

Six-Month Indication-Specific Outcomes After Sleeve Gastrectomy to Roux-en-Y Gastric Bypass Conversion: A Nationwide Analysis of the MBSAQIP Database

Jorge Urbina

Mayo Clinic in Florida

Michael Kachmar

Tampa General Hospital

Christopher DuCoin

Tampa General Hospital

Lalith Kondapalli

Tampa General Hospital

Salvatore Docimo

Tampa General Hospital

Benjamin Clapp

bclappmd@gmail.com

El Paso Bariatric Surgery

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Abstract

Introduction

Conversion of sleeve gastrectomy (SG) to Roux-en-Y gastric bypass (RYGB) is performed for gastroesophageal reflux disease (GERD), recurrent weight gain, and suboptimal clinical response. We compared early safety, weight loss, and healthcare utilization across indications.

Methods

We retrospectively analyzed adults undergoing SG-to-RYGB conversion in the 2023 MBSAQIP Participant Use File linked to the Long-Term Follow-Up file. Patients were grouped by indication as GERD, recurrent weight gain, suboptimal clinical response, or other. Baseline, operative, 30-day, and 6-month outcomes were compared using unadjusted analyses.

Results

Among 12,350 patients, indications were GERD in 59.2%, recurrent weight gain in 24.7%, suboptimal clinical response in 10.5%, and other in 5.6%. Patients with weight-related indications had higher baseline BMI. Major 30-day complications were uncommon and did not differ significantly across groups. Among 8,797 patients with 6-month weight data, mean percent total weight loss (%TWL) was 14.2% for recurrent weight gain, 13.3% for suboptimal clinical response, and 12.7% for both GERD and other indications ($P < 0.001$). The maximum absolute difference was 1.5 percentage points. Six-month intervention rates were 6.4% for GERD and 6.8% for other indications, compared with 4.2% for recurrent weight gain and 2.8% for suboptimal clinical response ($P < 0.001$); mortality remained uncommon.

Conclusion

SG-to-RYGB conversion was associated with low short-term complication rates across indications. Six-month weight loss and healthcare utilization differed in unadjusted comparisons, but weight-loss differences were modest and may reflect baseline case-mix differences.

Key Points

- Thirty-day major complications were uncommon across indication groups.
- Six-month %TWL differed by only 1.5 percentage points across groups.
- GERD and other indications had higher six-month intervention rates.
- Six-month differences were modest and based on unadjusted comparisons.

Introduction

Sleeve gastrectomy (SG) has become the most commonly performed bariatric operation worldwide; however, a subset of patients requires conversion surgery due to suboptimal clinical response, recurrent weight gain, or refractory gastroesophageal reflux disease (GERD) [1–3]. Conversion to Roux-en-Y gastric bypass (RYGB) represents the most frequently performed conversion procedure, given its efficacy in both weight reduction and reflux control [4, 5]. Despite the increasing prevalence of SG-to-RYGB conversion, outcomes remain heterogeneous, particularly when stratified by the underlying indication for conversion [6–8].

Prior studies evaluating outcomes after SG-to-RYGB conversion have largely focused on aggregate perioperative safety and weight loss, often without stratification by indication. A recent systematic review and meta-analysis by Fehervari et al. demonstrated that conversion for insufficient weight loss achieves meaningful additional weight reduction, with pooled short-term outcomes of approximately 20–23% total weight loss and excess weight loss exceeding 50%, while maintaining low perioperative morbidity [6]. Importantly, this analysis also highlighted that outcomes vary by indication, with patients undergoing conversion for weight-related failure achieving greater weight loss compared to those converted for other reasons, while overall complication rates remain low and comparable to primary RYGB. However, most available studies, including pooled analyses, combine heterogeneous patient populations and do not adequately distinguish between GERD-driven and weight-driven conversions, limiting the ability to understand indication-specific differences in outcomes.

Although SG-to-RYGB conversion is well established, contemporary national data directly comparing short-term safety, weight loss, and healthcare utilization across conversion indications remain limited. This study aimed to compare 30-day perioperative safety and 6-month weight loss following SG-to-RYGB conversion across indication groups using the Metabolic and Bariatric Surgery Accreditation and Quality Improvement Program (MBSAQIP) database, stratified by indication for conversion. We hypothesized that 6-month weight loss and postoperative healthcare utilization would differ across conversion indications, whereas major perioperative complication rates would be similar among groups.

Methods

A retrospective cohort study was performed using the 2023 Metabolic and Bariatric Surgery Accreditation and Quality Improvement Program (MBSAQIP) Participant Use File (PUF) [9, 10]. Both the PUF for 2023 and the corresponding 2023 long-term follow-up (LTFU) file were used. MBSAQIP is a nationally validated, prospectively collected clinical registry that captures perioperative and longitudinal outcomes for bariatric surgery across accredited centers in the United States [11]. These datasets include standardized variables related to patient demographics, associated medical conditions, operative characteristics, and both 30-day and 6-month postoperative outcomes.

Adult patients aged 18 years or older who underwent conversion from a prior sleeve gastrectomy to Roux-en-Y gastric bypass were identified using MBSAQIP procedure classification variables indicating

conversion surgery with a previous sleeve gastrectomy and a current Roux-en-Y gastric bypass (n = 12,449). Patients were sequentially excluded for a surgical approach other than laparoscopic or robotic (n = 29), missing or invalid age (n = 5), missing baseline body mass index (BMI) (n = 3), missing operative length (n = 58), and missing or invalid sex (n = 4), yielding a final analytic cohort of 12,350 patients (Fig. 1). Six-month follow-up, defined by the presence of non-missing 6-month BMI data in the MBSAQIP LTFU file linked to the main PUF by case identifier, was available for 8,858 patients (71.7% of the analytic cohort). Of these, 61 patients (0.7%) had out of range weight-loss values and were excluded, leaving 8,797 patients (71.2%) for the 6-month weight-loss analysis (Supplementary Table S1).

Patients were stratified according to the primary indication documented in the MBSAQIP Revision/Conversion Final Indication field. The registry-recorded indications were categorized into four groups: GERD, recurrent weight gain, suboptimal clinical response, and other indications. Group assignment was based exclusively on the primary indication for conversion; the separate preoperative GERD associated medical problem field was not used for classification. Therefore, patients classified in a non-GERD indication group could still have GERD documented as an associated medical problem when reflux was present but was not the primary indication for conversion. The other-indication group consisted only of patients whose primary indication was recorded as "Other."

The primary outcome of interest was 6-month weight loss following conversion, assessed using absolute weight change in kilograms, percentage total weight loss (%TWL), and change in BMI. Secondary outcomes included operative characteristics such as operative time, use of robotic assistance, and concurrent hiatal hernia repair. Postoperative outcomes included 30-day readmission, emergency department (ED) utilization, and major complications, including anastomotic leak, pulmonary embolism, sepsis, and intensive care unit (ICU) admission. Six-month outcomes included readmission, reoperation, intervention, and mortality.

Baseline patient characteristics included age, sex, pre-operative weight, BMI at the time of conversion, race and ethnicity, current smoking status, and obesity-related medical problems; as diabetes, hypertension, hyperlipidemia, and obstructive sleep apnea. These variables were selected based on clinical relevance and prior studies evaluating outcomes after conversion bariatric surgery.

Continuous variables were reported as means with standard deviation and compared using analysis of variance. Categorical variables were expressed as proportions and compared using the chi-square test. Comparisons were performed across indication groups to evaluate differences in baseline characteristics, operative variables, and outcomes. Six-month weight outcomes were analyzed using available cases only. Patients without valid linked 6-month weight data were excluded from the weight analysis, and missing follow-up values were not imputed. All comparisons were unadjusted and were intended to describe observed differences across indication groups rather than estimate the independent effect of conversion indication. Because the analyses were exploratory, no adjustment for multiple comparisons was applied; p-values should therefore be interpreted descriptively. No prespecified minimum clinically important difference was applied because no validated threshold

specific to 6-month %TWL after SG-to-RYGB conversion was identified. Clinical relevance was assessed from the absolute magnitude of the observed differences rather than statistical significance alone. A two-sided p-value of less than 0.05 was considered statistically significant. To visualize the relationship between follow-up timing and %TWL, separate smoothed curves were created for each indication using patient-level %TWL and the postoperative day of follow-up. Each patient contributed one measurement, so the curves show cross-sectional trends rather than changes within individual patients over time. For visualization, the curves were anchored at 0% TWL on postoperative day 0, and postoperative day 180 was used as the 6-month timepoint. All analyses were conducted using Python (pandas, NumPy, and SciPy libraries) within a reproducible analytic framework. Because the MBSAQIP dataset is de-identified and publicly available, this study was deemed exempt from institutional review board approval. The American College of Surgeons Metabolic and Bariatric Surgery Accreditation and Quality Improvement Program and the centers participating in the ACS MBSAQIP are the source of the data used herein; they have not verified and are not responsible for the statistical validity of the data analysis or the conclusions derived by the authors.

Results

A total of 12,350 patients underwent conversion from sleeve gastrectomy to Roux-en-Y gastric bypass in the 2023 MBSAQIP dataset. Gastroesophageal reflux disease (GERD) was the most common indication for conversion (n = 7,310, 59.2%), followed by recurrent weight gain (n = 3,050, 24.7%) and suboptimal clinical response (n = 1,298, 10.5%), with 692 patients (5.6%) undergoing conversion for other indications.

Baseline characteristics differed significantly across indication groups (Table 1). Patients undergoing conversion for weight-related indications had higher BMI at the time of conversion compared to those undergoing conversion for GERD (43.0 ± 7.1 kg/m² for recurrent weight gain and 42.7 ± 7.3 kg/m² for suboptimal clinical response vs 37.8 ± 7.4 kg/m² for GERD, $p < 0.001$), a difference mirrored in pre-operative weight (118.3 ± 23.8 kg and 117.2 ± 23.7 kg vs 102.7 ± 22.7 kg, $p < 0.001$). These patients also demonstrated a greater burden of obesity-related associated medical problems, including diabetes (14.1–16.1% vs 10.7%, $p < 0.001$), hypertension (37.4–42.5% vs 34.3%, $p < 0.001$), and obstructive sleep apnea (27.0–32.2% vs 23.0%, $p < 0.001$). Hispanic ethnicity varied across groups (13.2–22.1%, $p < 0.001$), whereas hyperlipidemia (19.2–21.8%, $p = 0.160$) and current smoking status (3.8–5.6%, $p = 0.132$) did not differ significantly. Although age and female sex distributions differed statistically (both $p < 0.001$), these differences were modest in absolute magnitude.

Table 1
Baseline characteristics by indication for conversion

Variable	GERD	Recurrent weight gain	Suboptimal clinical response	Other	p-value
Age, years	47.4 ± 10.4	45.6 ± 10.4	46.2 ± 10.6	47.9 ± 11.3	< 0.001
BMI at conversion, kg/m ²	37.8 ± 7.4	43.0 ± 7.1	42.7 ± 7.3	38.7 ± 8.7	< 0.001
Pre-op weight, kg	102.7 ± 22.7	118.3 ± 23.8	117.2 ± 23.7	106.2 ± 26.6	< 0.001
Female sex, n (%)	6,682 (91.4%)	2,646 (86.8%)	1,128 (86.9%)	619 (89.5%)	< 0.001
Hispanic ethnicity, n (%)	1,168 (16.0%)	675 (22.1%)	251 (19.3%)	91 (13.2%)	< 0.001
Diabetes (any), n (%)	779 (10.7%)	429 (14.1%)	209 (16.1%)	96 (13.9%)	< 0.001
GERD, n (%)	6,601 (90.3%)	1,618 (53.0%)	781 (60.2%)	440 (63.6%)	< 0.001
Hypertension, n (%)	2,510 (34.3%)	1,141 (37.4%)	552 (42.5%)	275 (39.7%)	< 0.001
Hyperlipidemia, n (%)	1,406 (19.2%)	602 (19.7%)	283 (21.8%)	144 (20.8%)	0.160
Sleep apnea, n (%)	1,678 (23.0%)	823 (27.0%)	418 (32.2%)	183 (26.4%)	< 0.001
Current smoker, n (%)	312 (4.3%)	115 (3.8%)	61 (4.7%)	39 (5.6%)	0.132
<i>BMI = body mass index.</i>					
<i>Data is presented as mean ± SD for continuous variables and as n (%) for categorical variables.</i>					
<i>P-values from one-way ANOVA (continuous variables) or chi-square test (categorical variables) across indication groups.</i>					

Operative characteristics and 30-day outcomes varied across indication groups (Table 2). Robotic assistance was most frequently utilized in the GERD cohort (44.8%, $p < 0.001$), and concurrent hiatal hernia repair was significantly more common among GERD patients (44.2% vs 24.7% in recurrent weight gain, 32.1% in suboptimal clinical response, and 32.4% in the other group, $p < 0.001$). Operative time differed statistically across groups (138.1–146.5 minutes, $p < 0.001$), representing a maximum absolute difference of 8.4 minutes. Although this difference was statistically significant ($p < 0.001$), its absolute magnitude was modest and may have limited clinical relevance. Thirty-day readmission rates were highest in the other-indication group (8.5%), and lowest in the suboptimal clinical response group (5.6%,

p = 0.014), and emergency department utilization was most frequent among GERD patients (14.2% vs 11.3–12.7% in the remaining groups, p < 0.001). Importantly, major postoperative complications including anastomotic leak (0.2–0.6%, p = 0.396), pulmonary embolism (0.0–0.4%, p = 0.082), sepsis (0.2–0.3%, p = 0.762), and ICU admission (0.6–1.0%, p = 0.512) were rare and did not differ significantly across groups.

Table 2
Operative characteristics and 30-day outcomes by indication

Variable	GERD	Recurrent Weight gain	Suboptimal clinical response	Other	p-value
Operative length, min	146.5 ± 65.7	138.1 ± 58.2	141.2 ± 61.9	144.8 ± 81.2	< 0.001
Robotic assist, n (%)	3,278 (44.8%)	1,259 (41.3%)	537 (41.4%)	230 (33.2%)	< 0.001
Hiatal hernia repair, n (%)	3,231 (44.2%)	754 (24.7%)	417 (32.1%)	224 (32.4%)	< 0.001
30-day readmission	525 (7.2%)	184 (6.0%)	73 (5.6%)	59 (8.5%)	0.014
30-day ED visit	1,035 (14.2%)	345 (11.3%)	165 (12.7%)	82 (11.8%)	< 0.001
Anastomotic leak	34 (0.5%)	15 (0.5%)	2 (0.2%)	4 (0.6%)	0.396
PE	14 (0.2%)	1 (0.0%)	3 (0.2%)	3 (0.4%)	0.082
Sepsis	19 (0.3%)	5 (0.2%)	4 (0.3%)	2 (0.3%)	0.762
ICU admission	68 (0.9%)	30 (1.0%)	8 (0.6%)	4 (0.6%)	0.512
<i>ED = emergency department; PE = pulmonary embolism; ICU = intensive care unit.</i>					
<i>Data are presented as mean ± SD for continuous variables and as n (%) for categorical variables.</i>					
<i>P-values from one-way ANOVA (continuous variables) or chi-square test (categorical variables) across indication groups.</i>					

A 6-month follow-up with available weight data was present in 8,797 patients (71.2% of the overall cohort). Six-month weight outcomes differed significantly by indication (Supplementary Table S1, global p < 0.001; Fig. 2 and Supplementary Figure S1-S3). Patients undergoing conversion for recurrent weight gain achieved the greatest weight loss (16.8 ± 8.7 kg; 14.2 ± 6.6% total weight loss [%TWL]; BMI reduction of 6.1 ± 3.1 kg/m²), followed by those undergoing conversion for suboptimal clinical response (15.8 ± 8.4 kg; 13.3 ± 6.4% TWL; BMI reduction of 5.8 ± 3.0 kg/m²). In contrast, patients undergoing conversion for GERD experienced comparatively lower weight loss (13.3 ± 8.3 kg; 12.7 ± 7.0% TWL; BMI reduction of 4.9 ± 3.0 kg/m²), with similar results observed in the other-indication group (14.1 ± 9.9 kg; 12.7 ± 7.4% TWL; BMI reduction of 5.1 ± 3.5 kg/m²). The maximum absolute difference in mean %TWL

across indication groups was 1.5 percentage points. Although the overall comparison was statistically significant, the clinical importance of this relatively small difference is uncertain. Figure 2 provides a smoothed visualization of %TWL according to the postoperative day of follow-up assessment, stratified by indication. Because each patient contributed one follow-up measurement, the curves should not be interpreted as serial within-patient weight-loss trajectories.

Six-month utilization and adverse events were low overall but differed across indication groups (Table 3). Readmission rates were similar across groups (1.7–2.7%, $p = 0.069$), whereas reoperation (1.0–2.0%, $p = 0.012$) and intervention rates (2.8–6.8%, $p < 0.001$) varied significantly. Intervention rates were highest among patients undergoing conversion for GERD (6.4%) and other indications (6.8%), compared to recurrent weight gain (4.2%) and suboptimal clinical response (2.8%) (Supplementary Figure S1). Six-month mortality remained rare and did not differ significantly across groups (0.1–0.3%, $p = 0.491$).

Table 3
Six-month utilization and adverse events by indication

Indication	n	6-mo readmission	6-mo reoperation	6-mo intervention	6-mo death
GERD	7,310	2.5%	1.9%	6.4%	0.1%
Recurrent weight gain	3,050	1.7%	1.0%	4.2%	0.1%
Suboptimal clinical response	1,298	2.1%	1.6%	2.8%	0.2%
Other	692	2.7%	2.0%	6.8%	0.3%
p-value		0.069	0.012	< 0.001	0.491
6-mo = six-month. Data is presented as percentages of patients with 6-month follow-up. P-values from chi-square test across indication groups.					

Discussion

In this large national cohort, early postoperative outcomes differed across indication groups in unadjusted comparisons, particularly for weight loss and healthcare utilization, whereas perioperative safety outcomes were similar. Among more than 12,000 patients, GERD was the most common indication for conversion, accounting for nearly 60% of cases and reflecting the well-established association between SG and GERD [12, 13]. Despite differences in baseline characteristics and operative approach, short-term complications, including anastomotic leak, pulmonary embolism, sepsis, and ICU admission, were uncommon and did not differ significantly across indication groups. These findings provide contemporary national estimates of the short-term safety of SG-to-RYGB conversion at MBSAQIP-accredited centers. The principal contribution of this study is not to establish the effectiveness of SG-to-RYGB conversion, but to describe short-term safety, weight outcomes, and healthcare utilization across clinically distinct indication groups.

In unadjusted comparisons, patients undergoing conversion for recurrent weight gain or suboptimal clinical response had greater mean weight loss than those undergoing conversion for GERD. However, the largest difference in mean %TWL was only 1.5 percentage points, and no validated clinically important difference specific to this conversion setting has been established. Accordingly, the statistical differences should not be interpreted as demonstrating clinically meaningful superiority, particularly given the baseline BMI and case-mix differences among the groups.

Our findings should be interpreted in the context of prior literature evaluating outcomes after conversion from SG to RYGB. In a long-term institutional series by D'Urso et al., conversion was demonstrated to be both safe and effective, with durable weight loss and excellent resolution of GERD symptoms; however, percentage excess weight loss decreased between 1 and 5 years in both indication groups, suggesting that early weight loss may diminish over time. In contrast, a systematic review and meta-analysis reported pooled weight loss outcomes of approximately 22–25% total weight loss at 6–12 months for conversion [7], which was higher than the 12.7%–14.2% TWL observed at 6 months in the present study. This difference may reflect variation in follow-up duration, baseline BMI, conversion indications, weight-loss definitions, and study design, as prior pooled estimates were largely derived from smaller institutional cohorts. In contrast, the present analysis used a national registry and was limited to patients with linkable 6-month follow-up data. Therefore, our weight-loss estimates should not be considered directly consistent with the previously reported pooled estimates. Importantly, perioperative complications remained uncommon across indication groups, consistent with prior reports.

Longer-term and indication-specific studies provide additional context for interpreting these findings. Parmar et al. reported substantial improvement in GERD symptoms after conversion but only modest additional weight loss in both GERD- and weight-related indication groups [14]. These findings emphasize that GERD-driven conversion is primarily performed for symptom control rather than weight reduction. Accordingly, the differences observed in the present study represent early postoperative weight outcomes and should not be interpreted as evidence of durable weight-loss differences or long-term weight stability among indication groups.

Postoperative healthcare utilization also varied by indication. Patients undergoing conversion for GERD had higher rates of emergency department visits and interventions at 6 months despite similar complication rates [15]. Because MBSAQIP does not provide sufficient detail regarding the reasons for each healthcare encounter, whether this increased utilization was driven by persistent or recurrent foregut symptoms could not be determined. The greater use of concurrent hiatal hernia repair and robotic assistance in the GERD group demonstrates differences in operative management across indication groups; however, procedural complexity cannot be directly assessed using the available registry variables [16–18].

Taken together, these findings highlight that SG-to-RYGB conversion represent clinically distinct populations with different treatment goals and observed outcomes. Although perioperative safety was similar across groups, unadjusted weight loss and postoperative healthcare utilization differed by

indication. These descriptive differences may help inform preoperative counseling but should be interpreted in the context of baseline differences in BMI, associated medical problems, and case mix. In this cohort, patients undergoing conversion for GERD had more modest early weight loss, whereas patients undergoing conversion for recurrent weight gain or suboptimal clinical response had greater observed weight loss. Indication should therefore be considered alongside baseline patient characteristics when counseling patients about expected outcomes. Ultimately, this study supports an individualized approach to conversion bariatric surgery, emphasizing that the indication for conversion is a critical determinant of postoperative outcomes and trajectory and should be incorporated into both clinical decision-making and future outcomes research.

Several limitations of this analysis need to be mentioned. Although a 6-month follow-up was available in 71.7% of patients, incomplete longitudinal capture remains a limitation of MBSAQIP. The overall findings are most applicable to adults undergoing laparoscopic or robotic SG-to-RYGB conversion at MBSAQIP-accredited centers. The 6-month weight findings apply specifically to patients with linkable, valid follow-up data and may represent a better-followed subset of the overall cohort. Generalizability to nonaccredited centers, patients without follow-up, and different healthcare settings may therefore be limited. The observed differences in weight outcomes should consequently be interpreted with caution. This may introduce bias, as patients with available longitudinal data may differ systematically from those lost to follow-up. Prior studies have demonstrated significant attrition in bariatric cohorts, and variability in reported outcomes may in part reflect inconsistent follow-up capture [19, 20]. Accordingly, the observed differences in weight loss and utilization by indication should be interpreted with caution.

All comparisons were unadjusted, and the indication groups differed substantially in baseline BMI and associated medical problems burden. Consequently, the observed differences in %TWL and postoperative utilization cannot be attributed independently to conversion indication and may reflect differences in baseline case mix or other unmeasured factors. The 6-month endpoint represents early follow-up after conversion bariatric surgery and is insufficient to evaluate the durability of weight loss, subsequent recurrent weight gain, long-term GERD control, or delayed complications. MBSAQIP does not capture important technical details of the conversion, including gastric pouch dimensions, gastrojejunal anastomosis size, biliopancreatic and Roux limb lengths, or other surgeon-specific technical variations. These factors may influence postoperative weight loss and reflux outcomes; therefore, procedures within each indication group should not be assumed to be anatomically equivalent. Despite these limitations, the large national sample and consistency of findings with prior literature support the validity of the observed indication-specific trends.

Conclusions

In this large, contemporary MBSAQIP analysis, SG-to-RYGB conversion was associated with low perioperative complication rates across indication groups. Unadjusted 6-month weight loss and postoperative healthcare utilization differed by indication; however, the absolute differences in %TWL were modest and may partly reflect differences in baseline BMI and case mix. These findings may

support indication-specific counseling but should not be interpreted as demonstrating an independent effect of conversion indication. Longer-term studies with multivariable adjustment are needed to evaluate the durability and clinical importance of these differences.

Declarations

Competing Interests

One author is a proctor for Intuitive Surgical and a consultant for Medtronic and Endolumik. Another author is a consultant for Intuitive Surgical and a speaker for ConMed. Another author is a consultant for Medtronic, Bard, Intuitive Surgical, and Johnson & Johnson. Rest of the authors have no disclosures.

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Author Contribution

MK and BC contributed to the study conception and design of the study, and also contributed to data analysis and interpretation. JU, MK, CD, LK, SD, and BC contributed to drafting the manuscript. MK, CD, SD, and BC contributed to data interpretation and revision of the manuscript. BC contributed to study conception and design, supervision, data interpretation, and revision of the manuscript and serves as the corresponding author. All authors reviewed and approved the final manuscript.

Data Availability

The data analyzed in this study are available from the American College of Surgeons MBSAQIP to eligible participating centers under the applicable data-use agreement.

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Figures

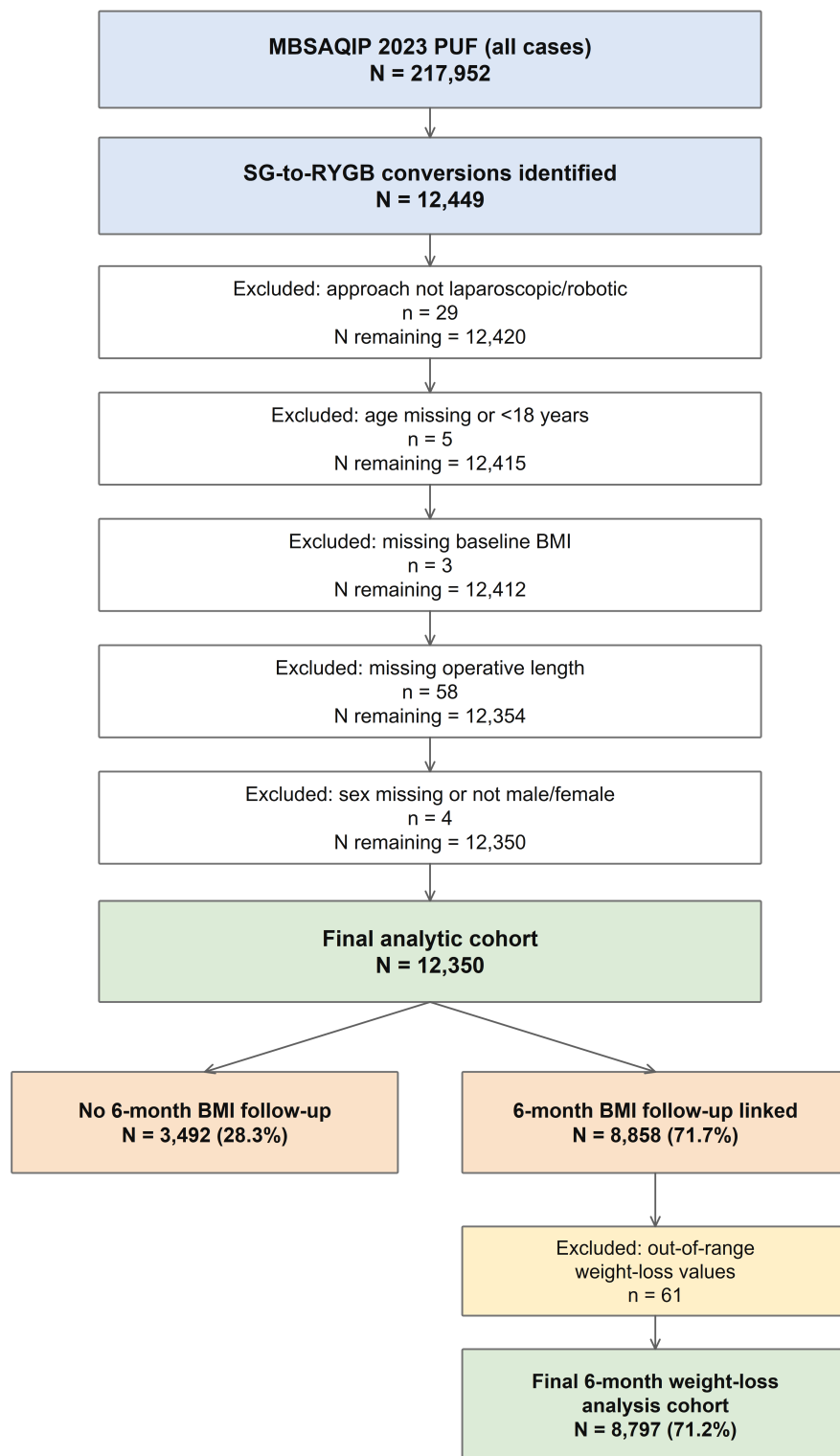


Figure 1

Cohort Flow Diagram. Patients undergoing SG-to-RYGB conversion (n=12,449) were sequentially excluded for non-laparoscopic/robotic approach (n=29), missing/invalid age (n=5), missing BMI (n=3), missing operative length (n=58), and missing/invalid sex (n=4), yielding a final cohort of 12,350. Of these, 8,797 (71.2%) had valid 6-month weight data.

Percent Total Weight Loss by Timing of Follow-up After SG-to-RYGB Conversion Smoothed by conversion indication and anchored at 0% on POD 0

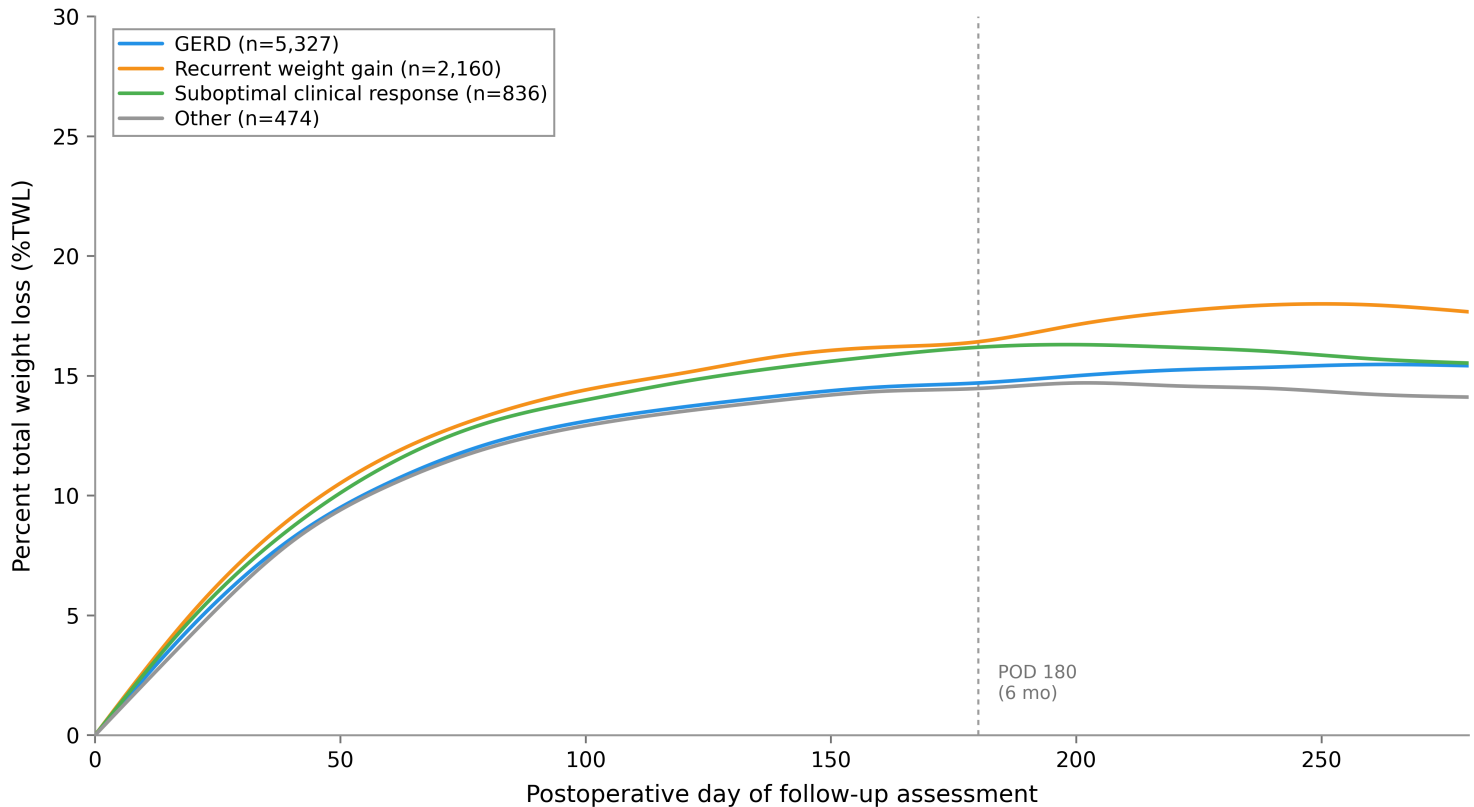


Figure 2

Smoothed percent total weight loss by postoperative day of follow-up assessment after SG-to-RYGB conversion, stratified by indication. Curves were anchored at 0% TWL on POD 0 for visualization. The dashed vertical line identifies POD 180, the nominal 6-month timepoint. Each patient contributed one follow-up measurement; therefore, the curves represent smoothed patterns according to assessment timing and should not be interpreted as serial within-patient trajectories.

Supplementary Files

This is a list of supplementary files associated with this preprint. Click to download.

- [SupplementaryMaterialSGtoRYGBconversion.docx](#)