ACS NSQIP®

"Quality Improvement through Quality Data"

User Guide for the 2022 ACS NSQIP Participant Use Data File (PUF)

American College of Surgeons
National Surgical Quality Improvement Program

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Contents

1. Introduction

This document is designed to accompany the 2022 Participant Use Data File (PUF) available for download on the American College of Surgeons National Surgical Quality Improvement Program (ACS NSQIP®) website (https://www.facs.org/quality-programs/data-and-registries/acs-nsqip/). The sections contained herein will provide the user with information on how to request the PUF, the contents of the data files, the data collection background, the inclusion and exclusion criteria for cases and hospitals, the data limitations, and the data point definitions and descriptions.

This user guide applies specifically to the 2022 PUF. Hospitals utilizing the PUF from a different year should refer to the user guide specifically tailored to that particular data set.

2. Data Request Process

An individual who has an official appointment at a fully enrolled site and wants to obtain a copy of the ACS NSQIP PUF can do so by visiting https://www.facs.org/quality-programs/data-and-registries/acs-nsqip/participant-use-data-file/ and following the steps listed below:

1. From the ACS NSQIP PUF main page (https://www.facs.org/quality-programs/data-and-registries/acs-nsqip/participant-use-data-file/) the requestor can scroll down towards the bottom of the page. From there, you can click on the navy blue "Request Data Set" box.
2. This will take the requestor to the PUF request page and Data Use Agreement. The DUA is a 3-page document that implements the data protections of the Health Insurance Portability and Accountability Act of 1996 (HIPAA) and the ACS NSQIP Hospital Participation Agreement. Delivery of the PUF is contingent on agreement to the terms and conditions specified within the Data Use Agreement. You can read the Data Use Agreement from this page or download the 3-page document. 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.
3. Requestors will then be required to complete a brief online form to provide ACS with basic information about themselves, including the participating hospital in which they are currently employed and in what capacity, as well as how the requestor plans on using the PUF data. Once all of the required fields are completed, the requestor clicks "Submit."
4. ACS NSQIP staff will review the request in a timely manner. Program contacts at participating sites will be contacted at this time to confirm the requestor's affiliation with the hospital and confirm internal approval of the PUF request.

5. Following receipt and confirmation of the information submitted, 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 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

Each summer/fall a PUF will be made available for the previous calendar year's data. The PUF is available in one of three different formats - Text, SAS, and SPSS. In 2008, we provided an additional file that contains SAS and SPSS codes for constructing RACE variable that was available in previous years. The 2022 file contains 270 variables for each case, and a variable-by-variable description is provided starting on page 13.

A brief description of the different formats follows:

File Name	Type	Uncompressed File Size	Description
ACS_NSQIP_PUF22.txt	tab delimited TXT file	1.6 GB	Contains 270 HIPAA compliant variables on 1,011,899 cases submitted from 702 sites in 2022.
ACS_NSQIP_PUF22.sas7bdat	SAS 9.2 data file	6.2 GB	Same information as stated above in SAS data format.
ACS_NSQIP_PUF22.sav	SPSS 16.0 data file	6.8 GB	Same information as stated above in TXT and SAS data format.

4. Data Variable Updates

The "Data Variables" list begins on Page 13 of this document.

The "Variable Definition" column (as it appeared in the PUF User Guides from 2005-2014) has been removed. It has been replaced by a column titled: "Search Term in Chapter 4…"

Beginning with the 2016 PUF, abbreviated definitions have been removed from the Variable Definition field. So that investigators will have ready access to complete and authoritative variable definitions (rather than past definitions which may be incomplete and potentially misleading with respect to nuanced clinical features of importance to the investigator), the "Search Term in Chapter 4…" field now contains a search term that will locate the complete definition in Chapter 4 of the "ACS NSQIP Operations Manual" - the authoritative variable definition reference manual used by SCRs. Please be aware that Chapter 4 definitions are year specific, though dramatic changes are rare.

Variables names have been reconciled so that you can copy the entire text within an individual cell from the column titled "Search Term in Chapter 4" in the User Guide and paste it into a search field (you can create a search field by simultaneously hitting Ctrl and F on your keyboard) in Chapter 4. Once the text is copied into the search field and enter is hit, you will see the variable definition and other information pertinent to that particular variable.

To support this new process, investigators receiving the PUF will have the opportunity to download a Chapter 4 corresponding to the specific PUF year (*beginning with data for 2015*). Appropriate definitions will continue to be provided in the "Search Term in Chapter 4…" field for those variables that are constructed specifically for the PUF and do not exist in Chapter 4.

Chapter 4 will be made available to you for download with the rest of your requested PUF files or by contacting your hospital's Surgical Clinical Reviewer (SCR). Data Use Agreements will now apply to the use and distribution of Chapter 4, as well as PUF data itself.

Beginning with the 2016 PUF, the variable, "PUFYEAR" has been added to the dataset. This variable will allow you to identify the appropriate Chapter 4 for data that has been merged across several years.

In prior years we have retained data fields for historical variables that are no longer collected and inserted missing values. Beginning this year, we are dropping all variables that are not currently collected. Thus, the number of variables included in the Essential PUF is fewer this year than in past years. Also, because the position of data fields is no longer consistent across years, it will no longer be possible to join data across years by merely concatenating files. Files will need to be merged by variable name using appropriate statistical software.

5. Data Collection Background and Data Quality

The ACS NSQIP collects data on over 150 variables, including preoperative risk factors, intraoperative variables, and 30-day postoperative mortality and morbidity outcomes for patients undergoing major surgical procedures in both the inpatient and outpatient setting. A site's trained and certified Surgical Clinical Reviewer (SCR) captures these data using a variety of methods including medical chart abstraction.

Required data variables are entered via web-based data collection to the ACS NSQIP website. 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 SCR(s) at their hospital for detailed information on how the hospital collects its ACS NSQIP data.

To ensure the data collected are of the highest quality, the ACS NSQIP has developed a host of different training mechanisms for the SCRs and conducts an Inter-Rater Reliability (IRR) Audit of selected participating sites. In addition to an initial web-based training program, the ACS NSQIP requires SCRs to complete a series of web-based training modules followed by a certification exam that must be retaken annually. The modules and certification exam focus on the program, processes, and analysis; preoperative, intraoperative, and postoperative definitions; and case studies. These modules are complemented by a growing online decision support system that ensures the SCRs have the knowledge and resources available to collect high-quality data.

The IRR Audit is a fundamental tool of ACS NSQIP to assess the quality of the data collected at participating sites. The process involves the review of multiple charts, some of which are selected randomly and others selected based on criteria designed to identify potential reporting errors. For example, cases with five or more preoperative risk factors and no reported mortality or morbidity or cases with two or fewer preoperative risk factors and reported mortality or morbidity will be selected for chart review. Operating room logs are also audited to ensure correct sampling of cases.

The combined results of the audits completed to date revealed an overall disagreement rate of approximately 2% for all assessed program variables. The ACS NSQIP has determined that an IRR Audit disagreement rate of 5% or less is acceptable. Sites that have higher than a 5% disagreement rate are not provided a hospital odds ratio in the ACS NSQIP Semiannual Report and may be required to undergo an additional audit following training and education recommendations from the ACS NSQIP.

6. Sampling Process and Case Exclusion Criteria

Sites participating in the ACS NSQIP can do so in a variety of options that cover general/vascular surgery, multispecialty surgery, or procedure targeted (reported separately). Each participation option includes a systematic sampling process that is described below.

Systematic Sampling Process

Larger institutions normally experience a significant volume of surgical cases. This presents the problem of managing an overwhelming workload. In order to prevent bias in choosing cases for assessment, a systematic sampling process was developed. An important tool to utilize while performing the systematic sampling process is the 8-Day Cycle Schedule. The 8-day cycle works as follows: If the first 'cycle' begins on a Monday, it continues through to include the following Monday (an 8-day period of time). The next cycle begins on Tuesday and continues through to include the following Tuesday. And so on. This process assures that over time cases have equal chances of being selected from each day of the week.

Note: There are some exceptions to the systematic sampling inclusion. Hospitals participating in the Small & Rural option will collect all ACS NSQIP-eligible cases at their hospital. Hospitals participating in Essentials or in the Procedure Targeted options are provided with sampling requirements specific to their site and may opt to collect more than the specified sampling requirements if resources allow.

Case Exclusion Criteria

The following exclusion criteria were applied to cases collected in 2022. For the current inclusion/exclusion criteria please contact the ACS NSQIP Clinical Support Team at clinicalsupport@acsnsqip.org.

- Minor Cases (all cases that are not considered Major)
- Patients under the age of 18 years.
- Patient for the case in question has been assigned with an ASA score of 6 (brain-death organ donors).
- Cases involving Hyperthermic Intraperitoneal Chemotherapy (HIPEC)
- Trauma cases: Any patient that meets the trauma exclusion criteria will be excluded.
- Transplant cases: For any patient who is admitted to the hospital and has a transplant procedure, that transplant procedure and any additional surgical procedure during the transplant hospitalization will be excluded.

- Cases beyond three per cycle for limited cases: For each program option (excluding Small & Rural), only a maximum of three cases from each of the below procedures should be included per 8-day cycle. Any case beyond the case limit of three for any of these procedures should be excluded.
    - Inguinal Herniorrhaphies
    - Breast Lumpectomies
    - Laparoscopic Cholecystectomies
    - TURPs and/or TURBTs

      (This limit does not apply for Procedure Targeted sites that are targeting TURPs.)

- Cases beyond the required number per your site's contract for each cycle.
- A return to the operating room that is related to an occurrence or complication of a prior procedure
- Multiple NSQIP assessed cases within 30 days: Any patient who already has a NSQIP-assessed procedure entered within the previous 30 days at your site should be excluded. Only one NSQIP-assessed procedure can be abstracted patient, per 30 days, for each

Hospital Exclusion Criteria

In addition to the case inclusion/exclusion criteria, hospital inclusion/exclusion criteria are also imposed. To maintain the highest level of data quality, only cases included in the odds ratio analysis are included in the PUF. These cases go through an additional level of scrutiny as they are passed from data collection to statistical analysis. A site is excluded from the odds ratio calculations and the PUF if it fits any of the following criteria:

- Sites that exhibit issues with either data quality or 30-day follow-up may be excluded in order to ensure the integrity of PUF data
- Inter-Rater Reliability Audit disagreement rate is over 5%

7. 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). Other limitations are due to resource constraints (such as the collection of generic surgical variables only, except for the procedure targeted option, which is reported separately). The following items represent the most salient limitations of the data:

- Because such a wide variety of operations are tracked, the variables are necessarily generic in nature. This limitation may pose difficulties for researchers attempting in-depth research

on specific conditions or operations. However, surgical Targeted PUF datasets are now available which address target-specific predictors and outcomes for many types of operations.

- While the sex and race distributions are reasonably representative of the national surgery patient population, only patients over the age of 18 are available for assessment, so the age distribution is somewhat truncated. Patients over the age of 90 are also grouped into a 90+ category to prevent cases from being identifiable due to unique data.

- Patients are followed after surgery for 30 days. Complications or death after that period are not included. Hospitals may follow patients longer than 30 days, but this data is not reported by NSQIP.

- 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 is recoded into Hospital Length of Stay.

- In order to comply with the Hospital Participation Agreement (HPA) that is agreed to between the ACS and participating sites, facility identifiers as well as geographic information regarding the case have been removed. The HPA stipulates that the ACS does not identify participating sites. Site 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 hospitals that are participating in the ACS NSQIP and do not represent a statistically valid nationally representative sample.

- Most patients do not receive all possible preoperative laboratory tests, so some of these variables have a high percentage of missing values (15% to 45%, 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.

Graft failure, Coma, and Peripheral Nerve Injury Data Update

As first identified and reported in December of 2014, we have identified a problem in reported results for three outcome variables that existed in the Classic program, but did not exist in Essentials, between 2011 and 2013.

As it is mandatory to report outcome variables, we have historically converted the absence of an affirmative response (i.e., missing data) to "No Complication". This otherwise appropriate procedure was mistakenly applied to three outcome variables which were dropped from Essentials beginning in 2011 (Graft failure, Coma, Peripheral Nerve Injury). This logic resulted in "No complication" being assigned to missing data coming from Essential sites where, in fact, no data was being collected for these three outcomes. For the 2013 SAR (when Classic no longer existed) this isn't much of a problem as users would clearly know that something was wrong when 100% of the cases had "No complication" (for 2014 missing values were inserted for these historical outcome variables rather than "No complication"). However, for 2011 and 2012, when some sites were Essentials and some Classic, a PUF user would see a strange, precipitous, drop in event rates for these outcomes.

Because of this problem, Graft failure, Coma, and Peripheral Nerve Injury should not be considered accurate for any PUF after 2010.

8. 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 Brian Matel, ACS NSQIP Statistical Report Manager, via email at bmatel@facs.org.

9. Frequently Asked Questions

Request Process

Q: Who has access to this file?

A: Any individual with an official appointment at a fully participating site will be given access to the file following completion of the Data Use Agreement and a short set of questions that are available on the website.

Q: Is the file available to individuals from non-participating sites?

A: At this time, the data files are only available to individuals with official appointments at fully participating sites.

Q: I am at a NSQIP-participating site and would like to work on a research project with others from a different site that is not participating. Will I be allowed to do that?

A: Yes, however, the NSQIP affiliated researcher must be the lead investigator on all PUF-based research projects and is responsible for the PUF dataset, even if forwarded to someone else. The non-participating collaborator must also sign the DUA.

Q: How do I obtain a copy of this file?

A: Please see the "Data Request Process" on page 1 of this document for a step-by-step approach on how to do so.

Contents of the Files

Q: What is in this file?

A: The file contains Health Insurance Portability and Accountability Act (HIPAA) de-identified data from sites participating in the ACS NSQIP that received risk-adjusted reports in 2022. The variable name, variable label, data definition, and other pertinent information are provided in Section 10: Data Variables and Definitions.

Q: Are site identifiers included in the database?

A: At this time, we do not provide any geographic or site-specific identification. We took this approach to ensure the privacy of both the participating sites and surgeons.

Q: Are there surgeon-specific identifiers included in the database?

A: At this time, we do not provide any surgeon-specific information. We took this approach to ensure the privacy of both the participating sites and surgeons.

Q: Are other PUF data sets available?

A: Between Essentials and Procedure Targeted, there are a total of 107 other PUF files available for request / download:

Essentials

PUF Year	PUF Type	Cases	Sites
2005/2006	Essentials	152,490	121
2007	Essentials	211,407	183
2008	Essentials	271,368	211
2009	Essentials	336,190	237
2010	Essentials	363,431	258
2011	Essentials	442,149	315
2012	Essentials	543,885	374
2013	Essentials	651,940	435

PUF Year	PUF Type	Cases	Sites
2014	Essentials	750,397	517
2015	Essentials	885,502	603
2016	Essentials	1,000,393	680
2017	Essentials	1,028,713	708
2018	Essentials	1,020,511	722
2019	Essentials	1,076,441	719
2020	Essentials	902,968	706
2021	Essentials	983,851	685

Procedure Targeted

PUF Year	PUF Type	Cases	Sites
2011/12	Vascular	655	71
2013	Vascular	4,292	83
2014	Vascular	4,029	83
2015	Vascular	4,199	89
2016	Vascular	4,071	95
2017	Vascular	4,177	95
2018	Vascular	3,807	98
2019	Vascular	3,912	85
2020	Vascular	2,398	78
2021	Vascular	2,572	69
2011/12	Colectomy	16,981	121
2013	Colectomy	21,505	154
2014	Colectomy	25,262	203
2015	Colectomy	31,307	239
2016	Colectomy	35,908	274
2017	Colectomy	38,139	285
2018	Colectomy	41,386	343
2019	Colectomy	47,425	336
2020	Colectomy	40,139	338
2021	Colectomy	44,518	341
2014	Gynecology	500	19
2015	Gynecology	492	29
2016	Gynecology	781	33
2017	Gynecology	1,250	41
2018	Gynecology	1,320	46
2019	Gynecology	1,313	41
2020	Gynecology	962	38
2021	Gynecology	1,061	36

PUF Year	PUF Type	Cases	Sites
2014	Hysterectomy	19,283	91
2015	Hysterectomy	23,360	109
2016	Hysterectomy	29,964	136
2017	Hysterectomy	34,070	147
2018	Hysterectomy	39,954	192
2019	Hysterectomy	43,857	173
2020	Hysterectomy	36,132	176
2021	Hysterectomy	39,407	170
2014	Hepatectomy	3,064	92
2015	Hepatectomy	3,854	105
2016	Hepatectomy	4,325	116
2017	Hepatectomy	4,505	120
2018	Hepatectomy	4,773	133
2019	Hepatectomy	5,074	141
2020	Hepatectomy	4,895	141
2021	Hepatectomy	5,170	149
2014	Pancreatectomy	5,187	106
2015	Pancreatectomy	6,032	120
2016	Pancreatectomy	6,244	137
2017	Pancreatectomy	6,918	142
2018	Pancreatectomy	7,248	158
2019	Pancreatectomy	7,814	165
2020	Pancreatectomy	7,496	166
2021	Pancreatectomy	7,874	168
2016	Proctectomy	4,217	159
2017	Proctectomy	4,576	176
2018	Proctectomy	4,621	200
2019	Proctectomy	4,905	193
2020	Proctectomy	4,189	190
2021	Proctectomy	4,328	201

PUF Year	PUF Type	Cases	Sites
2016	Thyroidectomy	5,871	93
2017	Thyroidectomy	5,755	91
2018	Thyroidectomy	6,452	112
2019	Thyroidectomy	6,864	83
2020	Thyroidectomy	5,593	84
2021	Thyroidectomy	7,233	89
2016	Esophagectomy	1,034	71
2017	Esophagectomy	1,066	76
2018	Esophagectomy	1,179	82
2019	Esophagectomy	1,290	85
2020	Esophagectomy	1,187	83
2021	Esophagectomy	1,057	83
2016	Appendectomy	12,376	115
2017	Appendectomy	12,406	113
2018	Appendectomy	12,667	131
2019	Appendectomy	15,110	112
2020	Appendectomy	13,210	111
2021	Appendectomy	14,296	106
2016	Hip Fracture	9,390	117
2017	Hip Fracture	10,506	115
2018	Hip Fracture	11,855	152
2019	Hip Fracture	14,523	140
2020	Hip Fracture	13,657	141
2021	Hip Fracture	12,395	119
2019	Cystectomy	2,953	107
2020	Cystectomy	3,150	107
2021	Cystectomy	2,832	111
2019	Nephrectomy	7,818	117
2020	Nephrectomy	6,585	122
2021	Nephrectomy	7,536	129
2019	Prostatectomy	8,256	125
2020	Prostatectomy	7,133	116
2021	Prostatectomy	7,649	115

Q: Why does the PUF exclude specific dates?

A: In order to release the PUF, certain adjustments to the data are required to ensure proper protection of patient information. To meet these requirements, we remove all elements of dates (except quarter of admission and year) for dates directly related to an individual. For more information on the 18 data elements that are required for removal, please visit http://privacyruleandresearch.nih.gov/
or
http://privacyruleandresearch.nih.gov/pdf/HIPAA_Booklet_4-14-2003.pdf.

Q: I am the Surgeon Champion or Surgical Clinical Reviewer from a site that has records in the PUF and would like to know which specific records are ours.

A: At this time, we do not provide site identification of any cases in the PUF, even self-identification.

Values in the Data

Q: For each of the following complications, Pneumonia, On Ventilator > 48 hours, Urinary Tract Infection, and Bleeding Transfusion, one case did not have a known duration from operation to complication. Why is that?

A: In each of these complications the case had an invalid date which inhibited the calculation of duration. The number of days from operation to complication variable is coded as -99 for these cases.

Q: What are the probability scores for mortality and morbidity and how often are they calculated?

A: The probabilities of mortality and morbidity are provided in this database for all surgery cases in 2022. These probabilities are derived using hierarchical regression analysis but based only on patient-level effects. They represent the probability (0 to 1) that a case will experience a morbidity or mortality event based on pre-existing conditions. These probabilities are calculated every six months for the previous 12 months of data so the algorithm used to generate the predicted values changes over time as does the data used to create the algorithm.

Q: Which calculated probabilities of mortality and morbidity are supplied in this data set?

A: The probabilities of mortality and morbidity for all surgical cases used in the risk-adjusted analysis in 2022 are provided.

Q: Why do some of the preoperative lab values have duration from lab to operation, but a value of -99 for the lab value?

A: The results of the lab tests can be entered manually and thus are susceptible to data entry error. Depending on the preoperative lab variable roughly 1% of the cases had invalid values and these invalid values were set to -99 to simplify analysis. It is also possible that some cases have valid lab values but are missing duration from lab to operation variable. This discrepancy is also related to a data entry error and the program continues to improve the data collection software to minimize the potential for data entry errors.

Q: When performing analysis on the five-digit CPT codes in the Other and Concurrent variables, how should I interpret those cases with a valid five-digit CPT code but a CPT description set to NULL?

A: If the case has a valid five-digit CPT code that procedure occurred and should be evaluated as such. The CPT description is a secondary variable and provided for convenience. In the processing of large amounts of data some descriptions are purposefully or inadvertently removed.

File Formats

Q: In what file formats are the data available?

A: The data files are made available in a tab delimited TXT file, an SPSS file, and a SAS file.

Advisement: When a change in definitions across PUF years is noted, users should attend to this if they merge files. It is suggested that they evaluate variable categories across years and combine them in a manner appropriate to their research objectives.						
Position #	**Variable Name**	**Data Type**	**Variable Label**	**Search Term in Chapter 4 Notes: 'Variable Name:' needs to be included in Search Term; *Variables not included in Chap 4**	**Variable Options at Entry**	**Comments**
1	PUFYEAR	Char	Year of PUF	*Year of PUF		
2	CaseID	Num	Case Identification Number	Variable Name:Identification Number (MRN/IDN)		
3	SEX	Char	Gender	Variable Name:Sex	Male; Female;Non-binary	NULL = No Response
4	RACE_NEW	Char	New Race	Variable Name:Race	American Indian or Alaska Native Asian Black or African American Native Hawaiian or Pacific Islander White Race combinations with low frequency Some Other Race Unknown/Not Reported	NULL = No Response Race combinaitons with low frequency=Patients with Multiple races selected Multiple races can be selected
5	ETHNICITY_HISPANIC	Char	Ethnicity Hispanic	Variable Name:Hispanic Ethnicity	Yes; No; Unknown	NULL = No Response
6	PRNCPTX	Char	Principal operative procedure CPT code description	Variable Name:Primary Procedure		
7	CPT	Char	CPT	Variable Name:Primary Procedure		
8	WORKRVU	Num	Work Relative Value Unit	*Work Relative Value Unit		-99 = No Response
9	INOUT	Char	Inpatient/outpatient	Variable Name:In/Out-Patient Status	Outpatient; Inpatient	NULL = No Response
10	TRANST	Char	Origin status	Variable Name:Origin Status	Home/Permanent residence Acute are hospital Other facility Unknown	NULL = No Response
11	Age	Char	Age of patient with patients over 89 coded as 90+	Variable Name:Date of Birth		-99 = No Response
12	AdmYR	Num	Year of Admission	Variable Name:Hospital Admission Date/Time		-99 = No Response
13	OperYR	Num	Year of Operation	Variable Name:Operation Date		-99 = No Response
14	DISCHDEST	Char	Discharge Destination	Variable Name:Hospital Discharge Destination	Home/Permanent residence Acute care hospital Other facility Expired Against Medical Advice (AMA) Unknown	NULL = No Response
15	ANESTHES	Char	Principal anesthesia technique	Variable Name:Principal Anesthesia Technique	Epidural General Local Monitored Anesthesia care (MAC) / IV Sedation None Other Regional Spinal Unknown	NULL = No Response
16	SURGSPEC	Char	Surgical Specialty	Variable Name:Surgical Specialty	Cardiac General Surgery Gynecology Neurosurgery Orthopedics Otolaryngology (ENT) Plastics Thoracic Urology Vascular Obstetrics Interventional Radiologist	
17	HEIGHT	Num	Height in inches	Variable Name:Height		-99=No Response Units converted to inches
18	WEIGHT	Num	Weight in lbs	Variable Name:Weight		-99=No Response Units converted to lbs
19	DIABETES	Char	Diabetes mellitus with oral agents or insulin	Variable Name:Diabetes Mellitus	No; Insulin; Non-insulin	NULL = No Response
20	SMOKE	Char	Current smoker within one year	Variable Name:Current Smoker	Yes; No	NULL = No Response
21	FNSTATUS2	Char	Functional health status Prior to Surgery	Variable Name:Functional Health Status	Independent; Partially Dependent; Totally Dependent; Unknown	NULL = No Response
22	VENTILAT	Char	Ventilator dependent	Variable Name:Ventilator Dependent	Yes; No	NULL = No Response
23	HXCOPD	Char	History of severe COPD	Variable Name:History of Severe COPD	Yes; No	NULL = No Response
24	ASCITES	Char	Ascites	Variable Name:Ascites	Yes; No	NULL = No Response
25	HXCHF	Char	Heart failure (CHF) in 30 days before surgery	Variable Name:Heart Failure	Yes; No	NULL = No Response
26	HYPERMED	Char	Hypertension requiring medication	Variable Name:Hypertension Requiring Medication	Yes; No	NULL = No Response
27	RENAFAIL	Char	Preop Acute Kidney Injury	Variable Name:Preop Acute Kidney Injury	Yes; No	NULL = No Response

Position #	Variable Name	Data Type	Variable Label	Search Term in Chapter 4 Notes: 'Variable Name:' needs to be included in Search Term; *Variables not included in Chap 4	Variable Options at Entry	Comments
28	DIALYSIS	Char	Preop Dialysis	Variable Name:Preop Dialysis	Yes; No	NULL = No Response
29	DISCANCR	Char	Disseminated cancer	Variable Name:Disseminated Cancer	Yes; No	NULL = No Response
30	STEROID	Char	Immunosuppressive Therapy	Variable Name:Immunosuppressive Therapy	Yes; No	NULL = No Response
31	BLEEDDIS	Char	Bleeding disorders	Variable Name:Bleeding Disorders	Yes; No	NULL = No Response
32	TRANSFUS	Char	Preop Transfusion of >= 1 unit of whole/packed RBCs in 72 hours prior to surgery	Variable Name:RBC Transfusions	Yes; No	NULL = No Response
33	PRSEPIS	Char	Systemic Sepsis	Variable Name:SIRS/Sepsis/Septic Shock	SIRS; Sepsis; Septic Shock; None	NULL=No Response
34	DPRNA	Num	Days from Na Preoperative Labs to Operation	*Days from Na Preoperative Labs to Operation		-99 = Lab value not obtained or No Response
35	DPRBUN	Num	Days from BUN Preoperative Labs to Operation	*Days from BUN Preoperative Labs to Operation		-99 = Lab value not obtained or No Response
36	DPRCREAT	Num	Days from Creatinine Preoperative Labs to Operation	*Days from Creatinine Preoperative Labs to Operation		-99 = Lab value not obtained or No Response
37	DPRALBUM	Num	Days from Albumin Preoperative Labs to Operation	*Days from Albumin Preoperative Labs to Operation		-99 = Lab value not obtained or No Response
38	DPRBILI	Num	Days from Bilirubin Preoperative Labs to Operation	*Days from Bilirubin Preoperative Labs to Operation		-99 = Lab value not obtained or No Response
39	DPRSGOT	Num	Days from SGOT Preoperative Labs to Operation	*Days from SGOT Preoperative Labs to Operation		-99 = Lab value not obtained or No Response
40	DPRALKPH	Num	Days from ALKPHOS Preoperative Labs to Operation	*Days from ALKPHOS Preoperative Labs to Operation		-99 = Lab value not obtained or No Response
41	DPRWBC	Num	Days from WBC Preoperative Labs to Operation	*Days from WBC Preoperative Labs to Operation		-99 = Lab value not obtained or No Response
42	DPRHCT	Num	Days from HCT Preoperative Labs to Operation	*Days from HCT Preoperative Labs to Operation		-99 = Lab value not obtained or No Response
43	DPRPLATE	Num	Days from PlateCount Preoperative Labs to Operation	*Days from PlateCount Preoperative Labs to Operation		-99 = Lab value not obtained or No Response
44	DPRPTT	Num	Days from PTT Preoperative Labs to Operation	*Days from PTT Preoperative Labs to Operation		-99 = Lab value not obtained or No Response
45	DPRINR	Num	Days from INR Preoperative Labs to Operation	*Days from INR Preoperative Labs to Operation		-99 = Lab value not obtained or No Response
46	PRSODM	Num	Pre-operative serum sodium	Variable Name:Preoperative Lab Value Information		-99 = Lab value not obtained or No Response
47	PRBUN	Num	Pre-operative BUN	Variable Name:Preoperative Lab Value Information		-99 = Lab value not obtained or No Response
48	PRCREAT	Num	Pre-operative serum creatinine	Variable Name:Preoperative Lab Value Information		-99 = Lab value not obtained or No Response
49	PRALBUM	Num	Pre-operative serum albumin	Variable Name:Preoperative Lab Value Information		-99 = Lab value not obtained or No Response
50	PRBILI	Num	Pre-operative total bilirubin	Variable Name:Preoperative Lab Value Information		-99 = Lab value not obtained or No Response
51	PRSGOT	Num	Pre-operative SGOT	Variable Name:Preoperative Lab Value Information		-99 = Lab value not obtained or No Response
52	PRALKPH	Num	Pre-operative alkaline phosphatase	Variable Name:Preoperative Lab Value Information		-99 = Lab value not obtained or No Response
53	PRWBC	Num	Pre-operative WBC	Variable Name:Preoperative Lab Value Information		-99 = Lab value not obtained or No Response
54	PRHCT	Num	Pre-operative hematocrit	Variable Name:Preoperative Lab Value Information		-99 = Lab value not obtained or No Response
55	PRPLATE	Num	Pre-operative platelet count	Variable Name:Preoperative Lab Value Information		-99 = Lab value not obtained or No Response
56	PRPTT	Num	Pre-operative PTT	Variable Name:Preoperative Lab Value Information		-99 = Lab value not obtained or No Response
57	PRINR	Num	Pre-operative International Normalized Ratio (INR) of PT values	Variable Name:Preoperative Lab Value Information		-99 = Lab value not obtained or No Response
58	OTHERPROC1	Char	Other Procedure 1	Variable Name:Other Procedures		NULL = No Procedure
59	OTHERCPT1	Char	Other CPT Code 1	Variable Name:Other Procedures		NULL = No Procedure
60	OTHERWRVU1	Num	Other Work Relative Value Unit 1	*Other Work Relative Value Unit 1		-99 = No Procedure/No Response
61	OTHERPROC2	Char	Variable Name:Other Procedure 2	Variable Name:Other Procedures		NULL = No Procedure
62	OTHERCPT2	Char	Other CPT Code 2	Variable Name:Other Procedures		NULL = No Procedure
63	OTHERWRVU2	Num	Other Work Relative Value Unit 2	*Other Work Relative Value Unit 2		-99 = No Procedure/No Response
64	OTHERPROC3	Char	Variable Name:Other Procedure 3	Variable Name:Other Procedures		NULL = No Procedure
65	OTHERCPT3	Char	Other CPT Code 3	Variable Name:Other Procedures		NULL = No Procedure

Position #	Variable Name	Data Type	Variable Label	Search Term in Chapter 4 Notes: 'Variable Name:' needs to be included in Search Term; *Variables not included in Chap 4	Variable Options at Entry	Comments
66	OTHERWRVU3	Num	Other Work Relative Value Unit 3	*Other Work Relative Value Unit 3		-99 = No Procedure/No Response
67	OTHERPROC4	Char	Variable Name:Other Procedure 4	Variable Name:Other Procedures		NULL = No Procedure
68	OTHERCPT4	Char	Other CPT Code 4	Variable Name:Other Procedures		NULL = No Procedure
69	OTHERWRVU4	Num	Other Work Relative Value Unit 4	*Other Work Relative Value Unit 4		-99 = No Procedure/No Response
70	OTHERPROC5	Char	Variable Name:Other Procedure 5	Variable Name:Other Procedures		NULL = No Procedure
71	OTHERCPT5	Char	Other CPT Code 5	Variable Name:Other Procedures		NULL = No Procedure
72	OTHERWRVU5	Num	Other Work Relative Value Unit 5	*Other Work Relative Value Unit 5		-99 = No Procedure/No Response
73	OTHERPROC6	Char	Variable Name:Other Procedure 6	Variable Name:Other Procedures		NULL = No Procedure
74	OTHERCPT6	Char	Other CPT Code 6	Variable Name:Other Procedures		NULL = No Procedure
75	OTHERWRVU6	Num	Other Work Relative Value Unit 6	*Other Work Relative Value Unit 6		-99 = No Procedure/No Response
76	OTHERPROC7	Char	Variable Name:Other Procedure 7	Variable Name:Other Procedures		NULL = No Procedure
77	OTHERCPT7	Char	Other Variable Name:Other Procedure 7	Variable Name:Other Procedures		NULL = No Procedure
78	OTHERWRVU7	Num	Other Work Relative Value Unit 7	*Other Work Relative Value Unit 7		-99 = No Procedure/No Response
79	OTHERPROC8	Char	Variable Name:Other Procedure 8	Variable Name:Other Procedures		NULL = No Procedure
80	OTHERCPT8	Char	Other Variable Name:Other Procedure 8	Variable Name:Other Procedures		NULL = No Procedure
81	OTHERWRVU8	Num	Other Work Relative Value Unit 8	*Other Work Relative Value Unit 8		-99 = No Procedure/No Response
82	OTHERPROC9	Char	Variable Name:Other Procedure 9	Variable Name:Other Procedures		NULL = No Procedure
83	OTHERCPT9	Char	Other Variable Name:Other Procedure 9	Variable Name:Other Procedures		NULL = No Procedure
84	OTHERWRVU9	Num	Other Work Relative Value Unit 9	*Other Work Relative Value Unit 9		-99 = No Procedure/No Response
85	OTHERPROC10	Char	Variable Name:Other Procedure 10	Variable Name:Other Procedures		NULL = No Procedure
86	OTHERCPT10	Char	Other Variable Name:Other Procedure 10	Variable Name:Other Procedures		NULL = No Procedure
87	OTHERWRVU10	Num	Other Work Relative Value Unit 10	*Other Work Relative Value Unit 10		-99 = No Procedure/No Response
88	CONCURR1	Char	Concurrent Procedure 1	Variable Name:Concurrent Procedures		NULL = No Procedure
89	CONCPT1	Char	Concurrent CPT 1	Variable Name:Concurrent Procedures		NULL = No Procedure
90	CONWRVU1	Num	Concurrent Work Relative Value Unit 1	*Concurrent Work Relative Value Unit 1		-99 = No Procedure/No Response
91	CONCURR2	Char	Concurrent Procedure 2	Variable Name:Concurrent Procedures		NULL = No Procedure
92	CONCPT2	Char	Concurrent CPT 2	Variable Name:Concurrent Procedures		NULL = No Procedure
93	CONWRVU2	Num	Concurrent Work Relative Value Unit 2	*Concurrent Work Relative Value Unit 2		-99 = No Procedure/No Response
94	CONCURR3	Char	Concurrent Procedure 3	Variable Name:Concurrent Procedures		NULL = No Procedure
95	CONCPT3	Char	Concurrent CPT 3	Variable Name:Concurrent Procedures		NULL = No Procedure
96	CONWRVU3	Num	Concurrent Work Relative Value Unit 3	*Concurrent Work Relative Value Unit 3		-99 = No Procedure/No Response
97	CONCURR4	Char	Concurrent Procedure 4	Variable Name:Concurrent Procedures		NULL = No Procedure
98	CONCPT4	Char	Concurrent CPT 4	Variable Name:Concurrent Procedures		NULL = No Procedure
99	CONWRVU4	Num	Concurrent Work Relative Value Unit 4	*Concurrent Work Relative Value Unit 4		-99 = No Procedure/No Response
100	CONCURR5	Char	Concurrent Procedure 5	Variable Name:Concurrent Procedures		NULL = No Procedure
101	CONCPT5	Char	Concurrent CPT 5	Variable Name:Concurrent Procedures		NULL = No Procedure
102	CONWRVU5	Num	Concurrent Work Relative Value Unit 5	*Concurrent Work Relative Value Unit 5		-99 = No Procedure/No Response
103	CONCURR6	Char	Concurrent Procedure 6	Variable Name:Concurrent Procedures		NULL = No Procedure
104	CONCPT6	Char	Concurrent CPT 6	Variable Name:Concurrent Procedures		NULL = No Procedure
105	CONWRVU6	Num	Concurrent Work Relative Value Unit 6	*Concurrent Work Relative Value Unit 6		-99 = No Procedure/No Response
106	CONCURR7	Char	Concurrent Procedure 7	Variable Name:Concurrent Procedures		NULL = No Procedure
107	CONCPT7	Char	Concurrent CPT 7	Variable Name:Concurrent Procedures		NULL = No Procedure
108	CONWRVU7	Num	Concurrent Work Relative Value Unit 7	*Concurrent Work Relative Value Unit 7		-99 = No Procedure/No Response
109	CONCURR8	Char	Concurrent Procedure 8	Variable Name:Concurrent Procedures		NULL = No Procedure
110	CONCPT8	Char	Concurrent CPT 8	Variable Name:Concurrent Procedures		NULL = No Procedure
111	CONWRVU8	Num	Concurrent Work Relative Value Unit 8	*Concurrent Work Relative Value Unit 8		-99 = No Procedure/No Response
112	CONCURR9	Char	Concurrent Procedure 9	Variable Name:Concurrent Procedures		NULL = No Procedure
113	CONCPT9	Char	Concurrent CPT 9	Variable Name:Concurrent Procedures		NULL = No Procedure
114	CONWRVU9	Num	Concurrent Work Relative Value Unit 9	*Concurrent Work Relative Value Unit 9		-99 = No Procedure/No Response
115	CONCURR10	Char	Concurrent Procedure 10	Variable Name:Concurrent Procedures		NULL = No Procedure

Position #	Variable Name	Data Type	Variable Label	Search Term in Chapter 4 Notes: 'Variable Name:' needs to be included in Search Term; *Variables not included in Chap 4	Variable Options at Entry	Comments
116	CONCPT10	Char	Concurrent CPT 10	Variable Name:Concurrent Procedures		NULL = No Procedure
117	CONWRVU10	Num	Concurrent Work Relative Value Unit 10	*Concurrent Work Relative Value Unit 10		-99 = No Procedure/No Response
118	ASACLAS	Char	ASA classification	Variable Name:ASA Classification	1-No Disturb 2-Mild Disturb 3-Severe Disturb 4-Life Threat 5-Moribund None assigned	NULL= No Response
119	MORTPROB	Num	Estimated Probability of Mortality	*Probability of mortality is developed for all cases based on a logistic regression analysis using the patient's preopeartive characteristics as the independent or predictive variables. Only cases included in the logistic regression analysis will have the associated probabilities of mortality.		System missing = case was not included in the logistic regression analysis
120	MORBPROB	Num	Estimated Probability of Morbidity	*Probability of morbidity is developed for all cases based on a logistic regression analysis using the patient's preopeartive characteristics as the independent or predictive variables. Only cases included in the logistic regression analysis will have the associated probabilities of morbidity.		System missing = case was not included in the logistic regression analysis
121	OPTIME	Num	Total operation time	*Total operation time in minutes		-99 = No Response
122	HDISDT	Num	Hospital discharge Year	Variable Name:Acute Hospital Discharge Date		-99 = No Response
123	YRDEATH	Num	Year of death	Variable Name:Date of Death		-99 = Patient alive at 30 days Notes: include death >30days of procedure
124	TOTHLOS	Num	Length of total hospital stay	*Length of total hospital stay		
125	AdmQtr	Num	Quarter of Admission	Variable Name:Hospital Admission Date	1; 2; 3; 4	-99 = No Response
126	HtoODay	Num	Days from Hospital Admission to Operation	*Days from Hospital Admission to Operation		-99 = No Response
127	NSUPINFEC	Num	Number of Superficial Incisional SSI Occurrences	*Number of Superficial Incisional SSI Occurrences		
128	SUPINFEC	Char	Occurrences Superficial surgical site infection	Variable Name:Superficial Incisional SSI	No Complication; Superficial Incisional SSI	
129	SSSIPATOS	Char	Superficial Incisional SSI PATOS	Variable Name:Superficial Incisional SSI – PATOS	Yes; No	NULL = No response
130	DSUPINFEC	Num	Days from Operation until Superficial Incisional SSI Complication	*Days from Operation until Superficial Incisional SSI Complication		
131	NWNDINFD	Num	Number of Deep Incisional SSI Occurrences	*Number of Deep Incisional SSI Occurrences		
132	WNDINFD	Char	Occurrences Deep Incisional SSI	Variable Name:Deep Incisional SSI	Deep Incisional SSI; No Complication	
133	DSSIPATOS	Char	Deep Incisional SSI PATOS	Variable Name:Deep Incisional SSI – PATOS	Yes; No	NULL = No response
134	DWNDINFD	Num	Days from Operation until Deep Incisional SSI Complication	*Days from Operation until Deep Incisional SSI Complication		-99 = Patient did not experience this complication at or before 30 days post operation
135	NORGSPCSSI	Num	Number of Organ/Space SSI Occurrences	*Number of Organ/Space SSI Occurrences		
136	ORGSPCSSI	Char	Occurrences Organ Space SSI	Variable Name:Organ/Space SSI	Organ/Space SSI; No Complication	
137	OSSIPATOS	Char	Organ/Space SSI PATOS	Variable Name:Organ/Space SSI – PATOS	Yes; No	NULL = No response
138	DORGSPCSSI	Num	Days from Operation until Organ/Space SSI Complication	*Days from Operation until Organ/Space SSI Complication		-99 = Patient did not experience this complication at or before 30 days post operation
139	NDEHIS	Num	Number of Wound Disruption Occurrences	*Number of Wound Disruption Occurrences		
140	DEHIS	Char	Occurrences Wound Disrupt	Variable Name:Wound Disruption	Wound Disruption; No Complication	
141	DDEHIS	Num	Days from Operation until Wound Disruption Complication	*Days from Operation until Wound Disruption Complication		-99 = Patient did not experience this complication at or before 30 days post operation
142	NOUPNEUMO	Num	Number of Pneumonia Occurrences	*Number of Pneumonia Occurrences		
143	OUPNEUMO	Char	Occurrences Pneumonia	Variable Name:Pneumonia	Pneumonia; No Complication	
144	PNAPATOS	Char	Pneumonia PATOS	Variable Name:Pneumonia – PATOS	Yes; No	NULL = No response
145	DOUPNEUMO	Num	Days from Operation until Pneumonia Complication	*Days from Operation until Pneumonia Complication		-99 = Patient did not experience this complication at or before 30 days post operation
146	NREINTUB	Num	Number of Unplanned Intubation Occurrences	*Number of Unplanned Intubation Occurrences		
147	REINTUB	Char	Occurrences Unplanned Intubation	Variable Name:Unplanned Intubation	Unplanned Intubation; No Complication	
148	DREINTUB	Num	Days from Operation until Unplanned Intubation Complication	*Days from Operation until Unplanned Intubation Complication		-99 = Patient did not experience this complication at or before 30 days post operation
149	NPULEMBOL	Num	Number of Pulmonary Embolism Occurrences	*Number of Pulmonary Embolism Occurrences		
150	PULEMBOL	Char	Occurrences Pulmonary Embolism	Variable Name:Pulmonary Embolism	Pulmonary Embolism; No Complication	

Position #	Variable Name	Data Type	Variable Label	Search Term in Chapter 4 Notes: 'Variable Name:' needs to be included in Search Term; *Variables not included in Chap 4	Variable Options at Entry	Comments
151	DPULEMBOL	Num	Days from Operation until Pulmonary Embolism Complication	*Days from Operation until Pulmonary Embolism Complication		-99 = Patient did not experience this complication at or before 30 days post operation
152	NFAILWEAN	Num	Number of On Ventilator > 48 Hours Occurrences	*Number of On Ventilator > 48 Hours Occurrences		
153	FAILWEAN	Char	Occurrences Ventilator > 48Hours	Variable Name:On Ventilator > 48 Hours	On Ventilator greater than 48 Hours; No Complication	
154	VENTPATOS	Char	On Ventilator > 48 Hours PATOS	Variable Name:On Ventilator > 48 Hours – PATOS	Yes; No	NULL = No response
155	DFAILWEAN	Num	Days from Operation until On Ventilator > 48 Hours Complication	*Days from Operation until On Ventilator > 48 Hours Complication		-99 = Patient did not experience this complication at or before 30 days post operation
156	NRENAINSF	Num	Number of Postop Renal Insufficiency Occurrences	*Number of Postop Renal Insufficiency Occurrences		
157	RENAINSF	Char	Occurrences Postop Renal Insufficiency	Variable Name:Postop Renal Insufficiency	Postop Renal Insufficiency; No Complication	Definition changed July 2021
158	DRENAINSF	Num	Days from Operation until Postop Renal Insufficiency Complication	*Days from Operation until Postop Renal Insufficiency Complication		-99 = Patient did not experience this complication at or before 30 days post operation
159	NOPRENAFL	Num	Number of Postop Dialysis Occurrences	*Number of Postop Dialysis Occurrences		
160	OPRENAFL	Char	Occurrences Postop Dialysis	Variable Name:Postop Dialysis	Postop Dialysis; No Complication	Definition changed July 2021
161	DOPRENAFL	Num	Days from Operation until Postop Dialysis Complication	*Days from Operation until Postop Dialysis Complication		-99 = Patient did not experience this complication at or before 30 days post operation
162	NURNINFEC	Num	Number of Urinary Tract infection Occurrences	*Number of Urinary Tract infection Occurrences		
163	URNINFEC	Char	Occurrences Urinary Tract Infection	Variable Name:Urinary Tract Infection	Urinary Tract Infection; No Complication	
164	UTIPATOS	Char	UTI PATOS	Variable Name:UTI – PATOS	Yes; No	NULL = No response
165	DURNINFEC	Num	Days from Operation until Urinary Tract Infection Complication	*Days from Operation until Urinary Tract Infection Complication		-99 = Patient did not experience this complication at or before 30 days post operation
166	NCNSCVA	Num	Number of Stroke/CVA Occurrences	*Number of Stroke/CVA Occurrences		
167	CNSCVA	Char	CVA/Stroke with neurological deficit	Variable Name:Stroke/CVA	Stroke/CVA; No Complication	
168	DCNSCVA	Num	Days from Operation until Stroke/CVA Complication	*Days from Operation until Stroke/CVA Complication		-99 = Patient did not experience this complication at or before 30 days post operation
169	NCDARREST	Num	Number of Cardiac Arrest Requiring CPR Occurrences	*Number of Cardiac Arrest Requiring CPR Occurrences		
170	CDARREST	Char	Occurrences Cardiac Arrest Requiring CPR	Variable Name:Cardiac Arrest Requiring CPR	Cardiac Arrest Requiring CPR; No Complication	
171	DCDARREST	Num	Days from Operation until Cardiac Arrest Requiring CPR Complication	*Days from Operation until Cardiac Arrest Requiring CPR Complication		-99 = Patient did not experience this complication at or before 30 days post operation
172	NCDMI	Num	Number of Myocardial Infarction Occurrences	*Number of Myocardial Infarction Occurrences		
173	CDMI	Char	Occurrences Myocardial Infarction	Variable Name:Myocardial Infarction	Myocardial Infarction; No Complication	
174	DCDMI	Num	Days from Operation until Myocardial Infarction Complication	*Days from Operation until Myocardial Infarction Complication		-99 = Patient did not experience this complication at or before 30 days post operation
175	NOTHBLEED	Num	Number of Blood Transfusion Occurrences	*Number of Blood Tranfusion Occurrences		
176	OTHBLEED	Char	Occurrences Blood Transfusion	Variable Name:Blood Transfusion	Blood transfusion; No Complication	Definition changed 2018
177	DOTHBLEED	Num	Days from Operation until Blood Transfusion Complication	*Days from Operation until Blood Transfusion Complication		-99 = Patient did not experience this complication at or before 30 days post operation
178	NOTHDVT	Num	Number of Vein Thrombosis Requiring Therapy Occurrences	*Number of Vein Thrombosis Requiring Therapy Occurrences		
179	OTHDVT	Char	Occurrences Vein Thrombosis Requiring Therapy	Variable Name:Venous Thrombosis Requiring Therapy	Venous Thrombosis Requiring Therapy; No Complication	Definition changed July 2021
180	DOTHDVT	Num	Days from Operation until Vein Thrombosis Requiring Therapy Complication	*Days from Operation until Vein Thrombosis Requiring Therapy Complication		-99 = Patient did not experience this complication at or before 30 days post operation
181	NOTHSYSEP	Num	Number of Sepsis Occurrences	*Number of Sepsis Occurrences		
182	OTHSYSEP	Char	Occurrences Sepsis	Variable Name:Sepsis	Sepsis; No Complication	
183	SEPSISPATOS	Char	Sepsis PATOS	Variable Name:Sepsis – PATOS	Yes; No	NULL = No Response

Position #	Variable Name	Data Type	Variable Label	Search Term in Chapter 4 Notes: 'Variable Name:' needs to be included in Search Term; *Variables not included in Chap 4	Variable Options at Entry	Comments
184	DOTHSYSEP	Num	Days from Operation until Sepsis Complication	*Days from Operation until Sepsis Complication		-99 = Patient did not experience this complication at or before 30 days post operation
185	NOTHSESHOCK	Num	Number of Septic Shock Occurrences	*Number of Septic Shock Occurrences		
186	OTHSESHOCK	Char	Occurrences Septic Shock	Variable Name:Septic Shock	Septic Shock; No Complication	
187	SEPSHOCKPATOS	Char	Septic Shock PATOS	Variable Name:Septic Shock – PATOS	Yes; No	NULL = No Response
188	DOTHSESHOCK	Num	Days from Operation until Septic Shock Complication	*Days from Operation until Septic Shock Complication		-99 = Patient did not experience this complication at or before 30 days post operation
189	PODIAG10	Char	Post-op diagnosis (ICD 10)	Variable Name:Postoperative ICD-10 Code		
190	PODIAGTX10	Char	Post-op Diagnosis Text	Variable Name:Postoperative ICD-10 Code		
191	RETURNOR	Char	Return to OR	Variable Name:Unplanned Reoperation	Yes; No	NULL= No Response
192	DOpertoD	Num	Days from Operation to Death	*Days from Operation to Death		-99 = Patient did not die at or before 30 days post operation Notes: deaths within 30 days of procedure included only
193	DOptoDis	Num	Days from Operation to Discharge	*Days from Operation to Discharge		-99 = No Response
194	STILLINHOSP	Char	Still in Hospital > 30 Days	Variable Name:Still in Hospital > 30 Days	Yes; No	NULL = No Response
195	REOPERATION1	Char	Unplanned Reoperation 1	Variable Name:30-Day Unplanned Return to OR	Yes; No	NULL=No Response
196	RETORPODAYS	Num	Days from Principal Operative Procedure to Unplanned Reoperation 1	*Days from Principal Operative Procedure to Unplanned Return to OR 1		-99 = Patient did not experience Unplanned Reoperation 1
197	REOPORCPT1	Char	Unplanned Reoperation 1 CPT	Variable Name:30-Day Unplanned Return to OR		NULL = No Response
198	RETORRELATED	Char	Unplanned Reoperation 1 related to principal operative procedure	Variable Name:30-Day Unplanned Return to OR	Yes No Unknown	NULL = No Response
199	REOPOR1ICD101	Char	Unplanned Reoperation 1 ICD-10	Variable Name:30-Day Unplanned Return to OR		
200	REOPERATION2	Char	Unplanned Reoperation 2	Variable Name:30-Day Unplanned Return to OR	Yes; No	NULL=No Response
201	RETOR2PODAYS	Num	Days from principal operative procedure to Unplanned Reoperation 2	*Days from Principal Operative Procedure to Unplanned Return to OR 2		-99 = Patient did not experience Unplanned Reoperation 2
202	REOPOR2CPT1	Char	Unplanned Reoperation 2 CPT	Variable Name:30-Day Unplanned Return to OR		NULL = No Response
203	RETOR2RELATED	Char	Unplanned Reoperation 2 related to principal operative procedure	Variable Name:30-Day Unplanned Return to OR	Yes No Unknown	NULL = No Response
204	REOPOR2ICD101	Char	Unplanned Reoperation 2 ICD-10	Variable Name:30-Day Unplanned Return to OR		NULL = No Response
205	REOPERATION3	Char	More than 2 unplanned reoperations	Variable Name:30-Day Unplanned Return to OR	Yes; No	NULL=No Response
206	READMISSION1	Char	Any Readmission 1	Variable Name:30-Day Readmission	Yes; No	NULL=No Response
207	READMPODAYS1	Num	Days from Principal Operative Procedure to Any Readmission 1	*Days from Principal Operative Procedure to Any Readmission 1		-99 = Patient did not experience Any Readmission 1
208	UNPLANNEDREADMISSION1	Char	Unplanned Readmission 1	Variable Name:30-Day Readmission	Yes; No	NULL = No Response
209	READMRELATED1	Char	Unplanned Readmission 1 likely related to the principal procedure	Variable Name:30-Day Readmission	Yes; No	NULL = No Response

Position #	Variable Name	Data Type	Variable Label	Search Term in Chapter 4 Notes: 'Variable Name:' needs to be included in Search Term; *Variables not included in Chap 4	Variable Options at Entry	Comments
210	READMSUSPREASON1	Char	Readmission related suspected reason 1	Variable Name:30-Day Readmission	Superficial Incisional SSI Deep Incisional SSI Organ/Space SSI Wound Disruption Pneumonia Unplanned Intubation Pulmonary Embolism On Ventilator > 48 hours Progressive Renal Insufficiency Acute Renal Failure Urinary Tract Infection CVA Cardiac Arrest Requiring CPR Myocardial Infarction Bleeding Requiring Transfusion (72h of surgery start time) Vein Thrombosis Requiring Therapy Sepsis Septic Shock Other (list ICD 9 code) Other (list ICD 10 code) C. diff	NULL = No Response
211	READMUNRELSUSP1	Char	Readmission unrelated suspected reason 1	Variable Name:30-Day Readmission	Superficial Incisional SSI Deep Incisional SSI Organ/Space SSI Wound Disruption Pneumonia Unplanned Intubation Pulmonary Embolism On Ventilator > 48 hours Progressive Renal Insufficiency Acute Renal Failure Urinary Tract Infection CVA Cardiac Arrest Requiring CPR Myocardial Infarction Bleeding Requiring Transfusion (72h of surgery start time) Vein Thrombosis Requiring Therapy Sepsis Septic Shock Other (list ICD 9 code) Other (list ICD 10 code) C. diff	NULL = No Response
212	READMRELICD101	Char	Readmission related ICD-10 code 1	Variable Name:30-Day Readmission		NULL = No Response
213	READMUNRELICD101	Char	Readmission unrelated ICD-10 code 1	Variable Name:30-Day Readmission		NULL = No Response
214	READMISSION2	Char	Any Readmission 2	Variable Name:30-Day Readmission	Yes; No	
215	READMPODAYS2	Num	Days from Principal Operative Procedure to Any Readmission 2	*Days from Principal Operative Procedure to Any Readmission 2		-99 = Patient did not experience Any Readmission 2
216	UNPLANNEDREADMISSION2	Char	Unplanned Readmission 2	Variable Name:30-Day Readmission	Yes;No	NULL = No Response
217	READMRELATED2	Char	Unplanned Readmission 2 likely related to the principal procedure	Variable Name:30-Day Readmission	Yes;No	NULL = No Response
218	READMSUSPREASON2	Char	Readmission related suspected reason 2	Variable Name:30-Day Readmission	See "Readmission related suspected reason 1"	NULL = No Response
219	READMUNRELSUSP2	Char	Readmission unrelated suspected reason 2	Variable Name:30-Day Readmission	See "Readmission unrelated suspected reason 1"	NULL = No Response
220	READMRELICD102	Char	Readmission related ICD-10 code 2	Variable Name:30-Day Readmission		NULL = No Response
221	READMUNRELICD102	Char	Readmission unrelated ICD-10 code 2	Variable Name:30-Day Readmission		NULL = No Response
222	READMISSION3	Char	Any Readmission 3	Variable Name:30-Day Readmission	Yes; No	
223	READMPODAYS3	Num	Days from Principal Operative Procedure to Any Readmission 3	*Days from Principal Operative Procedure to Any Readmission 3		-99 = Patient did not experience Any Readmission 3
224	UNPLANNEDREADMISSION3	Char	Unplanned Readmission 3	Variable Name:30-Day Readmission	Yes;No	NULL = No Response
225	READMRELATED3	Char	Unplanned Readmission 3 likely related to the principal procedure	Variable Name:30-Day Readmission	Yes; No	NULL = No Response
226	READMSUSPREASON3	Char	Readmission related suspected reason 3	Variable Name:30-Day Readmission	See "Readmission related suspected reason 1"	NULL = No Response
227	READMUNRELSUSP3	Char	Readmission unrelated suspected reason 3	Variable Name:30-Day Readmission	See "Readmission unrelated suspected reason 1"	NULL = No Response
228	READMRELICD103	Char	Readmission related ICD-10 code 3	Variable Name:30-Day Readmission		NULL = No Response
229	READMUNRELICD103	Char	Readmission unrelated ICD-10 code 3	Variable Name:30-Day Readmission		NULL = No Response
230	READMISSION4	Char	Any Readmission 4	Variable Name:30-Day Readmission	Yes; No	
231	READMPODAYS4	Num	Days from Principal Operative Procedure to Any Readmission 4	*Days from Principal Operative Procedure to Any Readmission 4		-99 = Patient did not experience Any Readmission 4

Position #	Variable Name	Data Type	Variable Label	Search Term in Chapter 4 Notes: 'Variable Name:' needs to be included in Search Term; *Variables not included in Chap 4	Variable Options at Entry	Comments
232	UNPLANNEDREADMISSION4	Char	Unplanned Readmission 4	Variable Name:30-Day Readmission	Yes; No	NULL = No Response
233	READMRELATED4	Char	Unplanned Readmission 4 likely related to the principal procedure	Variable Name:30-Day Readmission	Yes; No	NULL = No Response
234	READMSUSPREASON4	Char	Readmission related suspected reason 4	Variable Name:30-Day Readmission	See "Readmission related suspected reason 1"	NULL = No Response
235	READMUNRELSUSP4	Char	Readmission unrelated suspected reason 4	Variable Name:30-Day Readmission	See "Readmission unrelated suspected reason 1"	NULL = No Response
236	READMRELICD104	Char	Readmission related ICD-10 code 4	Variable Name:30-Day Readmission		NULL = No Response
237	READMUNRELICD104	Char	Readmission unrelated ICD-10 code 4	Variable Name:30-Day Readmission		NULL = No Response
238	READMISSION5	Char	Any Readmission 5	Variable Name:30-Day Readmission	Yes; No	
239	READMPODAYS5	Num	Days from Principal Operative Procedure to Any Readmission 5	*Days from Principal Operative Procedure to Any Readmission 5		-99 = Patient did not experience Any Readmission 5
240	UNPLANNEDREADMISSION5	Char	Unplanned Readmission 5	Variable Name:30-Day Readmission	Yes; No	NULL = No Response
241	READMRELATED5	Char	Unplanned Readmission 5 likely related to the principal procedure	Variable Name:30-Day Readmission	Yes; No	NULL = No Response
242	READMSUSPREASON5	Char	Readmission related suspected reason 5	Variable Name:30-Day Readmission	See "Readmission related suspected reason 1"	NULL = No Response
243	READMUNRELSUSP5	Char	Readmission unrelated suspected reason 5	Variable Name:30-Day Readmission	See "Readmission unrelated suspected reason 1"	NULL = No Response
244	READMRELICD105	Char	Readmission related ICD-10 code 5	Variable Name:30-Day Readmission		NULL = No Response
245	READMUNRELICD105	Char	Readmission unrelated ICD-10 code 5	Variable Name:30-Day Readmission		NULL = No Response
246	PODIAG_OTHER10	Char	Other postoperative occurrence(ICD 10)	Variable Name:Other Occurrence (ICD-10 Code)		NULL=No Response
247	ANESTHES_OTHER	Char	Additional anesthesia technique	Variable Name:Additional Anesthesia Technique(s)	General Epidural Spinal Regional Local Monitored Anesthesia Care/IV Sedation Other	NULL = No Response
248	OTHCDIFF	Char	Occurrences Clostridium Difficile (C.diff) Colitis	Variable Name:C. diff Colitis	No Complication; C. diff	
249	NOTHCDIFF	Num	Number of C. diff Occurrences	*Number of C. diff Colitis Occurrences		
250	DOTHCDIFF	Num	Days from operation until C.diff Complication	*Days from operation until C. diff Colitis Complication		-99=Patient did not experience complication at or before 30 days post operations
251	EOL_WDCARE	Char	End of Life/Withdrawal of Care	Variable Name:End of Life/Withdrawal of Care	Yes; No	
252	BLEED_UNITS_TOT	Num	Postop total transfusion amount	Variable Name:Blood Transfusion		-99=No Transfusion
253	PREOP_COVID	Char	Preop COVID-19 Diagnosis	Variable Name:Preop COVID-19 Diagnosis	No Yes, lab-confirmed diagnosis (or ICD-10 code U07.1) Yes, suspected diagnosis (or ICD-10 code U07.2)	NULL= No Response
254	POSTOP_COVID	Char	Postop COVID-19 Diagnosis	Variable Name:New Postop COVID-19 Diagnosis	No Yes, lab-confirmed diagnosis (or ICD-10 code U07.1) Yes, suspected diagnosis (or ICD-10 code U07.2)	NULL= No Response
255	IMMUNO_CAT	Char	Immunosuppressive Therapy Category	Variable Name:Immunosuppressive Therapy	Corticosteroids Anti-rejection/transplant immunosuppressants Synthetic DMARDs/DMDs Biologic DMARDs/DMDs Other	NULL = No Response Multiple categories can be selected
256	OXYGEN_SUPPORT	Char	Oxygen Support	Variable Name:Oxygen Support	Yes; No	
257	HEMO	Char	Hemoglobin A1c	Variable Name:Preoperative Lab Value Information		-99 = Lab value not obtained or No Response
258	CASETYPE	Char	Case Acuity	Variable Name:Case Acuity	Elective; Urgent; Emergent	
259	HOMESUP	Char	Home Origin Status	Variable Name:Home Origin Status - Support	Lives alone at home; Lives at home with other individuals; Unknown	NULL=No Response
260	HXFALL	Char	Fall History	Variable Name:Fall History	Yes,within 6 months; No; Unknown	NULL=No Response
261	HXDEMENTIA	Char	History of Dementia or Cognitive Impairment	Variable Name:History of Dementia or Cognitive Impairment	Yes; No (no conclusive evidence)	NULL=No Response
262	DELIRIUM	Char	Postoperative Delirium	Variable Name:Postoperative Delirium	Delirium present on screening No delirium present on screening Not screened for delirium	NULL= No Response
263	DISHOMESVC	Char	Home Discharge Service	Variable Name:Home Discharge - Services	Discharged to home with services; Discharged to home without services	NULL=No Response
264	DISFXNSTAT	Char	Functional health status on discharge	Variable Name:Functional Health Status on Discharge	Independent Partially Dependent Totally Dependent Unknown Expired	NULL = No Response

Position #	Variable Name	Data Type	Variable Label	Search Term in Chapter 4 Notes: 'Variable Name:' needs to be included in Search Term; *Variables not included in Chap 4	Variable Options at Entry	Comments
265	PREOP_CREAT_MSINCR	Char	Most Severe Preop Creatinine Increase	Variable Name:Most Severe Preop Creatinine Increase (nested in variable ' Preop Acute Kid	Increase in SCr of ≥0.3 mg/dL within 48 hours Increase in SCr to 1.5 to <2.0 times baseline (first value) within 7 days Increase in SCr to 2.0 to <3.0 times baseline (first value) within 7 days Increase in SCr to ≥3.0 times baseline (first value) within 7 days Increase in SCr of ≥0.3 mg/dL to ≥4.0 mg/dL within 48 hours Increase in SCr to ≥1.5 times baseline (first value) to ≥4.0 mg/dL within 7 days	NULL=No Response
266	POSTOP_CREAT_MSINCR	Char	Most Severe Postop Creatinine Increase	Variable Name:Most Severe Postop Creatinine Increase (nested in variable 'Postop Renal Insufficiency')	Increase in SCr of ≥0.3 mg/dL within 48 hours Increase in SCr to 1.5 to <2.0 times baseline (first value) within 7 days Increase in SCr to 2.0 to <3.0 times baseline (first value) within 7 days Increase in SCr to ≥3.0 times baseline (first value) within 7 days Increase in SCr of ≥0.3 mg/dL to ≥4.0 mg/dL within 48 hours Increase in SCr to ≥1.5 times baseline (first value) to ≥4.0 mg/dL within 7 days	NULL=No Response
267	OP_APPROACH	Char	Operative Approach	Variable Name:Operative Approach	Open Laparoscopic Thoracoscopic Arthroscopic Percutaneous Endoscopic MIS through Single incision (e.g. SILS, Uni- VATS) Natural Orifice Transluminal Endoscopic Surgery (NOTES) Other MIS	Multiple approaches can be selected
268	ROBOT_USED	Char	Robot Used	Variable Name:Robot Used (nested in variable 'Operative Approach')	Yes; No	
269	UNPLANNED_CONV_OPEN	Char	Unplanned Conversion to Open	Variable Name:Unplanned Conversion to Open (nested in variable 'Operative Approach')	Yes; No	
270	HAND_OPEN_ASSIST	Char	Hand Open Assist	Variable Name:Hand/Open Assist (nested in variable 'Operative Approach')	Yes; No	NULL=No Response

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