NATIONAL QUALITY FORUM

Measure Evaluation 4.1
January 2010

This form contains the measure information submitted by stewards. Blank fields indicate no information was provided. Attachments also may have been submitted and are provided to reviewers. The sub-criteria and most of the footnotes from the evaluation criteria are provided in Word comments and will appear if your cursor is over the highlighted area (or in the margin if your Word program is set to show revisions in balloons). Hyperlinks to the evaluation criteria and ratings are provided in each section.

TAP/Workgroup (if utilized)**:** Complete all yellow highlighted areas of the form. Evaluate the extent to which each sub-criterion is met. Based on your evaluation, summarize the strengths and weaknesses in each section.

Note: *If there is no TAP or workgroup, the SC also evaluates the* sub-criteria *(yellow highlighted areas)*.

Steering Committee: Complete all pink highlighted areas of the form. Review the workgroup/TAP assessment of the sub-criterion, noting any areas of disagreement; then evaluate the extent to which each major criterion is met; and finally, indicate your recommendation for the endorsement. Provide the rationale for your ratings.

Evaluation ratings of the extent to which the criteria are met
C = Completely (unquestionably demonstrated to meet the criterion)
P = Partially (demonstrated to partially meet the criterion)
M = Minimally (addressed BUT demonstrated to only minimally meet the criterion)
N = Not at all (NOT addressed; OR incorrectly addressed; OR demonstrated to NOT meet the criterion)
NA = Not applicable (only an option for a few sub-criteria as indicated)

(for NQF staff use) **NQF Review** #: OT2-008-09 **NQF Project:** Patient Outcomes Measures: Phases I and II
MEASURE DESCRIPTIVE INFORMATION
De.1 **Measure Title:** Bariatric surgery and complications during the hospitalization or within 180 days of discharge.
De.2 **Brief description of measure***:* This measure identifies patients 12 years and older with bariatric surgery who had a defined complication during hospitalization or within 180 days of discharge.
1.1-2 **Type of Measure:** outcome De.3 **If included in a composite or paired with another measure, please identify composite or paired measure** not applicable
De.4 **National Priority Partners Priority Area:** safety De.5 **IOM Quality Domain**: safety De.6 **Consumer Care Need:** Getting Better

CONDITIONS FOR CONSIDERATION BY NQF	
Four conditions must be met before proposed measures may be considered and evaluated for suitability as voluntary consensus standards:	**NQF Staff**
A. The measure is in the public domain or an intellectual property (measure steward agreement) is signed. *Public domain only applies to governmental organizations. All non-government organizations must sign a measure steward agreement even if measures are made publicly and freely available.* A.1 **Do you attest that the measure steward holds intellectual property rights to the measure and the right to use aspects of the measure owned by another entity (e.g., risk model, code set)?** Yes A.2 **Indicate if Proprietary Measure** (*as defined in measure steward agreement*)**:** proprietary measure A.3 **Measure Steward Agreement:** agreement signed and submitted A.4 **Measure Steward Agreement attached:**	**A** **Y**☐ **N**☐

B. The measure owner/steward verifies there is an identified responsible entity and process to maintain and update the measure on a schedule that is commensurate with the rate of clinical innovation, but at least every 3 years. Yes, information provided in contact section	**B** Y☐ N☐
C. The intended use of the measure includes both public reporting and quality improvement. ►**Purpose:** public reporting, quality improvement Accreditation, Payment Incentive, Accountability	**C** Y☐ N☐
D. The requested measure submission information is complete. Generally, measures should be fully developed and tested so that all the evaluation criteria have been addressed and information needed to evaluate the measure is provided. Measures that have not been tested are only potentially eligible for a time-limited endorsement and in that case, measure owners must verify that testing will be completed within 12 months of endorsement. D.1**Testing:** Yes, fully developed and tested D.2 **Have NQF-endorsed measures been reviewed to identify if there are similar or related measures?** Yes	**D** Y☐ N☐
(for NQF staff use**)** **Have all conditions for consideration been met?** **Staff Notes to Steward** (*if submission returned*)**:**	**Met** Y☐ N☐
Staff Notes to Reviewers (*issues or questions regarding any criteria*)**:**	
Staff Reviewer Name(s):	

TAP/Workgroup Reviewer Name:	
Steering Committee Reviewer Name:	
1. IMPORTANCE TO MEASURE AND REPORT	
Extent to which the specific measure focus is important to making significant gains in health care quality (safety, timeliness, effectiveness, efficiency, equity, patient-centeredness) and improving health outcomes for a specific high impact aspect of healthcare where there is variation in or overall poor performance. *Measures must be judged to be important to measure and report in order to be evaluated against the remaining criteria.* (evaluation criteria) **1a. High Impact**	Eval Rating
(for NQF staff use) **Specific NPP goal**:	
1a.1 Demonstrated High Impact Aspect of Healthcare: other **1a.2** procedure that is increasing in use **1a.3 Summary of Evidence of High Impact:** A recent study by Thorpe et. al. showed that the obesity epidemic is responsible for over one-fourth of the spiraling growth in U.S. healthcare costs over the past 15 years (1,2). With the obesity epidemic, bariatric surgery is emerging as the leading method of weight loss among the morbidly obese. Bariatric surgery is one of the fastest growing hospital procedures, but with a 40% complication rate in 2001. Between 2001 and 2005 bariatric surgeries grew by 113% (3). Despite the apparent long-term benefits of bariatric surgery, little is known about population-level patient rates of adverse outcomes and healthcare utilization immediately after bariatric surgery. Most of the literature has found a complication rate between 10% and 20% during the initial surgical stay; few studies have examined complication rates after the patient leaves the hospital. Encinosa et.al. recently analyzed complications associated with bariatric surgery from 2001 to 2006 (3). While older and sicker patients underwent surgery during this time period, the 180-day risk-adjusted complication rate did decline from 41.7% to 32.8%. Most of the improvement was in the initial hospital stay, where the risk-adjusted inpatient complication rate declined from 23.6% to 14.8%. There was also a decline from 9.8% to 6.8% in risk-adjusted rates of readmissions with complications. Despite this improvement, complication rates remain unacceptably high. This data indicates the need to monitor and report complications associated with this procedure, particularly given the presence of strategies that can further	**1a** C☐ P☐ M☐ N☐

reduce complications (i.e., banding without bypass) (3).

1a.4 Citations for Evidence of High Impact: 1. Thorpe K, Florence C, Howard D, et al. The impact of obesity on rising medical spending. Health Aff (Millwood). 2004;W4:480–486.
2. Encinosa WE, Bernard DM, Chen CC, Steiner CA. Healthcare Utilization and Outcomes After Bariatric Surgery. Med Care 2006;44: 706–712.
3. Encinosa WE, Bernard DM, Du D, Steiner CA. Recent improvements in bariatric surgery outcomes. Med Care 2009;47: 531–535.

1b. Opportunity for Improvement

1b.1 Benefits (improvements in quality) envisioned by use of this measure:

1b.2 Summary of data demonstrating performance gap (variation or overall poor performance) across providers:
Using a geographically diverse 1 million member test database (this database represents predominately a commercial population less than 65 year of age) the complication rate, as defined in this measure, was 18.2 percent. This indicates an opportunity for care improvement and the value of identifying patients who have experienced a complication after bariatric surgery. Also, this represents an overall complication rate; it does not take into account provider and regional variation that may be associated with higher complication rates.

1b.3 Citations for data on performance gap:
Ingenix EBM Connect test results, October 2009

1b.4 Summary of Data on disparities by population group:
not applicable

1b.5 Citations for data on Disparities:
none

1b
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P☐
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N☐

1c. Outcome or Evidence to Support Measure Focus

1c.1 Relationship to Outcomes (*For non-outcome measures, briefly describe the relationship to desired outcome. For outcomes, describe why it is relevant to the target population*)**:** This measure identifies patients with serious or life-threatening complications after bariatric surgery. It is essential to measure and understand complications from this treatment, particularly since there are strategies that can reduce many complications. This measure will identify surgeons or surgical centers that have higher than expected surgical complications. It will identify local and regional differences. It will identify high risk patients who could benefit from disease management services. This can result in the following: improved quality of care, reduction of 180-day complications, reduction of readmission rates, reduction of preventable ER visits, and facilitation of care coordination in high-risk situations.

This measure complements a similar measure designed to identified complications within 30 days of bariatric surgery. We believe there is tremendous value associated with identifying complications during two different time periods - 30 and 180 days after bariatric surgery. Specificaly, this will allow identification of different patterns and types of complications that occur during these different timeframes. This is particularly important given the increasing use of bariatric surgery and our limited knowledge of complications associated with this procedure. Our ability to reduce complications in the future will depend on our ability to define the timing and type of complications that occur.

1c.2-3. Type of Evidence: observational study

1c.4 Summary of Evidence (*as described in the criteria; for outcomes, summarize any evidence that healthcare services/care processes influence the outcome*)**:**
There is evidence that certain strategies can reduce bariatric surgery complications. For example, Encinosa et.al. found the declines in complication rates noted from 2001 and 2006 were due to the following: (1)

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increased use of laparoscopy; (2) increased use of banding without bypass; or (3) within-hospital increases in hospital volume (i.e., increased bariatric surgery experience). Although improvements were due to all three reasons, certain differences were also noted. First, the improvement in 180-day complications was due to laparoscopy and within-hospital increases in hospital volume. However, laparoscopy had no impact on readmissions and ER visits with complications. Both within-hospital increases in hospital volume and a move to banding reduced such postoperative visits. Laparoscopy reduced payments by 12% and banding reduced payments by 20%. Given these complexities and the opportunity for outcome improvements, it is critical to understand complication patterns in more detail including local and regional differences. This could result in fewer complications, better quality, and lower costs associated with bariatric surgery. **1c.5 Rating of strength/quality of evidence (***also provide narrative description of the rating and by whom***):** not applicable **1c.6 Method for rating evidence:** none **1c.7 Summary of Controversy/Contradictory Evidence:** none **1c.8 Citations for Evidence (***other than guidelines***):** **1c.9 Quote the Specific guideline recommendation (***including guideline number and/or page number***):** not applicable **1c.10 Clinical Practice Guideline Citation:** not applicable **1c.11 National Guideline Clearinghouse or other URL:** not applicable **1c.12 Rating of strength of recommendation (***also provide narrative description of the rating and by whom***):** not applicable **1c.13 Method for rating strength of recommendation** (*If different from* USPSTF system*, also describe rating and how it relates to USPSTF)***:** not applicable **1c.14 Rationale for using this guideline over others:** not applicable	
TAP/Workgroup: What are the strengths and weaknesses in relation to the sub-criteria **for** *Importance to Measure and Report?*	**1**
Steering Committee: Was the threshold criterion, *Importance to Measure and Report***, met?** **Rationale:**	**1** **Y☐** **N☐**
2. SCIENTIFIC ACCEPTABILITY OF MEASURE PROPERTIES	
Extent to which the measure, as specified, produces consistent (reliable) and credible (valid) results about the quality of care when implemented. (evaluation criteria)	Eval Rating
2a. MEASURE SPECIFICATIONS	
S.1 Do you have a web page where current detailed measure specifications can be obtained? **S.2 If yes, provide web page URL:** **2a. Precisely Specified**	**2a-specs** **C☐** **P☐** **M☐**
2a.1 Numerator Statement (*Brief, text description of the numerator - what is being measured about the*	

target population, e.g. target condition, event, or outcome)**:**
evidence of a complication during the bariatric surgery hospitalization or within 180 days of discharge

2a.2 Numerator Time Window (*The time period in which cases are eligible for inclusion in the numerator***):**

2a.3 Numerator Details (*All information required to collect/calculate the numerator, including all codes, logic, and definitions***):**
Was there evidence of any of the following complications during the following time period: date of bariatric surgery hospitalization through 180 days after hospital discharge
1. Readmission to the hospital with any diagnosis
2. One or more of the following services with a diagnosis of gastrointestinal perforation (code set DX0052), OR post-operative wound infection or dehiscence (code set DX0126), OR pulmonary embolism (code set DX0129), OR bacterial pneumonia (code set DX0298), OR anastomotic leak (code set DX0324), OR deep venous thrombosis (code set DX0326)?
Professional Encounter (code set PR0107, RV0107)
Facility Event – Confinement/Admission
Facility Event – Emergency Room
Facility Event – Outpatient Surgery
3. A procedure for wound dehiscence (code set PR0363)?
4. A stenosis and obstruction diagnosis (code set DX0325) and a claim on the same day with a stenosis and obstruction procedure (code set PR0362)?

DX0052 Gastrointestinal perforation
569.83 PERFORATION OF INTESTINE

DX0126 Post-operative wound infection or dehiscence
998.3 DISRUPTION OF WOUND*
998.31 DISRUPTION OF INTERNAL OPERATION SURGICAL WOUND
998.32 DISRUPTION OF EXTERNAL OPERATION SURGICAL WOUND
998.5 POSTOPERATIVE INFECTION NOT ELSEWHERE CLASSIFIED*
998.51 INFECTED POSTOPERATIVE SEROMA NEC
998.59 OTHER POSTOPERATIVE INFECTION NEC

DX0129 Pulmonary embolism
415.11 IATROGENIC PULMONARY EMBOLISM AND INFARCTION
415.12 SEPTIC PULMONARY EMBOLISM
415.19 OTHER PULMONARY EMBOLISM AND INFARCTION

DX0298 Bacterial Pneumonia
481 PNEUMOCOCCAL PNEUMONIA
482 OTHER BACTERIAL PNEUMONIA*
482.0 PNEUMONIA DUE TO KLEBSIELLA PNEUMONIAE
482.1 PNEUMONIA DUE TO PSEUDOMONAS
482.2 PNEUMONIA DUE TO HEMOPHILUS INFLUENZAE
482.3 PNEUMONIA DUE TO STREPTOCOCCUS*
482.30 PNEUMONIA DUE TO UNSPECIFIED STREPTOCOCCUS
482.31 PNEUMONIA DUE TO STREPTOCOCCUS GROUP A
482.32 PNEUMONIA DUE TO STREPTOCOCCUS GROUP B
482.39 PNEUMONIA DUE TO OTHER STREPTOCOCCUS
482.4 PNEUMONIA DUE TO STAPHYLOCOCCUS*
482.40 PNEUMONIA DUE TO STAPHYLOCOCCUS UNSPECIFIED
482.41 METHICILLIN SUSECPTIBLE PNEUMONIA STAPH AUREUS
482.49 OTHER STAPHYLOCOCCUS PNEUMONIA
482.8 PNEUMONIA DUE TO OTHER SPECIFIED BACTERIA*
482.81 PNEUMONIA DUE TO ANAEROBES
482.82 PNEUMONIA DUE TO ESCHERICHIA COLI

N☐

482.83 PNEUMONIA DUE TO OTHER GRAM-NEGATIVE BACTERIA
482.84 LEGIONNAIRES+ DISEASE
482.89 PNEUMONIA DUE TO OTHER SPECIFIED BACTERIA
482.9 UNSPECIFIED BACTERIAL PNEUMONIA
483 PNEUMONIA DUE TO OTHER SPECIFIED ORGANISM*
483.0 PNEUMONIA DUE TO MYCOPLASMA PNEUMONIAE
483.1 PNEUMONIA DUE TO CHLAMYDIA
483.8 PNEUMONIA DUE TO OTHER SPECIFIED ORGANISM
485 BRONCHOPNEUMONIA ORGANISM UNSPECIFIED
486 PNEUMONIA, ORGANISM UNSPECIFIED
487.0 INFLUENZA WITH PNEUMONIA

DX0324 Anastomotic leak
537.89 OTHER SPECIFIED DISORDER OF STOMACH AND DUODENUM
997.4 DIGESTIVE SYSTEM COMPLICATION NEC
E878.2 ABNORM REACT D/T ANASTOMOSIS-BYPASS/GRAFT SURG

DX0326 Deep venous thrombosis
451.11 PHLEBITIS AND THROMBOPHLEBITIS OF FEMORAL VEIN
451.19 PHLEBITIS&THROMBOPHLEB OTH DEEP VES LOWER EXTREM
451.2 PHLEBITIS&THROMBOPHLEBITIS LOWER EXTREM UNSPEC
451.81 PHLEBITIS AND THROMBOPHLEBITIS OF ILIAC VEIN
451.9 PHLEBITIS&THROMBOPHLEBITIS OF UNSPECIFIED SITE
453.8 EMBOLISM AND THROMBOSIS OF OTHER SPECIFIED VEINS
453.9 EMBOLISM AND THROMBOSIS OF UNSPECIFIED SITE
997.2 PERIPHERAL VASCULAR COMPLICATIONS NEC

DX0325 Stenosis and obstruction
536.8 DYSPEPSIA&OTHER SPEC DISORDERS FUNCTION STOMACH
537.0 ACQUIRED HYPERTROPHIC PYLORIC STENOSIS
537.2 CHRONIC DUODENAL ILEUS
537.3 OTHER OBSTRUCTION OF DUODENUM
537.6 HOURGLASS STRICTURE OR STENOSIS OF STOMACH
537.9 UNSPECIFIED DISORDER OF STOMACH AND DUODENUM
560.81 INTESTINAL OR PERITONEAL ADHESIONS W/OBSTRUCTION
560.89 OTHER SPECIFIED INTESTINAL OBSTRUCTION
560.9 UNSPECIFIED INTESTINAL OBSTRUCTION

PR0362 Stenosis and obstruction
44.21 Dilation of pylorus by incision
44.22 Endoscopic dilation of pylorus
43220 Esophagoscopy, rigid or flexible; with balloon dilation (less than 30 mm diameter)
43226 Esophagoscopy, rigid or flexible; with insertion of guide wire followed by dilation over guide wire
43241 Upper gastrointestinal endoscopy including esophagus, stomach, and either the duodenum and/or jejunum as appropriate; with transendoscopic intraluminal tube or catheter placement
43245 Upper gastrointestinal endoscopy including esophagus, stomach, and either the duodenum and/or jejunum as appropriate; with dilation of gastric outlet for obstruction (eg, balloon, guide wire, bougie)
44615 Intestinal stricturoplasty (enterotomy and enterorrhaphy) with or without dilation, for intestinal obstruction

PR0363 Wound dehiscence
54.0 Incision of abdominal wall
54.11 Exploratory laparotomy
54.12 Reopening of recent laparotomy site
54.19 Other laparotomy
54.61 Reclosure of postoperative disruption of abdominal wall
12020 Treatment of superficial wound dehiscence; simple closure
12021 Treatment of superficial wound dehiscence; with packing

13160 Secondary closure of surgical wound or dehiscence, extensive or complicated
49002 Reopening of recent laparotomy

Code Set/Code Set Description/Procedure Code
PR0107 Professional encounter 99201
PR0107 Professional encounter 99202
PR0107 Professional encounter 99203
PR0107 Professional encounter 99204
PR0107 Professional encounter 99205
PR0107 Professional encounter 99211
PR0107 Professional encounter 99212
PR0107 Professional encounter 99213
PR0107 Professional encounter 99214
PR0107 Professional encounter 99215
PR0107 Professional encounter 99217
PR0107 Professional encounter 99218
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PR0107 Professional encounter 99404
PR0107 Professional encounter 99411
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PR0107 Professional encounter 99420
PR0107 Professional encounter 99429
PR0107 Professional encounter S0270
PR0107 Professional encounter S0271
PR0107 Professional encounter S0272
PR0107 Professional encounter S0273

Code Set/Code Set Description/Revenue Code
RV0107 Professional encounter 0510
RV0107 Professional encounter 0511
RV0107 Professional encounter 0512
RV0107 Professional encounter 0513
RV0107 Professional encounter 0514
RV0107 Professional encounter 0515
RV0107 Professional encounter 0516
RV0107 Professional encounter 0517
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RV0107 Professional encounter 0528
RV0107 Professional encounter 0529
RV0107 Professional encounter 0981
RV0107 Professional encounter 0983

2a.4 Denominator Statement (*Brief, text description of the denominator - target population being measured***):**
Patients 12 years and older hospitalized for bariatric surgery

2a.5 Target population gender: Female, Male
2a.6 Target population age range: 12 years or older at the end of the report period

2a.7 Denominator Time Window (*The time period in which cases are eligible for inclusion in the denominator***):**
24 months before the end of the report period through 180 days before the end of the report period (need 180 day period to look for complications)

2a.8 Denominator Details (*All information required to collect/calculate the denominator - the target population being measured - including all codes, logic, and definitions***):**
The following criteria must be met for denominator inclusion:
1. Age 12 years or older at the end of the report period
2. Patient must be continuously enrolled in medical benefits throughout the 24 months prior to the end of the report period (note: our standard enrollment break logic allows unlimited breaks of no more than 45 days and no breaks greater than 45 days)
3. Define the start date as the the earliest date of one of the following services, where there is a procedure for bariatric surgery (code set PR0004):
Facility Event – Confinement/Admission
Facility Event – Outpatient Surgery

PR0004 Bariatric surgery
43644 Laparoscopy, surgical, gastric restrictive procedure; with gastric bypass and Roux-en-Y gastroenterostomy (roux limb 150 cm or less)
43645 Laparoscopy, surgical, gastric restrictive procedure; with gastric bypass and small intestine reconstruction to limit absorption
43770 Laparoscopy, surgical, gastric restrictive procedure; placement of adjustable gastric restrictive device (eg, gastric band and subcutaneous port components)
43771 Laparoscopy, surgical, gastric restrictive procedure; revision of adjustable gastric restrictive device component only
43772 Laparoscopy, surgical, gastric restrictive procedure; removal of adjustable gastric restrictive device component only
43773 Laparoscopy, surgical, gastric restrictive procedure; removal and replacement of adjustable gastric restrictive device component only
43774 Laparoscopy, surgical, gastric restrictive procedure; removal of adjustable gastric restrictive device and subcutaneous port components
43842 Gastric restrictive procedure, without gastric bypass, for morbid obesity; vertical-banded gastroplasty
43843 Gastric restrictive procedure, without gastric bypass, for morbid obesity; other than vertical-banded gastroplasty
43845 Gastric restrictive procedure with partial gastrectomy, pylorus-preserving duodenoileostomy and ileoileostomy (50 to 100 cm common channel) to limit absorption (biliopancreatic diversion with duodenal switch)
43846 Gastric restrictive procedure, with gastric bypass for morbid obesity; with short limb (150 cm or less) Roux-en-Y gastroenterostomy

43847 Gastric restrictive procedure, with gastric bypass for morbid obesity; with small intestine reconstruction to limit absorption
43848 Revision, open, of gastric restrictive procedure for morbid obesity, other than adjustable gastric restrictive device (separate procedure)
43886 Gastric restrictive procedure, open; revision of subcutaneous port component only
43887 Gastric restrictive procedure, open; removal of subcutaneous port component only
43888 Gastric restrictive procedure, open; removal and replacement of subcutaneous port component only
S2082 Laparoscopy, surgical; gastric restrictive proc,

2a.9 Denominator Exclusions (*Brief text description of exclusions from the target population***):** none

2a.10 Denominator Exclusion Details (*All information required to collect exclusions to the denominator, including all codes, logic, and definitions***):**
not applicable

2a.11 Stratification Details/Variables (*All information required to stratify the measure including the stratification variables, all codes, logic, and definitions***):**
not applicable

2a.12-13 Risk Adjustment Type: no risk adjustment necessary

2a.14 Risk Adjustment Methodology/Variables (*List risk adjustment variables and describe conceptual models, statistical models, or other aspects of model or method***):**
not applicable

2a.15-17 Detailed risk model available Web page URL or attachment:

2a.18-19 Type of Score: rate/proportion
2a.20 Interpretation of Score: better quality = lower score
2a.21 Calculation Algorithm (*Describe the calculation of the measure as a flowchart or series of steps***):**
1. Assign a YES or NO result to member based on numerator response (i.e., was there a complication)
2. Rate = YES/[YES+NO]

2a.22 Describe the method for discriminating performance *(e.g., significance testing)***:**
Performance results can be compared to results from our geographically diverse 1 million member test database.

2a.23 Sampling (Survey) Methodology *If measure is based on a sample (or survey), provide instructions for obtaining the sample, conducting the survey and guidance on minimum sample size (response rate)*:
not applicable

2a.24 Data Source (*Check the source(s) for which the measure is specified and tested)*
Electronic adminstrative data/claims

2a.25 Data source/data collection instrument (*Identify the specific data source/data collection instrument, e.g. name of database, clinical registry, collection instrument, etc.***):**
ICD-9 codes, CPT codes, revenue codes

2a.26-28 Data source/data collection instrument reference web page URL or attachment:

2a.29-31 Data dictionary/code table web page URL or attachment:

2a.32-35 Level of Measurement/Analysis (*Check the level(s) for which the measure is specified and tested)*
Population: national, Population: states, Population: counties or cities, Population: regional/network, Clinicians: Individual, Program: Disease management, Clinicians: Group, Program: QIO, Can be measured at all levels

2a.36-37 Care Settings (*Check the setting(s) for which the measure is specified and tested)*
Ambulatory Care: Office, Ambulatory Care: Clinic, Ambulatory Care: Hospital Outpatient, Long term acute

care hospital, Hospital

2a.38-41 Clinical Services (*Healthcare services being measured, check all that apply*)
Clinicians: Physicians (MD/DO)

TESTING/ANALYSIS

2b. Reliability testing

2b.1 Data/sample *(description of data/sample and size)*: Our primary data sample included a geographically diverse 12 million member benchmark database. The database represents predominately a commercial population less than 65 year of age.

2b.2 Analytic Method *(type of reliability & rationale, method for testing)*:
Quality assurance of each measure is accomplished through the testing using multiple methods. Types of testing, data samples and volume vary to ensure the integrity of the measure. Rigorous development, analysis and testing processes are deployed for creating measure specifications. Software testing ensures the software is working as designed. Reliability and validity testing of measures is based on differing data samples and volume of members. National benchmarks are created on a large volume set of data representing members throughout the United States. All quality checks for all measure results must have consistent results and meet expected outcomes based on industry knowledge and experience.

Customer Acceptance Testing (CAT) is another important quality process. CAT ensures that the clinical measures are functioning as intended and that they generate accurate results for typical billing patterns. Using actual claims data, a team of business analysts, nurses, and health services researchers conduct a detailed analysis of the output. For each clinical condition in the product (e.g., Diabetes Mellitus, Coronary Artery Disease, etc.) there is a set of CAT data with at least 4000 members who satisfy the condition confirmation criteria. This data is extracted from a large (50+ million member) multi-payer benchmark database and contains inpatient, outpatient, pharmacy, and laboratory data. The testing team analyzes claims from individual members and compares the creation of denominators (target population), numerators, and exclusions from this manual review process to output results from the quality measure.

Regression testing is the part of CAT that verifies the reliability of the product across software releases. For a new release the testing team confirms that every unchanged measure produces the same results as in previous releases, accounting for systematic changes to the software (e.g., code updates, logic changes, etc). Regression testing is conducted at multiple points throughout the software development cycle.

2b.3 Testing Results *(reliability statistics, assessment of adequacy in the context of norms for the test conducted)*:
Within our data sample, we identified 5412 members that had bariatric surgery during the measurement period. When using a more limited list of complications (readmission, gastrointestinal perforation, post-operative wound infection or dehiscence, or pulmonary embolism), the 30-day complication rate was 5.64 percent. We then added other complications identified in articles published by Encinosa et.al. (2006, 2009) and analyzed our modified measure using a smaller database and looking for complications within 180 days of surgery - the subsequent 180-day complication rate was 18.2 percent. [Note: We will retest this modified measure using our standard 12 million member benchmark database with results available June 2010.]

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2c. Validity testing

2c.1 Data/sample *(description of data/sample and size)*: as above

2c.2 Analytic Method *(type of validity & rationale, method for testing)*:
Face Validity Testing (FVT) is the final testing step in the software release cycle. One million members are randomly selected from the large multi-payer benchmark database and their claims data is processed through the software. The Medical Director reviews the results to verify that:
1. Prevalence rates for a condition are comparable to nationally published rates
2. Compliance rates for a measure are comparable to the rates reported in the published literature or by other national sources (e.g. HEDIS). If no comparable sources are available, the rates are judged based on

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what is clinically reasonable.
In addition, all results are reviewed for face validity by members of an external physician clinical consultant panel.

Our claims-based measures have been validated using a chart review comparison process. This validation project is summarized below:
Goal: evaluate the reliability of claims-based measure results using chart review as the gold standard
Methods:
The charts of 100 members from two clinics in one city were reviewed. Results from our claims-based measures were compared to information present in the chart. During this process, 726 measures were evaluated.
Results:
The overall error rate was less than 5%. The error rate varied depending on the type of claim required for numerator compliance and is summarized as follows:
o The error rate was highest with medications, with an 11 percent error rate (2/18). From chart review, it was difficult to tell if this represented a real error, a medication sample was provided, or the prescription was never filled).
o The error rate was 4 percent (14/318) for measures that required labs for numerator compliance. It was noted that a claims-based measure approach sometimes identified labs that were missing in chart review.
o The error rate for office visit and specialty appointments was 2 percent (8/390). Of note, administrative claims was more likely than chart review to identify relevant office and specialty visits, particularly for appointments that occurred outside the clinic or network.
o Errors were found related to coding in claims data, not due to the claims-based measures or methodology. These errors were not quantified.

2c.3 **Testing Results** *(statistical results, assessment of adequacy in the context of norms for the test conducted)***:**
as above

2d. Exclusions Justified

2d.1 **Summary of Evidence supporting exclusion(s):**
not applicable

2d.2 **Citations for Evidence:**
not applicable

2d.3 **Data/sample** *(description of data/sample and size)***:** not applicable

2d.4 **Analytic Method** *(type analysis & rationale)***:**
not applicable

2d.5 **Testing Results** *(e.g., frequency, variability, sensitivity analyses)***:**
not applicable

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2e. Risk Adjustment for Outcomes/ Resource Use Measures

2e.1 **Data/sample** *(description of data/sample and size)***:** not applicable

2e.2 **Analytic Method** *(type of risk adjustment, analysis, & rationale)***:**
not applicable

2e.3 **Testing Results** *(risk model performance metrics)***:**
not applicable

2e.4 **If outcome or resource use measure is not risk adjusted, provide rationale:** The purpose of this measure is to identify all patients who have evidence of specific complications within 180 days of bariatric

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surgery.	
2f. Identification of Meaningful Differences in Performance **2f.1 Data/sample from Testing or Current Use** *(description of data/sample and size)*: as above **2f.2 Methods to identify statistically significant and practically/meaningfully differences in performance** *(type of analysis & rationale)*: as above **2f.3 Provide Measure Scores from Testing or Current Use** *(description of scores, e.g., distribution by quartile, mean, median, SD, etc.; identification of statistically significant and meaningfully differences in performance)*: as above	**2f** C☐ P☐ M☐ N☐
2g. Comparability of Multiple Data Sources/Methods **2g.1 Data/sample** *(description of data/sample and size)*: as above **2g.2 Analytic Method** *(type of analysis & rationale)*: as above **2g.3 Testing Results** *(e.g., correlation statistics, comparison of rankings)*: as above	**2g** C☐ P☐ M☐ N☐ NA☐
2h. Disparities in Care **2h.1 If measure is stratified, provide stratified results** *(scores by stratified categories/cohorts)*: **2h.2 If disparities have been reported/identified, but measure is not specified to detect disparities, provide follow-up plans:**	**2h** C☐ P☐ M☐ N☐ NA☐
TAP/Workgroup: What are the strengths and weaknesses in relation to the sub-criteria **for** *Scientific Acceptability of Measure Properties?*	**2**
Steering Committee: Overall, to what extent was the criterion, *Scientific Acceptability of Measure Properties*, **met?** **Rationale:**	*2* C☐ P☐ M☐ N☐
3. USABILITY	
Extent to which intended audiences (e.g., consumers, purchasers, providers, policy makers) can understand the results of the measure and are likely to find them useful for decision making. (evaluation criteria)	Eval Rating
3a. Meaningful, Understandable, and Useful Information **3a.1 Current Use:** not in use but testing completed **3a.2 Use in a public reporting initiative (disclosure of performance results to the public at large)** (*If used in a public reporting initiative, provide name of initiative(s), locations, Web page URL(s). If not publicly reported, state the plans to achieve public reporting within 3 years*): **3a.3 If used in other programs/initiatives (***If used in quality improvement or other programs/initiatives, name of initiative(s), locations, Web page URL(s). If not used for QI, state the plans to achieve use for QI within 3 years***):** This measure will soon be released. It is similar to a measure that identified complications within 30 days of bariatric surgery. Health plans, physicians (individuals and groups), care management, and other vendors/customers are using the 30-day complication rate measure at a national level. Some are using this data in public reporting initiatives.	**3a** C☐ P☐ M☐ N☐

Testing of Interpretability (*Testing that demonstrates the results are understood by the potential users for public reporting and quality improvement*) **3a.4 Data/sample** *(description of data/sample and size)*: Results are summarized and reported by users/customers depending on their business need. Therefore, this is no single public reporting format. **3a.5 Methods** *(e.g., focus group, survey, QI project)*: **3a.6 Results** *(qualitative and/or quantitative results and conclusions)*:	
3b/3c. Relation to other NQF-endorsed measures **3b.1 NQF # and Title of similar or related measures:**	
(for NQF staff use) **Notes on similar/related endorsed or submitted measures:**	
3b. Harmonization If this measure is related to measure(s) already endorsed by NQF (e.g., same topic, but different target population/setting/data source or different topic but same target population): **3b.2 Are the measure specifications harmonized? If not, why?**	**3b** C☐ P☐ M☐ N☐ NA☐
3c. Distinctive or Additive Value **3c.1 Describe the distinctive, improved, or additive value this measure provides to existing NQF-endorsed measures:** **5.1 Competing Measures If this measure is similar to measure(s) already endorsed by NQF (i.e., on the same topic and the same target population), describe why it is a more valid or efficient way to measure quality:**	**3c** C☐ P☐ M☐ N☐
TAP/Workgroup: What are the strengths and weaknesses in relation to the sub-criteria **for** *Usability?*	**3**
Steering Committee: Overall, to what extent was the criterion, *Usability*, **met?** **Rationale:**	**3** C☐ P☐ M☐ N☐
4. FEASIBILITY	
Extent to which the required data are readily available, retrievable without undue burden, and can be implemented for performance measurement. (evaluation criteria)	Eval Rating
4a. Data Generated as a Byproduct of Care Processes **4a.1-2 How are the data elements that are needed to compute measure scores generated?** data generated as byproduct of care processes during delivery, coding/abstraction performed by someone other than person obtaining original information,	**4a** C☐ P☐ M☐ N☐
4b. Electronic Sources **4b.1 Are all the data elements available electronically?** (*elements that are needed to compute measure scores are in defined, computer-readable fields, e.g., electronic health record, electronic claims*) Yes **4b.2 If not, specify the near-term path to achieve electronic capture by most providers.**	**4b** C☐ P☐ M☐ N☐

4c. Exclusions 4c.1 **Do the specified exclusions require additional data sources beyond what is required for the numerator and denominator specifications?** No 4c.2 **If yes, provide justification.**	**4c** C☐ P☐ M☐ N☐ NA☐
4d. Susceptibility to Inaccuracies, Errors, or Unintended Consequences 4d.1 **Identify susceptibility to inaccuracies, errors, or unintended consequences of the measure and describe how these potential problems could be audited. If audited, provide results.** no significant errors are anticipated	**4d** C☐ P☐ M☐ N☐
4e. Data Collection Strategy/Implementation 4e.1 **Describe what you have learned/modified as a result of testing and/or operational use of the measure regarding data collection, availability of data/missing data, timing/frequency of data collection, patient confidentiality, time/cost of data collection, other feasibility/ implementation issues:** As noted earlier, our original measure developed approximately three years ago used a more limited list of complications (readmission, gastrointestinal perforation, post-operative wound infection or dehiscence, or pulmonary embolism) and measured complications within 30 days of the surgery; the 30-day complication rate was 5.64 percent. More recently, we modified this measure to include additional complications identified in the articles published by Encinosa et.al. (2006, 2009) and modified logic to identify complications within 180 days of surgery. Dr. Encinosa kindly provided his ICD-9 and CPT complication code list for our use. We have analyzed our modified measure using a smaller database; the subsequent 180-day complication rate was 18.2 percent. This rate is more consistent with the rates reported by Encinosa. We will retest this modified measure using our standard 12 million member benchmark database with results available June 2010. We have not experienced any problems with the measure related to data collection, data integrity, or overall feasibility. 4e.2 **Costs to implement the measure** (*costs of data collection, fees associated with proprietary measures*)**:** 4e.3 **Evidence for costs:** 4e.4 **Business case documentation:**	**4e** C☐ P☐ M☐ N☐
TAP/Workgroup: What are the strengths and weaknesses in relation to the sub-criteria **for** *Feasibility*?	**4**
Steering Committee: Overall, to what extent was the criterion, *Feasibility***, met?** **Rationale:**	**4** C☐ P☐ M☐ N☐
RECOMMENDATION	
(for NQF staff use) **Check if measure is untested and only eligible for time-limited endorsement.**	**Time-limited** ☐
Steering Committee: Do you recommend for endorsement?	**Y**☐

Comments: N☐ A☐

CONTACT INFORMATION

Co.1 **Measure Steward (Intellectual Property Owner)**
Co.1 **Organization**
Ingenix | 12125 Technology Drive, MN002-0135 | Eden Prairie | Minnesota | 55344

Co.2 **Point of Contact**
Kay | Schwebke | kay.schwebke@ingenix.com | 952-833-7154

Measure Developer If different from Measure Steward
Co.3 **Organization**
Ingenix | 12125 Technology Drive, MN002-0135 | Eden Prairie | Minnesota | 55344

Co.4 **Point of Contact**
Kay | Schwebke | kay.schwebke@ingenix.com | 952-833-7154

Co.5 **Submitter If different from Measure Steward POC**
Kay | Schwebke | kay.schwebke@ingenix.com | 952-833-7154

Co.6 **Additional organizations that sponsored/participated in measure development**

ADDITIONAL INFORMATION

Workgroup/Expert Panel involved in measure development
Ad.1 **Provide a list of sponsoring organizations and workgroup/panel members' names and organizations. Describe the members' role in measure development.**
Alexander, Beth Pharm D, BCPS Assistant Professor, Augsburg College
Ayenew, Woubeshet, MD Hennepin Faculty Associates; Hennepin County Medical Center
Becker, Keith, MD Fairview Medical Center
Betcher, Susan, MD Allina Medical Clinic
Bruer, Paul, MD Comprehensive Ophthamology, LLC
Capecchi, Joseph, MD Allina Medical Clinic
Giesler, Janell, MD Allina Medical Clinic
Grabowski, Carol, MD Allina Medical Clinic
Hansen, Calvin, MD Iowa Health Physicians
Hargrove, Jody, MD Arthritis and Rheumatology Consultants
Hermann, Richard, MD Tufts - New England Medical Center
Jemming, Brian, Pharm D CentraCare Health System
Kohen, Jeffrey, MD Veterans Affairs Medical Center
McCarthy, Teresa, MD University of Minnesota, Department of Family Medicine & Community Health
McEvoy, Charlene, MD, MPH HealthPartners & HealthPartners Research Foundation; Assistant Professor of Medicine, University of Minnesota
McGee, Deanna, Pharm D, BCPS Retail Pharmacy
Ogle, Kathleen, MD Hennepin Faculty Associates; Hennepin County Medical Center: Assistant Professor of Medicine, University of Minnesota Medical School
Peter, Kathleen, MD Park Nicollet Medical Center
Pieper-Bigelow, Christina, MD Allina Medical Clinic
Redmon, Bruce, MD University of Minnesota Physicians
Scharpf, Steven, MD Mountain Valleys Health Centers
Weitz, Carol, MD Independent

This external consultant panel is responsible for assisting with the literature review, developing and maintaining measures, developing and maintaining code sets, and reviewing test results.

Ad.2 **If adapted, provide name of original measure:**
Ad.3-5 **If adapted, provide original specifications URL or attachment**

Measure Developer/Steward Updates and Ongoing Maintenance
Ad.6 **Year the measure was first released:** 2009
Ad.7 **Month and Year of most recent revision:** 2009-09
Ad.8 **What is your frequency for review/update of this measure?** every three years at minimum - this measure will be updated in 2011
Ad.9 **When is the next scheduled review/update for this measure?** 2011-08

Ad.10 **Copyright statement/disclaimers:**

Ad.11 -13 **Additional Information web page URL or attachment:**

Date of Submission (*MM/DD/YY*)**:** 10/29/2009