



“Quality Improvement through Quality Data”

User Guide for the 2023  
ACS NSQIP  
Participant Use  
Data File (PUF)

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American College of Surgeons  
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## 1. Introduction

This document is designed to accompany the 2023 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 2023 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.
2. After a brief description of all the available PUFs and under the “Requesting a PUF” heading, you will see the Data Use Agreement (DUA). 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 the gray “Request Data File” box. 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 2023 file contains 274 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	Description
ACS_NSQIP_PUF23.txt	tab delimited TXT file	Contains 274 HIPAA compliant variables on 994,314 cases submitted from 676 sites in 2023.
ACS_NSQIP_PUF23.sas7bdat	SAS 9.2 data file	Same information as stated above in SAS data format.
ACS_NSQIP_PUF23.sav	SPSS 16.0 data file	Same information as stated above in TXT and SAS data format.
Construct_RACE_Codes.txt	Notepad file	Contains SAS and SPSS codes for constructing RACE variable that was available in 2005, 2006 and 2007.

## 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. We now drop 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 elect to do so in our Essentials (surgical specialty) and/or Procedure Targeted options. 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 that align with their sampling selections. 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 2023. For the current inclusion/exclusion criteria please contact the ACS NSQIP Clinical Support Team at [clinicalsupport@acsnsqip.org](mailto: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 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. Furthermore, the PUF includes international sites so the data would not strictly represent the situation in U.S. hospitals. The inclusion of international sites may lead to other problems in interpretation. For example, many international sites are not permitted to provide patient race and ethnicity. As such, observed effects of missing race/ethnicity on outcomes would be confounded with the effects of country.

- Most patients do not receive all possible preoperative laboratory tests, so some of these variables have a high percentage of missing values (15% to over 50%, 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.

## 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](mailto: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 2023. 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 122 other PUF files available for request / download. The list of all available PUF files is on the next page.

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PUF Year	PUF Type	Cases	Sites	PUF Year	PUF Type	Cases	Sites
2005/2006	NSQIP	152,490	121	2015	NSQIP	885,502	603
2007	NSQIP	211,407	183	2016	NSQIP	1,000,393	680
2008	NSQIP	271,368	211	2017	NSQIP	1,028,713	708
2009	NSQIP	336,190	237	2018	NSQIP	1,020,511	722
2010	NSQIP	363,431	258	2019	NSQIP	1,076,441	719
2011	NSQIP	442,149	315	2020	NSQIP	902,968	706
2012	NSQIP	543,885	374	2021	NSQIP	983,851	685
2013	NSQIP	651,940	435	2022	NSQIP	1,011,899	702
2014	NSQIP	750,397	517				

**Procedure Targeted**

PUF Year	PUF Type	Cases	Sites	PUF Year	PUF Type	Cases	Sites	PUF Year	PUF Type	Cases	Sites
2016	Appendectomy	12,376	115	2016	Hip Fracture	9,390	117	2016	Proctectomy	4,217	159
2017	Appendectomy	12,406	113	2017	Hip Fracture	10,506	115	2017	Proctectomy	4,576	176
2018	Appendectomy	12,667	131	2018	Hip Fracture	11,855	152	2018	Proctectomy	4,621	200
2019	Appendectomy	15,110	112	2019	Hip Fracture	14,523	140	2019	Proctectomy	4,905	193
2020	Appendectomy	13,210	111	2020	Hip Fracture	13,657	141	2020	Proctectomy	4,189	190
2021	Appendectomy	14,296	106	2021	Hip Fracture	12,395	119	2021	Proctectomy	4,328	201
2022	Appendectomy	13,653	104	2022	Hip Fracture	11,424	115	2022	Proctectomy	4,454	212
2011/12	Colectomy	16,981	121	2014	Hepatectomy	3,064	92	2019	Prostatectomy	8,256	125
2013	Colectomy	21,505	154	2015	Hepatectomy	3,854	105	2020	Prostatectomy	7,133	116
2014	Colectomy	25,262	203	2016	Hepatectomy	4,325	116	2021	Prostatectomy	7,649	115
2015	Colectomy	31,307	239	2017	Hepatectomy	4,505	120	2022	Prostatectomy	8,692	119
2016	Colectomy	35,908	274	2018	Hepatectomy	4,773	133	2016	Thyroidectomy	5,871	93
2017	Colectomy	38,139	285	2019	Hepatectomy	5,074	141	2017	Thyroidectomy	5,755	91
2018	Colectomy	41,386	343	2020	Hepatectomy	4,895	141	2018	Thyroidectomy	6,452	112
2019	Colectomy	47,425	336	2021	Hepatectomy	5,170	149	2019	Thyroidectomy	6,864	83
2020	Colectomy	40,139	338	2022	Hepatectomy	5,232	154	2020	Thyroidectomy	5,593	84
2021	Colectomy	44,518	341	2014	Hysterectomy	19,283	91	2021	Thyroidectomy	7,233	89
2022	Colectomy	47,255	359	2015	Hysterectomy	23,360	109	2022	Thyroidectomy	8,603	94
2019	Cystectomy	2,953	107	2016	Hysterectomy	29,964	136	2011/12	Vascular	655	71
2020	Cystectomy	3,150	107	2017	Hysterectomy	34,070	147	2013	Vascular	4,292	83
2021	Cystectomy	2,832	111	2018	Hysterectomy	39,954	192	2014	Vascular	4,029	83
2022	Cystectomy	2,830	108	2019	Hysterectomy	43,857	173	2015	Vascular	4,199	89
2016	Esophagectomy	1,034	71	2020	Hysterectomy	36,132	176	2016	Vascular	4,071	95
2017	Esophagectomy	1,066	76	2021	Hysterectomy	39,407	170	2017	Vascular	4,177	95
2018	Esophagectomy	1,179	82	2022	Hysterectomy	40,523	175	2018	Vascular	3,807	98
2019	Esophagectomy	1,290	85	2019	Nephrectomy	7,818	117	2019	Vascular	3,912	85
2020	Esophagectomy	1,187	83	2020	Nephrectomy	6,585	122	2020	Vascular	2,398	78
2021	Esophagectomy	1,057	83	2021	Nephrectomy	7,536	129	2021	Vascular	2,572	69
2022	Esophagectomy	1,074	81	2022	Nephrectomy	8,026	133	2022	Vascular	2,727	77
2014	Gynecology	500	19	2014	Pancreatectomy	5,187	106				
2015	Gynecology	492	29	2015	Pancreatectomy	6,032	120				
2016	Gynecology	781	33	2016	Pancreatectomy	6,244	137				
2017	Gynecology	1,250	41	2017	Pancreatectomy	6,918	142				
2018	Gynecology	1,320	46	2018	Pancreatectomy	7,248	158				
2019	Gynecology	1,313	41	2019	Pancreatectomy	7,814	165				
2020	Gynecology	962	38	2020	Pancreatectomy	7,496	166				
2021	Gynecology	1,061	36	2021	Pancreatectomy	7,874	168				
2022	Gynecology	1,038	33	2022	Pancreatectomy	8,035	167				

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](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 2023. 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 2023 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. We recommend the use of a statistical package such as SAS or SPSS. Although we do provide the PUF File a in Text version, this version is normally used to import into a third-party statistical software program and was not designed to work by itself. We recommend downloading and installing special software “Unarchiver” (link below) on your computer to extract the contents of these files and to view them on a Mac.

<https://itunes.apple.com/us/app/the-unarchiver/id425424353?mt=12>

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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 Chapter 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 combinations 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 care 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
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	PRSEPSIS	Char	Systemic Sepsis	Variable Name:SIRS/Sepsis/Septic Shock	SIRS; Sepsis; Septic Shock; None	NULL=No Response

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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 Chapter 4	Variable Options at Entry	Comments
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	DPRHEMO_A1C	Num	Days from Hemoglobin A1C Labs to Operation	*Days from Hemoglobin A1C Labs to Operation		-99 = Lab value not obtained or No Response
47	DPRHEMOGLOBIN	Num	Days from Hemoglobin Labs to Operation	*Days from Hemoglobin Labs to Operation		-99 = Lab value not obtained or No Response
48	PRSODM	Num	Pre-operative serum sodium	Variable Name:Preoperative Lab Value Information		-99 = Lab value not obtained or No Response
49	PRBUN	Num	Pre-operative BUN	Variable Name:Preoperative Lab Value Information		-99 = Lab value not obtained or No Response
50	PRCREAT	Num	Pre-operative serum creatinine	Variable Name:Preoperative Lab Value Information		-99 = Lab value not obtained or No Response
51	PRALBUM	Num	Pre-operative serum albumin	Variable Name:Preoperative Lab Value Information		-99 = Lab value not obtained or No Response
52	PRBILI	Num	Pre-operative total bilirubin	Variable Name:Preoperative Lab Value Information		-99 = Lab value not obtained or No Response
53	PRSGOT	Num	Pre-operative SGOT	Variable Name:Preoperative Lab Value Information		-99 = Lab value not obtained or No Response
54	PRALKPH	Num	Pre-operative alkaline phosphatase	Variable Name:Preoperative Lab Value Information		-99 = Lab value not obtained or No Response
55	PRWBC	Num	Pre-operative WBC	Variable Name:Preoperative Lab Value Information		-99 = Lab value not obtained or No Response
56	PRHCT	Num	Pre-operative hematocrit	Variable Name:Preoperative Lab Value Information		-99 = Lab value not obtained or No Response
57	PRPLATE	Num	Pre-operative platelet count	Variable Name:Preoperative Lab Value Information		-99 = Lab value not obtained or No Response
58	PRPTT	Num	Pre-operative PTT	Variable Name:Preoperative Lab Value Information		-99 = Lab value not obtained or No Response
59	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
60	PRHEMO_A1C	Num	Pre-operative Hemoglobin A1C	Variable Name:Preoperative Lab Value Information		-99 = Lab value not obtained or No Response
61	PRHEMOGLOBIN	Num	Pre-operative Hemoglobin	Variable Name:Preoperative Lab Value Information		-99 = Lab value not obtained or No Response
62	OTHERPROC1	Char	Other Procedure 1	Variable Name:Other Procedures		NULL = No Procedure
63	OTHERCPT1	Char	Other CPT Code 1	Variable Name:Other Procedures		NULL = No Procedure
64	OTHERWRVU1	Num	Other Work Relative Value Unit 1	*Other Work Relative Value Unit 1		-99 = No Procedure/No Response
65	OTHERPROC2	Char	Variable Name:Other Procedure 2	Variable Name:Other Procedures		NULL = No Procedure
66	OTHERCPT2	Char	Other CPT Code 2	Variable Name:Other Procedures		NULL = No Procedure
67	OTHERWRVU2	Num	Other Work Relative Value Unit 2	*Other Work Relative Value Unit 2		-99 = No Procedure/No Response
68	OTHERPROC3	Char	Variable Name:Other Procedure 3	Variable Name:Other Procedures		NULL = No Procedure
69	OTHERCPT3	Char	Other CPT Code 3	Variable Name:Other Procedures		NULL = No Procedure
70	OTHERWRVU3	Num	Other Work Relative Value Unit 3	*Other Work Relative Value Unit 3		-99 = No Procedure/No Response
71	OTHERPROC4	Char	Variable Name:Other Procedure 4	Variable Name:Other Procedures		NULL = No Procedure
72	OTHERCPT4	Char	Other CPT Code 4	Variable Name:Other Procedures		NULL = No Procedure
73	OTHERWRVU4	Num	Other Work Relative Value Unit 4	*Other Work Relative Value Unit 4		-99 = No Procedure/No Response
74	OTHERPROC5	Char	Variable Name:Other Procedure 5	Variable Name:Other Procedures		NULL = No Procedure
75	OTHERCPT5	Char	Other CPT Code 5	Variable Name:Other Procedures		NULL = No Procedure
76	OTHERWRVU5	Num	Other Work Relative Value Unit 5	*Other Work Relative Value Unit 5		-99 = No Procedure/No Response
77	OTHERPROC6	Char	Variable Name:Other Procedure 6	Variable Name:Other Procedures		NULL = No Procedure

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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 Chapter 4'	Variable Options at Entry	Comments
78	OTHERCPT6	Char	Other CPT Code 6	Variable Name:Other Procedures		NULL = No Procedure
79	OTHERWRVU6	Num	Other Work Relative Value Unit 6	*Other Work Relative Value Unit 6		-99 = No Procedure/No Response
80	OTHERPROC7	Char	Variable Name:Other Procedure 7	Variable Name:Other Procedures		NULL = No Procedure
81	OTHERCPT7	Char	Other Variable Name:Other Procedure 7	Variable Name:Other Procedures		NULL = No Procedure
82	OTHERWRVU7	Num	Other Work Relative Value Unit 7	*Other Work Relative Value Unit 7		-99 = No Procedure/No Response
83	OTHERPROC8	Char	Variable Name:Other Procedure 8	Variable Name:Other Procedures		NULL = No Procedure
84	OTHERCPT8	Char	Other Variable Name:Other Procedure 8	Variable Name:Other Procedures		NULL = No Procedure
85	OTHERWRVU8	Num	Other Work Relative Value Unit 8	*Other Work Relative Value Unit 8		-99 = No Procedure/No Response
86	OTHERPROC9	Char	Variable Name:Other Procedure 9	Variable Name:Other Procedures		NULL = No Procedure
87	OTHERCPT9	Char	Other Variable Name:Other Procedure 9	Variable Name:Other Procedures		NULL = No Procedure
88	OTHERWRVU9	Num	Other Work Relative Value Unit 9	*Other Work Relative Value Unit 9		-99 = No Procedure/No Response
89	OTHERPROC10	Char	Variable Name:Other Procedure 10	Variable Name:Other Procedures		NULL = No Procedure
90	OTHERCPT10	Char	Other Variable Name:Other Procedure 10	Variable Name:Other Procedures		NULL = No Procedure
91	OTHERWRVU10	Num	Other Work Relative Value Unit 10	*Other Work Relative Value Unit 10		-99 = No Procedure/No Response
92	CONCURR1	Char	Concurrent Procedure 1	Variable Name:Concurrent Procedures		NULL = No Procedure
93	CONCPT1	Char	Concurrent CPT 1	Variable Name:Concurrent Procedures		NULL = No Procedure
94	CONWRVU1	Num	Concurrent Work Relative Value Unit 1	*Concurrent Work Relative Value Unit 1		-99 = No Procedure/No Response
95	CONCURR2	Char	Concurrent Procedure 2	Variable Name:Concurrent Procedures		NULL = No Procedure
96	CONCPT2	Char	Concurrent CPT 2	Variable Name:Concurrent Procedures		NULL = No Procedure
97	CONWRVU2	Num	Concurrent Work Relative Value Unit 2	*Concurrent Work Relative Value Unit 2		-99 = No Procedure/No Response
98	CONCURR3	Char	Concurrent Procedure 3	Variable Name:Concurrent Procedures		NULL = No Procedure
99	CONCPT3	Char	Concurrent CPT 3	Variable Name:Concurrent Procedures		NULL = No Procedure
100	CONWRVU3	Num	Concurrent Work Relative Value Unit 3	*Concurrent Work Relative Value Unit 3		-99 = No Procedure/No Response
101	CONCURR4	Char	Concurrent Procedure 4	Variable Name:Concurrent Procedures		NULL = No Procedure
102	CONCPT4	Char	Concurrent CPT 4	Variable Name:Concurrent Procedures		NULL = No Procedure
103	CONWRVU4	Num	Concurrent Work Relative Value Unit 4	*Concurrent Work Relative Value Unit 4		-99 = No Procedure/No Response
104	CONCURR5	Char	Concurrent Procedure 5	Variable Name:Concurrent Procedures		NULL = No Procedure
105	CONCPT5	Char	Concurrent CPT 5	Variable Name:Concurrent Procedures		NULL = No Procedure
106	CONWRVU5	Num	Concurrent Work Relative Value Unit 5	*Concurrent Work Relative Value Unit 5		-99 = No Procedure/No Response
107	CONCURR6	Char	Concurrent Procedure 6	Variable Name:Concurrent Procedures		NULL = No Procedure
108	CONCPT6	Char	Concurrent CPT 6	Variable Name:Concurrent Procedures		NULL = No Procedure
109	CONWRVU6	Num	Concurrent Work Relative Value Unit 6	*Concurrent Work Relative Value Unit 6		-99 = No Procedure/No Response
110	CONCURR7	Char	Concurrent Procedure 7	Variable Name:Concurrent Procedures		NULL = No Procedure
111	CONCPT7	Char	Concurrent CPT 7	Variable Name:Concurrent Procedures		NULL = No Procedure
112	CONWRVU7	Num	Concurrent Work Relative Value Unit 7	*Concurrent Work Relative Value Unit 7		-99 = No Procedure/No Response
113	CONCURR8	Char	Concurrent Procedure 8	Variable Name:Concurrent Procedures		NULL = No Procedure
114	CONCPT8	Char	Concurrent CPT 8	Variable Name:Concurrent Procedures		NULL = No Procedure
115	CONWRVU8	Num	Concurrent Work Relative Value Unit 8	*Concurrent Work Relative Value Unit 8		-99 = No Procedure/No Response
116	CONCURR9	Char	Concurrent Procedure 9	Variable Name:Concurrent Procedures		NULL = No Procedure
117	CONCPT9	Char	Concurrent CPT 9	Variable Name:Concurrent Procedures		NULL = No Procedure
118	CONWRVU9	Num	Concurrent Work Relative Value Unit 9	*Concurrent Work Relative Value Unit 9		-99 = No Procedure/No Response
119	CONCURR10	Char	Concurrent Procedure 10	Variable Name:Concurrent Procedures		NULL = No Procedure
120	CONCPT10	Char	Concurrent CPT 10	Variable Name:Concurrent Procedures		NULL = No Procedure
121	CONWRVU10	Num	Concurrent Work Relative Value Unit 10	*Concurrent Work Relative Value Unit 10		-99 = No Procedure/No Response
122	ASACLAS	Char	ASA classification	Variable Name:ASA Classification	1-No Disturb 2-Mild Disturb 3-Severe Disturb 4-Life Threat 5-Morbund None assigned	NULL= No Response
123	MORTPROB	Num	Estimated Probability of Mortality	*Probability of mortality is developed for all cases based on a logistic regression analysis using the patient's preoperative 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
124	MORBPROB	Num	Estimated Probability of Morbidity	*Probability of morbidity is developed for all cases based on a logistic regression analysis using the patient's preoperative 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
125	OPTIME	Num	Total operation time	*Total operation time in minutes		-99 = No Response
126	HDISDT	Num	Hospital discharge Year	Variable Name:Acute Hospital Discharge Date		-99 = No Response
127	YRDEATH	Num	Year of death	Variable Name:Date of Death		-99 = Patient alive at 30 days Notes: include death >30days of procedure
128	TOTHLOS	Num	Length of total hospital stay	*Length of total hospital stay		
129	AdmQtr	Num	Quarter of Admission	Variable Name:Hospital Admission Date	1; 2; 3; 4	-99 = No Response
130	HtcODay	Num	Days from Hospital Admission to Operation	*Days from Hospital Admission to Operation		-99 = No Response
131	NSUPINFEC	Num	Number of Superficial Incisional SSI Occurrences	*Number of Superficial Incisional SSI Occurrences		
132	SUPINFEC	Char	Occurrences Superficial surgical site infection	Variable Name:Superficial Incisional SSI	No Complication; Superficial Incisional SSI	
133	SSSIPATOS	Char	Superficial Incisional SSI PATOS	Variable Name:Superficial Incisional SSI – PATOS	Yes; No	NULL = No response
134	DSUPINFEC	Num	Days from Operation until Superficial Incisional SSI Complication	*Days from Operation until Superficial Incisional SSI Complication		
135	NWINDINF	Num	Number of Deep Incisional SSI Occurrences	*Number of Deep Incisional SSI Occurrences		
136	WINDINF	Char	Occurrences Deep Incisional SSI	Variable Name:Deep Incisional SSI	Deep Incisional SSI; No Complication	
137	DSSIPATOS	Char	Deep Incisional SSI PATOS	Variable Name:Deep Incisional SSI – PATOS	Yes; No	NULL = No response

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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 Chapter 4	Variable Options at Entry	Comments
138	DWINDIFD	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
139	NORGSPCSSI	Num	Number of Organ/Space SSI Occurrences	*Number of Organ/Space SSI Occurrences		
140	ORGSPCSSI	Char	Occurrences Organ Space SSI	Variable Name:Organ/Space SSI	Organ/Space SSI; No Complication	
141	OSSIPATOS	Char	Organ/Space SSI PATOS	Variable Name:Organ/Space SSI – PATOS	Yes; No	NULL = No response
142	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
143	NDEHIS	Num	Number of Wound Disruption Occurrences	*Number of Wound Disruption Occurrences		
144	DEHIS	Char	Occurrences Wound Disrupt	Variable Name:Wound Disruption	Wound Disruption; No Complication	
145	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
146	NOUNPNEUMO	Num	Number of Pneumonia Occurrences	*Number of Pneumonia Occurrences		
147	OUPNEUMO	Char	Occurrences Pneumonia	Variable Name:Pneumonia	Pneumonia; No Complication	
148	PNAPATOS	Char	Pneumonia PATOS	Variable Name:Pneumonia – PATOS	Yes; No	NULL = No response
149	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
150	NREINTUB	Num	Number of Unplanned Intubation Occurrences	*Number of Unplanned Intubation Occurrences		
151	REINTUB	Char	Occurrences Unplanned Intubation	Variable Name:Unplanned Intubation	Unplanned Intubation; No Complication	
152	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
153	NPULEMBOL	Num	Number of Pulmonary Embolism Occurrences	*Number of Pulmonary Embolism Occurrences		
154	PULEMBOL	Char	Occurrences Pulmonary Embolism	Variable Name:Pulmonary Embolism	Pulmonary Embolism; No Complication	
155	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
156	NFAILWEAN	Num	Number of On Ventilator > 48 Hours Occurrences	*Number of On Ventilator > 48 Hours Occurrences		
157	FAILWEAN	Char	Occurrences Ventilator > 48Hours	Variable Name:On Ventilator > 48 Hours	On Ventilator greater than 48 Hours; No Complication	
158	VENTPATOS	Char	On Ventilator > 48 Hours PATOS	Variable Name:On Ventilator > 48 Hours – PATOS	Yes; No	NULL = No response
159	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
160	NRENAISF	Num	Number of Postop Renal Insufficiency Occurrences	*Number of Postop Renal Insufficiency Occurrences		
161	RENAISF	Char	Occurrences Postop Renal Insufficiency	Variable Name:Postop Renal Insufficiency	Postop Renal Insufficiency; No Complication	Definition changed July 2021
162	DRENAISF	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
163	NOPRENAFL	Num	Number of Postop Dialysis Occurrences	*Number of Postop Dialysis Occurrences		
164	OPRENAFL	Char	Occurrences Postop Dialysis	Variable Name:Postop Dialysis	Postop Dialysis; No Complication	Definition changed July 2021
165	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
166	NURNINFEC	Num	Number of Urinary Tract infection Occurrences	*Number of Urinary Tract infection Occurrences		
167	URNINFEC	Char	Occurrences Urinary Tract Infection	Variable Name:Urinary Tract Infection	Urinary Tract Infection; No Complication	
168	UTIPATOS	Char	UTI PATOS	Variable Name:UTI – PATOS	Yes; No	NULL = No response
169	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
170	NCNSCVA	Num	Number of Stroke/CVA Occurrences	*Number of Stroke/CVA Occurrences		
171	CNSCVA	Char	CVA/Stroke with neurological deficit	Variable Name:Stroke/CVA	Stroke/CVA; No Complication	
172	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
173	NCDARREST	Num	Number of Cardiac Arrest Requiring CPR Occurrences	*Number of Cardiac Arrest Requiring CPR Occurrences		
174	CDARREST	Char	Occurrences Cardiac Arrest Requiring CPR	Variable Name:Cardiac Arrest Requiring CPR	Cardiac Arrest Requiring CPR; No Complication	
175	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
176	NCDMI	Num	Number of Myocardial Infarction Occurrences	*Number of Myocardial Infarction Occurrences		
177	CDMI	Char	Occurrences Myocardial Infarction	Variable Name:Myocardial Infarction	Myocardial Infarction; No Complication	
178	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
179	NOTHBLEED	Num	Number of Blood Transfusion Occurrences	*Number of Blood Tranfusion Occurrences		
180	OTHBLEED	Char	Occurrences Blood Transfusion	Variable Name:Blood Transfusion	Blood transfusion; No Complication	Definition changed 2018

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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 Chapter 4	Variable Options at Entry	Comments
181	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
182	NOTHDVT	Num	Number of Vein Thrombosis Requiring Therapy Occurrences	*Number of Vein Thrombosis Requiring Therapy Occurrences		
183	OTHDVT	Char	Occurrences Vein Thrombosis Requiring Therapy	Variable Name:Venous Thrombosis Requiring Therapy	Venous Thrombosis Requiring Therapy; No Complication	Definition changed July 2021
184	DOTHSDVT	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
185	NOTHSYSEP	Num	Number of Sepsis Occurrences	*Number of Sepsis Occurrences		
186	OTHSYSEP	Char	Occurrences Sepsis	Variable Name:Sepsis	Sepsis; No Complication	
187	SEPSISPATOS	Char	Sepsis PATOS	Variable Name:Sepsis - PATOS	Yes; No	NULL = No Response
188	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
189	NOTHSESHOCK	Num	Number of Septic Shock Occurrences	*Number of Septic Shock Occurrences		
190	OTHSESHOCK	Char	Occurrences Septic Shock	Variable Name:Septic Shock	Septic Shock; No Complication	
191	SEPSHOCKPATOS	Char	Septic Shock PATOS	Variable Name:Septic Shock - PATOS	Yes; No	NULL = No Response
192	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
193	PODIAG10	Char	Post-op diagnosis (ICD 10)	Variable Name:Postoperative ICD-10 Code		
194	PODIAGTX10	Char	Post-op Diagnosis Text	Variable Name:Postoperative ICD-10 Code		
195	RETURNOR	Char	Return to OR	Variable Name:Unplanned Reoperation	Yes; No	NULL = No Response
196	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
197	DOptoDis	Num	Days from Operation to Discharge	*Days from Operation to Discharge		-99 = No Response
198	STILLINHOSP	Char	Still in Hospital > 30 Days	Variable Name:Still in Hospital > 30 Days	Yes; No	NULL = No Response
199	REOPERATION1	Char	Unplanned Reoperation 1	Variable Name:30-Day Unplanned Return to OR	Yes; No	NULL = No Response
200	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
201	REOPORCPT1	Char	Unplanned Reoperation 1 CPT	Variable Name:30-Day Unplanned Return to OR		NULL = No Response
202	RETORRELATED	Char	Unplanned Reoperation 1 related to principal operative procedure	Variable Name:30-Day Unplanned Return to OR	Yes No Unknown	NULL = No Response
203	REOPOR1ICD101	Char	Unplanned Reoperation 1 ICD-10	Variable Name:30-Day Unplanned Return to OR		NULL = No Response
204	REOPERATION2	Char	Unplanned Reoperation 2	Variable Name:30-Day Unplanned Return to OR	Yes; No	NULL = No Response
205	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
206	REOPOR2CPT1	Char	Unplanned Reoperation 2 CPT	Variable Name:30-Day Unplanned Return to OR		NULL = No Response
207	RETOR2RELATED	Char	Unplanned Reoperation 2 related to principal operative procedure	Variable Name:30-Day Unplanned Return to OR	Yes No Unknown	NULL = No Response
208	REOPOR2ICD101	Char	Unplanned Reoperation 2 ICD-10	Variable Name:30-Day Unplanned Return to OR		NULL = No Response
209	REOPERATION3	Char	More than 2 unplanned reoperations	Variable Name:30-Day Unplanned Return to OR	Yes; No	NULL = No Response
210	READMISSION1	Char	Any Readmission 1	Variable Name:30-Day Readmission	Yes; No	NULL = No Response
211	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
212	UNPLANNEDREADMISSION1	Char	Unplanned Readmission 1	Variable Name:30-Day Readmission	Yes; No	NULL = No Response
213	READMRELATED1	Char	Unplanned Readmission 1 likely related to the principal procedure	Variable Name:30-Day Readmission	Yes; No	NULL = No Response
214	READMSUSPREASON1	Char	Readmission related suspected reason 1	Variable Name:30-Day Readmission	Superficial Incisional SSI Deep Incisional SSI Other (list ICD 10 code) C. diff	NULL = No Response
215	READMUNRELSUSP1	Char	Readmission unrelated suspected reason 1	Variable Name:30-Day Readmission	Superficial Incisional SSI Deep Incisional SSI	NULL = No Response
216	READMRELCID101	Char	Readmission related ICD-10 code 1	Variable Name:30-Day Readmission		NULL = No Response
217	READMUNRELCID101	Char	Readmission unrelated ICD-10 code 1	Variable Name:30-Day Readmission		NULL = No Response
218	READMISSION2	Char	Any Readmission 2	Variable Name:30-Day Readmission	Yes; No	
219	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
220	UNPLANNEDREADMISSION2	Char	Unplanned Readmission 2	Variable Name:30-Day Readmission	Yes;No	NULL = No Response
221	READMRELATED2	Char	Unplanned Readmission 2 likely related to the principal procedure	Variable Name:30-Day Readmission	Yes;No	NULL = No Response
222	READMSUSPREASON2	Char	Readmission related suspected reason 2	Variable Name:30-Day Readmission	See "Readmission related suspected reason 1"	NULL = No Response
223	READMUNRELSUSP2	Char	Readmission unrelated suspected reason 2	Variable Name:30-Day Readmission	See "Readmission unrelated suspected reason 1"	NULL = No Response
224	READMRELCID102	Char	Readmission related ICD-10 code 2	Variable Name:30-Day Readmission		NULL = No Response
225	READMUNRELCID102	Char	Readmission unrelated ICD-10 code 2	Variable Name:30-Day Readmission		NULL = No Response
226	READMISSION3	Char	Any Readmission 3	Variable Name:30-Day Readmission	Yes; No	

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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 Chapter 4	Variable Options at Entry	Comments
227	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
228	UNPLANNEDREADMISSION3	Char	Unplanned Readmission 3	Variable Name:30-Day Readmission	Yes;No	NULL = No Response
229	READMRELATED3	Char	Unplanned Readmission 3 likely related to the principal procedure	Variable Name:30-Day Readmission	Yes; No	NULL = No Response
230	READMSUSPREASON3	Char	Readmission related suspected reason 3	Variable Name:30-Day Readmission	See "Readmission related suspected reason 1"	NULL = No Response
231	READMUNRELSUSP3	Char	Readmission unrelated suspected reason 3	Variable Name:30-Day Readmission	See "Readmission unrelated suspected reason 1"	NULL = No Response
232	READMRELICD103	Char	Readmission related ICD-10 code 3	Variable Name:30-Day Readmission		NULL = No Response
233	READMUNRELICD103	Char	Readmission unrelated ICD-10 code 3	Variable Name:30-Day Readmission		NULL = No Response
234	READMISSION4	Char	Any Readmission 4	Variable Name:30-Day Readmission	Yes; No	
235	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
236	UNPLANNEDREADMISSION4	Char	Unplanned Readmission 4	Variable Name:30-Day Readmission	Yes; No	NULL = No Response
237	READMRELATED4	Char	Unplanned Readmission 4 likely related to the principal procedure	Variable Name:30-Day Readmission	Yes; No	NULL = No Response
238	READMSUSPREASON4	Char	Readmission related suspected reason 4	Variable Name:30-Day Readmission	See "Readmission related suspected reason 1"	NULL = No Response
239	READMUNRELSUSP4	Char	Readmission unrelated suspected reason 4	Variable Name:30-Day Readmission	See "Readmission unrelated suspected reason 1"	NULL = No Response
240	READMRELICD104	Char	Readmission related ICD-10 code 4	Variable Name:30-Day Readmission		NULL = No Response
241	READMUNRELICD104	Char	Readmission unrelated ICD-10 code 4	Variable Name:30-Day Readmission		NULL = No Response
242	READMISSION5	Char	Any Readmission 5	Variable Name:30-Day Readmission	Yes; No	
243	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
244	UNPLANNEDREADMISSION5	Char	Unplanned Readmission 5	Variable Name:30-Day Readmission	Yes; No	NULL = No Response
245	READMRELATED5	Char	Unplanned Readmission 5 likely related to the principal procedure	Variable Name:30-Day Readmission	Yes; No	NULL = No Response
246	READMSUSPREASON5	Char	Readmission related suspected reason 5	Variable Name:30-Day Readmission	See "Readmission related suspected reason 1"	NULL = No Response
247	READMUNRELSUSP5	Char	Readmission unrelated suspected reason 5	Variable Name:30-Day Readmission	See "Readmission unrelated suspected reason 1"	NULL = No Response
248	READMRELICD105	Char	Readmission related ICD-10 code 5	Variable Name:30-Day Readmission		NULL = No Response
249	READMUNRELICD105	Char	Readmission unrelated ICD-10 code 5	Variable Name:30-Day Readmission		NULL = No Response
250	PODIAG_OTHER10	Char	Other postoperative occurrence(ICD 10)	Variable Name:Other Occurrence (ICD-10 Code)		NULL=No Response
251	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
252	CDIFF_LAB	Char	C.diff Colitis Lab Confirmation	Variable Name:C. diff Colitis	Yes;No	NULL=No Response
253	OTHCDIFF	Char	Occurrences Clostridium Difficile (C.diff) Colitis	Variable Name:C. diff Colitis	No Complication; C. diff	
254	NOTHCDIFF	Num	Number of C. diff Occurrences	*Number of C. diff Colitis Occurrences		
255	DOHCDIFF	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
256	EOL_WDCARE	Char	End of Life/Withdrawal of Care	Variable Name:End of Life/Withdrawal of Care	Yes; No	
257	BLEED_UNITS_TOT	Num	Postop total transfusion amount	Variable Name:Blood Transfusion		-99=No Transfusion
258	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
259	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)	NULL= No Response
260	IMMUNO_CAT	Char	Immunosuppressive Therapy Category	Variable Name:Immunosuppressive Therapy	Corticosteroids Anti-rejection/transplant immunosuppressants Other	NULL = No Response Multiple categories can be selected
261	OXYGEN_SUPPORT	Char	Oxygen Support	Variable Name:Oxygen Support	Yes; No	
262	CASETYPE	Char	Case Acuity	Variable Name:Case Acuity	Elective; Urgent; Emergent	
263	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
264	HXFALL	Char	Fall History	Variable Name:Fall History	Yes, within 6 months; No; Unknown	NULL=No Response
265	HXDEMENTIA	Char	History of Dementia or Cognitive Impairment	Variable Name:History of Dementia or Cognitive Impairment	Yes; No (no conclusive evidence)	NULL=No Response
266	DELIRIUM	Char	Postoperative Delirium	Variable Name:Postoperative Delirium	Delirium present on screening No delirium present on screening Not screened for delirium	NULL = No Response
267	DISHOMESVC	Char	Home Discharge Service	Variable Name:Home Discharge - Services	Discharged to home with services; Discharged to home without services	NULL=No Response
268	DISFXNSTAT	Char	Functional health status on discharge	Variable Name:Functional Health Status on Discharge	Independent Partially Dependent Totally Dependent Unknown Expired	NULL = No Response

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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 Chapter 4	Variable Options at Entry	Comments
269	PREOP_CREAT_MSINCR	Char	Most Severe Preop Creatinine Increase	Variable Name:Most Severe Preop Creatinine Increase (nested in variable 'Preop Acute Kidney Injury')	Increase in SCr of $\geq 0.3$ mg/dL to $\geq 4.0$ mg/dL within 48 hours Increase in SCr to $\geq 1.5$ times baseline to $\geq 4.0$ mg/dL within 7 days Increase in SCr to $\geq 3.0$ times baseline within 7 days Increase of 2.0 to $< 3.0$ times baseline within 7 days	NULL=No Response
270	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 $\geq 0.3$ mg/dL to $\geq 4.0$ mg/dL within 48 hours Increase in SCr to $\geq 1.5$ times baseline to $\geq 4.0$ mg/dL within 7 days Increase in SCr to $\geq 3.0$ times baseline within 7 days Increase of 2.0 to $< 3.0$ times baseline within 7 days	NULL=No Response
271	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
272	ROBOT_USED	Char	Robot Used	Variable Name:Robot Used (nested in variable 'Operative Approach')	Yes; No	
273	UNPLANNED_CONV_OPEN	Char	Unplanned Conversion to Open	Variable Name:Unplanned Conversion to Open (nested in variable 'Operative Approach')	Yes; No	
274	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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