ENDORSEMENT SUMMARY: Surgery

MAY 2012

Purpose of the Project

The number of surgical procedures, especially those performed outside of hospitals, continues to rise each year. In 2006, 99 million surgeries were performed in the United States, with 53 million of those taking place in ambulatory surgery centers. By 2007, there were almost 5,000 Medicare-certified ambulatory surgery centers across the country, a 64 percent increase from 2000. These statistics illustrate the need for surgical measures that can assess care quality across a variety of care settings and conditions.

NQF has endorsed a significant number of performance measures related to surgical procedures and care over the past six years. In fall 2010, NQF – at the request of the Department of Health and Human Services – began a two-phase project focused on identifying, endorsing, and updating surgical performance measures. Phase I of the project focused on measures related to cardiac surgery, including pre-operative evaluation, post-operative care, diagnostic studies, and treatments associated with these surgeries. Phase II sought to endorse measures specifically focused on general surgery and surgical specialties including but not limited to thoracic, vascular, orthopedic, and neurosurgery.

The resulting endorsed measures address care delivery across a range of clinical settings and will help providers ensure patients receive the high-quality surgical care they deserve.

What Was Endorsed

Summary of Surgery Endorsement Maintenance Measures Project

Measure submitted for consideration	73
Measures withdrawn by the developer for more testing and further refinement	13
Measures recommended for endorsement	51 (42 maintenance, 9 new)
Measures not recommended for endorsement	9

In the two phases of the surgery endorsement project, NQF endorsed 51 measures (18 measures in phase I, 24 measures in phase 2, and nine measures in an addendum to phase 2) suitable for accountability and quality improvement. Of the 51 measures, 42 were previously endorsed and granted continued endorsement status, and nine were newly submitted measures. Two measures were placed in reserve status, meaning they address critical aspects of performance that should be periodically reassessed to ensure that high levels of performance are maintained.

Measure stewards included both public- and private-sector healthcare stakeholders. Among them were the Centers for Medicare & Medicaid Services; Society of Thoracic Surgeons; Agency for Healthcare Research and Quality; Society for Vascular Surgery; The Children's Hospital of Philadelphia; and the ACS Quality Collaboration. A full list of measures is available at the end of this report.

The Need these Measures Fill

This project sought to identify and endorse measures that specifically address surgical care and surgical procedures for accountability and quality improvement. The resulting measures focus on a wide range of procedures and processes, including coronary artery bypass grafts, hip and knee replacement, pediatric cardiology volume and mortality rates, and cataract surgery.

Notably, this set of endorsed measures includes several that evaluate the actual outcomes of care – such as incidents of stroke or death following a carotid endarterectomy or carotid artery stenting procedure, and death among surgical inpatients with serious, treatable complications. Because outcomes measures go beyond simply taking stock of patient care processes, they are considered most relevant to patients and providers looking to improve care delivery.

This measure set also includes a measure from the American College of Surgeons focused on patient experience, an increasingly important area of interest in quality measurement. The measure assesses quality of care from the patient's perspective based on the Consumer Assessment of Healthcare Providers and Systems (CAHPS®) surgical care survey. Data from the survey – which touches on patients' thoughts on how well they were prepared for surgery, how well they believed the surgeons communicated, and what information they were given to help them recover from surgery, among other questions – should help providers better understand and ultimately improve patient care and experience.

Potential Use

While these measures are available for use in hospitals, many are also available for use in ambulatory surgery centers, which will help with quality improvement efforts in a range of clinical settings.

Project Perspectives

The rate of surgical procedures continues to increase each year, as does the number and type of sites performing surgery. Outpatient care settings, such as physicians' offices and ambulatory surgical centers, can face different challenges than hospitals with respect to quality and safety. Measuring quality of care across the many and varied locations in which surgical procedures are performed may drive providers in these different locations to recognize and address barriers to quality in their practices, and may lead to an increased focus on the tools, behaviors, and principles that ensure safe, cost-effective care.

The endorsed surgery measures listed below also address important cross-cutting areas of patient safety and care coordination. Preventable complications of healthcare, such as surgical site infections or postoperative pulmonary embolisms, can have significant financial and human costs. A lack of coordination and communication by providers across settings and between episodes of care can also result in adverse health outcomes for surgery patients. For example, measures tracking hospital readmission rates promote a view of care that reaches beyond the walls of the hospital or outpatient facility, pushing providers to improve their oversight of care transitions and to engage in follow-up efforts with patients who have been in their care. This is especially critical for patients who have had surgery and are at risk of a variety of serious complications following their procedures.

Endorsed Measures

0114: Risk-adjusted post-operative renal failure (STS)

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.

0115: Risk-adjusted surgical re-exploration (STS)

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.

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

Description: Percent of patients aged 18 years and older undergoing isolated CABG who require intubation for more than 24 hours.

0131: Risk-adjusted stroke/cerebrovascular accident (STS)

Description: Percent of patients aged 18 years and older undergoing isolated CABG who have

a postoperative stroke (i.e., any confirmed neurological deficit of abrupt onset caused by a disturbance in blood supply to the brain) that did not resolve within 24 hours.

0119: Risk-adjusted operative mortality for CABG (STS)

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.

0113: Participation in a database for cardiac surgery (STS) (reserve status)

Description: Participation in a clinical database with broad state, regional, or national representation, that provides regular performance reports based on benchmarked data.

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

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

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

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

0122: Risk-adjusted operative mortality MV replacement + CABG surgery (STS)

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

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

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

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

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

1502: Risk-adjusted operative mortality for MV repair + CABG surgery (STS)

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

0360: Esophageal resection mortality rate (IQI 8) (AHRQ)

Description: Number of inpatient deaths per 100 discharges with a procedure for esophageal resection.

0361: Esophageal resection volume (IQI 1) (AHRQ)

Description: Number of discharges with a procedure for esophageal resection.

0116: Anti-platelet medication at discharge (STS)

Description: Percent of patients aged 18 years and older undergoing isolated CABG who were discharged on anti-platelet medication.

0118: Anti-lipid treatment discharge (STS)

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

0130: Risk-adjusted deep sternal wound infection rate (STS)

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.

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

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.

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

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

0300: Cardiac surgery patients with controlled postoperative blood glucose (CMS)

Description: Cardiac surgery patients with controlled postoperative blood glucose (less than or equal to 180mg/dL) in the timeframe of 18 to 24 hours after Anesthesia End Time.

0127: Preoperative beta blockade (STS)

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

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

Description: Percentage of patients on beta blocker therapy prior to admission who received a beta blocker during the perioperative period. To be in the denominator, the patient must be on a beta-blocker prior to arrival. The case is excluded if the patient is not on a beta-blocker prior to arrival, as described below in 2a4.

0117: Beta blockade at discharge (STS)

Description: Percent of patients aged 18 years and older undergoing isolated CABG who were discharged on beta blockers.

0273: Perforated appendix admission rate (PQI 2) (AHRQ)

Description: Percentage of admissions for appendicitis within county with perforated appendix.

0265: Hospital transfer/admission (ASC Quality Collaboration)

Description: Rate of ASC admissions requiring a hospital transfer or hospital admission upon discharge from the ASC

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

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.

1540: Postoperative stroke or death in asymptomatic patients undergoing carotid endarterectomy (SVS)

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.

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

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.

0339: RACHS-1 pediatric heart surgery mortality (AHRQ)

Description: Risk-adjusted rate of in-hospital death for pediatric cases undergoing surgery for congenital heart disease, along with ratio of observed to expected in-hospital mortality rates.

0340: Pediatric heart surgery volume (PDI 7) (AHRQ)

Description: Number of discharges with procedure for pediatric heart surgery

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

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

0353: Failure to rescue 30-day mortality (risk adjusted) (CHOP)

Description: Percentage of patients who died with a complication within 30 days from admission.

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

Description: Percentage of cases having developed specified complications of care with an in-hospital death.

0515: Ambulatory surgery patients with appropriate method of hair removal (ASC Quality Collaboration)

Description: Percentage of ASC admissions with appropriate surgical site hair removal.

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

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.

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

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.

1536: Cataracts: Improvement in patient's visual function within 90 days following cataract surgery (AAO/Hoskins Center for Quality Eye Care)

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

0528: Prophylactic antibiotic selection for surgical patients (CMS)

Description: Surgical patients who received prophylactic antibiotics consistent with current guidelines (specific to each type of surgical procedure).

0126: Selection of antibiotic prophylaxis for cardiac surgery patients (STS)

Description: Percent of patients aged 18 years and older undergoing cardiac surgery who received preoperative prophylactic antibiotics recommended for the operation.

0264: Prophylactic intravenous (IV) antibiotic timing (ASC Quality Collaboration)

Description: Rate of ASC patients who received IV antibiotics ordered for surgical site infection prophylaxis on time

0527: Prophylactic antibiotic received within 1 hour prior to surgical incision (CMS)

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.

0301: Surgery patients with appropriate hair removal (CMS) (reserve status)

Description: Percentage of surgery patients with surgical hair site removal with clippers or depilatory or no surgical site hair removal.

0128: Duration of antibiotic prophylaxis for cardiac surgery patients (Society of Thoracic Surgeons)

Description: Percent of patients aged 18 years and older undergoing cardiac surgery whose prophylactic antibiotics were discontinued within 48 hours after surgery end time.

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

Description: Count of adult hospital discharges in a one year time period with a procedure code of AAA repair.

0359: Abdominal aortic aneurysm (AAA) repair mortality rate (IQI 11) (risk adjusted) (ARHQ)

Description: Percent of adult hospital discharges in a one-year time period with a procedure code of AAA repair and a diagnosis of AAA with an in-hospital death.

0365: Pancreatic resection mortality rate (IQI 9) (risk adjusted) (AHRQ)

Description: Percentage of adult hospital discharges with procedure code of pancreatic resection with an in-hospital death, stratified by benign and malignant disease.

0366: Pancreatic resection volume (IQI 2) (AHRQ)

Description: Number of adult hospital discharges with procedure for pancreatic resection, stratified by benign and malignant disease.

0529: Prophylactic antibiotics discontinued within 24 hours after surgery end time (CMS)

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.

1523: In-hospital mortality following elective open repair of AAAs (Society for Vascular Surgery)

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

1534: In-hospital mortality following elective EVAR of AAAs (Society for Vascular Surgery)

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

1741: Patient experience with surgical care based on the Consumer Assessment of Healthcare Providers and Systems (CAHPS) ® surgical care survey (American College of Surgeons)

Description: The following 6 composites and 1 single-item measure are generated from the Consumer Assessment of Healthcare Providers and Systems (CAHPS®) Surgical Care Survey. Each measure is used to assess a particular domain of surgical care quality from the patient's perspective.

- Measure 1: Information to help you prepare for surgery (2 items)
- Measure 2: How well surgeon communicates with patients before surgery (4 items)
- Measure 3: Surgeon's attentiveness on day of surgery (2 items)
- Measure 4: Information to help you recover from surgery (4 items)
- Measure 5: How well surgeon communicates with patients after surgery (4 items)
- Measure 6: Helpful, courteous, and respectful staff at surgeon's office (2 items)
- Measure 7: Rating of surgeon (1 item)

The Consumer Assessment of Healthcare Providers and Systems (CAHPS®) Surgical Care Survey is administered to adult patients (age 18 and over) having had a major surgery as defined by CPT codes (90 day globals) within 3 to 6 months prior to the start of the survey.