

**2018 Metabolic and Bariatric Surgery Accreditation and Quality Improvement  
Program (MBSAQIP) Qualified Clinical Data Registry (QCDR)  
Non-MIPS and MIPS Measures Specifications**

**1. Measure ID # MBSAQIP9**

**Risk standardized rate of patients who experienced a postoperative complication following a primary Laparoscopic Roux-en-Y Gastric Bypass or Laparoscopic Sleeve Gastrectomy operation**

**National Quality Strategy (NQS) Domain:** Effective Clinical Care

**Measure Type (Composite/Outcome/Process):** Composite

**Outcome or High Priority:** N/A

**Inverse Measure (Yes/No):** Yes

**Proportional Measure (Yes/No):** Yes

**DESCRIPTION:**

Primary Laparoscopic Roux-en-Y Gastric Bypass or Laparoscopic Sleeve Gastrectomy patients who experienced a postoperative complication

**DENOMINATOR:**

All patients undergoing a primary Laparoscopic Roux-en-Y Gastric Bypass or Laparoscopic Sleeve Gastrectomy

**DENOMINATOR EXCLUSIONS:** None

**NUMERATOR:**

Primary Laparoscopic Roux-en-Y Gastric Bypass or Laparoscopic Sleeve Gastrectomy patients who meet any of the following 3 criteria:

- (1) Blood transfusion within 72 hours of surgery start time
- (2) Surgical Site Infection (SSI) within 30 days of surgery
- (3) Urinary Tract Infection (UTI) within 30 days of surgery

**NUMERATOR EXCLUSIONS:**

Patients will be excluded from the numerator if only numerator criteria (2) or (3) are met and they have PATOS (Present at Time of Surgery) modifiers for each SSI or UTI complication.

## **RATIONALE:**

Post-operative overall complication rate is reflective of harm to patients, and thus it is important to measure and report. Until a decade ago, the overall complication rate for bariatric procedures was as high as 30% (1). More recent data report improved outcomes; however, the overall rate of complications remains high. A study of multi-institutional ACS- NSQIP 2005-2006 data for laparoscopic and open roux en y gastric bypass of 5,777 patients showed overall 30-day complication rates of almost 7% for laparoscopic and 13% for open bariatric procedures, with 3.4% and 7.4% major complications, respectively (2). A study involving 25 hospitals with 9895 patients who underwent either sleeve gastrectomy or gastric bypass during 2006-2009 showed an almost 6% 30-day complication rate with sleeve gastrectomy, and 10.3% complication rate with gastric bypass (3). Serious life threatening or permanently disabling complications, such as pulmonary embolism or respiratory failure, were reported at 2.2% and 3.6% for sleeve gastrectomy and gastric bypass respectively. A study of ACS-Bariatric Surgery Center Network (BSCN) accreditation program data from 109 hospitals for 28,616 patients from 2007-2010 undergoing bariatric operations, with 16,423 undergoing laparoscopic sleeve gastrectomy or laparoscopic or open gastric bypass showed 30-day overall complication rates of 5.6% for laparoscopic sleeve gastrectomy, 5.9% for laparoscopic gastric bypass, and 15% for open gastric bypass (4). Post-operative complications result in disability, increased lengths of stay, and increased hospital costs.

## **CLINICAL RECOMMENDATION STATEMENTS:**

Several risk factors for postoperative complications following bariatric surgery have been identified for patients undergoing bariatric surgery. Studies have consistently shown that age, type of bariatric surgery, higher BMI, cardiac and pulmonary disease, prior VTE, functional dependence, and limited mobility are risk factors for post-operative complications (5, 6, 7). These should be carefully monitored in patients undergoing bariatric surgery. Patients with cardiopulmonary disease should be optimized pre-operatively; those with a history of VTE should be given more aggressive chemoprophylaxis post-operatively.

## **References:**

1. Schauer PR, Ikramuddin S, Gourash W, Ramanathan R, Luketich J. Outcomes after laparoscopic Roux-en-Y gastric bypass for morbid obesity. *Ann. Surg.* 232(4), 515–529 (2000).
2. Lancaster RT, Hutter MM. Bands and bypasses: 30-day morbidity and mortality of bariatric surgical procedures as assessed by prospective, multi-center, risk-adjusted ACS- NSQIP data. *Surg. Endosc.* 22(12), 2554–2563 (2008).
3. Birkmeyer N.J., Dimick J.B., Share D., Hawasli A., English W.J., Genaw J., et al: Hospital complication rates with bariatric surgery in Michigan. *JAMA* 304. 435-442 (2010).
4. Hutter MM, Schirmer BD, Jones DB, et al. First report from the American College of Surgeons Bariatric Surgery Center Network: laparoscopic sleeve gastrectomy has morbidity and effectiveness positioned between the band and the bypass. *Annals of Surgery*, 2011 Sep;254(3):410-20.
5. Jonathan F. Finks, Kerry L. Kole, Panduranga R. et al. Predicting Risk for Serious Complications With Bariatric Surgery: Results from the Michigan Bariatric Surgery Collaborative. *Annals of Surgery*, Volume 254, Number 4, October 2011
6. Gupta PK, Franck C, MillerWJ, et al. Development and validation of a bariatric surgery morbidity risk calculator using the prospective, multicenter NSQIP dataset. *J Am Coll Surg.* 212:301–309.
7. Turner PL, Saager L, Dalton J, et al. A Nomogram for predicting surgical complications in bariatric surgery patients. *Obes Surg.* 2011;21:655–662.

**2. Measure ID # MBSAQIP10**

**Risk standardized rate of patients who experienced a postoperative escalation in care event following a primary Laparoscopic Roux-en-Y Gastric Bypass or Laparoscopic Sleeve Gastrectomy operation**

**National Quality Strategy (NQS) Domain:** Effective Clinical Care

**Measure Type (Composite/Outcome/Process):** Composite

**Outcome or High Priority:** Outcome

**Inverse Measure (Yes/No):** Yes

**Proportional Measure (Yes/No):** Yes

**DESCRIPTION:**

Primary Laparoscopic Roux-en-Y Gastric Bypass or Laparoscopic Sleeve Gastrectomy patients who experienced a postoperative escalation in care event

**DENOMINATOR:**

All patients undergoing a primary Laparoscopic Roux-en-Y Gastric Bypass or Laparoscopic Sleeve Gastrectomy

**DENOMINATOR EXCLUSIONS:** None

**NUMERATOR:**

Primary Laparoscopic Roux-en-Y Gastric Bypass or Laparoscopic Sleeve Gastrectomy patients who meet any of the following 4 criteria:

- (1) Readmission within 30 days of surgery
- (2) Reoperation within 30 days of surgery
- (3) Intervention within 30 days of surgery
- (4) Admission to ICU within 30 days of surgery

**NUMERATOR EXCLUSIONS:** None

**RATIONALE:**

Reoperations significantly increase morbidity and mortality in patients undergoing bariatric surgery, as well as operating room and hospital costs, and are thus important to measure and report. A study utilizing ACS-NSQIP data for 28,241 patients undergoing bariatric surgery during 2007-2009, of which 18,671 patients underwent laparoscopic gastric bypass, revealed a 2.9% reoperation rate within 30 days for those who underwent laparoscopic gastric bypass as the index procedure (1). A study of multi-institutional ACS-NSQIP 2005-2006 data for laparoscopic and open roux en y gastric bypass of 5,777 patients showed 30-day reoperation rates of 3.6% for laparoscopic and 5.0% for open bariatric

procedures (2). A study involving 25 hospitals with 9895 patients who underwent either sleeve gastrectomy or gastric bypass during 2006-2009 showed a 0.6% 30-day reoperation rate with sleeve gastrectomy and 2.5% with gastric bypass (3). Reoperations are undertaken for leaks and perforations, severe wound infections, major bleeding, and strictures. A study of ACS-Bariatric Surgery Center Network (BSCN) accreditation program data from 109 hospitals for 28,616 patients from 2007-2010 undergoing bariatric operations, with 16,423 undergoing laparoscopic sleeve gastrectomy or laparoscopic or open gastric bypass showed 30-day reoperation rates of 3% for laparoscopic sleeve gastrectomy, and 5% for laparoscopic and open gastric bypass (4). The ACS-NSQIP data for 28,241 patients undergoing bariatric surgery revealed an overall significant increase in morbidity (40% vs. 3.3%) and mortality (2.2% vs. 0.01%) for those undergoing reoperations (1).

#### **CLINICAL RECOMMENDATION STATEMENTS:**

Several risk factors have been identified that increase the likelihood of requiring reoperation following bariatric surgery. Patient with bleeding disorders (OR 2.1), low pre-operative serum albumin (OR 0.8), hemodialysis requirement (OR 9.2), or those with increased anesthesia time (OR 1.0) have an increased risk of reoperations (1). For patients with low albumin levels preoperatively, nutritional counseling can be undertaken prior to the procedure. Patients can also be counseled as to increased risk of reoperation and morbidity with these risk factors to ensure a better understanding of the risks of the planned procedure for purposes of informed consent.

#### **References:**

1. Nandipati K, Lin E, Husain F, et al. Factors predicting the increased risk for return to the operating room in bariatric patients: a NSQIP database study. *Surg Endosc.* 2013 Apr;27(4):1172-7.
2. Lancaster RT, Hutter MM. Bands and bypasses: 30-day morbidity and mortality of bariatric surgical procedures as assessed by prospective, multi-center, risk-adjusted ACS- NSQIP data. *Surg. Endosc.* 22(12), 2554–2563 (2008).
3. Birkmeyer N.J., Dimick J.B., Share D., Hawasli A., English W.J., Genaw J., et al: Hospital complication rates with bariatric surgery in Michigan. *JAMA* 304. 435-442 (2010).
4. Hutter MM, Schirmer BD, Jones DB, et al. First report from the American College of Surgeons Bariatric Surgery Center Network: laparoscopic sleeve gastrectomy has morbidity and effectiveness positioned between the band and the bypass. *Ann Surg.* 2011 Sep; 254(3):410-20.

### **3. Measure ID # MBSAQIP11**

**Risk standardized rate of patients who experienced a pulmonary complication following a primary Laparoscopic Roux-en-Y Gastric Bypass or Laparoscopic Sleeve Gastrectomy**

**National Quality Strategy (NQS) Domain:** Effective Clinical Care

**Measure Type (Composite/Outcome/Process):** Composite

**Outcome or High Priority:** Outcome

**Inverse Measure (Yes/No):** Yes

**Proportional Measure (Yes/No):** Yes

**DESCRIPTION:**

Primary Laparoscopic Roux-en-Y Gastric Bypass or Laparoscopic Sleeve Gastrectomy patients who experienced a pulmonary complication

**DENOMINATOR:**

All patients undergoing a primary Laparoscopic Roux-en-Y Gastric Bypass or Laparoscopic Sleeve Gastrectomy

**DENOMINATOR EXCLUSIONS:** None

**NUMERATOR:**

Primary Laparoscopic Roux-en-Y Gastric Bypass or Laparoscopic Sleeve Gastrectomy patients who meet any of the following 4 criteria:

- (1) Pneumonia within 30 days of surgery
- (2) Unplanned Intubation within 30 days of surgery
- (3) Pulmonary Embolism within 30 days of surgery
- (4) On Ventilator > 48 Hours within 30 days of surgery

**NUMERATOR EXCLUSIONS:**

Patients will be excluded from the numerator if only numerator criteria (1) or (4) are met and they have PATOS (Present At Time Of Surgery) modifiers for each pneumonia or ventilator > 48 hours occurrences

**4. Measure ID # MBSAQIP8**

**Risk standardized rate of patients who experienced an extended length of stay (> 3 days) following a primary Laparoscopic Roux-en-Y Gastric Bypass or Laparoscopic Sleeve Gastrectomy operation**

**National Quality Strategy (NQS) Domain:** Effective Clinical Care

**Measure Type (Composite/Outcome/Process):** Outcome

**Outcome or High Priority:** Outcome

**Inverse Measure (Yes/No):** Yes

**Proportional Measure (Yes/No):** Yes

**DESCRIPTION:**

Primary Laparoscopic Roux-en-Y Gastric Bypass or Laparoscopic Sleeve Gastrectomy patients who experienced an extended length of stay (> 3 days)

**DENOMINATOR:**

All patients undergoing a primary Laparoscopic Roux-en-Y Gastric Bypass or Laparoscopic Sleeve Gastrectomy

**DENOMINATOR EXCLUSIONS:** None

**NUMERATOR:**

Primary Laparoscopic Roux-en-Y Gastric Bypass or Laparoscopic Sleeve Gastrectomy patients who experienced an extended length of stay (> 3 days)

**NUMERATOR EXCLUSIONS:** None

**RATIONALE:**

Extended length of stay (LOS) can be a marker of post-operative complications and is therefore important to measure and report. An analysis of current data suggests that only 1.5% of patients have a LOS greater than 7 days. A study of multi-institutional ACS-NSQIP 2005-2006 data for laparoscopic and open roux en y gastric bypass of 5,777 patients reported median LOS 2.0 days for laparoscopic and 3.0 days for open gastric bypass (1). A single center study of 2,823 patients that underwent bariatric procedures during 2003-2006 found LOS >3 days at the initial operation increased the odds of unplanned readmissions within 30 days (2). A study of 1,939 patients undergoing a variety of bariatric procedures and followed for one year post-operatively found that the mean initial LOS for the 265 readmitted patients was 0.5 days longer than the LOS for those not readmitted. The mean length of stay at readmission was 3 days (3). A study of 100 patients at a single institution who underwent laparoscopic sleeve gastrectomy between 2008 and 2011 showed a median LOS of 3.1 days (4).

**CLINICAL RECOMMENDATION STATEMENTS:**

Extended initial length of stay is a risk factor for readmission later in the post-operative course. Patients who have a longer initial length of stay may benefit from additional follow up visits to prevent morbidity from complications and costly readmissions.

**References:**

1. Lancaster RT, Hutter MM. Bands and bypasses: 30-day morbidity and mortality of bariatric surgical procedures as assessed by prospective, multi-center, risk-adjusted ACS- NSQIP data. *Surg. Endosc.* 22(12), 2554–2563 (2008).
2. Saunders JK, Ballantyne GH, Belsley S, et al. 30-day readmission rates at a high volume bariatric surgery center: laparoscopic adjustable gastric banding, laparoscopic gastric bypass, and vertical banded gastroplasty-Roux-en-Y gastric bypass. *Obes Surg.* 2007 Sep; 17(9):1171-7.
3. Saunders J, Ballantyne GH, Belsley S, et al. One-year readmission rates at a high volume bariatric surgery center: laparoscopic adjustable gastric banding, laparoscopic gastric bypass, and vertical banded gastroplasty-Roux-en-Y gastric bypass. *Obes Surg.* 2008 Oct; 18(10):1233-40.
4. Sucandy I, Antanavicius G, Bonanni F Jr. Outcome analysis of early laparoscopic sleeve gastrectomy experience. *JSLs.* 2013 Oct-Dec;17(4):602-6.

**5. Measure ID # MBSAQIP7**

**Risk standardized rate of patients who experienced postoperative nausea, vomiting or fluid/electrolyte/nutritional depletion following a primary Laparoscopic Roux-en-Y Gastric Bypass or Laparoscopic Sleeve Gastrectomy operation**

**National Quality Strategy (NQS) Domain:** Effective Clinical Care

**Measure Type (Composite/Outcome/Process):** Outcome

**Outcome or High Priority:** N/A

**Inverse Measure (Yes/No):** Yes

**Proportional Measure (Yes/No):** Yes

**DESCRIPTION:**

Primary Laparoscopic Roux-en-Y Gastric Bypass or Laparoscopic Sleeve Gastrectomy patients who experienced postoperative nausea, vomiting or fluid/electrolyte/nutritional depletion

**DENOMINATOR:**

All patients undergoing a primary Laparoscopic Roux-en-Y Gastric Bypass or Laparoscopic Sleeve Gastrectomy

**DENOMINATOR EXCLUSIONS:** NONE

**NUMERATOR:**

Primary Laparoscopic Roux-en-Y Gastric Bypass or Laparoscopic Sleeve Gastrectomy patients who experienced postoperative nausea, vomiting or fluid/electrolyte/nutritional depletion within 30 days of surgery

**NUMERATOR EXCLUSIONS:** NONE

**RATIONALE:**

Post-operative nausea, vomiting, and fluid/electrolyte/nutritional depletion rate affects the post-operative recovery for patients and thus it is important to measure and report. A study of ACS-Bariatric Surgery Center Network (BSCN) accreditation program data from 109 hospitals for 28,616 patients from 2007-2010 undergoing bariatric operations, with 16,423 undergoing laparoscopic sleeve gastrectomy or laparoscopic or open gastric bypass showed 30- day fluid, electrolyte, and nutritional depletion rates of 1.9% for laparoscopic sleeve gastrectomy, 1.5% for laparoscopic gastric bypass, and 2.1% for open gastric bypass (1). In a retrospective review of 1222 patients who underwent gastric bypass during 2004-2007, of the 127 emergency room visits, reoperations, and readmissions within 30 days, almost 40% were due to nausea, vomiting, and dehydration (2). These symptoms were also the most common complaint, at 26%, for those patients who presented to an emergency room within the first 90 days of a bariatric procedure. These symptoms can also be indicative of post-operative ileus or small bowel obstruction (SBO). A study involving 25 hospitals with 9895 patients who underwent either sleeve gastrectomy or gastric bypass during 2006-2009 reported 30-day ileus/SBO in 0.8% of gastric bypass operations, and 0.1% of sleeve gastrectomy procedures (3).

**CLINICAL RECOMMENDATION STATEMENTS:**

Clinical practice guidelines exist to address post-operative fluid/electrolyte/nutritional needs for bariatric patients (4). Those could be adhered to as clinically appropriate to reduce these post-operative conditions for an improved patient care and to reduce costly readmissions. Post-operative nausea and vomiting should be addressed early and patient counseling could be undertaken to avoid dehydration and electrolyte deficiencies.

**References:**

- 1.Hutter MM, Schirmer BD, Jones DB, et al. First report from the American College of Surgeons Bariatric Surgery Center Network: laparoscopic sleeve gastrectomy has morbidity and effectiveness positioned between the band and the bypass. Ann Surg. 2011 Sep;254(3):410-20
2. Kellogg, TA, Swan T, Leslie DA, et al. Patterns of readmission and reoperation within 90 days after Roux-en-Y gastric bypass. Surg Obes Relat Dis. 2009 Jul-Aug;5(4):416-23.
3. Birkmeyer N.J., Dimick J.B., Share D., Hawasli A., English W.J., Genaw J., et al: Hospital complication rates with bariatric surgery in Michigan. JAMA 304. 435-442 (2010).
4. Mechanick JI, Youdim A, Jones DB, et al. Clinical practice guidelines for the perioperative nutritional, metabolic, and nonsurgical support of the bariatric surgery patient--2013 update: cosponsored by American Association of Clinical Endocrinologists, the Obesity Society, and American Society for Metabolic & Bariatric Surgery. Surg Obes Relat Dis. 2013 Mar-Apr;9(2):159-91.

**6. Quality ID # 354  
Anastomotic Leak Intervention\***

**National Quality Strategy (NQS) Domain:** Patient Safety

**Measure Type (Composite/Outcome/Process):** Outcome

**Outcome or High Priority:** Outcome

**Inverse Measure (Yes/No):** Yes

**Proportional Measure (Yes/No):** Yes

**DESCRIPTION:**

Percentage of patients aged 18 years and older who required an anastomotic leak intervention following primary gastric bypass surgery

**DENOMINATOR:**

Patients aged 18 years and older undergoing primary gastric bypass

**NUMERATOR:**

Intervention (via return to operating room, interventional radiology, or interventional gastroenterology) for presence of leak of endoluminal contents (such as air, fluid, GI contents, or contrast material) through an anastomosis. The presence of an infection/abscess thought to be related to an anastomosis, even if the leak cannot be definitively identified as visualized during an operation, or by contrast extravasation would also be considered an anastomotic leak.



**RATIONALE:**

This is an adverse surgical outcome, which is often a preventable cause of harm, thus it is important to measure and report. It is feasible to collect the data and produces reliable and valid results about the quality of care. It is useful and understandable to stakeholders. As highlighted earlier, this measure was developed in a collaborative effort by the American College of Surgeons and the American Board of Surgery. This measure addresses the National Quality Strategy Priorities, and was identified by an expert panel of physician providers to be a critical outcome for this procedure. This measure addresses a high-impact condition as it is one of the most common procedures performed in the U.S. The measure aligns well with the intended use. The care settings include Acute Care Facilities/Hospitals. Data are being collected in a clinical registry that has been in existence for over 5 years, with over 4000 current users. Thus, we are requesting consideration of this measure in the “Registry Reporting” option. The level of analysis is the clinician/individual. All populations are included, except children. The measure allows measurement across the person-centered episode of care out to 30 days after the procedure whether an inpatient, outpatient, or readmitted. The measure addresses disparities in care. The risk adjustment is performed with a parsimonious dataset and aims to allow efficient data collection resources and data reporting. Measures have been harmonized when possible.

**CLINICAL RECOMMENDATION STATEMENTS:**

A modified-Delphi methodology using an expert panel of surgeons who are Directors of the American Board of Surgery identified this to be a critical outcome for this surgical procedure (Surgeon Specific Registry Report on Project for ABS MOC Part IV. Unpublished study by the American College of Surgeons in conjunction with the American Board of Surgery, 2011).

**7. Quality ID # 356  
Unplanned Hospital Readmission within 30 Days of the Principal Procedure\***

**National Quality Strategy (NQS) Domain:** Effective Clinical Care

**Measure Type (Composite/Outcome/Process):** Outcome

**Outcome or High Priority:** Outcome

**Inverse Measure (Yes/No):** Yes

**Proportional Measure (Yes/No):** Yes

**DESCRIPTION:**

Percentage of patients aged 18 years and older who had an unplanned hospital readmission within 30 days of principal procedure

**DENOMINATOR:**

Patients aged 18 years and older undergoing a surgical procedure

**NUMERATOR:**

Inpatient readmission to the same hospital for any reason or an outside hospital (if known to the surgeon), within 30 days of the principal surgical procedure Numerator Instructions:

INVERSE MEASURE - A lower calculated performance rate for this measure indicates better clinical care or control. The “Performance Not Met” numerator option for this measure is the representation of the better clinical quality or control. Reporting that numerator option will produce a performance rate that trends closer to 0%, as quality increases. For inverse measures a rate of 100% means all of the denominator eligible patients did not receive the appropriate care or were not in proper control.

Numerator Options: Performance Met: Unplanned hospital readmission within 30 days of principal procedure (G9310) OR Performance Not Met: No unplanned hospital readmission within 30 days of principal procedure (G9309)

**RATIONALE:**

This is an adverse surgical outcome, which is often a preventable cause of harm, thus it is important to measure and report. It is feasible to collect the data and produces reliable and valid results about the quality of care. It is useful and understandable to stakeholders. As highlighted earlier, this measure was developed in a collaborative effort by the American College of Surgeons and the American Board of Surgery. This measure addresses the National Quality Strategy Priorities, and was identified by an expert panel of physician providers to be a critical outcome for this procedure. This measure addresses a high-impact condition as it is one of the most common procedures performed in the U.S. The measure aligns well with the intended use. The care settings include Acute Care Facilities/Hospitals. Data are being collected in a clinical registry that has been in existence for over 5 years, with over 4000 current users. Thus, we are requesting consideration of this measure in the “Registry Reporting” option. The level of analysis is the clinician/individual. All populations are included, except children. The measure allows measurement across the person-centered episode of care out to 30 days after the procedure whether an inpatient, outpatient, or readmitted. The measure addresses disparities in care. The risk adjustment is performed with a parsimonious dataset and aims to allow efficient data collection resources and data reporting. Measures have been harmonized when possible.

**CLINICAL RECOMMENDATION STATEMENTS:**

A modified-Delphi methodology using an expert panel of surgeons who are Directors of the American Board of Surgery identified this to be a critical outcome for this surgical procedure (Surgeon Specific Registry Report on Project for ABS MOC Part IV. Unpublished study by the American College of Surgeons in conjunction with the American Board of Surgery, 2011).

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\* **Measure 6** - Quality ID #354 and **Measure 7** - Quality ID # 356 are MIPS Quality Measures. For more information, please see Claims Registry Measures 351-400 available [here:](https://www.cms.gov/Medicare/Quality-Payment-Program/Resource-Library/2018-Resources.html)  
<https://www.cms.gov/Medicare/Quality-Payment-Program/Resource-Library/2018-Resources.html>

**Measures 1-5** are non-MIPS quality measures developed by the MBSAQIP and approved by CMS.