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1. Introduction

The Metabolic and Bariatric Surgery Accreditation and Quality Improvement Program (MBSAQIP®) is pleased to introduce the 2017 Participant Use Data File (PUF) – including cases with operation dates between January 1, 2017 and December 31, 2017. The PUF is a Health Insurance Portability and Accountability Act (HIPAA)-compliant data file containing cases submitted to the MBSAQIP Data Registry. The PUF contains patient-level data and does not identify hospitals, health care providers, or patients. The intended purpose of these files is to provide researchers at participating centers with a data resource they can use to investigate and advance the quality of care delivered to the metabolic and bariatric surgical patient through the analysis of cases captured by MBSAQIP. The PUF is provided at no additional cost to employees (surgeons, researchers, bariatric program staff, etc.) of MBSAQIP participant centers. With over 200,000 metabolic and bariatric cases captured each year, the MBSAQIP PUF is the largest, bariatric-specific, clinical dataset in the country and serves as an invaluable resource to investigators looking to answer important clinical questions in this field. It is part of the mission of the MBSAQIP to make this data available to all participants to improve the power and reliability of clinical research and further propel innovation in the field of metabolic and bariatric surgery.

This guide is designed to accompany the 2017 Participant Use Data File available for download via the MBSAQIP website (https://www.facs.org/quality-programs/mbsaqip/participant-use). The sections contained herein will provide the user with information on how to request the PUF, contents of the data files, data collection background, data limitations, and answers to frequently asked questions.

This user guide applies specifically to the 2017

within the Data Use Agreement. The Data Use Agreement can be read from this page or the three-page document can be downloaded. The requestor is then required to type in their first and last name and click on "Request Data File." By clicking on "Request Data File" the requestor agrees to the terms and conditions of the Data Use Agreement.

4. Requestors will then be required to complete a brief online form to provide ACS with basic information about themselves, including the participating center in which they are currently employed and in what capacity, as well as how the requestor plans to utilize the PUF data. Once all of the required fields are completed, the requestor clicks "Submit."
5. Upon approval an email will be sent to the requestor containing a username and password along with the URL to download the data. The web link will be active from the time of the email for 10 full days (240 hours).
6. The file will be available in three different formats (Text, SPSS, SAS) and depending on the user's internet connection speed should take between 5 and 30 minutes to download.
7. The requestor may be contacted to confirm receipt of the data file and allow for feedback on the delivery mechanism, data points contained, and data file format.

3. File Description

The PUF consists of five distinct datasets which are referred to as main, reoperation, readmission, intervention, and BMI, respectively. Each dataset is available in one of three different formats - Text, SAS, and SPSS. The main dataset is a flat file containing preoperative, intraoperative, and postoperative patient and procedure characteristics for all metabolic and bariatric surgical cases that were eligible for the PUF in 2017. The reoperation, readmission, intervention, and BMI datasets are available in long form (i.e., multiple rows per case), and contain detailed information on readmissions, reoperations, interventions, and post-operative BMI measurements, respectively, associated with cases in the main dataset. All five datasets contain a unique key matching variable, CASEID, which allows users to merge datasets as necessary.

Postoperative BMI measurements recorded in the BMI dataset were taken in the 30-day follow-up time period, which runs from 0 to 30 days from the date of the index procedure. All postoperative events or outcomes (e.g., death, sepsis, reoperation, readmission, intervention, postop BMI, etc.) recorded in the main, reoperation, readmission, and intervention datasets are 30-day outcomes (i.e., occurred within 30 days of the index procedure).

The main dataset contains three variables (REOP30, READ30, and INTV30) derived from the reoperation, readmission, and intervention datasets, respectively. These variables represent whether at least one reoperation, readmission, or intervention occurred, respectively, *for any reason*, within 30 days of the index procedure. Investigators interested in other facets of reoperation, readmission, or intervention will need to manipulate the long datasets and merge them with the main dataset in a manner which is appropriate to the specified research question. For example, suppose a researcher is interested in estimating the overall 30-day *related* reoperation rate for metabolic and bariatric surgical procedures. The specific research question

4. Data Collection Background and Data Quality

MBSAQIP collects data on over 200 variables including preoperative risk factors, intraoperative variables, and 30-day postoperative mortality and morbidity outcomes for patients undergoing metabolic and bariatric surgical procedures in both the inpatient and outpatient setting.

Required data elements are entered via a web-based data collection tool. Portions of the data may be automatically populated by a software program that was developed to extract data from the participating hospital's existing information systems. Requestors should contact the Metabolic and Bariatric Surgical Clinical Reviewers (MBSCRs), at their hospital for detailed information on how the hospital collects its MBSAQIP data.

6. Data Limitations

While every effort has been made to make the PUF as complete as possible, the data do have certain limitations. Some of these limitations have been deliberately introduced to safeguard the privacy of patients (such as removal of absolute dates). The following items represent the most salient limitations of the data:

- While the sex and race distributions are reasonably representative of the national surgery patient population, only patients over the age of 10 are available for assessment, so the age distribution is somewhat truncated. Patients over the age of 80 also have their ages de-identified in the PUF (age is set to missing with an indicator variable included to identify patients over the age of 80).
- In order to comply with HIPAA requirements, all absolute dates have been removed. The most critical of these is the date of surgery, which has been reduced to year of surgery only. Some dates (hospital entry, dates of laboratory tests, and so on) have been recoded into durations (e.g., Date of Admission and Date of Discharge are recoded into Days to Discharge from Hospital Admit).
- In order to comply with the Participation Agreement (PA) that is agreed to between the ACS and participating centers, facility identifiers as well as geographic information regarding the case have been removed. The PA stipulates that the ACS does not identify participating centers. Facility identification could be possible even with blinded identifiers through advanced statistics. A stipulation of access to the PUF is completion of the Data Use Agreement that strictly prohibits attempts to identify hospitals, health care providers, or patients.
- While many risk factors are tracked, preventative measures are not recorded which can lead to an underestimation of the risk of certain conditions when such measures are routinely taken before surgery.
- The data are submitted from centers that are participating in the MBSAQIP and do not represent a statistically valid nationally representative sample.
- Many patients do not receive all possible preoperative laboratory tests, so some of these variables have a high percentage of missing values (10% to 70%, depending on the tests). This high percentage of missing data can make it problematic to use these variables in a traditional logistic regression model as well as in many other types of analysis.

This list may not include all data limitations and additional limitations may apply in future versions of the data.

7. Contact Information

All questions about the User Guide or PUF, as well as comments and suggestions for improvements are welcome and may be directed to Rasa Krapikas, MS, MBSAQIP Data Registry Manager, at rkrapikas@facs.org.

Q: **Approximately 1% of records in the main dataset are missing a pre-op BMI measurement. Why is that?**

Variable added in 2016
Main Variable added in 2017

Position #	Variable Name	Data Type	Variable Label	Search Term in Variables and Definitions	Page Number in Variables and Definitions

Position #	Variable Name	Data Type	Variable Label	Search Term in Variables and Definitions	Page Number in Variables and Definitions	Variable Options	Comments
46	CHRONIC_STEROIDS	Char	Pre-Op Steroid/Immunosuppressant Use for Chronic Condition	Variable Name: Preoperative Steroid/Immunosuppressant Use for a Chronic Condition	41	Yes; No	
47	PREV_ORGTRANS	Char	Previous Organ Transplant	Variable Name: Previous Organ Transplant	46	Yes; No	
48	IVC_FILTER	Char	Pre-Op IVC Filter	Variable Name: Preoperative Does the patient have an IVC filter	38	Yes; No	
					38	IVC filter placed in anticipation of the metabolic or bariatric procedure IVC filter was preexisting Unknown	
50	ALBUMIN	Num	Pre-op Albumin Lab Value	Variable Name: Preoperative Lab Value Information	47		Values capped between 1 and 10
51	DPRALBUM	Num	Days from Albumin Pre-Op Labs to Operation	Days from pre-operative Albumin to initial bariatric surgery operation date			Values capped between 0 and 90
52	HCT	Num	Pre-op Hematocrit Lab Value	Variable Name: Preoperative Lab Value Information	47		Values capped between 8 and 60
53	DPRHCT	Num	Days from Hematocrit Pre-Op Labs to Operation	Days from pre-operative Hematocrit to intitial bariatric surgery operation date			Values capped between 0 and 90
54	CREATININE	Num	Pre-Op Creatinine Lab Value	Variable Name: Preoperative Lab Value Information	47		Values capped between 0.1 and 15
55	DPRCREAT	Num	Days from Creatinine Pre-Op Labs to Operation	Days from pre-operative Creatinine to initial bariatric surgery operation date			Values capped between 0 and 90
56	HEMO	Num	Pre-Op Hemoglobin A1c Value	Variable Name: Preoperative Lab Value Information	47		Values capped between 4 and 20
57	DPRHEMO	Num	Days from Hemoglobin A1c Pre-Op Labs to Operation	Days from pre-operative Hemoglobin A1c to initial bariatric surgery operation date			Values capped between 0 and 90
						None (no assist or scrub tech/RN only) Physician Assistant/Nurse Practitioner/Registerd Nurse First Assist Resident (PGY 1-5+) Minimally Invasive Surgery Fellow Attending - Weight Loss Surgeon Attending - Other	
59	PRIORITY	Char	Emergency Case	Variable Name: Emergency Case Principal Operative Procedure	49	Yes; No	
						N.O.T.E.S. (Natural Orifice Transluminal Endoscopic Single Incision Robotic-assisted Conventional laparoscopic (thoracoscopic) Laparoscopic assisted (thoracoscopic assisted) Hand-assisted Open	
61	APPROACH_CONVERTED	Char	Procedure converted to another approach	Variable Name: Was the Principal Operative Procedure converted to another approach?	52	Yes; No	
						Single Incision Robotic-assisted Conventional laparoscopic (thoracoscopic) Laparoscopic assisted (thoracoscopic assisted) Hand-assisted Open	
63	BOUGIE_SIZE	Num	Sleeve Bougie Size	Variable Name: Bougie (or sizing device) size for Gastric Sleeve	56		
						1 = French 2 = cm	
65	PYLORUS_DISTANCE	Num	Sleeve Distance to Pylorus	Variable Name: Distance from the Pylorus (in cm) for Gastric Sleeve	57		
66	STAPLE_LINE_REINFORCEMENT	Char	Sleeve Staple Line Reinforcement	Variable Name: Staple Line Reinforcement for Gastric Sleeve	58	Yes; No	
67	OVERSEW	Char	Sleeve Oversew	Variable Name: Oversew for Gastric Sleeve	59	Yes; No	
68	DRAIN_PLACED	Char	Drain placed at the time of the initial operation	Variable Name: Was a Drain Placed at Time of the Initial Operation	53	Yes; No	
						Yes, routine Yes, selective No Yes No N/A ASA 1 - No Disturb ASA 2 - Mild Disturb ASA 3 - Severe Disturbance ASA 4 - Life Threatening ASA 5 - Moribund None Assigned	

ASA 5 - Moribund
None Assigned

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161	DTWOUNDDISRUPTION	Num	Days from operation date to Wound Disruption	Days to Wound Disruption occurrence from initial bariatric surgery operation date			Values capped between 0 and 30. If WOUNDDISRUPTION = "No" then this variable will be missing
162	DTUNPLINTUBATION	Num	Days from operation date to Unplanned Intubation	Days to Unplanned Intubation occurrence from initial bariatric surgery operation date			Values capped between 0 and 30. If UNPLINTUBATION = "No" then this variable will be missing
163	DTPULMONARYEMBOLSM	Num	Days from operation date to Pulmonary Embolism	Days to Pulmonary Embolism occurrence from initial bariatric surgery operation date			Values capped between 0 and 30. If PULMONARYEMBOLSM = "No" then this variable will be missing
164	DTPROGRSRENALINSUF	Num	Days from operation date to Progressive Renal Insufficiency	Days to Progressive Renal Insufficiency occurrence from initial bariatric surgery operation date			Values capped between 0 and 30. If PROGRSRENALINSUF = "No" then this variable will be missing
165	DTACTERENALFAILURE	Num	Days from operation date to Acute Renal Failure	Days to Acute Renal Failure occurrence from initial bariatric surgery operation date			Values capped between 0 and 30. If ACTERENALFAILURE = "No" then this variable will be missing
166	DTCVA	Num	Days from operation date to Stroke/CVA	Days to Stroke/CVA occurrence from initial bariatric surgery operation date			Values capped between 0 and 30. If CVA = "No" then this variable will be missing
167	DTCOMA24HOURS	Num	Days from operation date to Coma > 24 Hours	Days to Coma > 24 Hours occurrence from initial bariatric surgery operation date			Values capped between 0 and 30. If COMA24HOURS = "No" then this variable will be missing
168	DTPREIFNRVINJ	Num	Days from operation date to Peripheral Nerve Injury	Days to Peripheral Nerve Injury occurrence from initial bariatric surgery operation date			Values capped between 0 and 30. If PREIFNRVINJ = "No" then this variable will be missing
169	DTCARDIACARRESTCPR	Num	Days from operation date to Cardiac Arrest Requiring CPR	Days to Cardiac Arrest Requiring CPR occurrence from initial bariatric surgery operation date			Values capped between 0 and 30. If CARDIACARRESTCPR = "No" then this variable will be missing
170	DTMYOCARDIALINFR	Num	Days from operation date to Myocardial Infarction	Days to Myocardial Infarction occurrence from initial bariatric surgery operation date			Values capped between 0 and 30. If MYOCARDIALINFR = "No" then this variable will be missing
171	DTTRANSFINTOPPSTOP	Num	Days from operation date to Transfusion	Days to Transfusion occurrence from initial bariatric surgery operation date			Values capped between 0 and 30. If TRANSFINTOPPSTOP = "No" then this variable will be missing
172	DTVEINTHROMBREQTER	Num	Days from operation date to Vein Thrombosis Requiring Therapy	Days to Vein Thrombosis Requiring Therapy occurrence from initial bariatric surgery operation date			Values capped between 0 and 30. If VEINTHROMBREQTER = "No" then this variable will be missing
173	DTCDIFF	Num	Days from operation date to C. diff Infection	Days to C. diff Infection occurrence from initial bariatric surgery operation date			Values capped between 0 and 30. If CDIFF = "No" then this variable will be missing

Position #	Variable Name	Data Type	Variable Label	Search Term in Variables and Definitions	Page Number in Variables and Definitions	Variable Options	Comments
1	CASEID	Num	Case Identification Number	Each case or record in the database has a unique CaseID number.	117	Medical record Patient/Family Report Other	
3	REOP_RELATED_BAR	Char	Reoperation related to metabolic/bariatric procedure	Variable Name: Was this Reoperation likely related to a Metabolic or Bariatric procedure?	112	Yes; No	
4	REOP_SUSPECTED_REASON_BAR	Char	Most likely reason for reoperation	Variable Name: Most Likely Reason for Reoperation	115	See "Most Likely Reason for Reoperation Guidance Table" on page 116 in Variables and Defintions	
5	REOP_CODE_BAR	Char	Reoperation Type	Variable Name: Reoperation Type	112	See "Reoperation Guidance Table" on page 113 in Variables and Defintions	
6	REOP_CPT_BAR	Char	Reoperation CPT	Variable Name: CPT code for Reoperation	112		
7	REOP_UNPLANNED	Char	Unplanned reoperation	Variable Name: Was this reoperation unplanned at the time of the principal procedure?	114	Yes; No	
8	REOP_CENTER	Char	Reoperation performed at reporting center	Variable Name: Was this reoperation performed at your hospital?	112	Yes; No	
9	REOP_EMERGENCY	Char	Emergency Reoperation	Variable Name: Reoperation Emergency Case	112	Yes; No	
10	REOP_STAPLING_PROC	Char	Reoperation Stapling Procedure	Variable Name: Was this Reoperation a Stapling Procedure?	112	Yes; No	
11	REOP_REVCONV_PROC	Char	Reoperation Revision/Conversion	Was this procedure a Revision/Conversion?	112	Yes; No	
12	REOP_MINILOOP	Char	Reoperation Mini-Loop Gastric Bypass	Was this procedure a mini-loop gastric bypass?	112	Yes; No	
13	REOP_GAS_PLICATION	Char	Reoperation Gastric Plication	Was this procedure a gastric plication?	112	Yes; No	
14	REOP_ENDO_THER	Char	Reoperation Endoscopic Therapy	Was this procedure an endoscopic therapy?	112	Yes; No	
15	DTREOP	Num	Days to Reoperation	Days from initial bariatric or metabolic surgery procedure to reoperation.			Values capped between 0 and 30
1	CASEID	Num	Case Identification Number	Each case or record in the database has a unique CaseID number.	110	Medical record