairment, better eye, profound impairment lesser eye | 369.10 |
| Moderate or severe impairment, better eye, profound impairment lesser eye | 369.11 |
| Moderate or severe impairment, better eye, profound impairment lesser eye | 369.12 |
| Moderate or severe impairment, better eye, profound impairment lesser eye | 369.13 |
| Moderate or severe impairment, better eye, profound impairment lesser eye | 369.14 |
| Moderate or severe impairment, better eye, profound impairment lesser eye | 369.15 |
| Moderate or severe impairment, better eye, profound impairment lesser eye | 369.16 |
| Moderate or severe impairment, better eye, profound impairment lesser eye | 369.17 |
| Moderate or severe impairment, better eye, profound impairment lesser eye | 369.18 |
| Nystagmus and iother irregular eye movements | 379.51 |
| Open wound of eyeball | 871.0 |
| Open wound of eyeball | 871.1 |
| Open wound of eyeball | 871.2 |
| Open wound of eyeball | 871.3 |
| Open wound of eyeball | 871.4 |
| Open wound of eyeball | 871.5 |
| Open wound of eyeball | 871.6 |
| Open wound of eyeball | 871.7 |

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|---|---|---|---|---|
| Open wound of eyeball | 871.9 | | | |
| Optic atrophy | 377.10 | | | |
| Optic atrophy | 377.11 | | | |
| Optic atrophy | 377.12 | | | |
| Optic atrophy | 377.13 | | | |
| Optic atrophy | 377.14 | | | |
| Optic atrophy | 377.15 | | | |
| Optic atrophy | 377.16 | | | |
| Optic neuritis | 377.30 | | | |
| Optic neuritis | 377.31 | | | |
| Optic neuritis | 377.32 | | | |
| Optic neuritis | 377.33 | | | |
| Optic neuritis | 377.34 | | | |
| Optic neuritis | 377.39 | | | |
| Other background retinopathy and retinal vascular changes | 362.12 | | | |
| Other background retinopathy and retinal vascular changes | 362.16 | | | |
| Other background retinopathy and retinal vascular changes | 362.18 | | | |
| Other corneal deformities | 371.70 | | | |
| Other corneal deformities | 371.71 | | | |
| Other corneal deformities | 371.72 | | | |
| Other corneal deformities | 371.73 | | | |
| Other disorders of optic nerve | 377.41 | | | |
| Other disorders of sclera | 379.11 | | | |
| Other disorders of sclera | 379.12 | | | |
| Other endophthalmitis | 360.11 | | | |
| Other endophthalmitis | 360.12 | | | |
| Other endophthalmitis | 360.13 | | | |
| Other endophthalmitis | 360.14 | | | |
| Other endophthalmitis | 360.19 | | | |
| Other retinal disorders | 362.81 | | | |
| Other retinal disorders | 362.82 | | | |
| Other retinal disorders | 362.83 | | | |
| Other retinal disorders | 362.84 | | | |
| Other retinal disorders | 362.85 | | | |
| Other retinal disorders | 362.89 | | | |
| Other and unspecified forms of chorioretinitis and retinochoroiditis | 363.20 | | | |
| Other and unspecified forms of chorioretinitis and retinochoroiditis | 363.21 | | | |
| Other and unspecified forms of chorioretinitis and retinochoroiditis | 363.22 | | | |
| Prior penetrating keratoplasty | 371.60 | | | |
| Prior penetrating keratoplasty | 371.61 | | | |
| Prior penetrating keratoplasty | 371.62 | | | |
| Profound impairment, both eyes | 369.00 | | | |
| Profound impairment, both eyes | 369.01 | | | |
| Profound impairment, both eyes | 369.02 | | | |
| Profound impairment, both eyes | 369.03 | | | |
| Profound impairment, both eyes | 369.04 | | | |
| Profound impairment, both eyes | 369.05 | | | |
| Profound impairment, both eyes | 369.06 | | | |
| Profound impairment, both eyes | 369.07 | | | |
| Profound impairment, both eyes | 369.08 | | | |
| Purulent endophthalmitis | 360.00 | | | |
| Purulent endophthalmitis | 360.01 | | | |
| Purulent endophthalmitis | 360.02 | | | |
| Purulent endophthalmitis | 360.03 | | | |
| Purulent endophthalmitis | 360.04 | | | |
| Retinal detachment with retinal defect | 361.00 | | | |
| Retinal detachment with retinal defect | 361.01 | | | |
| Retinal detachment with retinal defect | 361.02 | | | |

Retinal detachment with retinal defect 361.03
Retinal detachment with retinal defect 361.04
Retinal detachment with retinal defect 361.05
Retinal detachment with retinal defect 361.06
Retinal detachment with retinal defect 361.07
Retinal vascular occlusion 362.31
Retinal vascular occlusion 362.32
Retinal vascular occlusion 362.35
Retinal vascular occlusion 362.36
Retinopathy of prematurity 362.21
Scleritis and episcleritis 379.04
Scleritis and episcleritis 379.05
Scleritis and episcleritis 379.06
Scleritis and episcleritis 379.07
Scleritis and episcleritis 379.09
Separation of retinal layers 362.41
Separation of retinal layers 362.42
Separation of retinal layers 362.43
Uveitis 360.11
Uveitis 360.12
Visual field defects 368.41

References:

1. Schein OD, Steinberg EP, Cassard SD et al. Predictors of outcome in patients who underwent cataract surgery. Ophthalmology 1995; 102:817-23.
2. Lum F, Schachat AP, Jampel HD.The development and demise of a cataract surgery database. Jt Comm J Qual Improv. 2002 Mar;28(3):108-14.
3. Gothwal VK, Wright TA, Lamoureux EL, Pesudovs K. Measuring outcomes of cataract surgery using the Visual Function Index-14. J Cataract Refract Surg 2010; 36:1181-8. no risk adjustment necessary Denominator Exclusions: Documentation of medical reason for not improving visual function within 90 days of cataract surgery

- Append modifier to CPT Category II Code: -1P

Documentation of patient reason for not improving visual function within 90 days of cataract surgery

- Append modifier to CPT Category II Code: -2P

Level of Analysis: Clinicians: Individual
Type of Measure: Outcome
Data Source: Survey: Patient
Measure Steward: American Academy of Ophthalmology and Hoskins Center for Quality Eye Care | 655 Beach Street | San Francisco | California, 94109-1336

Steering Committee Recommendation for Endorsement: Conditional Y-9; N-10; A-0
Rationale: The Committee verified the importance of patient centered measures but suggested that the measure should be better specified.

If applicable, Conditions/Questions for Developer:
Overarching comment: The numerator, denominator with the inclusions and exclusions should be refined to capture patients relevant to the measure focus and the measure should be tested with the changes that are made.

1. 2a.3 Numerator Details: a) Provide the method (e.g., scale or other method to demonstrate improvement quantitatively pre- and post- surgery) to define "improvement"; b) It appears inappropriate to include, in the numerator, patients who do not complete visual function assessments; reevaluate how these cases should be handled; c) Indicate whether objective vs subjective improvement by survey only; d) Specify whether patient is surveyed both pre-and post-surgery. If only post-surgery, is the patient asked to rate vision preoperatively and asked to rate vision post-operatively, or is the patient asked to rate the number of points of improvement?
2. 2a.9 Denominator Exclusions: Excluding patients who do not want to complete the survey inappropriately inflates the rate.
3. 2a.25 Data Source/Data Collection Instrument: a) Identify the specific tool(s) used for the measure and provide information about the use for which it/they have been validated (e.g., self-administration, provider facilitated administration, etc.); b) Include information about why the objective assessment of visual function/acuity should be supplement with such a measure; c) Define survey methodology: Is it a mail survey, phone survey, in office paper survey with questions asked by office staff? Is the survey of the entire population of those with cataract surgery or a sample? If a sample, please specify sampling methodology.
4. 3a.2 Use in Public Reporting Initiative: Provide plans and expected date (within 3 years) for public reporting.
5. 4e Data Collection Strategy: Clarify more specifically the burden on providers of data collection.

Developer Response:
If applicable, Questions to the Steering Committee:

1. Importance to Measure and Report: Y-18; N-1
*(1a. Impact; 1b. Performance gap; 1c. Outcome or Evidence)*
Rationale: The Committee recognized the frequent occurrence of cataract surgery in the United States. They also affirmed the importance of patient centered measures. In this measure, visual function is considered a more broad assessment than that of visual acuity.

2. Scientific Acceptability of Measure Properties: C-2; P-12; M-4; 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: The Committee was advised that the tool used for assessment of visual function had been validated. It was questioned how the measure defined visual improvement. The time window of the measure may need to be extended to take into account multi-focal implants, which are now being used to improve visual acuity. The Committee suggested measuring the improvement in visual function for patients with and without comorbidities.

3. Usability: C-1; P-15; 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 tool is self-administered. The return rate has been 50 percent; considered a good rate for surveys. Some effort has been required with contact to patients to increase return rate; this could introduce bias.

4. Feasibility: C-1; P-12; M-4; N-2
*(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: It was questioned whether patients could accurately assess their visual acuity. In addition to potential bias introduced by calling patients to respond, they also mentioned that the exclusion criteria of "patient refused to participate" may bias the results. Additionally, conducting the survey will incur a cost and the burden on the provider was described as unclear.

1549 Cataracts: Patient satisfaction within 90 days following cataract surgery

Description: Percentage of patients aged 18 years and older who had cataract surgery and were satisfied with their care within 90 days following the cataract surgery
Numerator Statement: Patients who were satisfied with their care within 90 days following cataract surgery. Valid exclusions for not performing the measure for the reporting calculation include:
•The patient refuses to participate
•The patient is unable to complete the questionnaire
Denominator Statement: All patients aged 18 years and older who had cataract surgery
Exclusions: All patients aged 18 years and older who had cataract surgery
•CPT Procedure Codes (with or without modifiers): 66840, 66850, 66852, 66920, 66930, 66940, 66982, 66983, 66984
Adjustment/Stratification: no risk adjustment necessary/No stratification is required for this measure.
Level of Analysis: Clinician: Individual
Type of Measure: Patient experience
Data Source: Survey: Patient
Measure Steward: American Academy of Ophthalmology and the Hoskins Center for Quality Eye Care | 655 Beach Street | San Francisco | California, 94109-1336

Steering Committee Recommendation for Endorsement: Conditional Y-5; N-14; A-0
Rationale: The Committee affirmed the importance of measures focusing on cataract surgery and measuring patient satisfaction, but requested changes from the developer.

If applicable, Conditions/Questions for Developer:
Overarching comment: The numerator, denominator with the inclusions and exclusions should be refined to capture patients relevant to the measure focus and the measure should be tested with the changes that are made.

1. 2a.3 Numerator Details: Define satisfaction.
2. 2a. 4 Denominator Statement: Please verify the denominator statement. As submitted, it indicates that all patients who have had cataract surgery are to be surveyed. Please clarify whether that is in fact the expectation. If a sample of patients is, or can be used, details regarding sampling should be included. Define survey methodology: mail survey, phone survey, in-office paper survey or in-office survey with questions asked by staff.
3. 2a.9 Denominator Exclusions: Excluding patients who do not want to complete the survey inappropriately inflates the rate.
4. 2a.25 Data source/Data Collection Instrument: S-CAPHS is identified as the data collection instrument. When invited to do

so, the developer of that instrument has indicated they are not ready to submit it for NQF endorsement. Please clarify the evidence upon which selection of the instrument was based and if it is not used in its entirety, how the selected parts were chosen and validated for use

5. 3a.2 Use in Public Reporting Initiative: Provide plans and expected date (within 3 years) for public reporting.
6. 4e Data Collection Strategy: Clarify more specifically the burden of data collection.

Developer Response:
If applicable, Questions to the Steering Committee:

1. Importance to Measure and Report: Y-13; N-6
*(1a. Impact; 1b. Performance gap; 1c. Outcome or Evidence)*
Rationale: Visual function is considered a more broad assessment than that of visual acuity.

2. Scientific Acceptability of Measure Properties: C-1; P-19; M-5; N-3
*(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 were considered unclear and difficult to calculate.

3. Usability: C-3; P-10; M-5; N-1
*(3a. Meaningful/useful for public reporting and quality improvement; 3b. Harmonized; 3c. Distinctive or additive value to existing measures)*
Rationale: The Committee noted that the measure did not define satisfaction, which made it difficult to use.

4. Feasibility: C-1; P-10; M-6; N-2
*(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 indicated that conducting the survey will incur a cost and the burden on the provider as unclear.

0528 Prophylactic antibiotic selection for surgical patients

Description: Surgical patients who received prophylactic antibiotics consistent with current guidelines (specific to each type of surgical procedure).
Numerator Statement: Surgical patients who received recommended prophylactic antibiotics for specific surgical procedures
Denominator Statement: All selected surgical patients with no evidence of prior infection.
Included Populations:
An ICD-9-CM Principal Procedure Code of selected surgeries (as defined in Appendix A, Table 5.10 for ICD-9-CM codes).
AND
An ICD-9-CM Principal Procedure Code of selected surgeries (as defined in Appendix A, Table 5.01-5.08 for ICD-9-CM codes).
Exclusions: Excluded Populations:
Patients less than 18 years of age
Patients who have a length of Stay greater than 120 days
Patients who had a principal diagnosis suggestive of preoperative infectious diseases (as defined in Appendix A, Table 5.09 for ICD-9-CM codes)
Patients whose ICD-9-CM principal procedure was performed entirely by Laparoscope
Patients enrolled in clinical trials
Patients whose ICD-9-CM principal procedure occurred prior to the date of admission
Patients with physician/advanced practice nurse/physician assistant (physician/APN/PA) documented infection prior to surgical procedure of interest
Patients who expired perioperatively
Patients who were receiving antibiotics more than 24 hours prior to surgery (except colon surgery patients taking oral prophylactic antibiotics)
Patients who were receiving antibiotics within 24 hours prior to arrival (except colon surgery patients taking oral prophylactic antibiotics)
Patients who did not receive any antibiotics before or during surgery, or within 24 hours after Anesthesia End Time (i.e., patient did not receive prophylactic antibiotics)
Patients who did not receive any antibiotics during this hospitalization
Adjustment/Stratification: no risk adjustment necessary/The antibiotic prophylaxis measures are stratified according to surgery type. The tables are subsets of Table 5.10 (see link for Specification Manual and Appendix A, Tables 5.01 to 5.08. The specific procedures must be in the large table (Table 5.10) to be eligible for the SCIP measures. The measure specific tables for SCIP-Inf-2 are 5.01 to 5.08.
Level of Analysis: Facility/ Agency; Population: National; Can be measured at all levels; Program: QIO
Type of Measure: Process
Data Source: Electronic administrative data/ claims; Electronic Health/ Medical Record; Paper medical record/ flow-sheet
Most facilities use vendors to collect the data electronically. CMS provides a free, downloadable tool called CART. A paper tool modeled

after the data collected electronically is provided as an attachment. CART downloads can be found on QualityNet.org 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 , Mail Stop S3-01-02 | Baltimore | Maryland | 21244-1850

Steering Committee Recommendation for Endorsement: Conditional Y-18; N-0; A-0
Rationale: This measure was described as appropriate and important to encourage continued focus on post surgical infection.

If applicable, Conditions/Questions for Developer:
Developer Response:
If applicable, Questions to the Steering Committee:

1. Importance to Measure and Report: Y-18; N-0
*(1a. Impact; 1b. Performance gap; 1c. Outcome or Evidence)*
Rationale: The measure is strongly supported by evidence. While performance rates are relatively high, room for improvement remains.

2. Scientific Acceptability of Measure Properties: C-15; 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 science behind the antibiotic selections is good but will need to continue to be harmonized with national guidelines as they come out. The Committee noted that including laparoscopic procedures will no longer be an exclusion effective January 1, 2012, which they supported.

3. Usability: C-16; 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 Committee indicated that the measure will require ongoing harmonization with national guidelines as they are released.

4. Feasibility: C-15; P-3; 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 stated that the measure was feasible based on data source.

0126 Selection of antibiotic prophylaxis for cardiac surgery patients

Description: Percent of patients aged 18 years and older undergoing cardiac surgery who received preoperative prophylactic antibiotics recommended for the operation.
Numerator Statement: Number of patients undergoing cardiac surgery who received a first generation or second generation cephalosporin prophylactic antibiotic (e.g., cefazolin, cefuroxime, cefamandole) preoperatively or in the event of a documented allergy, an alternate antibiotic choice (e.g., vancomycin, clindamycin) was ordered and administered preoperatively.
Denominator Statement: Number of patients undergoing cardiac surgery
Exclusions: Exclusions include:
- Patients who had a principal diagnosis suggestive of preoperative infectious diseases
- Patients whose ICD-9-CM principal procedure was performed entirely by Laparoscope
- Patients enrolled in clinical trials
- Patients with documented infection prior to surgical procedure of interest
- Patients who expired perioperatively
- Patients who were receiving antibiotics more than 24 hours prior to surgery
- Patients who were receiving antibiotics within 24 hours prior to arrival
- Patients who did not receive any antibiotics before or during surgery, or within 24 hours after anesthesia end time (i.e., patient did not receive prophylactic antibiotics)
- Patients who did not receive any antibiotics during this hospitalization

This list will be provided in the STS Adult Cardiac Surgery Database Data Manager's Training Manual as acceptable exclusions. AbxSelect is marked "Exclusion"
Adjustment/Stratification: no risk adjustment necessary N/A N/A
Level of Analysis: Clinicians : Group, Facility/ Agency, Population : Counties or cities, Population : National, Population : Regional/ network, Population : states
Type of Measure: Process
Data Source: Registry data
Measure Steward: Society of Thoracic Surgeons | 633 North Saint Clair Street, Suite 2320 | Chicago | Illinois | 60611

Steering Committee Recommendation for Endorsement: Conditional Y-19; N-0; A-0
Rationale: The Committee confirmed the measure's importance and agreed that 92 percent performance, given the seriousness of infection, indicates room for continued improvement.

If applicable, Conditions/Questions for Developer:

Developer Response:
If applicable, Questions to the Steering Committee:

1. Importance to Measure and Report: Y-19; N-0
*(1a. Impact; 1b. Performance gap; 1c. Outcome or Evidence)*
Rationale: The evidence indicated that the use of prophylactic antibiotics can decrease the incidence of mediastinitis, which ranges between 0.25 percent and 4 percent. The seriousness of infection in the population measured suggests that even at 92 percent performance, additional improvement should be expected and sought.

2. Scientific Acceptability of Measure Properties: C-15; 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 focus on prophylaxis and measure specifications were considered appropriate and valid.

3. Usability: C-17; 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 has been in use since 2007 and is publicly reported on the STS and Consumers Union websites.

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: The measure was considered feasible based on its continued use over time.

0128 Duration of antibiotic prophylaxis for cardiac surgery patients

Description: Percent of patients aged 18 years and older undergoing cardiac surgery whose prophylactic antibiotics were discontinued within 48 hours after surgery end time
Numerator Statement: Number of patients undergoing cardiac surgery whose prophylactic antibiotics were discontinued within 48 hours after surgery end time
Denominator Statement: Number of patients undergoing cardiac surgery
Exclusions: Exclusions:
-Patients who had a principal diagnosis suggestive of preoperative infectious diseases
-Patients whose ICD-9-CM principal procedure was performed entirely by Laparoscope
-Patients enrolled in clinical trials
-Patients with documented infection prior to surgical procedure of interest
-Patients who expired perioperatively
-Patients who were receiving antibiotics more than 24 hours prior to surgery
-Patients who were receiving antibiotics within 24 hours prior to arrival
-Patients who did not receive any antibiotics during this hospitalization
-Patients with reasons to extend antibiotics
This list will be provided in the STS Adult Cardiac Surgery Database Data Manager's Training Manual as acceptable exclusions.
Adjustment/Stratification: no risk adjustment necessary/No stratification is required for this measure.
Level of Analysis: Clinicians : Group, Facility/ Agency, Population : Counties or cities, Population : National, Population : Regional/ network, Population : states
Type of Measure: Process
Data Source: Registry data
Measure Steward: Society of Thoracic Surgeons | 633 North Saint Clair Street, Suite 2320 | Chicago | Illinois | 60611

Steering Committee Recommendation for Endorsement: Conditional Y-17, N-2; A-0
Rationale: The measure was considered important due to the potential for prolonged antibiotic use and the percent of antimicrobial resistance.

If applicable, Conditions/Questions for Developer:
Developer Response:
If applicable, Questions to the Steering Committee:

1. Importance to Measure and Report: Y-18, N-1
*(1a. Impact; 1b. Performance gap; 1c. Outcome or Evidence)*
Rationale: The measure noted a performance gap in appropriate antibiotic administration, which can increase the incidence of deep sternal wound infection or antimicrobial resistance.

2. Scientific Acceptability of Measure Properties: C-10; P-6; 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: The Committee debated the time period for antibiotic discontinuation reviewing the merits of 48 hours versus 24 hours.

3. Usability: C-13; P-6; 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 will be reported as part of a composite in the future.

4. Feasibility: C-11; 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 measure presented minimal evidence of costs.

0125 Timing of antibiotic prophylaxis for cardiac surgery patients

Description: Percent of patients aged 18 years and older undergoing cardiac surgery who received prophylactic antibiotics within one hour of surgical incision or start of procedure if no incision was required (two hours if receiving vancomycin or fluoroquinolone)
Numerator Statement: Number of patients undergoing cardiac surgery patients who received prophylactic antibiotics within one hour of surgical incision or start of procedure if no incision was required (two hours if vancomycin or fluoroquinolone)
Denominator Statement: Number of patients undergoing cardiac surgery
Exclusions: Cases are removed from the denominator if the patient had a documented contraindication or rationale for not administering antibiotic in medical record.
Other exclusions include:
-Patients who had a principal diagnosis suggestive of preoperative infectious diseases
-Patients whose ICD-9-CM principal procedure was performed entirely by Laparoscope
-Patients enrolled in clinical trials
-Patients with documented infection prior to surgical procedure of interest
-Patients who were receiving antibiotics more than 24 hours prior to surgery
-Patients who were receiving antibiotics within 24 hours prior to arrival
This list will be provided in the STS Adult Cardiac Surgery Database Data Manager's Training Manual as acceptable exclusions.
Adjustment/Stratification: no risk adjustment necessary/No stratification is required for this measure.
Level of Analysis: Clinicians : Group, Facility/ Agency, Population : Counties or cities, Population : National, Population : Regional/ network, Population : states
Type of Measure: Process
Data Source: Registry data
Measure Steward: Society of Thoracic Surgeons | 633 North Saint Clair Street, Suite 2320 | Chicago | Illinois | 60611

Steering Committee Recommendation for Endorsement: Conditional Y-17; N-2; A-0
Rationale: The evidence supporting the measure was considered strong.

If applicable, Conditions/Questions for Developer:

1. 1c.5 Rating of Strength/Quality of Evidence: Address the rating of evidence.
2. 2a.1 Numerator Statement: Provide the exact timing of the prophylactic antibiotic.

Note: Discussion of Related and Competing measures may result in additional requests to developers specific to harmonization.

Developer Response:
If applicable, Questions to the Steering Committee:

1. Importance to Measure and Report: Y-17; N-2
*(1a. Impact; 1b. Performance gap; 1c. Outcome or Evidence)*
Rationale: The Committee noted controversy regarding the one hour timeframe for antibiotic prophylaxis. The performance gap for the measure was considered small but the outcome of mediastinitis and potentially death suggests measuring continued improvement effort is warranted.

2. Scientific Acceptability of Measure Properties: C-11; P-8; 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 noted that laparoscopic procedures were excluded but in the future would be included in the measure.

3. Usability: C-13; P-6; 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 indicated that there were similar measures that may need to be harmonized including:
#0269: Timing of prophylactic antibiotics - administering physician
#0270: Timing of antibiotic prophylaxis- ordering physician
#0472: Prophylactic antibiotic received within one hour prior to surgical incision or at the time of delivery – cesarean section

#0527: Prophylactic antibiotic received within 1 hour prior to surgical incision SCIP-Inf-1.

4. Feasibility: C-15; 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: While data for the measure is drawn from registry, thus available only to registry participants, the measure was considered feasible.

0264 Prophylactic intravenous (IV) antibiotic timing

Description: Rate of ASC patients who received IV antibiotics ordered for surgical site infection prophylaxis on time
Numerator Statement: Number of ambulatory surgical center (ASC) admissions with a preoperative order for a prophylactic IV antibiotic for prevention of surgical site infection who received the prophylactic antibiotic on time
Denominator Statement: All ASC admissions with a preoperative order for a prophylactic IV antibiotic for prevention of surgical site infection
Exclusions: ASC admissions with a preoperative order for a prophylactic IV antibiotic for prevention of infections other than surgical site infections (e.g., bacterial endocarditis).
ASC admissions with a preoperative order for a prophylactic antibiotic not administered by the intravenous route.
Adjustment/Stratification: no risk adjustment necessary/No stratification is required for this measure.
Level of Analysis: Facility/ Agency
Type of Measure: Process
Data Source: Paper medical record/ flow-sheet
Measure Steward: ASC Quality Collaboration | 5686 Escondida Blvd S | St. Petersburg | Florida | 33715

Steering Committee Recommendation for Endorsement: Conditional Y-18; N-1; A-0
Rationale: This measure was considered important to measure and report despite its small performance gap. The Committee wants to see disparities information prior to making any determination regarding continued reporting of the measure.

If applicable, Conditions/Questions for Developer:

1. 2a.1 Numerator Statement: Clarify 'on time.' Suggested modification-Instead of 'on time' change to 'one hour.'
2. 2h. Disparities in Care: Please submit any subpopulation performance data that is available for the measures. The committee understands that ASCs do not have a quality reporting system requirement; however, assessment of subpopulation data is important and should be collected and reported for this and other measures.

Developer Response:
If applicable, Questions to the Steering Committee:

1. Importance to Measure and Report: Y-17; N-2
*(1a. Impact; 1b. Performance gap; 1c. Outcome or Evidence)*
Rationale: Performance on the measure is high; however, disparities information was not presented. ASC noted that only about 900 of the eligible 5,200 institutions report.

2. Scientific Acceptability of Measure Properties: C-10; P-9; 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 questioned why the measure focused on antibiotics being provided in a one hour timeframe.

3. Usability: C-12; P-7; 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 agreed the measure is useful and understandable.

4. Feasibility: C-13; P-6; 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 uses procedure codes, which makes it less burdensome for ambulatory surgical centers to collect.

0527 Prophylactic antibiotic received within 1 hour prior to surgical incision

Description: Surgical patients with prophylactic antibiotics initiated within one hour prior to surgical incision. Patients who received vancomycin or a fluoroquinolone for prophylactic antibiotics should have the antibiotics initiated within two hours prior to surgical incision. Due to the longer infusion time required for vancomycin or a fluoroquinolone, it is acceptable to start these antibiotics within two hours prior to incision time.
Numerator Statement: Number of surgical patients with prophylactic antibiotics initiated within one hour prior to surgical incision (two hours if receiving vancomycin, in Appendix C, Table 3.8, or a fluoroquinolone, in Appendix C, Table 3.10).
Denominator Statement: All selected surgical patients with no evidence of prior infection. Table 5.10 is the complete table of selected

major surgeries
Exclusions: Patients less than 18 years of age
Patients who have a Length of Stay greater than 120 days
Patients who had a hysterectomy and a caesarean section performed during this hospitalization
Patients who had a principal diagnosis suggestive of preoperative infectious diseases (as defined in Appendix A, Table 5.09 for ICD-9-CM
codes)
Patients whose ICD-9-CM principal procedure was performed entirely by Laparoscope
Patients enrolled in clinical trials
Patients whose ICD-9-CM principal procedure occurred prior to the date of admission
Patients with physician/advanced practice nurse/physician assistant (physician/APN/PA) documented infection prior to surgical procedure of interest
Patients who had other procedures requiring general or spinal anesthesia that occurred within 3 days (4 days for CABG or Other Cardiac Surgery) prior to or after the procedure of interest (during separate surgical episodes) during this hospital stay
Patients who were receiving antibiotics more than 24 hours prior to surgery
Patients who were receiving antibiotics within 24 hours prior to arrival (except colon surgery patients taking oral prophylactic antibiotics)
Adjustment/Stratification: no risk adjustment necessary/The antibiotic prophylaxis measures are stratified according to surgery type. The tables are subsets of Table 5.10 (see link for Specification Manual and Appendix A, Tables 5.01 to 5.08. The specific procedures must be in the large table (Table 5.10) to be eligible for the SCIP measures. The measure specific tables for SCIP-Inf-1 are 5.01 to 5.08.
Level of Analysis: Can be measured at all levels, Facility/ Agency, Population : National, Program : QIO
Type of Measure: Process
Data Source: Electronic administrative data/ claims, Electronic Health/ Medical Record, Paper medical record/ flow-sheet
Most facilities use vendors to collect and submit the data electronically. CMS provides a free, downloadable tool called CART. A paper tool modeled after the data collected electronically is provided as an attachment. CART downloads can be found on QualityNet.org 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 , Mail Stop S3-01-02 | Baltimore | Maryland | 21244-1850

Steering Committee Recommendation for Endorsement: Conditional Y-17; N-1; A-0
Rationale: The measure presents disparity data that demonstrates performance gaps across subpopulations.

If applicable, Conditions/Questions for Developer:
Developer Response:
If applicable, Questions to the Steering Committee:

1. Importance to Measure and Report: Y-19; N-0
*(1a. Impact; 1b. Performance gap; 1c. Outcome or Evidence)*
Rationale: The measure focus is supported by the evidence. While the performance gap has been reduced over time, the measure continues to demonstrate a performance gap that could be improved. It was also noted that the gap still exists for general surgeries compared with cardiac surgeries.

2. Scientific Acceptability of Measure Properties: C-13; P-6; 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 focus and specifications are appropriate. The request that laparoscopic procedure be removed from the exclusions will become effective January 1, 2012.

3. Usability: C-14; 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: The measure has been widely used for some time; it may require harmonization with the similar measures below:
#0125: Timing of antibiotic prophylaxis for cardiac surgery patients
#0269: Timing of prophylactic antibiotics - administering physician
#0270: Timing of antibiotic prophylaxis- ordering physician
#0472: Prophylactic antibiotic received within one hour prior to surgical incision or at the time of delivery – cesarean section.

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: The Committee stated that the measure was feasible based on the data required and its record of use.

0529 Prophylactic antibiotics discontinued within 24 hours after surgery end time

Description: Surgical patients whose prophylactic antibiotics were discontinued within 24 hours after Anesthesia End Time (48 hours for

CABG or Other Cardiac Surgery). The Society of Thoracic Surgeons (STS) Practice Guideline for Antibiotic Prophylaxis in Cardiac Surgery (2006) indicates that there is no reason to extend antibiotics beyond 48 hours for cardiac surgery and very explicitly states that antibiotics should not be extended beyond 48 hours even with tubes and drains in place for cardiac surgery.
Numerator Statement: Number of surgical patients whose prophylactic antibiotics were discontinued within 24 hours after Anesthesia End Time (48 hours for CABG or Other Cardiac Surgery).
Denominator Statement: All selected surgical patients with no evidence of prior infection. Included Populations:
An ICD-9-CM Principal Procedure Code of selected surgeries (as defined in Appendix A, Table 5.10 for ICD-9-CM codes) AND
An ICD-9-CM Principal Procedure Code of selected surgeries (as defined in Appendix A, Table 5.01-5.08 for ICD-9-CM codes)
Exclusions: Excluded Populations:
Patients less than 18 years of age
Patients who have a length of Stay greater than 120 days
Patients who had a principal diagnosis suggestive of preoperative infectious diseases (as defined in Appendix A, Table 5.09 for ICD-9-CM codes)
Patients whose ICD-9-CM principal procedure was performed entirely by Laparoscope
Patients enrolled in clinical trials
Patients whose ICD-9-CM principal procedure occurred prior to the date of admission
Patients with physician/advanced practice nurse/physician assistant (physician/APN/PA) documented infection prior to surgical procedure of interest
Patients who expired perioperatively
Patients who had other procedures requiring general or spinal anesthesia that occurred within three days (four days for CABG or Other Cardiac Surgery) prior to or after the procedure of interest (during separate surgical episodes) during this hospital stay
Patients who were receiving antibiotics more than 24 hours prior to surgery (except colon surgery patients taking oral prophylactic antibiotics)
Patients who were receiving antibiotics within 24 hours prior to arrival (except colon surgery patients taking oral prophylactic antibiotics)
Patients who did not receive any antibiotics during this hospitalization.
Patients who received urinary antiseptics only (as defined in Appendix C, Table 3.11)
Patients with Reasons to Extend Antibiotics.
Adjustment/Stratification: no risk adjustment necessary/The antibiotic prophylaxis measures are stratified according to surgery type. The tables are subsets of Table 5.10 (see link for Specification Manual and Appendix A, Tables 5.01 to 5.08. The specific procedures must be in the large table (Table 5.10) to be eligible for the SCIP measures. The measure specific tables for SCIP-Inf-3 are 5.01 to 5.08
Level of Analysis: Facility/ Agency; Population: National; Can be measured at all levels; Program: QIO
Type of Measure: Process
Data Source: Electorinc administrative data/ claims; Electronic Health/ Medical Record; Paper medical record/ flow-sheet
Most facilities use vendors to collect the data electronically. CMS provides a free, downloadable tool called CART. A paper tool modeled after the data collected electronically is provided as an attachment. CART downloads can be found on QualityNet.org 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 , Mail Stop S3-01-02 | Baltimore | Maryland | 21244-1850

Steering Committee Recommendation for Endorsement: Conditional Y-19; N-0; A-0
Rationale: The measure is important and provides an appropriate timeline for discontinuing antibiotic therapy promoting appropriate use of antibiotics.

If applicable, Conditions/Questions for Developer:
Developer Response:
If applicable, Questions to the Steering Committee:

1. Importance to Measure and Report: Y-19; N-0
*(1a. Impact; 1b. Performance gap; 1c. Outcome or Evidence)*
Rationale: The measure has a small performance gap but includes evidence that disparities among subpopulations demonstrate performance below 90 percent.

2. Scientific Acceptability of Measure Properties: C-14; P-4; 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 Committee discussed single dose prophylaxis compared with 24 hour prophylaxis and no post-operative prophylaxis noting the timeframe of this measure is standard at present. They also discussed requesting the measure's 24 hour timeframe to be changed to shorten duration when the evidence supports. The laparoscopic exclusion is removed effective January 1, 2012.

3. Usability: C-18; 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 currently in use and is part of the Surgical Care Improvement Project (SCIP) measure set.

4. Feasibility: C-16; P-3; 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 relies on administrative claims data.

0367 Post operative wound dehiscence (PDI 11)

Description: Percentage of abdominopelvic surgery cases with reclosure of postoperative disruption of abdominal wall.
Numerator Statement: Discharges among cases meeting the inclusion and exclusion rules for the denominator with ICD-9-CM procedure code for reclosure of postoperative disruption of abdominal wall.
Denominator Statement: All abdominopelvic surgical discharges under age 18.
Exclusions: Exclude cases:
• where a procedure for reclosure of postoperative disruption of abdominal wall occurs before or on the same day as the first abdominopelvic surgery procedure
Note: If day of procedure is not available in the input data file, the rate may be slightly lower than if the information was available

- Where length of stay is less than 2 days
- With any diagnosis of high- or immediate-risk immunocompromised state
- With an procedure code for transplant
- With hepatitis failure consisting of any diagnosis of cirrhosis plus a code for hepatic coma or hepatorenal syndrome in any diagnosis field with procedure code for gastroschisis or umbilical hernia repair in newborns (omphalacele repair) performed before reclosure
  - MDC 14 (pregnancy, childbirth, and puerperium)
  - neonates with birth weight less than 500 grams (Birth Weight Category 1)

Adjustment/Stratification: Risk adjustment method widely or commercially available
The predicted value for each case is computed using a hierarchical model (logistic regression with hospital random effect) and covariates for gender, birth weight (500g groups), age in days (29-60, 61-90, 91+), age in years (in 5-year age groups), modified CMS DRG and AHRQ CCS comorbidities. The reference population used in the model is the universe of discharges for states that participate in the HCUP State Inpatient Databases (SID) for the year 2007 (updated annually), a database consisting of 43 states and approximately 6 million pediatric discharges. The expected rate is computed as the sum of the predicted value for each case divided by the number of cases for the unit of analysis of interest (i.e., hospital, state, and region). The risk adjusted rate is computed using indirect standardization as the observed rate divided by the expected rate, multiplied by the reference population rate.
Required data elements: CMS Diagnosis Related Group (DRG); CMS Major Diagnostic Category (MDC); age in days up to 364, then age years at admission; International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) principal and secondary diagnosis codes/Clinical stratification for PDIs 10 and 11 is divided into four categories based on surgical class associated with the DRG or MS-DRG and whether or not the admission type is elective (SID ATYPE=3), as shown in the table below.
PDI 10 and PDI 11
Clinical Stratification Categories
Clinical Stratification
Surgical Class DRG
Admission Type
Strata 1. Clean Procedures Elective
1
Elective
Strata 2. Clean Procedures Non-Elective
1
Not Elective
Strata 3. Potentially Contaminated Elective
2, 3, or 9
Elective
Strata 4. Potentially Contaminated Non-Elective
2, 3, or 9
Not Elective
Surgical Class 1 DRGs
For discharges using DRGs (before October 1, 2007)
DRG - TITLE
003 - CRANIOTOMY AGE 0-17
006 - CARPAL TUNNEL RELEASE
007 - PERIPH & CRANIAL NERVE & OTHER NERV SYST PROC W CC
008 - PERIPH & CRANIAL NERVE & OTHER NERV SYST PROC W/O CC

036 - RETINAL PROCEDURES
037 - ORBITAL PROCEDURES
038 - PRIMARY IRIS PROCEDURES
039 - LENS PROCEDURES WITH OR WITHOUT VITRECTOMY
041 - EXTRAOCULAR PROCEDURES EXCEPT ORBIT AGE 0-17
042 - INTRAOCULAR PROCEDURES EXCEPT RETINA, IRIS & LENS
049 - MAJOR HEAD & NECK PROCEDURES
050 - SIALOADENECTOMY
DRG - TITLE
051 - SALIVARY GLAND PROCEDURES EXCEPT SIALOADENECTOMY
052 - CLEFT LIP & PALATE REPAIR
054 - SINUS & MASTOID PROCEDURES AGE 0-17
055 - MISCELLANEOUS EAR, NOSE, MOUTH & THROAT PROCEDURES
056 - RHINOPLASTY
058 - T&A PROC, EXCEPT TONSILLECTOMY &/OR ADENOIDECTOMY ONLY, AGE 0-17
060 - TONSILLECTOMY &/OR ADENOIDECTOMY ONLY, AGE 0-17
062 - MYRINGOTOMY W TUBE INSERTION AGE 0-17
063 - OTHER EAR, NOSE, MOUTH & THROAT O.R. PROCEDURES
DRG - TITLE
103 - HEART TRANSPLANT OR IMPLANT OF HEART ASSIST SYSTEM
104 - CARDIAC VALVE & OTH MAJOR CARDIOTHORACIC PROC W CARD CATH
105 - CARDIAC VALVE & OTH MAJOR CARDIOTHORACIC PROC W/O CARD CATH
106 - CORONARY BYPASS W PTCA
108 - OTHER CARDIOTHORACIC PROCEDURES
110 - MAJOR CARDIOVASCULAR PROCEDURES W CC
111 - MAJOR CARDIOVASCULAR PROCEDURES W/O CC
113 - AMPUTATION FOR CIRC SYSTEM DISORDERS EXCEPT UPPER LIMB & TOE
114 - UPPER LIMB & TOE AMPUTATION FOR CIRC SYSTEM DISORDERS
117 - CARDIAC PACEMAKER REVISION EXCEPT DEVICE REPLACEMENT
118 - CARDIAC PACEMAKER DEVICE REPLACEMENT
119 - VEIN LIGATION & STRIPPING
120 - OTHER CIRCULATORY SYSTEM O.R. PROCEDURES
163 - HERNIA PROCEDURES AGE 0-17
168 - MOUTH PROCEDURES W CC
169 - MOUTH PROCEDURES W/O CC
212 - HIP & FEMUR PROCEDURES EXCEPT MAJOR JOINT AGE 0-17
213 - AMPUTATION FOR MUSCULOSKELETAL SYSTEM & CONN TISSUE DISORDERS
216 - BIOPSIES OF MUSCULOSKELETAL SYSTEM & CONNECTIVE TISSUE
217 - WND DEBRID & SKN GRFT EXCEPT HAND,FOR MUSCSKELET & CONN TISS DIS
220 - LOWER EXTREM & HUMER PROC EXCEPT HIP,FOOT,FEMUR AGE 0-17
223 - MAJOR SHOULDER/ELBOW PROC, OR OTHER UPPER EXTREMITY PROC W CC
224 - SHOULDER,ELBOW OR FOREARM PROC,EXC MAJOR JOINT PROC, W/O CC
225 - FOOT PROCEDURES
226 - SOFT TISSUE PROCEDURES W CC
227 -SOFT TISSUE PROCEDURES W/O CC
228 - MAJOR THUMB OR JOINT PROC,OR OTH HAND OR WRIST PROC W CC
229 - HAND OR WRIST PROC, EXCEPT MAJOR JOINT PROC, W/O CC
230 - LOCAL EXCISION & REMOVAL OF INT FIX DEVICES OF HIP & FEMUR
232 - ARTHROSCOPY
233 - OTHER MUSCULOSKELET SYS & CONN TISS O.R. PROC W CC
DRG - TITLE
234 - OTHER MUSCULOSKELET SYS & CONN TISS O.R. PROC W/O CC
257 - TOTAL MASTECTOMY FOR MALIGNANCY W CC
258 - TOTAL MASTECTOMY FOR MALIGNANCY W/O CC
259 - SUBTOTAL MASTECTOMY FOR MALIGNANCY W CC
260 - SUBTOTAL MASTECTOMY FOR MALIGNANCY W/O CC
261 - BREAST PROC FOR NON-MALIGNANCY EXCEPT BIOPSY & LOCAL EXCISION
262 - BREAST BIOPSY & LOCAL EXCISION FOR NON-MALIGNANCY

285 - AMPUTAT OF LOWER LIMB FOR ENDOCRINE,NUTRIT,& METABOL DISORDERS
286 - ADRENAL & PITUITARY PROCEDURES
287 - SKIN GRAFTS & WOUND DEBRID FOR ENDOC, NUTRIT & METAB DISORDERS
289 - PARATHYROID PROCEDURES
290 - THYROID PROCEDURES
291 - THYROGLOSSAL PROCEDURES
292 - OTHER ENDOCRINE, NUTRIT & METAB O.R. PROC W CC
293 - OTHER ENDOCRINE, NUTRIT & METAB O.R. PROC W/O CC
338 - TESTES PROCEDURES, FOR MALIGNANCY
340 - TESTES PROCEDURES, NON-MALIGNANCY AGE 0-17
393 - SPLENECTOMY AGE 0-17
394 - OTHER O.R. PROCEDURES OF THE BLOOD AND BLOOD FORMING ORGANS
471 - BILATERAL OR MULTIPLE MAJOR JOINT PROCS OF LOWER EXTREMITY
479 - OTHER VASCULAR PROCEDURES W/O CC
481 - BONE MARROW TRANSPLANT
491 - MAJOR JOINT & LIMB REATTACHMENT PROCEDURES OF UPPER EXTREMITY
496 - COMBINED ANTERIOR/POSTERIOR SPINAL FUSION
497 - SPINAL FUSION EXCEPT CERVICAL W CC
498 - SPINAL FUSION EXCEPT CERVICAL W/O CC
499 - BACK & NECK PROCEDURES EXCEPT SPINAL FUSION W CC
500 - BACK & NECK PROCEDURES EXCEPT SPINAL FUSION W/O CC
501 - KNEE PROCEDURES W PDX OF INFECTION W CC
502 - KNEE PROCEDURES W PDX OF INFECTION W/O CC
503 - KNEE PROCEDURES W/O PDX OF INFECTION
515 - CARDIAC DEFIBRILLATOR IMPLANT W/O CARDIAC CATH
DRG - TITLE
518 - PERC CARDIO PROC W/O CORONARY ARTERY STENT OR AMI
519 - CERVICAL SPINAL FUSION W CC
520 - CERVICAL SPINAL FUSION W/O CC
525 - OTHER HEART ASSIST SYSTEM IMPLANT
528 - INTRACRANIAL VASCULAR PROC W PDX HEMORRHAGE
529 - VENTRICULAR SHUNT PROCEDURES W CC
530 - VENTRICULAR SHUNT PROCEDURES W/O CC
531 - SPINAL PROCEDURES W CC
532 - SPINAL PROCEDURES W/O CC
533 - EXTRACRANIAL PROCEDURES W CC
534 - EXTRACRANIAL PROCEDURES W/O CC
535 - CARDIAC DEFIB IMPLANT W CARDIAC CATH W AMI/HF/SHOCK
536 - CARDIAC DEFIB IMPLANT W CARDIAC CATH W/O AMI/HF/SHOCK
537 - LOCAL EXCIS & REMOV OF INT FIX DEV EXCEPT HIP & FEMUR W CC
538 - LOCAL EXCIS & REMOV OF INT FIX DEV EXCEPT HIP & FEMUR W/O CC
543 - CRANIOTOMY W MAJOR DEVICE IMPLANT OR ACUTE COMPLEX CNS PRINCIPAL DIAGNOSIS
544 - MAJOR JOINT REPLACEMENT OR REATTACHMENT OF LOWER EXTREMITY
545 - REVISION OF HIP OR KNEE REPLACEMENT
DRG - TITLE
546 - SPINAL FUSION EXC CERV WITH CURVATURE OF THE SPINE OR MALIG
547 - CORONARY BYPASS W CARDIAC CATH W MAJOR CV DX
548 - CORONARY BYPASS W CARDIAC CATH W/O MAJOR CV DX
549 - CORONARY BYPASS W/O CARDIAC CATH W MAJOR CV DX
550 - CORONARY BYPASS W/O CARDIAC CATH W/O MAJOR CV DX
551 - PERMANENT CARDIAC PACEMAKER IMPL W MAJ CV DX OR AICD LEAD OR GNRTR
552 - OTHER PERMANENT CARDIAC PACEMAKER IMPLANT W/O MAJOR CV DX
553 - OTHER VASCULAR PROCEDURES W CC W MAJOR CV DX
554 - OTHER VASCULAR PROCEDURES W CC W/O MAJOR CV DX
555 - PERCUTANEOUS CARDIOVASCULAR PROC W MAJOR CV DX
556 - PERCUTANEOUS CARDIOVASC PROC W NON-DRUG-ELUTING STENT W/O MAJ CV DX
557 - PERCUTANEOUS CARDIOVASCULAR PROC W DRUG-ELUTING STENT W MAJOR CV DX
558 - PERCUTANEOUS CARDIOVASCULAR PROC W DRUG-ELUTING STENT W/O MAJ CV DX

577 - CAROTID ARTERY STENT PROCEDURE
Surgical Class 1 MS-DRGs
For discharges using MS-DRGs (on or after October 1, 2007)
MS-DRG - TITLE
001 - HEART TRANSPLANT OR IMPLANT OF HEART ASSIST SYSTEM W MCC
002 - HEART TRANSPLANT OR IMPLANT OF HEART ASSIST SYSTEM W/O MCC
009 - BONE MARROW TRANSPLANT
020 - INTRACRANIAL VASCULAR PROCEDURES W PDX HEMORRHAGE W MCC
021 - INTRACRANIAL VASCULAR PROCEDURES W PDX HEMORRHAGE W CC
022 - INTRACRANIAL VASCULAR PROCEDURES W PDX HEMORRHAGE W/O CC/MCC
023 - CRANIO W MAJOR DEV IMPL/ACUTE COMPLEX CNS PDX W MCC OR CHEMO IMPLANT
024 - CRANIO W MAJOR DEV IMPL/ACUTE COMPLEX CNS PDX W/O MCC
027 - CRANIOTOMY & ENDOVASCULAR INTRACRANIAL PROCEDURES W/O
MS-DRG - TITLE
CC/MCC
028- SPINAL PROCEDURES W MCC
029 - SPINAL PROCEDURES W CC OR SPINAL NEUROSTIMULATORS
030 - SPINAL PROCEDURES W/O CC/MCC
031 - VENTRICULAR SHUNT PROCEDURES W MCC
032 - VENTRICULAR SHUNT PROCEDURES W CC
033 - VENTRICULAR SHUNT PROCEDURES W/O CC/MCC
034 - CAROTID ARTERY STENT PROCEDURE W MCC
035 - CAROTID ARTERY STENT PROCEDURE W CC
036 - CAROTID ARTERY STENT PROCEDURE W/O CC/MCC
037 - EXTRACRANIAL PROCEDURES W MCC
038 - EXTRACRANIAL PROCEDURES W CC
039 - EXTRACRANIAL PROCEDURES W/O CC/MCC
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Pediatric Quality Indicators Technical Specifications Version 4.2– 2010
PDI #11 Postoperative Wound Dehiscence Page 10
MS-DRG - TITLE
040 - PERIPH & CRANIAL NERVE & OTHER NERV SYST PROC W MCC
041 - PERIPH/CRANIAL NERVE & OTHER NERV SYST PROC W CC OR PERIPH NEUROSTIM
042 - PERIPH & CRANIAL NERVE & OTHER NERV SYST PROC W/O CC/MCC
113 - ORBITAL PROCEDURES W CC/MCC
114 - ORBITAL PROCEDURES W/O CC/MCC
115 - EXTRAOCULAR PROCEDURES EXCEPT ORBIT
116 - INTRAOCULAR PROCEDURES W CC/MCC
117 - INTRAOCULAR PROCEDURES W/O CC/MCC
129 - MAJOR HEAD & NECK PROCEDURES W CC/MCC OR MAJOR DEVICE
130 - MAJOR HEAD & NECK PROCEDURES W/O CC/MCC
131 - CRANIAL/FACIAL PROCEDURES W CC/MCC
132 - CRANIAL/FACIAL PROCEDURES W/O CC/MCC
133 - OTHER EAR, NOSE, MOUTH & THROAT O.R. PROCEDURES W CC/MCC
134 - OTHER EAR, NOSE, MOUTH & THROAT O.R. PROCEDURES W/O CC/MCC
136 - SINUS & MASTOID PROCEDURES W/O CC/MCC
137 - MOUTH PROCEDURES W CC/MCC
138 - MOUTH PROCEDURES W/O CC/MCC
139 - SALIVARY GLAND PROCEDURES
215 - OTHER HEART ASSIST SYSTEM IMPLANT
216 - CARDIAC VALVE & OTH MAJ CARDIOTHORACIC PROC W CARD CATH W MCC
217 - CARDIAC VALVE & OTH MAJ CARDIOTHORACIC PROC W CARD CATH W CC
218 - CARDIAC VALVE & OTH MAJ CARDIOTHORACIC PROC W CARD CATH W/O CC/MCC
219 - CARDIAC VALVE & OTH MAJ CARDIOTHORACIC PROC W/O CARD CATH W MCC
220 - CARDIAC VALVE & OTH MAJ CARDIOTHORACIC PROC W/O CARD CATH W CC
221 - CARDIAC VALVE & OTH MAJ CARDIOTHORACIC PROC W/O CARD CATH W/O CC/MCC
222 - CARDIAC DEFIB IMPLANT W CARDIAC CATH W AMI/HF/SHOCK W MCC
223 - CARDIAC DEFIB IMPLANT W CARDIAC CATH W AMI/HF/SHOCK W/O MCC

224 - CARDIAC DEFIB IMPLANT W CARDIAC CATH W/O AMI/HF/SHOCK W MCC
225 - CARDIAC DEFIB IMPLANT W CARDIAC CATH W/O AMI/HF/SHOCK W/O MCC
MS-DRG - TITLE
226 - CARDIAC DEFIBRILLATOR IMPLANT W/O CARDIAC CATH W MCC
227 - CARDIAC DEFIBRILLATOR IMPLANT W/O CARDIAC CATH W/O MCC
228 - OTHER CARDIOTHORACIC PROCEDURES W MCC
229 - OTHER CARDIOTHORACIC PROCEDURES W CC
230 - OTHER CARDIOTHORACIC PROCEDURES W/O CC/MCC
231 - CORONARY BYPASS W PTCA W MCC
232 - CORONARY BYPASS W PTCA W/O MCC
233 - CORONARY BYPASS W CARDIAC CATH W MCC
234 - CORONARY BYPASS W CARDIAC CATH W/O MCC
235 - CORONARY BYPASS W/O CARDIAC CATH W MCC
236 - CORONARY BYPASS W/O CARDIAC CATH W/O MCC
237 - MAJOR CARDIOVASC PROCEDURES W MCC OR THORACIC AORTIC ANUERYSM REPAIR
238 - MAJOR CARDIOVASCULAR PROCEDURES W/O MCC
239 - AMPUTATION FOR CIRC SYS DISORDERS EXC UPPER LIMB & TOE W MCC
240 - AMPUTATION FOR CIRC SYS DISORDERS EXC UPPER LIMB & TOE W CC
241 - AMPUTATION FOR CIRC SYS DISORDERS EXC UPPER LIMB & TOE W/O CC/MCC
242 - PERMANENT CARDIAC PACEMAKER IMPLANT W MCC
243 - PERMANENT CARDIAC PACEMAKER IMPLANT W CC
244 - PERMANENT CARDIAC PACEMAKER IMPLANT W/O CC/MCC
245 - AICD LEAD & GENERATOR PROCEDURES
246 - PERC CARDIOVASC PROC W DRUG-ELUTING STENT W MCC OR 4+ VESSELS/STENTS
247 - PERC CARDIOVASC PROC W DRUG-ELUTING STENT W/O MCC
248 - PERC CARDIOVASC PROC W NON-DRUG-ELUTING STENT W MCC OR 4+ VES/STENTS
249 - PERC CARDIOVASC PROC W NON-DRUG-ELUTING STENT W/O MCC
250 - PERC CARDIOVASC PROC W/O CORONARY ARTERY STENT OR AMI W MCC
251 - PERC CARDIOVASC PROC W/O CORONARY ARTERY STENT OR AMI W/O MCC
252 - OTHER VASCULAR PROCEDURES W MCC
DRG - TITLE
518 - PERC CARDIO PROC W/O CORONARY ARTERY STENT OR AMI
519 - CERVICAL SPINAL FUSION W CC
520 - CERVICAL SPINAL FUSION W/O CC
525 - OTHER HEART ASSIST SYSTEM IMPLANT
528 - INTRACRANIAL VASCULAR PROC W PDX HEMORRHAGE
529 - VENTRICULAR SHUNT PROCEDURES W CC
530 - VENTRICULAR SHUNT PROCEDURES W/O CC
531 - SPINAL PROCEDURES W CC
532 - SPINAL PROCEDURES W/O CC
533 - EXTRACRANIAL PROCEDURES W CC
534 - EXTRACRANIAL PROCEDURES W/O CC
535 - CARDIAC DEFIB IMPLANT W CARDIAC CATH W AMI/HF/SHOCK
536 - CARDIAC DEFIB IMPLANT W CARDIAC CATH W/O AMI/HF/SHOCK
537 - LOCAL EXCIS & REMOV OF INT FIX DEV EXCEPT HIP & FEMUR W CC
538 - LOCAL EXCIS & REMOV OF INT FIX DEV EXCEPT HIP & FEMUR W/O CC
543 - CRANIOTOMY W MAJOR DEVICE IMPLANT OR ACUTE COMPLEX CNS PRINCIPAL DIAGNOSIS
544 - MAJOR JOINT REPLACEMENT OR REATTACHMENT OF LOWER EXTREMITY
545 - REVISION OF HIP OR KNEE REPLACEMENT
DRG - TITLE
546 - SPINAL FUSION EXC CERV WITH CURVATURE OF THE SPINE OR MALIG
547 - CORONARY BYPASS W CARDIAC CATH W MAJOR CV DX
548 - CORONARY BYPASS W CARDIAC CATH W/O MAJOR CV DX
549 - CORONARY BYPASS W/O CARDIAC CATH W MAJOR CV DX
550 - CORONARY BYPASS W/O CARDIAC CATH W/O MAJOR CV DX
551 - PERMANENT CARDIAC PACEMAKER IMPL W MAJ CV DX OR AICD LEAD OR GNRTR
552 - OTHER PERMANENT CARDIAC PACEMAKER IMPLANT W/O MAJOR CV DX
553 - OTHER VASCULAR PROCEDURES W CC W MAJOR CV DX

554 - OTHER VASCULAR PROCEDURES W CC W/O MAJOR CV DX
555 - PERCUTANEOUS CARDIOVASCULAR PROC W MAJOR CV DX
556 - PERCUTANEOUS CARDIOVASC PROC W NON-DRUG-ELUTING STENT W/O MAJ CV DX
557 - PERCUTANEOUS CARDIOVASCULAR PROC W DRUG-ELUTING STENT W MAJOR CV DX
558 - PERCUTANEOUS CARDIOVASCULAR PROC W DRUG-ELUTING STENT W/O MAJ CV DX
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For discharges using MS-DRGs (on or after October 1, 2007)
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001 - HEART TRANSPLANT OR IMPLANT OF HEART ASSIST SYSTEM W MCC
002 - HEART TRANSPLANT OR IMPLANT OF HEART ASSIST SYSTEM W/O MCC
009 - BONE MARROW TRANSPLANT
020 - INTRACRANIAL VASCULAR PROCEDURES W PDX HEMORRHAGE W MCC
021 - INTRACRANIAL VASCULAR PROCEDURES W PDX HEMORRHAGE W CC
022 - INTRACRANIAL VASCULAR PROCEDURES W PDX HEMORRHAGE W/O CC/MCC
023 - CRANIO W MAJOR DEV IMPL/ACUTE COMPLEX CNS PDX W MCC OR CHEMO IMPLANT
024 - CRANIO W MAJOR DEV IMPL/ACUTE COMPLEX CNS PDX W/O MCC
027 - CRANIOTOMY & ENDOVASCULAR INTRACRANIAL PROCEDURES W/O
MS-DRG - TITLE
CC/MCC
028 - SPINAL PROCEDURES W MCC
029 - SPINAL PROCEDURES W CC OR SPINAL NEUROSTIMULATORS
030 - SPINAL PROCEDURES W/O CC/MCC
031 - VENTRICULAR SHUNT PROCEDURES W MCC
032 - VENTRICULAR SHUNT PROCEDURES W CC
033 - VENTRICULAR SHUNT PROCEDURES W/O CC/MCC
034 - CAROTID ARTERY STENT PROCEDURE W MCC
035 - CAROTID ARTERY STENT PROCEDURE W CC
036 - CAROTID ARTERY STENT PROCEDURE W/O CC/MCC
037 - EXTRACRANIAL PROCEDURES W MCC
038 - EXTRACRANIAL PROCEDURES W CC
039 - EXTRACRANIAL PROCEDURES W/O CC/MCC
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Pediatric Quality Indicators Technical Specifications Version 4.2– 2010
PDI #11 Postoperative Wound Dehiscence Page 10
MS-DRG - TITLE
040 - PERIPH & CRANIAL NERVE & OTHER NERV SYST PROC W MCC
041 - PERIPH/CRANIAL NERVE & OTHER NERV SYST PROC W CC OR PERIPH NEUROSTIM
042 - PERIPH & CRANIAL NERVE & OTHER NERV SYST PROC W/O CC/MCC
113 - ORBITAL PROCEDURES W CC/MCC
114 - ORBITAL PROCEDURES W/O CC/MCC
115 - EXTRAOCULAR PROCEDURES EXCEPT ORBIT
116 - INTRAOCULAR PROCEDURES W CC/MCC
117 - INTRAOCULAR PROCEDURES W/O CC/MCC
129 - MAJOR HEAD & NECK PROCEDURES W CC/MCC OR MAJOR DEVICE
130 - MAJOR HEAD & NECK PROCEDURES W/O CC/MCC
131 - CRANIAL/FACIAL PROCEDURES W CC/MCC
132 - CRANIAL/FACIAL PROCEDURES W/O CC/MCC
133 - OTHER EAR, NOSE, MOUTH & THROAT O.R. PROCEDURES W CC/MCC
134 - OTHER EAR, NOSE, MOUTH & THROAT O.R. PROCEDURES W/O CC/MCC
136 - SINUS & MASTOID PROCEDURES W/O CC/MCC
137 - MOUTH PROCEDURES W CC/MCC
138 - MOUTH PROCEDURES W/O CC/MCC
139 - SALIVARY GLAND PROCEDURES
215 - OTHER HEART ASSIST SYSTEM IMPLANT
216 - CARDIAC VALVE & OTH MAJ CARDIOTHORACIC PROC W CARD CATH W MCC
217 - CARDIAC VALVE & OTH MAJ CARDIOTHORACIC PROC W CARD CATH W CC
218 - CARDIAC VALVE & OTH MAJ CARDIOTHORACIC PROC W CARD CATH W/O CC/MCC

219 - CARDIAC VALVE & OTH MAJ CARDIOTHORACIC PROC W/O CARD CATH W MCC
220 - CARDIAC VALVE & OTH MAJ CARDIOTHORACIC PROC W/O CARD CATH W CC
221 - CARDIAC VALVE & OTH MAJ CARDIOTHORACIC PROC W/O CARD CATH W/O CC/MCC
222 - CARDIAC DEFIB IMPLANT W CARDIAC CATH W AMI/HF/SHOCK W MCC
223 - CARDIAC DEFIB IMPLANT W CARDIAC CATH W AMI/HF/SHOCK W/O MCC
224 - CARDIAC DEFIB IMPLANT W CARDIAC CATH W/O AMI/HF/SHOCK W MCC
225 - CARDIAC DEFIB IMPLANT W CARDIAC CATH W/O AMI/HF/SHOCK W/O MCC
MS-DRG - TITLE
226 - CARDIAC DEFIBRILLATOR IMPLANT W/O CARDIAC CATH W MCC
227 - CARDIAC DEFIBRILLATOR IMPLANT W/O CARDIAC CATH W/O MCC
228 - OTHER CARDIOTHORACIC PROCEDURES W MCC
229 - OTHER CARDIOTHORACIC PROCEDURES W CC
230 - OTHER CARDIOTHORACIC PROCEDURES W/O CC/MCC
231 - CORONARY BYPASS W PTCA W MCC
232 - CORONARY BYPASS W PTCA W/O MCC
233 - CORONARY BYPASS W CARDIAC CATH W MCC
234 - CORONARY BYPASS W CARDIAC CATH W/O MCC
235 - CORONARY BYPASS W/O CARDIAC CATH W MCC
236 - CORONARY BYPASS W/O CARDIAC CATH W/O MCC
237 - MAJOR CARDIOVASC PROCEDURES W MCC OR THORACIC AORTIC ANUERYSM REPAIR
238 - MAJOR CARDIOVASCULAR PROCEDURES W/O MCC
239 - AMPUTATION FOR CIRC SYS DISORDERS EXC UPPER LIMB & TOE W MCC
240 - AMPUTATION FOR CIRC SYS DISORDERS EXC UPPER LIMB & TOE W CC
241 - AMPUTATION FOR CIRC SYS DISORDERS EXC UPPER LIMB & TOE W/O CC/MCC
242 - PERMANENT CARDIAC PACEMAKER IMPLANT W MCC
243 - PERMANENT CARDIAC PACEMAKER IMPLANT W CC
244 - PERMANENT CARDIAC PACEMAKER IMPLANT W/O CC/MCC
245 - AICD LEAD & GENERATOR PROCEDURES
246 - PERC CARDIOVASC PROC W DRUG-ELUTING STENT W MCC OR 4+ VESSELS/STENTS
247 - PERC CARDIOVASC PROC W DRUG-ELUTING STENT W/O MCC
248 - PERC CARDIOVASC PROC W NON-DRUG-ELUTING STENT W MCC OR 4+ VES/STENTS
249 - PERC CARDIOVASC PROC W NON-DRUG-ELUTING STENT W/O MCC
250 - PERC CARDIOVASC PROC W/O CORONARY ARTERY STENT OR AMI W MCC
251 - PERC CARDIOVASC PROC W/O CORONARY ARTERY STENT OR AMI W/O MCC
252 - OTHER VASCULAR PROCEDURES W MCC
MS-DRG - TITLE
253 - OTHER VASCULAR PROCEDURES W CC
254 - OTHER VASCULAR PROCEDURES W/O CC/MCC
255 - UPPER LIMB & TOE AMPUTATION FOR CIRC SYSTEM DISORDERS W MCC
256 - UPPER LIMB & TOE AMPUTATION FOR CIRC SYSTEM DISORDERS W CC
257 - UPPER LIMB & TOE AMPUTATION FOR CIRC SYSTEM DISORDERS W/O CC/MCC
258 - CARDIAC PACEMAKER DEVICE REPLACEMENT W MCC
259 - CARDIAC PACEMAKER DEVICE REPLACEMENT W/O MCC
260 - CARDIAC PACEMAKER REVISION EXCEPT DEVICE REPLACEMENT W MCC
261 - CARDIAC PACEMAKER REVISION EXCEPT DEVICE REPLACEMENT W CC
262 - CARDIAC PACEMAKER REVISION EXCEPT DEVICE REPLACEMENT W/O CC/MCC
263 - VEIN LIGATION & STRIPPING
264 - OTHER CIRCULATORY SYSTEM O.R. PROCEDURES
352 - INGUINAL & FEMORAL HERNIA PROCEDURES W/O CC/MCC
453 - COMBINED ANTERIOR/POSTERIOR SPINAL FUSION W MCC
454 - COMBINED ANTERIOR/POSTERIOR SPINAL FUSION W CC
455 - COMBINED ANTERIOR/POSTERIOR SPINAL FUSION W/O CC/MCC
456 - SPINAL FUS EXC CERV W SPINAL CURV/MALIG/INFEC OR 9+ FUS W MCC
457 - SPINAL FUS EXC CERV W SPINAL CURV/MALIG/INFEC OR 9+ FUS W CC
458 - SPINAL FUS EXC CERV W SPINAL CURV/MALIG/INFEC OR 9+ FUS W/O CC/MCC
459 - SPINAL FUSION EXCEPT CERVICAL W MCC
460 - SPINAL FUSION EXCEPT CERVICAL W/O MCC
461 - BILATERAL OR MULTIPLE MAJOR JOINT PROCS OF LOWER EXTREMITY W MCC

462 - BILATERAL OR MULTIPLE MAJOR JOINT PROCS OF LOWER EXTREMITY W/O MCC
463 - WND DEBRID & SKN GRFT EXC HAND, FOR MUSCULO-CONN TISS DIS W MCC
464 - WND DEBRID & SKN GRFT EXC HAND, FOR MUSCULO-CONN TISS DIS W CC
465 - WND DEBRID & SKN GRFT EXC HAND, FOR MUSCULO-CONN TISS DIS W/O CC/MCC
466 - REVISION OF HIP OR KNEE REPLACEMENT W MCC
467 - REVISION OF HIP OR KNEE REPLACEMENT W CC
468 - REVISION OF HIP OR KNEE
MS-DRG - TITLE
REPLACEMENT W/O CC/MCC
469 - MAJOR JOINT REPLACEMENT OR REATTACHMENT OF LOWER EXTREMITY W MCC
470 - MAJOR JOINT REPLACEMENT OR REATTACHMENT OF LOWER EXTREMITY W/O MCC
471 - CERVICAL SPINAL FUSION W MCC
472 - CERVICAL SPINAL FUSION W CC
473 - CERVICAL SPINAL FUSION W/O CC/MCC
474 - AMPUTATION FOR MUSCULOSKELETAL SYS & CONN TISSUE DIS W MCC
475 - AMPUTATION FOR MUSCULOSKELETAL SYS & CONN TISSUE DIS W CC
476 - AMPUTATION FOR MUSCULOSKELETAL SYS & CONN TISSUE DIS W/O CC/MCC
477 - BIOPSIES OF MUSCULOSKELETAL SYSTEM & CONNECTIVE TISSUE W MCC
478 - BIOPSIES OF MUSCULOSKELETAL SYSTEM & CONNECTIVE TISSUE W CC
479 - BIOPSIES OF MUSCULOSKELETAL SYSTEM & CONNECTIVE TISSUE W/O CC/MCC
482 - HIP & FEMUR PROCEDURES EXCEPT MAJOR JOINT W/O CC/MCC
483 - MAJOR JOINT & LIMB REATTACHMENT PROC OF UPPER EXTREMITY W CC/MCC
484 - MAJOR JOINT & LIMB REATTACHMENT PROC OF UPPER EXTREMITY W/O CC/MCC
485 - KNEE PROCEDURES W PDX OF INFECTION W MCC
486 - KNEE PROCEDURES W PDX OF INFECTION W CC
487 - KNEE PROCEDURES W PDX OF INFECTION W/O CC/MCC
488 - KNEE PROCEDURES W/O PDX OF INFECTION W CC/MCC
489 - KNEE PROCEDURES W/O PDX OF INFECTION W/O CC/MCC
490 - BACK & NECK PROC EXC SPINAL FUSION W CC/MCC OR DISC DEVICE/NEUROSTIM
491 - BACK & NECK PROC EXC SPINAL FUSION W/O CC/MCC
494 - LOWER EXTREM & HUMER PROC EXCEPT HIP,FOOT,FEMUR W/O CC/MCC
495 - LOCAL EXCISION & REMOVAL INT FIX DEVICES EXC HIP & FEMUR W MCC
496 - LOCAL EXCISION & REMOVAL INT FIX DEVICES EXC HIP & FEMUR W CC
497 - LOCAL EXCISION & REMOVAL INT FIX DEVICES EXC HIP & FEMUR W/O CC/MCC
498 - LOCAL EXCISION & REMOVAL INT FIX DEVICES OF HIP & FEMUR W CC/MCC
499 - LOCAL EXCISION & REMOVAL INT FIX DEVICES OF HIP & FEMUR W/O CC/MCC
500 - SOFT TISSUE PROCEDURES W MCC
AHRQ Quality Indicators Web Site: http://www.qualityindicators.ahrq.gov
Pediatric Quality Indicators Technical Specifications Version 4.2– 2010
PDI #11 Postoperative Wound Dehiscence Page 12
MS-DRG - TITLE
501 - SOFT TISSUE PROCEDURES W CC
502 - SOFT TISSUE PROCEDURES W/O CC/MCC
503 - FOOT PROCEDURES W MCC
504 - FOOT PROCEDURES W CC
505 - FOOT PROCEDURES W/O CC/MCC
506 - MAJOR THUMB OR JOINT PROCEDURES
507 - MAJOR SHOULDER OR ELBOW JOINT PROCEDURES W CC/MCC
508 - MAJOR SHOULDER OR ELBOW JOINT PROCEDURES W/O CC/MCC
509 - ARTHROSCOPY
510 - SHOULDER,ELBOW OR FOREARM PROC,EXC MAJOR JOINT PROC W MCC
511 - SHOULDER,ELBOW OR FOREARM PROC,EXC MAJOR JOINT PROC W CC
512 - SHOULDER,ELBOW OR FOREARM PROC,EXC MAJOR JOINT PROC W/O CC/MCC
513 - HAND OR WRIST PROC, EXCEPT MAJOR THUMB OR JOINT PROC W CC/MCC
514 - HAND OR WRIST PROC, EXCEPT MAJOR THUMB OR JOINT PROC W/O CC/MCC
515 - OTHER MUSCULOSKELET SYS & CONN TISS O.R. PROC W MCC
516 - OTHER MUSCULOSKELET SYS & CONN TISS O.R. PROC W CC
517 - OTHER MUSCULOSKELET SYS & CONN TISS O.R. PROC W/O CC/MCC

582 - MASTECTOMY FOR MALIGNANCY W CC/MCC
583 - MASTECTOMY FOR MALIGNANCY W/O CC/MCC
584 - BREAST BIOPSY, LOCAL EXCISION & OTHER BREAST PROCEDURES W CC/MCC
585 - BREAST BIOPSY, LOCAL EXCISION & OTHER BREAST PROCEDURES W/O CC/MCC
614 - ADRENAL & PITUITARY PROCEDURES
MS-DRG - TITLE
W CC/MCC
615 - ADRENAL & PITUITARY PROCEDURES W/O CC/MCC
616 - AMPUTAT OF LOWER LIMB FOR ENDOCRINE,NUTRIT,& METABOL DIS W MCC
617 - AMPUTAT OF LOWER LIMB FOR ENDOCRINE,NUTRIT,& METABOL DIS W CC
618 - AMPUTAT OF LOWER LIMB FOR ENDOCRINE,NUTRIT,& METABOL DIS W/O CC/MCC
622 - SKIN GRAFTS & WOUND DEBRID FOR ENDOC, NUTRIT & METAB DIS W MCC
623 - SKIN GRAFTS & WOUND DEBRID FOR ENDOC, NUTRIT & METAB DIS W CC
624 - SKIN GRAFTS & WOUND DEBRID FOR ENDOC, NUTRIT & METAB DIS W/O CC/MCC
625 - THYROID, PARATHYROID & THYROGLOSSAL PROCEDURES W MCC
626 - THYROID, PARATHYROID & THYROGLOSSAL PROCEDURES W CC
627 - THYROID, PARATHYROID & THYROGLOSSAL PROCEDURES W/O CC/MCC
628 - OTHER ENDOCRINE, NUTRIT & METAB O.R. PROC W MCC
629 - OTHER ENDOCRINE, NUTRIT & METAB O.R. PROC W CC
630 - OTHER ENDOCRINE, NUTRIT & METAB O.R. PROC W/O CC/MCC
711 - TESTES PROCEDURES W CC/MCC
712 - TESTES PROCEDURES W/O CC/MCC
800 - SPLENECTOMY W CC
801 - SPLENECTOMY W/O CC/MCC
802 - OTHER O.R. PROC OF THE BLOOD & BLOOD FORMING ORGANS W MCC
803 - OTHER O.R. PROC OF THE BLOOD & BLOOD FORMING ORGANS W CC
804 - OTHER O.R. PROC OF THE BLOOD & BLOOD FORMING ORGANS W/O CC/MCC
Surgical Class 2 DRGs
For discharges using DRGs (before October 1, 2007)
DRG - TITLE
075 - MAJOR CHEST PROCEDURES
076 - OTHER RESP SYSTEM O.R. PROCEDURES W CC
077 - OTHER RESP SYSTEM O.R. PROCEDURES W/O CC
146 - RECTAL RESECTION W CC
147 - RECTAL RESECTION W/O CC
149 - MAJOR SMALL & LARGE BOWEL PROCEDURES W/O CC
150 - PERITONEAL ADHESIOLYSIS W CC
151 - PERITONEAL ADHESIOLYSIS W/O CC
DRG - TITLE
152 - MINOR SMALL & LARGE BOWEL PROCEDURES W CC
153 - MINOR SMALL & LARGE BOWEL PROCEDURES W/O CC
156 - STOMACH, ESOPHAGEAL & DUODENAL PROCEDURES AGE 0-17
157 - ANAL & STOMAL PROCEDURES W CC
158 - ANAL & STOMAL PROCEDURES W/O CC
166 - APPENDECTOMY W/O COMPLICATED PRINCIPAL DIAG W CC
DRG - TITLE
167 - APPENDECTOMY W/O COMPLICATED PRINCIPAL DIAG W/O CC
170 - OTHER DIGESTIVE SYSTEM O.R. PROCEDURES W CC
171 - OTHER DIGESTIVE SYSTEM O.R. PROCEDURES W/O CC
191 - PANCREAS, LIVER & SHUNT PROCEDURES W CC
192 - PANCREAS, LIVER & SHUNT PROCEDURES W/O CC
193 - BILIARY TRACT PROC EXCEPT ONLY CHOLECYST W OR W/O C.D.E. W CC
194 - BILIARY TRACT PROC EXCEPT ONLY CHOLECYST W OR W/O C.D.E. W/O CC
195 - CHOLECYSTECTOMY W C.D.E. W CC
196 - CHOLECYSTECTOMY W C.D.E. W/O CC
197 - CHOLECYSTECTOMY EXCEPT BY LAPAROSCOPE W/O C.D.E. W CC
198 - CHOLECYSTECTOMY EXCEPT BY LAPAROSCOPE W/O C.D.E. W/O CC
199 - HEPATOBILIARY DIAGNOSTIC PROCEDURE FOR MALIGNANCY

200 - HEPATOBILIARY DIAGNOSTIC PROCEDURE FOR NON-MALIGNANCY
201 - OTHER HEPATOBILIARY OR PANCREAS O.R. PROCEDURES
265 - SKIN GRAFT &/OR DEBRID EXCEPT FOR SKIN ULCER OR CELLULITIS W CC
266 - SKIN GRAFT &/OR DEBRID EXCEPT FOR SKIN ULCER OR CELLULITIS W/O CC
267 - PERIANAL & PILONIDAL PROCEDURES
268 - SKIN, SUBCUTANEOUS TISSUE & BREAST PLASTIC PROCEDURES
269 - OTHER SKIN, SUBCUT TISS & BREAST PROC W CC
270 - OTHER SKIN, SUBCUT TISS & BREAST PROC W/O CC
288 - O.R. PROCEDURES FOR OBESITY
302 - KIDNEY TRANSPLANT
303 - KIDNEY AND URETER PROCEDURES FOR NEOPLASM
304 - KIDNEY AND URETER PROCEDURES FOR NON-NEOPLASM WITHOUT CC
305 - KIDNEY AND URETER PROCEDURES FOR NON-NEOPLASM WITHOUT CC
306 - PROSTATECTOMY W CC
307 - PROSTATECTOMY W/O CC
308 - MINOR BLADDER PROCEDURES W CC
309 - MINOR BLADDER PROCEDURES W/O CC
310 - TRANSURETHRAL PROCEDURES W CC
311 - TRANSURETHRAL PROCEDURES W/O CC
314 - URETHRAL PROCEDURES, AGE 0-17
315 - OTHER KIDNEY & URINARY TRACT O.R. PROCEDURES
334 - MAJOR MALE PELVIC PROCEDURES W CC
335 - MAJOR MALE PELVIC PROCEDURES W/O CC
336 - TRANSURETHRAL PROSTATECTOMY W CC
DRG - TITLE
337 - TRANSURETHRAL PROSTATECTOMY W/O CC
341 - PENIS PROCEDURES
343 - CIRCUMCISION AGE 0-17
344 - OTHER MALE REPRODUCTIVE SYSTEM O.R. PROCEDURES FOR MALIGNANCY
345 - OTHER MALE REPRODUCTIVE SYSTEM O.R. PROC EXCEPT FOR MALIGNANCY
353 - PELVIC EVISCERATION, RADICAL HYSTERECTOMY & RADICAL VULVECTOMY
354 - UTERINE,ADNEXA PROC FOR NON-OVARIAN/ADNEXAL MALIG W CC
355 - UTERINE,ADNEXA PROC FOR NON-OVARIAN/ADNEXAL MALIG W/O CC
356 - FEMALE REPRODUCTIVE SYSTEM RECONSTRUCTIVE PROCEDURES
357 - UTERINE & ADNEXA PROC FOR OVARIAN OR ADNEXAL MALIGNANCY
358 - UTERINE & ADNEXA PROC FOR NON-MALIGNANCY W CC
359 - UTERINE & ADNEXA PROC FOR NON-MALIGNANCY W/O CC
360 - VAGINA, CERVIX & VULVA PROCEDURES
361 - LAPAROSCOPY & INCISIONAL TUBAL INTERRUPTION
362 - ENDOSCOPIC TUBAL INTERRUPTION
363 - D&C, CONIZATION & RADIO-IMPLANT, FOR MALIGNANCY
364 - D&C, CONIZATION EXCEPT FOR MALIGNANCY
365 - OTHER FEMALE REPRODUCTIVE SYSTEM O.R. PROCEDURES
370 - CESAREAN SECTION W CC
371 - CESAREAN SECTION W/O CC
372 - VAGINAL DELIVERY W COMPLICATING DIAGNOSES
373 - VAGINAL DELIVERY W/O COMPLICATING DIAGNOSES
374 - VAGINAL DELIVERY W STERILIZATION &/OR D&C
375 - VAGINAL DELIVERY W O.R. PROC EXCEPT STERIL &/OR D&C
377 - POSTPARTUM & POST ABORTION DIAGNOSES W O.R. PROCEDURE
381 - ABORTION W D&C, ASPIRATION CURETTAGE OR HYSTEROTOMY
468 - EXTENSIVE O.R. PROCEDURE UNRELATED TO PRINCIPAL DIAGNOSIS
476 - PROSTATIC O.R. PROCEDURE UNRELATED TO PRINCIPAL DIAGNOSIS
477 - NON-EXTENSIVE O.R. PROCEDURE UNRELATED TO PRINCIPAL DIAGNOSIS
480 - LIVER TRANSPLANT AND/OR INTESTINAL TRANSPLANT
482 - TRACHEOSTOMY FOR FACE,MOUTH & NECK DIAGNOSES
493 - LAPAROSCOPIC CHOLECYSTECTOMY W/O C.D.E. W CC
AHRQ Quality Indicators Web Site: http://www.qualityindicators.ahrq.gov

Pediatric Quality Indicators Technical Specifications Version 4.2– 2010
PDI #11 Postoperative Wound Dehiscence Page 14
DRG - TITLE
494 - LAPAROSCOPIC CHOLECYSTECTOMY W/O C.D.E. W/O CC
495 - LUNG TRANSPLANT
512 - SIMULTANEOUS PANCREAS/KIDNEY TRANSPLANT
513 - PANCREAS TRANSPLANT
541 - ECMO OR TRACH W MV 96+HRS OR PDX EXC FACE, MOUTH & NECK W MAJ O.R.
DRG - TITLE
542 - TRACH W MV 96+HRS OR PDX EXC FACE, MOUTH & NECK W/O MAJ O.R.
559 - ACUTE ISCHEMIC STROKE WITH USE OF THROMBOLYTIC AGENT
569 - MAJOR SMALL & LARGE BOWEL PROCEDURES W CC W MAJOR GI DX
570 - MAJOR SMALL & LARGE BOWEL PROCEDURES W CC W/O MAJOR GI DX
573 - MAJOR BLADDER PROCEDURES
Surgical Class 2 MS-DRGs
For discharges using MS-DRGs (on or after October 1, 2007)
MS-DRG - TITLE
003 - ECMO OR TRACH W MV 96+ HRS OR PDX EXC FACE, MOUTH & NECK W MAJ O.R.
004 - TRACH W MV 96+ HRS OR PDX EXC FACE, MOUTH & NECK W/O MAJ O.R.
005 - LIVER TRANSPLANT W MCC OR INTESTINAL TRANSPLANT
006 - LIVER TRANSPLANT W/O MCC
007 - LUNG TRANSPLANT
008 - SIMULTANEOUS PANCREAS/KIDNEY TRANSPLANT
010 - PANCREAS TRANSPLANT
011 - TRACHEOSTOMY FOR FACE,MOUTH & NECK DIAGNOSES W MCC
012 - TRACHEOSTOMY FOR FACE,MOUTH & NECK DIAGNOSES W CC
013 - TRACHEOSTOMY FOR FACE,MOUTH & NECK DIAGNOSES W/O CC/MCC
061 - ACUTE ISCHEMIC STROKE W USE OF THROMBOLYTIC AGENT W MCC
062 - ACUTE ISCHEMIC STROKE W USE OF THROMBOLYTIC AGENT W CC
063 - ACUTE ISCHEMIC STROKE W USE OF THROMBOLYTIC AGENT W/O CC/MCC
163 - MAJOR CHEST PROCEDURES W MCC
164 - MAJOR CHEST PROCEDURES W CC
165 - MAJOR CHEST PROCEDURES W/O CC/MCC
166 - OTHER RESP SYSTEM O.R. PROCEDURES W MCC
167 - OTHER RESP SYSTEM O.R. PROCEDURES W CC
168 - OTHER RESP SYSTEM O.R. PROCEDURES W/O CC/MCC
327 - STOMACH, ESOPHAGEAL & DUODENAL PROC W CC
329 - MAJOR SMALL & LARGE BOWEL PROCEDURES W MCC
330 - MAJOR SMALL & LARGE BOWEL PROCEDURES W CC
331 - MAJOR SMALL & LARGE BOWEL PROCEDURES W/O CC/MCC
332 - RECTAL RESECTION W MCC
333 - RECTAL RESECTION W CC
334 - RECTAL RESECTION W/O CC/MCC
MS-DRG - TITLE
335 - PERITONEAL ADHESIOLYSIS W MCC
336
PERITONEAL ADHESIOLYSIS W CC
337 - PERITONEAL ADHESIOLYSIS W/O CC/MCC
341 - APPENDECTOMY W/O COMPLICATED PRINCIPAL DIAG W MCC
342 - APPENDECTOMY W/O COMPLICATED PRINCIPAL DIAG W CC
343 - APPENDECTOMY W/O COMPLICATED PRINCIPAL DIAG W/O CC/MCC
344 - MINOR SMALL & LARGE BOWEL PROCEDURES W MCC
345 - MINOR SMALL & LARGE BOWEL PROCEDURES W CC
346 - MINOR SMALL & LARGE BOWEL PROCEDURES W/O CC/MCC
347 - ANAL & STOMAL PROCEDURES W MCC
348 - ANAL & STOMAL PROCEDURES W CC
349 - ANAL & STOMAL PROCEDURES W/O CC/MCC
356 - OTHER DIGESTIVE SYSTEM O.R. PROCEDURES W MCC

357 - OTHER DIGESTIVE SYSTEM O.R. PROCEDURES W CC
358 - OTHER DIGESTIVE SYSTEM O.R. PROCEDURES W/O CC/MCC
405 - PANCREAS, LIVER & SHUNT PROCEDURES W MCC
406 - PANCREAS, LIVER & SHUNT PROCEDURES W CC
407 - PANCREAS, LIVER & SHUNT PROCEDURES W/O CC/MCC
408 - BILIARY TRACT PROC EXCEPT ONLY CHOLECYST W OR W/O C.D.E. W MCC
409 - BILIARY TRACT PROC EXCEPT ONLY CHOLECYST W OR W/O C.D.E. W CC
410 - BILIARY TRACT PROC EXCEPT ONLY CHOLECYST W OR W/O C.D.E. W/O CC/MCC
411 - CHOLECYSTECTOMY W C.D.E. W MCC
412 - CHOLECYSTECTOMY W C.D.E. W CC
413 - CHOLECYSTECTOMY W C.D.E. W/O CC/MCC
414 - CHOLECYSTECTOMY EXCEPT BY LAPAROSCOPE W/O C.D.E. W MCC
MS-DRG - TITLE
415 - CHOLECYSTECTOMY EXCEPT BY LAPAROSCOPE W/O C.D.E. W CC
416 - CHOLECYSTECTOMY EXCEPT BY LAPAROSCOPE W/O C.D.E. W/O CC/MCC
417 - LAPAROSCOPIC CHOLECYSTECTOMY W/O C.D.E. W MCC
418 - LAPAROSCOPIC CHOLECYSTECTOMY W/O C.D.E. W CC
419 - LAPAROSCOPIC CHOLECYSTECTOMY W/O C.D.E. W/O CC/MCC
420 - HEPATOBILIARY DIAGNOSTIC PROCEDURES W MCC
421 - HEPATOBILIARY DIAGNOSTIC PROCEDURES W CC
422 - HEPATOBILIARY DIAGNOSTIC PROCEDURES W/O CC/MCC
423 - OTHER HEPATOBILIARY OR PANCREAS O.R. PROCEDURES W MCC
424 - OTHER HEPATOBILIARY OR PANCREAS O.R. PROCEDURES W CC
425 - OTHER HEPATOBILIARY OR PANCREAS O.R. PROCEDURES W/O CC/MCC
576 - SKIN GRAFT &/OR DEBRID EXC FOR SKIN ULCER OR CELLULITIS W MCC
577 - SKIN GRAFT &/OR DEBRID EXC FOR SKIN ULCER OR CELLULITIS W CC
578 - SKIN GRAFT &/OR DEBRID EXC FOR SKIN ULCER OR CELLULITIS W/O CC/MCC
579 - OTHER SKIN, SUBCUT TISS & BREAST PROC W MCC
580 - OTHER SKIN, SUBCUT TISS & BREAST PROC W CC
581 - OTHER SKIN, SUBCUT TISS & BREAST PROC W/O CC/MCC
619 - O.R. PROCEDURES FOR OBESITY W MCC
620 - O.R. PROCEDURES FOR OBESITY W CC
621 - O.R. PROCEDURES FOR OBESITY W/O CC/MCC
652 - KIDNEY TRANSPLANT
653 - MAJOR BLADDER PROCEDURES W MCC
654 - MAJOR BLADDER PROCEDURES W CC
655 - MAJOR BLADDER PROCEDURES W/O CC/MCC
656 - KIDNEY & URETER PROCEDURES FOR NEOPLASM W MCC
657 - KIDNEY & URETER PROCEDURES FORNEOPLASM W CC
658 - KIDNEY & URETER PROCEDURES FOR NEOPLASM W/O CC/MCC
659 - KIDNEY & URETER PROCEDURES FOR NON-NEOPLASM W MCC
660 - KIDNEY & URETER PROCEDURES FOR NON-NEOPLASM W CC
661 - KIDNEY & URETER PROCEDURES FOR NON-NEOPLASM W/O CC/MCC
662 - MINOR BLADDER PROCEDURES W MCC
663 - MINOR BLADDER PROCEDURES W CC
MS-DRG - TITLE
664 - MINOR BLADDER PROCEDURES W/O CC/MCC
665 - PROSTATECTOMY W MCC
666 - PROSTATECTOMY W CC
667 - PROSTATECTOMY W/O CC/MCC
668 - TRANSURETHRAL PROCEDURES W MCC
669 - TRANSURETHRAL PROCEDURES W CC
670 - TRANSURETHRAL PROCEDURES W/O CC/MCC
672 - URETHRAL PROCEDURES W/O CC/MCC
673 - OTHER KIDNEY & URINARY TRACT PROCEDURES W MCC
674 - OTHER KIDNEY & URINARY TRACT PROCEDURES W CC
675 - OTHER KIDNEY & URINARY TRACT PROCEDURES W/O CC/MCC
707 - MAJOR MALE PELVIC PROCEDURES W CC/MCC

708 - MAJOR MALE PELVIC PROCEDURES W/O CC/MCC
709 - PENIS PROCEDURES W CC/MCC
710 - PENIS PROCEDURES W/O CC/MCC
713 - TRANSURETHRAL PROSTATECTOMY W CC/MCC
714 - TRANSURETHRAL PROSTATECTOMY W/O CC/MCC
715 - OTHER MALE REPRODUCTIVE SYSTEM O.R. PROC FOR MALIGNANCY W CC/MCC
716 - OTHER MALE REPRODUCTIVE SYSTEM O.R. PROC FOR MALIGNANCY W/O CC/MCC
717 - OTHER MALE REPRODUCTIVE SYSTEM O.R. PROC EXC MALIGNANCY W CC/MCC
718 - OTHER MALE REPRODUCTIVE SYSTEM O.R. PROC EXC MALIGNANCY W/O CC/MCC
734 - PELVIC EVISCERATION, RAD HYSTERECTOMY & RAD VULVECTOMY W CC/MCC
735 - PELVIC EVISCERATION, RAD HYSTERECTOMY & RAD VULVECTOMY W/O CC/MCC
736 - UTERINE & ADNEXA PROC FOR OVARIAN OR ADNEXAL MALIGNANCY W MCC
737 - UTERINE & ADNEXA PROC FOR OVARIAN OR ADNEXAL MALIGNANCY W CC
738 - UTERINE & ADNEXA PROC FOR OVARIAN OR ADNEXAL MALIGNANCY W/O CC/MCC
739 - UTERINE,ADNEXA PROC FOR NON-OVARIAN/ADNEXAL MALIG W MCC
740 - UTERINE,ADNEXA PROC FOR NON-OVARIAN/ADNEXAL MALIG W CC
741 - UTERINE,ADNEXA PROC FOR NON-OVARIAN/ADNEXAL MALIG W/O CC/MCC
AHRQ Quality Indicators Web Site: http://www.qualityindicators.ahrq.gov
Pediatric Quality Indicators Technical Specifications Version 4.2– 2010
PDI #11 Postoperative Wound Dehiscence Page 16
MS-DRG - TITLE
742 - UTERINE & ADNEXA PROC FOR NON-MALIGNANCY W CC/MCC
743 - UTERINE & ADNEXA PROC FOR NON-MALIGNANCY W/O CC/MCC
744 - D&C, CONIZATION, LAPAROSCOPY & TUBAL INTERRUPTION W CC/MCC
745 - D&C, CONIZATION, LAPAROSCOPY & TUBAL INTERRUPTION W/O CC/MCC
746 - VAGINA, CERVIX & VULVA PROCEDURES W CC/MCC
747 - VAGINA, CERVIX & VULVA PROCEDURES W/O CC/MCC
748 - FEMALE REPRODUCTIVE SYSTEM RECONSTRUCTIVE PROCEDURES
749 - OTHER FEMALE REPRODUCTIVE SYSTEM O.R. PROCEDURES W CC/MCC
750 - OTHER FEMALE REPRODUCTIVE SYSTEM O.R. PROCEDURES W/O CC/MCC
765 - CESAREAN SECTION W CC/MCC
766 - CESAREAN SECTION W/O CC/MCC
767 - VAGINAL DELIVERY W STERILIZATION &/OR D&C
768 - VAGINAL DELIVERY W O.R. PROC EXCEPT STERIL &/OR D&C
769 - POSTPARTUM & POST ABORTION DIAGNOSES W O.R. PROCEDURE
770 - ABORTION W D&C, ASPIRATION CURETTAGE OR HYSTEROTOMY
774 - VAGINAL DELIVERY W COMPLICATING DIAGNOSES
MS-DRG - TITLE
775 - VAGINAL DELIVERY W/O COMPLICATING DIAGNOSES
981 - EXTENSIVE O.R. PROCEDURE UNRELATED TO PRINCIPAL DIAGNOSIS W MCC
982 - EXTENSIVE O.R. PROCEDURE UNRELATED TO PRINCIPAL DIAGNOSIS W CC
983 - EXTENSIVE O.R. PROCEDURE UNRELATED TO PRINCIPAL DIAGNOSIS W/O CC/MCC
984 - PROSTATIC O.R. PROCEDURE UNRELATED TO PRINCIPAL DIAGNOSIS W MCC
985
PROSTATIC O.R. PROCEDURE UNRELATED TO PRINCIPAL DIAGNOSIS W CC
986
PROSTATIC O.R. PROCEDURE UNRELATED TO PRINCIPAL DIAGNOSIS W/O CC/MCC
987 - NON-EXTENSIVE O.R. PROC UNRELATED TO PRINCIPAL DIAGNOSIS W MCC
988 - NON-EXTENSIVE O.R. PROC UNRELATED TO PRINCIPAL DIAGNOSIS W CC
989 - NON-EXTENSIVE O.R. PROC UNRELATED TO PRINCIPAL DIAGNOSIS W/O CC/MCC
Surgical Class 3 DRGs
For discharges using DRGs (before October 1, 2007)
DRG - TITLE
263 - SKIN GRAFT &/OR DEBRID FOR SKN ULCER OR CELLULITIS W CC
264 - SKIN GRAFT &/OR DEBRID FOR SKN ULCER OR CELLULITIS W/O CC
439 - SKIN GRAFTS FOR INJURIES
440 - WOUND DEBRIDEMENTS FOR INJURIES
441 - HAND PROCEDURES FOR INJURIES

442 - OTHER O.R. PROCEDURES FOR INJURIES W CC
443 - OTHER O.R. PROCEDURES FOR INJURIES W/O CC
484 - CRANIOTOMY FOR MULTIPLE SIGNIFICANT TRAUMA
DRG - TITLE
485 - LIMB REATTACHMENT, HIP AND FEMUR PROC FOR MULTIPLE SIGNIFICANT TRAUMA
486 - OTHER O.R. PROCEDURES FOR MULTIPLE SIGNIFICANT TRAUMA
504 - EXTEN. BURNS OR FULL THICKNESS BURN W/MV 96+HRS W/SKIN GFT
506 - FULL THICKNESS BURN W SKIN GRAFT OR INHAL INJ W CC OR SIG TRAUMA
507 - FULL THICKNESS BURN W SKIN GRFT OR INHAL INJ W/O CC OR SIG TRAUMA
Surgical Class 3 MS-DRGs
For discharges using MS-DRGs (on or after October 1, 2007)
MS-DRG - TITLE
573 - SKIN GRAFT &/OR DEBRID FOR SKN ULCER OR CELLULITIS W MCC
MS-DRG - TITLE
574 - SKIN GRAFT &/OR DEBRID FOR SKN ULCER OR CELLULITIS W CC
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-5; N-14
Rationale: Did not pass threshold criterion of Importance to Measure and Report thus not assessed against remaining criteria.

If applicable, Conditions/Questions for Developer:
Developer Response:
If applicable, Questions to the Steering Committee:

1. Importance to Measure and Report: Y-5; N-14
*(1a. Impact; 1b. Performance gap; 1c. Outcome or Evidence)*
Rationale: The Committee noted that only about 25 percent of wound dehiscence has been demonstrated to have modifiable factors. Twenty-five percent of wound dehiscence is not preventable and the cause in another 41 percent is uncertain; thus, the rationale for the measure is not supported by the literature. Also, members were concerned that the evidence for the measure appeared to be based on an analysis of patients with a secondary diagnosis code for "other than wound disruptions". The Committee noted that the disparity data could be improved. Finally, they stated that the evidence does not indicate that wound dehiscence is a problem specifically in children and only a small number of patients experience wound dehiscence.

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

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

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

0368 Post operative wound dehiscence (PSI 14)

Description: Percentage of abdominopelvic surgery cases with reclosure of postoperative disruption of abdominal wall.
Numerator Statement: Discharges among cases meeting the inclusion and exclusion rules for the denominator with ICD-9-CM procuedure code for reclosure of postoperative disruption of abdominal wall procedure.
Denominator Statement: All abdominopelvic surgical discharges age 18 and older.
Exclusions: Exclude cases:
• where a procedure for reclosure of postoperative disruption of abdominal wall occurs before or on the same day as the first abdominopelvic surgery procedure
Note: If day of procedure is not available in the input data file, the rate may be slightly lower than if the information was available
• where length of stay is less than 2 days
• with any diagnosis or procedure code for immunocompromised state
• MDC 14 (pregnancy, childbirth, and puerperium).

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| Adjustment/Stratification: risk adjustment method widely or commercially available The predicted value for each case is computed using a hierarchical model (logistic regression with hospital random effect) and covariates for gender, birth weight (500g groups), age in days (29-60, 61-90, 91+), age in years (in 5-year age groups), modified CMS DRG and AHRQ CCS comorbidities. The reference population used in the model is the universe of discharges for states that participate in the HCUP State Inpatient Databases (SID) for the year 2007 (updated annually), a database consisting of 43 states and approximately 6 million pediatric discharges. The expected rate is computed as the sum of the predicted value for each case divided by the number of cases for the unit of analysis of interest (i.e., hospital, state, and region). The risk adjusted rate is computed using indirect standardization as the observed rate divided by the expected rate, multiplied by the reference population rate.<br>Required data elements: CMS Diagnosis Related Group (DRG); CMS Major Diagnostic Category (MDC); patient gender; age in years at admission; International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) principal and secondary diagnosis codes/The user has the option to stratify by gender, birth weight, age in days, age in years (5-year age groups), race / ethnicity, primary payer, and custom stratifiers.<br>Level of Analysis: Facility/ Agency<br>Type of Measure: Outcome<br>Data Source: Electronic administrative data/ claims<br>Measure Steward: Agency for Healthcare Research and Quality \| 540 Gaither Road \| Rockville \| Maryland \| 20850 |
| Steering Committee Recommendation for Endorsement: No Y-6; N-13<br>Rationale: Did not pass threshold criterion of Importance to Measure and Report thus not assessed against remaining criteria. |
| If applicable, Conditions/Questions for Developer:<br>Developer Response:<br>If applicable, Questions to the Steering Committee: |
| 1. Importance to Measure and Report: Y-6; N-13<br>*(1a. Impact; 1b. Performance gap; 1c. Outcome or Evidence)*<br>Rationale: The Committee noted that only about 25 percent of wound dehiscence has been demonstrated to have modifiable factors. Twenty-five percent of wound dehiscence is not preventable and the cause in another 41 percent is uncertain thus the rationale for the measure is not supported by the literature. Also, members were concerned that evidence for measure appeared to be based on an analysis of patients with a secondary diagnosis code for other than wound disruptions. The Committee noted that the disparity data could be improved. Finally, they stated only a very small number of patients experience wound dehiscence. It was noted that as in the case of many safety measures, the volume is often quite small and that the utility of the patient safety indicators is that they often serve as surrogate measures or trigger tools for which data is readily availability. In the case of these measures, comment was made that there is not a significant association with them as marked due to their infrequency of occurrence. Any additional discussion of the measure should be accompanied by data regarding its actual impact. The measure utilizes administrative databases which would appropriately identify wound dehiscence cases. The measure is straightforward and uses claims data. The Committee questioned how the measure would be publicly reported. The Committee described the measure as feasible and noted that the burden of collecting the data was minimal. |
| 2. Scientific Acceptability of Measure Properties:<br>*(2a. Precise specifications; 2b. Reliability testing; 2c. Validity testing; 2d. Exclusions justified; 2e. Risk adjustment/stratification; 2f. Meaningful differences; 2g. Comparability; 2h. Disparities)*<br>Rationale: |
| 3. Usability:<br>*(3a. Meaningful/useful for public reporting and quality improvement; 3b. Harmonized; 3c. Distinctive or additive value to existing measures)*<br>Rationale: |
| 4. Feasibility:<br>*(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)*<br>Rationale: |

Following the evaluation of Phase II measures, the Committee began their discussion of related and competing measures in Phase II. Two measures from the Pediatric and Congenital Cardiac Surgery project and one measure from the Surgery project were reviewed. The Committee noted that measures *PCS-021-09: Standardized mortality ratio for congenital heart surgery, risk adjustment for congenital heart surgery (RACHS-1) adjusted* and *0339: Pediatric heart surgery mortality (PDI 6)* could be harmonized into a single measure. It was noted that measure *PCS-018-09: Number of patients who undergo preoperative mortality stratified by the five STS-EACTS mortality levels* was complementary.

The measures would provide equally important information that would be useful to different stakeholders. While *PCS-021-09* and *0339* would be reported as a risk-adjusted ratio for pediatric cardiac surgery, *PCS-018-09* would be reported on five different levels of complexity that would differentiate based on the severity of disease at the group and facility level. The Committee requested that in the future Society of Thoracic Surgeons present statistics on the number of pediatric cardiac surgery patients per year at the facility and category level. The Committee will continue their discussion of the three pediatric cardiac volume measures and additional related and competing measures that were recommended for conditional endorsement on an upcoming conference call.

**NEXT STEPS**

Ms. Murphy indicated that project staff will provide the Committee with the votes related to the extent to which the measures meet measure evaluation criteria as well as a document outlining the Committee's conditions for measures deemed as meeting NQF criteria for endorsement. Additionally, finalized recommendations regarding endorsement will be made after discussion of related and competing measures. Staff will create a survey to determine the Committee's availability to review the measure developers' responses to the Committee's suggested modifications and to continue discussion of related and competing measures. Ms. Forman noted that staff will provide developers with a two to three week deadline to respond to the Committee's suggestions.