ACS NSQIP®

"Quality Improvement through Quality Data"

# User Guide for the 2011 ACS NSQIP Procedure Targeted Participant Use Data File

American College of Surgeons

National Surgical Quality Improvement Program

January 2014

American College of Surgeons

*Inspiring Quality:*
*Highest Standards, Better Outcomes*

# Contents


| Section | | Page |
|---|---|---|
| 1. | Introduction | 1 |
| 2. | Merging Cases with the ACS NSQIP PUF | 1 |
| 3. | Data Request Process | 1 |
| 4. | File Description | 2 |
| 5. | Data Collection Background and Data Quality | 3 |
| 6. | Sampling Process and Case Inclusion/Exclusion Criteria | 4 |
| 7. | Data Limitations | 6 |
| 8. | Contact Information | 7 |
| 9. | Frequently Asked Questions | 8 |
| 10. | Data Variables and Definitions<br>• Procedure Targeted – Vascular<br>• Procedure Targeted – Colectomy | 11 |

## Data Update

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.

# 1. Introduction

This document, along with the Procedure Targeted User Guide Table, is designed to accompany the 2011 Procedure Targeted Participant Use Data File (PUF) available for download on the American College of Surgeons National Surgical Quality Improvement Program (ACS NSQIP) website (www.acsnsqip.org). The data contained in this version of the Procedure Targeted PUF covers dates of surgery from July 1, 2011 to December 31, 2011. The sections contained herein will provide the user with information on how to request the Procedure Targeted 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 2011 Procedure Targeted PUF.

# 2. Merging Cases with the ACS NSQIP PUF

Using the unique CASE ID variable, target-specific variables can be merged to the main ACS NSQIP adult PUF.

# 3. 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 Procedure Targeted PUF can do so by visiting www.acsnsqip.org and following the steps listed below:

1. From the ACS NSQIP main page (www.acsnsqip.org) the requestor can scroll over "Program Specifics" as it appears on the banner. A drop down will appear, follow the drop down and put the mouse over "Quality Support Tools." As you are over "Quality Support Tools" you will see "Participant Use Data File" appear on the right, click on "Participant Use Data File."
2. Following a brief introduction, the requestor can click on "Request Data Set."
3. This will take the requestor to the Data Use Agreement. This 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.

4. 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."
5. 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.
6. 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).
7. The file will be available in 3 different formats (Text, SPSS, SAS) and depending on the connection speed should take between 5 and 30 minutes to download.
8. 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.

# 4. File Description

The Procedure Targeted PUF is available in 1 of 3 different formats - Text, SAS, and SPSS.
A brief description of the different formats follows:

**Vascular:**

| File Name | Type | File Size | Variables | Cases | Sites |
|---|---|---|---|---|---|
| PUF_TAR_AAA_2011 | SAS | 81KB | 22 | 294 | 43 |
| | SPSS | 100KB | 22 | 294 | 43 |
| | TEXT | 39KB | 22 | 294 | 43 |
| PUF_TAR_AIE_2011 | SAS | 97KB | 20 | 179 | 14 |
| | SPSS | 89KB | 20 | 179 | 14 |
| | TEXT | 39KB | 20 | 179 | 14 |
| PUF_TAR_AIO_2011 | SAS | 81KB | 21 | 158 | 31 |
| | SPSS | 75KB | 21 | 158 | 31 |
| | TEXT | 36KB | 21 | 158 | 31 |
| PUF_TAR_CAS_ 2011 | SAS | 33KB | 31 | 58 | 10 |
| | SPSS | 34KB | 31 | 58 | 10 |
| | TEXT | 17KB | 31 | 58 | 10 |

| | | | | | |
|---|---|---|---|---|---|
| PUF_TAR_CEA_2011 | SAS | 673KB | 29 | 1512 | 56 |
| | SPSS | 737KB | 29 | 1512 | 56 |
| | TEXT | 354KB | 29 | 1512 | 56 |
| PUF_TAR_EVAR_2011 | SAS | 209KB | 26 | 701 | 43 |
| | SPSS | 261KB | 26 | 701 | 43 |
| | TEXT | 92KB | 26 | 701 | 43 |
| PUF_TAR_LEE_2011 | SAS | 225KB | 22 | 438 | 17 |
| | SPSS | 240KB | 22 | 438 | 17 |
| | TEXT | 102KB | 22 | 438 | 17 |
| PUF_TAR_LEO_2011 | SAS | 417KB | 22 | 791 | 55 |
| | SPSS | 449KB | 22 | 791 | 55 |
| | TEXT | 195KB | 22 | 791 | 55 |

# 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 5 or more preoperative risk factors and no reported mortality or morbidity or cases with 2 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 Semi Annual Report and may be required to undergo an additional audit following training and education recommendations from the ACS NSQIP.

# 6. Sampling Process and Case Inclusion/Exclusion Criteria

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

### *Systematic Sampling Process*

Many hospitals are not able to capture all of the surgical cases that meet the program's inclusion criteria. Therefore, a systematic sampling system called the 8-day cycle was developed to prevent bias in choosing cases for assessment. The SCR uses the 8-day cycle to select completed cases from the hospital's operative log. The schedule works as follows: If the first cycle begins on a Monday, it continues through to the following Monday (an 8-day period of time). The next cycle begins on Tuesday and continues through to the following Tuesday, and so on. There are 46 8-day cycles in 1 year, and the program requires that data be submitted for 42 of those cycles. The process ensures that cases have an equal chance of being selected from each day of the week. Case selection and case mix are monitored by the program on a weekly basis to ensure that the sampling is appropriate.

### *Case Inclusion Criteria*

The following inclusion criteria were applied to cases collected in 2012. For the current inclusion/exclusion criteria please contact the ACS NSQIP Clinical Support Team at clinicalsupport@acsnsqip.org.
The ACS NSQIP includes all Major Cases. Major Cases are defined as:

- Cases performed under the following anesthesia types:
  General
  Spinal
  Epidural
- The following cases *regardless* of anesthesia type:
  Carotid endarterectomy
  Inguinal herniorrhaphy
  Parathyroidectomy
  Thyroidectomy
  Breast lumpectomy
  Endovascular AAA repair

### *Case Exclusion Criteria*

The following exclusion criteria were applied to cases collected in 2011. 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
- More than 3 inguinal herniorrhaphies in an 8-day period
- More than 3 breast lumpectomies in an 8-day period
- Trauma Cases - Specifically: A patient who is admitted to the hospital with acute trauma and has a surgical procedure(s) for that trauma will be excluded. Any operation performed after the patient has been discharged from the trauma stay will be included.
- Transplant Cases - Specifically: A patient who is admitted to the hospital for a transplant and has a transplant procedure and any additional surgical procedure during the transplant hospitalization will be excluded. Any operation performed after the patient has been discharged from the transplant stay will be included.
  ASA 6 (brain-dead organ donors)
- Concurrent Cases - An additional operative procedure performed by a different surgical team under the same anesthetic (for example, coronary artery bypass graft procedure on a patient who is also undergoing a carotid endarterectomy). An assessment is not required on the concurrent procedure; however, additional procedures would be repeated as “concurrent” in the operative section for the assessed case.

- Cases with CPT codes not on the CPT Code Inclusion List
- SCR on vacation - Each site is allowed to assign 4 of the 8-day cycles as vacation cycles and therefore does not need to collect cases during those cycles.

***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:

- 30-day follow-up rate is under 80%
- 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). 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.

- While the sex and race distributions are reasonably representative of the national surgery patient population, only patients over the age of 16 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 a maximum of 30 days. Complications or death after that period are not included.

- 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.

# 8. Contact Information

All questions about the Procedure Targeted 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 nonparticipating 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 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: No. At this time use of the file is restricted to individuals at fully participating sites.

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 odds ratios in 2011. Each record includes 295 variables. The variable name, variable label, data definition, and other pertinent information are provided in Section 10: Data Variables and Definitions.

Q: Where can I find the Procedure Targeted variables and definitions?
A: You can contact your site's SCR for the July-December 2011 Procedure Targeted Variables and Definitions.

Q: What other reference materials are available?
A: Other PUF reference materials include the ACS NSQIP Targeted Procedure Materialized Views from September 2012, also available through your site's SCR.

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: 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: The ACS NSQIP program collects over 150 variables, but the database contains 295 variables. What are the additional variables?
A: The additional variables contained in the PUF relate to computed durations. For example, the admission and discharge dates are used to calculate hospital length of stay. In addition, each complication in the ACS NSQIP requires the use of 3 different variables in the database. There are a few other data elements collected in the ACS NSQIP that require multiple variables in the database. In 2008, we've removed RACE variable but added RACE_NEW and ETHNICITY_HISPANIC variables to comply with the CMS standard.

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: You may contact Brett Beemer, ACS NSQIP Application Support Specialist, via email at bbeemer@facs.org to request a file that will contain the Case IDs from your facility.

**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 2011-12. These probabilities are derived using hierarchical regression analysis. They represent the probability (0 to1) that a case will experience a morbid or mortal event based on the pre-existing conditions. These probabilities are calculated every 6 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 2011-12 are provided. Future versions of the PUF may contain a more complete set of predictive values.

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 5 digit CPT code but a CPT description set to NULL?

A: If the case has a valid 5 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.

**Targeted AAA(Abdominal Aortic Aneurysm)**

| Position # | Variable Name | Data Type | Variable Label | Variable Options at Entry |
|---|---|---|---|---|
| 1 | CASEID | Num | CASEID | You need this unique CASEID to merge with regular PUF dataset. |
| 2 | AAA_SURGIND | Char | Indication for Surgery | Diameter |
| | | | | Dissection |
| | | | | Non-ruptured symptomatic |
| | | | | Not documented |
| | | | | Rupture w/ hypotension or use of pressors |
| | | | | Rupture w/out hypotension |
| | | | | Thrombosis |
| 3 | AAA_ANDIAM | Num | Aneurysm Diameter | In centimeters the largest anterior-posterior measurement of AAA taken by CT or abdominal ultrasound prior to the operation. |
| 4 | AAA_ANDIAM_UNK | Char | Aneurysm Diameter Unknown | |
| 5 | AAA_PAAS | Char | Prior Open Abdominal Surgery | No |
| | | | | Unknown |
| | | | | Yes |
| 6 | AAA_SURGAP | Char | Surgical Approach | Not documented |
| | | | | Retroperitoneal |
| | | | | Transperitoneal-midline |
| | | | | Transperitoneal-transverse |
| 7 | AAA_PCL | Char | Proximal Clamp Location | Above one renal |
| | | | | Between SMA & renals |
| | | | | Infrarenal |
| | | | | Not documented |
| | | | | Supraceliac |
| 8 | AAA_PAE | Char | Proximal Aneurysm Extent | Infrarenal |
| | | | | Juxtarenal |
| | | | | Not documented |
| | | | | Pararenal |
| | | | | Supra-renal |
| | | | | Type IV Thoracoabdominal aneurysm |
| 9 | AAA_DISTEXT | Char | Distal Extent | Aortic |
| | | | | Common iliac |
| | | | | External iliac |
| | | | | Internal iliac |
| | | | | Not documented |
| 10 | AAA_MIMA | Char | Management of Inferior Mesenteric Artery | Chronically occluded |
| | | | | Implanted |
| | | | | Ligated |
| | | | | Not documented |
| 11 | AAA_CP_RENREVASC | Char | Renal Revascularization | No |
| | | | | Yes |
| 12 | AAA_CP_VISCREVASC | Char | Visceral (SMA & celiac) Revascularization | No |
| | | | | Yes |
| 13 | AAA_CP_LER | Char | Lower Extremity Revascularization (LER) | No |
| | | | | Yes |
| 14 | AAA_CP_ARE | Char | Abdominal, non-arterial repair or excision | No |
| | | | | Yes |
| 15 | AAA_COLITIS | Char | Ischemic Colitis | No |
| | | | | Yes |
| 16 | AAA_DCOLITIS | Num | Days from operation until Ischemic Coloitis | |
| 17 | AAA_COLITIIS_TREAT | Char | Ischemic Colitis Treatment | Medical treatment |
| | | | | Not documented |
| 18 | AAA_LEI | Char | Lower Extremity Ischemia | No |
| | | | | Yes |
| 19 | AAA_DLEI | Num | Days from operation until Lower Extremity Ischemia | |
| 20 | AAA_ROA | Char | Rupture of Aneurysm | No |
| | | | | Yes |
| 21 | AAA_DROA | Num | Days from operation until Rupture of Aneurysm | |
| 22 | AAA_ICULOS | Char | Intensive Care Unit LOS | The number of days (24 hours periods) a patient spent in the ICU |

* If the number of days from operation date until outcome event date is more than 30 days, the value is set to missing.

**Targeted AIE (Aortoiliac endo)**

| Position # | Variable Name | Data Type | Variable Label | Variable Options at Entry |
|---|---|---|---|---|
| 1 | CASEID | Num | CASEID | You need this unique CASEID to merge with regular PUF dataset. |
| 2 | AIE_PROC | Char | Procedure | Aortic angioplasty/stenting |
| | | | | Bilateral common iliac (kissing) angioplasty/stenting |
| | | | | Common and external iliac angioplasty/stenting |
| | | | | Common iliac angioplasty/stenting |
| | | | | External iliac angioplasty/stenting |
| | | | | Not documented |
| 3 | AIE_SYMPT | Char | Symptomatology | Asymptomatic |
| | | | | Claudication |
| | | | | Critical limb ischemia: rest pain |
| | | | | Critical limb ischemia: tissue loss |
| | | | | Not documented |
| 4 | AIE_HRF_PHYS | Char | High Risk Factors, Physiologic | No |
| | | | | Unknown |
| | | | | Yes |
| 5 | AIE_HRF_ANAT | Char | High Risk Factors, Anatomic | None/Not documented |
| | | | | Prior ipsilateral bypass involving currently treated segment |
| | | | | Prior ipsilateral percutaneous intervention involving currently treated segment |
| 6 | AIE_PREMED_ASPIRIN | Char | Pre-procedural Medication-Aspirin/Clopidogrel | No |
| | | | | Unknown |
| | | | | Yes |
| 7 | AIE_PREMED_STATIN | Char | Pre-procedural Medication-Statin | No |
| | | | | Unknown |
| | | | | Yes |
| 8 | AIE_PREMED_BETAB | Char | Pre-procedural Medication-Beta Blocker | No |
| | | | | Unknown |
| | | | | Yes |
| 9 | AIE_PREHEMO | Char | Preprocedural Hemodynamics of Treated Leg | ABI 0.40 - 0.89 |
| | | | | ABI 0.90 - 1.29 |
| | | | | ABI <= 0.39 |
| | | | | ABI >= 1.30; arteries "noncompressible", no toe pressure taken |
| | | | | ABI >= 1.30; arteries "noncompressible", toe pressure < 30 mm Hg |
| | | | | ABI >= 1.30; arteries "noncompressible", toe pressure >= 30 mm Hg |
| | | | | ABI not performed; "not palpable" |
| | | | | ABI not performed; ipsilateral pedal pulse "palpable" |
| | | | | Not documented |
| 10 | AIE_ULP | Char | Untreated Loss of Patency | No |
| | | | | Yes |
| 11 | AIE_DULP | Num | Days from operation until Untreated Loss of Petency | |
| 12 | AIE_BLEEDING | Char | Bleeding Requiring Transfusion or Secondary Procedure | No |
| | | | | Yes |
| 13 | AIE_DBLEEDING | Num | Days from operation until Bleeding | |
| 14 | AIE_MI_STROKE | Char | Myocardial Infarction or Stroke | No |
| | | | | Yes |
| 15 | AIE_DMI_STROKE | Num | Days from operation until Myocardial Infarction or Stroke | |
| 16 | AIE_WOUND | Char | Wound Infection/Complication | No |
| | | | | Yes |
| 17 | AIE_DWOUND | Num | Days from operation until Wound Infection/Complication | |
| 18 | AIE_POSTHEMO | Char | Postprocedural Hemodynamics of Treated Leg | ABI 0.40 - 0.89 |
| | | | | ABI 0.90 - 1.29 |
| | | | | ABI <= 0.39 |
| | | | | ABI >= 1.30; arteries "noncompressible", no toe pressure taken |
| | | | | ABI >= 1.30; arteries "noncompressible", toe pressure < 30 mm Hg |
| | | | | ABI >= 1.30; arteries "noncompressible", toe pressure >= 30 mm Hg |
| | | | | ABI not performed; "not palpable" |
| | | | | ABI not performed; ipsilateral pedal pulse "palpable" |
| | | | | None/Not documented |
| 19 | AIE_MOSTSEVOUTCOME | Char | Most Severe Procedural Outcome | Death |
| | | | | Major Amputation |
| | | | | New bypass in the treated arterial segment |
| | | | | Not documented |
| | | | | Patent treated arterial segment with stenosis |
| | | | | Patent treated arterial segment, no stenosis |
| | | | | Reintervened treated arterial segment with no stenosis |
| | | | | Reintervened treated arterial segment with stenosis |
| | | | | Thrombosis with no planned intervention |
| 20 | AIE_AMPUTATION | Char | Major Amputation (Transtibial or Proximal) | No |
| | | | | Yes |

* If the number of days from operation date until outcome event date is more than 30 days, the value is set to missing.

**Targeted AIO (Aortoiliac open)**

| Position # | Variable Name | Data Type | Variable Label | Variable Options at Entry |
|---|---|---|---|---|
| 1 | CASEID | Num | CASEID | You need this unique CASEID to merge with regular PUF dataset. |
| 2 | AIO_PROC | Char | Procedure | Aortobifemoral bypass |
| | | | | Aortobiliac bypass |
| | | | | Aortoiliac bypass |
| | | | | Aortoiliac endarterectomy |
| | | | | Ilio-femoral or Femoral-femoral bypass |
| | | | | Not documented |
| 3 | AIO_SYMPT | Char | Symptomatology | Asymptomatic |
| | | | | Claudication |
| | | | | Critical limb ischemia: rest pain |
| | | | | Critical limb ischemia: tissue loss |
| | | | | Not documented |
| 4 | AIO_HRF_PHYS | Char | High Risk Factors, Physiologic | No |
| | | | | Unknown |
| | | | | Yes |
| 5 | AIO_HRF_ANAT | Char | High Risk Factors, Anatomic | None/Not documented |
| | | | | Prior abdominal surgery |
| | | | | Prior ipsilateral bypass involving currently treated segment |
| | | | | Prior ipsilateral percutaneous intervention involving currently treated segment |
| 6 | AIO_PREMED_ASPIRIN | Char | Pre-procedural Medication-Aspirin/Clopidogrel | No |
| | | | | Unknown |
| | | | | Yes |
| 7 | AIO_PREMED_STATIN | Char | Pre-procedural Medication-Statin | No |
| | | | | Unknown |
| | | | | Yes |
| 8 | AIO_PREMED_BETAB | Char | Pre-procedural Medication-Beta Blocker | No |
| | | | | Unknown |
| | | | | Yes |
| 9 | AIO_PREHEMO | Char | Preprocedural Hemodynamics of Treated Leg | ABI 0.40 - 0.89 |
| | | | | ABI 0.90 - 1.29 |
| | | | | ABI <= 0.39 |
| | | | | ABI >= 1.30; arteries "noncompressible", no toe pressure taken |
| | | | | ABI >= 1.30; arteries "noncompressible", toe pressure >= 30 mm Hg |
| | | | | ABI not performed; "not palpable" |
| | | | | ABI not performed; ipsilateral pedal pulse "palpable" |
| | | | | Not documented |
| 10 | AIO_ULP | Char | Untreated Loss of Patency | No |
| | | | | Yes |
| 11 | AIO_DULP | Num | Days from operation until Untreated Loss of Petency | |
| 12 | AIO_BLEEDING | Char | Bleeding Requiring Transfusion or Secondary Procedure | No |
| | | | | Yes |
| 13 | AIO_DBLEEDING | Num | Days from operation until Bleeding | |
| 14 | AIO_MI_STROKE | Char | Myocardial Infarction or Stroke | No |
| | | | | Yes |
| 15 | AIO_DMI_STROKE | Num | Days from operation until Myocardial Infarction or Stroke | |
| 16 | AIO_WOUND | Char | Wound Infection/Complication | No |
| | | | | Yes |
| 17 | AIO_DWOUND | Num | Days from operation until Wound Infection/Complication | |
| 18 | AIO_POSTHEMO | Char | Postprocedural Hemodynamics of Treated Leg | ABI 0.40 - 0.89 |
| | | | | ABI 0.90 - 1.29 |
| | | | | ABI <= 0.39 |
| | | | | ABI not performed; "not palpable" |
| | | | | ABI not performed; ipsilateral pedal pulse "palpable" |
| | | | | None/Not documented |
| 19 | AIO_MOSTSEVOUTCOMEO | Char | Most Severe Procedural Outcome | Death |
| | | | | Major Amputation |
| | | | | New bypass in the treated arterial segment |
| | | | | Not documented |
| | | | | Patent treated arterial segment with stenosis |
| | | | | Patent treated arterial segment, no stenosis |
| | | | | Reintervened treated arterial segment with no stenosis |
| | | | | Reintervened treated arterial segment with stenosis |
| 20 | AIO_MRTAS | Char | Major Reintervention of Treated Arterial Segment | No |
| | | | | Yes |
| 21 | AIO_AMPUTATION | Char | Major Amputation (Transtibial or Proximal) | No |
| | | | | Yes |

* If the number of days from operation date until outcome event date is more than 30 days, the value is set to missing.

**Targeted CAS (Carotid Artery Stenting)**

| Position # | Variable Name | Data Type | Variable Label | Variable Options at Entry |
|---|---|---|---|---|
| 1 | CASEID | Num | CASEID | You need this unique CASEID to merge with regular PUF dataset. |
| 2 | CAS_PROC | Char | Procedure | Multiple stents |
| | | | | Multiple stents with CPD |
| | | | | Not documented |
| | | | | Single straight stent |
| | | | | Single straight stent with cerebral protection device (CPD) |
| | | | | Single tapered stent |
| | | | | Single tapered stent with CPD |
| 3 | CAS_SYMPT | Char | Symptomatology | Amaurosis fugax or TMB, ipsilateral |
| | | | | Asymptomatic |
| | | | | Stroke, ipsilateral |
| | | | | Transient ischemic attack, ipsilateral |
| 4 | CAS_MODRANKIN | Char | Modified Rankin Scale | No significant disability |
| | | | | Slight disability |
| 5 | CAS_HRF_PHYS | Char | High Risk Factors, Physiologic | No |
| | | | | Yes |
| 6 | CAS_HRF_ANAT | Char | High Risk Factors, Anatomic | No |
| | | | | Yes |
| 7 | CAS_PREMED_ASPIRIN | Char | Pre-procedural Medication-Aspirin/Clopidogrel | No |
| | | | | Yes |
| 8 | CAS_PREMED_STATIN | Char | Pre-procedural Medication-Statin | No |
| | | | | Yes |
| 9 | CAS_PREMED_BETAB | Char | Pre-procedural Medication-Beta Blocker | No |
| | | | | Yes |
| 10 | CAS_BS_IPSICA | Char | Baseline Doppler Ultrasound or Angiogram, ipsilateral ICA stenosis | Moderate stenosis (estimate of 50%-79%) |
| | | | | Not performed |
| | | | | Severe stenosis (estimate of 80% to 99%) |
| 11 | CAS_BS_CONICA | Char | Baseline Doppler Ultrasound or Angiogram, contralateral ICA stenosis | Mild or no stenosis (estimate of <50%) |
| | | | | Moderate stenosis (estimate of 50%-79%) |
| | | | | Not performed |
| | | | | Severe stenosis (estimate of 80% to 99%) |
| | | | | Total occlusion (estimate of 100%) |
| 12 | CAS_EMBOLIZ | Char | Embolization | No |
| 13 | CAS_DEMBOLIZ | Num | Days from operation until Embolization | |
| 14 | CAS_THROMB | Char | Thrombosis/Occlusive dissection/Vessel Closure | No |
| 15 | CAS_DTHROMB | Num | Days from operation until Thrombosis/Occlusive dissection/Vessel Closure | |
| 16 | CAS_MIA | Char | MI / Arrhythmia | No |
| | | | | Yes |
| 17 | CAS_DMIA | Num | Days from operation until MI/Arrhythmia | |
| 18 | CAS_STROKE | Char | Stroke | No |
| | | | | Yes |
| 19 | CAS_DSTROKE | Num | Days from operation until Stroke | |
| 20 | CAS_RANKIN | Char | Rankin Scale | |
| | | | | Moderately severe disability |
| 21 | CAS_TIA | Char | TIA/Amaurosis Fugax/TMB | No |
| 22 | CAS_DTIA | Num | Days from operation until TIA/Amaurosis Fugax/TMB | |
| 23 | CAS_PUNCTURE | Char | Puncture Site | No |
| | | | | Yes |
| 24 | CAS_DPUNCTURE | Num | Days from operation until Puncture Site | |
| 25 | CAS_RESTENOSIS | Char | Restenosis | No |
| | | | | Yes |
| 26 | CAS_DRESTENOSIS | Num | Days from operation until Restenosis | |
| 27 | CAS_DISTEMB | Char | Distal Embolization | No |
| 28 | CAS_DDISTEMB | Num | Days from operation until Distal Embolization | |
| 29 | CAS_MOSTSEVOUTCOME | Char | Most Severe Clinical Outcome | Myocardial Infarction |
| | | | | Not documented |
| | | | | Other |
| | | | | Stroke |
| 30 | CAS_FUP_IPSICA | Char | Follow-up Doppler Ultrasound or Angiogram, ipsilateral ICA stenosis | Mild or no stenosis (estimate of <50%) |
| | | | | Moderate stenosis (estimate of 50%-79%) |
| | | | | Not performed |
| | | | | Total occlusion (estimate of 100%) |
| 31 | CAS_LESREVASC | Char | Target Lesion Revascularization | Moderate stenosis (estimate of 50%-79%) |

* If the number of days from operation date until outcome event date is more than 30 days, the value is set to missing.

**Targeted CEA (Carotid Endarterectomy)**

| Position # | Variable Name | Data Type | Variable Label | Variable Options at Entry |
|---|---|---|---|---|
| 1 | CASEID | Num | CASEID | You need this unique CASEID to merge with regular PUF dataset. |
| 2 | CEA_PROC | Char | Procedure | Carotid Endarterectomy |
| | | | | Carotid Endarterectomy w/ patch angioplasty |
| | | | | Carotid Endarterectomy w/ patch angioplasty & shunt |
| | | | | Carotid Endarterectomy w/ shunt |
| | | | | Eversion Carotid Endarterectomy |
| | | | | Not documented |
| 3 | CEA_SYMPT | Char | Symptomatology | Amaurosis fugax or TMB, ipsilateral |
| | | | | Asymptomatic |
| | | | | Not documented |
| | | | | Stroke, ipsilateral |
| | | | | Transient ischemic attack, ipsilateral |
| 4 | CEA_MODRANKIN | Char | Modified Rankin Scale | |
| | | | | 0-No symptoms |
| | | | | 1-No significant disability |
| | | | | 2-Slight disability |
| | | | | 3-Moderate disability |
| | | | | 4-Moderately severe disability |
| | | | | 5-Severe disability |
| | | | | No Rankin Scale given |
| 5 | CEA_HRF_PHYS | Char | High Risk Factors, Physiologic | No |
| | | | | Unknown |
| | | | | Yes |
| 6 | CEA_HRF_ANAT | Char | High Risk Factors, Anatomic | No |
| | | | | Unknown |
| | | | | Yes |
| 7 | CEA_PREMED_ASPIRIN | Char | Pre-procedural Medication-Aspirin/Clopidogrel | No |
| | | | | Unknown |
| | | | | Yes |
| 8 | CEA_PREMED_STATIN | Char | Pre-procedural Medication-Statin | No |
| | | | | Unknown |
| | | | | Yes |
| 9 | CEA_PREMED_BETAB | Char | Pre-procedural Medication-Beta Blocker | No |
| | | | | Unknown |
| | | | | Yes |
| 10 | CEA_BS_IPSICA | Char | Baseline Doppler Ultrasound or Angiogram, ipsilateral ICA stenosis | Mild or no stenosis (estimate of <50%) |
| | | | | Moderate stenosis (estimate of 50%-79%) |
| | | | | Not performed |
| | | | | Severe stenosis (estimate of 80% to 99%) |
| | | | | Total occlusion (estimate of 100%) |
| 11 | CEA_BS_CONICA | Char | Baseline Doppler Ultrasound or Angiogram, contralateral ICA stenosis | Mild or no stenosis (estimate of <50%) |
| | | | | Moderate stenosis (estimate of 50%-79%) |
| | | | | Not performed |
| | | | | Severe stenosis (estimate of 80% to 99%) |
| | | | | Total occlusion (estimate of 100%) |
| 12 | CEA_ACUTEREV | Char | Acute Occlusion/Technical Defects Requiring Revision | |
| 13 | CEA_DACUTEREV | Num | Days from operation until Acute Occlusion/Technical Defects Requiring Revision | |
| 14 | CEA_CNI | Char | Cranial Nerve Injury | No |
| | | | | Yes |
| 15 | CEA_DCNI | Num | Days from operation until Cranial Nerve Injury | |
| 16 | CEA_MIA | Char | MI / Arrhythmia | No |
| | | | | Yes |
| 17 | CEA_DMIA | Num | Days from operation until MI/Arrhythmia | |
| 18 | CEA_STROKE | Char | Stroke | No |
| | | | | Yes |
| 19 | CEA_DSTROKE | Num | Days from operation until Stroke | |
| 20 | CEA_RANKIN | Char | Rankin Scale | No symptoms |
| | | | | No significant disability |
| | | | | Slight disability |
| | | | | Moderate disability |
| | | | | Moderately severe disability |
| | | | | Severe disability |
| | | | | Dead |
| | | | | No Rankin Scale given |
| 21 | CEA_TIA | Char | TIA/Amaurosis Fugax/TMB | No |
| | | | | Yes |
| 22 | CEA_DTIA | Num | Days from operation until TIA/Amaurosis Fugax/TMB | |
| 23 | CEA_RESTENOSIS | Char | Restenosis | No |
| | | | | Yes |
| 24 | CEA_DRESTENOSIS | Num | Days from operation until Restenosis | |
| 25 | CEA_DISTEMB | Char | Distal Embolization | No |
| | | | | Yes |
| 26 | CEA_DDISTEMB | Num | Days from operation until Distal Embolization | |
| 27 | CEA_MOSTSEVOUTCOME | Char | Most Severe Clinical Outcome | Amaurosis fugax or transient monocular blindness |
| | | | | Myocardial Infarction |
| | | | | Not documented |
| | | | | Other |
| | | | | Stroke |
| | | | | Transient Ischemic Attack (TIA) |
| 28 | CEA_FUP_IPSICA | Char | Follow-up Doppler Ultrasound or Angiogram, ipsilateral ICA stenosis | Mild or no stenosis (estimate of <50%) |
| | | | | Moderate stenosis (estimate of 50%-79%) |
| | | | | Not performed |
| | | | | Severe stenosis (estimate of 80% to 99%) |
| | | | | Total occlusion (estimate of 100%) |
| 29 | CEA_LESREVASC | Char | Target Lesion Revascularization | No |
| | | | | Yes |

* If the number of days from operation date until outcome event date is more than 30 days, the value is set to missing.

**Targeted EVAR (Endovascular Aneurysm Repair)**

| Position # | Variable Name | Data Type | Variable Label | Variable Options at Entry |
|---|---|---|---|---|
| 1 | CASEID | Num | CASEID | You need this unique CASEID to merge with regular PUF dataset. |
| 2 | EVAR_SURGIND | Char | Indication for Surgery | Diameter |
| | | | | Dissection |
| | | | | Embolization |
| | | | | Non-ruptured symptomatic |
| | | | | Not documented |
| | | | | Rupture w/ hypotension or use of pressors |
| | | | | Rupture w/out hypotension |
| | | | | Thrombosis |
| 3 | EVAR_ANDIAM | Num | Aneurysm Diameter ("cm") | |
| 4 | EVAR_ANDIAM_UNK | Char | Unknown | |
| 5 | EVAR_PAAS | Char | Prior Abdominal Aortic Surgery | No |
| | | | | Unknown |
| | | | | Yes |
| 6 | EVAR_ACCESS | Char | Access | Attempted percutaneous access converted to open cutdown |
| | | | | Bilateral groin cutdown |
| | | | | Not documented |
| | | | | One groin cutdown |
| | | | | Percutaneous bilateral |
| 7 | EVAR_MBD | Char | Main Body Device | Cook Zenith |
| | | | | Cook Zenith Fenestrated |
| | | | | Cook Zenith Renu |
| | | | | Endologix Powerlink |
| | | | | Gore Excluder |
| | | | | Lombard Aorfix |
| | | | | Medtronic AneuRx |
| | | | | Medtronic Endurant |
| | | | | Medtronic TALENT |
| | | | | Not documented |
| | | | | Other |
| | | | | TriVascular Ovation |
| 8 | EVAR_ACOP | Char | Acute Conversion to Open Procedure | No |
| | | | | Unknown |
| | | | | Yes |
| 9 | EVAR_PAE | Char | Proximal Aneurysm Extent | Infrarenal |
| | | | | Juxtarenal |
| | | | | Not documented |
| | | | | Pararenal |
| | | | | Supra-renal |
| | | | | Type IV Thoracoabdominal aneurysm |
| 10 | EVAR_DISTEXT | Char | Distal Extent | Aortic |
| | | | | Common iliac |
| | | | | External iliac |
| | | | | Internal iliac |
| | | | | Not documented |
| 11 | EVAR_CP_ACCESS | Char | Access Vessels (Conduit, Repair) | No |
| | | | | Yes |
| 12 | EVAR_CP_RENALSTENT | Char | Renal Stent | No |
| | | | | Yes |
| 13 | EVAR_CP_HYPOEMB | Char | Hypogastric Embolization | No |
| | | | | Yes |
| 14 | EVAR_CP_HYPOREVASC | Char | Hypogastric Revascularization | No |
| | | | | Yes |
| 15 | EVAR_CP_LEREVASC | Char | Lower Extremity Revascularization | |
| 16 | EVAR_CP_ILIACBD | Char | Iliac Branched Device | No |
| | | | | Yes |
| 17 | EVAR_CP_AORTICSTENT | Char | Aortic (Bare Metal) Stent | No |
| | | | | Yes |
| 18 | EVAR_CP_ILIACSTENT | Char | Iliac (Bare Metal) Stent | No |
| | | | | Yes |
| 19 | EVAR_COLITIS | Char | Ischemic Colitis | No |
| | | | | Yes |
| 20 | EVAR_DCOLITIS | Num | Days from operation until Ischemic Colitis | |
| 21 | EVAR_COLITIIS_TREAT | Char | Ischemic Colitis Treatment | |
| | | | | Medical treatment |
| 21 | EVAR_COLITIIS_TREAT | Char | Ischemic Colitis Treatment | Surgical treatment |
| 22 | EVAR_LEI | Char | Lower Extremity Ischemia | No |
| | | | | Yes |
| 23 | EVAR_DLEI | Num | Days from operation until Low Extremity Ischemic | |
| 24 | EVAR_ROA | Char | Rupture of Aneurysm | No |
| | | | | Yes |
| 25 | EVAR_DROA | Num | Days from operation until Rupture of Aneurysm | |
| 26 | EVAR_ICULOS | Char | Intensive Care Unit LOS | The number of days(24 hours periods) a patient spent in ICU. |

* If the number of days from operation date until outcome event date is more than 30 days, the value is set to missing.

**Targeted LEE (Lower Extremity endo)**

| Position # | Variable Name | Data Type | Variable Label | Variable Options at Entry |
|---|---|---|---|---|
| 1 | CASEID | Num | CASEID | You need this unique CASEID to merge with regular PUF dataset. |
| 2 | LEE_PROC | Char | Procedure | Femoropopliteal angioplasty/stenting/atherectomy |
| | | | | Not documented |
| | | | | Tibial angioplasty/stenting |
| 3 | LEE_SYMPT | Char | Symptomatology | Asymptomatic |
| | | | | Claudication |
| | | | | Critical limb ischemia: rest pain |
| | | | | Critical limb ischemia: tissue loss |
| | | | | Not documented |
| 4 | LEE_HRF_PHYS | Char | High Risk Factors, Physiologic | No |
| | | | | Unknown |
| | | | | Yes |
| 5 | LEE_HRF_ANAT | Char | High Risk Factors, Anatomic | None/Not documented |
| | | | | Prior ipsilateral bypass involving currently treated segment |
| | | | | Prior ipsilateral percutaneous intervention involving currently treated segment |
| 6 | LEE_PREMED_ASPIRIN | Char | Pre-procedural Medication-Aspirin/Clopidogrel | No |
| | | | | Yes |
| 7 | LEE_PREMED_STATIN | Char | Pre-procedural Medication-Statin | No |
| | | | | Yes |
| 8 | LEE_PREMED_BETAB | Char | Pre-procedural Medication-Beta Blocker | No |
| | | | | Unknown |
| | | | | Yes |
| 9 | LEE_PREHEMO | Char | Preprocedural Hemodynamics of Treated Leg | ABI 0.40 - 0.89 |
| | | | | ABI 0.90 - 1.29 |
| | | | | ABI <= 0.39 |
| | | | | ABI >= 1.30; arteries "noncompressible", no toe pressure taken |
| | | | | ABI >= 1.30; arteries "noncompressible", toe pressure < 30 mm Hg |
| | | | | ABI >= 1.30; arteries "noncompressible", toe pressure >= 30 mm Hg |
| | | | | ABI not performed; "not palpable" |
| | | | | ABI not performed; ipsilateral pedal pulse "palpable" |
| | | | | None/Not documented |
| 10 | LEE_ULP | Char | Untreated Loss of Patency | No |
| | | | | Yes |
| 11 | LEE_DULP | Num | Days from operation until Untreated Loss of Patency | |
| 12 | LEE_BLEEDING | Char | Bleeding Requiring Transfusion or Secondary Procedure | No |
| | | | | Yes |
| 13 | LEE_DBLEEDING | Num | Days from operation until Bleeding | |
| 14 | LEE_MI_STROKE | Char | Myocardial Infarction or Stroke | No |
| | | | | Yes |
| 15 | LEE_DMI_STROKE | Num | Days from operation until Myocardial Infarction or Stroke | |
| 16 | LEE_WOUND | Char | Wound Infection/Complication | No |
| | | | | Yes |
| 17 | LEE_DWOUND | Num | Days from operation until Wound Infection/Complication | |
| 18 | LEE_POSTHEMO | Char | Postprocedural Hemodynamics of Treated Leg | ABI 0.40 - 0.89 |
| | | | | ABI 0.90 - 1.29 |
| | | | | ABI <= 0.39 |
| | | | | ABI >= 1.30; arteries "noncompressible", no toe pressure taken |
| | | | | ABI >= 1.30; arteries "noncompressible", toe pressure < 30 mm Hg |
| | | | | ABI >= 1.30; arteries "noncompressible", toe pressure >= 30 mm Hg |
| | | | | ABI not performed; "not palpable" |
| | | | | ABI not performed; ipsilateral pedal pulse "palpable" |
| | | | | None/Not documented |
| 19 | LEE_MOSTSEVOUTCOME | Char | Most Severe Procedural Outcome | Death |
| | | | | Image-proven treated arterial segment thrombosis or clinically evident thrombosis with no planned intervention |
| | | | | Major Amputation |
| | | | | New bypass in the treated arterial segment |
| | | | | Not documented |
| | | | | Other |
| | | | | Patent treated arterial segment with stenosis |
| | | | | Patent treated arterial segment, no stenosis |
| | | | | Reintervened treated arterial segment with stenosis |
| 20 | LEE_DMOSTSEVOUTC | Num | Days from operation until Most Severe Procedural Outcome | |
| 21 | LEE_MRTAS | Char | Major Reintervention of Treated Arterial Segment | No |
| | | | | Yes |
| 22 | LEE_AMPUTATION | Char | Major Amputation (Transtibial or Proximal) | No |
| | | | | Yes |

* If the number of days from operation date until outcome event date is more than 30 days, the value is set to missing.

**Targeted LEO (Lower Extremity open)**

| Position # | Variable Name | Data Type | Variable Label | Variable Options at Entry |
|---|---|---|---|---|
| 1 | CASEID | Num | CASEID | You need this unique CASEID to merge with regular PUF dataset. |
| 2 | LEO_PROC | Char | Procedure | Femoral distal bypass w/ prosthetic/spliced vein/composite |
| | | | | Femoral distal bypass w/ single segment saphenous vein |
| | | | | Femoral endarterectomy |
| | | | | Femoropopliteal bypass w/ single segment saphenous vein |
| | | | | Femoropopliteal bypass w/prosthetic/spliced vein/composite |
| | | | | Not documented or Other |
| | | | | Popliteal distal bypass w/ prosthetic/spliced vein/composite or non-saphenous conduit |
| | | | | Popliteal distal w/ single segment saphenous vein |
| | | | | Profundoplasty |
| 3 | LEO_SYMPT | Char | Symptomatology | Asymptomatic |
| | | | | Claudication |
| | | | | Critical limb ischemia: rest pain |
| | | | | Critical limb ischemia: tissue loss |
| | | | | Not documented |
| 4 | LEO_HRF_PHYS | Char | High Risk Factors, Physiologic | No |
| | | | | Unknown |
| | | | | Yes |
| 5 | LEO_HRF_ANAT | Char | High Risk Factors, Anatomic | None/Not documented |
| | | | | Prior ipsilateral bypass involving currently treated segment |
| | | | | Prior ipsilateral percutaneous intervention involving currently treated segment |
| 6 | LEO_PREMED_ASPIRIN | Char | Pre-procedural Medication-Aspirin/Clopidogrel | No |
| | | | | Unknown |
| | | | | Yes |
| 7 | LEO_PREMED_STATIN | Char | Pre-procedural Medication-Statin | No |
| | | | | Unknown |
| | | | | Yes |
| 8 | LEO_PREMED_BETAB | Char | Pre-procedural Medication-Beta Blocker | No |
| | | | | Unknown |
| | | | | Yes |
| 9 | LEO_PREHEMO | Char | Preprocedural Hemodynamics of Treated Leg | ABI 0.40 - 0.89 |
| | | | | ABI 0.90 - 1.29 |
| | | | | ABI <= 0.39 |
| | | | | ABI >= 1.30; arteries "noncompressible", no toe pressure taken |
| | | | | ABI >= 1.30; arteries "noncompressible", toe pressure < 30 mm Hg |
| | | | | ABI >= 1.30; arteries "noncompressible", toe pressure >= 30 mm Hg |
| | | | | ABI not performed; "not palpable" |
| | | | | ABI not performed; ipsilateral pedal pulse "palpable" |
| | | | | None/Not documented |
| 10 | LEO_ULP | Char | Untreated Loss of Patency | No |
| | | | | Yes |
| 11 | LEO_DULP | Num | Days from operation until Untreated Loss of Patency | |
| 12 | LEO_BLEEDING | Char | Bleeding Requiring Transfusion or Secondary Procedure | |
| 13 | LEO_DBLEEDING | Num | Days from operation until Bleeding Requiring Transfusion or Secondary Procedure | |
| 14 | LEO_MI_STROKE | Char | Myocardial Infarction or Stroke | No |
| | | | | Yes |
| 15 | LEO_DMI_STROKE | Num | Days from operation until Myocardial Infarction or Stroke | |
| 16 | LEO_WOUND | Char | Wound Infection/Complication | No |
| | | | | Yes |
| 17 | LEO_DWOUND | Num | Days from operation until Wound Infection/Complication | |
| 18 | LEO_POSTHEMO | Char | Postprocedural Hemodynamics of Treated Leg | ABI 0.40 - 0.89 |
| | | | | ABI 0.90 - 1.29 |
| | | | | ABI <= 0.39 |
| | | | | ABI >= 1.30; arteries "noncompressible", no toe pressure taken |
| | | | | ABI >= 1.30; arteries "noncompressible", toe pressure < 30 mm Hg |
| | | | | ABI >= 1.30; arteries "noncompressible", toe pressure >= 30 mm Hg |
| | | | | ABI not performed; "not palpable" |
| | | | | ABI not performed; ipsilateral pedal pulse "palpable" |
| | | | | None/Not documented |
| 19 | LEO_MOSTSEVOUTCOME | Char | Most Severe Procedural Outcome | Death |
| | | | | Image-proven graft thrombosis or clinically evident thrombosis with no planned intervention |
| | | | | Major Amputation |
| | | | | New bypass in the treated arterial segment |
| | | | | Not documented |
| | | | | Other |
| | | | | Patent graft with stenosis |
| | | | | Patent graft, no stenosis |
| | | | | Revised graft with stenosis |
| | | | | Revised graft, no current stenosis |
| 20 | LEO_DMOSTSEVOUTC | Num | Days from operation until Most Severe Procedural Outcome | |
| 21 | LEO_MRB | Char | Major reintervention on the bypass | No |
| | | | | Yes |
| 22 | LEO_AMPUTATION | Char | Major Amputation (Transtibial or Proximal) | No |
| | | | | Yes |

* If the number of days from operation date until outcome event date is more than 30 days, the value is set to missing.

ACS NSQIP®

American College of Surgeons

*Inspiring Quality:*
*Highest Standards, Better Outcomes*