

Supplementary File 1. Definitions of 30-day post-operative composite variables (panel A), list of secondary outcomes (panel B) and predictors (panel C).

Panel A

Composite Outcomes	Components
All Complications	Defined as the occurrence of ≥ 1 of the following within 30 days: reoperation; readmission; intervention; emergency visit; unplanned intensive care unit (ICU) admission; surgical site infections (superficial, deep, or organ-space); anastomotic/staple-line leak; wound disruption; pneumonia; unplanned intubation; pulmonary embolism; ventilator dependence >48 hours; renal complications; stroke; cardiac events; transfusion; venous thromboembolism; sepsis or septic shock; <i>Clostridioides difficile</i> infection (C. diff.); gastrointestinal bleeding (GI bleeding); bowel obstruction; dehydration requiring treatment; urinary tract infection.
Serious Complication	Defined as the occurrence of ≥ 1 of the following within 30 days: death; unplanned ICU admission; reoperation; procedural intervention; organ-space infection; pneumonia; unplanned intubation; pulmonary embolism; ventilator dependence >48 hours; progressive renal insufficiency; acute renal failure;

	stroke; cardiac arrest; myocardial infarction; transfusion; deep vein thrombosis; sepsis; and septic shock.
Bleeding	The presence of either GI bleeding or the need for postoperative transfusion aligned with the MBSAQIP calculator definition.

Panel B

Secondary Outcomes	Pneumonia; unplanned intubation; pulmonary embolism; cardiac arrest with cardiopulmonary resuscitation (CPR); urinary tract infection; C. diff.; wound disruption; prolonged ventilator dependence; GI bleeding; renal insufficiency; acute renal failure; unplanned ICU admission; bowel obstruction; cerebrovascular accident (CVA); venous thromboembolism (VTE); postoperative BMI; and length of stay.
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Panel C

Demographics:	Age; sex; race; ethnicity.
Body measurements:	BMI (preoperative); weight (kg).
Comorbidities and past medical history:	Diabetes mellitus; Hypertension; Hyperlipidemia; chronic obstructive

	pulmonary disease (COPD); gastroesophageal reflux disease (GERD); Sleep apnea; Smoking status; Renal insufficiency; History of VTE; cardiac disease history; vascular disease history; Dialysis dependence; Immunosuppression; Presence of inferior vena cava (IVC) filter; History of previous bariatric surgery
Clinical assessments:	American Society of Anesthesiologists (ASA) class; Functional status.
Preoperative Laboratory values	Hematocrit; Hemoglobin A1c; serum albumin; serum creatinine.

Note: All variables were captured from the MBSAQIP PUF and subjected to standardized recoding and cleaning procedures to ensure consistency across years.