

**Data Collection Form fields:  
Updated: January 2020**

**Data Manager Quick-Links**

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**Major Changes coming to the Databases January 1, 2020** (click to learn about upcoming webinars, harvest dates, and other important information)

[New Data Warehouse - Starting January 1, 2020 – Important Information for ALL SITES!](#)

[Adult Cardiac Homepage](#)

[Data Collection Resources \(version specific abstraction documents\)](#)

[Ask an Abstraction Question](#)

[Data Manager Education](#)

[Monthly Webinars](#)

[Advances in Quality and Outcomes: A Data Managers Meeting](#)

[Performance Measures \(NQF Measures\)](#)

[STS National Database News - Publication for STS Data Managers](#)

[Public Reporting](#)

[Contact Information](#)

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**Introduction**

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This manual is intended to clarify field definition and intent. This document contains the most up to date instructions for v. 2.9 data abstraction. Do not refer to old manuals or other data definitions. **Please review this document prior to submitting clinical questions.** FAQs will be added to the document in red to provide additional examples and clarification. Comments in green are provided for clarification within prior updates. Please do not print this document since it will change frequently. Using the web version will ensure that you have the most up to date information. Occasionally there may be changes or important information that will be highlighted here and will be also included in STS Database Newsletters. **Update Nov 2019 – Unless otherwise indicated, Data Managers are not required to go back in past records to update them based on**

**new updated FAQ's and Updates to the Training Manual. Data Mangers should move forward with new updated FAQ's and Updates to the Training Manual as they abstract records. In the event of an audit, records will be audited based on the Training Manual at that time.** Use the Ctrl + F function to search for a number or term of interest. Bookmarks have been added for **January 2020** update

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## **General Information:**

### **November 2018**

The STS data collection forms should be held for **three** years.  
If you only collect data directly to the software you are not required to create data collection forms to save.

For all questions where the choices include “no” and “unknown,” how should the question be coded when there is no specific documentation?  
When a history and physical or a consultation exists in the medical record and the values are not specifically addressed in the documentation, code no. Unknown should be coded only in the circumstance where no clinical documentation exists and the patient cannot give history and supportive documentation.

Will the STS plan to extract data from the EMR?  
Currently, the STS is not extracting from the EMR. Some but not all could be collected from the EMR. Some fields are too complex to extract from the EMR in real time.

Is there a list of the procedures that should be included in the Adult Cardiac Surgery Database?  
While there is no all-inclusive list of procedures to be included, all procedures must include a surgeon that is listed in the participation agreement with the STS.

**FAQ December 2018:** Should transcatheter mitral valve (TMVR) procedures be included in the ACSD?  
Answer: Transcatheter mitral valve procedures are optional to be included in the ACSD and will not be analysed.

**FAQ August 2019** - Data Manager's have shared they are using an internet link that provides UDI for valves. Does this sound correct?  
**Answer** – No, there is no internet link that will provide you with an UDI. The UDI's are device specific which means they are unique for each device implanted into each patient. No two devices will have the same UDI. See the below image for what an UDI number looks like.



**FAQ August 2019** - The current data specs allow for 50 characters to be entered for the UDI. However, most UDIs are greater than 50 characters, please advise?

**Answer** - The UDI is made up of 5 different identifiers and each identifier is preceded by a number in parentheses (e.g. (GIN (01) #; Expiration Date (17); Manufacturing Date (11); Lot number (10) AND Serial number (21)). It is necessary to enter all of the characters, including the parentheses, into the database so the FDA can identify each unique device. If you are not able to enter the entire UDI, including the parentheses, then please leave this field blank. The field length will be addressed in the 2020 version upgrade to allow for more characters.

**FAQ August 2019** – A patient had a TEVAR performed on June 1<sup>st</sup> and was discharged on June 4<sup>th</sup>. The patient returned on June 15<sup>th</sup> with an endoleak and required another TEVAR to fix the endoleak. How do I account for this second procedure, we don't want to lose data from this case.

**Answer** – On the first DCF from the June 1<sup>st</sup> TEVAR you will enter this as a readmission (readmit primary reason – Other – related readmission), and a readmit primary procedure of 'OR for Aorta Intervention.' A DCF will need to be filled out for the second case as well since it was a separate readmission and any complications following the second procedure will be captured on the second DCF. This is true for all primary procedures that are captured in the STS ACSD. If a patient has a CABG and then comes back within 30 days for a Valve, the valve would be captured on a separate DCF. If there are additional questions about when a second DCF should be filled out for a new admission requiring an ACSD procedure within 30 days of the first procedure then please send in a FAQ.

**Update Dec 2019** – When entering values into the DCF, if your values are outside of the allowable range for the field, then you should enter the highest / lowest allowable value for that field. For example, patient has preop BNP 75,744. The allowable value for BNP is between 5 and 70,000. In this situation code 70,000. Before using the highest or lowest allowable values, please verify the unit for the value is correct.

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**Administrative**  
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**SEQ. #: 5**

**Long Name:** Software Vendor Identifier

**Short Name:** VendorID

**Definition:** Name (assigned by STS) given to identify software vendor (up to 8 characters). Vendors should use standard name identification across sites. Changes to Vendor Name Identification must be approved by the STS.

**Intent/Clarification:**

Name must match what is listed as the Active vendor for your Participant ID in the database. Any mismatch will cause your data file submission not to process.

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**SEQ. #: 10**

**Long Name:** Software Version

**Short Name:** SoftVrsn

**Definition:** Vendor's software product name and version number identifying the software which created this record. Vendor controls the value in this field. Version passing certification/harvest testing will be noted at warehouse.

**Intent/Clarification: -**

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**SEQ. #: 15**

**Long Name:** STS Data Version

**Short Name:** DataVrsn

**Definition:** Version number of the STS Data Specifications/Dictionary, to which each record conforms. It will identify which fields should have data, and what are the valid data for each field. This must be entered into the record automatically by the software.

**Intent/Clarification:**

Data version must be appropriate for the procedure date listed in the record. Valid date ranges can be found in the current Software Specifications.

**Any mismatch will cause your data file submission not to process.**

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**SEQ. #: 20**

**Long Name:** On-Demand Files Version Number

**Short Name:** OnDemandVrsn

**Definition:** The version number of the On-Demand lists in use at the time this data record was created or edited. The value is inserted into the record at the time the record is created or is modified by the user. The version numbers will be specified by the STS.

**Intent/Clarification:**

Inconsistencies here do not prevent your file from being processed. However, any mismatch will appear in your Data Quality Report (DQR) as a value that could not be

interpreted. You should contact your designated Data Submission Coordinator for assistance.

<http://www.sts.org/sts-national-database/database-managers/contact-information>

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**SEQ. #: 25**

**Long Name:** Participant ID

**Short Name:** ParticID

**Definition:** Participant ID is a unique number assigned to each database participant by the STS. A database participant is defined as one entity that signs a Participation Agreement with the STS, submits one data file to the harvest, and gets back one report on their data. The participant ID must be entered into each record.

Each participant's data if submitted to harvest must be in one data file. If one participant keeps their data in more than one file (e.g. at two sites), then the participant must combine them back into one file for harvest submission.

If two or more participants share a single purchased software, and enter cases into one database, then the data must be extracted into two different files, one for each participant ID, with each record having the correct participant ID number.

**Intent/Clarification:**

Each participant's data, if submitted to harvest, must be in one data file. If one participant keeps the data in more than one file (e.g. at two sites), then the participant must combine them back into one file for harvest submission. If two or more participants share a single purchased software, and enter cases in to one database, then the data must be extracted into two different files, one for each participant ID, with each record having the correct participant ID number.

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**SEQ. #: 30**

**Long Name:** Record ID

**Short Name:** RecordID

**Definition:** An arbitrary, unique value generated by the software that permanently identifies each record in the participant's database (note that unlike the PatID value, this does not identify the individual patient). The value of the identifier is a combination of a code assigned to the software developer by the STS, and a value generated by the software to create a unique value. Once assigned to a record, this value can never be changed or reused. The data warehouse will use this value to communicate issues about individual records with the participant. It may also be used by the data warehouse to link this record to other clinical data.

**Intent/Clarification:**

The data warehouse will use this value to communicate issues about individual records with the participant. It may also be used by the data warehouse to link this record to other clinical data.

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**SEQ. #: 35**

**Long Name:** Cost Link

**Short Name:** CostLink

**Definition:** A participant specified alpha-numeric code that can be used to link this record's clinical data with the participant's cost information for this patient admission. This information may be used in the future to perform procedure cost analysis (for which the actual cost data would have to be harvested separately). The value in this field must not be the patient's Medical Record Number, Social Security Number or any other patient identifying value.

**Intent/Clarification:**

This information may be used in the future to perform procedure cost analysis, for which the actual cost data would have to be harvested separately. The value in this field must not be the patient's Medical Record Number, Social Security Number or any other patient identifying value.

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**SEQ. #: 40**

**Long Name:** Patient ID

**Short Name:** PatID

**Definition:** An arbitrary value, (not a recognizable ID like Social Security Number or Medical Record Number) that uniquely and permanently identifies each patient. The value of the identifier is a combination of a code assigned to the software developer by the STS, and a value generated by the software to create a unique value. Once assigned to a patient, this can never be changed or reused. If a patient is admitted to the hospital more than once, each record for that patient will have the same value in this field.

**Intent/Clarification:**

The value of the identifier is a combination of a code assigned to the software developer by the STS, and a value generated by the software to create a unique value. Once assigned to a patient, this can never be changed or reused. If a patient is admitted to the hospital more than once, each record for that patient will have the same value in this field.

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**SEQ. #: 45**

**Long Name:** Patient Participating In STS-Related Clinical Trial

**Short Name:** ClinTrial

**Definition:** Indicate which, if any, STS-related clinical trial in which the patient is participating. The STS will assign a code to each clinical trial as they begin collecting data.

**Intent/Clarification:**

A list of trials will be posted as they are started.

There is one clinical trial underway. The Hybrid CABG trial started 10/2017. This is to be captured by checking Trial 1.

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**SEQ. #: 46**

**Long Name:** Patient Participating In STS-Related Clinical Trial - Patient ID

**Short Name:** ClinTrialPatID

**Definition:** Indicate the patient identifier used to identify the patient in the clinical trial.

**Intent/Clarification:** Instructions will be provided for each trial.

There is one trial underway. The Hybrid CABG trial started 10/2017. Format for this field is HCR-###-####.

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**Demographics**

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**SEQ. #: 50**

**Long Name:** Patient Last Name

**Short Name:** PatLName

**Definition:** Indicate the patient's last name documented in the medical record. This field should be collected in compliance with state/local privacy laws.

**Intent/Clarification: -**

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**SEQ. #: 55**

**Long Name:** Patient First Name

**Short Name:** PatFName

**Definition:** Indicate the patient's first name documented in the medical record. This field should be collected in compliance with state/local privacy laws.

**Intent/Clarification: -**

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**SEQ. #: 60**

**Long Name:** Patient Middle Name

**Short Name:** PatMName

**Definition:** Indicate the patient's middle name as documented in the medical record. Leave "blank" if no middle name. This field should be collected in compliance with state/local privacy laws.

**Intent/Clarification: -**

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**SEQ. #: 65**

**Long Name:** Date of Birth **Short Name:** DOB

**Definition:** Indicate the patient's date of birth using 4-digit format for year. This field should be collected in compliance with state/local privacy laws.

**Intent/Clarification:** Required date format: mm/dd/yyyy

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**SEQ. #: 70**

**Long Name:** Patient Age

**Short Name:** Age

**Definition:** Indicate the patient's age in years, at time of surgery. This should be calculated from the date of birth and the date of surgery, according to the convention used in the USA (the number of birthdate anniversaries reached by the date of surgery). If age is less than 18, the data record will be accepted into the database, but will not be included in the national analysis and report.

**Intent/Clarification: -**

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**SEQ. #: 75**

**Long Name:** Sex

**Short Name:** Gender

**Definition:** Indicate the patient's sex at birth as either male or female.

**Intent/Clarification:**

Patients who have undergone gender reassignment surgery maintain the risk associated with their chromosomal gender.

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**SEQ. #: 76**

**Long Name:** National Identification (Social Security Number) Known

**Short Name:** SSNKnown

**Definition:** Indicate whether the patient's National Identification Number is known or if the patient refused to provide this information.



**Intent/Clarification:** - Refused means the patient did not wish to share the information. No means the information was not available, or the participant site did not wish to provide.

**FAQ September 2018:** Do not take the Medicare number as the Social Security number.

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**SEQ. #: 80**

**Long Name:** National Identification (Social Security Number)

**Short Name:** SSN

**Definition:** Indicate the patient's National Identification Number. Although this is the Social Security Number in the USA, other countries may have a different National Patient Identifier Number. For example, in Canada, this would be the Social Insurance Number.

This field should be collected in compliance with state/local privacy laws.

**Intent/Clarification:** -

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**SEQ. #: 85**

**Long Name:** Medical Record Number

**Short Name:** MedRecN

**Definition:** Indicate the patient's medical record number at the hospital where surgery occurred. This field should be collected in compliance with state/local privacy laws.

**Intent/Clarification:** -

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**SEQ. #: 90**

**Long Name:** Patient's Street Address

**Short Name:** PatAddr

**Definition:** Indicate the street address at which the patient resides at time of admission. If patient is homeless, enter "Homeless".

This field should be collected in compliance with state/local privacy laws.

**Intent/Clarification:**

This may be a hotel or relative's home if the patient is not a local resident. This will track referrals and assist with follow-up. A post office box may be used if no other address is available.

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**SEQ. #: 95**

**Long Name:** Patient's City

**Short Name:** PatCity

**Definition:** Indicate the city in which the patient resides at time of admission.

This field should be collected in compliance with state/local privacy laws.

**Intent/Clarification: -**

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**SEQ. #: 100**

**Long Name:** Patient's Region

**Short Name:** PatRegion

**Definition:** Indicate the region of the country (i.e., state or province) in which the patient resides at time of admission.

**Intent/Clarification:**

Regional information is used to assess disparities in health care delivery.

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**SEQ. #: 105**

**Long Name:** Patient's ZIP Code

**Short Name:** PatZIP

**Definition:** Indicate the ZIP Code of the patient's local residence. Outside the USA, this data may be known by other names such as Postal Code.

This field should be collected in compliance with state/local privacy laws.

**Intent/Clarification:**

Regional information is used to assess disparities in health care delivery.

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**SEQ. #: 115**

**Long Name:** Patient's Country

**Short Name:** PatientCountry

**Definition:** Indicate the patient's country of residence at time of admission.

This field should be collected in compliance with state/local privacy laws.

**Intent/Clarification:**

List of country codes found in Data Specifications V2.9 (p.9)

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**SEQ. #:** 120

**Long Name:** Permanent Address

**Short Name:** PermAddr

**Definition:** Indicate whether the patient considers the given address to be their permanent address.

**Intent/Clarification:**

The intent is to identify patients who travel outside their local area for treatment. CMS is tracking disparities in health care delivery and looking at underserved areas. This also assists with long term follow up locally.

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**SEQ. #:** 150

**Long Name:** Race Documented

**Short Name:** RaceDocumented

**Definition:** Indicate whether race is documented

**Intent/Clarification:**

Race should be self-reported by the patient/family. Do not assign race or make assumptions if race is not documented.

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**SEQ. #:** 155

**Long Name:** Race - White

**Short Name:** RaceCaucasian

**Definition:** Indicate whether the patient's race, as determined by the patient or family, includes White. "White" refers to a person having origins in any of the original peoples of Europe, the Middle East, or North Africa. It includes people who indicated their race(s) as "White" or reported entries such as Irish, German, Italian, Lebanese, Arab, Moroccan, or Caucasian. [The 2010 Census Redistricting Data (Public Law 94-171) Summary File]

**Intent/Clarification:**

The Census Bureau collects race data in accordance with guidelines provided by the U.S. Office of Management and Budget, these data are based on self-identification. The racial categories included in the census form generally reflect a social definition of race recognized in this country and are not an attempt to define race biologically, anthropologically or genetically. In addition, it is recognized that categories of the race item include racial and national origin or socio-cultural groups. People may choose to report more than one race to indicate their racial mixture, such as American Indian and White.

People who identify their origin (ETHNICITY) as Hispanic, Latino or Spanish may be of any race. In addition, it is recognized that the categories of the race item include both

racial and national origin and socio-cultural groups. You may choose more than one race category.

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**SEQ. #: 160**

**Long Name:** Race - Black / African American

**Short Name:** RaceBlack

**Definition:** Indicate whether the patient's race, as determined by the patient or family, includes Black / African American. "Black or African American" refers to a person having origins in any of the Black racial groups of Africa. It includes people who indicated their race(s) as "Black, African Am., or Negro" or reported entries such as African American, Kenyan, Nigerian, or Haitian. [The 2010 Census Redistricting Data (Public Law 94-171) Summary File]

**Intent/Clarification:**

This includes a person having origins in any of the black racial groups of Africa. Terms such as "Haitian" or "Negro" can be used in addition to "Black or African American."

Definition source: Standards for Maintaining, Collecting and Presenting Federal Data on Race and Ethnicity: The minimum categories for data on race and ethnicity for Federal statistics, program administrative reporting and civil rights compliance reporting.

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**SEQ. #: 165**

**Long Name:** Race - Asian

**Short Name:** RaceAsian

**Definition:** Indicate whether the patient's race, as determined by the patient or family, includes Asian. "Asian" refers to a person having origins in any of the original peoples of the Far East, Southeast Asia, or the Indian subcontinent, including, for example, Cambodia, China, India, Japan, Korea, Malaysia, Pakistan, the Philippine Islands, Thailand, and Vietnam. It includes people who indicated their race(s) as "Asian" or reported entries such as "Asian Indian", "Chinese", "Filipino", "Korean", "Japanese", "Vietnamese", and "Other Asian" or provided other detailed Asian responses. [The 2010 Census Redistricting Data (Public Law 94-171) Summary File]

**Intent/Clarification: -**

Definition source: Standards for Maintaining, Collecting and Presenting Federal Data on Race and Ethnicity: The minimum categories for data on race and ethnicity for Federal statistics, program administrative reporting and civil rights compliance reporting.

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**SEQ. #: 170**

**Long Name:** Race - American Indian / Alaskan Native

**Short Name:** RaceNativeAm

**Definition:** Indicate whether the patient's race, as determined by the patient or family, includes American Indian / Alaskan Native. "American Indian or Alaska Native" refers to a person having origins in any of the original peoples of North and South America (including Central America) and who maintains tribal affiliation or community attachment. This category includes people who indicated their race(s) as "American Indian or Alaska Native" or reported their enrolled or principle tribe, such as Navajo, Blackfeet, Inupiat, Yup'ik, or Central American Indian groups or South American Indian groups. [The 2010 Census Redistricting Data (Public Law 94-171) Summary File]

**Intent/Clarification:**

This includes all in North American native peoples such as American Indian/Alaskan Native, Inuit.

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**SEQ. #: 175**

**Long Name:** Race - Native Hawaiian / Pacific Islander

**Short Name:** RacNativePacific

**Definition:** Indicate whether the patient's race, as determined by the patient or family, includes Native Hawaiian / Pacific Islander. "Native Hawaiian or Other Pacific Islander" refers to a person having origins in any of the original peoples of Hawaii, Guam, Samoa, or other Pacific Islands. It includes people who indicated their race(s) as "Pacific Islander" or reported entries such as "Native Hawaiian", "Guamanian or Chamorro", "Samoaan", and "Other Pacific Islander" or provided other detailed Pacific Islander responses. [The 2010 Census Redistricting Data (Public Law 94-171) Summary File]

**Intent/Clarification: -**

Definition source: Standards for Maintaining, Collecting and Presenting Federal Data on Race and Ethnicity. The minimum categories for data on race and ethnicity for Federal statistics, program administrative reporting and civil rights compliance reporting.

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**SEQ. #: 180**

**Long Name:** Race - Other

**Short Name:** RaceOther

**Definition:** Indicate whether the patient's race, as determined by the patient or family, includes any other race. "Some Other Race" includes all other responses not included in the White, Black or African American, American Indian or Alaska Native, Asian, and Native Hawaiian or Other Pacific Islander race categories described above. [The 2010 Census Redistricting Data (Public Law 94-171) Summary File]

**Intent/Clarification: -**

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**SEQ. #: 185**

**Long Name:** Hispanic or Latino or Spanish Ethnicity

**Short Name:** Ethnicity

**Definition:** Indicate if the patient is of Hispanic, Latino or Spanish ethnicity as reported by the patient / family. "Hispanic, Latino or Spanish" refers to a person of Cuban, Mexican, Puerto Rican, South or Central American, or other Spanish culture or origin regardless of race. [The 2010 Census Redistricting Data (Public Law 94-171) Summary File]

**Intent/Clarification:**

People who identify their origin as Hispanic, Latino or Spanish **may be of any race.** Do not make assumptions about ethnicity if it is not documented in the medical record.

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**Hospitalization**  
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**SEQ. #: 205**

**Long Name:** Hospital Name

**Short Name:** HospName

**Definition:** Indicate the full name of the facility where the procedure was performed. Values should be full, official hospital name as it appears on the contract with the STS, with no abbreviations or variations in spelling for a single hospital. Values should also be in mixed-case.

**Intent/Clarification:**

User maintains list of valid values. New values are made available through a utility that is separate from entering a data record.

This must match what DCRI and STS have on your contract. If this name does not match your file will be rejected. Please update if any changes occur.

Update Hospital and Surgeon information here:

[http://www.sts.org/sites/default/files/documents/Updated\\_STSContactUpdateForm\\_FIN\\_AL\\_03142017\\_0.pdf](http://www.sts.org/sites/default/files/documents/Updated_STSContactUpdateForm_FIN_AL_03142017_0.pdf)

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**SEQ. #: 210**

**Long Name:** Hospital ZIP Code **Short Name:** HospZIP

**Definition:** Indicate the ZIP Code of the hospital. Outside the USA, these data may be known by other names such as Postal Code. This field should be collected in compliance with state/local privacy laws.

**Intent/Clarification:** -

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**SEQ. #:** 215

**Long Name:** Hospital Region

**Short Name:** HospStat

**Definition:** Indicate the region of the country (i.e., state or province) in which the hospital is located.

**Intent/Clarification:** -

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**SEQ. #:** 220

**Long Name:** Hospital National Provider Identifier

**Short Name:** HospNPI

**Definition:** Indicate the hospital's National Provider Identifier (NPI). This number, assigned by the Center for Medicare and Medicaid Services (CMS), is used to uniquely identify facilities for Medicare billing purposes.

Non-US participants will have a unique hospital ID number assigned by STS.

**Intent/Clarification:**

STS/DCRI maintains a list of Hospital NPIs associated with Participation Agreements. Data files that include other hospitals cannot be processed. **This is different from the Surgeon NPI.** <https://nppes.cms.hhs.gov/NPPES/NPIRegistryHome.do>. **If the field is missing or incorrect, the file will not be processed.**

If the hospital NPI is changed (e.g. thru mergers/acquisitions) it is crucial that STS and DCRI be notified as soon as possible. This will ensure records are handled appropriately at harvest.

Update Hospital and Surgeon information here:

[http://www.sts.org/sites/default/files/documents/Updated\\_STSContactUpdateForm\\_FIN\\_AL\\_03142017\\_0.pdf](http://www.sts.org/sites/default/files/documents/Updated_STSContactUpdateForm_FIN_AL_03142017_0.pdf)

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**SEQ. #:** 221

**Long Name:** Hospital CMS Certification Number

**Short Name:** HospCMSCert

**Definition:** Indicate the hospital's CMS certification number

**Intent/Clarification:**

In order to avoid confusion with the NPI, the Medicare/Medicaid Provider Number, also known as the OSCAR Provider Number, Medicare Identification Number or Provider Number) has been renamed the **CMS Certification Number (CCN)**.

**FAQ August 2017:** Where can I find the CMS certification number for my site?  
Answer: Contact your medical records billing department for the number. You can also look for the number on the CMS website at <https://www.ahd.com/search.php>

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**SEQ. #: 291**

**Long Name:** Primary Payor

**Short Name:** PayorPrim

**Definition:** Indicate the primary insurance payor for this admission.

**Intent/Clarification:**

When there is more than one payor, the primary payor pays first.

**FAQ August 2017:** How is a Medicare/Medicaid managed care product coded (ie. Humana Medicare, Star Molina Medicaid)?

Answer: The Medicare/Medicaid managed care products are captured in the primary payor category as Medicare or Medicaid only.

**FAQ December 2017:** The patient was admitted after a car accident. His primary insurance would then be his auto insurance policy with his health care policy as his secondary insurance. For the STS, how is the auto insurance policy coded?

Answer: The intent is to capture the patient's normal health care policy, do not capture the auto insurance policy.

**FAQ July 2019 -** Since the Payors are now part of the Risk Model, which option is recommended to capture the Payor fields when the Hospital documents state "Medicaid Pending"? The 2.9 definition states "for this admission", suggesting that the patient is uninsured (None/Self) at the time of admission. Is this insurance at time of arrival or at time of discharge?

Answer - Please capture insurance at time of arrival.

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**SEQ. #: 292**

**Long Name:** Primary Payor Medicare Fee For Service

**Short Name:** PrimMCareFFS

**Definition:** Indicate whether the patient is covered by Medicare Fee For Service (Part B).

**Intent/Clarification: -**

**FAQ Sept 2019 -** Are Medicare Replacement Plans or Managed Care Plans that pay via PFFS (Private-Fee-for-Service) answered as YES in Seq 292 or is this field only for traditional Medicare plans that pay via FFS (Fee-for-service)?



Answer: This field is for traditional Medicare plans that pay via FFS (Fee-for-service)? Medicare Replacement and Managed Care plans are no longer medicare FFS. The intent is to discern the way the patient's care is managed.

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**SEQ. #: 293**

**Long Name:** Secondary (Supplemental) Payor

**Short Name:** PayorSecond

**Definition:** Indicate which if any secondary insurance payor was used for this admission.

**Intent/Clarification:**

When there is more than one payor, the secondary payor pays after the primary payor.

**FAQ August 2017:** How is a Medicare/Medicaid managed care product coded (ie. Humana Medicare, Star Molina Medicaid)?

Answer: The Medicare/Medicaid managed care products are captured in the secondary payor category as Medicare or Medicaid only.

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**SEQ. #: 294**

**Long Name:** Secondary Payor Medicare Fee For Service

**Short Name:** SecondMCareFFS

**Definition:** Indicate whether the patient is covered by Medicare Fee For Service (Part B).

**Intent/Clarification: -**

**FAQ August 2017:** When is secondary Medicare FFS coded?

Answer: Code a secondary Medicare FFS provider only when the FFS ID number is different from the primary Medicare FFS provider number.

**FAQ Sept 2019 -** Are Medicare Replacement Plans or Managed Care Plans that pay via PFFS (Private-Fee-for-Service) answered as YES in Seq 292 or is this field only for traditional Medicare plans that pay via FFS (Fee-for-service)?

Answer: This field is for traditional Medicare plans that pay via FFS (Fee-for-service)? Medicare Replacement and Managed Care plans are no longer medicare FFS. The intent is to discern the way the patient's care is managed.

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**SEQ. #: 305**

**Long Name:** Date of Admission

**Short Name:** AdmitDt

**Definition:** Indicate the Date of Admission. For those patients who originally enter the hospital in an out-patient capacity (i.e., catheterization), the admit date is the date the patient's status changes to in-patient. In the event admission date comes after date of surgery, use date of surgery.

**Intent/Clarification:** Required date format: mm/dd/yyyy

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**SEQ. #: 310**

**Long Name:** Date of Surgery

**Short Name:** SurgDt

**Definition:** Indicate the date of index cardiac surgical procedure. Index cardiac surgical procedure is defined as the initial major cardiac surgical procedure of the hospitalization.

**Intent/Clarification:**

The date the patient enters the operating room for surgery.

Required date format: mm/dd/yyyy

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**SEQ. #: 320**

**Long Name:** Admit Source

**Short Name:** AdmitSrc

**Definition:** Indicate the source of admission for the patient to your facility.

**Intent/Clarification:**

Choose elective admission, through the ED, transferred in from another acute care facility or "other," which includes transfers from non-acute care facilities such as nursing homes.

If a patient is admitted for an elective catheterization and is then held-over for surgery (elective or urgent), this should be coded as an elective admission; however, the surgery status should be coded as urgent based on the catheterization findings.

If the facility has a stand-alone "feeder" ER (with the same patient ID) then the source is ED.

The option "Other" includes **direct admits** from MD offices, providers, non-acute clinics, Rehab units. However, if patients is sent to the ED then ED should be selected as admit source.

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**SEQ. #: 325**

**Long Name:** Other Hospital Performs Cardiac Surgery

**Short Name:** OthHosCS

**Definition:** The transferring hospital has the necessary personnel and facilities to have been able to perform cardiac surgery.

**Intent/Clarification:**

The intent is to capture patients whose acuity requires a higher level of care or more complex procedure than can be provided at the transferring facility, such as a transplant. The goal is to identify high acuity patients and does not reflect negatively on the referring hospital. Code “yes” if the transferring hospital performs heart surgery, even if it is not the type of surgery the patient is being transferred for such as transplant or VAD.

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**Risk Factors**

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**General Information:**

**If the patient is alone, intubated and unable to give history; use the information from the patient’s family if they become available.**

**Pregnancy is not captured as a risk factor; the associate risk is captured in other factors present at the time.**

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**SEQ. #: 330**

**Long Name:** Height (cm)

**Short Name:** HeightCm

**Definition:** Indicate the height of the patient in centimeters.

**Intent/Clarification:**

Used to calculate BSA (body surface area) and is a field for risk calculation. 1 inch = 2.54 cm. For patients who have had lower extremity amputations, code the patient’s original height. **Update October 2019 - Time frame – capture height closest to time of OR for index procedure. Use the Anesthesia Record as priority source, followed by the Perfusion record. If height is not available from the above sources, use the height recorded in other documents closest to entry to OR for index procedure.**

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**SEQ. #:** 335

**Long Name:** Weight (kg)

**Short Name:** WeightKg

**Definition:** Indicate the weight of the patient in kilograms closest to the date of procedure.

**Intent/Clarification:**

Used to calculate BSA (body surface area) and is a field for risk calculation. Record in kilograms. 1 Kg = 2.2 pounds. **Update October 2019 - Time frame – capture weight closest to time of OR for index procedure. Use the Anesthesia Record as priority source, followed by the Perfusion record. If weight is not available from the above sources, use the weight recorded in other documents closest to entry to OR for index procedure.**

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**SEQ. #:** 355

**Long Name:** RF-Family History of Premature CAD

**Short Name:** FHCAD

**Definition:** Indicate if the patient has any direct blood relatives (parents, siblings, children) who have had any of the following at age <55 y for male relatives or <65 y for female relatives:

- Angina
- Acute MI
- Sudden cardiac death without obvious cause
- CABG surgery
- PCI

**Intent/Clarification:**

The disease, treatment (surgical, non-surgical or medical) and/or symptoms must have been present or reported to have occurred prior to age 55 in males and 65 in females. This is considered a strong predictor for development of CAD and may include, but is not limited to, angina, acute MI, CABG, PCI or sudden cardiac death with no known cause. Early onset of CAD in patient and or first-generation family members predisposes patient to increased risk of mortality/morbidity.

Code family history as “No” if the patient is adopted and family history is unknown.

You must have the exact age (not age range or approximation) to document premature CAD.

**FAQ July 2019** – How are half-siblings captured?

Answer- Half-siblings are considered second-degree relatives and will not be coded as family history of first degree / direct blood relatives.

**FAQ October 2019** - Patient history has strong family history of CAD with multiple first-degree family members; however, no ages are given in medical record for any family member with history of CAD. Patient was able to give a complete history, so no issues there. Should this be coded as "No" or "Unknown".

Answer - Code unknown in this scenario.

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**SEQ. #: 360**

**Long Name:** RF-Diabetes

**Short Name:** Diabetes

**Definition:** History of diabetes diagnosed and/or treated by a healthcare provider. The American Diabetes Association criteria include documentation of the following:

1. Hemoglobin A1c  $\geq 6.5\%$ ; or
2. Fasting plasma glucose  $\geq 126$  mg/dL (7.0 mmol/L); or
3. 2-h Plasma glucose  $\geq 200$  mg/dL (11.1 mmol/L) during an oral glucose tolerance test; or
4. In a patient with classic symptoms of hyperglycemia or hyperglycemic crisis, a random plasma glucose  $\geq 200$  mg/dL (11.1 mmol/L)

This does not include gestational diabetes.

2013 ACCF/AHA Data Standards  
Cannon et al. JACC Vol. 61, No. 9, 2013

**Intent/Clarification:**

Indicate if the patient has a history of diabetes mellitus regardless of duration of disease or need for anti-diabetic agents. Code no for patients with steroid induced hyperglycemia and gestational (transient) diabetes if there is no supportive documentation of diabetes such as a HbA1c and/or treatment.

Not all patients receiving diabetic medications are considered diabetic. It is important to remember that some medications used to treat diabetes may be used to treat other conditions. **Update Sept 2019 - Time frame – capture any occurrence between birth and entry to OR for index procedure.**

A HbA1c value  $\geq 6.5$ , collected within 3 months prior to surgery, is acceptable for documentation of diabetes = "yes".

**FAQ June 2019:** Patient has a history of Type 1 diabetes and has had a pancreatic transplant. Do you mark yes for history of diabetes?

Answer – Yes.

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**SEQ. #: 365**

**Long Name:** RF-Diabetes-Control

**Short Name:** DiabCtrl

**Definition:** Indicate the patient's diabetes control method as presented on admission. Patients placed on a preprocedure diabetic pathway of insulin drip at admission but whose diabetes was controlled by diet or oral methods are not coded as being treated with insulin.

Choose the most aggressive therapy from the order below

- Insulin: insulin treatment (includes any combination with insulin)
- Other subcutaneous medications (e.g., GLP-1 agonist)
- Oral: treatment with oral agent (includes oral agent with or without diet treatment)
- Diet only: Treatment with diet only
- None: no treatment for diabetes
- Other: other adjunctive treatment, non-oral/insulin/diet
- Unknown

2013 ACCF/AHA Data Standards  
Cannon et al. JACC Vol. 61, No. 9, 2013

**Intent/Clarification:**

Code diet only for patients who have had a history of diabetes that is resolved and not taking medication.

For patients who have had pancreatic transplant, code other adjunctive treatment.

**FAQ June 2019:** How should diabetes control be coded for the patient who has had a pancreatic transplant?

Answer: If the patient has had a pancreatic transplant code "other", since the insulin from the new pancreas is not exogenous insulin.

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**SEQ. #: 370**

**Long Name:** RF-Dyslipidemia

**Short Name:** Dyslip

**Definition:** Indicate if the patient has a history of dyslipidemia that was diagnosed and/or treated by a physician. NCEP criteria include documentation of the following:

- Total cholesterol >200 mg/dL (5.18 mmol/L); or
- LDL  $\geq$ 130 mg/dL (3.37 mmol/L);
- HDL <40 mg/dL (1.04 mmol/L) in men and <50 mg/dL (1.30 mmol/L) in women;
- Currently receiving antilipidemic treatment

**Intent/Clarification:**

Code "Yes" if a patient is prescribed treatment for dyslipidemia resulting in normal lab values even if anti-lipids are prescribed prophylactically, even pre-operatively, prior diagnosis with current therapy, or new diagnosis with therapy, or new diagnosis that meets the lab value definition, or if the patient is on a statin preoperatively.

Studies indicate some of the cholesterol-independent or "pleiotropic" effects of statins involve improving endothelial function, enhancing stability of atherosclerotic plaques,

decreasing oxidative stress and inflammation, and inhibiting thrombogenic response.

Code "Yes" when:

- A. Documented history of dyslipidemia
- B. Lab values prior to OR entry support the diagnosis of dyslipidemia, include historic lab values
- C. Patient is on a statin medication prior to admission

Code "No" when:

- A. The patient is put on a statin after admission without the diagnosis of dyslipidemia or laboratory documentation to support the diagnosis.

**FAQ December 2018:** Can dyslipidemia be coded from the laboratory values?

Answer: Yes, dyslipidemia can be coded from the laboratory values if they support the diagnosis of dyslipidemia.

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**SEQ. #: 375**

**Long Name:** RF-Renal Fail-Dialysis

**Short Name:** Dialysis

**Definition:** Indicate whether the patient is currently (prior to surgery) undergoing dialysis.

**Intent/Clarification:**

Includes any form of peritoneal or hemodialysis the patient is ~~receiving prior to~~ **currently receiving routinely prior to surgery with the intent to resume post -op (Update Nov 2019)** to surgery. Also, may include Continuous Veno-Venous Hemofiltration (CVVH, CVVH-D), and Continuous Renal Replacement Therapy (CRRT) as dialysis.

Code "No" for renal dialysis if ultrafiltration is the only documentation found in the record since this is for volume management.

**FAQ February 2019:** The patient has a history of dialysis 6 years ago but does not currently require dialysis. His preoperative creatinine is 3.3. Should this be coded as yes for renal failure dialysis preoperatively?

Answer: No, this remote history of dialysis is not coded as renal failure dialysis.

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**SEQ. #: 380**

**Long Name:** RF-Hypertension

**Short Name:** Hypertn

**Definition:** Indicate if the patient has a current diagnosis of hypertension defined by any 1 of the following:

- History of hypertension diagnosed and treated with medication, diet, and/or exercise

- ~~Update Nov 2019 - Prior documentation of blood pressure >140 mm Hg systolic and/or 90 mm Hg diastolic for patients without diabetes or chronic kidney disease, or prior documentation of blood pressure >130 mm Hg systolic or 80 mm Hg diastolic on at least 2 occasions for patients with diabetes or chronic kidney disease~~

- Currently undergoing pharmacological therapy for treatment of hypertension

**Intent/Clarification:** - ~~Update Sept 2019 - Time frame – capture any occurrence between birth and entry to OR for index procedure. Update Nov 2019 - Capturing of HTN as a risk factor must be based on Provider diagnosis of HTN in the medical record.~~

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**SEQ. #:** 385

**Long Name:** RF- Endocarditis

**Short Name:** InfEndo

**Definition:** Indicate whether the patient has a history of endocarditis. Endocarditis must meet the current CDC definition:

Endocarditis must meet at least 1 of the following criteria:

1. Patient has organisms cultured from valve or vegetation.
2. Patient has 2 or more of the following signs or symptoms: fever (>38°C), new or changing murmur\*, embolic phenomena\*, skin manifestations\* (i.e., petechiae, splinter hemorrhages, painful subcutaneous nodules), congestive heart failure\*, or cardiac conduction abnormality\*

\* With no other recognized cause and at least 1 of the following:

- 1) Organisms cultured from 2 or more blood cultures
- 2) Organisms seen on Gram's stain of valve when culture is negative or not done
- 3) Valvular vegetation seen during an invasive procedure or autopsy
- 4) Positive laboratory test on blood or urine (e.g., antigen tests for H influenzae, S pneumoniae, N meningitidis, or Group B Streptococcus)
- 5) Evidence of new vegetation seen on echocardiogram and if diagnosis is made antemortem, physician institutes appropriate antimicrobial therapy.

Choose "Yes" for patients with pre-operative endocarditis who begin antibiotics post-op. Code "Yes" for patients who are diagnosed intraoperatively.

**Intent/Clarification:**

Marantic Endocarditis (Nonbacterial Thrombotic Endocarditis) (Lupus) should not be coded as infectious endocarditis. **Update Sept 2019 - Time frame – capture any occurrence between birth and entry to OR for index procedure.**

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**SEQ. #: 390**

**Long Name:** RF-Infect Endocard Type

**Short Name:** InfEndTy

**Definition:** Indicate the type of endocarditis the patient has. If the patient is currently being treated for endocarditis, the disease is considered active. If no antibiotic medication (other than prophylactic medication) is being given at the time of surgery and the cultures are negative, then the infection is considered treated.

**Intent/Clarification:**

- **Active** - currently being treated; also include patients who were diagnosed in the OR but began treatment postop.
  - **Treated** - no antibiotic medication at time of surgery (other than prophylactic medication).
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**SEQ. #: 395**

**Long Name:** RF-Infect Endocard Culture

**Short Name:** InfEndCult

**Definition:** Indicate culture results (may use cultures obtained in the OR).

**Intent/Clarification:**

The most common causal agents are listed; choose "other" if none of these apply or "unknown" if no culture result is available. Culture Negative, Streptococcus species, Methicillin sensitive staphylococcus aureus (MRSA), Coagulase negative staphylococcus, Enterococcus species, Gram negative species, Polymicrobial, Mycobacterium (chimera), Fungal, Other, or Unknown. You may use cultures obtained in the OR.

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**SEQ. #: 400**

**Long Name:** RF-Tobacco Use

**Short Name:** TobaccoUse

**Definition:** Indicate current (within 30 days prior to admission) or previous use of any tobacco product, including Cigarettes, Pipe, Cigars, Smokeless Cans, Other tobacco products (orbs, strips, sticks, hookah, etc.). Meaningful Use Definition

[Http://www.healthit.gov/providers-professionals/achieve-meaningful-use/core-measures/record-smoking-status](http://www.healthit.gov/providers-professionals/achieve-meaningful-use/core-measures/record-smoking-status)

**Intent/Clarification:**

Electronic cigarettes (Ecig) = "No;" Electronic cigarettes are not considered tobacco products.

- Current – Everyday smoker (Tobacco use within the most recent 30 days – on a daily basis)
- Current – Some Days smoker (Tobacco use within the most recent 30 days – on a less than daily basis)
- Smoker, current status unknown (Tobacco use within the most recent 30 days–

frequency of use is unknown)

- Former smoker (Tobacco use prior to the most recent 30 days, without use within the most recent 30 days.)
- Smoking Status unknown (No information is available on patient's smoking status)

Example: Patient who smoked prior to admission, has been in the hospital > 2 weeks prior to surgery, and did not smoke while in the hospital is captured as "Yes, Current Everyday Smoker". The patient smoked within the 30-day window.

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**SEQ. #: 405**

**Long Name:** RF-Chronic Lung Disease

**Short Name:** ChrLungD

**Definition:** Indicate whether the patient has chronic lung disease, and the severity level according to the following classification:

No

Mild: FEV1 60% to 75% of predicted, **and/or** on chronic inhaled or oral bronchodilator therapy.

Moderate: FEV1 50% to 59% of predicted, **and/or** on chronic oral/systemic steroid therapy aimed at lung disease.

Severe: FEV1 < 50% **and/or** Room Air pO<sub>2</sub> < 60 or pCO<sub>2</sub> > 50.

CLD present, severity not documented.

Unknown

**Time Frame:** Do not use values obtained more than 12 months prior to the date of surgery.

A history of chronic inhalation reactive disease (asbestosis, mesothelioma, black lung disease or pneumoconiosis) may qualify as chronic lung disease. Radiation induced pneumonitis or radiation fibrosis also qualifies as chronic lung disease. (if above criteria is met) A history of atelectasis is a transient condition and does not qualify.

Chronic lung disease can include patients with chronic obstructive pulmonary disease, chronic bronchitis, or emphysema. It can also include a patient who is currently being chronically treated with inhaled or oral pharmacological therapy (e.g., beta-adrenergic agonist, anti-inflammatory agent, leukotriene receptor antagonist, or steroid). Patients with asthma or seasonal allergies are not considered to have chronic lung disease.

**Intent/Clarification:**

Bedside spirometry can be used to quantify chronic lung disease. ~~ONLY if the study is interpreted by a pulmonologist.~~ **Beginning January 1, 2019, spirometry results that have not been interpreted by a pulmonologist may be used to quantify chronic lung disease.**

**FAQ December 2017:** The patient has sarcoidosis, should this be coded as chronic lung disease?

Answer: Sarcoidosis can be considered a chronic lung disease if the patient meets the criteria based on pulmonary function studies, use of inhaled medications or steroids aimed at the lungs.

**FAQ December 2017:** If the patient had a bilateral lung transplant due to severe CLD two years prior to a MVR, should chronic lung disease be coded as severe and the type be coded obstructive for this patient?

Answer: No, the patient no longer has chronic lung disease.

**FAQ February 2019:** Bedside spirometry was done and the results were interpreted differently by the surgeon and the pulmonologist. Which interpretation should be used?

Answer: Code chronic lung disease based on the results of the spirometry.

**FAQ February 2019:** The bedside spirometry results have an FEV1 of 57% but the pulmonologist states the patient has mild chronic lung disease. How should chronic lung disease be code?

Answer: Code based on the FEV1, 57% should be coded as moderate.

**FAQ July 2019 -** Patient had PFT done, with FEV1 % Predicted of 48%. I have not seen any documented diagnosis of chronic lung disease in the chart. Do I still code as 'Severe', based on the PFT or does there also have to be a diagnosis of chronic lung disease?

Answer -Yes, this should be coded as severe COPD per FEV1 results and does not require physician documentation.

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**SEQ. #: 410**

**Long Name:** RF-Chronic Lung Disease - Type

**Short Name:** ChrLungDType

**Definition:** Indicate the type of chronic lung disease.

**Intent/Clarification:**

- **Obstructive** - Obstructive chronic lung disease is characterized by chronically poor airflow. It typically worsens over time and the main symptoms include shortness of breath, cough, and sputum production (ex. COPD; Chronic Bronchitis; Emphysema);
- **Reactive** - Reactive lung disease is a specific type of reactive airway disease, a term used to generally describe a condition where the individual experiences asthma-like symptoms after exposure to toxins. The condition is distinctly different from asthma which is not COPD, a chronic respiratory disease where allergic reactions induce wheezing, though sometimes the terms are used interchangeably. (Ex. asbestosis and mesothelioma);
- **Interstitial Fibrosis** - Interstitial lung disease (ILD), also known as diffuse parenchymal lung disease (DPLD), refers to a group of lung diseases affecting the interstitium (the tissue and space around the air sacs of the lungs). It concerns alveolar epithelium, pulmonary capillary endothelium, basement membrane, perivascular and perilymphatic tissues. The term ILD is used to distinguish these diseases from obstructive airways diseases; (ex. ILD, DPLD,

Cystic Fibrosis)

- **Restrictive** - Restrictive lung diseases, or restrictive ventilatory defects, are a category of extrapulmonary, pleural, or parenchymal respiratory diseases that restrict lung expansion, resulting in a decreased lung volume, an increased work of breathing, and inadequate ventilation and/or oxygenation.
- **Other** - chronic lung disease other than previously described (ex: Amiodarone toxicity)
- **Multiple** - Multiple types of chronic lung disease conditions are present
- **Not documented**

**FAQ December 2017:** The patient has sarcoidosis, should chronic lung disease type be coded as obstructive for this patient?

Answer: While sarcoidosis can be considered a chronic lung disease if the patient meets the criteria based on pulmonary function studies, use of inhaled medications or steroids aimed at the lungs, the patient who has had bilateral lung transplant no longer has chronic lung disease and a should not have lung disease type coded as obstructive.

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**SEQ. #: 415**

**Long Name:** RF-Pulmonary Function Test

**Short Name:** PFT

**Definition:** Indicate whether pulmonary function tests were performed.

**Intent/Clarification:**

Pulmonary function testing is a valuable tool for evaluating the respiratory system, representing an important adjunct to the patient history, various lung imaging studies, and invasive testing such as bronchoscopy and open-lung biopsy. Insight into underlying pathophysiology can often be gained by comparing the measured values for pulmonary function tests obtained on a patient at any particular point with normative values derived from population studies. The percentage of predicted normal is used to grade the severity of the abnormality. Pulmonary function testing is used in clinical medicine for evaluating respiratory symptoms such as dyspnea and cough, for stratifying preoperative risk, and for diagnosing common diseases such as asthma and chronic obstructive pulmonary disease.

~~Bedside spirometry can be used to quantify chronic lung disease ONLY if the study is interpreted by a pulmonologist.~~ **Beginning January 1, 2019, spirometry results that have not been interpreted by a pulmonologist may be used to quantify chronic lung disease.**

**Time Frame:** Do not use values obtained more than 12 months prior to the date of surgery.

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**SEQ. #: 420**

**Long Name:** RF-Forced Expiratory Volume Predicted

**Short Name:** FEV1

**Definition:** Indicate the FEV1 % predicted from the most recent pulmonary function test prior to procedure.

Choose the highest value reported for % predicted, whether or not a bronchodilator was used.

**Intent/Clarification:**

FEV<sub>1</sub> is the maximal amount of air forcefully exhaled in one second. It is then converted to a percentage of normal. For example, the FEV<sub>1</sub> may be 80% of predicted based on height, weight, and race. FEV<sub>1</sub> is a marker for the degree of obstruction. In normal persons, the FEV<sub>1</sub> accounts for the greatest part of the exhaled volume from a spirometric maneuver and reflects mechanical properties of the large and the medium-sized airways.

- FEV1 > 75% of predicted = Normal
- FEV1 60% to 75% of predicted = Mild obstruction
- FEV1 50% to 59% of predicted = Moderate obstruction
- FEV1 < 50% of predicted = Severe obstruction

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**SEQ. #:** 425

**Long Name:** DLCO Test Performed

**Short Name:** DLCO

**Definition:** Indicate whether a lung diffusion test (DLCO) was performed.

**Intent/Clarification:**

The diffusing capacity (DLCO) is a test of the integrity of the alveolar-capillary surface area for gas transfer.

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**SEQ. #:** 430

**Long Name:** DLCO Predicted **Short Name:** DLCOPred

**Definition:** Indicate the % predicted DLCO value obtained for the patient. Choose the value that represents the highest **lowest** % predicted whether or not it is the simple DLCO or the DLCO/VA.

**Intent/Clarification:**

The **lowest** value for DLCO uncorrected should be captured.

**FAQ Dec 2019** - The PFT report lists DLCO\_SB, DLCOcSB, DLCO/VA. Are we to look for the lowest % predicted among these three?

Answer - The difference in the DCLO SB (simple DCLO) and the DCLOcSB is that the DCLOcSB is corrected for the hgb value. ~~In this scenario, capture the lowest of these 3 numbers.~~ **Update January 2020:** Use the lowest DLCO\_SB or DLCO/VA value. Do not use the DLCOcSB since it is a corrected value.

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**SEQ. #: 435**

**Long Name:** RF-Arterial Blood Gas

**Short Name:** ABG

**Definition:** Indicate whether a room-air arterial blood gas was performed prior to surgery. Answer no if the only available arterial blood gasses were drawn while patient was receiving supplemental oxygen.

**Intent/Clarification:**

Arterial blood gasses may be drawn in patients with suspected lung disease or sometimes during cardiac catheterization.

Do not use ABGs drawn after initiation of anesthetic management. They may not accurately reflect the patient's true baseline due to preop sedation, anxiety, pain and other factors.

Answer "No" if the only available arterial blood gasses were drawn while patient was receiving supplemental oxygen.

**FAQ June 2019:** Can I use an arterial blood gas that was drawn 2 months prior to surgery?

**Answer:** No use the arterial blood gas value closest to surgery within 30 days of surgery.

**FAQ June 2019:** Beginning June 2019 use the arterial blood gas value closest to surgery within 30 days of surgery.

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**SEQ. #: 440**

**Long Name:** RF-Carbon Dioxide Level

**Short Name:** PCO2

**Definition:** Indicate PCO2 on most recent room air blood gas prior to procedure.

**Intent/Clarification:**

Higher levels (CO<sub>2</sub> retention) may indicate hypoventilation and low levels are consistent with hyperventilation.

The normal range is 35-45 mmHg.

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**SEQ. #: 445**

**Long Name:** RF-Oxygen Level

**Short Name:** PO2

**Definition:** Indicate PO2 result on most recent room air arterial blood gas prior to procedure.

**Intent/Clarification:**

The partial pressure of oxygen that is dissolved in arterial blood is known as PO<sub>2</sub>. In persons over 60 years of age, the normal is lower.

Normal values 80-100mm Hg.

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**SEQ. #:** 450

**Long Name:** RF-Home Oxygen

**Short Name:** HmO2

**Definition:** Indicate whether supplemental oxygen at home is prescribed and used.

**Intent/Clarification:**

Choices include the following:

- Yes, PRN
- Yes, Oxygen dependent
- No
- Unknown

Code "No" for patients who are using home O<sub>2</sub> on a prn basis but have not used > 1 month,

Code "Unknown" if there is no indication of when home O<sub>2</sub> was last used.

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**SEQ. #:** 455

**Long Name:** RF-Inhaled Medication or Oral Bronchodilator Therapy

**Short Name:** BDTx

**Definition:** Indicate whether oral and/or inhaled bronchodilator or inhaled (not oral or IV) steroid medications were in use by the patient routinely prior to this procedure.

**Intent/Clarification:**

Capture patients with prescribed home bronchodilator therapy prior to admission. Capture only routine use. Do not capture for patients using bronchodilators to treat asthma.

A bronchodilator is a substance that dilates the bronchi and bronchioles, decreasing airway resistance and thereby facilitating airflow. They are most useful in obstructive lung diseases, of which asthma and chronic obstructive pulmonary disease are the most common conditions. Bronchodilators are either short-acting or long-acting. Short-acting

medications provide quick or "rescue" relief from acute bronchoconstriction. Long-acting bronchodilators help to control and prevent symptoms.

Code "Unknown" when there is conflicting information in the medical record and/or with the patient/family.

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**SEQ. #:** 460

**Long Name:** RF-Sleep Apnea

**Short Name:** SlpApn

**Definition:** Indicate whether patient has a diagnosis of sleep apnea (may be described as obstructive sleep apnea or OSA).

**Intent/Clarification:**

Sleep apnea is a potentially serious sleep disorder in which breathing repeatedly stops and starts during sleep. Sleep apnea occurs in two main types: Obstructive Sleep Apnea, the more common form that occurs when throat muscles relax, and Central Sleep Apnea, which occurs when the brain doesn't send proper signals to the muscles that control breathing. Additionally, some people have complex sleep apnea, which is a combination of both. Sleep apnea has been associated with sudden death.

- Capture patients with prescribed home therapy despite frequency of use.
- Sleep apnea must be diagnosed by a physician/NP/PA. **Do not capture suspected sleep apnea or that reported by family members as sleep apnea.**
- CPAP or BiPAP therapy is no longer a requirement to code "yes" for sleep apnea.
- Code "No" to sleep apnea if sleep apnea has been surgically corrected.
- **Update Nov 2019 - Sleep Apnea cannot be diagnosed with a screening tool. It needs to be diagnosed with a formal diagnostic tool such as sleep study.**

Code "Yes" if sleep apnea is **diagnosed using a formal diagnostic tool such as a sleep study (Update Nov 2019)** but is not treated.

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**SEQ. #:** 465

**Long Name:** RF-Pneumonia

**Short Name:** Pneumonia

**Definition:** Indicate whether patient has a recent (within 30 days) or remote (more than 30 days) history of pneumonia.

**Intent/Clarification:**

Pneumonia is an infection of one or both lungs caused by bacteria, viruses, fungi, chemicals, or aspiration. It can be community acquired or acquired in a health care setting. Typical symptoms associated with pneumonia include cough, chest pain, fever, and difficulty in breathing. Diagnostic tools include x-rays and examination of the sputum. Treatment depends on the cause of pneumonia; bacterial pneumonia is treated with antibiotics.



Code as:

- Recent- pneumonia diagnosis within 30 days of procedure or
- Remote - pneumonia diagnosis more than 30 days prior to the procedure.
- No - meaning no history of pneumonia
- Unknown

There must be documentation of pneumonia to code "Yes". "**Possible** pneumonia" with antibiotic treatment should be coded "Unknown".

Pneumonitis, inflammation of the lung tissue, without infection is not considered pneumonia and should be coded as "no".

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**SEQ. #: 470**

**Long Name:** RF-Illicit Drug Use **Short Name:** IVDrugAb

**Definition:** Indicate whether documented history of use of illicit drugs, such as heroin, **marijuana**, cocaine, or methamphetamine, or abuse of a controlled substance. Do not include rare historical use. Do not include prescribed medicinal marijuana. Treatment with methadone is not considered illicit drug use.

**Intent/Clarification:**

Capture patients with habitual use of illicit drugs. Include abuse of street and prescription medications. Illicit drug use is associated with numerous health and social problems, and age-related physiological, psychological, and social changes that could impact recovery from surgery.

- **Recent** - Within 30 days of procedure
- **Remote** - More than 30 days prior to procedure
- **No** – No illicit drug use
- **Unknown** - patient/family unable to provide history.

**FAQ February 2018:** Illicit drugs: With the legalization of marijuana in some states across the country, should marijuana be excluded from the illicit drug definition so that all patients have parity in measurement of the illicit drug question. Medicinal use is also different from recreational use and rarely is the information clear as to the category of patients reporting marijuana use.

**ANSWER:** Marijuana should not be captured as an illicit drug and has been removed from the definition.

**FAQ February 2018:** if the patient denies illicit drug use but the drug screen is positive should illicit drug use be coded yes?

**ANSWER:** Yes, Code Illicit drug use if the drug screen is positive.

**FAQ Sept 2019** - Is it appropriate to answer "unknown" when drug use has not been assessed?

**Answer –** Yes, code unknown if drug use has not been assessed.

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**SEQ. #: 475**

**Long Name:** RF-Depression

**Short Name:** Depression

**Definition:** Indicate whether there is a current or previous history of depression or documentation of a depressed mood or affect.

**Intent/Clarification:**

People with heart disease are more likely to suffer from depression than otherwise healthy people. Angina and heart attacks are closely linked with depression. Recovery following heart surgery may be negatively impacted by the presence of preoperative depression.

A clinical diagnosis of depression/treatment is not required to code "Yes". Patient/family stating depressed mood or affect is sufficient.

Do not code "Yes" if a patient taking antidepressant medications for something other than depression (examples: radiculopathy, smoking cessation, fibromyalgia, sleep disorders, hormonal imbalances).

Include patients who are reporting symptoms of depression; treated or not treated with medications or therapy.

Bipolar disorders are considered depression.

Code "Unknown" when there is conflicting information in the medical record and/or with the patient/family.

**FAQ May 2019:** Is a documented history of postpartum depression to be coded "Yes" for Depression?

Answer: Code this as yes for depression.

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**SEQ. #: 480**

**Long Name:** RF-Alcohol Use

**Short Name:** Alcohol

**Definition:** Specify alcohol consumption history.

**Intent/Clarification: 480**

Code current alcohol use (within 30 days of surgery):

- ≤ 1 drink per week (rare or occasional drink) one beer, one glass of wine or one shot
- 2-7 drinks per week (Social)
- ≥ 8 drinks per week (Heavy drinker)
- None (Non-drinker)
- Unknown- patient/family unable to provide history

Alcohol abuse is not necessarily a quantity of alcohol but implies interference with home, work and life functioning. Documentation the patient is an alcoholic at the time of admission should be coded  $\geq 8$  drinks per week.

**FAQ Sept 2019** - Is it appropriate to answer "unknown" when alcohol use has not been assessed?

Answer – Yes, code unknown if alcohol use has not been assessed.

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**SEQ. #: 485**

**Long Name:** RF-Liver Disease

**Short Name:** LiverDis

**Definition:** Indicate whether the patient has a history of hepatitis B, hepatitis C, cirrhosis, portal hypertension, esophageal varices, **chronic alcohol abuse** or congestive hepatopathy. Exclude NASH in the absence of cirrhosis.

**Intent/Clarification:**

LFTs or a MELD score alone **cannot** be used to code "Yes" to liver disease since other conditions impact these lab values. Liver fibrosis with recurrent ascites, supported by the MELD can be coded as liver disease. **Update Sept 2019 - Time frame – capture any occurrence between birth and entry to OR for index procedure.**

The following are not coded as liver disease:

- ~~Patients who have had liver transplant without residual anatomic or systemic issues or associated MELD scores.~~
- Hepatitis A
- Gilberts syndrome
- Fatty liver
- Liver Cancer
- **Hepatitis E (Update January 2020)**

**FAQ September 2017:** Patient had a liver transplant 11 years ago and is here for convergent A-Fib ablation. His MELD score this admission was 10.69, bilirubin was 1.8, and there was no GI/Hepatology consult.

How should I code liver disease? I wouldn't be able to show that he has history of liver transplant if I key no.

Answer: Capture yes to liver disease and yes to liver transplant. It is important to capture the history of liver disease.

**FAQ May 2018:** The patient has a history of drug induced vs. autoimmune hepatitis, is this coded as liver disease.

Answer: Yes, code as liver disease. Active or history of hepatitis can leave chronic sequelae that could impact the patient.

**FAQ May 2019-** Would hepatic sarcoidosis be coded as liver disease?

Answer - Sarcoidosis should not be coded alone as liver disease. To code liver disease other qualifying disease criteria must be met (cirrhosis, hepatitis, MELD score).

**FAQ June 2019:** Is ANY history of alcohol abuse to be coded liver disease, regardless of number of years in recovery? Example: If the patient has been in recovery for a significant amount of time, and liver work up is clean, do we still code YES for liver disease?

Answer: Do not code liver disease. Chronic ETOH is not considered liver disease without other liver disease criteria being met.

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**SEQ. #: 486**

**Long Name:** RF-Liver Disease - Child Pugh Class

**Short Name:** LiverChildPugh

**Definition:** Indicate the Child Pugh Class, if known.

**Intent/Clarification:**

Documentation includes the compilation of the MELD score, the clinical diagnosis and the controllability of ascites.

- Child-Pugh A
- Child-Pugh B
- Child-Pugh C
- Unknown

**FAQ August 2017:** Can I calculate the Child-Pugh classification?

Answer: No, it is the responsibility of the surgeon/physician to calculate the Child-Pugh classification and document the score in the medical record. If not documented, code unknown.

**FAQ December 2017:** Can the Child-Pugh classification that was calculated and documented in the patient's medical record by an APN or PA, or must this be performed and documented by the physician/surgeon?

Answer: Documentation of the Child-Pugh classification documented by an APN or PA can be used.

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**SEQ. #: 487**

**Long Name:** RF-Liver Disease - Listed for Liver Transplant

**Short Name:** LiverTransList

**Definition:** Indicate whether the patient is listed for liver transplant.

**Intent/Clarification:** -

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**SEQ. #: 488**

**Long Name:** RF-Liver Disease - Status Post Liver Transplant

**Short Name:** LiverStatusPost

**Definition:** Indicate whether the patient has received a liver transplant prior to this operation.

**Intent/Clarification: -**

**FAQ September 2017:** Patient had a liver transplant 11 years ago and is here for convergent A-Fib ablation. His MELD score this admission was 10.69, bilirubin was 1.8, and there was no GI/Hepatology consult.

How should I code liver disease? I wouldn't be able to show that he has history of liver transplant if I key no.

Answer: Capture yes to liver disease and yes to liver transplant. It is important to capture the history of liver disease.

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**SEQ. #: 490**

**Long Name:** RF-Immunocompromise

**Short Name:** ImmSupp

**Definition:** Indicate whether immunocompromise is present due to immunosuppressive medication therapy within 30 days preceding the operative procedure or existing medical condition. This includes, but is not limited to systemic steroid therapy, anti-rejection medications and chemotherapy. This does not include topical steroid applications, one-time systemic therapy, inhaled steroid therapy or pre-procedure protocol.

**Intent/Clarification:**

Include patients being treated with IVIG. Patients who have had splenectomy are considered immunocompromised. Examples of conditions causing immunocompromise include Hypogammaglobulinemia and HIV infection.

**FAQ September 2018:** Should HGB H disease, Thalassemia, be coded as immunocompromised?

Answer: Yes, code patients with Thalassemia as immunocompromised.

**FAQ June 2019:** Is splenic sequestration considered an immunocompromised medical condition?

Answer: No

**FAQ July 2019 -** Pt has systemic lupus taking Plaquenil QD. Is this considered immunocompromise?

Answer: Yes, Plaquenil suppress the immune system.

**FAQ Sept 2019 -** If a patient had a partial Splenectomy in the past would Seq#490 be a coded as "yes"?

Answer: Code no in this scenario. A partial splenectomy may reduce both short and long-term mortality by preserving immune system functioning.

**FAQ October 2019** - Is a patient with IgG4 related sclerosing disease considered immunosuppressed? The patient is not on any medications currently for this illness.  
Answer - No

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**SEQ. #: 495**

**Long Name:** RF-Mediastinal Radiation

**Short Name:** MediastRad

**Definition:** Indicate whether patient has a history of radiation therapy to the mediastinum or chest.

**Intent/Clarification:**

Chest wall or mediastinal radiation can cause damage to blood vessels, heart valves and lung tissue. Scar tissue caused by radiation therapy can lead to increased bleeding, may make harvesting the internal mammary artery difficult and may interfere with sternal healing. **Update Sept 2019 - Time frame – capture any occurrence between birth and entry to OR for index procedure.**

Include radiation to the “mantel/chest” area only – this includes breast cancer with radiation.

**FAQ February 2018:** Mediastinal Radiation: Should I count Brachymesh as radiation to the mediastinal area? The patient has history of a wedge resection with Brachymesh (with radioactive seeds) in 2015. This is not beam radiation; however, it is a form of radiation.

Answer: The low-dose rate iodine-125 seeds have limited range and limited impact to reentry into the chest and should not be coded as Mediastinal Radiation.

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**SEQ. #: 500**

**Long Name:** RF-Cancer Within 5 Years

**Short Name:** Cancer

**Definition:** Indicate whether the patient has a history of cancer diagnosed within 5 years of procedure. Do not capture low grade skin cancers such as basal cell or squamous cell carcinoma.

**Intent/Clarification:**

Capture cancers that have or will require surgical intervention, chemotherapy and or radiation therapy. If the date of diagnosis is not known, then the date of the last treatment may be used to determine the 5-year interval.

**FAQ October 2019** – My patient has a history of cancer; however, I do not know if the cancer occurred within 5 years. Can I code unknown in this case?

Answer - Yes

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**SEQ. #:** 505

**Long Name:** RF-Peripheral Arterial Disease

**Short Name:** PVD

**Definition:** Indicate whether the patient has a history of peripheral arterial disease (includes upper and lower extremity, renal, mesenteric, and abdominal aortic systems).

This can include:

1. Claudication, either with exertion or at rest,
2. Amputation for arterial vascular insufficiency,
3. Vascular reconstruction, bypass surgery, or percutaneous intervention to the extremities (excluding dialysis fistulas and vein stripping),
4. Documented abdominal aortic aneurysm with or without repair,
5. Positive noninvasive test (e.g., ankle brachial index  $\leq$  0.9, ultrasound, magnetic resonance or computed tomography imaging of  $>$  50% diameter stenosis in any peripheral artery, i.e., renal, subclavian, femoral, iliac) or angiographic imaging. **Update Dec 2019 - Data managers are not expected to interpret the diagnostic results, please review the chart for other documentation of PAD to confirm this diagnosis.**

Peripheral arterial disease excludes disease in the carotid, cerebrovascular arteries or thoracic aorta. PVD does not include DVT **or AVM (Update Nov 2019)**

**Intent/Clarification:**

PAD is sometimes called PVD, code only arterial disease. PAD includes subclavian artery stenosis. **Update Sept 2019 - Time frame – capture any occurrence between birth and entry to OR for index procedure.**

**FAQ July 2019** - Is a pulmonary artery aneurysm captured in the risk factor section?

Answer: No, this is not captured.

**FAQ July 2019** - Is Raynaud's Disease coded as 'YES' to peripheral arterial disease?

Answer: Raynaud's is an idiopathic vasomotor response to cold or stress and not peripheral arterial disease.

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**SEQ. #:** 510

**Long Name:** RF-Thoracic Aorta Disease

**Short Name:** ThAoDisease

**Definition:** Indicate whether the patient has a history of disease of the thoracic or thoracoabdominal aorta.

Abdominal aortic disease without thoracic involvement is captured in peripheral artery disease.

**Intent/Clarification:**

Code "Yes" to aortic aneurysms, aortic dissection/rupture. Fusiform ascending thoracic aneurysm is more likely to dissect when the aortic cross clamp is applied and should be

coded as thoracic aorta disease. **Update Sept 2019 - Time frame – capture any occurrence between birth and entry to OR for index procedure.**

Code "No" to blunt trauma or infection.

This field is not intended to capture calcification of the aorta.

**FAQ July 2019** - Is a pulmonary artery aneurysm captured in the risk factor section?

Answer: No, this is not captured.

**FAQ Nov 2019** – Can Aortic ectasia can be coded as YES to thoracic aortic disease.

Answer – ~~Yes~~ **Update January 2020 – Code Thoracic Aorta Disease only if annulo-aortic ectasia is documented.**

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**SEQ. #: 515**

**Long Name:** RF-Syncope

**Short Name:** Syncope

**Definition:** Indicate whether the patient had a sudden loss of consciousness with loss of postural tone, not related to anesthesia, with spontaneous recovery and believed to be related to cardiac condition. Capture events occurring within the past one year as reported by patient or observer. Patient may experience syncope when supine.

**Intent/Clarification:**

Cardiac conditions including dysrhythmias, such as ventricular tachycardia or ventricular fibrillation, and aortic stenosis can cause syncope.

Near syncope should be coded as "no".

Cardiac arrest with resuscitation is **not** syncope.

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**SEQ. #: 520**

**Long Name:** RF-Unresponsive Neurologic State

**Short Name:** UnrespStat

**Definition:** Indicate whether the patient has a history of non-medically induced, unresponsive state within 24 hours of the time of surgery. Patient experienced complete mental unresponsiveness and no evidence of psychological or physiologically appropriate responses to stimulation, includes patients who experience sudden cardiac death.

**Intent/Clarification:**

The intent is to identify those patients whose postoperative neurologic state may not be a result of the surgery but rather patient's known preoperative neurologic status.

Code "Yes" if the patient never regained consciousness prior to surgery.



Temporary loss of consciousness that resolved after cardiac arrest should not be coded as yes.

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**SEQ. #: 521**

**Long Name:** RF-Chest Wall Deformity

**Short Name:** ChestWallDef

**Definition:** Indicate whether the patient has a chest wall deformity.

**Intent/Clarification:**

A deformity is thought to be caused by excessive growth of the costal cartilages (ribs), although the reason for this is unknown. This overgrowth causes the ribs and cartilages to buckle and pushes the sternum either inwards or outwards.

Pectus excavatum results in a sunken sternum sometimes called funnel chest and usually involves the lower half of the sternum.

In pectus carinatum the sternum protrudes in a convex shape and is sometimes called pigeon chest.

Chest wall deformity should be coded for the patient with an existing deformity or one that has been previously repaired.

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**SEQ. #: 525**

**Long Name:** RF-Cerebrovascular Dis

**Short Name:** CVD

**Definition:** Indicate whether the patient has a current or previous history of any of the following:

A. Stroke: Stroke is an acute episode of focal or global neurological dysfunction caused by brain, spinal cord, or retinal vascular injury as a result of hemorrhage or infarction, where the neurological dysfunction lasts for greater than 24 hours.

B. TIA: is defined as a transient episode of focal neurological dysfunction caused by brain, spinal cord, or retinal ischemia, without acute infarction, where the neurological dysfunction resolves within 24 hours.

C. Noninvasive or invasive arterial imaging test demonstrating  $\geq 50\%$  stenosis of any of the major extracranial or intracranial vessels of the brain

D. Previous cervical or cerebral artery revascularization surgery or percutaneous intervention

This does not include chronic (nonvascular) neurological diseases or other acute neurological insults such as metabolic and anoxic ischemic encephalopathy.

**Intent/Clarification:**

A positive CT scan, even in the patient with no symptoms, should be coded as cerebral vascular disease. A CT scan following surgery with evidence of old infarct should be coded no.

Subdural hematoma **or AVM (Update Nov 2019)** is not cerebral vascular disease.

~~FAQ October 2018: Is a totally occluded vertebral artery coded as cerebral vascular disease?~~

~~Answer: Do not code cerebral vascular disease in version 2.9. This will be reviewed with the next version upgrade.~~

**FAQ February 2019:** Beginning January 1<sup>st</sup>, 2019 included vertebral artery disease, internal carotid disease and intercranial consistent with atherosclerotic disease with document presence as CVD. External carotid disease is still excluded.

**FAQ February 2019:** The patient is a 27-year old with endocarditis, multiple cerebral septic emboli are found on MRI. The only symptom the patient has is headache. Is this considered cerebrovascular disease?

Answer: Yes, code cerebrovascular disease.

**FAQ June 2019:** If a patient has a brain/cerebral aneurysm, would I answer 'yes' to cerebrovascular disease?

Answer: Yes

**FAQ October 2019** - Can we code CVD for occlusion of right Common Carotid Artery in an aortic Dissection? MRA mentions " A 1.1 cm long occlusion at the proximal right CCA, partial reconstitution of flow at the proximal cervical segment of the right CCA for a 3.0 cm segment. Distal to that, there is progressively decreased flow related enhancement in the cervical right CCA. Reconstitution of flow of the right ECA from collateral flow. A long intraluminal thrombus in the distal right CCA and extending to the precavernous segment of the right ICA.

Answer - Code Yes to account for the risk of a dissection because the blood flow is null so a dissection acts like an occlusion.

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**SEQ. #: 530**

**Long Name:** RF-Prior CVA

**Short Name:** CVA

**Definition:** Indicate whether the patient has a history of stroke. Stroke is an acute episode of focal or global neurological dysfunction caused by brain, spinal cord, or retinal vascular injury as a result of hemorrhage or infarction, where the neurological dysfunction lasts for greater than 24 hours.

**Intent/Clarification:**

Include any confirmed neurological deficit of abrupt onset caused by a disturbance in cerebral blood supply that did not resolve within 24 hours of the event. The physical deficit can be in the form of extremity weakness, facial asymmetry, language (speech and/or cognitive thinking) impairment. The intent is to differentiate between neurological

events that resolve within 24 hours and those that don't.  
Code "yes" to prior CVA if the patient has no history of stroke and no symptoms but imaging study results show an infarct (old/chronic or new). **Update Sept 2019 - Time frame – capture any occurrence between birth and entry to OR for index procedure.**

**FAQ February 2019:** The patient is a 27-year old with endocarditis, multiple cerebral septic emboli are found on MRI. The only symptom the patient has is headache. Is this considered a CVA?  
Answer: Yes, code CVA.

**FAQ Sept 2019 -** Do I code a history of subarachnoid hemorrhage as a prior CVA?  
Answer – No not all subarachnoid hemorrhages will create a stroke. There must be some form of deficit documented in the chart to code SAH as a CVA.

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**SEQ. #: 535**

**Long Name:** RF-Prior CVA-When

**Short Name:** CVAWhen

**Definition:** Indicate when the CVA events occurred. Those events occurring within 30 days prior to the surgical procedure are considered recent, while all others are considered remote.

**Intent/Clarification:**

≤ 30 days is recent

> 30 days is remote

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**SEQ. #: 540**

**Long Name:** RF-CVD TIA

**Short Name:** CVDTIA

**Definition:** Indicate whether the patient has a history of a Transient Ischemic Attack (TIA). Transient ischemic attack (TIA) is defined as a transient episode of focal neurological dysfunction caused by brain, spinal cord, or retinal ischemia, without acute infarction, where the neurological dysfunction resolves within 24 hours.

**Intent/Clarification:**

Choices are:

- Yes
- No
- Unknown

**Update Sept 2019 - Time frame – capture any occurrence between birth and entry to OR for index procedure.** "Unknown" should be selected if any neurologic dysfunction occurred or was suspected, was resolved in 24 hours, and could not be confirmed or if patient/family unable to provide history.

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**SEQ. #:** 545

**Long Name:** RF-CVD Carotid Stenosis

**Short Name:** CVDCarSten

**Definition:** Indicate which carotid artery was determined from any diagnostic test to be  $\geq 50\%$  stenotic.

**Intent/Clarification:**

Code what is found **on the study closest to entry into OR for index procedure** at the time of surgery, even if a prior stent is in place.

Choices are:

- None
- Right
- Left
- Both

If the results are reported in a range, such as “40-50%”, choose the highest level in the range.

**FAQ February 2019** – Leave stenosis blank for dissection.

**FAQ January 2020** - When a carotid duplex reports stenosis as 0-59% but states "no evidence of hemodynamic significance," I want to confirm that since it is reported in a range we take the highest number which would put this in the 50-79% / moderate category.

**Answer** - Code No for CVD in this scenario given the range of 0-59% and documentation of no hemodynamic significance.

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**SEQ. #:** 550

**Long Name:** RF-CVD Carotid Stenosis - Right

**Short Name:** CVDCarStenRt

**Definition:** Indicate the severity of stenosis reported on the right carotid artery.

**Intent/Clarification:**

Indicate % stenosis:

- 50 - 79% or “moderate”
- 80 - 99% or “critical”, “severe”, or “subtotal”.
- 100% or “total”
- Not documented

If the results are reported in a range, such as “40-50%”, choose the highest level in the range.

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**SEQ. #: 555**

**Long Name:** RF-CVD Carotid Stenosis - Left

**Short Name:** CVDStenLft

**Definition:** Indicate the severity of stenosis reported on the left carotid artery.

**Intent/Clarification:**

Indicate % stenosis:

50 - 79% = "moderate"

80 - 99% = "critical", "severe", or "subtotal".

100% = "total"

Not documented

If the results are reported in a range, such as "40-50%", choose the highest level in the range.

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**SEQ. #: 560**

**Long Name:** RF-CVD Prior Carotid Surgery

**Short Name:** CVDPCarSurg

**Definition:** Indicate whether the patient has a history of previous carotid artery surgery and/or stenting.

**Intent/Clarification:**

**Update Sept 2019 - Time frame – capture any occurrence between birth and entry to OR for index procedure.** Carotid endarterectomy is a surgical procedure during which a surgeon removes atherosclerotic plaque or other material obstructing the flow of blood from the artery. This procedure eliminates a substance called plaque from the artery and can restore blood flow.

Carotid artery stenting is a procedure in which a slender, metal-mesh tube, called a stent, is inserted and expands inside the carotid artery to increase blood flow in areas blocked by plaque.

Also includes internal carotid artery aneurysm coils.

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**General Information for Labs:**

**Update Aug 2019 - Use results closest to surgery, prior to anesthesia provider initiating care. Lab values should be collected STS recommends values within 30 days, unless otherwise stated below.**

Capture lab values if available. Not all patients will have, or need to have, all the following labs drawn.

Do not use labs drawn after IV fluids are hung in holding area or OR. Include POC (point of care) results.

Update Nov 2019 – Clarification: Please do not round lab values up enter the value based on the limitations of the vendor tool for example if INR is 1.16 but vendor will only allow you to enter one place after the decimal point, then enter as 1.1.

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**SEQ. #: 565**

**Long Name:** RF-Last WBC Count

**Short Name:** WBC

**Definition:** Indicate the pre-operative White Blood Cell (WBC) count closest to the date and time prior to surgery but prior to anesthetic management (induction area or operating room).

**Intent/Clarification:**

White Blood Cells (leukocytes) are part of the body's immune defense and are often elevated in the presence of infection. The hospital laboratory report should be accessed first when coding this variable. If this is unavailable, then additional source documents may be referenced for lab results. **Update Nov 2019 – The unit of measurement for WBC is  $\times 10^3/\mu\text{l}$  or  $10^3/\mu\text{l}$  (1000 ul) or  $10^3/\text{mm}^3$  (1000/ $\text{mm}^3$ ) or K/ $\mu\text{l}$  or K/ $\text{mm}^3$**

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**SEQ. #: 570**

**Long Name:** RF-Hemoglobin

**Short Name:** RFHemoglobin

**Definition:** Indicate the pre-operative Hemoglobin level at the date and time closest to surgery but prior to anesthetic management (induction area or operating room). Capture only measured hemoglobin levels, not calculated values.

**Intent/Clarification:**

The hemoglobin (Hgb) test may be used to screen for, diagnose, or monitor a number of conditions and diseases that affect red blood cells (RBCs) and/or the amount of hemoglobin in blood. The hospital laboratory report should be accessed first when coding this variable. If this is unavailable, then additional source documents may be referenced for lab results. **Update Nov 2019 – The unit of measurement for Hgb is g/dl or g/100 ml or g%.**

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**SEQ. #: 575**

**Long Name:** RF-Last Hematocrit

**Short Name:** Hct

**Definition:** Indicate the pre-operative Hematocrit level at the date and time closest to surgery but prior to anesthetic management (induction area or operating room). Capture only measured hematocrit levels, not calculated values.

**Intent/Clarification:**

Hematocrit (Hct) is the proportion of red cells in the blood. The hospital laboratory report should be accessed first when coding this variable. If this is unavailable, then additional source documents may be referenced for lab results. **Update Nov 2019 – The unit of measurement for Hct is %.**

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**SEQ. #: 580**

**Long Name:** RF-Platelets

**Short Name:** Platelets

**Definition:** Indicate the platelet count closest to the date and time prior to surgery but prior to anesthetic management (induction area or operating room).

**Intent/Clarification:**

Platelets (plt) are a blood component instrumental in clot formation. The hospital laboratory report should be accessed first when coding this variable. If this is unavailable, then additional source documents may be referenced for lab results.

**Update Nov 2019 – The unit of measurement for Platelets is  $\times 10^3/\mu\text{l}$  or  $10^3/\mu\text{l}$  (1000  $\mu\text{l}$ ) or  $10^3/\text{mm}^3$  (1000/ $\text{mm}^3$ ) or K/ $\mu\text{l}$  or K/ $\text{mm}^3$**

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**SEQ. #: 585**

**Long Name:** RF-Last Creat Level

**Short Name:** CreatLst

**Definition:** Indicate the creatinine level closest to the date and time prior surgery but prior to anesthetic management (induction area or operating room).

A creatinine level should be collected on all patients, even if they have no prior history of renal disease. A creatinine value is a high predictor of a patient's outcome and is used in the predicted risk models.

**Intent/Clarification:**

Creatinine (Cr) is a chemical waste molecule excreted by the kidneys that is generated from muscle metabolism. If the kidneys become impaired for any reason, the creatinine level in the blood will rise due to poor clearance by the kidneys. Abnormally high levels of creatinine thus warn of possible malfunction or failure of the kidneys. **Update Nov 2019 – The unit of measurement for Creatinine is mg/dl or mg/100ml or mg%**

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**SEQ. #: 590**

**Long Name:** RF-Total Albumin

**Short Name:** TotAlbumin

**Definition:** Indicate the total albumin closest to the date and time prior to surgery but prior to anesthetic management (induction area or operating room).

**Intent/Clarification:**

Albumin (alb), produced only in the liver, is the major plasma protein that circulates in the bloodstream. Albumin is essential for maintaining the oncotic pressure in the vascular system. A decrease in oncotic pressure due to a low albumin level allows fluid to leak out from the interstitial spaces into the peritoneal cavity, producing ascites. Albumin is also very important in the transportation of many substances such as drugs, lipids, hormones, and toxins that are bound to albumin in the bloodstream. A low serum albumin indicates poor liver function. Decreased serum albumin levels are not seen in acute liver failure because it takes several weeks of impaired albumin production before the serum albumin level drops. The most common reason for a low albumin is chronic liver failure caused by cirrhosis. The serum albumin concentration is usually normal in chronic liver disease until cirrhosis and significant liver damage has occurred. **Update Nov 2019 – The unit of measurement for Albumin is g/dl or g/100 ml or g%.**

**You can capture results up to 6 weeks prior to surgery provided there is no known acute liver disease process.**

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**SEQ. #: 595**

**Long Name:** RF-Total Bilirubin

**Short Name:** TotBlrbn

**Definition:** Indicate the total Bilirubin closest to the date and time prior to surgery but prior to anesthetic management (induction area or operating room).

**Intent/Clarification:**

Bilirubin (Tbili) testing checks for levels of bilirubin, an orange-yellow pigment, in blood. Bilirubin is a natural byproduct that results from the normal breakdown of red blood cells. As a normal process, bilirubin is carried in the blood and passes through the liver. Too much bilirubin may indicate liver damage or disease. **Update Nov 2019 – The unit of measurement for Bilirubin is mg/dl or mg/100 ml or mg%.**

**You can capture results up to 6 weeks prior to surgery provided there is no known acute liver disease process.**

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**SEQ. #: 600**

**Long Name:** RF-Last A1c Level

**Short Name:** A1cLvl

**Definition:** Indicate the pre-operative HbA1c level closest to the date and time prior surgery but prior to anesthetic management (induction area or operating room).



**Intent/Clarification:**

Glycosylated hemoglobin, HbA1c, is a form of hemoglobin used primarily to identify the average plasma glucose concentration over prolonged periods of time. It is formed in a non-enzymatic glycation pathway by hemoglobin's exposure to plasma glucose. Normal levels of glucose produce a normal amount of glycosylated hemoglobin. As the average amount of plasma glucose increases, the fraction of glycosylated hemoglobin increases in a predictable way. This serves as a marker for average blood glucose levels over the previous months prior to the measurement. The HbA1c level is proportional to average blood glucose concentration over the previous four weeks to three months. **Update Nov 2019 – The unit of measurement for A1C is %.**

The 2010 American Diabetes Association Standards of Medical Care in Diabetes added the A1c  $\geq$  6.5% as a criterion for the diagnosis of diabetes.

This lab must be drawn preoperatively since cardiopulmonary bypass, fluid shifts and transfusions can alter results and not accurately reflect the prior glucose levels

**You can capture results up to 3 months prior to surgery.**

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**SEQ. #:** 605

**Long Name:** RF-HIT Antibodies

**Short Name:** HITAnti

**Definition:** Indicate whether Heparin Induced Thrombocytopenia (HIT) is confirmed by antibody testing.

**Intent/Clarification:**

Heparin induced thrombocytopenia (HIT) can be defined as any clinical event best explained by platelet factor 4 (PF4)/ heparin-reactive antibodies ('HIT antibodies') in a patient who is, or has recently received heparin. Thrombocytopenia is the most common 'event' in HIT and occurs in at least 90% of patients, depending upon the definition of thrombocytopenia. A high proportion of patients with HIT develop thrombosis. Alternative, non-heparin, anticoagulant therapy reduces the risk of subsequent thrombosis. The SRA (serotonin release assay) test is the most definitive HIT test. The timeframe is any time prior to surgery. <http://emedicine.medscape.com/article/1357846-overview>

Choices are:

- Yes - Positive antibody testing (test was performed, HIT positive)
- No - Negative antibody testing (test was performed, HIT negative)
- NA - antibody testing not performed

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**SEQ. #:** 610

**Long Name:** RF-INR

**Short Name:** INR

**Definition:** Indicate the International Normalized Ratio (INR) closest to the date and time prior to surgery but prior to anesthetic management (induction area or operating room).

**Intent/Clarification:**

INR is the standard unit used to report the result of a prothrombin (PT) test. An individual whose blood clots normally and who is not on anticoagulation should have an INR of approximately 1. The higher the INR, the longer it takes blood to clot. As the INR increases above a given level, the risk of bleeding and bleeding-related events increases. As the INR decreases below a given level, the risk of clotting events increases.

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**SEQ. #:** 615

**Long Name:** RF-MELD Score

**Short Name:** MELDScr

**Definition:** MELD score value calculated by software to indicate severity of liver disease.

**Intent/Clarification:**

MELD is a validated liver disease severity scoring system that uses laboratory values for serum bilirubin, serum creatinine and the INR to predict survival. In patients with chronic liver disease, an increasing MELD score is associated with increasing risk of death.

**MELD is not used to confirm liver disease, rather as a severity measure for patients with known liver disease.**

≤ 15 predictive of 95% survival at 3 months

~ 30 predictive of 65% survival at 3 months

≥ 40 predictive of 10-15% survival at 3 months

MELD = 3.8[Ln serum bilirubin (mg/dL)] + 11.2[Ln INR] + 9.6[Ln serum creatinine (mg/dL)] + 6.4. Laboratory values of INR, total bilirubin and serum creatinine that are <1.0 are set to 1.0. In addition, serum creatinine levels >4.0 mg/dL are capped at 4.0 mg/dL, and patients on dialysis receive an assigned serum creatinine value of 4.0 mg/dL.

Reference: <http://www.mayoclinic.org/medical-professionals/model-end-stage-liver-disease>

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**SEQ. #:** 620

**Long Name:** RF-BNP

**Short Name:** BNP

**Definition:** Indicate the BNP value.

**Intent/Clarification:**

Brain natriuretic peptide (BNP), now known as B-type natriuretic peptide or Ventricular Natriuretic Peptide (still BNP), is a 32-amino acid polypeptide secreted by the ventricles of the heart in response to excessive stretching of heart muscle cells (cardiomyocytes). The physiologic actions of BNP are similar to those of ANP and include decrease in systemic vascular resistance and central venous pressure as well as an increase in natriuresis. Thus, the net effect of BNP and ANP is a decrease in blood volume, which lowers systemic blood pressure and afterload, yielding an increase in cardiac output, partly due to a higher ejection fraction. **Update Nov 2019 – The unit of measurement for BNP is pg/ml**

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**SEQ. #:** 645

**Long Name:** RF-Five Meter Walk Test Done

**Short Name:** FiveMWalkTest

**Definition:** Indicate whether the five-meter walk test was done.

**Intent/Clarification:**

Frailty is a risk factor for surgery that has been difficult to quantify. This test quantifies frailty prior to surgery in ambulatory patients. **Prolonged times strongly correlate with increased risk and this risk factor will be assessed for possible inclusion in risk model updates being done in 2015.**

**Instructions:**

1. Accompany the patient to the designated area, which should be well-lit, unobstructed, and contain clearly indicated markings at 0 and 5 meters
2. Position the patient with his/her feet behind and just touching the 0-meter start line
3. Instruct the patient to “walk at your comfortable pace” until a few steps past the 5-meter mark (the patient should not start to slow down before the 5-meter mark)
4. Begin each trial on the word “Go”
5. Start the timer with the first footfall after the 0-meter line
6. Stop the timer with the first footfall after the 5-meter line
7. Repeat 3 times, allowing sufficient time for recuperation between trials. (If patient is unable to repeat x3, enter 1 or 2 times)

Note: Patient may use a walking aid (cane, walker). If the patient is receiving an IV drip, he/she should perform the test without the IV only if it can be interrupted temporarily without any potential risk to the patient, if not, then the patient may perform the test pushing the IV pole. If the time taken to walk 5 meters averages > 6 seconds, the patient is considered frail.

Choices are:

- Yes
- No

- Non-ambulatory patient (physically or medically unable to perform the test)

Reference: *Gait Speed as an Incremental Predictor of Mortality and Major Morbidity in Elderly...* Afilalo et al. J Am Coll Cardiol.2010; 56: 1668-1676

**FAQ August 2019** - What is the time frame on the 5M walk test?

Answer – To code ‘YES’ to 5M walk test performed it should be done within 3 months of surgery.

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**SEQ. #: 650**

**Long Name:** RF-Five Meter Walk Time 1

**Short Name:** FiveMWalk1

**Definition:** Indicate the time in seconds it takes the patient to walk 5 meters for the first of three tests.

**Intent/Clarification:** -  
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**SEQ. #: 655**

**Long Name:** RF-Five Meter Walk Time 2

**Short Name:** FiveMWalk2

**Definition:** Indicate the time in seconds it takes the patient to walk 5 meters for the second of three tests.

**Intent/Clarification:** -  
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**SEQ. #: 660**

**Long Name:** RF-Five Meter Walk Time 3

**Short Name:** FiveMWalk3

**Definition:** Indicate the time in seconds it takes the patient to walk 5 meters for the third of three tests.

**Intent/Clarification:** -  
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**SEQ. #: 661**

**Long Name:** RF - Six Minute Walk Test Done

**Short Name:** SixMWalkDone

**Definition:** Indicate whether a six-minute walk test was done.

**Intent/Clarification:**

The 6MWT is a practical simple test that requires a 100-ft hallway but no exercise equipment or advanced training for technicians. Walking is an activity performed daily by all but the most severely impaired patients. This test measures the distance that a patient can quickly walk on a flat, hard surface in a period of 6 minutes (the 6MWD). It evaluates the global and integrated responses of all the systems involved during exercise, including the pulmonary and cardiovascular systems, systemic circulation, peripheral circulation, blood, neuromuscular units, and muscle metabolism.

- Yes
- No

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**SEQ. #: 662**

**Long Name:** RF - Six Minute Walk Test Distance

**Short Name:** SixMWalkDist

**Definition:** Indicate the distance in feet the patient walked during the six-minute walk test.

**Intent/Clarification: -**

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**Previous Cardiac Interventions**

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**SEQ. #: 665**

**Long Name:** Prev Cardiac Intervent

**Short Name:** PrCVInt

**Definition:** Indicate whether the patient has undergone any previous cardiovascular intervention, either surgical or non-surgical, which may include those done during the current admission.

**Intent/Clarification:**

A patient who had previous invasive cardiac procedures (PCI or surgery) will have increased risk due to a variety of factors; such as repeated exposure to heparin potentiating incidence of heparin antibodies, heparin resistance or surgical adhesions. This is intended to capture surgical and/or interventional procedures, not diagnostic ones like TEE or cath.

**FAQ January 2018:** Patient has a history of a CABG, then later a VAD, then a heart transplant. The patient is now having a CABG on his transplanted heart. For sequence 665 previous cardiac interventions, do we count his prior history of the CABG and VAD on his native heart, or only what has happened since getting his transplant?

Answer: Count the prior transplant as a previous intervention.

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**SEQ. #:** 670

**Long Name:** Prev CAB

**Short Name:** PrCAB

**Definition:** Indicate whether the patient had a previous Coronary Bypass Graft prior to the current admission.

**Intent/Clarification:**

This applies only to surgical approach to revascularization. Angioplasty or other catheter based coronary artery occlusion treatment does not apply.

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**SEQ. #:** 675

**Long Name:** Prev Valve

**Short Name:** PrValve

**Definition:** Indicate whether the patient had a previous surgical replacement and/or surgical repair of a cardiac valve. This may also include percutaneous valve procedures.

**Intent/Clarification:**

This may include percutaneous valve procedures such as percutaneous valvotomy or valvuloplasty, as well as surgical or transcatheter valve repair or replacement. Capture all procedures that apply. These do not have to be in chronological order.

**FAQ January 2018:** Should we collect previous percutaneous Mitral Valve if they were unable to deploy the clip? Unable to grasp the leaflets so the procedure was aborted and the pt underwent surgical MVR (same episode of care).

Answer: No, this is not captured as a previous CV intervention as the clip was not deployed.

**FAQ February 2018:** A 35-year old male underwent a percutaneous aortic valvuloplasty at age 12. He now enters the OR for a surgical AVR. How is previous CV intervention coded?

Answer: Code Previous valve procedure.

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**SEQ. #:** 695

**Long Name:** Prev Valve Procedure 1

**Short Name:** PrValveProc1

**Definition:** Indicate the first previous valve procedure.

**Intent/Clarification: Indicate which specific valve procedure was performed:**

No additional valve procedure(s)

Aortic valve balloon valvotomy/valvuloplasty  
Aortic valve repair, surgical  
Aortic valve replacement, surgical  
Aortic valve replacement, transcatheter  
Mitral valve balloon valvotomy/valvuloplasty  
Mitral valve commissurotomy, surgical  
Mitral valve repair, percutaneous  
Mitral valve repair, surgical  
Mitral valve replacement, surgical  
Mitral valve replacement, transcatheter  
Tricuspid valve balloon valvotomy/valvuloplasty  
Tricuspid valve repair, percutaneous  
Tricuspid valve repair, surgical  
Tricuspid valve replacement, surgical  
Tricuspid valve replacement, transcatheter  
Tricuspid valvectomy  
Pulmonary valve balloon valvotomy/valvuloplasty  
Pulmonary valve repair, surgical  
Pulmonary valve replacement, surgical  
Pulmonary valve replacement, transcatheter  
Pulmonary valvectomy  
Other valve procedure

**FAQ February 2018:** A 35-year old male underwent a percutaneous aortic valvuloplasty at age 12. He now enters the OR for a surgical AVR. How is previous valve procedure coded?

Answer: Code Aortic balloon valvotomy/valvuloplasty.

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**SEQ. #:** 700

**Long Name:** Prev Valve Procedure 2

**Short Name:** PrValveProc2

**Definition:** Indicate the second previous valve procedure or select "No additional valve procedures"

**Intent/Clarification:**

If a second procedure was done, please select from the list above or select:

No Additional Valve Procedure(s) - Software will grey out any additional selections.

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**SEQ. #:** 705

**Long Name:** Prev Valve Procedure 3

**Short Name:** PrValveProc3

**Definition:** Indicate the third previous valve procedure or select "No additional valve procedures"

**Intent/Clarification:**

If a third procedure was done, please select from the list above or select:  
No Additional Valve Procedure(s) - Software will grey out any additional selections.

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**SEQ. #: 710**

**Long Name:** Prev Valve Procedure 4

**Short Name:** PrValveProc4

**Definition:** Indicate the fourth previous valve procedure or select "No additional valve procedures"

**Intent/Clarification:**

If a fourth procedure was done, please select from the list above or select:  
No Additional Valve Procedure(s) - Software will grey out any additional selections.

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**SEQ. #: 715**

**Long Name:** Prev Valve Procedure 5

**Short Name:** PrValveProc5

**Definition:** Indicate the fifth previous valve procedure or select "No additional valve procedures"

**Intent/Clarification:**

If a fifth procedure was done, please select from the list above or select:  
No Additional Valve Procedure(s) - Software will grey out any additional selections.

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**SEQ. #: 775**

**Long Name:** Previous PCI

**Short Name:** POCPCI

**Definition:** Indicate whether a previous Percutaneous Coronary Intervention (PCI) was performed any time prior to this surgical procedure.

Percutaneous coronary intervention (PCI) is the placement of an angioplasty guide wire, balloon, or other device (e.g. stent, atherectomy, brachytherapy, or thrombectomy catheter) into a native coronary artery or coronary artery bypass graft for the purpose of mechanical coronary revascularization.

**Intent/Clarification:**

An **attempted**, even if unsuccessful, PCI should be coded as a Previous CV intervention-PCI. This is in an effort to harmonize with ACC-NCDR.

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**SEQ. #: 780**

**Long Name:** Previous PCI-Within This Episode of Care

**Short Name:** POCPCIWhen

**Definition:** Indicate whether the previous Percutaneous Cardiac Intervention (PCI) was performed within this episode of care. Episode of care is defined as continuous inpatient hospitalization which includes transfer from one acute care hospital to another.

**Intent/Clarification:**

This field is intended to capture PCIs done during the same episode of care prior to the surgical procedure. Include patients who were transferred for surgery from another facility following PCI.

Do not code PCIs done after the surgical procedure here.

Do not code as the same episode of care if the patient is discharged home between interventions. Choices are:

- Yes, at this facility
- Yes, at some other acute care facility
- No

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**NOTE THAT SEQUENCE NUMBER 785 IS A CHILD TO SEQUENCE NUMBER 780.**

**SEQ. #: 785**

**Long Name:** Previous PCI-Indication for Surgery

**Short Name:** POCPCIndSurg

**Definition:** Select the indication for surgery following the Percutaneous Cardiac Intervention (PCI).

**Intent/Clarification: Indicate whether surgery was required due to:**

- **PCI complication** - complication during PCI necessitating surgical intervention such as dissection or acute occlusion.
- **PCI failure with clinical deterioration** - PCI failed to yield expected and/or desired results, patient condition deteriorated, includes attempts to cross with the wire but unsuccessful.
- **PCI for STEMI, multi-vessel disease** - STEMI with primary PCI of culprit lesion and multi-vessel disease requiring CABG.
- **PCI failure without clinical deterioration** - PCI failed to yield expected and/or desired results, patient condition did not deteriorate, includes attempts to cross with the wire but unsuccessful.
- **PCI/Surgery staged procedure (not STEMI)** - PCI and surgical procedures performed in a staged fashion in a patient not experiencing STEMI.
- **Other** - other indication for surgery not described above.

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**SEQ. #:** 790

**Long Name:** Previous PCI-Stent

**Short Name:** POCPCISt

**Definition:** Indicate whether an intracoronary stent was used during the previous Percutaneous Cardiac Intervention (PCI).

**Intent/Clarification:**

A stent is a small mesh tube that's used to treat narrow or weak arteries. It is placed in an artery as part of a procedure called percutaneous coronary intervention (PCI). PCI restores blood flow through narrow or blocked arteries and helps support the inner wall of the artery in the months or years after PCI. Doctors may also place stents in weak arteries to improve blood flow and help prevent the arteries from bursting. Stents usually are made of metal mesh, but sometimes they're made of fabric. Fabric stents, also called stent grafts, are used in larger arteries.

**FAQ July 2019** - When a patient has a prior history of stents, and then comes to the hospital on this admission and gets a balloon angioplasty before CABG, there is not a way to mark both of those. I mark yes on Previous PCI, but then I have to choose whether it was on this admission or not. If there was something done this admission (in this case, a balloon angioplasty), then I mark "Within this episode; Yes, at this facility" but then that takes away the possibility of me marking anything about the prior stents. Answer: Code Yes to prior Stent - this field is a child of 775 (Prior PCI), not 780 (Previous PCI Time frame)- so history of prior stent and type of stent from any prior PCI will be captured in 790 and 795.

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**SEQ. #:** 795

**Long Name:** Previous PCI-Stent Type

**Short Name:** POCPCIStTy

**Definition:** Indicate type of intracoronary stent placed.

**Intent/Clarification:**

Choices are:

- **Bare metal**
- **Drug-eluting** - coated with medicine that is slowly and continuously released into the artery. The medicine is intended to prevent the artery from becoming blocked again.
  - **Bio-resorbable** - A bio-resorbable, biodegradable, or bio-absorbable stent serves the same purpose, but is manufactured from a material intended to dissolve or be absorbed in the body.
- **Multiple types**
- **Unknown**

**FAQ July 2018:** We are using the Cobra stent which is Nanocoated, what should we code for stent type?

Answer: Code as unknown, Nanocoated will have to be added to the next version.

**FAQ July 2019** - When a patient has a prior history of stents, and then comes to the hospital on this admission and gets a balloon angioplasty before CABG, there is not a way to mark both of those. I mark yes on Previous PCI, but then I have to choose whether it was on this admission or not. If there was something done this admission (in this case, a balloon angioplasty), then I mark "Within this episode; Yes, at this facility" but then that takes away the possibility of me marking anything about the prior stents. Answer: Code Yes to prior Stent - this field is a child of 775 (Prior PCI), not 780 (Previous PCI Time frame)- so history of prior stent and type of stent from any prior PCI will be captured in 790 and 795.

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**SEQ. #: 800**

**Long Name:** Previous PCI-Interval

**Short Name:** POCPCIIn

**Definition:** Indicate the interval of time between the previous PCI and the current surgical procedure.

**Intent/Clarification:**

The choices are  $\leq 6$  hours or  $> 6$  hours prior to OR entry. The timing of surgery after PCI may influence outcomes such as renal failure due to contrast given during PCI.

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**SEQ. #: 805**

**Long Name:** Previous Other Cardiac **Short Name:** POC

**Definition:** Indicate whether the patient had any other previous cardiac intervention.

**Intent/Clarification:**

If the patient had any other procedure involving the heart and/or great vessels not mentioned above, choose this field. These do not have to be in chronological order.

**FAQ November 2017:** How would a history of ethanol ablation and myectomy be captured in this sequence number?

Answer: Code as previous other cardiac intervention – not listed.

**FAQ February 2018:** The patient enters the operating room electively for an AVR. The same procedure was attempted at another hospital 6 months previously but was cancelled after discovering a porcelain aorta as the surgeon attempted to place cannulation sutures.

How is previous CV intervention coded?

Answer: Code previous Other Cardiac Intervention (not listed).

**FAQ January 2019:** Would we capture Brachytherapy under pervious other CV intervention?

Answer: No, this is not traditionally considered a previous CV intervention.

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**SEQ. #:** 810

**Long Name:** Previous Other Cardiac Intervention 1

**Short Name:** POCInt1

**Definition:** Indicate the first other cardiac intervention that was performed.

**Intent/Clarification:**

No additional interventions

Ablation, catheter, atrial fibrillation

Ablation, catheter, other or unknown

Ablation, catheter, ventricular

Ablation, surgical, atrial fibrillation

Ablation, surgical, other or unknown

Aneurysmectomy, LV

Aortic procedure, arch

Aortic procedure, ascending

Aortic procedure, descending

Aortic procedure, root

Aortic procedure, thoracoabdominal

Aortic Procedure, TEVAR

Aortic root procedure, valve sparing

Atrial appendage obliteration, Left, surgical

Atrial appendage obliteration, Left, transcatheter

Cardiac Tumor

Cardioversion(s)

Closure device, atrial septal defect

Closure device, ventricular septal defect

Congenital cardiac repair, surgical

ECMO

Implantable Cardioverter Defibrillator (ICD) with or without pacemaker

**Permanent** Pacemaker

Pericardial Window/Pericardiocentesis

Pericardiectomy

Pulmonary thromboembolectomy

Total Artificial Heart (TAH)

Transmyocardial Laser Revascularization (TMR)

Transplant heart & lung

Transplant, heart

Transplant, lung(s)

Ventricular Assist Device (VAD), BiVAD

Ventricular Assist Device (VAD), left

Ventricular Assist Device (VAD), right

Other Cardiac Intervention (not listed)

**FAQ March 2018:** I have a patient who has Wolff-Parkinson-White Syndrome. She had an ablation and cardioversion because of this arrhythmia. I am not sure where to

capture this for sequence #945. Would I say yes to #945 and code it as Sick Sinus Syndrome?

Answer: Code Wolff-Parkinson-White syndrome as ablation, catheter, other or unknown.

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**SEQ. #: 815**

**Long Name:** Previous Other Cardiac Intervention 2

**Short Name:** POCInt2

**Definition:** Indicate the second other cardiac intervention that was performed.

**Intent/Clarification:**

If a second procedure was done, please select from the list above or select "No Additional Interventions," software will grey out any additional selections.

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**SEQ. #: 820**

**Long Name:** Previous Other Cardiac Intervention 3

**Short Name:** POCInt3

**Definition:** Indicate the third other cardiac intervention that was performed.

**Intent/Clarification:**

If a third procedure was done, please select from the list above or select: No Additional Interventions - Software will grey out any additional selections.

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**SEQ. #: 825**

**Long Name:** Previous Other Cardiac Intervention 4

**Short Name:** POCInt4

**Definition:** Indicate the fourth other cardiac intervention that was performed.

**Intent/Clarification:**

If a fourth procedure was done, please select from the list above or select "No Additional Interventions," software will grey out any additional selections.

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**SEQ. #: 830**

**Long Name:** Previous Other Cardiac Intervention 5

**Short Name:** POCInt5

**Definition:** Indicate the fifth other cardiac intervention that was performed.

**Intent/Clarification:**

If a fifth procedure was done, please select from the list above or select “No Additional Interventions,” software will grey out any additional selections.

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**SEQ. #: 835**

**Long Name:** Previous Other Cardiac Intervention 6

**Short Name:** POCInt6

**Definition:** Indicate the sixth other cardiac intervention that was performed.

**Intent/Clarification:**

**If a sixth procedure was done, please select from the list above** or select “No Additional Interventions,” software will grey out any additional selections.

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**SEQ. #: 840**

**Long Name:** Previous Other Cardiac Intervention 7

**Short Name:** POCInt7

**Definition:** Indicate the seventh other cardiac intervention that was performed.

**Intent/Clarification:**

**If a seventh procedure was done, please select from the list above** or select “No Additional Interventions,” software will grey out any additional selections.

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### **Preoperative Cardiac Status**

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**SEQ. #: 885**

**Long Name:** Prior MI

**Short Name:** PrevMI

**Definition:** Indicate if the patient has had at least one documented previous myocardial infarction at any time prior to this surgery. (Refer to training manual for MI definition.)

**Intent/Clarification:**

Indicate if the patient has a history of MI. A myocardial infarction is evidenced by **any of the following** in addition to a rise and fall of cardiac biomarkers (preferably troponin) with at least one of the values in the abnormal range for that laboratory [typically above the 99th percentile of the upper reference limit (URL) for normal subjects] **together with at least one of the following** manifestations of myocardial ischemia:

- 1) Ischemic symptoms;
  - a) ECG changes indicative of new ischemia (new ST-T changes, new LBBB, or loss of R- wave voltage)
  - b) Development of pathological Q waves in  $\geq 2$  contiguous leads on ECG (or

- equivalent findings for posterior MI)
  - c) Imaging evidence of new loss of viable myocardium or new regional wall motion abnormality
  - d) Documentation in the medical record of the diagnosis of acute myocardial infarction based on the cardiac biomarker pattern in the absence of any items enumerated in and due to conditions that may mask their appearance (e.g., peri-operative infarct when the patient cannot report ischemic symptoms; baseline left bundle branch block or ventricular pacing)
- 2) ECG changes associated with prior myocardial infarction can include the following (with or without prior symptoms):
    - a) Any Q wave in leads V2-V3  $\geq 0.02$  seconds or QS complex in leads V2 and V3.
    - b) Q wave  $\geq 0.03$  seconds and  $\geq 0.1$  mV deep or QS complex in leads I, II, aVL, aVF, or V4-V6 in any two leads of a contiguous lead grouping (I, aVL, V6; V4-V6; II, III, and aVF).
    - c) R-wave  $\geq 0.04$  seconds in V1-V2 and R/S  $\geq 1$  with a concordant positive T-wave in the absence of a conduction defect.
  - 3) Imaging evidence of a region with new loss of viable myocardium at rest in the absence of a non-ischemic cause. This can be manifest as:
    - a) Echocardiographic, CT, MR, ventriculographic or nuclear imaging evidence of left ventricular thinning or scarring and failure to contract appropriately (i.e., hypokinesis, akinesis, or dyskinesis)
    - b) Fixed (non-reversible) perfusion defects on nuclear radioisotope imaging (e.g., MIBI, thallium)
  - 4) Medical records documentation of prior myocardial infarction.

Do not use phrases such as “cannot rule out”, “suggestive”, “probable”, “cannot exclude”, etc. to code MI.

**FAQ February 2018:** I know AMI and other registries are differentiating between real NSTEMIs and Type 2 Demand NSTEMIs, not calling the second one an MI. How do you want us to capture these Demand Type 2 NSTEMIs that only have troponin slightly increased with no EKG changes? They are generally related to CHF or endocarditis. Do they count as an MI or not?

Answer: Physician documentation should indicate MI; do not code slight troponin increases and no EKG changes alone as MI without confirmation in the medical record by a physician or physician extender.

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**SEQ. #: 890**

**Long Name:** MI-When

**Short Name:** MIWhen

**Definition:** Indicate the time period between the last documented myocardial infarction and surgery.

**Intent/Clarification:**

Time of surgery is documented as the hour the patient entered the operating room. Select the time-interval category based on information available on when the MI occurred. MI occurrence is the time of diagnosis and/or when confirmation of the last MI is documented prior to surgery. If the EKG indicates a prior MI of undetermined age Code

as >21 days if the patient has no recently reported or documented symptoms. More recent infarctions would likely be described as “evolving” on the EKG.

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**SEQ. #:** 895

**Long Name:** Cardiac Presentation/Symptoms - At Time Of This Admission

**Short Name:** CardSympTimeOfAdm

**Definition:** Indicate the patient's cardiac symptoms at the time of this admission.

**Intent/Clarification:**

Indicate the patient's cardiac presentation / symptoms. Choose the worst status.

Time Frame: The highest value at the time of admission. If this is a subsequent episode of care, within 7 days, do not code the CAD Presentation from the previous episode of care.

If the patient presents with atypical symptoms of myocardial ischemia (i.e. only shortness of breath, upper abdominal pain, left arm pain, etc.) that is known and documented to be myocardial ischemia, and is considered to be an angina equivalent, code the selection that fits their presentation. If these symptoms are not thought to be, or have not been proven to be the anginal equivalent, code “No Symptoms”.

- **No symptoms** – No angina, no acute STEMI, non-STEMI, no anginal equivalent, and no other atypical chest pain.
- **Stable angina** without a change in frequency or pattern for the 6 weeks prior. Angina is controlled by rest and/or oral or transcutaneous medications.
- **Unstable angina:** There are three principal presentations of unstable angina.
  - Rest angina (occurring at rest and prolonged, usually >20 minutes)
  - New-onset angina (within the past 2 months, of at least Canadian Cardiovascular Society Class III severity)
  - Increasing angina (previously diagnosed angina that has become distinctly more frequent, longer in duration, or increased by 1 or more Canadian Cardiovascular Society class to at least CCS III severity)
- **Non-STEMI** The patient was hospitalized for a non-ST elevation myocardial infarction (STEMI) as documented in the medical record. Non-STEMIs are characterized by the presence of **both** criteria:
  - Cardiac biomarkers (creatinine kinase-myocardial band, Troponin T or I) exceed upper limit of normal according to the individual hospitals. Laboratory confirmation of myocardial necrosis; laboratory parameters with a clinical presentation consistent or suggestive of ischemia. ECG changes and/or ischemic symptoms may or may not be present.
  - Absence of ECG changes diagnostic of a STEMI (see STEMI).
- **ST-Elevation MI (STEMI)** or equivalent. The patient presented with a ST elevation myocardial infarction (STEMI) or its equivalent as documented in the medical record. STEMI is characterized by the presence of both criteria:
  - ECG evidence of STEMI: New/presumed new ST-segment elevation or new left bundle branch block not documented to be resolved within 20 minutes. ST-segment elevation is defined by new or presumed new sustained ST-segment elevation at the J-point in two contiguous ECG leads with the cut-off points:  $\geq 0.2$  mV in men or  $\geq 0.15$  mV in women in leads V2- V3 and/or  $\geq 0.1$  mV in other leads and lasting greater than or



equal to 20 minutes. If no exact ST-elevation measurement is recorded in the medical chart, physician's written documentation of ST-elevation or Q waves is acceptable. If only one ECG is performed, then the assumption that the ST elevation persisted at least the required 20 minutes is acceptable. Left bundle branch block (LBBB) refers to new or presumed new LBBB on the initial ECG. Cardiac biomarkers (creatinine kinase-myocardial band, Troponin T or I) exceed the upper limit of normal according to the individual hospital's laboratory parameters and a clinical presentation which is consistent or suggestive of ischemia. Note: For purposes of the Registry, ST elevation in the posterior chest leads (V7 through V9), or ST depression that is maximal in V1-3, without ST-segment elevation in other leads, demonstrating posterobasal myocardial infarction, is considered a STEMI equivalent.

- **Anginal Equivalent** - An anginal equivalent is a symptom such as shortness of breath (dyspnea), diaphoresis, extreme fatigue, or belching, occurring in a patient at high cardiac risk. Anginal equivalents are considered to be symptoms of myocardial ischemia. Anginal equivalents are considered to have the same importance as angina pectoris in patients presenting with elevation of cardiac enzymes or certain EKG changes which are diagnostic of myocardial ischemia. For the patient with diabetes who presents with "silent angina", code anginal equivalent.
- **Other** – Aortic dissections, sudden death, heart block, arrhythmia, syncope, heart failure or **other symptoms associated with non-coronary artery disease conditions such as Aortic or Mitral stenosis / insufficiency without CAD**

**FAQ Sept 2019** - I have physician documentation that the patient is NYHA 3, and CCS 3. Can I equate CCS 3 as angina, since CCS is a grading system for angina? The physician does not explicitly state the word 'angina'. I see in the Training Manual there is a recent FAQ for HF seq. 915 that states I cannot code HF based on documentation of an NYHA class, so I am wondering if I can code an angina from CCS documentation.

Answer - You can code YES to Seq 895 in this scenario. CCS Class is specific to patients having angina. The NYHA Class is often used to document functional class and may or may not be associated with a diagnosis of heart failure. You will have to clarify with the physician as to the type of angina if you can not determine the type based on the documentation in the medical record.

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**SEQ. #: 900**

**Long Name:** Cardiac Symptoms - At Time Of Surgery

**Short Name:** CardSympTimeOfSurg

**Definition:** Indicate the patient's cardiac symptoms at the time of this procedure.

**Intent/Clarification:**

The intent is to capture changes between admission and surgery; whether a patient improves or deteriorates. The definition is the same as Seq. #895, although timeframes may overlap.

- For elective admissions, patient symptoms, same value/answer, will be entered twice for seq. #895 and 900.

- If the patient did not improve or deteriorate between admission and surgery, the code will be the same.
- If the patient presents with STEMI or Non-STEMI, they should be coded as such in both sequence numbers 895 and 900.
- If the patient remains longer than 7 days and in that case presentation at the time of admission would be STEMI or Non-STEMI and at the time of surgery would be coded as unstable angina.
- Unstable angina at the time of admission would be coded unstable angina at the time of surgery.

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**SEQ. #: 911**

**Long Name:** Heart Failure

**Short Name:** HeartFail

**Definition:** Indicate whether there is physician documentation or report that the patient has been in a state of heart failure.

**Intent/Clarification:**

Heart failure is described as unusual dyspnea on light exertion, recurrent dyspnea occurring in the supine position, fluid retention; or the description of rales, jugular venous distension, pulmonary edema on physical exam, or pulmonary edema on chest x-ray presumed to be cardiac dysfunction. A low ejection fraction alone, without clinical evidence of heart failure does not qualify as heart failure. An elevated BNP without other supporting documentation should not be coded as CHF.

**Update Dec 2019 - Time frame – capture any occurrence between birth and entry to OR for index procedure.**

Heart failure is a complex clinical syndrome that results from any structural or functional impairment of ventricular filling or ejection of blood. The cardinal manifestations of HF are dyspnea and fatigue, which may limit exercise tolerance, and fluid retention, which may lead to pulmonary and/or splanchnic congestion and/or peripheral edema. Some patients have exercise intolerance but little evidence of fluid retention, whereas others complain primarily of edema, dyspnea, or fatigue. Because some patients present without signs or symptoms of volume overload, the term “heart failure” is preferred over “congestive heart failure.” There is no single diagnostic test for HF because it is largely a clinical diagnosis based on a careful history and physical examination.

**FAQ July 2019** - How should heart failure be coded when there is not supportive documentation of the patient being in heart failure or history of heart failure, but the OP note states NYHA Class I. Should these cases be coded yes for heart failure and enter NYHA Class I or code NO for heart failure?

Answer - NYHA Class documentation alone can't be used for diagnosis for heart failure, you must have physician documentation that states heart failure. There needs to be documentation in the chart that the patient has been in or was in a state of heart failure.

**FAQ August 2019** – Can I code heart failure for a patient with a documented diagnosis of cardiomyopathy without a diagnosis of heart failure documented in the medical record?

Answer - Do not code heart failure for this patient. A diagnosis of heart failure must be documented in the medical record to code heart failure. Cardiomyopathy may or may not be associated with a heart failure diagnosis.

**FAQ Sept 2019** -Is heart failure Seq 911 specific to left heart failure or do we capture right and left heart failure?

Answer – Capture either right or left heart failure in Seq 911.

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**SEQ. #: 912**

**Long Name:** Heart Failure Timing

**Short Name:** HeartFailTmg

**Definition:** Indicate whether heart failure is acute, chronic or both (acute on chronic)

**Intent/Clarification:**

- Acute heart failure is the rapid onset of symptoms and signs of heart failure and may occur with or without previous cardiac disease occurring within 2 weeks of surgery. Acute decompensated heart failure is a sudden worsening of the signs and symptoms of heart failure, which typically includes difficulty breathing (dyspnea), leg or feet swelling, and fatigue.
  - Chronic heart failure develops gradually over time with symptoms of shortness of breath, lower extremity swelling and fatigue without an acute exacerbation within the 2 weeks prior to admission.
  - Both involves patients with chronic heart failure who presents with acute symptoms presents with a worsening of symptoms within 2 weeks of surgery.
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**SEQ. #: 913**

**Long Name:** Heart Failure Type

**Short Name:** HeartFailType

**Definition:** Indicate the type of heart failure.

**Intent/Clarification:**

- Systolic: The left ventricle lacks the force to push enough blood into the circulation.
- Diastolic: The left ventricle is stiff and fails to relax sufficiently to allow adequate filling.
- Both: Components of both systolic and diastolic failure exist.
- Unavailable: The type of heart failure is not documented in the medical record.

**FAQ July 2019** – Does there need to be specific physician documentation of the type of heart failure in the chart or can the Data Manager determine if it is systolic or diastolic based on their patient's EF?

Answer – There must be physician documentation in the medical record indicating if the heart failure is systolic, diastolic, or combined dysfunction.

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**SEQ. #: 915**

**Long Name:** Classification-NYHA

**Short Name:** ClassNYH

**Definition:** Indicate the patient's worst dyspnea or functional class, coded as the New York Heart Association (NYHA) classification within the past 2 weeks. This is to be used for heart failure only, is not intended to classify angina.

**Intent/Clarification:**

**NYHA is for congestive heart failure (CHF).**

Select the **highest level** of heart failure within the two weeks leading up to episode of hospitalization or at the time of the procedure. The intent is to capture the highest level of failure. Physician documentation should be in the medical record.

- **Class I:** Patient has cardiac disease but without resulting limitations of ordinary physical activity. Ordinary physical activity (e.g., walking several blocks or climbing stairs) does not cause undue fatigue, palpitation, dyspnea, or anginal pain. Limiting symptoms may occur with marked exertion.
- **Class II:** Patient has cardiac disease resulting in slight limitation of ordinary physical activity. Patient is comfortable at rest. Ordinary physical activity such as walking more than two blocks or climbing more than one flight of stairs results in limiting symptoms (e.g., fatigue, palpitation, dyspnea, or anginal pain).
- **Class III:** Patient has cardiac disease resulting in marked limitation of physical activity. Patient is comfortable at rest. Less than ordinary physical activity (e.g., walking one to two level blocks or climbing one flight of stairs) causes fatigue, palpitation, dyspnea, or anginal pain.
- **Class IV:** Patient has dyspnea at rest that increases with any physical activity. Patient has cardiac disease resulting in inability to perform any physical activity without discomfort. Symptoms may be present even at rest. If any physical activity is undertaken, discomfort is increased. The physician documents new onset CHF with an EF of 25% and SOB. There is no indication of what level of activity causes the SOB.

**FAQ July 2019** - Does the physician specifically have to document NYHA class or can the Data Manager select the class that matches the definitions listed above?

Answer - There must be physician documentation in the medical record indicating the NYHA class.

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**SEQ. #: 930**

**Long Name:** Cardiogenic Shock

**Short Name:** CarShock

**Definition:** Indicate if the patient developed cardiogenic shock. Cardiogenic shock is defined as a sustained (>30 min) episode of hypoperfusion evidenced by systolic blood pressure <90 mm Hg and/or, if available, cardiac index <2.2 L/min per square meter determined to be secondary to cardiac dysfunction and/or the requirement for parenteral inotropic or vasopressor agents or mechanical support (e.g., IABP, extracorporeal circulation, VADs) to maintain blood pressure and cardiac index above those specified levels.

Note: Transient episodes of hypotension reversed with IV fluid or atropine do not constitute cardiogenic shock. The hemodynamic compromise (with or without extraordinary supportive therapy) must persist for at least 30 min.

ACCF/AHA 2013

**Intent/Clarification:**

- At the time of the procedure. **Update Sept 2019 - Do not code cardiogenic shock after induction.**
- This includes patients with cardiogenic shock who have been stabilized on IABP/inotropes at the time of surgery.
- Do not code yes to cardiogenic shock for patients with a low cardiac index who are asymptomatic and do not require mechanical or inotropic support.
- Hemodynamic issues that could be contributed to anesthesia induction problems should not count in the preoperative status of the patient.
- Elective procedures should not be coded as cardiogenic shock.
- Do not code yes to cardiogenic shock just because the patient has a LVAD; the patient must meet the blood pressure and/or cardiac index parameters of the definition of cardiogenic shock.

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**SEQ. #:** 935

**Long Name:** Resuscitation

**Short Name:** Resusc

**Definition:** Indicate whether the patient required cardiopulmonary resuscitation before the start of the operative procedure which includes the institution of anesthetic management. Capture resuscitation timeframe: within 1 hour or 1-24 hours pre-op.

**Intent/Clarification:**

Indicate whether the patient required cardiopulmonary resuscitation within 24 hours of the start of the operative procedure. The start of the procedure begins with the induction of anesthesia. Capture resuscitation timeframe: within 1 hour of surgery or 1-24 hours pre-operatively.

The additional time options were added to harmonize with NCDR, looking at 24 hours pre-procedure yet still mapping to previous STS versions and risk models.

- Resuscitation may include **complete** circulatory support such as ECMO/other mechanical assist devices (ex. Impella, LVAD) initiated emergently prior to

surgery. Intra-aortic balloon counterpulsation (IABP) by itself does not qualify as complete circulatory support.

- Do not code yes for resuscitation started after induction of anesthesia. The goal is to identify patients who require CPR and/or mechanical circulatory support to maintain life in the 24-hour period preceding surgery.

ECMO: ECMO is to be captured as a status of 'Salvage' in sequence 1975 and as 'Resuscitation – Yes' in sequence 935. ECMO is a supportive modality and not a procedural type. The risk of the patient on ECMO is accounted for when 'Status = salvage' and should be left in the intended procedural category.

**FAQ May 2019:** The patient was in surgery having Right carotid endarterectomy done (and please note the plan was to have the AVR done tomorrow) when during this procedure the patient became bradycardic and required chest compressions and multiple doses of epi. They were able to get the patient back after 10 minutes of chest compressions. However, the pt. had a second bradycardic cardiac arrest and the surgeon decided on a salvage aortic valve replacement! So is the Endarterectomy now part of the AVR surgery (How do I mark this on the STS tool?)

Answer: If this was done in the same room then code the the AVR as Salvage and the endarterectomy. You can also code resuscitation.

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**SEQ. #: 945**

**Long Name:** Cardiac Arrhythmia

**Short Name:** Arrhythmia

**Definition:** Indicate whether the patient has a history of a cardiac rhythm disturbance before the start of the operative procedure which includes the institution of anesthetic management.

**Intent/Clarification:**

- Yes - **Update Dec 2019 – the intent is to capture the below arrhythmias – permanently paced rhythm, Ventricular Tachycardia/ Ventricular Fibrillation, Sick Sinus Syndrome, Atrial Flutter, Atrial Fibrillation, Second Degree Heart Block, Third Degree Heart Block**
- No

**FAQ March 2018:** I have a patient who has Wolff-Parkinson-White Syndrome. She had an ablation and cardioversion because of this arrhythmia. I am not sure where to capture this for sequence #945. Would I say yes to #945 and code it as Sick Sinus Syndrome? Or does this arrhythmia not get captured?

Answer: Do not code Wolff-Parkinson-White syndrome as an arrhythmia.

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**SEQ. #: 947**

**Long Name:** Cardiac Arrhythmia - Permanently Paced Rhythm

**Short Name:** ArrhythPPaced

**Definition:** Indicate whether the patient has a permanently paced rhythm, evidenced by pacemaker activity during heart rhythm evaluation.

**Intent/Clarification:**

- Yes
  - No
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**SEQ. #: 950**

**Long Name:** Cardiac Arrhythmia - VTach / VFib

**Short Name:** ArrhythVV

**Definition:** Indicate whether arrhythmia was VTach or VFib.

**Intent/Clarification:**

V-tach rhythm must be sustained/persistent or paroxysmal and require some type of intervention (pharmacological and/or electrical) to interrupt and cease the arrhythmia. Do not include short runs of VT.

- None
  - Remote - more than 30 days prior to procedure
  - Recent - within 30 days of this procedure
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**SEQ. #: 955**

**Long Name:** Cardiac Arrhythmia - Sick Sinus Syndrome

**Short Name:** ArrhythSSS

**Definition:** Indicate whether arrhythmia was sick sinus syndrome.

**Intent/Clarification:**

Sick sinus syndrome is a collection of heart rhythm disorders caused by dysfunction in the SA node, the heart's main pacemaker. SSS may present as: Sinus bradycardia -- slow heart rates from the natural pacemaker of the heart. Tachycardias - fast heart rates  
Bradycardia-tachycardia -- alternating slow and fast heart rhythms

- None
  - Remote - more than 30 days prior to procedure
  - Recent - within 30 days of this procedure
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**SEQ. #: 960**

**Long Name:** Cardiac Arrhythmia - AFlutter

**Short Name:** ArrhythAFlutter

**Definition:** Indicate whether arrhythmia was atrial flutter.

**Intent/Clarification:**

Atrial flutter (AFL) is an abnormal heart rhythm that occurs in the atria of the heart. When it first occurs, it is usually associated with a fast heart rate or tachycardia (beats over 100 per minute) which falls into the category of supra-ventricular tachycardias. While this rhythm occurs most often in individuals with cardiovascular disease (e.g. hypertension, coronary artery disease, and cardiomyopathy) and diabetes, it may occur spontaneously in people with otherwise normal hearts. It is typically not a stable rhythm, and frequently degenerates into atrial fibrillation (AF). However, it does rarely persist for months to years. If rhythm is described as fib/flutter, code fibrillation.

- None
  - Remote - more than 30 days prior to procedure
  - Recent - within 30 days of this procedure
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**SEQ. #: 961**

**Long Name:** Cardiac Arrhythmia - Atrial Fibrillation

**Short Name:** ArrhythAtrFib

**Definition:** Indicate whether arrhythmia was atrial fibrillation.

**Intent/Clarification:**

- None
  - Remote - more than 30 days prior to procedure
  - Recent - within 30 days of this procedure
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**SEQ. #: 962**

**Long Name:** Cardiac Arrhythmia - Atrial Fibrillation - Type

**Short Name:** ArrhythAFib

**Definition:** Indicate whether arrhythmia was atrial fibrillation and if so, which type.

**Intent/Clarification:**

If the diagnosis of atrial fibrillation is present code the type:

- Paroxysmal: Recurrent AF (> 2 episodes). Terminates spontaneously within 7 days.
- Persistent: Sustained episode > 7 days, or lasting < 7 days, but necessitating pharmacologic or electrical cardioversion.
- Long-Standing Persistent: Continuous episode of > 1-year duration.
- Permanent: Continuous episode of > 1-year duration.

**FAQ August 2017:** The definition of longstanding persistent and permanent are the same, can you clarify the difference?



Answer: Longstanding persistent atrial fibrillation lasts longer than 1 year but still responds to treatment ie. cardioversion or ablation therapy.  
Permanent atrial fibrillation lasts longer than 1 year but no longer responds to any form of treatment. These patients are treated for rate control and prevention of stroke only.

**FAQ July 2019** - Patient had one episode of rapid Afib in Sept 2018 was treated with Amiodarone and has been on Amiodarone since with no recurrence. Do I code as persistent or paroxysmal afib?

Answer - If the AF required medication or procedure to convert in Sept 2018 code it as persistent. If it converted spontaneously in Sept 2018 and then the patient was placed on medication for prevention reoccurrence then this would be coded as paroxysmal.

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**SEQ. #: 965**

**Long Name:** Cardiac Arrhythmia - Second Degree Heart Block

**Short Name:** ArrhythSecond

**Definition:** Indicate whether arrhythmia was second degree heart block.

**Intent/Clarification:**

In second degree heart block, some signals from the atria don't reach the ventricles. This causes "dropped beats." On an ECG, the P wave isn't followed by the QRS wave, because the ventricles weren't activated. There are two types: Type I second-degree heart block, or Mobitz Type I, or Wenckebach's AV block. Electrical impulses are delayed more and more with each heartbeat until a beat is skipped. This condition is not too serious but sometimes causes dizziness and/or other symptoms. Type II second-degree heart block, or Mobitz Type II. This is less common than Type I but generally more serious. Because electrical impulses can't reach the ventricles, an abnormally slow heartbeat may result. In some cases a pacemaker is needed.

- None
- Remote -more than 30 days prior to procedure
- Recent -within 30 days of this procedure

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**SEQ. #: 970**

**Long Name:** Cardiac Arrhythmia - Third Degree Heart Block

**Short Name:** ArrhythThird

**Definition:** Indicate whether arrhythmia was third degree heart block.

**Intent/Clarification:**

Heart block is applicable only if the patient has or did have 3rd degree heart block (complete heart block). Complete heart block, also referred to as third-degree heart block, or third-degree atrioventricular (AV) block, is a disorder of the cardiac conduction system where there is no conduction through the AV node. Therefore, complete dissociation of the atrial and ventricular activity exists.

- None
- Remote- more than 30 days prior to procedure

- Recent - within 30 days of this procedure

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### Preoperative Medications

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**Update October 2019 - Contraindications for pre-op medication requires documentation of a contraindication for the class of medications when applicable such as statin, beta blockers, ADP inhibitors etc. not just one medication in the medication class. For example, a documented contraindication for Toprol at pre-op would need to be documented as a contraindication for Beta Blockers, instead of one drug in the medication class.**

FAQ June 2018: Is Pletal captured in the adult cardiac surgery database.

Answer: No, Pletal is not captured.

**SEQ. #:** 1020

**Long Name:** Meds-ACE Inhibitors or ARB Within 48 Hours

**Short Name:** MedACEI48

**Definition:** Indicate whether the patient received ACE Inhibitors or ARB within 48 hours preceding surgery (e.g., if indicated for LV dysfunction or acute MI).

**Intent/Clarification:**

ACE and ARBs are used in the treatment of hypertension, congestive heart failure (reduces the workload of the heart). The drug action is to inhibit the release of the hormone angiotensin II that constricts blood vessels, causing an increase in blood pressure. Therefore, blood vessels dilate to increase systemic blood flow to the heart. Some ACE inhibitors have additional diuretic components to increase the elimination of excess fluid.

Studies have shown that preoperative use of ACEI/ARB is associated with a 27.6% higher risk for Acute Kidney Injury (AKI) postoperatively. Stopping ACEI or ARB before cardiac surgery may reduce the incidence of AKI. This includes renin inhibitors.

- **Yes** - Capture those who are prescribed to take medications on a regular schedule and are presumed to be at a therapeutic level, 48 hours preceding surgery, (entry into the OR)
- **No** - did not receive an ACE inhibitor or ARB within 48 hours preceding surgery
- **Contraindicated** - Documented evidence of contraindication: If a contraindication is documented explicitly as excluded for medical reasons, or is evidenced clearly within the medical record (notation of a medication allergy prior to arrival) by physician, Nurse Practitioner, Anesthesia, Physician Assistant, or Pharmacist
- **Unknown** - conflicting information in the medical record and/or with the patient/family or no information available

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**SEQ. #:** 1025

**Long Name:** Meds- Amiodarone Prior To Surgery

**Short Name:** MedAmiodarone

**Definition:** Indicate whether and when the patient received Amiodarone therapy prior to surgery. Dronedarone (Multaq) may be coded as Amiodarone.

**Intent/Clarification:**

Intended to capture **ongoing** medication administration prior to surgery.

Amiodarone may play a role in reducing the risk of post-operative arrhythmias, notably A-Fib.

- **Yes: on home therapy**
- **Yes: therapy started this admission**, can include patients where a preoperative protocol was initiated; this allows differentiation from those patients on long term home therapy.
- **No:** a single dose prior to surgery such as in ED does not count as "Yes," , only capture those who are prescribed to take medications on a regular schedule and are presumed to be at a therapeutic level, preceding surgery (entry into the OR)
- **Unknown:** conflicting information in the medical record and/or with the patient/family or no information available

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**SEQ. #:** 1030

**Long Name:** Meds-Beta Blockers Within 24 Hours

**Short Name:** MedBeta

**Definition:** Indicate whether or not the patient received beta blockers within 24 hours preceding surgery, or if beta blocker was contraindicated. The contraindication must be documented in the medical record by a physician, nurse practitioner, or physician assistant. A "hold order" is not considered a contraindication.

**Intent/Clarification:**

NQF Endorsed Measure - Part of the medication bundle in the STS Composite Quality Rating (Star Rating).

Beta blockers have been proven to increase survival in cardiac patients. For the treatment of:

1. High blood pressure
2. Treating chest pain or angina
3. Controlling irregular heart rhythms, prevention of post op Afib
4. Slowing ventricular rate response
5. Treating congestive heart failure

**Yes-** include those who received within 24 hours prior to **or at the same time as (Update Dec 2019) incision in the OR**. This can include onetime doses given prior to **or at the same time as (Update Dec 2019) incision in OR**

**No** – Patient did not receive prior to **incision in the OR**

**Contraindicated** - documented evidence of contraindication: If a contraindication is

documented explicitly as excluded for medical reasons, or is evidenced clearly within the medical record (examples might include allergy, bradycardia, hypotension, heart block, COPD, Other), check “Contraindication.” by physician, Nurse Practitioner, Anesthesia, Physician Assistant, or Pharmacist. Documents created by hospitals used to track Core Measure Information may be used but would still have to be countersigned by physician, Nurse Practitioner, Anesthesia, Physician Assistant.

**FAQ September 2018/January 2019:** Is it a contraindication if the patient has a hold order for BB if HR<55 and the nurse holds the medication.

Answer: You can code contraindicated for the medication not given by the health care professional as a result of the order parameters not being met.

For example: If the patient’s heart rate of 55 was within the order parameters then you could not code this as a contraindication. But if the orders specified not to give the medication for a HR of less than 60 then you could code this as a contraindication. This must be addressed on the MAR as the reason for not administering the medication.

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**SEQ. #: 1035**

**Long Name:** Meds-Beta Blocker Therapy For More Than 2 Weeks Prior To Surgery

**Short Name:** MedBetaTher

**Definition:** Indicate whether the patient received beta blocker therapy for at least 2 weeks prior to surgery.

**Intent/Clarification:**

Studies have shown that the abrupt discontinuation of Beta-Blockers during the perioperative period in patients who were on chronic Beta-Blocker therapy prior to surgery can lead to increased mortality during the intraoperative and postoperative periods. The American College of Cardiology/American Heart Association has given the continuation of Beta-Blocker therapy throughout the perioperative period a Class I recommendation.

- **Yes** - Capture those who are prescribed to take a Beta-Blocker on a regular schedule (daily) and are presumed to be at a therapeutic level, for at least 2 weeks preceding surgery (entry into the OR). Do Not Include a one-time dose.
- **No** – Beta-Blocker was prescribed but patient is not taking a daily dose or not prescribed Beta-Blocker, within the two weeks preceding surgery
- **Contraindicated**- Documented evidence of contraindication: If a contraindication is documented explicitly as excluded for medical reasons, or is evidenced clearly within the medical record, notation of a medication allergy prior to arrival, by Physician, Nurse Practitioner, Anesthesia, Physician Assistant, or Pharmacist. A “hold order” is not an acceptable contraindication.
- **Unknown** – conflicting information in the medical record and/or with the patient/family or no information is available

**Update Sept 2019- Anti-anginal medications: beta blockers, calcium channel blockers, long acting nitrates and “other antianginal medication” are to be captured if the patient is on them at home > 2 weeks prior to admission,**

even if they are stopped prior to surgery. Capturing these home meds demonstrates that the physicians caring for these patients were appropriately attempting to manage the patient's CAD.

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**SEQ. #:** 1040

**Long Name:** Meds-Calcium Channel Blocker Therapy For More Than 2 Weeks Prior To Surgery

**Short Name:** MedCChanTher

**Definition:** Indicate whether the patient received calcium channel blocker therapy for at least 2 weeks prior to surgery.

**Intent/Clarification:**

Calcium channel blockers (CCB), calcium channel antagonists or calcium antagonists are a number of medications that disrupts the movement of calcium (Ca<sup>2+</sup>) through calcium channels. Calcium channel blockers are used as antihypertensive drugs, i.e. as medications to decrease blood pressure in patients with hypertension. CCBs are particularly effective against large vessel stiffness, one of the common causes of elevated systolic blood pressure in elderly patients. Calcium channel blockers are also frequently used to alter heart rate, to prevent cerebral vasospasm, and to reduce chest pain caused by angina pectoris

- **Yes** - Capture those who are prescribed to calcium channel blockers on a regular schedule and are presumed to be at a therapeutic level, for at least 2 weeks preceding surgery (entry into the OR)
- **No** – Patient did not receive a Calcium Channel Blocker for at least 2 weeks preceding surgery
- **Contraindicated** - Documented evidence of contraindication: If a contraindication is documented explicitly as excluded for medical reasons, or is evidenced clearly within the medical record (notation of a medication allergy prior to arrival) by a Physician, Nurse Practitioner, Anesthesia, Physician Assistant, or Pharmacist
- **Unknown** – conflicting information in the medical record and/or with the patient/family or no information is available
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**Update Sept 2019- Anti-anginal medications: beta blockers, calcium channel blockers, long acting nitrates and “other antianginal medication” are to be captured if the patient is on them at home > 2 weeks prior to admission, even if they are stopped prior to surgery. Capturing these home meds demonstrates that the physicians caring for these patients were appropriately attempting to manage the patient's CAD.**

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**SEQ. #:** 1045

**Long Name:** Meds-Long-Acting Nitrate Therapy For More Than 2 Weeks Prior To Surgery

**Short Name:** MedLongActNit

**Definition:** Indicate whether the patient received long-acting nitrate therapy for at least 2 weeks prior to surgery.

**Intent/Clarification:**

- **Yes** - Capture those prescribed to take medications on a regular schedule and are presumed to be at a therapeutic level, for at least 2 weeks preceding surgery (entry into the OR). Nitropaste or Nitropatch are long-acting nitrates. Do Not include a one-time dose
- **No** – Patient did not receive a Long-Acting Nitrate for at least 2 weeks preceding surgery
- **Contraindicated** - Documented evidence of contraindication: If a contraindication is documented explicitly as excluded for medical reasons, or is evidenced clearly within the medical record (notation of a medication allergy prior to arrival) by a Physician, Nurse Practitioner, Anesthesia, Physician Assistant, or Pharmacist -BH
- **Unknown** – conflicting information in the medical record and/or with the patient/family or no information is available

**Update Sept 2019- Anti-anginal medications: beta blockers, calcium channel blockers, long acting nitrates and “other antianginal medication” are to be captured if the patient is on them at home > 2 weeks prior to admission, even if they are stopped prior to surgery. Capturing these home meds demonstrates that the physicians caring for these patients were appropriately attempting to manage the patient’s CAD.**

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**SEQ. #: 1050**

**Long Name:** Meds-Nitrates-I.V. Within 24 Hours

**Short Name:** MedNitIV

**Definition:** Indicate whether the patient received IV Nitrates within 24 hours preceding surgery.

**Intent/Clarification:**

Nitrates act by increasing dilatation of the coronary arteries, thereby increasing blood flow to the myocardium and decreasing myocardial ischemic changes. Trade name is Nitroglycerin.

- **Yes** - Capture those who are prescribed to take IV Nitrates and are presumed to be at a therapeutic level, 24 hours preceding surgery (entry into the OR)
- **No** – Patient did not receive IV Nitrates within 24 hours preceding surgery

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**SEQ. #: 1055**

**Long Name:** Meds-Other Antianginal Medication Therapy For More Than 2 Weeks Prior To Surgery

**Short Name:** MedOthAntiang

**Definition:** Indicate whether the patient received any other antianginal medication therapy for at least 2 weeks prior to surgery.

**Intent/Clarification:**

- **Yes** - Capture those who are prescribed to take any other antianginal medication on a regular schedule and are presumed to be at a therapeutic level, for at least 2 weeks preceding surgery (entry into the OR) - Do Not Include a one-time dose
- **No** – Patient did not receive any other antianginal medication therapy for at least 2 weeks preceding surgery. Do not capture if patient was given a sublingual, IV, or short acting formula of one of these medications.
- **Contraindicated** - Documented evidence of contraindication: If a contraindication is documented explicitly as excluded for medical reasons, or is evidenced clearly within the medical record (notation of a medication allergy prior to arrival) by a Physician, Nurse Practitioner, Anesthesia, Physician Assistant, or Pharmacist -BH
- **Unknown** – conflicting information in the medical record and/or with the patient/family

**Update Sept 2019- Anti-anginal medications: beta blockers, calcium channel blockers, long acting nitrates and “other antianginal medication” are to be captured if the patient is on them at home > 2 weeks prior to admission, even if they are stopped prior to surgery. Capturing these home meds demonstrates that the physicians caring for these patients were appropriately attempting to manage the patient’s CAD.**

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**SEQ. #: 1060**

**Long Name:** Meds-ADP Inhibitors Within Five Days

**Short Name:** MedADP5Days

**Definition:** Indicate whether the patient has received ADP Inhibitors within 5 days preceding surgery.

**Intent/Clarification:**

ADP stands for Adenosine Diphosphate. The anticoagulant properties of these medications may increase the risk of bleeding by inhibiting platelet aggregation (clotting). This category includes P2Y12 inhibitors. They are often used to treat patients with a history of atherosclerotic cardiovascular disease and potentially reduce the incidence of major cardiovascular events (stroke, peripheral arterial disease events). Peak drug levels are reached within 3-7 days of initiated maintenance dosing, while termination of drug effects are not seen for 5 days after last dose.

- **Yes** - Capture those who are prescribed to ADP inhibitors on a regular schedule and are presumed to be at a therapeutic level within 5 day preceding surgery (entry into the OR) **and** those who received a one-time dose of Plavix, preceding surgery
- **No** - did not receive an ADP inhibitor within 5 days preceding surgery
- **Contraindicated** - Documented evidence of contraindication: If a contraindication is documented explicitly as excluded for medical reasons, or is evidenced clearly within the medical record (notation of a medication allergy prior to arrival) by a

- Physician, Nurse Practitioner, Anesthesia, Physician Assistant, or Pharmacist
- **Unknown** – conflicting information in the medical record and/or with the patient/family or no information available

**FAQ October 2017:** ADP is coded 'Yes' for patients who receive a single dose of Plavix, is that true for Brillinta and Effient?

Answer: Code 'Yes' for one-time doses of Brillinta and Effient.

**FAQ February 2018:** A patient is brought to the ED on Saturday evening diagnosed with NSTEMI. He is on chronic Plavix due to prior stent placements. On Monday he is transitioned to Cangrelor and is taken to surgery on Wednesday. How is the medication captured?

Answer: Do not code the Cangrelor.

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**SEQ. #: 1065**

**Long Name:** Meds-ADP Inhibitors Discontinuation

**Short Name:** MedADPIDis

**Definition:** Indicate the number of days prior to surgery ADP Inhibitor use was discontinued. If less than 24 hours, enter "0".

**Intent/Clarification:**

Peak drug levels are reached within 3-7 days of initiated maintenance dosing, while termination of drug affects are not seen for 5 days after last dose, which may increase risk of bleeding.

**FAQ February 2018:** A patient is brought to the ED on Saturday evening diagnosed with NSTEMI. He is on chronic Plavix due to prior stent placements. On Monday he is transitioned to Cangrelor and is taken to surgery on Wednesday. How is the medication captured?

Answer: Do not code the Cangrelor due to the short half-life; code the days prior to the discontinuation of Plavix.

**FAQ July 2019** – Patient receives last dose of plavix on 4/27 at 1:15pm. Surgery is 4/29 at 730 am. Is Plavix discontinuation counted as 2 days before surgery or 1 day since it is less than 48 hours?

Answer: Code as 2 days counting each day starting at midnight. Day one is 4/28, Day two is 4/29.

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**SEQ. #: 1070**

**Long Name:** Meds-Aspirin Within Five Days

**Short Name:** MedASA



**Definition:** Indicate whether or not the patient received Aspirin or Ecotrin within 5 days preceding surgery.

**Intent/Clarification:**

Anti-inflammatory, analgesic and antiplatelet action. Half-life of aspirin products is 5-7 days. Aspirin use may predispose patient to post op bleeding.

- **Yes** - Capture those who are prescribed to take Aspirin or Ecotrin on a regular schedule and are presumed to be at a therapeutic level, 5 days preceding surgery (entry into the OR) - The minimum dose should be at least 75 mg (i.e. Aggrenox, which is only 25mg, should not be included).
- **No** – Patient did not receive Aspirin within 5 days preceding surgery.
- **Contraindicated** - Documented evidence of contraindication: If a contraindication is documented explicitly as excluded for medical reasons, or is evidenced clearly within the medical record (notation of a medication allergy prior to arrival) by a Physician, Nurse Practitioner, Anesthesia, Physician Assistant, or Pharmacist
- **Unknown** – conflicting information in the medical record and/or with the patient/family or no information available.

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**SEQ. #: 1071**

**Long Name:** Meds-Aspirin Discontinuation

**Short Name:** MedASADis

**Definition:** Indicate the number of days prior to surgery Aspirin use was discontinued. If less than 24 hours, enter "0".

**Intent/Clarification: -**

**FAQ July 2019** – Patient receives last dose of plavix on 4/27 at 1:15pm. Surgery is 4/29 at 730 am. Is Plavix discontinuation counted as 2 days before surgery or 1 day since it is less than 48 hours?

Answer: Code as 2 days counting each day starting at midnight. Day one is 4/28, Day two is 4/29.

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**SEQ. #: 1072**

**Long Name:** Meds-Aspirin One-Time Dose

**Short Name:** MedASAOnce

**Definition:** Indicate whether the patient received a one-time dose of Aspirin and is not on daily aspirin.

**Intent/Clarification: -**

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**SEQ. #: 1073**

**Long Name:** Meds-Glycoprotein IIb/IIIa Inhibitor Within 24 Hours

**Short Name:** MedGP

**Definition:** Indicate whether the patient received Glycoprotein IIb/IIIa inhibitors within 24 hours preceding surgery.

**Intent/Clarification:**

- **Yes:** if the patient received a IIb/IIIa inhibitor within 24 hours of OR entry date and time.
  - **No**
- 
- 

**SEQ. #:** 1075

**Long Name:** Meds-Anticoagulants Within 48 Hours

**Short Name:** MedACoag

**Definition:** Indicate whether the patient received IV and/or sub-q anticoagulants within 48 hours preceding surgery.

Do NOT include Coumadin or one-time boluses of Heparin.

**Intent/Clarification:**

Anticoagulant therapy inhibits platelet aggregation and clot formation, is used to treat and prevent blood clots, decreasing the viscosity of the blood. These medications may increase the risk of bleeding

- **Yes:** Only capture those who are prescribed to take IV and/or Sub-Q anticoagulants on a regular schedule and are presumed to be at a therapeutic level, within 48 hours preceding surgery (entry into the OR).
  - **No:** Patient did not receive IV and/or Sub-Q anticoagulants within 48 hour preceding surgery. Do not capture one-time heparin, Lovenox/Enoxaparin doses used during the cardiac cath or any time within 48 hours preceding surgery.
- 
- 

**SEQ. #:** 1080

**Long Name:** Meds-Anticoagulants-Medication Name

**Short Name:** MedACMN

**Definition:** Indicate the name of the anticoagulant the patient received within 48 hours preceding surgery.

**Intent/Clarification:**

- Heparin (Unfractionated)
  - Heparin (Low Molecular)
  - Both
  - Other
- 
- 

**SEQ. #:** 1091

**Long Name:** Meds-Warfarin (Coumadin) Within 5 Days

**Short Name:** MedCoum5Days

**Definition:** Indicate whether the patient has received Warfarin (Coumadin) within 5 days preceding surgery.

**Intent/Clarification:**

This is collected to capture the risk of bleeding related to anticoagulation therapy.

- **Yes** - Capture those who took Coumadin within 5 days preceding surgery and are presumed to be at a therapeutic level within 24 hours prior to OR entry date and time.
- **No** – Patient did not receive a Coumadin within 5 days prior to OR entry date and time.
- **Unknown** – Conflicting information in the medical record and/or with the patient/family or no information is available

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**SEQ. #:** 1092

**Long Name:** Meds-Warfarin (Coumadin) Discontinuation

**Short Name:** MedCoum5Dis

**Definition:** Indicate the number of days prior to surgery Warfarin (Coumadin) use was discontinued. If less than 24 hours, enter "0".

**Intent/Clarification:**

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**SEQ. #:** 1101

**Long Name:** Meds-Factor Xa Inhibitors Within 5 Days

**Short Name:** MedXa5Days

**Definition:** Indicate whether the patient has received Factor Xa Inhibitors within 5 days preceding surgery.

**Intent/Clarification:**

Direct factor Xa inhibitors ( "xabans ") are a class of anticoagulant drugs which act directly upon Factor X in the coagulation cascade, without using anti-thrombin as a mediator. This is collected to capture risk of bleeding related to anticoagulation therapy

- **Yes** - Capture those who are prescribed to take Factor Xa inhibitors on a regular schedule within the 5 days preceding surgery and are presumed to be at a therapeutic level, within 24 hours prior to OR entry date and time.
- **No** – Patient did not receive Factor Xa Inhibitors within 5 days prior to OR entry date and time.
- **Unknown** – Conflicting information in the medical record and/or with the patient/family or no information is available.

·  
**FAQ August 2017:** Clarify which medications should be coded in this category.

Answer: Confusion lies when the medications could be coded in any or all of three categories, Factor Xa, Thrombin Inhibitors, or NOAC. Initially all three categories were included to differentiate medications that did not have antidotes. With more antidotes available, the three medications seem redundant. Capture the medication according to the manufacturer's category description. The only caveat to remember is that you should only code ONE of the three medications so as not to have it appear that the patient is receiving more than one.

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**SEQ. #:** 1102

**Long Name:** Meds-Factor Xa Inhibitors Discontinuation

**Short Name:** MedXa5DDis

**Definition:** Indicate the number of days prior to surgery Factor Xa Inhibitor use was discontinued. If less than 24 hours, enter "0".

**Intent/Clarification:**

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**SEQ. #:** 1111

**Long Name:** Meds-Novel Oral Anticoagulant Within 5 Days

**Short Name:** MedNOAC5Days

**Definition:** Indicate whether the patient has received Novel Oral Anticoagulant within 5 days preceding surgery.

**Intent/Clarification:**

New agents have been introduced that are collectively referred to as **novel oral anticoagulants (NOACs)** or **directly acting oral anticoagulants (DOACs)**. They have been shown to be as good as or possibly better than Coumadin with less serious side effects. The newer anticoagulants (NOACs/DOACs), are more expensive than the traditional ones and should be used with care in patients with kidney problems. Additionally, there is no antidote for the factor Xa inhibitors, so it is difficult to stop their effects in the body in cases of emergency (accidents, urgent surgery). [Idarucizumab](#) was FDA approved for the reversal of dabigatran in 2015.

- Yes - Capture those who are prescribed to take novel oral anticoagulants on a regular schedule within the 5 days preceding surgery and are presumed to be at a therapeutic level, within 24 hours prior to OR entry date and time.
- No - Patient did not receive a novel oral anticoagulant within 5 days prior to OR entry date and time.
- Unknown - Conflicting information in the medical record and/or with the patient/family or no information is available.

**FAQ August 2017:** Clarify which medications should be coded in this category.

Answer: Confusion lies when the medications could be coded in any or all of the three categories, Factor Xa, Thrombin Inhibitors, or NOAC. Initially all three categories were included to differentiate medications that did not have antidotes. With more antidotes

available, the three medications seem redundant. Capture the medication according to the manufacturer's category description. The only caveat to remember is that you should only code ONE of the three medications so as not to have it appear that the patient is receiving more than one.

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**SEQ. #:** 1112

**Long Name:** Meds-Novel Oral Anticoagulant Discontinuation

**Short Name:** MedNOACDisc

**Definition:** Indicate the number of days prior to surgery Novel Oral Anticoagulant use was discontinued. If less than 24 hours, enter "0".

**Intent/Clarification:**

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**SEQ. #:** 1121

**Long Name:** Meds-Thrombin Inhibitors Within 5 Days

**Short Name:** MedThromIn5Days

**Definition:** Indicate whether the patient has received Thrombin Inhibitors within 5 days preceding surgery.

**Intent/Clarification:**

- **Yes** - Capture those who are prescribed to take thrombin inhibitors within the 5 days preceding surgery and are presumed to be at a therapeutic level, within 24 hours preceding surgery (entry into the OR) - Do Not Include a one-time dose
- **No** – Patient did not receive a Thrombin Inhibitor medication within 5 days prior to OR entry date and time.
- **Contraindicated** - Documented evidence of contraindication: If a contraindication is documented explicitly as excluded for medical reasons, or is evidenced clearly within the medical record (notation of a medication allergy prior to arrival) by a Physician, Nurse Practitioner, Anesthesia, Physician Assistant, or Pharmacist
- **Unknown** – conflicting information in the medical record and/or with the patient/family or no information is available.

**FAQ August 2017:** Clarify which medications should be coded in this category.

Answer: Confusion lies when the medications could be coded in any or all of three categories, Factor Xa, Thrombin Inhibitors, or NOAC. Initially all three categories were included to differentiate medications that did not have antidotes. With more antidotes available, the three medications seem redundant. Capture the medication according to the manufacturer's category description. The only caveat to remember is that you should only code ONE of the three medications so as not to have it appear that the patient is receiving more than one.

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**SEQ. #:** 1122

**Long Name:** Meds-Thrombin Inhibitors Discontinuation

**Short Name:** MedThromInDisc

**Definition:** Indicate the number of days prior to surgery Thrombin Inhibitor use was discontinued. If less than 24 hours, enter "0".

**Intent/Clarification:**

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**SEQ. #:** 1125

**Long Name:** Meds-Thrombolytics Within 24 Hours

**Short Name:** MedThrom

**Definition:** Indicate whether the patient received thrombolytics within 24 hours preoperatively.

**Intent/Clarification:**

Thrombolytic (fibrinolytic) therapy is the use of drugs to break up or dissolve blood clots, which are the main cause of both heart attacks and stroke. It can predispose a patient to bleeding if given within 24 hours prior to surgery. There are three major classes of thrombolytic drugs: tissue plasminogen activator (tPA), streptokinase (SK), and urokinase (UK). This includes one-time doses.

- **Yes** - Capture those who received thrombolytics within 24 hours preceding of OR entry date and time.
  - **No** – Patient did not receive thrombolytics within 24 hours preceding surgery.
  - **ONLY CAPTURE DOSES GIVEN WITHIN 24 HOURS NOT 48 AS LISTED IN THE V2.9 DATA COLLECTION FORM.**
- -----

**SEQ. #:** 1130

**Long Name:** Meds-Inotropes Within 48 Hours

**Short Name:** MedInotr

**Definition:** Indicate whether the patient received IV inotropic agents within 48 hours preceding surgery.

**Intent/Clarification:**

Positive Inotropic agent actions act at the cellular level, increasing intracellular calcium. Cardiovascular effects range from increasing or decreasing the heart rate, increasing force of the heart muscle contraction, peripheral or extremity arterial or venous constriction. The degree to which these systems are affected are dose dependent. As well, these drugs may lose their cardiovascular effect causing a negative response at higher dosing levels. Initiation of these drugs typically is in response to some hemodynamic instability in the patient.

This field is in the risk models. Use of inotropic agents preoperatively is associated with increased risk of mortality and morbidity- including renal failure, prolonged vent, reoperation, and length of stay.

- **Yes** - Capture those who received IV inotropic agent(s), within 48 hours preceding OR entry date and time.
  - **No** – Patient did not receive Inotropes within 48hours preceding surgery.
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**SEQ. #: 1135**

**Long Name:** Meds-Lipid Lowering Within 24 Hours

**Short Name:** MedLipid

**Definition:** Indicate whether or not the patient received lipid lowering medication within 24 hours preceding surgery.

**Intent/Clarification:**

Capture medications administered to lower the total cholesterol, LDL, HDL or triglyceride levels. Patient may be on prescribed medication and have normal cholesterol values, these patients should still be coded as ““Yes,”” for dyslipidemia.

- **Yes** - Capture those who are prescribed to take lipid-lowering medication on a regular schedule and are presumed to be at a therapeutic level 24 hours preceding surgery (entry into the OR) - Do Not Include a one-time dose
- **No** – Patient did not receive a lipid lowering medication within 24 hours preceding surgery
- **Contraindicated** - Documented evidence of contraindication: If a contraindication is documented explicitly as excluded for medical reasons, or is evidenced clearly within the medical record (notation of a medication allergy prior to arrival) by physician, Nurse Practitioner, Anesthesia, Physician Assistant, or Pharmacist
- **Unknown** – Conflicting information in the medical record and/or with the patient/family or no information is available.

**FAQ February 2018:** A patient with familial hypercholesterolemia enters the OR for an elective CAB. Medications taken on the morning of surgery include Lopressor, Lipitor and Repatha. How are these medications captured? There is particular discussion related to Repatha timing.

Answer: Code non-statin.

**FAQ August 2019** - The patient was on red rice yeast prior to surgery, can this be abstracted as ‘YES’ for meds-lipid lowering within 24 hours?

Answer - If the patient is prescribed red rice yeast as a lipid lowering agent, you may code this as a non-statin/other agent. Capture red rice yeast as a non-statin/other.

**FAQ Nov 2019** - Patient is on Repatha (no other lipid lowering meds) with last dose 9 days prior to surgery. Should 1135 lipid lowering medication be answered as yes since they are taking it appropriately, once every 2 weeks?

Answer - Code Yes to lipid lowering medication in this scenario since they are taking it appropriately, once every 2 weeks, and should be therapeutic.

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**SEQ. #:** 1141

**Long Name:** Meds-Lipid Lowering-Medication Type

**Short Name:** MedLipType

**Definition:** Indicate the type of lipid lowering medication the patient received within 24 hours preceding surgery.

**Intent/Clarification:**

- Statin
- Statin + Other
- Non-Statin/Other

**FAQ February 2018:** A patient with familial hypercholesterolemia enters the OR for an elective CAB. Medications taken on the morning of surgery include Lopressor, Lipitor and Repatha. How are these medications captured? There is particular discussion related to Repatha timing.

Answer: Code Statin + Other.

**FAQ August 2019** - The patient was on red rice prior to surgery, can this be abstracted as yes for meds-lipid lowering within 24 hours?

Answer - If the patient is prescribed red rice yeast as a lipid lowering agent, you may code this as a non-statin/other agent. Capture red rice yeast as a non-statin/other.

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**SEQ. #:** 1143

**Long Name:** Meds-Steroids Within 24 Hours

**Short Name:** MedSter

**Definition:** Indicate whether the patient was taking steroids within 24 hours of surgery. This does not include a one-time dose related to prophylaxis therapy (i.e. for IV dye exposure during cath procedure or surgery pre-induction period). Non-systemic medications are not included in this category (i.e., nasal sprays, topical creams).

**Intent/Clarification:**

**Systemic delivery only.** Non-systemic delivery is not included in this data element. Non-systemic delivery includes topical creams, nasal sprays, inhalers or ophthalmic or otic drops.

Do not include one-time systemic dose as part of clinical pathway guideline or procedure/surgical preparatory order.

- **Yes** - Capture those who are prescribed to take **systemic steroids** within 24 hours preceding surgery and are presumed to be at a therapeutic level within 24 hours preceding OR entry date and time - Do Not Include a one-time dose.
- **No** – Patient did not receive a systemic steroids within 24 hours preceding surgery
- **Contraindicated** - Documented evidence of contraindication: If a contraindication is documented explicitly as excluded for medical reasons, or is evidenced clearly within the medical record (notation of a medication allergy prior to arrival) by physician, Nurse Practitioner, Anesthesia, Physician Assistant, or Pharmacist -BH
- **Unknown** – Conflicting information in the medical record and/or with the patient/family or no information is available



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## Hemodynamics/Cath/Echo

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**\*\*General Information: All Hemodynamic values for ejection fraction, pulmonary artery pressure, valve insufficiency and stenosis etc should be captured from studies done closest to the time of surgery as described below October 2019 Update. Any test that provides hemodynamic measurements may be used.**

### Capturing of Hemodynamic/Cath/ECHO results:

#### Effective October 2019 Source Document Priority for Coding:

1. Pre-op results captured from objective studies (cath, echo, nuclear study, etc..) closest and prior to OR Entry, within 6 months of OR date (while it is preferred that the cath be done within 6 months, they can be used for up to one year).
2. Use the OR pre-incision results if pre-incision results change the planned surgery. For example, if pre-op MV regurgitation was mild and pre-incision MV regurgitation is severe and the surgeon decides to do a MV Repair – code severe for MV regurgitation.
3. Use the OR pre-incision results if no other values are available or if the valves were not visualized on any of the pre- operative exams regardless if planned surgery was changed or not.
4. If no other results are available, then Surgeon documentation should be used.

~~November 2018 Update – Pre-op results closest and prior to OR Entry, within 6 months of OR date, unless pre-incision results change the planned surgery. Use the OR pre-incision results if no other values are available or if the valves were not visualized on any of the pre-operative echos regardless if planned surgery was changed or not. Multiple results may be used to obtain hemodynamic values with the closest and prior to OR Entry result required. Any test that provides hemodynamic measurements may be used.~~

Example:

Echo from 9/21 has all needed results – abstract these results

Echo from 9/30 has updated EF but no other results – change EF result to match update result

10/1 Pre incision TEE has updated MV degree of insufficiency and planned surgery was changed related to findings on the TEE – Abstract ONLY the MV degree of insufficiency from these results since the planned surgery was changed as a result of this finding.

If Audited be sure to include all of the Cath, Echo, TEE, and TTE results from 6 months pre procedure.

**FAQ June 2019:** If the patient's valve is not visualized on a preoperative echo but visualized on the intraoperative pre-incision echo, may I code those values.

**Answer:** Yes, if the valve was not visualized on the pre-op echo but was visualized on the intra-op pre-incision echo then you may use the intra-op pre-incision echo for the value of that valve only, not for all the valves if they were visualized on the pre-op echo.

**FAQ June 2019:** If valve regurgitation is dictated from echocardiogram as "NO SIGNIFICANT REGURGITATION" do we code as "None" or "Trivial/Trace"?

**Answer:** Code none

**FAQ June 2019:** Can I use this is for all valve insufficiency elements in version 2.9: +1 = trace/trivial, +2 = mild, +3 = moderate, and +4 = severe?

**Answer:** You can not assume that +1 equals trace etc... Please work with your echo dept to develop a protocol that clearly defines what the scoring system equals in terms of descriptive terminology. Have this protocol available in the event of an audit.

**FAQ August 2019** - If the pre-op echo reports 'structurally normal valve'. Is this valve considered normal with no disease?

**Answer** - This documentation implies that the valve is normal without disease or regurgitation.

**FAQ Nov 2019** - Patient has a cath 14 months before AVR that shows 1 vessel RCA CTO. No cath is repeated within 1 year. I know I have to code NO to Cath performed since > 1 year, but can I say YES to Seq 1155 CAD known and Yes to Seq 1170 Number of diseased vessels since I have cath report in chart and once diseased always diseased? Should I code Seq 1175 Native Stenosis known as NO since the cath is > 1 year old?

**Answer** - In this scenario, code YES to Seq 1155 CAD known. Code 1 vessel to Seq 1170 and in Seq 1175 in the coronary Grid code 100% for RCA since it was a CTO.

**FAQ Nov 2019** - What is the correct value to code when the EF is listed as > 55%?

**Answer** - Capture as 56%.

**FAQ Nov 2019** - What is the correct value to code when the EF is listed as < 15%.

**Answer** - Capture as 14%.

**FAQ Nov 2019** - What value do we code when the conclusion for EF states "normal" and the left heart portion of the report says 60-70% by visual estimate. Do we code 60% for "normal" verbiage or 65% since we have a numerical range?

**Answer** - Use the numerical values first in this scenario capture as 65%. Use descriptive terms when you have no numerical values.

**FAQ Nov 2019** - From the echocardiogram, should we take the dimensions from the 2D Mode or the M mode?

**Answer** - Use the 2D measurements as priority source when you have values from both modes. **Update Dec 2019 - if you have a 3D mode, it will take precedence over the 2D or M mode.**

**FAQ Nov 2019** - If echo reports a RVSP of <35 what would I enter for sequence 1575?

**Answer** - Capture as 34, in addition if it is documented as > 35, then enter 36.

**FAQ Nov 2019** - If there is ONLY ramus disease, would that count as 1V disease?  
Answer – Yes, the Ramus should count as a single vessel disease vessel on the left side.

**FAQ Dec 2019** - If there are multiple values for the EF within the echo closest to surgery such as Under the Left Ventricle the EF is 35% and Under Impression LVEF 35-40% which value do I take?

**Answer** - In this scenario, use the the value on the final impression / conclusion from the reading physician.

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**SEQ. #: 1145**

**Long Name:** Cardiac Catheterization Performed

**Short Name:** CarCathPer

**Definition:** Indicate whether cardiac catheterization and/or CT angio was performed.

**Intent/Clarification:**

Diagnostic coronary angiography is defined as the passage of a catheter into the aortic root or other great vessels for the purpose of angiography of the native coronary arteries or bypass grafts supplying native coronary arteries.

~~Capture procedures done within 6 months prior to surgery.~~ **While it is preferred that the cath be done within 6 months, they can be used for up to one year.** Do not include stand-alone right heart catheterization in this field; include coronary angiogram either done with or without right and/or left heart pressures.

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**SEQ. #: 1150**

**Long Name:** Cardiac Catheterization Date

**Short Name:** CarCathDt

**Definition:** Indicate the date cardiac catheterization was performed.

**Intent/Clarification:**

If more than one was performed, capture the date closest to surgery. Do not include stand-alone RHC (right heart cath) in this field. While it is preferred that the cath be done within 6 months, they can be used for up to one year.

Required date format: mm/dd/yyyy.

**FAQ Sept 2019** - If the only documentation indicates cardiac catheterization was performed on May 2019, with no exact day. How should I code the date?

Answer - If month and year are known code 5/1/19. If only the year is known Code 01/01/Year. Leave Blank if you have no information on the month, day, or year of the cath.

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**SEQ. #:** 1155

**Long Name:** Coronary Anatomy/Disease Known

**Short Name:** CorAnatDisKnown

**Definition:** Indicate whether coronary artery anatomy and/or disease is documented and available prior to surgery.

**Intent/Clarification:**

Indicated if coronary artery anatomy and/or disease is documented **prior** to surgery. Sometimes the results are known and verbally communicated to the surgeon, but the Cath Lab Report is not documented in the medical record until after surgery has started; this is particularly true for emergent cases. This can be captured even if dictation was not completed until after the surgery. Results dictated following the procedure may be used.

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**SEQ. #:** 1160

**Long Name:** Dominance

**Short Name:** Dominance

**Definition:** Indicate whether coronary artery dominance is documented prior to surgery.

**Intent/Clarification:**

- **Left** - The posterior descending artery (PDA) arises from the left circumflex artery.
  - **Right** - The posterior descending artery (PDA) arises from the right coronary artery.
  - **Co-dominant** - The right coronary artery supplies the posterior descending artery (PDA) and the circumflex supplies the posterolateral artery (**PLA or PLB**). Thus, there is approximately equal contribution to the inferior surface of the left ventricle from both the left circumflex and right coronary arteries.
  - **Not documented**
- 
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**SEQ. #:** 1165

**Long Name:** Source(s) Used To Quantify Stenosis

**Short Name:** StenSource

**Definition:** Indicate source or sources used to quantify coronary artery stenosis.

**Intent/Clarification:**

- Angiogram
- CT
- IVUS
- Progress/OP Note
- Other
- Multiple

~~Oct 2019 - If multiple sources are available, select surgeon "s documentation of the degree of stenosis. This is the degree of stenosis the surgeon used to develop the operative plan.~~

October 2019: Please refer to the General Statement from October 2019 regarding time frame of hemodynamic results.

**FAQ August 2017:** Should IVUS results be used for the LM only or can it be used to quantify disease in any artery?

Answer: IVUS can be used to quantify the stenosis in any artery.

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**SEQ. #: 1170**

**Long Name:** Num Dis Vessels

**Short Name:** NumDisV

**Definition:** Indicate the number of diseased major native coronary vessel systems: LAD system, Circumflex system, and/or Right system with  $\geq 50\%$  narrowing of any vessel preoperatively.

NOTE: Left main disease ( $\geq 50\%$ ) is counted as TWO vessels (LAD and Circumflex, which may include a Ramus Intermedius). For example, left main and RCA would count as three total.

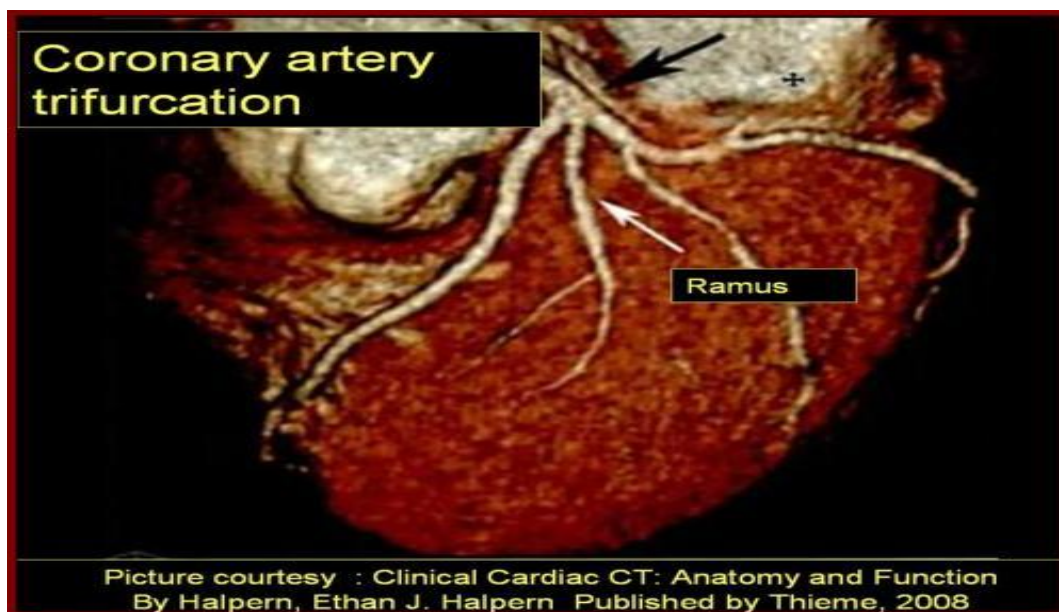
A vessel that has ever been considered diseased, should always be considered diseased.

**Intent/Clarification:**

There are three (3) major coronary systems; Left Anterior Descending (LAD), Circumflex and Right Coronary System (RCA). Each system has "branches" that are considered part of their corresponding system. Vessel stenosis or narrowing is measured in percentages (%), most often expressed as a range of "stenosis".

The Ramus Intermedius is a vessel that can function as part of the LAD system or as part of the Circumflex system depending on its course. If the Ramus is part of the LAD system and functions much like a diagonal, code 1 vessel disease. If the Ramus is part of the Circumflex system and functions much like an obtuse marginal AND the patient has LAD disease, code 2 vessel disease.

**If there is any confusion about the distribution of the Ramus as it relates to the LAD or Circumflex coronary artery, consult with your surgeon.**



The number of diseased vessels may not necessarily match the number of bypass grafts performed.

Left main disease ( $\geq 50\%$ ) is counted as TWO vessels (LAD and Circumflex). For example, left main  $\geq 50\%$  and RCA would count as a total of three.

If bypass is performed for an anomalous, kinked or damaged vessel, or myocardial bridging this vessel is counted as one diseased or abnormal vessel.

Code the number of vessels diseased only for those vessels that have a stenosis greater than or equal to 50%.

**October 2019:** [Please refer to the General Statement from October 2019 regarding time frame of hemodynamic results.](#)

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**SEQ. #: 1175**

**Long Name:** Percent Native Artery Stenosis Known

**Short Name:** PctStenKnown

**Definition:** Indicate whether the percent stenosis of native coronary stenosis is known.

**Intent/Clarification:**

**A patient may never have more than three vessel disease. Once a coronary artery is found to be diseased, for the purposes of the STS, the vessel is considered diseased for the remainder of the patient's life and all subsequent reoperations regardless of previous interventions.**

The Coronary section is arranged in a grid format. Each column header has a "Yes,"/no" field. If any column has a "Yes," answer, at least one vessel below must have documentation. If the medical record has conflicting reports on the vessel name, for

example a vessel is described as OM 1 by one provider and the same vessel is referred to as the Ramus by another provider, use the surgeon "s description of the lesion location.

Each Column with a "Yes," response below must have documentation on at least one Vessel.

**Update Nov 2019 - Ostial disease can be considered proximal disease in a coronary artery.**

**Update Nov 2019 - The PLB artery can also be known as the PLA artery.**

**October 2019:** [Please refer to the General Statement from October 2019 regarding time frame of hemodynamic results.](#)

Coronary	Native Artery % Stenosis Known: PctStenKnown (1175) <input type="checkbox"/> Yes <input type="checkbox"/> No (If yes↓)	Graft(s) Graft(s) Present: GraftsPrsnt (1180) <input type="checkbox"/> Yes <input type="checkbox"/> No (If yes↓)	Stent(s) Stent(s) Present: StentPrsnt (1185) <input type="checkbox"/> Yes <input type="checkbox"/> No (If yes↓)	Fractional Flow Reserve (FFR) performed: FFRPerf (1190) <input type="checkbox"/> Yes <input type="checkbox"/> No (If yes↓)	Instantaneous wave-free ratio (iFR) performed: IFRPerf (1191) <input type="checkbox"/> Yes <input type="checkbox"/> No(If yes↓)
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**SEQ. #: 1180**

**Long Name:** Graft(s) Present

**Short Name:** GraftsPrsnt

**Definition:** Indicate whether one or more coronary artery bypass grafts are present prior to this surgery.

**Intent/Clarification:**

- **Yes** – A previous coronary bypass graft is documented in the medical record.
  - **No** – No previous graft documented in the medical record.
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**SEQ. #: 1185**

**Long Name:** Stent(s) Present

**Short Name:** StentPrsnt

**Definition:** Indicate whether one or more intracoronary stents are present prior to this surgery.

**Intent/Clarification:**

- **Yes** – a previously placed coronary artery stent is documented in the medical record.
- **No** – no previous coronary artery stent documented in the medical record.

**FAQ October 2019** - If there is documentation that the patient had a previous coronary stent; however, no documentation about which vessel has the stent how should we abstract this data?

Answer - In the scenario you described, code Yes to history of previous PCI and stent in Seq 775 and 779 and in the Coronary GRID code Yes to stent present and leave all selections blank since you do not know what vessel was stented in the past. If you knew the vessel, you could code not documented to that stent in the grid. In this situation you will receive a consistency error, however, the error consistency error is sort of like an outlier report it is asking you to double check your data. If you have and the data entered into the database is correct then, ignore the consistency error. This will be addressed in the upgrade.

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**SEQ. #: 1190**

**Long Name:** Fractional Flow Reserve (FFR) Performed

**Short Name:** FFRPerf

**Definition:** Indicate whether Fractional Flow Reserve (FFR) was performed.

**Intent/Clarification:**

Fractional flow reserve (FFR) is a technique used in coronary catheterization to measure pressure differences across a coronary artery stenosis (narrowing, usually due to atherosclerosis) to determine the likelihood that the stenosis impedes oxygen delivery to the heart muscle (myocardial ischemia).

Fractional flow reserve is defined as the pressure behind (distal to) a stenosis relative to the pressure before the stenosis. The result is an absolute number; an FFR of 0.80 means that a given stenosis causes a 20% drop in blood pressure. In other words, FFR expresses the maximal flow down a vessel in the presence of a stenosis compared to the maximal flow in the hypothetical absence of the stenosis.

- **Yes** – a vessel that has a Fractional Flow Reserve documented in the medical record. If the value from the FFR is higher than the cardiac catheterization; code from the FFR.
  - **No** – a vessel that has no Fractional Flow Reserve documented in the medical record.
- 
- 

**SEQ. #: 1191**

**Long Name:** Instantaneous Wave-Free Ration (iFR) Performed

**Short Name:** IFRPerf

**Definition:** Indicate whether Instantaneous wave-free ration (iFR) was performed.

**Intent/Clarification:**

Instantaneous wave-free ratio is performed using high fidelity pressure wires that are passed distal to the coronary stenosis. iFR isolates a specific period in diastole, called the wave-free period, and uses the ratio of distal coronary pressure (Pd) to the pressure observed in the aorta (Pa) over this period. During this wave-free period, the competing forces (waves) that affect coronary flow are quiescent meaning pressure and flow are linearly related as compared to the rest of the cardiac cycle.



When stenoses are flow limiting, Pd and Pa pressures over the wave-free period diverge; a normal ratio is 1.0 and iFR values of below 0.90 suggest flow limitation. iFR can be calculated using dedicated consoles available for medical use and typically uses an average over 5 heart beats but can be performed using a single heartbeat. iFR is measured at rest, without the need for pharmacological vasodilators or stressors and compares well to other invasive and non-invasive markers of ischemia or flow limitation.

- **Yes** – a vessel that has an Instantaneous Wave-Free Ration documented in the medical record.
- **No** – a vessel that has no Instantaneous Wave-Free Ration documented in the medical record.

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**GENERAL STATEMENT (10/2017):** The following descriptive terms and associated percentages can be used to quantify the % stenosis in any coronary artery.

**October 2019:** [Please refer to the General Statement from October 2019 regarding time frame of hemodynamic results.](#)

<b>Stenosis <math>\geq 50\%</math></b>		
▪ Borderline obstructive/obstruction	▪ Borderline disease	<b>50%</b>
▪ Moderate disease	▪ Intermediate disease	
<b>Stenosis <math>\geq 70\%</math></b>		
▪ Significant	▪ Obstructive disease	<b>70%</b>
▪ Flow-limiting		
<b>Stenosis <math>\geq 90\%</math></b>		
▪ Critical	▪ Subtotaled	<b>90%</b>
▪ Severe	▪ Tight	
▪ Occlusive		
<b>Stenosis 100%</b>		
▪ Total occlusion	▪ Chronic Total Occlusion (CTO)	<b>100%</b>
▪ Occluded		

**Update Nov 2019 - Ostial disease can be considered proximal disease in a coronary artery.**

**Update Nov 2019 - The PLB artery can also be known as the PLA artery.**

**SEQ. #:** 1195

**Long Name:** Percent Stenosis - Left Main

**Short Name:** PctStenLMain

**Definition:** Indicate the highest percent stenosis in this vessel at the time of this surgery.

**Intent/Clarification:**

The intent is to capture % stenosis for vessels with documented stenosis  $\geq 50\%$

If “Native Artery % Stenosis Known” (field 1175) is marked “Yes,” at least one vessel must

have a percent stenosis marked to avoid a missing data flag in the DQR.  
If there is no stenosis or no documentation or mention of a vessel, leave the selection blank.

In instances where multiple lesions are present, enter the single highest percent stenosis noted in that vessel. When ranges are reported, such as 45- 50% for stenosis, **report as the highest percent in range, in this case 50%.**

Stenosis at the ostia of the LAD and circumflex is not considered left main disease for the purpose of Society of Thoracic Surgeons (STS). **Stenosis needs to be in the left main artery.**

If the cath report states 40% disease, but the Intravascular Ultrasound (IVUS) shows 70%, code 70%.

~~Oct 2019 - If multiple sources are available, select surgeon "s documentation of the degree of stenosis. This is the degree of stenosis the surgeon used to develop the operative plan.~~

**Update General Statement / FAQ September 2017:** Do we enter vessel stenosis in a coronary artery in the data collection form if it is less than 50%?

Answer: When coding the % stenosis in a native coronary artery, code all the known percentages even if they are less than 50%. For reports where there is 0% stenosis, enter 0%. If stenosis of the vessel is not reported, then leave blank. Understand that these fields will only need to be completed when the number of diseased vessels in NumDisV - seq 1170 is select as one or more.

**FAQ October 2017:** How would bilateral spontaneous coronary dissections from the ostium of both the Left and Right main coronary arteries to the distal end of the coronary tree be coded.

Answer: Code 100% for both LM and RCA.

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**SEQ. #: 1200**

**Long Name:** Graft Stenosis - Left Main

**Short Name:** GrftStenLMain

**Definition:** Indicate the highest percent stenosis in this graft at the time of this surgery.

**Intent/Clarification:**

The intent is to capture the degree of stenosis in a graft if one is present.

If "Graft Present" (field 1180) is marked ""Yes,"" at least one vessel must have a graft stenosis marked to avoid a missing data flag in the DQR.

If there is no stenosis documented code patent. If no documentation of graft stenosis, code not documented.

- Patent
- Stenosis  $\geq$  50%

- 100% occlusion
  - Not documented
- 
- 

**SEQ. #:** 1205

**Long Name:** Stent Stenosis - Left Main

**Short Name:** StntStenLMain

**Definition:** Indicate the highest percent of stent stenosis at the time of this surgery.

**Intent/Clarification:**

The intent is to capture the degree of in-stent stenosis if present.

If no documentation of in-stent stenosis, leave blank.

If “Stent Present” (field 1185) is marked ““Yes,”” at least one vessel must have a stent present marked to avoid a missing data flag in the DQR.

If no documentation of in-stenosis, code not documented.

- Patent
  - Stenosis  $\geq 50\%$
  - Not documented
- 
- 

**SEQ. #:** 1210

**Long Name:** Fractional Flow Reserve (FFR) - Left Main

**Short Name:** FFRLMain

**Definition:** Indicate the FFR in this vessel.

**Intent/Clarification:**

The intent is to capture the pressure difference across a coronary artery when “FFR” (field 1190) is marked ““Yes,”” and has been performed and documented in at least one vessel.

If there is no FFR reported for this vessel, leave blank. Choose the **lowest value** documented in the medical record. A FFR of 0.70 indicates a higher level of stenosis than a FFR of 0.80.

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**SEQ. #:** 1212

**Long Name:** Instantaneous Wave-Free Ration (iFR) - Left Main

**Short Name:** IFRLMain

**Definition:** Indicate the iFR in this vessel at the time of this surgery.

**Intent/Clarification:**

If there is no iFR reported for this vessel, leave blank. Choose the **lowest value** documented in the medical record. iFR values of below 0.90 suggest flow limitation. Choose the lowest value documented in the medical record.

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**SEQ. #:** 1215

**Long Name:** Percent Stenosis - Proximal LAD

**Short Name:** PctStenProxLAD

**Definition:** Indicate the highest percent stenosis in this vessel at the time of this surgery.

**Intent/Clarification:**

The intent is to capture % stenosis for vessels with documented stenosis  $\geq 50\%$ . If "Native Artery % Stenosis Known" (field 1175) is marked "Yes," at least one vessel must have a percent stenosis marked to avoid a missing data flag in the DQR.

If there is no stenosis or no documentation or mention of a vessel, leave the selection blank.

In instances where multiple lesions are present, enter the single highest percent stenosis noted in that vessel. When ranges are reported, such as 45- 50% for stenosis, **report as the highest percent in range, in this case 50%. Update Nov 2019 - Ostial disease can be considered proximal disease in a coronary artery.**

**Update General Statement / FAQ September 2017:** Do we enter vessel stenosis in a coronary artery in the data collection form if it is less than 50%?

Answer: When coding the % stenosis in a native coronary artery, code all the known percentages even if they are less than 50%. For reports where there is 0% stenosis, enter 0%. If stenosis of the vessel is not reported, then leave blank. Understand that these fields will only need to be completed when the number of diseased vessels in NumDisV - seq 1170 is select as one or more.

**FAQ October 2018:**

**General Statement:**

**The mid LAD is considered to be the LAD starting at the 1st diagonal vessel and/or at the first septal perforator.**

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**SEQ. #:** 1220

**Long Name:** Graft Stenosis - Proximal LAD

**Short Name:** GrftStenProxLAD

**Definition:** Indicate the highest percent stenosis in this graft at the time of this surgery.

**Intent/Clarification:**

The intent is to capture the degree of stenosis in a graft if one is present.

If "Graft Present" (field 1180) is marked "Yes," at least one vessel must have a graft stenosis marked to avoid a missing data flag in the DQR.

If no stenosis, or no documentation of graft stenosis, code not documented.

- Patent
- Stenosis  $\geq 50\%$

- 100% Occlusion
  - Not documented
- 
- 

**SEQ. #:** 1225

**Long Name:** Stent Stenosis - Proximal LAD

**Short Name:** StntStenProxLAD

**Definition:** Indicate the highest percent of stent stenosis at the time of this surgery.

**Intent/Clarification:**

The intent is to capture the degree of in-stent stenosis is present.

If no documentation of in-stent stenosis, leave blank.

If “Stent Present” (field 1185) is marked ““Yes,”” at least one vessel must have a stent present marked to avoid a missing data flag in the DQR.

If no documentation of in- stenosis, leave blank.

- Patent
  - Stenosis  $\geq$  50%
  - Not documented
- 
- 

**SEQ. #:** 1230

**Long Name:** Fractional Flow Reserve (FFR) - Proximal LAD

**Short Name:** FFRProxLAD

**Definition:** Indicate the FFR in this vessel.

**Intent/Clarification:**

The intent is to capture the pressure difference across a coronary artery when FFR (field 1190) is ““Yes,”” and has been performed and documented in at least one vessel.

If there is no FFR reported for this vessel, leave blank. Choose the **lowest** value documented in the medical record. A FFR of 0.70 indicates a higher level of stenosis than a FFR of 0.80.

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**SEQ. #:** 1232

**Long Name:** Instantaneous Wave-Free Ration (iFR) - Proximal LAD

**Short Name:** IFRProxLAD

**Definition:** Indicate the iFR in this vessel at the time of this surgery.

**Intent/Clarification:**

If there is no iFR reported for this vessel, leave blank. Choose the **lowest** value documented in the medical record. iFR values of below 0.90 suggest flow limitation.

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**SEQ. #:** 1235

**Long Name:** Percent Stenosis - Mid LAD

**Short Name:** PctStenMidLAD

**Definition:** Indicate the highest percent stenosis in this vessel at the time of this surgery.

**Intent/Clarification:**

The intent is to capture % stenosis for vessels with documented stenosis  $\geq 50\%$  If "Native Artery % Stenosis Known"(1175) is marked "Yes," at least one vessel must have a percent stenosis marked to avoid a missing data flag in the DQR.

If there is no stenosis or no documentation or mention of a vessel, leave the selection blank

In instances where multiple lesions are present, enter the single highest percent stenosis noted in that vessel. When ranges are reported, such as 45- 50% for stenosis, **report as the highest percent in range, in this case 50%.**

**Update General Statement / FAQ September 2017:** Do we enter vessel stenosis in a coronary artery in the data collection form if it is less than 50%?

Answer: When coding the % stenosis in a native coronary artery, code all the known percentages even if they are less than 50%. For reports where there is 0% stenosis, enter 0%. If stenosis of the vessel is not reported, then leave blank. Understand that these fields will only need to be completed when the number of diseased vessels in NumDisV - seq 1170 is select as one or more.

**FAQ October 2018:**

**General Statement:**

**The mid LAD is considered to be the LAD starting at the 1st diagonal vessel and/or at the first septal perforator.**

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**SEQ. #:** 1240

**Long Name:** Graft Stenosis - Mid LAD

**Short Name:** GrftStenMidLAD

**Definition:** Indicate the highest percent stenosis in this graft at the time of this surgery.

**Intent/Clarification:**

The intent is to capture the degree of stenosis in a graft if one is present.

If "Graft Present" (field 1180) is marked "Yes," at least one vessel must have a graft stenosis marked to avoid a missing data flag in the DQR.

If no stenosis, or no documentation of graft stenosis, leave blank.

- Patent

- Stenosis  $\geq$  50%
  - 100% Occlusion
  - Not documented
- 
- 

**SEQ. #:** 1245

**Long Name:** Stent Stenosis - Mid LAD

**Short Name:** StntStenMidLAD

**Definition:** Indicate the highest percent of stent stenosis at the time of this surgery.

**Intent/Clarification:**

The intent is to capture the degree of in-stent stenosis is present.

If no documentation of in-stent stenosis, leave blank.

If “Stent Present” (field 1185) is marked “Yes,” at least one vessel must have a stent present marked to avoid a missing data flag in the DQR.

If no documentation of in- stenosis, leave blank.

- Patent
  - Stenosis  $\geq$  50%
  - Not documented
- 
- 

**SEQ. #:** 1250

**Long Name:** Fractional Flow Reserve (FFR) - Mid LAD

**Short Name:** FFRMidLAD

**Definition:** Indicate the FFR in this vessel at the time of this surgery.

**Intent/Clarification:**

The intent is to capture the pressure difference across a coronary artery when FFR (field 1190) is “Yes,” and has been performed and documented in at least one vessel.

If there is no FFR reported for this vessel, leave blank. Choose the **lowest** value documented in the medical record. A FFR of 0.70 indicates a higher level of stenosis than a FFR of 0.80.

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**SEQ. #:** 1252

**Long Name:** Instantaneous Wave-Free Ration (iFR) - Mid LAD

**Short Name:** IFRMidLAD

**Definition:** Indicate the iFR in this vessel at the time of this surgery.

**Intent/Clarification:**

If there is no iFR reported for this vessel, leave blank. Choose the **lowest** value documented in the medical record. iFR values of below 0.90 suggest flow limitation.

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**SEQ. #:** 1255

**Long Name:** Percent Stenosis - Distal LAD

**Short Name:** PctStenDistLAD

**Definition:** Indicate the highest percent stenosis in this vessel at the time of this surgery.

**Intent/Clarification:**

The intent is to capture % stenosis for vessels with documented stenosis  $\geq 50\%$

If "Native Artery % Stenosis Known" (field 1175) is marked "Yes," at least one vessel must have a percent stenosis marked to avoid a missing data flag in the DQR.

If there is no stenosis or no documentation or mention of a vessel, leave the selection blank

In instances where multiple lesions are present, enter the single highest percent stenosis noted in that vessel. When ranges are reported, such as 45- 50% for stenosis, **report as the highest percent in range, in this case 50%.**

**Update General Statement / FAQ September 2017:** Do we enter vessel stenosis in a coronary artery in the data collection form if it is less than 50%?

Answer: When coding the % stenosis in a native coronary artery, code all the known percentages even if they are less than 50%. For reports where there is 0% stenosis, enter 0%. If stenosis of the vessel is not reported, then leave blank. Understand that these fields will only need to be completed when the number of diseased vessels in NumDisV - seq 1170 is select as one or more.

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**SEQ. #:** 1260

**Long Name:** Graft Stenosis - Distal LAD

**Short Name:** GrftStenDistLAD

**Definition:** Indicate the highest percent stenosis in this graft at the time of this surgery.

**Intent/Clarification:**

The intent is to capture the degree of stenosis in a graft if one is present.

If "Graft Present" (field 1180) is marked "Yes," at least one vessel must have a graft stenosis marked to avoid a missing data flag in the DQR.

If no stenosis, or no documentation of graft stenosis, leave blank.

- Patent
- Stenosis  $\geq 50\%$
- 100% Occlusion
- Not documented



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**SEQ. #:** 1265

**Long Name:** Stent Stenosis - Distal LAD

**Short Name:** StntStenDistLAD

**Definition:** Indicate the highest percent of stent stenosis in this vessel at the time of this surgery.

**Intent/Clarification:**

The intent is to capture the degree of in-stent stenosis is present.

If no documentation of in-stent stenosis, leave blank.

If "Stent Present" (field 1185) is marked "Yes," at least one vessel must have a stent present marked to avoid a missing data flag in the DQR.

If no documentation of in- stenosis, leave blank.

- Patent
- Stenosis  $\geq$  50%
- Not documented

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**SEQ. #:** 1270

**Long Name:** Fractional Flow Reserve (FFR) - Distal LAD

**Short Name:** FFRDistLAD

**Definition:** Indicate the FFR in this vessel at the time of this surgery.

**Intent/Clarification:**

The intent is to capture the pressure difference across a coronary artery when FFR (field 1190) is "Yes," and has been performed and documented in at least one vessel.

If there is no FFR reported for this vessel, leave blank. Choose the **lowest** value documented in the medical record. A FFR of 0.70 indicates a higher level of stenosis than a FFR of 0.80.

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**SEQ. #:** 1272

**Long Name:** Instantaneous Wave-Free Ration (iFR) - Distal LAD

**Short Name:** IFRDistLAD

**Definition:** Indicate the iFR in this vessel at the time of this surgery.

**Intent/Clarification:**

If there is no iFR reported for this vessel, leave blank. Choose the **lowest** value documented in the medical record. iFR values of below 0.90 suggest flow limitation.

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**SEQ. #: 1275**

**Long Name:** Percent Stenosis - Diagonal 1

**Short Name:** PctStenDiag1

**Definition:** Indicate the highest percent stenosis in this vessel at the time of this surgery.

**Intent/Clarification:**

The intent is to capture % stenosis for vessels with documented stenosis  $\geq 50\%$ . If "Native Artery % Stenosis Known" (field 1175) is marked "Yes," at least one vessel must have a percent stenosis marked to avoid a missing data flag in the DQR.

If there is no stenosis or no documentation or mention of a vessel, leave the selection blank.

In instances where multiple lesions are present, enter the single highest percent stenosis noted in that vessel. When ranges are reported, such as 45- 50% for stenosis, **report as the highest percent in range, in this case 50%.**

**Update General Statement / FAQ September 2017:** Do we enter vessel stenosis in a coronary artery in the data collection form if it is less than 50%?

Answer: When coding the % stenosis in a native coronary artery, code all the known percentages even if they are less than 50%. For reports where there is 0% stenosis, enter 0%. If stenosis of the vessel is not reported, then leave blank. Understand that these fields will only need to be completed when the number of diseased vessels in NumDisV - seq 1170 is select as one or more.

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**SEQ. #: 1280**

**Long Name:** Graft Stenosis - Diagonal 1

**Short Name:** GrftStenDiag1

**Definition:** Indicate the highest percent stenosis in this graft at the time of this surgery.

**Intent/Clarification:**

The intent is to capture the degree of stenosis in a graft if one is present.

If "Graft Present" (field 1180) is marked "Yes," at least one vessel must have a graft stenosis marked to avoid a missing data flag in the DQR.

If no stenosis, or no documentation of graft stenosis, leave blank.

- Patent
- Stenosis  $\geq 50\%$
- 100% Occlusion
- Not documented

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**SEQ. #: 1285**

**Long Name:** Stent Stenosis - Diagonal 1

**Short Name:** StntStenDiag1

**Definition:** Indicate the highest percent of stent stenosis in this vessel at the time of this surgery.

**Intent/Clarification:**

If no documentation of in-stent stenosis, leave blank.

The intent is to capture the degree of in-stent stenosis is present.

If "Stent Present" (field 1185) is marked "Yes," at least one vessel must have a stent present marked to avoid a missing data flag in the DQR.

If no documentation of in- stenosis, leave blank.

- Patent
- Stenosis  $\geq$  50%
- Not documented

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**SEQ. #:** 1290

**Long Name:** Fractional Flow Reserve (FFR) - Diagonal 1

**Short Name:** FFRDiag1

**Definition:** Indicate the FFR in this vessel at the time of this surgery.

**Intent/Clarification:**

The intent is to capture the pressure difference across a coronary artery when FFR (field 1190) is "Yes," and has been performed and documented in at least one vessel.

If there is no FFR reported for this vessel, leave blank. Choose the **lowest** value documented in the medical record. A FFR of 0.70 indicates a higher level of stenosis than a FFR of 0.80.

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**SEQ. #:** 1292

**Long Name:** Instantaneous Wave-Free Ration (iFR) - Diagonal 1

**Short Name:** IFRDiag1

**Definition:** Indicate the iFR in this vessel at the time of this surgery.

**Intent/Clarification:**

If there is no iFR reported for this vessel, leave blank. Choose the **lowest** value documented in the medical record. iFR values of below 0.90 suggest flow limitation.

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**SEQ. #:** 1295

**Long Name:** Percent Stenosis - Diagonal 2

**Short Name:** PctStenDiag2

**Definition:** Indicate the highest percent stenosis in this vessel at the time of this surgery.

**Intent/Clarification:**

The intent is to capture % stenosis for vessels with documented stenosis  $\geq 50\%$   
If “Native Artery % Stenosis Known” (field 1175) is marked “Yes,” at least one vessel must have a percent stenosis marked to avoid a missing data flag in the DQR.

If there is no stenosis or no documentation or mention of a vessel, leave the selection blank

In instances where multiple lesions are present, enter the single highest percent stenosis noted in that vessel. When ranges are reported, such as 45- 50% for stenosis, **report as the highest percent in range, in this case 50%.**

**Update General Statement / FAQ September 2017:** Do we enter vessel stenosis in a coronary artery in the data collection form if it is less than 50%?

Answer: When coding the % stenosis in a native coronary artery, code all the known percentages even if they are less than 50%. For reports where there is 0% stenosis, enter 0%. If stenosis of the vessel is not reported, then leave blank. Understand that these fields will only need to be completed when the number of diseased vessels in NumDisV - seq 1170 is select as one or more.

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**SEQ. #: 1300**

**Long Name:** Graft Stenosis - Diagonal 2

**Short Name:** GrftStenDiag2

**Definition:** Indicate the highest percent stenosis in this graft at the time of this surgery.

**Intent/Clarification:**

The intent is to capture the degree of stenosis in a graft if one is present.

If “Graft Present” (field 1180) is marked “Yes,” at least one vessel must have a graft stenosis marked to avoid a missing data flag in the DQR.

If no stenosis, or no documentation of graft stenosis, leave blank.

- Patent
- Stenosis  $\geq 50\%$
- 100% Occlusion
- Not documented

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**SEQ. #: 1305**

**Long Name:** Stent Stenosis - Diagonal 2

**Short Name:** StntStenDiag2

**Definition:** Indicate the highest percent of stent stenosis in this vessel at the time of this surgery.

**Intent/Clarification:**

The intent is to capture the degree of in-stent stenosis is present.

If no documentation of in-stent stenosis, leave blank.

If “Stent Present” (field 1185) is marked “Yes,” at least one vessel must have a stent present marked to avoid a missing data flag in the DQR.

If no documentation of in- stenosis, leave blank.

- Patent
- Stenosis  $\geq$  50%
- Not documented

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**SEQ. #: 1310**

**Long Name:** Fractional Flow Reserve (FFR) - Diagonal 2

**Short Name:** FFRDiag2

**Definition:** Indicate the FFR in this vessel at the time of this surgery.

**Intent/Clarification:**

The intent is to capture the pressure difference across a coronary artery when FFR (field 1190) is “Yes,” and has been performed and documented in at least one vessel.

If there is no FFR reported for this vessel, leave blank. Choose the **lowest** value

documented in the medical record. A FFR of 0.70 indicates a higher level of stenosis than a FFR of 0.80.

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**SEQ. #: 1312**

**Long Name:** Instantaneous Wave-Free Ration (iFR) - Diagonal 2

**Short Name:** IFRDiag2

**Definition:** Indicate the iFR in this vessel at the time of this surgery.

**Intent/Clarification:**

If there is no iFR reported for this vessel, leave blank. Choose the **lowest** value

documented in the medical record. iFR values of below 0.90 suggest flow limitation.

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**SEQ. #: 1315**

**Long Name:** Percent Stenosis - Diagonal 3

**Short Name:** PctStenDiag3

**Definition:** Indicate the highest percent stenosis in this vessel at the time of this surgery.

**Intent/Clarification:**

The intent is to capture % stenosis for vessels with documented stenosis  $\geq$  50%

If “Native Artery % Stenosis Known” (field 1175) is marked “Yes,” at least one vessel must

have a percent stenosis marked to avoid a missing data flag in the DQR.  
If there is no stenosis or no documentation or mention of a vessel, leave the selection blank

In instances where multiple lesions are present, enter the single highest percent stenosis noted in that vessel. When ranges are reported, such as 45- 50% for stenosis, **report as the highest percent in range, in this case 50%.**

**Update General Statement / FAQ September 2017:** Do we enter vessel stenosis in a coronary artery in the data collection form if it is less than 50%?

Answer: When coding the % stenosis in a native coronary artery, code all the known percentages even if they are less than 50%. For reports where there is 0% stenosis, enter 0%. If stenosis of the vessel is not reported, then leave blank. Understand that these fields will only need to be completed when the number of diseased vessels in NumDisV - seq 1170 is select as one or more.

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**SEQ. #:** 1320

**Long Name:** Graft Stenosis - Diagonal 3

**Short Name:** GrftStenDiag3

**Definition:** Indicate the highest percent stenosis in this graft at the time of this surgery.

**Intent/Clarification:**

The intent is to capture the degree of stenosis in a graft if one is present.

If "Graft Present" (field 1180) is marked "Yes," at least one vessel must have a graft stenosis marked to avoid a missing data flag in the DQR.

If no stenosis, or no documentation of graft stenosis, leave blank.

- Patent
- Stenosis  $\geq$  50%
- 100% Occlusion
- Not documented

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**SEQ. #:** 1325

**Long Name:** Stent Stenosis - Diagonal 3

**Short Name:** StntStenDiag3

**Definition:** Indicate the highest percent of stent stenosis in this vessel at the time of this surgery.

**Intent/Clarification:**

The intent is to capture the degree of in-stent stenosis is present.

If no documentation of in-stent stenosis, leave blank.

If "Stent Present" (field 1185) is marked "Yes," at least one vessel must have a stent

present marked to avoid a missing data flag in the DQR.  
If no documentation of in-stenosis, leave blank.

- Patent
- Stenosis  $\geq 50\%$
- Not documented

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**SEQ. #:** 1330

**Long Name:** Fractional Flow Reserve (FFR) - Diagonal 3

**Short Name:** FFRDiag3

**Definition:** Indicate the FFR in this vessel at the time of this surgery.

**Intent/Clarification:**

The intent is to capture the pressure difference across a coronary artery when FFR (field 1190) is “Yes,” and has been performed and documented in at least one vessel. If there is no FFR reported for this vessel, leave blank. Choose the **lowest** value documented in the medical record. A FFR of 0.70 indicates a higher level of stenosis than a FFR of 0.80.

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**SEQ. #:** 1332

**Long Name:** Instantaneous Wave-Free Ration (iFR) - Diagonal 3

**Short Name:** IFRDiag3

**Definition:** Indicate the iFR in this vessel at the time of this surgery.

**Intent/Clarification:**

If there is no iFR reported for this vessel, leave blank. Choose the **lowest** value documented in the medical record. iFR values of below 0.90 suggest flow limitation.

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**SEQ. #:** 1335

**Long Name:** Percent Stenosis - Circumflex

**Short Name:** PctStenCircflx

**Definition:** Indicate the highest percent stenosis in this vessel at the time of this surgery.

**Intent/Clarification:**

The intent is to capture % stenosis for vessels with documented stenosis  $\geq 50\%$ . If “Native Artery % Stenosis Known” (field 1175) is marked “Yes,” at least one vessel must have a percent stenosis marked to avoid a missing data flag in the DQR. If there is no stenosis or no documentation or mention of a vessel, leave the selection blank.

In instances where multiple lesions are present, enter the single highest percent stenosis noted in that vessel. When ranges are reported, such as 45- 50% for stenosis, **report as the highest percent in range, in this case 50%.**

**Update General Statement / FAQ September 2017:** Do we enter vessel stenosis in a coronary artery in the data collection form if it is less than 50%?

Answer: When coding the % stenosis in a native coronary artery, code all the known percentages even if they are less than 50%. For reports where there is 0% stenosis, enter 0%. If stenosis of the vessel is not reported, then leave blank. Understand that these fields will only need to be completed when the number of diseased vessels in NumDisV - seq 1170 is select as one or more.

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**SEQ. #: 1340**

**Long Name:** Graft Stenosis - Circumflex

**Short Name:** GrftStenCircflx

**Definition:** Indicate the highest percent stenosis in this graft at the time of this surgery.

**Intent/Clarification:**

The intent is to capture the degree of stenosis in a graft if one is present.

If "Graft Present" (field 1180) is marked "Yes," at least one vessel must have a graft stenosis marked to avoid a missing data flag in the DQR.

If no stenosis, or no documentation of graft stenosis, leave blank.

- Patent
- Stenosis  $\geq$  50%
- 100% Occlusion
- Not documented

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**SEQ. #: 1345**

**Long Name:** Stent Stenosis - Circumflex

**Short Name:** StntStenCircflx

**Definition:** Indicate the highest percent of stent stenosis in this vessel at the time of this surgery.

**Intent/Clarification:**

The intent is to capture the degree of stenosis in a graft if one is present.

If "Graft Present" (field 1180) is marked "Yes," at least one vessel must have a graft stenosis marked to avoid a missing data flag in the DQR.

If no stenosis, or no documentation of graft stenosis, leave blank.

- Patent
- Stenosis  $\geq$  50%
- 100% Occlusion
- Not documented



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**SEQ. #:** 1350

**Long Name:** Fractional Flow Reserve (FFR) - Circumflex

**Short Name:** FFRCircflx

**Definition:** Indicate the FFR in this vessel at the time of this surgery.

**Intent/Clarification:**

The intent is to capture the pressure difference across a coronary artery when FFR (field 1190) is "Yes," and has been performed and documented in at least one vessel. If there is no FFR reported for this vessel, leave blank. Choose the lowest value documented in the medical record. A FFR of 0.70 indicates a higher level of stenosis than a FFR of 0.80.

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**SEQ. #:** 1352

**Long Name:** Instantaneous Wave-Free Ration (iFR) - Circumflex

**Short Name:** IFRCircflx

**Definition:** Indicate the iFR in this vessel at the time of this surgery.

**Intent/Clarification:**

If there is no iFR reported for this vessel, leave blank. Choose the **lowest** value documented in the medical record. iFR values of below 0.90 suggest flow limitation.

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**SEQ. #:** 1355

**Long Name:** Percent Stenosis - Obtuse Marginal 1

**Short Name:** PctStenOM1

**Definition:** Indicate the highest percent stenosis in this vessel at the time of this surgery.

**Intent/Clarification:**

The intent is to capture % stenosis for vessels with documented stenosis  $\geq 50\%$ . If "Native Artery % Stenosis Known" (field 1175) is marked "Yes," at least one vessel must have a percent stenosis marked to avoid a missing data flag in the DQR. If there is no stenosis or no documentation or mention of a vessel, leave the selection blank. In instances where multiple lesions are present, enter the single highest percent stenosis noted in that vessel. When ranges are reported, such as 45- 50% for stenosis, **report as the highest percent in range, in this case 50%**.

**Update General Statement / FAQ September 2017:** Do we enter vessel stenosis in a coronary artery in the data collection form if it is less than 50%?

Answer: When coding the % stenosis in a native coronary artery, code all the known percentages even if they are less than 50%. For reports where there is 0% stenosis, enter 0%. If stenosis of the vessel is not reported, then leave blank. Understand that these fields will only need to be completed when the number of diseased vessels in NumDisV - seq 1170 is select as one or more.

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**SEQ. #:** 1360

**Long Name:** Graft Stenosis - Obtuse Marginal 1

**Short Name:** GrftStenOM1

**Definition:** Indicate the highest percent stenosis in this graft at the time of this surgery.

**Intent/Clarification:**

The intent is to capture the degree of stenosis in a graft if one is present.

If "Graft Present" (field 1180) is marked "Yes," at least one vessel must have a graft stenosis marked to avoid a missing data flag in the DQR.

If no stenosis, or no documentation of graft stenosis, leave blank.

- Patent
  - Stenosis  $\geq$  50%
  - 100% Occlusion
  - Not documented
- 
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**SEQ. #:** 1365

**Long Name:** Stent Stenosis - Obtuse Marginal 1

**Short Name:** StntStenOM1

**Definition:** Indicate the highest percent of stent stenosis in this vessel at the time of this surgery.

**Intent/Clarification:**

The intent is to capture the degree of in-stent stenosis is present.

If no documentation of in-stent stenosis, leave blank.

If "Stent Present" (field 1185) is marked "Yes," at least one vessel must have a stent present marked to avoid a missing data flag in the DQR.

If no documentation of in- stenosis, leave blank.

- Patent
- Stenosis  $\geq$  50%
- Not documented

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**SEQ. #:** 1370

**Long Name:** Fractional Flow Reserve (FFR) - Obtuse Marginal 1

**Short Name:** FFROM1

**Definition:** Indicate the FFR in this vessel at the time of this surgery.

**Intent/Clarification:**

The intent is to capture the pressure difference across a coronary artery when FFR (field 1190) is "Yes," and has been performed and documented in at least one vessel. If there is no FFR reported for this vessel, leave blank. Choose the **lowest** value documented in the medical record. A FFR of 0.70 indicates a higher level of stenosis than a FFR of 0.80.

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**SEQ. #:** 1372

**Long Name:** Instantaneous Wave-Free Ration (iFR) - Obtuse Marginal 1

**Short Name:** IFROM1

**Definition:** Indicate the iFR in this vessel at the time of this surgery.

**Intent/Clarification:**

If there is no iFR reported for this vessel, leave blank. Choose the **lowest** value documented in the medical record. iFR values of below 0.90 suggest flow limitation.

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**SEQ. #:** 1375

**Long Name:** Percent Stenosis - Obtuse Marginal 2

**Short Name:** PctStenOM2

**Definition:** Indicate the highest percent stenosis in this vessel at the time of this surgery.

**Intent/Clarification:**

The intent is to capture % stenosis for vessels with documented stenosis  $\geq 50\%$   
If "Native Artery % Stenosis Known" (field 1175) is marked "Yes," at least one vessel must have a percent stenosis marked to avoid a missing data flag in the DQR.  
If there is no stenosis or no documentation or mention of a vessel, leave the selection blank  
In instances where multiple lesions are present, enter the single highest percent stenosis noted in that vessel. When ranges are reported, such as 45- 50% for stenosis, **report as the highest percent in range, in this case 50%.**

**Update General Statement / FAQ September 2017:** Do we enter vessel stenosis in a coronary artery in the data collection form if it is less than 50%?

Answer: When coding the % stenosis in a native coronary artery, code all the known percentages even if they are less than 50%. For reports where there is 0% stenosis, enter 0%. If stenosis of the vessel is not reported, then leave blank. Understand that these fields will only need to be completed when the number of diseased vessels in NumDisV - seq 1170 is select as one or more.

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**SEQ. #:** 1380

**Long Name:** Graft Stenosis - Obtuse Marginal 2

**Short Name:** GrftStenOM2

**Definition:** Indicate the highest percent stenosis in this graft at the time of this surgery.

**Intent/Clarification:**

The intent is to capture the degree of stenosis in a graft if one is present.

If "Graft Present" (field 1180) is marked "Yes," at least one vessel must have a graft stenosis marked to avoid a missing data flag in the DQR.

If no stenosis, or no documentation of graft stenosis, leave blank.

- Patent
  - Stenosis  $\geq$  50%
  - 100% Occlusion
  - Not documented
- 
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**SEQ. #:** 1385

**Long Name:** Stent Stenosis - Obtuse Marginal 2

**Short Name:** StntStenOM2

**Definition:** Indicate the highest percent of stent stenosis in this vessel at the time of this surgery.

**Intent/Clarification:**

The intent is to capture the degree of in-stent stenosis is present.

If no documentation of in-stent stenosis, leave blank.

If "Stent Present" (field 1185) is marked "Yes," at least one vessel must have a stent present marked to avoid a missing data flag in the DQR.

If no documentation of in- stenosis, leave blank.

- Patent
  - Stenosis  $\geq$  50%
  - Not documented
- 
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**SEQ. #:** 1390

**Long Name:** Fractional Flow Reserve (FFR) - Obtuse Marginal 2

**Short Name:** FFROM2

**Definition:** Indicate the FFR in this vessel at the time of this surgery.

**Intent/Clarification:**

The intent is to capture the pressure difference across a coronary artery when FFR (field 1190) is "Yes," and has been performed and documented in at least one vessel. If there is no FFR reported for this vessel, leave blank. Choose the **lowest** value documented in the medical record. A FFR of 0.70 indicates a higher level of stenosis than a FFR of 0.80.

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**SEQ. #:** 1392

**Long Name:** Instantaneous Wave-Free Ration (iFR) - Obtuse Marginal 2

**Short Name:** IFROM2

**Definition:** Indicate the iFR in this vessel at the time of this surgery.

**Intent/Clarification:**

If there is no iFR reported for this vessel, leave blank. Choose the **lowest** value documented in the medical record. iFR values of below 0.90 suggest flow limitation.

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**SEQ. #:** 1395

**Long Name:** Percent Stenosis - Obtuse Marginal 3

**Short Name:** PctStenOM3

**Definition:** Indicate the highest percent stenosis in this vessel at the time of this surgery.

**Intent/Clarification:**

The intent is to capture % stenosis for vessels with documented stenosis  $\geq 50\%$ . If "Native Artery % Stenosis Known" (field 1175) is marked "Yes," at least one vessel must have a percent stenosis marked to avoid a missing data flag in the DQR. If there is no stenosis or no documentation or mention of a vessel, leave the selection blank. In instances where multiple lesions are present, enter the single highest percent stenosis noted in that vessel. When ranges are reported, such as 45- 50% for stenosis, **report as the highest percent in range, in this case 50%.**

**Update General Statement / FAQ September 2017:** Do we enter vessel stenosis in a coronary artery in the data collection form if it is less than 50%?

Answer: When coding the % stenosis in a native coronary artery, code all the known percentages even if they are less than 50%. For reports where there is 0% stenosis, enter 0%. If stenosis of the vessel is not reported, then leave blank. Understand that these fields will only need to be completed when the number of diseased vessels in NumDisV - seq 1170 is select as one or more.

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**SEQ. #:** 1400

**Long Name:** Graft Stenosis - Obtuse Marginal 3

**Short Name:** GrftStenOM3

**Definition:** Indicate the highest percent stenosis in this graft at the time of this surgery.

**Intent/Clarification:**

The intent is to capture the degree of stenosis in a graft if one is present.

If "Graft Present" (field 1180) is marked "Yes," at least one vessel must have a graft stenosis marked to avoid a missing data flag in the DQR.

If no stenosis, or no documentation of graft stenosis, leave blank.

- Patent
- Stenosis  $\geq$  50%
- 100% Occlusion
- Not documented

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**SEQ. #:** 1405

**Long Name:** Stent Stenosis - Obtuse Marginal 3

**Short Name:** StntStenOM3

**Definition:** Indicate the highest percent of stent stenosis in this vessel at the time of this surgery.

**Intent/Clarification:**

If no documentation of in-stent stenosis, leave blank.

The intent is to capture the degree of in-stent stenosis is present.

If "Stent Present" (field 1185) is marked "Yes," at least one vessel must have a stent present marked to avoid a missing data flag in the DQR.

If no documentation of in- stenosis, leave blank.

- Patent
- Stenosis  $\geq$  50%
- Not documented

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**SEQ. #:** 1410

**Long Name:** Fractional Flow Reserve (FFR) - Obtuse Marginal 3

**Short Name:** FFR0M3

**Definition:** Indicate the FFR in this vessel at the time of this surgery.

**Intent/Clarification:**

The intent is to capture the pressure difference across a coronary artery when FFR (field 1190) is "Yes," and has been performed and documented in at least one vessel. If there is no FFR reported for this vessel, leave blank. Choose the **lowest** value documented in the medical record. A FFR of 0.70 indicates a higher level of stenosis than a FFR of 0.80.

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**SEQ. #:** 1412

**Long Name:** Instantaneous Wave-Free Ration (iFR) - Obtuse Marginal 3

**Short Name:** IFR0M3

**Definition:** Indicate the iFR in this vessel at the time of this surgery.

**Intent/Clarification:**

If there is no iFR reported for this vessel, leave blank. Choose the **lowest** value documented in the medical record. iFR values of below 0.90 suggest flow limitation.

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**SEQ. #:** 1415

**Long Name:** Percent Stenosis - Ramus

**Short Name:** PctStenRamus

**Definition:** Indicate the highest percent stenosis in this vessel at the time of this surgery.

**Intent/Clarification:**

The intent is to capture % stenosis for vessels with documented stenosis  $\geq 50\%$ . If "Native Artery % Stenosis Known" (field 1175) is marked "Yes," at least one vessel must have a percent stenosis marked to avoid a missing data flag in the DQR. If there is no stenosis or no documentation or mention of a vessel, leave the selection blank.

In instances where multiple lesions are present, enter the single highest percent stenosis noted in that vessel. When ranges are reported, such as 45- 50% for stenosis, **report as the highest percent in range, in this case 50%**.

**Update General Statement / FAQ September 2017:** Do we enter vessel stenosis in a coronary artery in the data collection form if it is less than 50%?

Answer: When coding the % stenosis in a native coronary artery, code all the known percentages even if they are less than 50%. For reports where there is 0% stenosis, enter 0%. If stenosis of the vessel is not reported, then leave blank. Understand that these fields will only need to be completed when the number of diseased vessels in NumDisV - seq 1170 is select as one or more.

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**SEQ. #:** 1420

**Long Name:** Graft Stenosis - Ramus

**Short Name:** GrftStenRamus

**Definition:** Indicate the highest percent stenosis in this graft at the time of this surgery.

**Intent/Clarification:**

The intent is to capture the degree of stenosis in a graft if one is present.

If "Graft Present" (field 1180) is marked "Yes," at least one vessel must have a graft stenosis marked to avoid a missing data flag in the DQR.

If no stenosis, or no documentation of graft stenosis, leave blank.

- Patent
- Stenosis  $\geq$  50%
- 100% Occlusion
- Not documented

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**SEQ. #:** 1425

**Long Name:** Stent Stenosis - Ramus

**Short Name:** StntStenRamus

**Definition:** Indicate the highest percent of stent stenosis in this vessel at the time of this surgery.

**Intent/Clarification:**

The intent is to capture the degree of in-stent stenosis is present.

If no documentation of in-stent stenosis, leave blank.

If "Stent Present" (field 1185) is marked "Yes," at least one vessel must have a stent present marked to avoid a missing data flag in the DQR.

If no documentation of in- stenosis, leave blank.

- Patent
- Stenosis  $\geq$  50%
- Not documented

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**SEQ. #:** 1430

**Long Name:** Fractional Flow Reserve (FFR) - Ramus

**Short Name:** FFRRamus

**Definition:** Indicate the FFR in this vessel at the time of this surgery.

**Intent/Clarification:**

The intent is to capture the pressure difference across a coronary artery when FFR (field 1190) is "Yes," and has been performed and documented in at least one vessel.

If there is no FFR reported for this vessel, leave blank. Choose the **lowest** value documented in the medical record. A FFR of 0.70 indicates a higher level of stenosis than a FFR of 0.80.



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**SEQ. #:** 1432

**Long Name:** Instantaneous Wave-Free Ration (iFR) - Ramus

**Short Name:** IFRRamus

**Definition:** Indicate the iFR in this vessel at the time of this surgery.

**Intent/Clarification:**

If there is no iFR reported for this vessel, leave blank. Choose the **lowest** value documented in the medical record. iFR values of below 0.90 suggest flow limitation.

If there is no iFR reported for this vessel, leave blank. Choose the lowest value documented in the medical record. iFR values of below 0.90 suggest flow limitation.

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**SEQ. #:** 1435

**Long Name:** Percent Stenosis - RCA

**Short Name:** PctStenRCA

**Definition:** Indicate the highest percent stenosis in this vessel at the time of this surgery.

**Intent/Clarification:**

The intent is to capture % stenosis for vessels with documented stenosis  $\geq 50\%$

If "Native Artery % Stenosis Known" (field 1175) is marked "Yes," at least one vessel must have a percent stenosis marked to avoid a missing data flag in the DQR.

If there is no stenosis or no documentation or mention of a vessel, leave the selection blank.

In instances where multiple lesions are present, enter the single highest percent stenosis noted in that vessel. When ranges are reported, such as 45- 50% for stenosis, **report as the highest percent in range, in this case 50%.**

**Update Nov 2019- The right posterior atrioventricular segment (PAV or rPAV) and should be captured as the RCA in the Database.**

**Update General Statement / FAQ September 2017:** Do we enter vessel stenosis in a coronary artery in the data collection form if it is less than 50%?

Answer: When coding the % stenosis in a native coronary artery, code all the known percentages even if they are less than 50%. For reports where there is 0% stenosis, enter 0%. If stenosis of the vessel is not reported, then leave blank. Understand that these fields will only need to be completed when the number of diseased vessels in NumDisV - seq 1170 is select as one or more.

**FAQ October 2017:** How would bilateral spontaneous coronary dissections from the ostium of both the Left and Right main coronary arteries to the distal end of the coronary tree be coded.

Answer: Code 100% for both LM and RCA.

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**SEQ. #:** 1440

**Long Name:** Graft Stenosis - RCA

**Short Name:** GrftStenRCA

**Definition:** Indicate the highest percent stenosis in this graft at the time of this surgery.

**Intent/Clarification:**

The intent is to capture the degree of stenosis in a graft if one is present.

If “Graft Present” (field 1180) is marked “Yes,” at least one vessel must have a graft stenosis marked to avoid a missing data flag in the DQR.

If no stenosis, or no documentation of graft stenosis, leave blank.

- Patent
- Stenosis  $\geq$  50%
- 100% Occlusion
- Not documented

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**SEQ. #:** 1445

**Long Name:** Stent Stenosis - RCA

**Short Name:** StntStenRCA

**Definition:** Indicate the highest percent of stent stenosis in this vessel at the time of this surgery.

**Intent/Clarification:**

If no documentation of in-stent stenosis, leave blank.

The intent is to capture the degree of in-stent stenosis is present.

If “Stent Present” (field 1185) is marked “Yes,” at least one vessel must have a stent present marked to avoid a missing data flag in the DQR.

If no documentation of in- stenosis, leave blank.

- Patent
- Stenosis  $\geq$  50%
- Not documented

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**SEQ. #:** 1450

**Long Name:** Fractional Flow Reserve (FFR) - RCA

**Short Name:** FFRRCA

**Definition:** Indicate the FFR in this vessel at the time of this surgery.

**Intent/Clarification:**

The intent is to capture the pressure difference across a coronary artery when FFR (field 1190) is “Yes,” and has been performed and documented in at least one vessel.

If there is no FFR reported for this vessel, leave blank. Choose the **lowest** value documented in the medical record. A FFR of 0.70 indicates a higher level of stenosis than a FFR of 0.80.

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**SEQ. #:** 1452

**Long Name:** Instantaneous Wave-Free Ration (iFR) - RCA

**Short Name:** IFRRCA

**Definition:** Indicate the iFR in this vessel at the time of this surgery.

**Intent/Clarification:**

If there is no iFR reported for this vessel, leave blank. Choose the **lowest** value documented in the medical record. iFR values of below 0.90 suggest flow limitation.

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**SEQ. #:** 1455

**Long Name:** Percent Stenosis - Acute Marginal (AM)

**Short Name:** PctStenAM

**Definition:** Indicate the highest percent stenosis in this vessel at the time of this surgery.

**Intent/Clarification:**

The intent is to capture % stenosis for vessels with documented stenosis  $\geq 50\%$

If "Native Artery % Stenosis Known" (field 1175) is marked "Yes," at least one vessel must have a percent stenosis marked to avoid a missing data flag in the DQR.

If there is no stenosis or no documentation or mention of a vessel, leave the selection blank

In instances where multiple lesions are present, enter the single highest percent stenosis noted in that vessel. When ranges are reported, such as 45- 50% for stenosis, **report as the highest percent in range, in this case 50%.**

**Update General Statement / FAQ September 2017:** Do we enter vessel stenosis in a coronary artery in the data collection form if it is less than 50%?

Answer: When coding the % stenosis in a native coronary artery, code all the known percentages even if they are less than 50%. For reports where there is 0% stenosis, enter 0%. If stenosis of the vessel is not reported, then leave blank. Understand that these fields will only need to be completed when the number of diseased vessels in NumDisV - seq 1170 is select as one or more.

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**SEQ. #:** 1460

**Long Name:** Graft Stenosis - Acute Marginal (AM)

**Short Name:** GrftStenAM

**Definition:** Indicate the highest percent stenosis in this graft at the time of this surgery.

**Intent/Clarification:**

The intent is to capture the degree of stenosis in a graft if one is present.

If "Graft Present" (field 1180) is marked "Yes," at least one vessel must have a graft stenosis marked to avoid a missing data flag in the DQR.

If no stenosis, or no documentation of graft stenosis, leave blank.

- Patent
- Stenosis  $\geq$  50%
- 100% Occlusion
- Not documented

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**SEQ. #:** 1465

**Long Name:** Stent Stenosis - Acute Marginal (AM)

**Short Name:** StntStenAM

**Definition:** Indicate the highest percent of stent stenosis in this vessel at the time of this surgery.

**Intent/Clarification:**

The intent is to capture the degree of in-stent stenosis is present.

If no documentation of in-stent stenosis, leave blank.

If "Stent Present" (field 1185) is marked "Yes," at least one vessel must have a stent present marked to avoid a missing data flag in the DQR.

If no documentation of in- stenosis, leave blank.

- Patent
- Stenosis  $\geq$  50%
- Not documented

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**SEQ. #:** 1470

**Long Name:** Fractional Flow Reserve (FFR) - Acute Marginal (AM)

**Short Name:** FFRAM

**Definition:** Indicate the FFR in this vessel at the time of this surgery.

**Intent/Clarification:**

The intent is to capture the pressure difference across a coronary artery when FFR (field 1190) is "Yes," and has been performed and documented in at least one vessel.

If there is no FFR reported for this vessel, leave blank. Choose the **lowest** value documented in the medical record. A FFR of 0.70 indicates a higher level of stenosis than a FFR of 0.80.

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**SEQ. #:** 1472

**Long Name:** Instantaneous Wave-Free Ratio (iFR) - Acute Marginal (AM)

**Short Name:** IFRAM

**Definition:** Indicate the iFR in this vessel at the time of this surgery.

**Intent/Clarification:**

Choose the **lowest** value documented in the medical record. iFR values of below 0.90 suggest flow limitation. If there is no iFR reported for this vessel, leave blank.

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**SEQ. #:** 1475

**Long Name:** Percent Stenosis - Posterior Descending (PDA)

**Short Name:** PctStenPDA

**Definition:** Indicate the highest percent stenosis in this vessel at the time of this surgery.

**Intent/Clarification:**

The intent is to capture % stenosis for vessels with documented stenosis  $\geq 50\%$   
If "Native Artery % Stenosis Known" (field 1175) is marked "Yes," at least one vessel must have a percent stenosis marked to avoid a missing data flag in the DQR.

If there is no stenosis or no documentation or mention of a vessel, leave the selection blank

In instances where multiple lesions are present, enter the single highest percent stenosis noted in that vessel. When ranges are reported, such as 45- 50% for stenosis, **report as the highest percent in range, in this case 50%.**

**Update General Statement / FAQ September 2017:** Do we enter vessel stenosis in a coronary artery in the data collection form if it is less than 50%?

Answer: When coding the % stenosis in a native coronary artery, code all the known percentages even if they are less than 50%. For reports where there is 0% stenosis, enter 0%. If stenosis of the vessel is not reported, then leave blank. Understand that these fields will only need to be completed when the number of diseased vessels in NumDisV - seq 1170 is select as one or more.

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**SEQ. #:** 1480

**Long Name:** Graft Stenosis - Posterior Descending (PDA)

**Short Name:** GrftStenPDA

**Definition:** Indicate the highest percent stenosis in this graft at the time of this surgery.

**Intent/Clarification:**

The intent is to capture the degree of stenosis in a graft if one is present.

If "Graft Present" (field 1180) is marked "Yes," at least one vessel must have a graft stenosis marked to avoid a missing data flag in the DQR.

If no stenosis, or no documentation of graft stenosis, leave blank.

- Patent
- Stenosis  $\geq$  50%
- 100% Occlusion
- Not documented

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**SEQ. #: 1485**

**Long Name:** Stent Stenosis - Posterior Descending (PDA)

**Short Name:** StntStenPDA

**Definition:** Indicate the highest percent of stent stenosis in this vessel at the time of this surgery.

**Intent/Clarification:**

If no documentation of in-stent stenosis, leave blank.

The intent is to capture the degree of in-stent stenosis is present.

If "Stent Present" (field 1185) is marked "Yes," at least one vessel must have a stent present marked to avoid a missing data flag in the DQR.

If no documentation of in- stenosis, leave blank.

- Patent
- Stenosis  $\geq$  50%
- Not documented

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**SEQ. #: 1490**

**Long Name:** Fractional Flow Reserve (FFR) - Posterior Descending (PDA)

**Short Name:** FFRPDA

**Definition:** Indicate the FFR in this vessel at the time of this surgery.

**Intent/Clarification:**

The intent is to capture the pressure difference across a coronary artery when FFR (field 1190) is "Yes," and has been performed and documented in at least one vessel.

If there is no FFR reported for this vessel, leave blank. Choose the **lowest** value documented in the medical record. A FFR of 0.70 indicates a higher level of stenosis than a FFR of 0.80.

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**SEQ. #: 1492**

**Long Name:** Instantaneous Wave-Free Ration (iFR) - Posterior Descending (PDA)

**Short Name:** IFRPDA

**Definition:** Indicate the iFR in this vessel at the time of this surgery.

**Intent/Clarification:**

If there is no iFR reported for this vessel, leave blank. Choose the **lowest** value documented in the medical record. iFR values of below 0.90 suggest flow limitation.

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**SEQ. #:** 1495

**Long Name:** Percent Stenosis - Posterolateral (PLB)

**Short Name:** PctStenPLB

**Definition:** Indicate the highest percent stenosis in this vessel at the time of this surgery.

**Intent/Clarification:**

The intent is to capture % stenosis for vessels with documented stenosis  $\geq 50\%$ . If "Native Artery % Stenosis Known" (field 1175) is marked "Yes," at least one vessel must have a percent stenosis marked to avoid a missing data flag in the DQR.

If there is no stenosis or no documentation or mention of a vessel, leave the selection blank.

In instances where multiple lesions are present, enter the single highest percent stenosis noted in that vessel. When ranges are reported, such as 45- 50% for stenosis, **report as the highest percent in range, in this case 50%**.

**Update General Statement / FAQ September 2017:** Do we enter vessel stenosis in a coronary artery in the data collection form if it is less than 50%?

Answer: When coding the % stenosis in a native coronary artery, code all the known percentages even if they are less than 50%. For reports where there is 0% stenosis, enter 0%. If stenosis of the vessel is not reported, then leave blank. Understand that these fields will only need to be completed when the number of diseased vessels in NumDisV - seq 1170 is select as one or more.

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**SEQ. #:** 1500

**Long Name:** Graft Stenosis - Posterolateral (PLB)

**Short Name:** GrftStenPLB

**Definition:** Indicate the highest percent stenosis in this graft at the time of this surgery.

**Intent/Clarification:**

The intent is to capture the degree of stenosis in a graft if one is present.

If "Graft Present" (field 1180) is marked "Yes," at least one vessel must have a graft stenosis marked to avoid a missing data flag in the DQR.

If no stenosis, or no documentation of graft stenosis, leave blank.

- Patent
- Stenosis  $\geq 50\%$
- 100% Occlusion

- Not documented

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**SEQ. #:** 1505

**Long Name:** Stent Stenosis - Posterolateral (PLB)

**Short Name:** StntStenPLB

**Definition:** Indicate the highest percent of stent stenosis in this vessel at the time of this surgery.

**Intent/Clarification:**

If no documentation of in-stent stenosis, leave blank.

The intent is to capture the degree of in-stent stenosis is present.

If “Stent Present” (field 1185) is marked “Yes,” at least one vessel must have a stent present marked to avoid a missing data flag in the DQR.

If no documentation of in- stenosis, leave blank.

- Patent
- Stenosis  $\geq$  50%
- Not documented

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**SEQ. #:** 1510

**Long Name:** Fractional Flow Reserve (FFR) - Posterolateral (PLB)

**Short Name:** FFRPLB

**Definition:** Indicate the FFR in this vessel at the time of this surgery.

**Intent/Clarification:**

The intent is to capture the pressure difference across a coronary artery when FFR (field 1190) is “Yes,” and has been performed and documented in at least one vessel.

If there is no FFR reported for this vessel, leave blank. Choose the **lowest** value documented in the medical record. A FFR of 0.70 indicates a higher level of stenosis than a FFR of 0.80.

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**SEQ. #:** 1512

**Long Name:** Instantaneous Wave-Free Ration (iFR) - Posterolateral (PLB)

**Short Name:** IFRPLB

**Definition:** Indicate the iFR in this vessel at the time of this surgery.

**Intent/Clarification:**

If there is no iFR reported for this vessel, leave blank. Choose the **lowest** value documented in the medical record. iFR values of below 0.90 suggest flow limitation.



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**SEQ. #:** 1515

**Long Name:** Syntax Score Known

**Short Name:** SyntaxScrKnown

**Definition:** Indicate whether a syntax score is known.

**Intent/Clarification:**

The SYNTAX score is an angiographic grading tool to determine the complexity of coronary artery disease. It is not used routinely at all sites.

- Yes - a syntax score is documented
  - No - no syntax score is documented
- 
- 

**SEQ. #:** 1520

**Long Name:** Syntax Score

**Short Name:** SyntaxScr

**Definition:** Indicate syntax score documented prior to this surgery.

**Intent/Clarification:**

The SYNTAX score is an angiographic grading tool to determine the complexity of coronary artery disease. The SYNTAX score is the sum of the points assigned to each individual lesion identified in the coronary tree with >50% diameter narrowing in vessels > 1.5mm diameter.

Each segment is given a score of 1 or 2 based on the presence of disease and this score is then weighted based on a chart, with values ranging from 3.5 for the proximal left anterior descending artery (LAD) to 5.0 for left main, and 0.5 for smaller branches. The percent diameter stenosis is not a consideration in the SYNTAX score, only the presence of a stenosis from 50–99% diameter, <50% diameter narrowing or the total occlusion.

The SYNTAX score is a useful differentiator for the outcome of patients undergoing three-vessel PCI. The patients with the highest scores have the highest risk and the lowest scores, the lowest risk. The high scores indicate complex conditions and represent greatest risks to patients undergoing PCI. High scores have the worst prognosis for revascularization with PCI compared to coronary artery bypass graft surgery (CABG).

When the Syntax score is reported in a range, code the highest value.

Reference: Sianos G, Morel MA, Kappetein AP, et al. The SYNTAX score: an angiographic tool grading the complexity of CAD. *EuroInterv* 2005; 1: 219-227

- Normal
  - Abnormal
  - Unavailable
- 
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**SEQ. #:** 1525

**Long Name:** Stress Test Performed

**Short Name:** StressTst

**Definition:** Indicate whether a stress test was performed prior to this surgery.

**Intent/Clarification:**

Indicate whether a stress test was performed within 6 months prior to this surgery. Types of stress tests include the following:

Standard Exercise Stress Test without imaging:

Treadmill Exercise Stress EKG

Stress Echocardiogram

Exercise Stress Echo with Doppler

Exercise Echo with Doppler

Pharmacologic Stress Echo with Doppler

Exercise Echo

Exercise Echo with Color Flow Doppler

Exercise Echo with Spectral Color Flow

Stress Testing with SPECT MPI

Nuclear Medicine Studies

Cardiac Scan - Infarct

Myocardial Perfusion - Rest/Stress

Myocardial Perfusion - Rest/Spect

Myocardial Perfusion - Rest/Stress/Spect

Myocardial Perfusion - Rest or Stress

PET Studies Heart, N-13 Blood Flow, Rest

Heart, N-13 Blood Flow, Stress

Myocardial Viability with Nuclear Perfusion

Stress Testing with CMR

MRI Studies

CMRI Dobutamine Stress

CMRI Adenosine Stress and Perfusion

CMRI Exercise Stress

CMRI Stress plus Flow Velocities with infusion

CMRI Stress plus Flow Velocities without infusion

MRI Part 2 Exercise Stress EKG

MRI Part 2 Pharmacologic Stress EKG

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**SEQ. #:** 1531

**Long Name:** Stress Test Result

**Short Name:** StrsTstRes

**Definition:** Indicate the results of the stress test.

**Intent/Clarification:**

- **Negative:** A stress test is negative when the electrocardiogram (ECG) is normal or not suggestive of ischemia. ECGs are not suggestive of ischemia when < 1 mm of horizontal or down sloping ST segment depression or elevation for ≥ 60-80 milliseconds after the end of the QRS complex, either during or after exercise.
- **Positive:** A stress test is positive when the electrocardiogram (ECG) suggests ischemia. ECGs suggestive of ischemia can be described as having ≥ 1 mm of horizontal or down sloping ST-segment depression or elevation for ≥ 60-80 milliseconds after the end of the QRS complex, either during or after exercise. It is also be suggestive of ischemia if the patient had symptoms of ischemia (i.e. chest pain), arrhythmias, and/or a fall in blood pressure during or immediately after the procedure. If more than one study was performed with conflicting results and one study suggested coronary artery disease, code “Yes”.
- **Not documented**

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**SEQ. #: 1540**

**Long Name:** Hemo Data-EF Done

**Short Name:** HDEFD

**Definition:** Indicate whether the Ejection Fraction was measured prior to the induction of anesthesia.

**Intent/Clarification:**

Some patients may not have had an LV Gram performed during cardiac catheterization due to existing clinical conditions. Ejection fraction (EF) and hemodynamic pressures may be obtained from other sources other than coronary angiogram, such as echo, or MUGA.

Because anesthesia can alter the values to be collected, do not collect data from intra-operative transesophageal echo (TEE) after the induction of anesthesia, unless you have no other source to collect the information.

Time Frame: Do not use results more than 6 months prior to this operation.

**October 2019:** [Please refer to the General Statement from October 2019 regarding time frame of hemodynamic results.](#)

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**SEQ. #: 1545**

**Long Name:** Hemo Data-EF

**Short Name:** HDEF

**Definition:** Indicate the percentage of the blood emptied from the left ventricle at the end of the contraction. Use the most recent determination prior to the surgical intervention documented on a diagnostic report.

Enter a percentage in the range of 1 - 99. If a qualitative description is reported, code the mean value for that range; i.e., normal (50-70%) is coded as 60%.

- Hyperdynamic: >70% (code 71%)
- Normal: 50%–70% (midpoint 60%)
- Mild dysfunction: 40%–49% (midpoint 45%)
- Moderate dysfunction: 30%–39% (midpoint 35%)
- Severe dysfunction: <30% (code 29%)

Note: If no diagnostic report is in the medical record, a value documented in the medical record is acceptable.

ACCF/AHA 2013

**Intent/Clarification:**

**Report of a reported range value, for example, a range of 55-60 is coded as 58%.**

~~Use the most recent determination prior to the induction of anesthesia documented on a diagnostic report, regardless of the diagnostic procedure to obtain it.~~

If no diagnostic report specifying an ejection fraction (EF) is in the medical record, a value documented in the progress record is acceptable.

If there is no documentation of a pre-op EF, then it is acceptable to code the EF from the intra-op TEE prior to **incision**.

~~Use the surgeon's documentation if more than one value is reported as this was likely used to plan operative care.~~

Time Frame: Not greater than **6 months**.

**October 2019:** [Please refer to the General Statement from October 2019 regarding time frame of hemodynamic results.](#)

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**SEQ. #:** 1555

**Long Name:** Hemo Data-Dimensions Available

**Short Name:** DimAvail

**Definition:** Indicate whether intracardiac dimensions are available.

**Intent/Clarification:**

Time Frame: Collect the last value closest to incision, not greater than **6 months** prior.

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**SEQ. #:** 1560

**Long Name:** Hemo Data-LV End Systolic Dimension

**Short Name:** LVSD

**Definition:** Indicate LV End -Systolic Dimension in mm.

LV end systolic dimension is the same as left ventricular internal dimension in end systole (LVIDs)

**Intent/Clarification:**

During systole the left ventricle contracts pumping blood through the body. During diastole the left ventricle relaxes and fills with blood again. The systolic dimension of the left ventricle demonstrates ventricular emptying and when compared to the end diastolic dimension, left ventricular performance is calculated.

**October 2019:** [Please refer to the General Statement from October 2019 regarding time frame of hemodynamic results.](#)

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**SEQ. #:** 1565

**Long Name:** Hemo Data-LV End-Diastolic Dimension

**Short Name:** LVEDD

**Definition:** Indicate the Left Ventricular End-Diastolic Dimension in mm. LV end diastolic dimension is the same as left ventricular internal dimension in end diastole (LVIDs)

**Intent/Clarification:**

During systole the ventricles contract pumping blood through the body. During diastole the ventricles relax and fill with blood again. The end-diastolic dimension of the left ventricle demonstrates ventricular filling and when compared to the end systolic dimension, left ventricular performance is calculated.

**October 2019:** [Please refer to the General Statement from October 2019 regarding time frame of hemodynamic results.](#)

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**SEQ. #:** 1570

**Long Name:** Hemo-PA Systolic Pressure Measured

**Short Name:** PASYSMeas

**Definition:** Indicate whether the PA systolic pressure was measured prior to ~~incision~~ induction.

**Intent/Clarification:**

Elevated pulmonary artery pressures are indicative of pulmonary hypertension, mitral valve disease and other pulmonary/cardiac diseases. Normal systolic pulmonary artery pressure readings are between 15-30 mm of pressure. If there are no PA pressures recorded or available from heart Cath –one may use PA pressure values from Swan Ganz Catheter inserted for surgery prior to induction of anesthesia.

**October 2019:** [Please refer to the General Statement from October 2019 regarding time frame of hemodynamic results.](#)

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**SEQ. #:** 1575

**Long Name:** Hemo-PA Systolic Pressure

**Short Name:** PASYS

**Definition:** Capture highest PA systolic pressure recorded prior to incision-induction.

**Intent/Clarification:**

Elevated pulmonary artery pressures are indicative of pulmonary hypertension, mitral valve disease and other pulmonary/cardiac diseases. Normal systolic pulmonary artery pressure readings are between 15-30 mm of pressure.

If there are no PA pressures recorded or available from heart Cath one may use PA pressure values from Swan Ganz Catheter inserted for surgery prior to induction.

~~If more than one preoperative measurement is available, choose the~~ **HIGHEST** ~~PA systolic pressure recorded before induction.~~

If PA systolic pressure is not available, it is acceptable to code the peak RV systolic pressure (RSVP). RSVP and PA systolic pressures will be the same as long as there is no pulmonary valve disease or outflow obstruction.

~~If more than one preoperative measurement is available, choose the~~ **HIGHEST** ~~PA systolic pressure recorded before induction.~~

If there is a preoperative echo, use those values UNLESS the diagnostic information from the TEE changes the procedure performed.

If there is no preop information, you may use the pre-incision intraoperative TEE.

**FAQ August 2017:** Please clarify, should the value be taken prior to induction or prior to incision?

Answer: The PA systolic value should be taken prior to induction of anesthesia.

**October 2019:** [Please refer to the General Statement from October 2019 regarding time frame of hemodynamic results.](#)

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**SEQ. #:** 1590

**Long Name:** VD-Insuff-Aortic

**Short Name:** VDInsufA

**Definition:** Indicate whether there is evidence of Aortic valve insufficiency/regurgitation. Enter the degree of insufficiency reported closest to incision and no more than 6 months prior to surgery.

**Intent/Clarification:**

Regurgitation/insufficiency is incompetence of the aortic valve or any of its valvular apparatus which allows diastolic blood flow to flow back into the left ventricular chamber. This may be a chronic or an acute condition.

Time Frame: Collect the last value closest to incision, not greater than **6 months** prior. Choose the **highest** level of valve dysfunction when there are differences in interpretation of the most recent study. Capture even if patient is not scheduled for valve repair and/or replacement when available.

- None
- Trivial/Trace
- Mild
- Moderate
- Severe
- Not documented

**October 2019:** [Please refer to the General Statement from October 2019 regarding time frame of hemodynamic results.](#)

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**SEQ. #:** 1591

**Long Name:** VD-Aortic Valve Eccentric Jet

**Short Name:** VDAVEccJet

**Definition:** Indicate whether aortic valve regurgitation is an eccentric jet.

**Intent/Clarification:**

- Yes
- No
- Not Documented

**October 2019:** [Please refer to the General Statement from October 2019 regarding time frame of hemodynamic results.](#)

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**SEQ. #:** 1595

**Long Name:** VD-Aortic

**Short Name:** VDAort

**Definition:** Indicate whether Aortic Valve disease is present.

**Intent/Clarification:**

Aortic valvular disease can be congenital or acquired and cause stenosis, regurgitation or both.

The valve should be coded as being diseased if there is mild, moderate or severe

insufficiency or aortic stenosis.

**FAQ September 2018:** Does once diseased – always diseased apply to valves?  
Answer: No, the valve is not considered disease unless there is disease present on the prosthetic valve.

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**SEQ. #:** 1600

**Long Name:** VD-Stenosis-Aortic

**Short Name:** VDStenA

**Definition:** Indicate whether Aortic Stenosis is present.

**Intent/Clarification:**

The aortic valve controls the direction of blood flow from the left ventricle to the aorta. When in good working order, the aortic valve does not impede the flow of blood between these two spaces. Under some circumstances, the aortic valve becomes narrower than normal, impeding the flow of blood. This is known as aortic valve stenosis or aortic stenosis, often abbreviated as A.S.

AS is described as trace, mild, moderate or severe. Aortic valve stenosis may be caused by aging (leaflets become calcified, thick and stiff), birth defects (congenital bicuspid (2) leaflets) or other disease processes like rheumatic fever.

Capture any degree of aortic valve stenosis present, even if the patient is not scheduled for valve replacement, record if available.

- Yes
- No

Time Frame: Collect the last value closest to incision, not greater than **6 months**.

**October 2019:** [Please refer to the General Statement from October 2019 regarding time frame of hemodynamic results.](#)

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**SEQ. #:** 1605

**Long Name:** VD-Aortic Hemodynamic Data Available

**Short Name:** AoHemoDatAvail

**Definition:** Indicate whether aortic valve hemodynamic measurements are available.

**Intent/Clarification:**

Collect the last value prior to induction not greater than **6 months**; if no reported values are available, code the value closest to and prior to incision.

**October 2019:** [Please refer to the General Statement from October 2019 regarding time](#)



[frame of hemodynamic results.](#)

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**SEQ. #:** 1610

**Long Name:** VD-Smallest Aortic Valve Area

**Short Name:** VDAoVA

**Definition:** Indicate the ~~smallest~~ documented aortic valve area (in cm squared).

**Intent/Clarification:**

The normal adult aortic valve opening is 3.0-4.0 (cm<sup>2</sup>). Aortic stenosis becomes hemodynamically significant when the area decreases to less than 2(cm<sup>2</sup>), as the systolic flow is impeded across the valve. **Collect the last value prior to induction not greater than 6 months; if no reported values are available, code the value closest to and prior to incision.**

**October 2019:** [Please refer to the General Statement from October 2019 regarding time frame of hemodynamic results.](#)

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**SEQ. #:** 1615

**Long Name:** VD-Aortic Gradient-Highest Mean

**Short Name:** VDGradA

**Definition:** Indicate the ~~highest~~ documented MEAN gradient (in mmHg) across the aortic valve ~~closest to the time of surgery.~~

**Intent/Clarification:**

When the aortic valve becomes stenotic, it causes a pressure gradient between the left ventricle (LV) and the aorta. The more constricted the valve, the higher the gradient between the LV and the aorta. For example, if the gradient is 20 mmHg, at peak systole, while the LV generates a pressure of 140 mmHg, the pressure that is transmitted to the aorta would only be 120 mmHg. A blood pressure cuff would measure a normal systolic blood pressure; the actual pressure generated by the LV would be considerably higher. In individuals with AS, the left ventricle (LV) has to work harder to overcome the increased afterload caused by the stenotic aortic valve and eject blood out of the LV. The more severe the aortic stenosis, the higher the gradient is between the left ventricular systolic pressures and the aortic systolic pressures.

**Collect the last value prior to induction not greater than 6 months; if no reported values are available, code the value closest to and prior to incision.**

**October 2019:** [Please refer to the General Statement from October 2019 regarding time frame of hemodynamic results.](#)

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**SEQ. #:** 1616

**Long Name:** VD - Maximum Aortic Jet Velocity (Vmax)

**Short Name:** VDVMax

**Definition:** Indicate the maximum aortic jet velocity

**Intent/Clarification:**

The antegrade systolic velocity across the narrowed aortic valve, or aortic jet velocity, is measured using continuous-wave (CW) Doppler (CWD) ultrasound. Velocity increases as stenosis severity increases. **Collect the last value prior to induction not greater than 6 months; if no reported values are available, code the value closest to and prior to incision.**

**October 2019:** [Please refer to the General Statement from October 2019 regarding time frame of hemodynamic results.](#)

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**SEQ. #:** 1646

**Long Name:** VD-Aortic Valve Disease Primary Etiology

**Short Name:** VDAoPrimEt

**Definition:** Indicate the primary etiology of aortic valve disease.

**Intent/Clarification:**

There is no hierarchy, choose the primary etiology documented in the medical record. Primary etiology may also be identified at the time of the surgical procedure.

**FAQ October 2017:** My surgeon replaced a mitral valve in a patient with a history of Hodgkin's disease who is s/p chemotherapy and radiation therapy. The etiology is described as radiation induced heart disease. How should this be coded?

Answer: This should be coded as mixed etiology and would apply to aortic valve etiology as well. This will be added in the next upgrade. In addition to capturing the etiology, code mediastinal radiation in Seq. No. 495.

**FAQ March 2018:** The patient had a thrombotic mass on the aortic valve from an antiphospholipid syndrome. What would you code as the etiology?

Answer: Code not documented as there is no option to code not listed or other.

**FAQ Sept 2019** - I have a patient had a pre-operative diagnosis of Bicuspid aortic valve and Ascending Aortic Aneurysm. Once patient was in the OR the surgeon notes that the aortic valve was unicuspid. What do I choose for Seq 1646 Aortic Etiology and Seq 4505 Patient's genetic history?

Answer – Code bicuspid in both Seq 1646 and Seq 4505 as these are along the same pathophysiologic process and are variants of valve morphology. This will be addressed in the upgrade.

**FAQ Dec 2019** – What etiology is functional bicuspid valve disease captured as?  
Answer - Functional bicuspid disease should be captured as Degenerative - Calcified etiology.

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**SEQ. #:** 1647

**Long Name:** VD-Aortic Valve Disease Sievers Class

**Short Name:** VDAoSievers

**Definition:** Indicate the documented Sievers class

**Intent/Clarification:**

A systematic classification of bicuspid aortic valves: Three major types were identified: type 0 (no raphe), type 1 (one raphe), and type 2 (two raphes), followed by two supplementary characteristics, spatial position and function. These characteristics served to classify and codify the bicuspid aortic valves.

Raphe is a groove, seam or ridge in tissue typically marking the line where two halves fused in the embryo.

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**SEQ. #:** 1680

**Long Name:** VD-Insuff-Mitral

**Short Name:** VDInsufM

**Definition:** Indicate whether there is evidence of Mitral valve insufficiency/regurgitation. Enter the degree of insufficiency reported closest to incision and no more than 6 months prior to surgery.

**Intent/Clarification:**

Mitral regurgitation/insufficiency may be an acute or chronic condition manifesting itself as increased left heart filling pressures which increase the left ventricular stroke volume (amount of blood ejected from the Left Vent. with each heartbeat). Over time, and depending upon the severity, MR can result in pulmonary edema and systemic volume overload. In chronic MR, Left Ventricular Hypertrophy may result. Mitral prolapse and rheumatic fever are the most common cause of MR. "Moderate to severe" should be coded as "Severe".

Collect the last value closest to incision, not greater than **6 months**.

- None
- Trivial/Trace
- Mild
- Moderate
- Severe
- Not documented

**October 2019:** [Please refer to the General Statement from October 2019 regarding time frame of hemodynamic results.](#)

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**SEQ. #:** 1681

**Long Name:** VD-Mitral Valve Eccentric Jet

**Short Name:** VDMVEccJet

**Definition:** Indicate whether mitral valve regurgitation is an eccentric jet.

**Intent/Clarification:**

- Yes
- No
- Not Documented

**October 2019:** [Please refer to the General Statement from October 2019 regarding time frame of hemodynamic results.](#)

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**SEQ. #:** 1685

**Long Name:** VD-Mitral

**Short Name:** VDMit

**Definition:** Indicate whether Mitral valve disease is present.

**Intent/Clarification:**

The mitral valve is made up of the annulus, anterior and posterior leaflets, and chordae, which attach the leaflets to their respective papillary muscles. A normally functioning valve allows blood to flow unimpeded from the left atrium to the left ventricle during diastole and prevents regurgitation during systole. Normal mitral valve function is dependent not only on the integrity of the underlying valvular structure, but on that of the adjacent myocardium as well. Mitral valve disease is the most common form of heart valve disease in the United States, affecting 5 percent of the population and resulting in over 500,000 hospital admissions per year. There are two general forms of mitral valve disease: mitral regurgitation/insufficiency and mitral stenosis.

The valve should be coded as being diseased if there is mild, moderate or severe insufficiency **or mitral stenosis.**

- Yes
- No

**FAQ September 2018:** Does once diseased – always diseased apply to valves?

Answer: No, the valve is not considered disease unless there is disease present on the prosthetic valve.

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**SEQ. #:** 1690

**Long Name:** VD-Stenosis-Mitral

**Short Name:** VDStenM

**Definition:** Indicate whether Mitral Stenosis is present.

**Intent/Clarification:**

Stenosis is the narrowing of the valve opening. Valve stenosis is most often caused by rheumatic fever, causing the leaflets to become rigid, stiff, and thick and/or fused reducing the amount of blood able to be ejected from the left atria into the left ventricle. Mitral stenosis (MS) causes blood to back up, dilate the left atria and create buildup of fluid in the lungs (congestive heart failure). Atrial fibrillation is a common arrhythmia in patients with MS.

**Time Frame:** Collect the last value closest to incision, not greater than **6 months**. Capture any degree of stenosis even if patient is not scheduled for valve repair and/or replacement when available.

- Yes
- No

**October 2019:** [Please refer to the General Statement from October 2019 regarding time frame of hemodynamic results.](#)

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**SEQ. #:** 1695

**Long Name:** VD-Mitral Hemodynamic Data Available

**Short Name:** MiHemoDatAvail

**Definition:** Indicate whether mitral valve hemodynamic measurements are available.

**Intent/Clarification:**

- Yes
- No

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**SEQ. #:** 1700

**Long Name:** VD-Smallest Mitral Valve Area

**Short Name:** VDMVA

**Definition:** Indicate the ~~smallest~~ documented Mitral Valve Area ~~closest to the time of surgery.~~

**Intent/Clarification:**

The normal area of the mitral valve orifice is about 4 to 6 (cm<sup>2</sup>). Under normal conditions, a normal mitral valve will not impede the flow of blood from the left atrium to the left ventricle during (ventricular) diastole, and the pressures in the left atrium and the left ventricle during ventricular diastole will be equal. When the mitral valve area goes below 2.0 (cm<sup>2</sup>), the valve causes an impediment to the flow of blood into the left ventricle, creating a pressure gradient across the mitral valve.

Collect the last value prior to induction not greater than **6 months**; if no reported values are available, code the value closest to and prior to incision.

**October 2019:** [Please refer to the General Statement from October 2019 regarding time frame of hemodynamic results.](#)

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**SEQ. #:** 1705

**Long Name:** VD-Mitral Gradient-Highest Mean

**Short Name:** VDGradM

**Definition:** Indicate the highest documented mean gradient (in mm Hg) across the mitral valve.

**Intent/Clarification:**

Mitral valve stenosis results from a narrowing of the mitral valve orifice when the valve is open. The high resistance across the stenotic mitral valve causes blood to back up into the left atrium thereby increasing LA pressure. This results in the left atrial (LA) pressure being much greater than left ventricular (LV) pressure during diastolic filling.

The gradient is highest during early diastole when the flow across the valve is highest. Normally, the pressure gradient across the valve is very small (a few mmHg); however, the pressure gradient can become quite high during severe stenosis (10-30 mmHg).

Collect the last value prior to induction not greater than **6 months**; if no reported values are available, code the value closest to and prior to incision.

**October 2019:** [Please refer to the General Statement from October 2019 regarding time frame of hemodynamic results.](#)

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**SEQ. #:** 1731

**Long Name:** VD-Mitral Valve Disease Primary Etiology

**Short Name:** VDMiPrimEt

**Definition:** Indicate the primary etiology of Mitral valve disease.

**Intent/Clarification:**

There is no hierarchy, choose the primary etiology as documented in the medical record. Primary etiology may not be identified until the time of the surgical procedure.

**FAQ October 2017:** My surgeon replaced a mitral valve in a patient with a history of Hodgkin's disease who is s/p chemotherapy and radiation therapy. The etiology is described as radiation induced heart disease. How should this be coded?

Answer: This should be coded as mixed etiology. This will be added in the next upgrade. In addition to capturing the etiology, code mediastinal radiation in Seq. No. 495.

**FAQ May 2018:** The surgeon does a mitral valve cleft repair and does not mark etiology, should valve clefts such as these be captured as congenital?

Answer: Yes, code congenital etiology.

**FAQ July 2019** – My patient's documented MV disease etiology was chronic ischemic, however, the patient has never had a MI. Can I choose the Ischemic- chronic (MI > 21 days) selection even though my patient has not had a MI?

Answer - Yes, this will be addressed in the upgrade.

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**SEQ. #: 1746**

**Long Name:** VD-Mitral Valve Primary Lesion

**Short Name:** VDMiPrimLes

**Definition:** Indicate the primary mitral valve lesion.

**Intent/Clarification:**

There is no hierarchy, choose the primary lesion. Primary lesion may be identified at the time of the surgical procedure.

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**SEQ. #: 1775**

**Long Name:** VD-Insuff-Tricuspid

**Short Name:** VDInsufT

**Definition:** Indicate whether there is evidence of Tricuspid valve insufficiency/regurgitation. Enter the degree of insufficiency reported closest to incision and no more than **6 months** prior to surgery.

**Intent/Clarification:**

Tricuspid regurgitation/insufficiency creates a backwards flow of blood across the tricuspid valve and causes enlargement of the right atrium and possibly atrial fibrillation. Capture even if patient is not scheduled for valve repair and/or replacement when available.

Time Frame: Collect the last value closest to incision, not greater than **6 months**.

Choose the highest level of valve dysfunction when there are differences in interpretation of the most recent study.

Capture even if patient is not scheduled for valve repair and/or replacement when available.

- None
- Trivial/Trace
- Mild
- Moderate
- Severe
- Not documented

**October 2019:** [Please refer to the General Statement from October 2019 regarding time frame of hemodynamic results.](#)

**FAQ June 2019:** Patient underwent a tricuspid valvectomy in 2013 and the preop echo for TV Replacement states Severe TV insufficiency. Do I code severe insufficiency for the tricuspid valve since the valve isn't there?

Answer: Code as severe

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**SEQ. #:** 1777

**Long Name:** VD-Tricuspid Annular Measurement Available

**Short Name:** VDTrAnnMeas

**Definition:** Indicate whether a tricuspid annular diameter measurement is available.

**Intent/Clarification:**

Tricuspid regurgitation (TR) occurs mainly from tricuspid annular dilation, which can result from left-sided heart failure from myocardial or valvular causes, right ventricular volume and pressure overload, or dilation of cardiac chambers.

Time Frame: Collect the last value closest to incision, not greater than **6 months**.

- Yes
- No

**October 2019:** [Please refer to the General Statement from October 2019 regarding time frame of hemodynamic results.](#)

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**SEQ. #:** 1778

**Long Name:** VD-Tricuspid Annulus Size (Diameter)

**Short Name:** VDTrAnnSize

**Definition:** Indicate tricuspid annular diameter in cm.

**Intent/Clarification:**

Normal values for Tricuspid annular diameter: 2-4 (cm)

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**SEQ. #:** 1780

**Long Name:** VD-Tricuspid

**Short Name:** VDTr

**Definition:** Indicate whether Tricuspid Valve disease is present.

**Intent/Clarification:**

Tricuspid valve disease refers to abnormal function of the tricuspid valve.

Two types of tricuspid disease include:

Tricuspid regurgitation - the valve is leaky or doesn't close tight enough, causing blood to leak backwards across the valve.



Tricuspid stenosis - the valve leaflets are stiff and do not open widely enough, causing a restriction in the forward flow of blood.

There is no hierarchy, choose the primary etiology as documented in the medical record. Primary etiology may not be identified until the time of the surgical procedure.

Tricuspid disease should be captured if tricuspid insufficiency is mild, moderate or severe or **Tricuspid stenosis**.

- Yes
- No

**FAQ September 2018:** Does once diseased – always diseased apply to valves?

Answer: No, the valve is not considered disease unless there is disease present on the prosthetic valve.

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**SEQ. #:** 1785

**Long Name:** VD-Stenosis-Tricuspid

**Short Name:** VDStenT

**Definition:** Indicate whether Tricuspid Stenosis is present.

**Intent/Clarification:**

The tricuspid valve is the largest of the four valves. Stenosis, over time, may create an enlarged right atrium, reducing the amount of blood flow into the right ventricle; thereby, reducing cardiac output. Prolonged or chronic tricuspid stenosis may cause systemic vascular congestion, manifested primarily in the liver. Capture even if patient is not scheduled for valve repair or replacement.

Time Frame: Collect the last value closest to incision, not greater than **6 months**.

Choose the highest level of valve dysfunction when there are differences in interpretation of the most recent study.

Capture even if patient is not scheduled for valve repair and/or replacement when available.

- Yes
- No

**October 2019:** [Please refer to the General Statement from October 2019 regarding time frame of hemodynamic results.](#)

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**SEQ. #:** 1811

**Long Name:** VD-Tricuspid Valve Disease Primary Etiology

**Short Name:** VDTrPrimEt

**Definition:** Indicate the primary etiology of tricuspid valve disease.

**Intent/Clarification:**

There is no hierarchy, choose the primary etiology. Primary lesion may be identified at the time of the surgical procedure.

**FAQ October 2017:** My surgeon replaced a mitral valve in a patient with a history of Hodgkin's disease who is s/p chemotherapy and radiation therapy. The etiology is described as radiation induced heart disease. How should this be coded?

Answer: This should be coded as mixed etiology and would apply to tricuspid valve etiology. This will be added in the next upgrade. In addition to capturing the etiology, code mediastinal radiation in Seq. No. 495.

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**SEQ. #:** 1820

**Long Name:** VD-Insuff-Pulmonic

**Short Name:** VDInsufP

**Definition:** Indicate whether there is evidence of Pulmonic valve insufficiency/regurgitation. Enter the degree of insufficiency reported closest to incision and no more than **6 months** prior to surgery.

**Intent/Clarification:**

Most common cause is from chronic pulmonary hypertension (noted by high PA pressures > 30mm Hg). Incompetent pulmonary leaflets allow blood to flow back into the Right Vent. Capture even if patient is not scheduled for valve repair and/or replacement

Time Frame: Collect the last value closest to incision, not greater than **6 months**. Enter the level of valve function associated with the highest risk (ie. worst performance) recorded in the chart. "Moderately severe" should be coded as "Severe".

Choose the **highest** level of valve dysfunction when there are differences in interpretation of the most recent study.

Capture even if patient is not scheduled for valve repair and/or replacement when available.

- None
- Trivial/Trace
- Mild
- Moderate
- Severe
- Not documented

**October 2019:** [Please refer to the General Statement from October 2019 regarding time frame of hemodynamic results.](#)

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**SEQ. #:** 1825

**Long Name:** VD-Pulmonic

**Short Name:** VDPulm

**Definition:** Indicate whether Pulmonic Valve disease is present.

**Intent/Clarification:**

The pulmonary valve is a valve between the heart and the artery that leads to the lungs. If valve regurgitation or insufficiency is present, blood is able to flow from the artery and back into the heart. Pulmonary stenosis reduces blood flow to the lungs and makes the

right ventricle work harder. The condition can cause the right sided heart failure. Pulmonary valve disease mostly occurs as a congenital abnormality, but it can also be caused by conditions such as pulmonary hypertension, infective endocarditis or Marfan syndrome.

The valve should be coded as being diseased if there is mild, moderate or severe insufficiency or pulmonic stenosis.

- Yes
- No

**FAQ September 2018:** Does once diseased – always diseased apply to valves?

Answer: No, the valve is not considered disease unless there is disease present on the prosthetic valve.

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**SEQ. #: 1830**

**Long Name:** VD-Pulmonic-RVEDD Known

**Short Name:** RVEDDKnown

**Definition:** Indicate whether the Right Ventricular End-Diastolic Dimension (RVEDD) is available.

**Intent/Clarification:**

- Yes
- No

**October 2019:** [Please refer to the General Statement from October 2019 regarding time frame of hemodynamic results.](#)

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**SEQ. #: 1835**

**Long Name:** VD-Pulmonic-RVEDD Indexed To BSA

**Short Name:** RVEDD

**Definition:** Indicate (in cm squared) the RVEDD indexed to BSA.

**Intent/Clarification:**

RVEDD may be called RVDD.

Collect the last value prior to induction not greater than **6 months**; if no reported values are available, code the value closest to and prior to incision.

**October 2019:** [Please refer to the General Statement from October 2019 regarding time frame of hemodynamic results.](#)

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**SEQ. #:** 1840

**Long Name:** VD-Stenosis-Pulmonic

**Short Name:** VDStenP

**Definition:** Indicate whether Pulmonic Stenosis is present.

**Intent/Clarification:**

Pulmonary stenosis (PS) is often due to congenital malformation of the valve. As it restricts blood flow from the right ventricle into the pulmonary artery, patients experience extreme fatigue and palpitations. Severe PS may create a bluish tint to skin and is life threatening.

Choose **highest** level of valve dysfunction when there are differences in interpretation of most recent study.

Capture even if patient is not scheduled for valve repair and/or replacement when available.

- Yes
- No

Time Frame: Collect the last value closest to incision, **not greater than 6 months**.

**October 2019:** [Please refer to the General Statement from October 2019 regarding time frame of hemodynamic results.](#)

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**SEQ. #:** 1845

**Long Name:** VD-Pulmonic Hemodynamic Data Available

**Short Name:** PuHemoDatAvail

**Definition:** Indicate whether pulmonary valve gradient is available.

**Intent/Clarification:**

Time Frame: Collect the last value closest to incision, not greater than **6 months**.

- Yes
- No

**October 2019:** [Please refer to the General Statement from October 2019 regarding time frame of hemodynamic results.](#)

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**SEQ. #:** 1850

**Long Name:** VD-Pulmonic Gradient-Highest Mean

**Short Name:** VDGradP

**Definition:** Indicate highest mean PV gradient documented prior to incision.

**Intent/Clarification:**

Time Frame: Collect the last value closest to incision, not greater than **6 months**.

**October 2019:** [Please refer to the General Statement from October 2019 regarding time frame of hemodynamic results.](#)

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**SEQ. #: 1855**

**Long Name:** VD-Pulmonic Valve Disease Etiology

**Short Name:** VDPuEt

**Definition:** Indicate the etiology of pulmonary valve disease if known.

**Intent/Clarification:**

There is no hierarchy, choose the primary etiology. Primary lesion may be identified at the time of the surgical procedure.

**FAQ October 2017:** My surgeon replaced a mitral valve in a patient with a history of Hodgkin's disease who is s/p chemotherapy and radiation therapy. The etiology is described as radiation induced heart disease. How should this be coded?

Answer: This should be coded as mixed etiology and would apply to pulmonic valve etiology. This will be added in the next upgrade. In addition to capturing the etiology, code mediastinal radiation in Seq. No. 495.

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**Operative**

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**SEQ. #: 1955**

**Long Name:** Surgeon

**Short Name:** Surgeon

**Definition:** Indicate the name of the surgeon responsible for the patient's care.

This field must have controlled data entry where a user selects the surgeon name from a user list. This will remove variation in spelling, abbreviations and punctuation within the field.

**Intent/Clarification:**

Field must be populated. Missing data or information for a surgeon not on your current contract with the STS will cause your data file submission not to process.

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**SEQ. #: 1960**

**Long Name:** Surgeon's National Provider Identifier

**Short Name:** SurgNPI

**Definition:** Indicate the individual-level National Provider Identifier of the surgeon performing the procedure.

For Non-US surgeons a unique identifier will be assigned by STS.

**Intent/Clarification:**

Field must be populated. Missing or inaccurate data will cause your data file submission not to process. It is crucial to enter the correct surgeon identifier since it may impact public reporting and physician quality reporting. This link provides an NPI search –

<https://nppes.cms.hhs.gov/#/>

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**SEQ. #:** 1965

**Long Name:** Taxpayer Identification Number

**Short Name:** TIN

**Definition:** Indicate the Taxpayer Identification Number for the Taxpayer holder of record for the Surgeon's National Provider Identifier that performed the procedure. This may be an individual TIN or a group TIN depending on billing. This information is vital for PQRS reporting.

This field will be blank for Non-US participants

**Intent/Clarification: -**

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**SEQ. #:** 1966

**Long Name:** STS Risk Calculator Score Discussed

**Short Name:** RiskDiscussed

**Definition:** Indicate whether the STS Risk Calculator score was discussed with the patient/family prior to surgery.

**Intent/Clarification:**

To meet this measure, discussion should take place between the surgeon and patient/family and be documented. STS risk models are available for CABG, AVR, AVR + CABG, MVR, MVR + CABG, MV Repair, MV Repair + CABG and calculated in vendor software or using the STS Risk Calculator. For all other procedures code NA. The Euroscore cannot be used to complete this field.

Use of STS Risk Calculator is the ONLY way to select “YES” to this question. This is a MIPS reported measure.

<http://www.sts.org/quality-research-patient-safety/quality/mips-reporting-database>

**FAQ July 2018:** The intent/clarification states that STS risk models are available for CAB, AVR, AVR + CAB, MVR, MVR + CAB, MV repair, MV repair + CAB. If the surgeon uses the risk calculator for the patients undergoing these procedures, can we use the risk profile from the calculator to complete the risk factors at the time of surgery?

Answer: No, do not use risk calculator entries for documentation of risk factors in the ACSD.

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**SEQ. #:** 1970

**Long Name:** Incidence

**Short Name:** Incidenc

**Definition:** Indicate if this is the patient's:

- first surgery
- first re-op surgery
- second re-op surgery
- third re-op surgery
- fourth or more re-op surgery
- **N/A – not a cardiovascular surgery**

**Intent/Clarification:**

**Update Nov 2019 - Incidence will be defined by the number of times of entry into the space for a specific procedure. A CABG/AVR/ MVR would be in pericardial space. A root/ascending/arch would be the pericardial space. An open distal arch/descending would be the pleural space. An open thoracoabdominal would involve the pleural and abdominal space. See examples below:**

- **Previous descending with a current AVR/Root/CAB. This would be first incidence into the pericardial space.**
- **Previous AVR/Root/hemiarch with a current CAB. This would be first re-op into the pericardial space.**
- **Previous CAB/AVR with a current open descending. This would be first incidence for pleural space**

For the purposes of this field surgery is defined as cardiothoracic surgical procedures performed on the heart, great vessels or major pericardial procedures, with or without cardiopulmonary bypass (CPB). The key distinction is surgical entry into the pericardial space. A pericardiectomy or pericardial window would qualify as surgery. Ascending aortic and arch procedures also qualify. A surgical descending thoracic aortic aneurysmectomy does not involve entry into the pericardial space and does not qualify. Similarly, catheter-based procedures such as TAVR, TEVAR, mitral-clip, are endovascular procedures and are not classified as prior surgery. Also include lung procedures utilizing CPB or tracheal procedures utilizing CPB. Reoperation increases risk due to presence of scar tissue or adhesions.

The intent of this field is to capture the incidence of the procedure that the patient is about to go through during the current hospitalization, as compared to those procedures prior to this hospitalization. First operative means the patient has never had any surgical procedure on the heart and/or great vessels. Note: previous surgical intervention increases risk for morbidity and mortality and severity of disease process. **Choosing N/A does not automatically exclude the patient from analysis.**

**FAQ August 2019** – Update of FAQ Jan 2018 and Feb 2018 - Patient has a history of a CABG, then later a VAD, then a heart transplant. The patient is now having a CABG on his transplanted heart. What is the incidence for this surgery?

Answer: Code incidence as third reoperation. The key distinction is surgical entry into the pericardial space

**FAQ February 2018:** The patient enters the operating room electively for an AVR. The same procedure was attempted at another hospital 6 months previously but was cancelled after discovering a porcelain aorta as the surgeon attempted to place cannulation sutures. How is incidence coded for this case?

How is previous CV intervention coded?

Answer: Code incidence as first reoperation.

**FAQ February 2018:** A 35-year-old male underwent a percutaneous aortic valvuloplasty at age 12. He now enters the OR for a surgical AVR. How is incidence coded?

Answer: Code incidence as first cardiovascular surgery.

**FAQ March 2018:** Patient went to OR for AVR and CABG. But only sternotomy and adhesiolysis were done because patient had frozen mediastinum and severe intrapericardial adhesion so surgeon decided to do the operation in stages. The sternum was closed. Next day patient went back to OR and AVR/CABG were done. How would I code this? Will still be first cardiovascular surgery? Reop for cardiac reason? Will I also note as surgery aborted?

Answer: Code the case as first CV surgery.

**FAQ May 2018:** How does TAVR affect incidence?

Answer: Prior TAVR case that needs a redo-AVR should be coded as first reoperation. Prior TAVR case that needs another cardiac procedure such as a CAB or MVR should be code as incidence as first CV surgery.

**FAQ June 2019:** The patient had a Mitral Clip Procedure at another facility one year ago. Now is admitted with severe Mitral insufficiency. The decision is to take the patient for Mitral valve Replacement Surgery. Do I code this as first re-op surgery?

**Answer:** Mitral Valve replacement should be coded as the first operation.

**FAQ July 2019 -** The patient had a TMVR Procedure at another facility one year ago. Now is admitted with severe Mitral insufficiency. The decision is to take the patient for Mitral valve Replacement Surgery. Is this first re-op or first surgery?

Answer - Prior TMVR case that needs a redo-MVR should be coded as first reoperation. Prior TMVR case that needs another cardiac procedure such as a CAB or AVR should be code as incidence as first CV surgery.

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**SEQ. #:** 1975

**Long Name:** Status

**Short Name:** Status

**Definition:** Indicate the clinical status of the patient prior to entering the operating room.

**Intent/Clarification:**



- **Elective**- The patient's cardiac function has been stable in the days or weeks prior to the operation. The procedure could be deferred without increased risk of compromised cardiac outcome.
- **Urgent** - Procedure required during same hospitalization in order to minimize chance of further clinical deterioration. Examples include but are not limited to: Worsening or sudden chest pain, CHF, acute myocardial infarction (AMI), anatomy, IABP, unstable angina (USA) with intravenous (IV) nitroglycerin (NTG) or rest angina.
  - Any of the conditions that require that the patient remain in the hospital until surgery can take place, but the patient is able to wait for surgery until the next available OR schedule time. Delay in the operation may be necessitated by attempts to improve the patient's condition, availability of a spouse or parent for informed consent, availability of blood products, or the availability of results of essential laboratory procedures or tests. **There is no hierarchy - choose the primary reason the procedure is urgent.**
  - If a patient has severe aortic and mitral valve stenosis, but also has symptoms such as dyspnea on exertion (DOE), paroxysmal nocturnal dyspnea (PND), congestion on x-ray or pedal edema that has been treated as CHF, code "CHF" as the most appropriate choice.
  - Valve dysfunction is defined as a structural failure with that valve. For prosthetic valves – fractured leaflet, thrombus formation, pannus development which impedes flow through the valve orifice, or valvular dehiscence (coming loose or disconnected at the suture line). Native valve dysfunction includes papillary rupture or torn leaflet. Rupture or dissection during cardiac cath; Perforation, tamponade following cardiac cath-does not include stent closure.
- **Emergent** - Patients requiring emergency operations will have ongoing, refractory (difficult, complicated, and/or unmanageable) unrelenting cardiac compromise, with or without hemodynamic instability, and not responsive to any form of therapy except cardiac surgery. An emergency operation is one in which there should be no delay in providing operative intervention. Patients requiring emergency operations will have ongoing, refractory (difficult, complicated, and/or unmanageable) cardiac compromise, with or without hemodynamic instability, and not responsive to any form of therapy except cardiac surgery. Hemodynamic picture of shock that is being chemically or mechanically supported. (IV inotrope or IABP to maintain cardiac output [CO]. Requires intubation and ventilation for pulmonary edema. The patient is extending an MI and requires immediate surgery. The patient continues to show signs of ongoing ischemia, i.e. EKG changes. Acute native valve dysfunction i.e. as acute papillary muscle rupture or torn leaflet. Prosthetic valve dysfunction is defined as a structural failure with that valve-fractured or torn leaflet, thrombus formation, pannus development which impedes flow through the valve orifice, or valvular dehiscence (coming loose or disconnected at the suture line). Acute dissection secondary to trauma or dissection secondary to progression of disease. Rupture or dissection during cardiac cath; perforation, tamponade following cardiac cath.

- If a patient presents with a scenario that does not fit into a definite category; it is reasonable to code the reason that most closely matches the patient's presentation.
- **Emergent/Salvage** - The patient is undergoing CPR en-route to the OR prior to anesthesia induction or has ongoing ECMO to maintain life. ECMO: ECMO is to be captured as a status of 'Salvage' in sequence 1975 and as 'Resuscitation – Yes' in sequence 935. ECMO is a supportive modality and not a procedural type. The risk of the patient on ECMO is accounted for when 'Status = salvage' and should be left in the intended procedural category.

**FAQ May 2019:** The patient was in surgery having Right carotid endarterectomy done (and please note the plan was to have the AVR done tomorrow) when during this procedure the patient became bradycardic and required chest compressions and multiple doses of epi. They were able to get the patient back after 10 minutes of chest compressions. However, the pt. had a second bradycardic cardiac arrest and the surgeon decided on a salvage aortic valve replacement! So is the Endarterectomy now part of the AVR surgery (How do I mark this on the STS tool?)

Answer: If this was done in the same room then code the the AVR as Salvage and the endarterectomy. You can also code resuscitation.

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**SEQ. #: 1990**

**Long Name:** Urgent Or Emergent Reason

**Short Name:** UrgEmergRsn

**Definition:** Choose one reason from the list below that best describes why this operation was considered urgent or emergent.

**Intent/Clarification:**

See list for options. There may be multiple reasons, choose one that best describes this patient's clinical state.

**FAQ November 2018:** The emergent urgent reason is patient specific and needs to be taken from the surgeon's notes.

**FAQ Urgent Reason:** Unstable angina at the time of admission would be coded unstable angina at the time of surgery.

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**SEQ. #: 1995**

**Long Name:** Previously Attempted Case Canceled

**Short Name:** PCancCase

**Definition:** Indicate whether this case was previously attempted during this admission and cancelled or aborted after patient entered the operating room.

**Intent/Clarification:**

To capture occasions when the patient goes to the operating room with the intention to perform a cardiac surgery but the case is canceled.

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**SEQ. #: 2000**

**Long Name:** Previously Attempted Canceled Case Date

**Short Name:** PCancCaseDt

**Definition:** Enter date previously attempted case was cancelled.

**Intent/Clarification:**

Date must be during this hospital admission. Required date format: mm/dd/yyyy.

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**SEQ. #: 2005**

**Long Name:** Previously Attempted Canceled Case Timing

**Short Name:** PCancCaseTmg

**Definition:** Indicate at what point previously attempted case was cancelled or aborted.

**Intent/Clarification:**

The intent is to capture the timing associated with cancelling the case:

- Prior to Induction of Anesthesia
  - After Induction, Prior to Incision
  - After Incision Made
- -----

**SEQ. #: 2010**

**Long Name:** Previously Attempted Canceled Case Reason

**Short Name:** PCancCaseRsn

**Definition:** Indicate the reason why the previously attempted case was cancelled or aborted.

**Intent/Clarification:**

The intent is to capture the reason for cancelling the case:

- Anesthesiology event - Includes airway, line insertion and medication issues encountered during induction
- Cardiac arrest - Patient deterioration unrelated to induction
- Equipment/supply issue - Device malfunction or supply issue including devices

and blood products needed for surgery but not available

- Access issue – Unable to gain access for lines and/or surgical exposure
- Unanticipated tumor – Tumor discovered at time of surgery
- Donor organ unacceptable – Organs for transplant found to be unacceptable
- Abnormal labs – Lab results could increase risk of surgery and/or require intervention prior to surgery
- Other – Reason not specified above

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**SEQ. #: 2015**

**Long Name:** Previously Attempted Cancelled Case Procedure - CABG

**Short Name:** PCancCaseCAB

**Definition:** Indicate whether the plan for the previously attempted procedure included coronary artery bypass grafting.

**Intent/Clarification:**

The intent is to capture if the intended procedure for the cancelled case was Coronary Artery Bypass.

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**SEQ. #: 2020**

**Long Name:** Previously Attempted Canceled Case Procedure - Mechanical Assist Device

**Short Name:** PCancCaseMech

**Definition:** Indicate whether the plan for the previously attempted procedure included implanting or explanting a mechanical assist device.

**Intent/Clarification:**

The intent is to capture if the intended procedure for the cancelled case was a mechanical assist device.

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**SEQ. #: 2025**

**Long Name:** Previously Attempted Canceled Case Procedure - Other Non-Cardiac

**Short Name:** PCancCaseONC

**Definition:** Indicate whether the plan for the previously attempted procedure included any other non-cardiac procedure.

**Intent/Clarification:**

The intent is to capture if the intended procedure for the cancelled case was any other non-cardiac procedure.

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**SEQ. #:** 2030

**Long Name:** Previously Attempted Canceled Case Procedure - Valve, Surgical

**Short Name:** PCancCaseValSur

**Definition:** Indicate whether the plan for the previously attempted procedure included a surgical valve procedure.

**Intent/Clarification:**

The intent is to capture if the intended procedure for the cancelled case was a surgical valve procedure.

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**SEQ. #:** 2035

**Long Name:** Previously Attempted Canceled Case Procedure - Valve, Transcatheter

**Short Name:** PCancCaseValTrans

**Definition:** Indicate whether the plan for the previously attempted procedure included a transcatheter valve procedure.

**Intent/Clarification:**

The intent is to capture if the intended procedure for the cancelled case was a transcatheter valve procedure.

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**SEQ. #:** 2040

**Long Name:** Previously Attempted Canceled Case Procedure - Other Cardiac

**Short Name:** PCancCaseOC

**Definition:** Indicate whether the plan for the previously attempted procedure included any other cardiac procedure.

**Intent/Clarification:**

The intent is to capture if the intended procedure for the cancelled case was any other cardiac procedure.

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**SEQ. #:** 2050

**Long Name:** Current Case Canceled

**Short Name:** CCancCase

**Definition:** Indicate whether the current case was canceled or aborted after patient entered the operating room.

**Intent/Clarification:**

The intent is to capture if the current case that was cancelled occurred after the patient entered the operating room.

**FAQ February 2018:** The patient's initial surgical plan was to have a minimally invasive AVR. During the intra-operative TEE, the findings included severe MR, severe left ventricular dilation, massive left atrial size, and EF of 10%. The surgeon discussed surgical options with the team and family, and it was decided to change the surgical plan from "aortic and mitral valve replacement" to a transfemoral balloon aortic valvuloplasty. The patient was moved from the OR suite to a hybrid OR suite due to his size and equipment needs.

Should this be captured as a cancelled case?

Answer: Do not code as a cancelled case, an aortic valvuloplasty was performed.

**FAQ March 2018:** Patient went to OR for AVR and CABG. But only sternotomy and adhesiolysis were done because patient had frozen mediastinum and severe intrapericardial adhesion so surgeon decided to do the operation in stages. The sternum was closed. Next day patient went back to OR and AVR/CABG were done.

How would I code this? Will still be first cardiovascular surgery? Reop for cardiac reason? Will I also note as surgery aborted?

Answer: Code the dissection of the adhesions as a canceled procedure.

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**SEQ. #:** 2055

**Long Name:** Current Case Canceled Timing

**Short Name:** CCancCaseTmg

**Definition:** Indicate at what point the current case was canceled or aborted.

**Intent/Clarification:**

The intent is to capture the timing associated with cancelling the case:

- Prior to Induction of Anesthesia
- After Induction, Prior to Incision
- After Incision Made

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**SEQ. #:** 2060

**Long Name:** Current Case Canceled Reason

**Short Name:** CCancCaseRsn

**Definition:** Indicate the reason why the current case was canceled or aborted.

**Intent/Clarification:**

The intent is to capture the reason for cancelling the case:

- **Anesthesiology event** - Includes airway, line insertion and medication issues encountered during induction
- **Cardiac arrest** - Patient deterioration unrelated to induction

- **Equipment/supply issue** - Device malfunction or supply issue including devices and blood products needed for surgery but not available
- **Access issue** – Unable to gain access for lines and/or surgical exposure
- **Unanticipated tumor** – Tumor discovered at time of surgery
- **Donor organ unacceptable** – Organs for transplant found to be unacceptable
- **Abnormal labs** – Lab results could increase risk of surgery and/or require intervention prior to surgery
- **Other** – Reason not specified above

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**SEQ. #:** 2065

**Long Name:** Current Case Canceled Procedure - CABG

**Short Name:** CCancCaseCAB

**Definition:** Indicate whether the plan for the current procedure included coronary artery bypass grafting.

**Intent/Clarification:**

The intent is to capture if the intended procedure for the cancelled case included Coronary Artery Bypass.

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**SEQ. #:** 2075

**Long Name:** Current Case Canceled Procedure - Mechanical Assist Device

**Short Name:** CCancCaseMech

**Definition:** Indicate whether the plan for the current procedure included implanting or explanting a mechanical assist device.

**Intent/Clarification:**

The intent is to capture if the intended procedure for the cancelled case was a mechanical assist device.

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**SEQ. #:** 2080

**Long Name:** Current Case Canceled Procedure - Other Non-cardiac

**Short Name:** CCancCaseONC

**Definition:** Indicate whether the plan for the current procedure included any other non-cardiac procedure.

**Intent/Clarification:**

The intent is to capture if the intended procedure for the cancelled case was any other non-cardiac procedure.

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**SEQ. #:** 2085

**Long Name:** Current Case Canceled Procedure - Valve, Surgical

**Short Name:** CCancCaseValSur

**Definition:** Indicate whether the plan for the previously attempted procedure included a surgical valve procedure.

**Intent/Clarification:**

The intent is to capture if the intended procedure for the cancelled case was a surgical valve procedure.

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**SEQ. #:** 2090

**Long Name:** Current Case Canceled Procedure - Valve, Transcatheter

**Short Name:** CCancCaseValTrans

**Definition:** Indicate whether the plan for the previously attempted procedure included a transcatheter valve procedure.

**Intent/Clarification:**

The intent is to capture if the intended procedure for the cancelled case was a transcatheter valve procedure.

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**SEQ. #:** 2095

**Long Name:** Current Case Canceled Procedure - Other Cardiac

**Short Name:** CCancCaseOC

**Definition:** Indicate whether the plan for the current procedure included any other cardiac procedure.

**Intent/Clarification:**

The intent is to capture if the intended procedure for the cancelled case was any other cardiac procedure.

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**SEQ. #:** 2100

**Long Name:** Operative Approach

**Short Name:** OPApp

**Definition:** Indicate the initial operative approach.

**Intent/Clarification:**

The intent is to capture the initial operative approach:

- Full conventional sternotomy
- Partial sternotomy
- Transverse sternotomy (includes clamshell)
- RIGHT OR LEFT parasternal incision
- Sub-xiphoid
- Sub-Costal
- Left Thoracotomy



- Right Thoracotomy
- Bilateral Thoracotomy
- Limited (mini) Thoracotomy, right (transapical TAVR)
- Limited (mini) Thoracotomy, left
- Limited (mini) Thoracotomy, bilateral
- Thoracoabdominal Incision
- Percutaneous
- Port Access
- Other
- None (cancelled case)

**Commonly used approaches for the following devices:**

- **Impella 2.0**
  - Percutaneous femoral
  - Percutaneous iliac
- **Impella 5.0**
  - Percutaneous femoral
  - Open femoral
  - Open aorta
  - Open iliac
- **VA ECMO**
  - Percutaneous femoral
  - Open Femoral
  - Percutaneous carotid
  - Percutaneous subclavian
  - Open subclavian

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**SEQ. #: 2105**

**Long Name:** Operative Approach Converted

**Short Name:** ApproachCon

**Definition:** Indicate whether the operative approach was converted during the procedure.

**Intent/Clarification:**

The intent is to capture whether the approach was converted and whether that was part of the initial surgical plan.

- Yes, planned
- Yes, unplanned
- No

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**SEQ. #: 2110**

**Long Name:** Robot Used

**Short Name:** Robotic

**Definition:** Indicate whether a robot was used during cardiac surgery.

**Intent/Clarification:**

The intent is to whether any portion of the procedure was used during the surgical procedure.

- Yes
  - No
- 
- 

**SEQ. #: 2115**

**Long Name:** Robot Use Time Frame

**Short Name:** RobotTim

**Definition:** Indicate the time frame of robotic use.

**Intent/Clarification:**

The intent is to the extent of the procedure where the robot was used.

- Used for entire operation
  - Used for part of the operation
- 
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**SEQ. #: 2120**

**Long Name:** CAB

**Short Name:** OpCAB

**Definition:** Indicate whether coronary artery bypass grafting was done.

**Intent/Clarification:**

The intent is to capture procedures where bypass grafts were constructed to native coronary arteries.

- Yes, planned\*
- Yes, unplanned due to surgical complication\*
- Yes, unplanned due to unsuspected disease or anatomy\*
- No

**\*If yes, complete Section J.**

**FAQ September 2017:** Pt with previous CAB in January of this year now presents with Aortic Dissection. The dissection was repaired and cadaver vein graft extensions were used to reimplant the PDA/PL grafts. The OM and Diag grafts were occluded by the dissection. Should this case include a CAB?

Answer: No, a distal coronary artery graft is not constructed using the cadaver vein.

FAQ October 2017: Following a David procedure, due to bleeding at the right coronary anastomosis, a Kay Zubiarte reconstruction was required to reconstruct the ostium of the RCA using a segment of saphenous vein. How is this coded?

Answer: Code CAB; Yes, unplanned due to surgical complication.

**FAQ May 2019:** I had a patient who had a planned CABG for 1 day and a planned TVAR the next day. Is the TAVR captured, if so, where?

Answer: Yes, please code the TAVR in the Aortic Valve Section even though it was done on a different day. This patient will appropriately fall out of the isolated CAB category considering the additional risk of the TAVR procedure.

**FAQ October 2019** – Is unroofing of an anomalous coronary artery captured as a CABG?

Answer - If only anomalous vessel CABG, then this should be captured as a congenital procedure, not ISOCAB. If in conjunction with other atherosclerotic vessels, then it is an ISOCAB only. If bypass is performed for an anomalous, kinked or damaged vessel, this vessel is counted as one diseased or abnormal vessel in Seq 1170.

**FAQ Dec 2019** - Our facility received a patient from another facility secondary to need for higher level of care. The patient had an emergent aortic dissection repair and was unable to come off CPB requiring ECMO insertion at the other facility. The patient was transferred emergently to our facility requiring a direct admit to our hybrid suite for cardiac cath which revealed CAD. A CABG was then emergently performed. Is the CABG still part of the other facility's episode of care or do we start a new DCF for the CABG performed at our facility?

Answer - The CABG is a return to OR on the first DCF for the first hospital. The second hospital captures the risk of the aorta surgery from the first hospital on a new DCF for the CABG.

**FAQ Dec 2019** – If a coronary bypass graft is performed for myocardial bridging with no evidence of any atherosclerotic disease is this captured as a Congenital procedure or a CABG?

Answer - If a bypass graft is performed for myocardial bridge then code as a CABG. If another procedure is performed to relieve the bridge then code as a congenital procedure. If the other procedure is performed in conjunction with other atherosclerotic vessels, then it is an ISOCAB only.

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**SEQ. #:** 2125

**Long Name:** Valve

**Short Name:** OpValve

**Definition:** Indicate whether a surgical procedure was done on the Aortic, Mitral, Tricuspid or Pulmonic valves.

**Intent/Clarification:**

The intent is to capture procedures where valve procedures were performed.

- Yes\*
- No

**\*If yes, complete Section K.**

**FAQ October 2018:** How is a Konno-Rastan procedure coded?

Answer: Konno-Rastan's should be captured as a Konno procedure by coding sequence numbers 2125, 3460 and 3461 (Konno). Konno-Rastans are more extensive outflow tract procedures and are not captured in this version.

**FAQ May 2019:** I had a patient who had a planned CABG for 1 day and a planned TVAR the next day. Is the TAVR captured, if so, where?

Answer: Yes, please code the TAVR in the Aortic Valve Section even though it was done on a different day. This patient will appropriately fall out of the isolated CAB category considering the additional risk of the TAVR procedure.

**FAQ July 2019** - While undergoing TAVR procedure, surgery was converted to open AVR. I know this 'conversion to open' will be captured in the TVT database, but do I still enter the case in STS since it is now an open procedure? My site does not normally enter TAVR cases into the STS.

Answer - Yes, this should be entered into the STS Database. If the site usually enters TAVRs into the STS database and the patient ends up converting to SAVR then the TAVR should not be captured as the index procedure, the SAVR should be entered as the index procedure and the preoperative risk of the failed TAVR should be captured.

**FAQ August 2019** - A patient was admitted for tricuspid valve endocarditis and had a AngioVac-assisted extirpation of matter from the tricuspid valve via percutaneous approach with cardiopulmonary bypass support. Is this case included in the Registry?  
Answer - Aortic thrombectomy using the AngioVac system is not collected, unless done in conjunction with an STS qualifying procedure, such as CAB or AVR etc.

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**SEQ. #: 2126**

**Long Name:** Surgeon Input for Valve Surgery Data Abstraction

**Short Name:** OpValSurgInput

**Definition:** Indicate whether the surgeon provided input for the valve surgery data abstraction.

**Intent/Clarification:**

Indicates that the data manager confirms that because of interaction with the surgeon the data included reflects the pathology and the procedure performed.

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**SEQ. #: 2128**

**Long Name:** Aorta Procedure Performed

**Short Name:** AortProc

**Definition:** Indicate whether a procedure was performed on the aorta.

**Intent/Clarification:**

The intent is to capture procedures where procedures were performed involving the aorta. **Update Nov 2019 - Aorta procedures for the purpose of the database refers to actual aorta procedures not stand-alone head or visceral vessels management without an additional aorta or planned staged aorta procedure performed.**

- Yes, planned\*
- Yes, unplanned due to surgical complication\*
- Yes, unplanned due to unsuspected disease or anatomy\*
- No

**\*If Yes, complete Section M2**

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**SEQ. #: 2129**

**Long Name:** Surgeon Input for Aortic Surgery Data Abstraction

**Short Name:** AortProcSurgInput

**Definition:** Indicate whether the surgeon provided input for the aortic surgery data abstraction.

**Intent/Clarification:**

Indicates that the data manager confirms that because of interaction with the surgeon the data included reflects the pathology and the procedure performed.

- Yes
- No

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**SEQ. #: 2140**

**Long Name:** Other Card

**Short Name:** OpOCard

**Definition:** Indicate whether another cardiac procedure was done (other than CABG and/or Valve procedures).

**Intent/Clarification:**

The intent is to capture procedures where **Other Cardiac Procedures were performed.**

- Yes, planned\*

- Yes, unplanned due to unsuspected disease or anatomy\*
- Yes, unplanned due to surgical complication\*
- No

**\*If Yes, complete Section M.**

Do not include isolated ECMO, Impella or IABP insertions here.

**FAQ September 2017:** If a patient has an extensive atrial fibrillation procedure and an LAA clipping, how would we include the atrial ligation/exclusion method and device?

Answer: Multiple sequence numbers will be required to code the ligation/exclusion and device.

First capture sequence numbers 2140 and 2145 to open section M and M-1.

Then capture the atrial appendage procedure in sequence 4050; then ligation/exclusion method in sequence 4051 and Model in sequence number 4052 as well as the UDI, if available, in sequence 4053.

Code the extensive ablation procedure in section M-1 as described by your physician including lesion number 7 to complete the LAA.

**FAQ October 2017:** A patient has a four-vessel bypass. During the procedure he also has an endarterectomy and vein patch angioplasty of the circumflex (no bypass). Do I code that a coronary bypass graft was done? Do I capture this as Other Cardiac thus throwing this out of the isolated CABG category?

Answer: In order to open the child fields in the coronary bypass grid to complete the fields for endarterectomy you must code 'Yes'. Leave proximal site blank. Do not code as 'Other Cardiac'.

**FAQ December 2017:** Should subxiphoid pericardial window or subxiphoid thoracoscopic epicardial ablation, a convergent procedure, be coded as other as other cardiac?

Answer: Yes, code other cardiac procedure.

**FAQ December 2017:** Should epicardial ablation performed for inappropriate sinus tachycardia be coded as an 'other cardiac' procedure or as an atrial fibrillation procedure?

Answer: Code this procedure as other cardiac procedure performed.

**FAQ February 2018:** The patient's initial surgical plan was to have a minimally invasive AVR. During the intra-operative TEE, the findings included severe MR, severe left ventricular dilation, massive left atrial size, and EF of 10%. The surgeon discussed surgical options with the team and family, and it was decided to change the surgical plan from "aortic and mitral valve replacement" to a transfemoral balloon aortic valvuloplasty. The patient was moved from the OR suite to a hybrid OR suite due to his size and equipment needs.

How should this case be captured?

Answer: Code other cardiac procedure, an aortic valvuloplasty was performed.

**FAQ August 2018:** The patient had a procedure where the left subclavian vein to the superior vena cava was bypassed with a reversed greater saphenous vein. Should this be included in the adult cardiac database?

Answer: No, do not include.

**FAQ January 2019:** Patient goes to OR for esophageal perforation repair and while in OR they also find that he requires an Inferior Pulm Vein repair. The pulm vein repair location and size of repair required that patient be put on bypass. Case occurred in pericardium, but not within the heart. Please confirm if this case should be entered in the ACSD.

Answer: Yes, this case can be entered into the ACSD as other cardiac.

**FAQ January 2019:** Should a pulmonary artery aneurysm repair be entered in the adult cardiac database? The pericardium was opened and the case was done on pump.

Answer: Yes, this case can be entered into the ACSD as other cardiac.

**FAQ May 2019:** How should I code the following procedure performed with a CABG or not - "Left ventriculotomy with removal of apical thrombus"?

Answer: Code other cardiac, other

**FAQ June 2019:** Patient underwent CABG and LV Thrombus Evacuation. A transverse low incision on the aorta was made and the LV cavity was inspected through the aortic valve. The aortic valve of the right coronary cusp was retracted gently, and the apex was visualized transaortic. The clot was removed in pieces. Should the LV Thrombus Evacuation be captured as Other Cardiac Procedure?

Answer: Code as Other Cardiac as this increases the patient risk during CABG since you are removing thrombus.

**FAQ August 2019** - A patient was admitted for tricuspid valve endocarditis and had a AngioVac-assisted extirpation of matter from the tricuspid valve via percutaneous approach with cardiopulmonary bypass support. Is this case included in the Registry?

Answer - Aortic thrombectomy using the AngioVac system is not collected, unless done in conjunction with an STS qualifying procedure, such as CAB or AVR etc.

**FAQ Nov 2019** - Pt has a planned PCI of the LAD and a bioprosthetic MVR in a hybrid OR. In v2.9, how would I capture this PCI done in the OR with the MVR? (since concurrent PCI was removed from this version). In this case the PCI was done prior to the MVR within the hybrid procedure. Wondering if I should capture the concurrent PCI as a planned Other Cardiac procedure in addition to the MVR or should it be captured as a prior PCI within same episode of care?

Answer - Code PCI as other planned, other cardiac procedure in this scenario.

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**SEQ. #: 2145**

**Long Name:** Atrial Fibrillation Procedure Performed

**Short Name:** AFibProc

**Definition:** Indicate whether an atrial fibrillation procedure was performed.

**Intent/Clarification:**

The intent is to capture when atrial fibrillation procedures were performed.

- Yes\*
- No

**\*If Yes, complete Section M1.**

**FAQ September 2017:** If a patient has an extensive atrial fibrillation procedure and an LAA clipping how would we include the atrial ligation/exclusion method and device?

Answer: Multiple sequence numbers will be required to code the ligation/exclusion and device.

First capture sequence numbers 2140 and 2145 to open section M and M-1.

Then capture the atrial appendage procedure in sequence 4050; then ligation/exclusion method in sequence 4051 and Model in sequence number 4052 as well as the UDI, if available, in sequence 4053.

Code the extensive ablation procedure in section M-1 as described by your physician including lesion number 7 to complete the LAA.

**FAQ May 2019:** How are we capturing epicardial botox injections for treatment of atrial fibrillation if done in conjunction with another database procedure?

Answer: Code this as yes to Other Cardiac, Afib seq 2145 and in the a-fib section code primarily epicardial for lesion location at seq 419 but leave method blank.

**FAQ May 2019:** Is the surgical component of the Convergent MAZE procedure that is completed by a Cardiothoracic Surgeon, required data entry for STS?

Answer: Yes, this can be captured in the Afib section as primarily epicardial.

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**SEQ. #: 2146**

**Long Name:** Surgeon Input for Other Cardiac Afib Data Abstraction

**Short Name:** AFibProcSurgInput

**Definition:** Indicate whether the surgeon provided input for the other cardiac Afib procedure data abstraction.

**Intent/Clarification:**

Indicates that the data manager confirms that because of interaction with the surgeon the data included reflects the pathology and the procedure performed.

- Yes\*
- No

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**SEQ. #: 2155**

**Long Name:** Other Non Card

**Short Name:** OpONCard



**Definition:** Indicate whether a non-cardiac procedure was done.

**Intent/Clarification:**

The intent is to capture when non-cardiac procedures were performed.

**FAQ May 2018:** We had a patient who underwent EGD with dilatation of his esophagus for stricture in order to pass the TEE probe in the OR. This was done immediately prior to the CAB procedure, in the same operating room and under one anesthetic setting. Is this coded as an 'other non-cardiac' procedure?

Answer: No, this is not an 'other non-cardiac' procedure and should not take the patient out of the isolated CAB category.

**FAQ June 2018:** The patient had a history of hydrocephalous and a VP shunt placement. A CT prior to OR showed the VP shunt lying over the sternum and did not enter the heart. Pt had a neurosurgeon (in the open heart room) Externalize the shunt immediately prior to this patients open heart surgery. Is this considered an Other Non-Cardiac procedure?

Answer: No, this did not require a non-cardiac procedure as the VP shunt was externalized or simply "moved aside".

**FAQ June 2018:** If a patient had hernia repair, involving the hernia sac and requiring mesh placement, during CABG procedure is this captured as other non-cardiac procedure?

Answer: Yes, this extensive hernia repair is an Other Non-Cardiac procedure.

**FAQ September 2018:** Patient had CAB, Aortic Root replacement, and plication of a redundant left hemi-diaphragm. Does the plication of the hemi-diaphragm get captured as an Other Non-Cardiac Procedure category?

Answer: It does not add to the risk, do not code anything.

**FAQ January 2019:** In the OR, but prior to skin incision, the anesthesiologist placed an introducer in the right internal jugular vein for purposes of SG catheter insertion but was unable to advance the catheter due to resistance. A central venous introducer was then placed in the left subclavian vein and the SG was floated successfully. Following the median sternotomy incision, a large hematoma was noted in the area around the innominate vein. Careful dissection revealed the central venous introducer protruding from the innominate vein. There was a fairly large tear in vein extending beneath the upper left sternum. Manual pressure was held, cardiopulmonary bypass was established between the RCFA and and RA. The tear was closed longitudinally using 6-0 prolene. Patient taken off bypass for IMA and vein harvest and placed back on bypass for remainder of CABG. Is this an 'other non cardiac/other vascula' unplanned due to surgical complication?

Answer: Yes, code other non-cardiac due to surgical complication.

**FAQ February 2019:** The patient was admitted for elective AVR and has a history of persistent right pleural effusion. During the surgery a right total lung decortication was performed (prior to the AVR). The pleural effusion was evacuated and the lung exhibited a significant amount of scar and was clearly trapped. Two hours was spent removing the pleural rind and an appropriate level of decortication was achieved. Should this be captured as an 'other non-cardiac procedure'?

Answer: Yes, code other non-cardiac.

**FAQ February 2019:** Would repair of severe pectus excavatum performed during an AVR + CAB be coded as an 'other non cardiac'?

Answer: No, do not code the repair as other non cardiac.

**FAQ May 2019:** The patient was in surgery having Right carotid endarterectomy done (and please note the plan was to have the AVR done tomorrow) when during this procedure the patient became bradycardic and required chest compressions and multiple doses of epi. They were able to get the patient back after 10 minutes of chest compressions. However, the pt. had a second bradycardic cardiac arrest and the surgeon decided on a salvage aortic valve replacement! So is the Endarterectomy now part of the AVR surgery (How do I mark this on the STS tool?)

Answer: If this was done in the same room then code the the AVR as Salvage and the endarterectomy. You can also code resuscitation.

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**SEQ. #:** 2195

**Long Name:** CPT-1 Code # 1

**Short Name:** CPT1Code1

**Definition:** Indicate the first CPT procedure code (CPT-1) pertaining to the surgery for which the data collection form was initiated.

**Intent/Clarification:**

There is no STS list. Use whichever CPT codes were entered for procedures performed during this operation. Consult with your Billing/Coding Department, if applicable.

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**SEQ. #:** 2200

**Long Name:** CPT-1 Code # 2

**Short Name:** CPT1Code2

**Definition:** Indicate, if applicable, the second CPT procedure code (CPT-1) pertaining to the surgery for which the data collection form was initiated.

**Intent/Clarification:**

There is no STS list. Use whichever CPT codes were entered for procedures performed during this operation. Consult with your Billing/Coding Department, if applicable.

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**SEQ. #:** 2205

**Long Name:** CPT-1 Code # 3

**Short Name:** CPT1Code3

**Definition:** Indicate, if applicable, the third CPT procedure code (CPT-1) pertaining to the surgery for which the data collection form was initiated.

**Intent/Clarification:**

There is no STS list. Use whichever CPT codes were entered for procedures performed during this operation. Consult with your Billing/Coding Department, if applicable.

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**SEQ. #:** 2210

**Long Name:** CPT-1 Code # 4

**Short Name:** CPT1Code4

**Definition:** Indicate, if applicable, the fourth CPT procedure code (CPT-1) pertaining to the surgery for which the data collection form was initiated.

**Intent/Clarification:**

There is no STS list. Use whichever CPT codes were entered for procedures performed during this operation. Consult with your Billing/Coding Department, if applicable.

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**SEQ. #:** 2215

**Long Name:** CPT-1 Code # 5 **Short Name:** CPT1Code5

**Definition:** Indicate, if applicable, the fifth CPT procedure code (CPT-1) pertaining to the surgery for which the data collection form was initiated.

**Intent/Clarification:**

There is no STS list. Use whichever CPT codes were entered for procedures performed during this operation. Consult with your Billing/Coding Department, if applicable.

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**SEQ. #:** 2220

**Long Name:** CPT-1 Code # 6

**Short Name:** CPT1Code6

**Definition:** Indicate, if applicable, the sixth CPT procedure code (CPT-1) pertaining to the surgery for which the data collection form was initiated.

**Intent/Clarification:**

There is no STS list. Use whichever CPT codes were entered for procedures performed during this operation. Consult with your Billing/Coding Department, if applicable.

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**SEQ. #:** 2225

**Long Name:** CPT-1 Code # 7

**Short Name:** CPT1Code7

**Definition:** Indicate, if applicable, the seventh CPT procedure code (CPT-1) pertaining to the surgery for which the data collection form was initiated.

**Intent/Clarification:**

There is no STS list. Use whichever CPT codes were entered for procedures performed during this operation. Consult with your Billing/Coding Department, if applicable.

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**SEQ. #:** 2230

**Long Name:** CPT-1 Code # 8

**Short Name:** CPT1Code8

**Definition:** Indicate, if applicable, the eighth CPT procedure code (CPT-1) pertaining to the surgery for which the data collection form was initiated.

**Intent/Clarification:**

There is no STS list. Use whichever CPT codes were entered for procedures performed during this operation. Consult with your Billing/Coding Department, if applicable.

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**SEQ. #:** 2235

**Long Name:** CPT-1 Code # 9

**Short Name:** CPT1Code9

**Definition:** Indicate, if applicable, the ninth CPT procedure code (CPT-1) pertaining to the surgery for which the data collection form was initiated.

**Intent/Clarification:**

There is no STS list. Use whichever CPT codes were entered for procedures performed during this operation. Consult with your Billing/Coding Department, if applicable.

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**SEQ. #:** 2240

**Long Name:** CPT-1 Code # 10

**Short Name:** CPT1Code10

**Definition:** Indicate, if applicable, the tenth CPT procedure code (CPT-1) pertaining to the surgery for which the data collection form was initiated.

**Intent/Clarification:**

There is no STS list. Use whichever CPT codes were entered for procedures performed during this operation. Consult with your Billing/Coding Department, if applicable.

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**SEQ. #:** 2245

**Long Name:** OR Entry Date And Time

**Short Name:** OREntryDT

**Definition:** Indicate the date and time, to the nearest minute (using 24-hour clock), that the patient entered the operating room. If the procedure was performed in a location other than the OR, record the time when the sterile field, or its equivalent, was set up.

**Intent/Clarification:**

The intent is to capture the actual date and time the patient physically enters the operating room. For emergency procedures done outside the OR, this may be an estimated time.

Required date format: mm/dd/yyyy

Required time format: hh:mm (0-24 hour clock)

**FAQ Sept 2019** - I had a patient who had a planned CABG for 1 day and a planned TVAR the next day. Per the Training Manual, I am to capture this as one procedure in the Aortic Valve Section even though it was done on a different day. In this scenario, do I enter the OR times from the CABG or TAVR procedure?

Answer - Use the OR times Seq 2245, 2250, 2253, 2265, 2270, and 2275 from the CABG in this scenario.

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**SEQ. #:** 2250

**Long Name:** OR Exit Date And Time

**Short Name:** ORExitDT

**Definition:** Indicate the date and time, to the nearest minute (using 24-hour clock), that the patient exits the operating room. If the procedure was performed in a location other than the OR, record the time when the sterile field, or its equivalent, was taken down.

**Intent/Clarification:**

The intent is to capture the actual date and time the patient physically leaves the operating room. This field is used to calculate post-operative ventilation time and therefore prolonged ventilation.

Required date format: mm/dd/yyyy.

Required time format: hh:mm (0-24 hour clock)

**FAQ October 2019** - A patient underwent CABG surgery, the Physician closed the chest, and while moving the patient off the OR table the patient had a VFIB arrest. She was placed back on the OR table, IABP Inserted, and her chest re-opened and an additional bypass graft performed. They re-closed the chest, took the patient off the table to another Hybrid OR room where a Cath Lab Physician placed an Impella. After the Impella was placed, the patient was transferred to the ICU. The hybrid room is across the hall from the previous OR Room. Same staff attended and care was not interrupted. How do I code OR exit date and time?

Answer - Code as all one procedure. The patient never left the OR in this situation – use the final time of OR exit.

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**SEQ. #:** 2251

**Long Name:** General Anesthesia

**Short Name:** GenAnes

**Definition:** Indicate whether general anesthesia was used during this procedure.

**Intent/Clarification:**

The intent is to clarify whether general anesthesia was used.

**FAQ August 2019** - Is general anesthesia to be checked “Yes” if used anytime during the procedure. This is related to cases that start with MAC and convert to general anesthesia?

Answer - The intent of this field is to capture if general anesthesia was used at any time during the procedure, regardless if they started with procedural sedation.

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**SEQ. #:** 2252

**Long Name:** Procedural Sedation

**Short Name:** ProcSed

**Definition:** Indicate whether the procedure was performed under sedation (also referred to as “moderate sedation” or “conscious sedation”) and not general anesthesia.

**Intent/Clarification:**

The intent is to identify whether sedation was used, moderate or conscious, instead of general anesthesia.

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**SEQ. #:** 2253

**Long Name:** Intubation

**Short Name:** Intubate

**Definition:** Indicate the status of intubation.

**Intent/Clarification:**

The intent is to identify whether the patient required endotracheal or tracheal intubation.

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**SEQ. #:** 2255

**Long Name:** Initial Intubation Date And Time

**Short Name:** IntubateDT

**Definition:** Indicate the date (mm/dd/yyyy) and time (hh:mm) (24 hour clock) ventilatory support started. Date in the format mm/dd/yyyy.

**Intent/Clarification:**

The following guidelines apply:

- Capture the intubation closest to the surgical start time. If the patient was intubated upon admission and remained intubated until the surgical start time, capture this intubation's date and time.
- If the patient was admitted intubated (intubated at another institution) and remained continually intubated until the surgical start time, capture the patient's admission date and time.
- If the patient was admitted with a tracheostomy in place without ventilator support, capture the date and time closest to the surgical start time that ventilator support was initiated.
- If the patient was admitted with a tracheostomy in place and was receiving chronic ventilator support, capture the admission date and time.
- If the intubation date and time is otherwise unknown, enter the date and time the patient entered the operating room.
- Do not alter the previously established date and time that ventilator support was initiated for scenarios including, but not limited to, interruptions in ventilator support due to accidental extubation/de-cannulation, elective tube change etc.

Required date format: mm/dd/yyyy

Required time format: hh:mm (0-24 hour clock)

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**SEQ. #:** 2260

**Long Name:** Initial Extubation Date And Time

**Short Name:** ExtubatedDT

**Definition:** Indicate the date (mm/dd/yyyy) and time (hh:mm) (24 hour clock) ventilatory support initially ceased after surgery.

**Intent/Clarification:**

The following guidelines apply:

- Capture extubation time closest to the surgical stop time
- If the patient has a tracheostomy and is separated from the mechanical ventilator postoperatively within the hospital admission, capture the date and time of separation from the mechanical ventilator closest to the surgical stop time.
- If the patient expires while intubated or cannulated and on the ventilator, capture the date and time of expiration as extubation time.
- If patient is discharged on chronic ventilator support, capture the date and time of discharge.

Required date format: mm/dd/yyyy

Required time format: hh:mm (0-24 hour clock)

**FAQ Nov 2019** - The respiratory therapist always documents the extubation time. However, the ICU nurse also documents the extubation time on her flow sheet. I often get the following scenario, RT time extubated documented as 0700, RN documents on her flowsheet 0703. Which time do I take?

Answer - Capture the time documented by the Respiratory Therapist as priority source documentation in this scenario.

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**SEQ. #: 2265**

**Long Name:** Skin Incision Start Date And Time

**Short Name:** SIStartDT

**Definition:** Indicate the date and time, to the nearest minute (using 24-hour clock), that the first skin incision, or its equivalent, was made.

**Intent/Clarification:**

Use the first incision, i.e. vein harvest incision; for the skin incision date and time. Do not code access site stab wounds. First skin incision would also apply to Carotid, Vascular, Thoracic and Other non-cardiac procedures.

Required date format: mm/dd/yyyy

Required time format: hh:mm (0-24 hour clock)

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**SEQ. #: 2270**

**Long Name:** Skin Incision Stop Date And Time

**Short Name:** SIStopDT

**Definition:** Indicate the date and time, to the nearest minute (using 24-hour clock), that the skin incision was closed, or its equivalent. If the patient leaves the operating room with an open incision, collect the time that the dressings were applied to the incision.

**Intent/Clarification:**

Use the documented time the incision was closed.

Required date format: mm/dd/yyyy

Required time format: hh:mm (0-24 hour clock)

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**SEQ. #: 2275**

**Long Name:** Anesthesia End Date and Time

**Short Name:** AnesEndDT



**Definition:** Indicate the anesthesia end time documented in the medical record. The definition of anesthesia end time is when the anesthesiologist is no longer in personal attendance, that is, when the patient is safely placed under post-anesthesia supervision.

**Intent/Clarification:**

The time may be in the recovery room or intensive care unit; when it is documented that anesthesia care has ended. This field will be referenced for selecting the peak post op glucose (6550) Anesthesia end time should be captured from the anesthesia record.

Required date format: mm/dd/yyyy

Required time format: hh:mm (0-24 hour clock)

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**SEQ. #:** 2280

**Long Name:** Appropriate Antibiotic Selection

**Short Name:** AbxSelect

**Definition:** Indicate if there was documentation of an order for a first generation or second generation cephalosporin prophylactic antibiotic, documentation that it was given preoperatively or in the event of a documented allergy an alternate antibiotic choice is ordered and administered.

**Intent/Clarification:** Refer to the antibiotic guidelines on the STS website.

<http://www.sts.org/resources-publications/clinical-practice-credentialing-guidelines/antibiotic-guidelines>

**FAQ Sept 2019** - Is Clindamycin an appropriate choice for PCN allergic patients?  
Answer - An alternative antibiotic can be given as the primary (prophylactic) antibiotic for a patient with a PCN allergy as deemed appropriate by hospital infectious disease consultant. Standing orders are acceptable as long as an Infection Disease Consultant was involved in the development of the orders.

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**SEQ. #:** 2285

**Long Name:** Appropriate Antibiotic Administration Timing

**Short Name:** AbxTiming

**Definition:** Indicate whether prophylactic antibiotics were administered within one hour of surgical incision or start of procedure if no incision required (two hours if receiving Vancomycin or fluoroquinolone).

The surgical incision time is the time of the first incision, regardless of location.

**Intent/Clarification:**

The documented time the antibiotic started must be prior to the documented time of the first surgical incision. **Update Dec 2019 - the antibiotic must be initiated / started within one hour prior to surgical incision (two hours if receiving Vancomycin or fluoroquinolone). If no incision is required then it must be started by the start of procedure.** Refer to antibiotic guidelines on the STS website.

<http://www.sts.org/resources-publications/clinical-practice-credentialing-guidelines/antibiotic-guidelines>

**FAQ January 2020 - Both Ancef & Vancomycin are given as pre-op antibiotics routinely per protocol at our facility. The Ancef dose is given > 1 hr before incision, but Vancomycin is given within two hours of incision. Can we code yes to Seq 2285?**

**Answer - Code No to Seq 2285 in this scenario. If hospitals choose to develop a pre-op antibiotic protocol where 2 antibiotics are given, then both must be administered within one hour of surgical incision or start of procedure if no incision required (two hours if receiving Vancomycin or fluoroquinolone) in order to code YES to Seq 2285.**

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**SEQ. #: 2290**

**Long Name:** Appropriate Antibiotic Discontinuation

**Short Name:** AbxDisc

**Definition:** Indicate whether the prophylactic antibiotics were ordered to be discontinued OR were discontinued within 48 hours after surgery end time.

Determining the timeframe (within 48 hours) begins at the "surgical end time".

**Intent/Clarification:**

Refer to antibiotic guidelines on the STS website.

<http://www.sts.org/resources-publications/clinical-practice-credentialing-guidelines/antibiotic-guidelines>

FAQ January 2019: Patient had antibiotic frequency changed from q8 X 5 Doses to q12 X five doses which timed last dose beyond the 48 hour limit. Would change for renal insufficiency be a permitted exclusion?

Answer: No, the antibiotic should still be discontinued within 48 hours.

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**SEQ. #: 2295**

**Long Name:** Additional Intraoperative Prophylactic Antibiotic Dose

**Short Name:** AddIntraPAnti

**Definition:** Indicate whether an additional prophylactic antibiotic dose was given in the operating room.

**Intent/Clarification:**

Refer to antibiotic guidelines on the STS website.

**SEQ. #:** 2296

**Long Name:** Temperature Measured

**Short Name:** TempMeas

**Definition:** Indicate whether the patient's core temperature was measured during the procedure.

**Intent/Clarification:**

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**SEQ. #:** 2300

**Long Name:** Lowest Temperature

**Short Name:** LwstTemp

**Definition:** Record the patient's lowest core temperature in the operating room in degrees centigrade.

**Intent/Clarification:**

The intent is to capture the lowest documented temperature intraoperatively. The source of the documentation may be Esophageal, CPB venous return, Bladder, Nasopharyngeal, Tympanic, Rectal, or Other.

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**SEQ. #:** 2305

**Long Name:** Lowest Temperature Source

**Short Name:** LwstTempSrc

**Definition:** Indicate the source where the lowest core temperature was measured.

**Intent/Clarification:**

Temperatures are typically documented on perfusion record or anesthesia record. Venous temperatures on CPB are most common and always available, however not as accurate. Sources may be Esophageal, CPB venous return, Bladder, Nasopharyngeal, Tympanic, Rectal, Other, or Unknown.

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**SEQ. #:** 2310

**Long Name:** Lowest Intra-op Hemoglobin

**Short Name:** LwstIntraHemo

**Definition:** Enter the lowest measured hemoglobin recorded in the operating room. Do not enter calculated values.

**Intent/Clarification:**

If you do not have measured lab values you may use calculated values. **Update Nov 2019 – The unit of measurement for Hgb is g/dl or g/100 ml or g%.**

\*\*Note that Hemoglobin (Hgb) should always be less than the Hematocrit (Hct).

**FAQ July 2019** - The definition states do not use calculated values however, under intent it states if you do not have a value you can use a calculated value? So which is it you can use calculated or you can not?

Answer - Calculated values are acceptable to use if that is all that is documented.

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**SEQ. #: 2315**

**Long Name:** Lowest Hematocrit

**Short Name:** LwstHct

**Definition:** Enter the lowest measured hematocrit recorded in the operating room. Do not enter calculated values.

**Intent/Clarification:**

If you do not have measured lab values you may use calculated values. **Update Nov 2019 – The unit of measurement for Hct is %.**

\*\*Note that Hemoglobin (Hgb) should always be less than the Hematocrit (Hct).

---

**SEQ. #: 2320**

**Long Name:** Highest Intra-op Glucose

**Short Name:** HighIntraGlu

**Definition:** Enter the highest glucose recorded in the operating room.

**Intent/Clarification:**

Typically documented in laboratory tests, anesthesia record, or perfusion record.

**Update Nov 2019 – The unit of measurement for Glucose is mg/dl.**

---

**SEQ. #: 2325**

**Long Name:** CPB Utilization

**Short Name:** CPBUtil

**Definition:** Indicate the level of CPB or coronary perfusion used during the procedure.

**Intent/Clarification:**

- **None:** No CPB or coronary perfusion used during the procedure.
- **Combination:** With or without CPB and/or with or without coronary perfusion at any time during the procedure (capture conversions from off-pump to on-pump only):
  - At start of procedure: No CPB/No Coronary Perfusion -> conversion to -> CPB
  - At start of procedure: No CPB/No Coronary Perfusion -> conversion to -> Coronary perfusion
  - At start of procedure: No CPB/No Coronary Perfusion -> conversion to -> Coronary perfusion -> conversion to -> CPB
- **Full CPB** or coronary perfusion was used for the entire procedure

**FAQ June 2019** - When the patient is placed on left heart bypass during an open descending thoraco-abdominal aneurysm repair, is the left heart bypass time captured under cardiopulmonary bypass time?

Answer: Code NO to Seq 2325 as this is not actual bypass as defined by the Training Manual.

---

**SEQ. #: 2330**

**Long Name:** CPB Utilization - Combination Plan

**Short Name:** CPBCmb

**Definition:** Indicate whether the combination procedure from off-pump to on-pump was a planned or an unplanned conversion.

**Intent/Clarification:**

To capture if the operation was intended to be an off pump case and, for some clinical reason, required cardiopulmonary bypass to complete the operation.

- **Planned** - The surgeon intended to treat with any of the combination options described in "CPB utilization"
- **Unplanned** - The surgeon did not intend to treat with any of the combination options described in "CPB utilization"

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**SEQ. #: 2335**

**Long Name:** CPB Utilization - Unplanned Combination Reason

**Short Name:** CPBCmbR

**Definition:** Indicate the reason that the procedure required the initiation of CPB and/or coronary perfusion.

**Intent/Clarification:**

To capture the reason that caused the procedure to require the initiation of cardiopulmonary bypass:

- Exposure/visualization
- Bleeding
- Inadequate size and/or diffuse disease of the distal vessel
- Hemodynamic instability (hypotension/arrhythmias)
- Conduit quality and/or trauma
- Other

---

**Update Nov 2019 - The cannulation site refers to where the catheter is inserted. Two stage/triple stage cannulation = right atrium. Code all caval/ bicaval cannulation as venous site = right atrium. An option for SVC will be added in the upgrade.**

**FAQ Nov 2019 - How do I code femoral and IJ cannulation?**  
Answer - Code as femoral and jugular.

**FAQ Dec 2019 - If the innominate is cannulated for cerebral perfusion during bypass, do we mark this cannulation?**  
Answer – No. The intent is to only capture coronary perfusion cannulation sites.

**SEQ. #: 2340**

**Long Name:** Cannulation - Arterial Cannulation Site - Aortic

**Short Name:** CanArtStAort

**Definition:** Indicate whether the arterial cannulation site included the aorta.

**Intent/Clarification:**

The arterial cannulation site was the aorta.

---

**SEQ. #: 2345**

**Long Name:** Cannulation - Arterial Cannulation Site - Femoral

**Short Name:** CanArtStFem

**Definition:** Indicate whether the arterial cannulation site included a femoral artery.

**Intent/Clarification:**

The arterial cannulation site was the femoral artery.

---

**SEQ. #: 2350**

**Long Name:** Cannulation - Arterial Cannulation Site - Axillary

**Short Name:** CanArtStAx

**Definition:** Indicate whether the arterial cannulation site included an axillary artery.

**Intent/Clarification:**

The arterial cannulation site was the axillary artery.

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**SEQ. #: 2355**

**Long Name:** Cannulation - Arterial Cannulation Site - Innominate

**Short Name:** CanArtStInn

**Definition:** Indicate whether the arterial cannulation site included an innominate artery.

**Intent/Clarification:**

The arterial cannulation site was the innominate artery.

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**SEQ. #: 2360**

**Long Name:** Cannulation - Arterial Cannulation Site - Other

**Short Name:** CanArtStOth

**Definition:** Indicate whether the arterial cannulation site included any other artery.

**Intent/Clarification:**

There was any other arterial cannulation site.

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**SEQ. #: 2365**

**Long Name:** Cannulation - Venous Cannulation Site - Femoral

**Short Name:** CanVenStFem

**Definition:** Indicate whether the venous (inflow) cannulation site included a femoral vein.

**Intent/Clarification:**

The venous cannulation site was the femoral vein.

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**SEQ. #: 2370**

**Long Name:** Cannulation - Venous Cannulation Site - Jugular

**Short Name:** CanVenStJug

**Definition:** Indicate whether the venous (inflow) cannulation site included a jugular vein.

**Intent/Clarification:**

The venous cannulation site was the jugular vein.

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**SEQ. #:** 2375

**Long Name:** Cannulation - Venous Cannulation Site - Right Atrial

**Short Name:** CanVenStRtA

**Definition:** Indicate whether the venous (inflow) cannulation site included the right atrium.

**Intent/Clarification:**

The venous cannulation site was the right atrium.

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**SEQ. #:** 2380

**Long Name:** Cannulation - Venous Cannulation Site - Left Atrial

**Short Name:** CanVenStLfA

**Definition:** Indicate whether the venous (inflow) cannulation site included the left atrium.

**Intent/Clarification:**

The venous cannulation site was the left atrium.

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**SEQ. #:** 2385

**Long Name:** Cannulation - Venous Cannulation Site - Pulmonary Vein

**Short Name:** CanVenStPulm

**Definition:** Indicate whether the venous (inflow) cannulation site included a pulmonary vein.

**Intent/Clarification:**

The venous cannulation site was the pulmonary vein.

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**SEQ. #:** 2390

**Long Name:** Cannulation - Venous Cannulation Site - Caval/Bicaval

**Short Name:** CanVenStBi

**Definition:** Indicate whether the venous (inflow) cannulation site included the superior and/or inferior vena cava.

**Intent/Clarification:**

The venous cannulation site was the superior and/or inferior vena cava.

**Update Nov 2019 - Code all caval/ bicaval cannulation as venous site = right atrium. An option for SVC will be added in the upgrade.**

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**SEQ. #:** 2395

**Long Name:** Cannulation - Venous Cannulation Site - Other

**Short Name:** CanVenStOth

**Definition:** Indicate whether the venous (inflow) cannulation site included any other site.

**Intent/Clarification:**

Any other venous cannulation site was used.

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**SEQ. #:** 2400

**Long Name:** Cardiopulmonary Bypass Time

**Short Name:** PerfusTm

**Definition:** Indicate the total number of minutes that systemic return is diverted into the cardiopulmonary bypass (CPB) circuit and returned to the systemic system. This time period (Cardiopulmonary Bypass Time) includes all periods of cerebral perfusion and sucker bypass. This time period (Cardiopulmonary Bypass Time) excludes any circulatory arrest and modified ultrafiltration periods. If more than one period of CPB is required during the surgical procedure, the sum of all the CPB periods will equal the total number of CPB minutes.

**Intent/Clarification:**

The total time in minutes. This information can be obtained from the perfusion record or in the Surgeon's dictation.

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**SEQ. #:** 2405

**Long Name:** Circulatory Arrest

**Short Name:** CircArr

**Definition:** Indicate whether or not circulatory arrest was utilized during the procedure.

**Intent/Clarification:**

Circulatory arrest is defined as the complete cessation of blood flow to the patient. Circulatory arrest is a surgical technique that involves cooling the body of the patient and stopping blood circulation and is not the same as coronary-pulmonary bypass time. It is used in cardiac surgery to allow operation on the aortic arch and in neurosurgery to repair some brain aneurysms.

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**SEQ. #:** 2410

**Long Name:** Circulatory Arrest Time Without Cerebral Perfusion

**Short Name:** DHCATm

**Definition:** Indicate the total number of minutes of deep hypothermic circulatory arrest without cerebral perfusion. If more than one period of circulatory arrest is required during this surgical procedure, the sum of these periods is equal to the total duration of circulatory arrest.

**Intent/Clarification:**

If more than one period of circulatory arrest with cerebral perfusion is required during this surgical procedure, the sum of these periods is equal to the total duration of circulatory arrest without cerebral perfusion.

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**SEQ. #: 2415**

**Long Name:** Circulatory Arrest With Cerebral Perfusion

**Short Name:** CPerfUtil

**Definition:** Indicate whether circulatory arrest with cerebral perfusion was performed.

**Intent/Clarification:**

Selective cerebral perfusion is a technique that involves providing blood flow and metabolic support to the brain while the blood flow to the rest of the body is stopped during circulatory arrest. This approach is commonly used during complex surgery that requires circulatory arrest. It offers more protection for the brain and minimizes the risk of stroke and other serious complications.

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**SEQ. #: 2420**

**Long Name:** Cerebral Perfusion Time

**Short Name:** CPerfTime

**Definition:** Indicate the total number of minute's cerebral perfusion was performed. This would include antegrade and/or retrograde cerebral perfusion strategies.

**Intent/Clarification:**

If more than one period of circulatory arrest with cerebral perfusion was used, add the times for the total circulatory arrest with cerebral perfusion time.

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**SEQ. #: 2425**

**Long Name:** Cerebral Perfusion Type

**Short Name:** CPerfTyp

**Definition:** Indicate type of cerebral perfusion utilized.

**Intent/Clarification:**

Indicate the type of cerebral perfusion:

- Antegrade
- Retrograde

- Both antegrade and retrograde

---

**SEQ. #:** 2426

**Long Name:** Total Circulatory Arrest Time

**Short Name:** TotCircArrTm

**Definition:** Calculated variable measuring circulatory arrest without cerebral perfusion time plus any cerebral perfusion time.

**Intent/Clarification:**

This value will be automatically generated by the software. It will total the number of minutes of circulatory arrest without cerebral perfusion + the total number of minutes of circulatory arrest with cerebral perfusion.

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**SEQ. #:** 2430

**Long Name:** Aortic Occlusion

**Short Name:** AortOccl

**Definition:** Indicate the technique of aortic occlusion used.

**Intent/Clarification:**

Identify the method used to prevent blood from circulating through the heart and to allow the delivery of cardioplegia into the aortic root to arrest the heart. In procedures where cardioplegia is not administered for myocardial protection, but a cross clamp is applied to isolated diseased sections of the aorta (i.e. descending thoracic or thoracoabdominal aneurysm repairs) the appropriate response to aortic occlusion is aortic cross clamp. You should populate the cross clamp time field with the appropriate minutes of cross clamp time. The Cardioplegia field would be equal to None.

Externally, the aortic cross clamp is used. Internally, balloon occlusion is used. Choose one of the following:

- None - beating heart
- None - fibrillating heart
- Aortic Cross clamp
- Balloon Occlusion

---

**SEQ. #:** 2435

**Long Name:** Cross Clamp Time (min)

**Short Name:** XClampTm

**Definition:** Indicate the total number of minutes that the coronary circulation is mechanically isolated from systemic circulation, either by an aortic cross clamp or systemic circulatory arrest.

**Intent/Clarification:**

Example: For the following two operations: (1) “Transplant, Heart”, and (2) “Transplant, Heart and Lung”, the field “Cross Clamp Time” will be defined as the cross clamp time of the **donor** heart. Therefore, these two operations represent the only operations where the field “Cross Clamp Time” can be greater than the field “Cardiopulmonary Bypass Time.”

**FAQ July 2019:** How is cross clamp time documented when performing descending aorta surgery when the beating heart is perfusing the upper body and the bypass pump is perfusing the lower body? During these surgeries the cross clamp is moved as the vessels are reimplemented.

Answer: Capture the time from start to finish of the entire cross clamp time. This means any time the clamp is on the aorta regardless if the clamp is moved.

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**SEQ. #: 2440**

**Long Name:** Cardioplegia Delivery

**Short Name:** CplegiaDeliv

**Definition:** Indicate the delivery method of cardioplegia if used.

**Intent/Clarification:**

Cardioplegia is a solution that is used to cause the heart to arrest as documented by the surgeon or perfusionist. Refer to the perfusion record or Surgeon’s dictation.

- Non, if not used
  - Antegrade
  - Retrograde
  - Both
- -----

**SEQ. #: 2445**

**Long Name:** Cardioplegia Type

**Short Name:** CplegiaType

**Definition:** Indicate the type of cardioplegia used.

**Intent/Clarification:**

Choose one of following:

- **Blood** (If any blood is contained in the solution, any ratio). Includes the following solutions:
  - Combination of blood +St. Thomas solution (i.e.Plegisol)
  - DelNido cardioplegia
  - Microplegia

- **Crystalloid** (If solution is **only** crystalloid)
- **Both** (If both types of solutions are used) Use “Both” if two different solutions were used during the procedure, 1 with blood and 1 crystalloid
- **Other**

---

**SEQ. #:** 2450

**Long Name:** Cerebral Oximetry Used

**Short Name:** CerOxUsed

**Definition:** Indicate whether cerebral oximetry was used.

**Intent/Clarification:**

Cerebral oximetry is similar to pulse oximetry in that it uses differences in light absorption between oxygenated and deoxygenated hemoglobin to measure regional oxygen saturation.

---

**SEQ. #:** 2490

**Long Name:** Diffuse Aortic Calcification (Porcelain Aorta)

**Short Name:** ConCalc

**Definition:** Indicate whether diffuse or concentric calcification of the aorta was discovered preoperatively or intraoperatively using imaging or palpation.

**Intent/Clarification:**

The intent is to capture when and if concentric calcification is discovered. This may impact the surgeon’s approach to cannulation.

Concentric calcification is the same as circumferential calcification and is often described as a porcelain aorta.

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**SEQ. #:** 2495

**Long Name:** Assessment of Ascending Aorta/Arch

**Short Name:** AsmtAscAA

**Definition:** Indicate whether the Ascending Aorta/Arch was evaluated for atheroma or plaque during surgery using TEE or epiaortic ultrasound. (Not intended for assessment of aneurysmal disease or dissection.)

**Intent/Clarification:**

Do not capture descending calcification. The intent is to evaluate the area of the aorta that will be cannulated, clamped or otherwise manipulated during the case. Calcification

or atheroma in this area can predispose the patient to stroke. Include descriptions of aortic root as ascending calcification.

- Yes
- No
- Not reported

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**SEQ. #: 2497**

**Long Name:** Method of Assessment of Aorta Plaque

**Short Name:** AsmtAoDxMeth

**Definition:** Indicate the method of assessing the highest grade of atheroma or plaque in the ascending aorta.

**Intent/Clarification:**

Do not capture descending calcification. The intent is to evaluate the area of the aorta that will be cannulated, clamped or otherwise manipulated during the case. Calcification or atheroma in this area can predispose the patient to stroke. Include descriptions of aortic root as ascending calcification.

Indicate the method of assessment: Epi-aortic ultrasound is an intraoperative evaluation. TEE can be performed pre and/or intraoperatively. Some patients may have preoperative evaluation by CT scan. MRI/A is another modality.

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**SEQ. #: 2500**

**Long Name:** Assessment of Aorta Plaque

**Short Name:** AsmtAoDx

**Definition:** Indicate highest grade of atheroma or plaque in the ascending aorta.

**Intent/Clarification:**

Choose one of following:

- Normal Aorta/No or minimal plaque
- Extensive intimal thickening
- Protruding Atheroma < 5 mm
- Protruding Atheroma ≥ 5 mm
- Mobile Plaques
- Not Documented

This will be found intraoperatively in the surgeon's dictation or the anesthesia record.

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**SEQ. #:** 2505

**Long Name:** Aortic Condition Altered Plan

**Short Name:** AsmtAPIn

**Definition:** Indicate whether aortic assessment changed cannulation strategy or surgical plan.

**Intent/Clarification:**

This assessment can assist the surgeon with selection of optimal site for cannulation of ascending aorta or may prompt decision to select alternate arterial cannulation site or an off pump approach.

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**SEQ. #:** 2510

**Long Name:** Intraop Blood Products Refused

**Short Name:** IBldProdRef

**Definition:** Indicate whether the patient or family refused blood products.

**Intent/Clarification:** Identify if the patient refused blood or blood products prior to surgery. This may be found in the history and physical, surgical consultation or in a specific consent/refusal form.

Sequence number 2510 is the parent field to sequence number 2515.

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**SEQ. #:** 2515

**Long Name:** Intraop Blood Products

**Short Name:** IBldProd

**Definition:** Indicate whether blood products were transfused any time intraoperatively during the initial surgery. Intraoperatively is defined as any blood started inside of the OR.

**Intent/Clarification:**

Intraoperatively is defined as any blood started inside of the OR.

For these Intraop Blood Product data fields, the intent is to ONLY collect blood products that were transfused any time intraoperatively during the INITIAL SURGERY. This includes RBCs, FFP, Platelets or Cryoprecipitate.

Sequence number 2515 is the parent field to sequence numbers 2520, 2525, 2530, and 2535.

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**SEQ. #:** 2520

**Long Name:** Intraop Blood Products - RBC Units

**Short Name:** IBdRBCU

**Definition:** Indicate the number of units of packed red blood cells that were transfused intraoperatively. Do not include autologous, cell-saver, pump-residual or chest tube recirculated blood.

**Intent/Clarification:**

Do not include autologous, cell-saver, pump-residual or chest tube recirculated blood.

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**SEQ. #:** 2525

**Long Name:** Intraop Blood Products - FFP Units

**Short Name:** IBdFFPU

**Definition:** Indicate the number of units of fresh frozen plasma that were transfused intraoperatively.

**Intent/Clarification:**

This can be found in the EMR, anesthesia or operative record or blood transfusion records.

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**SEQ. #:** 2530

**Long Name:** Intraop Blood Products - Platelet Units

**Short Name:** IBdPlatU

**Definition:** Indicate the number of units of platelets that were transfused intraoperatively.

Count the dose pack as one unit. A dose pack may consist of 4, 6, 8, 10, or any number of donor platelets obtained. The number of units coded is not volume dependent.

**Intent/Clarification:**

The number of units of platelets transfused during the surgical procedure while the patient was in the OR.

Platelets can be aggregated from several donors or be designated as single donor platelets. It is imperative that each site understand their institution's definition for Random Donor Platelets (RDP) and Single Donor Platelets (SDP).

SDP or Platelet Pheresis count as one unit. One unit is comprised of platelets derived from a single donor. The number of units is not volume dependent.

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**SEQ. #:** 2535



**Long Name:** Intraop Blood Products - Cryo Units

**Short Name:** IBdCryoU

**Definition:** Indicate the number of units of cryoprecipitate that were transfused intraoperatively. One bag of cryo = one unit.

The number of units is not volume dependent.

**Intent/Clarification:**

This can be found in the EMR, anesthesia or operative record or blood transfusion records.

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**SEQ. #:** 2545

**Long Name:** Intraop Clotting Factors

**Short Name:** IntraClotFact

**Definition:** Indicate whether clotting factors were administered intraoperatively.

**Intent/Clarification:**

**Update Nov 2019 – Code YES for systemic clotting factors. This does not include topical clotting factors.**

Include clotting factors other than those mentioned above. Other clotting factors may include: Factor VIIa, FEIBA (Anti-Inhibitor Coagulant Complex), or Composite (Platelet-rich Plasma)

- Yes, Factor VIIa
  - Yes, FEIBA (Anti-Inhibitor Coagulant Complex)
  - Yes, Composite, includes Platelet-rich Plasma
  - No
- 
- 

**SEQ. #:** 2546

**Long Name:** Intraop Prothrombin Complex Concentrate

**Short Name:** IntraopProComCon

**Definition:** Indicate whether prothrombin complex concentrate (i.e.K-Centra) was given intraoperatively.

**Intent/Clarification:** -

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**SEQ. #:** 2550

**Long Name:** Intraop Antifibrinolytic Medications - Epsilon Amino-Caproic Acid

**Short Name:** IMedEACA

**Definition:** Indicate whether the patient received Epsilon Amino-Caproic Acid in the operating room.

**Intent/Clarification: -**

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**SEQ. #:** 2555

**Long Name:** Intraop Antifibrinolytic Medications - Tranexamic Acid

**Short Name:** IMedTran

**Definition:** Indicate whether the patient received Tranexamic Acid in the operating room.

**Intent/Clarification: -**

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**SEQ. #:** 2560

**Long Name:** Intraop TEE post procedure

**Short Name:** InOpTEE

**Definition:** Indicate whether intraoperative TEE was performed following procedure.

**Intent/Clarification:** Indicate if a transesophageal echocardiogram (TEE) was performed intraoperatively following the procedure after the patient is removed from Cardiopulmonary Bypass prior to OR Exit time.

A TEE is performed by passing a small tube thru the patient's mouth into the esophagus to typically assess the efficiency of the patient's heart valves and ejection fraction (efficiency of the left ventricle). At this point of the surgery it is done to assess the valves and to obtain ejection fraction.

**SEQ. #:** 2565

**Long Name:** Post Repair TEE Aortic Insufficiency

**Short Name:** PRepAR

**Definition:** Indicate the highest level of aortic insufficiency/ regurgitation found on post CPB intraop TEE. Mild-to-Moderate should be coded as moderate; moderate to severe should be coded as severe. Amount of AR should be the LAST ASSESSMENT before leaving the operating room. For example: if patient has aortic repair, separates from CPB and finds moderate AR, surgeon goes back on and re-fixes, comes off and finds no AR, it should be recorded as none.

**Intent/Clarification:** Indicate the level of aortic insufficiency obtained by the intraoperative post-procedure TEE prior to the patient leaving the OR after the surgical procedure is complete. Obtain the amount closest to OR Exit Time.

Insufficiency is also called regurgitation (AR) in which the valve does not seal properly and allows too much blood to return to the left ventricle after diastole. This causes an increase in preload of the left ventricle.

Choices include:

- None
- Trivial/Trace
- Mild
- Moderate
- Severe
- Not Documented

If the valve is reported as “normal” code “none”

Choose not documented for the highest level of insufficiency if the test was performed and insufficiency is not reported.

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**SEQ. #:** 2566

**Long Name:** Aortic Gradient - Post Repair Mean

**Short Name:** PRepAGradM

**Definition:** Indicate the mean aortic valve gradient on TEE in the OR after the procedure

**Intent/Clarification:** Record the mean aortic valve gradient obtained from the TEE intraoperatively post-procedure. Record the one closest to OR Exit Time.

The aortic mean gradient is the mean of the amount of pressure across the aortic valve and should be reported as a pressure in millimeters of Mercury (mmHg) with a typical range of <20 to >50mmHg.

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**SEQ. #:** 2567

**Long Name:** Post Repair Aortic Paravalvular Leak

**Short Name:** PRepAPVL

**Definition:** Indicate whether there was an aortic paravalvular leak noted on TEE in the OR after the procedure

**Intent/Clarification:** Indicate if any amount of leakage was identified around the aortic valve intraoperatively post-procedure. Obtain the amount closest to OR Exit Time.

Choices are:

- None
- Trivial/Trace
- Mild
- Moderate
- Severe
- Not Documented

**FAQ August 2017:** Is this field intended to be coded for all valves or just when a new valve is implanted?

Answer: This field should be coded only for current and/or prior prosthetic valves. It can be coded when a new valve is implanted or for a valve that was implanted during a previous operation. DCRI will omit these fields from your DQR when no prosthetic valve is present.

**December 2017:** This field relates to prosthetic valves only. If the patient does not have a prosthetic valve (current or previously inserted) leave blank. Not Applicable will be added for the next version.

**SEQ. #:** 2570

**Long Name:** Post Repair TEE Mitral Insufficiency

**Short Name:** PRepMR

**Definition:** Indicate the highest level of mitral insufficiency/ regurgitation found on post CPB intraop TEE. Mild-to-Moderate should be coded as moderate; moderate to severe should be coded as severe. Amount of MR should be the LAST ASSESSMENT before leaving the operating room. For example: if patient has mitral repair, separates from CPB and finds moderate MR, surgeon goes back on and re-fixes, comes off and finds no MR, it should be recorded as none.

**Intent/Clarification:** Indicate the level of mitral valve insufficiency obtained by the intraoperative post-procedure TEE prior to the patient leaving the OR after the surgical procedure is complete. Obtain the amount closest to OR Exit Time.

Insufficiency is also called mitral regurgitation (MR) in which the valve does not seal properly and allows too much blood to return to the left atrium.

Choices include:

- None
- Trivial/Trace
- Mild
- Moderate
- Severe
- Not Documented

If the valve is reported as “normal” code “none”

Choose not documented for the highest level of insufficiency if the test was performed and insufficiency is not reported.

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**SEQ. #:** 2571

**Long Name:** Mitral Gradient - Post Repair Mean

**Short Name:** PRepMGradM

**Definition:** Indicate the mean mitral valve gradient on TEE in the OR after the procedure

**Intent/Clarification:** Record the mean mitral valve gradient obtained from the TEE intraoperatively post-procedure. Record the one closest to OR Exit Time.

The mitral mean gradient is the mean of the amount of pressure across the mitral valve and should be reported as a pressure in millimeters of Mercury (mmHg) with a typical range of <5 to >10mmHg.

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**SEQ. #:** 2572

**Long Name:** Post Repair Mitral Paravalvular Leak

**Short Name:** PRepMPVL

**Definition:** Indicate whether there was a mitral paravalvular leak noted on TEE in the OR after the procedure

**Intent/Clarification:** Indicate if any amount of leakage was identified around the mitral valve intraoperatively post-procedure. Obtain the amount closest to OR Exit Time.

Choices are:

- None
- Trivial/Trace
- Mild
- Moderate
- Severe
- Not Documented

**FAQ August 2017:** Is this field intended to be coded for all valves or just when a new valve is implanted?

Answer: This field should be coded only for current and/or prosthetic valves. It can be coded when a new valve is implanted or for a valve that was implanted during a previous operation. DCRI will omit these fields from your DQR when no prosthetic valve is present.

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**SEQ. #:** 2575

**Long Name:** Post Repair TEE Tricuspid Insufficiency

**Short Name:** PRepTR

**Definition:** Indicate the highest level of tricuspid insufficiency/regurgitation found on post CPB intraop TEE. Mild-to-Moderate should be coded as moderate; moderate to severe should be coded as severe. Amount of TR should be the LAST ASSESSMENT before leaving the operating room.

**Intent/Clarification:** Indicate the level of tricuspid valve insufficiency obtained by the intraoperative post-procedure TEE prior to the patient leaving the OR after the surgical procedure is complete. Obtain the amount closest to OR Exit Time.

Insufficiency is also called tricuspid regurgitation (TR) in which the valve does not seal properly and allows too much blood to return to the right atrium.

Choices include:

- None

- Trivial/Trace
- Mild
- Moderate
- Severe
- Not Documented

If the valve is reported as “normal” code “none”

Choose not documented for the highest level of insufficiency if the test was performed and insufficiency is not reported.

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**SEQ. #: 2576**

**Long Name:** Tricuspid Gradient - Post Repair Mean

**Short Name:** PRepTGradM

**Definition:** Indicate the mean tricuspid valve gradient on TEE in the OR after the procedure

**Intent/Clarification:** Record the mean tricuspid valve gradient obtained from the TEE intraoperatively post-procedure. Record the one closest to OR Exit Time.

The tricuspid mean gradient is the mean of the amount of pressure across the tricuspid valve and should be reported as a pressure in millimeters of Mercury (mmHg) with a typical range of <5 or ≥5.

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**SEQ. #: 2577**

**Long Name:** Post Repair Tricuspid Paravalvular Leak

**Short Name:** PRepTPVL

**Definition:** Indicate whether there was a tricuspid paravalvular leak noted on TEE in the OR after the procedure

**Intent/Clarification:** Indicate if any amount of leakage was identified around the tricuspid valve intraoperatively post-procedure. Obtain the amount closest to OR Exit Time.

Choices are:

- None
- Trivial/Trace
- Mild
- Moderate
- Severe
- Not Documented

**FAQ August 2017:** Is this field intended to be coded for all valves or just when a new valve is implanted?

Answer: This field should be coded only for current and/or prior prosthetic valves. It can be coded when a new valve is implanted or for a valve that was implanted during a previous operation. DCRI will omit these fields from your DQR when no prosthetic valve is present.

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**SEQ. #:** 2581

**Long Name:** Ejection Fraction Measured Post Procedure

**Short Name:** PPEFMeas

**Definition:** Indicate whether the ejection fraction was measured after the procedure.

**Intent/Clarification:** Indicate if an ejection fraction was obtained intraoperatively **by an intra-op TEE** post-procedure.

Ejection fraction (EF) indicates the efficiency of the left ventricle (ability to pump blood sufficiently to the rest of the body). It compares the amount of blood in the left ventricle at the end of systole (when the ventricle is fuller) to the end of diastole (after the ventricle contracted and should be less full). Issues effecting the left ventricles pumping ability include preload (the amount of blood deposited into the ventricle prior to diastole), afterload (amount of pressure the ventricle has to pump against typically high as a result of elevated systemic venous pressure), ventricular hypertrophy (the enlargement of the ventricle which results in stretching of the ventricle causing decreased contractility and is usually a result of congestive heart failure), and valvular insufficiency. Ejection fraction is typically reported in a percentage (1-99%) or described with words.

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**SEQ. #:** 2582

**Long Name:** Ejection Fraction Post Procedure

**Short Name:** PPEF

**Definition:** Indicate the percentage of the blood emptied from the left ventricle at the end of the contraction. Use the most recent determination after the procedure documented on a diagnostic report.

Enter a percentage in the range of 1 - 99. If a percentage range is reported, report a whole number using the "mean" (i.e., 50-55% is reported as 53%).

Note: If no diagnostic report is in the medical record, a value documented in the medical record is acceptable.

ACCF/AHA 2013

**Intent/Clarification:** Record the mean ejection fraction (EF) closest to OR Exit Time. If a qualitative description is reported, code the mean value for that range; i.e., normal (50-70%) is coded as 60%.

- Hyperdynamic: >70% (code 71%)
- Normal: 50%–70% (midpoint 60%)
- Mild dysfunction: 40%–49% (midpoint 45%)
- Moderate dysfunction: 30%–39% (midpoint 35%)

- Severe dysfunction: <30% (code 29%)

Note: If no diagnostic report is in the medical record, a value documented in the medical record is acceptable.

**Report of a reported range value, for example, a range of 55-60 is coded as 58%.**

**FAQ Dec 2019** - Some anesthesiologists are documenting visual EF, 2D or 3D EF measurement, and Simpson's EF measurement post CPB. Which EF are we supposed to capture?

Answer - use the 2D or 3D mode measurement. If you have both a 2D and a 3D measurement, code the 3D measurement.

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**SEQ. #:** 2606

**Long Name:** Planned Post Procedure PCI

**Short Name:** PPPlannedPCI

**Definition:** Indicate whether the procedure was followed by a planned PCI.

**Intent/Clarification:** Indicate if the patient returned to the Cath Lab any time after OR EXIT Time and before discharge for a percutaneous coronary intervention (PCI) that was planned prior to **or during** coronary, valve, or aorta surgery. To be considered “planned” this would need to be indicated in the Medical Provider’s preoperative /**operative** notes.

A percutaneous coronary intervention (PCI) is understood to be any procedure where entry to the vascular system is obtain thru percutaneous access (a needle poked thru the skin). A catheter is then inserted and a guide wire is thru passed thru the vascular system to the heart. Dye is then injected and pictures of the heart vessels are obtained as the dye flows thru via fluoroscopy (x-ray). An intervention is then performed to “open up” a vessel(s) if a blockage is recognized where dye flow was decreased. This can be done either thru angioplasty (a ballooning of the vessel to allow more blood to flow) or an angioplasty with stent placement (a ballooning of the vessel to allow more blood to pass followed by placement of a stent to help the vessel to remain open). Either “angioplasty” or “angioplasty with stent placement” should be captured here.

**FAQ June 2019:** The patient goes to surgery for a CAB on 3/11/2019. During the operation the surgeon determines that the patient will need a post op PCI on a vessel that is too small to bypass. The patient is taken back to the cath lab on 3/14/2019 for a planned PCI of the vessel that was too small to bypass. There is no information in the chart after surgery suggesting the patient is having ischemia. Do we capture this as Reintervention Myocardial Ischemia?

Answer: At time of initial surgery if the surgeon determines that a vessel is not bypassable and more suitable for PCI then Seq 2606 can be coded as YES.



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## Coronary Bypass

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**SEQ. #:** 2626

**Long Name:** Internal Mammary Artery Used

**Short Name:** IMAUsed

**Definition:** Indicate whether an internal mammary artery conduit was used

**Intent/Clarification:**

To capture the use of an internal mammary artery to construct one or more distal anastomoses: LIMA, RIMA, both or none. IMA may be used as a free or in-situ graft; pedicle, skeletonized.

**FAQ October 2017:** Patient had a non-STEMI with urgent CABG. LIMA and RIMA were initially anastomosed to the LAD and Diagonal but prior to leaving the OR, they had insufficient flow and vein grafts were used. The RIMA was a T-graft to the Diagonal from the free LIMA. The surgeon documented "sluggish flow in the LIMA after harvesting as a pedicle, therefore it was utilized as a free graft. He documented this was probably due to stenosis at the takeoff from the left subclavian artery. The chest was closed and initial vitals were stable. Prior to leaving the OR, EKG and hemodynamic changes were noted. Therefore, the chest was reopened, and the patient was placed back on CPB. The flow via the IMA grafts were poor so the surgeon removed them and used venous grafts to the LAD and Diagonal." How do I code IMA used?

Answer: Code no, an IMA was not used.

**FAQ October 2019** - How do I code the use of an existing LIMA to the Mid LAD that was removed from the Mid LAD and attached to the 1st Diag branch? The proximal IMA was not brought down by pedicle or skeletonized, it already existed. A decision was made to transpose the LIMA over to the adjacent diagonal branch which was a much better target. The left internal thoracic artery was transposed and then sewn end-to-side to diagonal branch.

Answer – Code Seq 2626 as Yes for IMA used, Seq 2629 – leave blank unless you have the original operative note describing the technique, and capture Seq 2630 as direct vision.

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**SEQ. #:** 2627

**Long Name:** Reason for No IMA

**Short Name:** NoIMARsn

**Definition:** Indicate PRIMARY reason Internal Mammary artery was not used as documented in medical record.

**Intent/Clarification:**

Choose from the following reasons:

- Subclavian stenosis\*
- Previous cardiac or thoracic surgery
- Previous mediastinal radiation
- Emergent or salvage procedure
- No (BYPASSABLE) LAD disease - This can include a clean LAD, diffusely diseased LAD or other condition resulting in the LAD not being bypassed.
- Other – The National Quality Forum (NQF) does not consider this exclusion for measure purposes.

Other is not an acceptable exclusion in the NQF endorsed measure and will have a negative impact on the star rating.

**FAQ October 2017:** Patient had a non-STEMI with urgent CABG. LIMA and RIMA were initially anastomosed to the LAD and Diagonal but prior to leaving the OR, they had insufficient flow and vein grafts were used. The RIMA was a T-graft to the Diagonal from the free LIMA. The surgeon documented sluggish flow in the LIMA after harvesting as a pedicle, therefore it was utilized as a free graft. He documented this was probably due to stenosis at the takeoff from the left subclavian artery. The chest was closed and initial vitals were stable. Prior to leaving the OR, EKG and hemodynamic changes were noted. Therefore, the chest was reopened, and the patient was placed back on CPB. The flow via the IMA grafts were poor so the surgeon removed them and used venous grafts to the LAD and Diagonal. If I must code “no” IMA used, what reason for no IMA should I use?

Answer: Code ‘Other’. Subclavian stenosis cannot be considered an exclusion because the IMA was initially used as a free graft.

**FAQ December 2017:** The IMA was not harvested because the patient had a left upper extremity fistula for hemodialysis and the surgeon was concerned about coronary steal syndrome. How should the reason for no IMA be coded?

Answer: Code this as an exclusion due to subclavian stenosis.

**FAQ February 2018:** Reason No IMA: Patient has a left lung mass that found to be left internal mammary artery bed; therefore, it was decided not to use the left internal mammary artery aspergillus. In the Op report, the surgeon states "the left apical aspergilloma was directly adjacent to the for bypass".

Answer: Aspergilloma is a rare finding and seq 2627 should be coded as ‘Other’.

**FAQ July 2018:** The patient has a history of severe PVD. The aortogram at the time of the cardiac catheterization showed an occluded distal aorta. The lower extremities perfusion was supplied by the mammary arteries. It was felt that the lower extremities would be in jeopardy if the mammary is used. How should the case be coded when no IMA is used?

Answer: Code subclavian stenosis for this unique situation.

**FAQ January 2019:** A patient had a bilateral mastectomy and immediate reconstruction with flap. During that procedure both the RIMA and LIMA were harvested. 7 months later the patient required a CABG and no IMA could be used as they were not present. How should field 2627 be coded?

Answer: Code previous thoracic surgery.

**FAQ July 2019** - The patient has pectus carinatum and it is documented "We attempted to harvest the left internal mammary artery however due to the patient's severe pectus, it was impossible to visualize the mammary artery. How do I code reason for no IMA?  
Answer - Capture Subclavian Stenosis. This will be addressed in the upgrade.

**FAQ October 2019** - I have had multiple cases where the IMA in not used but the physician places an SVG to the LAD. The cardiac cath shows no LAD disease but does have LM disease. The surgeon documents "I elected not use use IMA since the patient does not have any specific LAD disease" Would this be coded as no LAD disease (since there is technically no LAD disease) or other ( just because they bypassed the LAD to assist the LM).

Answer – No LAD disease is not an acceptable exclusion in this situation. Left main is functionally 2 VD LAD and CX disease. Code OTHER as reason for no IMA.

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**SEQ. #: 2628**

**Long Name:** IMA Dist Anast #

**Short Name:** NumIMADA

**Definition:** Indicate the total number of distal anastomoses done using IMA grafts.

**Intent/Clarification:**

To collect the total number of anastomoses constructed using an IMA conduit. More than one anastomosis can be constructed from each IMA; the IMA may be used as a pedicle graft or a free graft. A pedicle graft remains connected at its proximal origin and requires only a distal anastomosis.

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**SEQ. #: 2629**

**Long Name:** Left IMA Used

**Short Name:** LeftIMA

**Definition:** Indicate whether the left internal mammary was used

**Intent/Clarification:**

The left IMA was used to construct one or more anastomosis; pedicle or skeletonized.

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**SEQ. #: 2630**

**Long Name:** Left IMA Harvest Technique

**Short Name:** LIMAHarvTech

**Definition:** Indicate the harvest technique used for the left internal mammary

**Intent/Clarification:**

Indicate the technique used to harvest an IMA:

- **Direct vision** (open) - Standard method; through full or partial sternotomy. IMA harvest with the chest open using a standard retractor.
- **Thoracoscopy** - Endoscopy used for the entire IMA harvest.
- **Combination** - Both thoracoscopy and direct vision used for IMA harvest.
- **Robotic assist** - Robot was used to harvest IMA.

**FAQ October 2019** - When LIMA is harvested as a pedicle graft proximally pedicle and skeletonized distally, should we count it as Pedicle or Skeletonized?

Answer - Code as skeletonized in this situation.

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**SEQ. #: 2631**

**Long Name:** Right IMA Used

**Short Name:** RightIMA

**Definition:** Indicate whether the right internal mammary was used

**Intent/Clarification:**

The right IMA was used to construct one or more anastomosis; pedicle or skeletonized.

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**SEQ. #: 2632**

**Long Name:** Right IMA Harvest Technique

**Short Name:** RIMAHarvTech

**Definition:** Indicate the harvest technique used for the right internal mammary

**Intent/Clarification:**

Indicate the technique used to harvest an IMA:

- **Direct vision** (open) -Standard method; through full or partial sternotomy. IMA harvest with the chest open using a standard retractor.
- **Thoracoscopy** - Endoscopy used for the entire IMA harvest.
- **Combination** - Both Thoracoscopy and direct vision used for IMA harvest.
- **Robotic assist** - Robot was used to harvest IMA.

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**SEQ. #: 2633**

**Long Name:** Radial Artery Used

**Short Name:** RadialArtUsed

**Definition:** Indicate whether a radial artery conduit was used.

**Intent/Clarification:**

The radial artery was used to construct one or more anastomosis.

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**SEQ. #:** 2634

**Long Name:** Radial Dist Anast #

**Short Name:** NumRadDA

**Definition:** Indicate the total number of distal anastomoses done using radial artery grafts.

**Intent/Clarification:**

To collect the total number of distal anastomoses constructed using a radial artery. More than one anastomosis can be constructed from each radial artery.

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**SEQ. #:** 2635

**Long Name:** Radial Dist Anast Harvest Technique

**Short Name:** RadHTech

**Definition:** Indicate the technique used to harvest the radial artery(s).

**Intent/Clarification:**

The technique used to harvest the radial artery (ies):

- Endoscopic
  - Direct vision (open) - Standard method; through full or partial radial harvest
  - Both - Both endovascular and direct vision used for radial artery harvest
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**SEQ. #:** 2636

**Long Name:** Radial Artery Harvest and Preparation Time

**Short Name:** RadHarvPrepTm

**Definition:** Indicate the total time for radial artery harvest and preparation.

**Intent/Clarification:**

It is important to quantify the harvest and prep times to track resource utilization and provide objective data for RUC (Specialty Society Relative Value Scale Update Committee or Relative Value Update Committee, an American Medical Association group involved in health care pricing) surveys and coding. This is important because

these values determine the rate at which Medicare and other payers reimburse for procedures.

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**SEQ. #:** 2637

**Long Name:** Venous Conduit(s) Used

**Short Name:** VenousCondUsed

**Definition:** Indicate whether a venous conduit was used

**Intent/Clarification:**

A venous conduit was used to construct one or more anastomosis.

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**SEQ. #:** 2638

**Long Name:** Dist Anast - Vein #

**Short Name:** DistVein

**Definition:** Indicate the total number of distal anastomoses with venous conduits.

**Intent/Clarification:**

Distal anastomosis refers to the connection between the bypass graft (conduit) and coronary artery. Record the total number of venous anastomoses constructed using a venous conduit connection to a coronary artery. More than one anastomosis can be constructed from a single vein. Saphenous veins are used as free grafts to bypass any coronary artery.

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**SEQ. #:** 2639

**Long Name:** Dist Anast - Vein Harvest Technique

**Short Name:** DistVeinHTech

**Definition:** Indicate the technique used to harvest the vein graft(s).

**Intent/Clarification:**

The technique(s) used to harvest the vein grafts:

- Endoscopic
  - Direct vision (open) - Through full or partial vein harvest
  - Both - Both endoscopic and direct vision used to harvest the vein grafts
  - Cryopreserved - Cryopreserved veins harvested from a donor, typically commercially supplied
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**SEQ. #:** 2640

**Long Name:** Saphenous Vein Harvest And Preparation Time

**Short Name:** SaphHarPrepTm

**Definition:** Indicate the total time for saphenous vein harvest and preparation.

**Intent/Clarification:**

It is important to quantify the harvest and prep times to track resource utilization and provide objective data for RUC, (Specialty Society Relative Value Scale Update Committee or Relative Value Update Committee, an American Medical Association group involved in health care pricing) surveys and coding. This is important because these values determine the rate at which Medicare and other payers reimburse for procedures.

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**SEQ. #:** 2641

**Long Name:** Other Arterial Distal Anastomoses #

**Short Name:** NumOArtD

**Definition:** Indicate the number of arterial distal anastomoses that were used, other than radial or IMA.

**Intent/Clarification:**

Any other arterial conduit was used to construct one or more anastomosis; i.e. inferior epigastric artery.

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**SEQ. #:** 2650

**Long Name:** Number Of Distal Anastomoses With Arterial-Venous Composite Conduits

**Short Name:** NumArtVenComp

**Definition:** Indicate the number of distal anastomoses with arterial-venous composite conduits

**Intent/Clarification:**

To capture grafts constructed from artery and venous composite. The venous component of the composite graft is anastomosed to the coronary artery. (i.e. an IMA or radial artery is lengthened with a segment of saphenous vein). The vein segment is attached to the coronary artery. Alternatively, a composite graft can be constructed as a "Y" or "T" with one limb going to one coronary artery and the other limb going to a different coronary site. The **arterial** segment provides inflow. When part of the IMA was used as part of the composite graft, code 2626 yes as the internal mammary artery was used. Composite grafts that include an IMA meet the NQF measure for IMA use.

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**SEQ. #:** 2651

**Long Name:** Number Of Distal Anastomoses With Venous-Arterial Composite Conduits

**Short Name:** NumVenArtComp

**Definition:** Indicate the number of distal anastomoses with venous-arterial composite conduits

**Intent/Clarification:**

To capture the number of grafts (if any) constructed from venous and arterial composite. The arterial component of the composite graft is anastomosed to the coronary artery. i.e., the IMA or radial artery which has been anastomosed to the coronary artery is too short to reach the aorta and is lengthened with a segment of saphenous vein. Alternatively, a composite graft can be constructed as a “Y” or “T” with one limb going to one coronary artery and the other limb going to a different coronary site. The **venous** segment provides inflow. When part of the IMA was used as part of the composite graft, code 2626 yes as the internal mammary artery was used. Composite grafts that include an IMA meet the NQF measure for IMA use.

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**SEQ. #:** 2652

**Long Name:** Number Of Distal Anastomoses With Arterial-Arterial Composite Conduits

**Short Name:** NumArtArtComp

**Definition:** Indicate the number of distal anastomoses with arterial-arterial composite conduits

**Intent/Clarification:**

To capture the number of grafts (if any) constructed from arterial and arterial composite; i.e. IMA plus radial artery. The concepts are similar to seq# 2651 and 2652, except the composite is composed of arteries only. When part of the IMA was used as part of the composite graft, code 2626 yes as the internal mammary artery was used. Composite grafts that include an IMA meet the NQF measure for IMA use.

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**SEQ. #:** 2710

**Long Name:** Proximal Technique

**Short Name:** ProxTech

**Definition:** Indicate the technique employed for proximal graft anastomosis.

**Intent/Clarification:**

The intent is to determine various methods used to perform proximal anastomosis which may have an impact on the risk of stroke/ embolization from aortic intima. If more than one technique was used for proximal grafts, choose the highest level of occlusion used.

- Single Cross Clamp
- Partial Occlusion Clamp
- Anastomotic Assist Device – such as Cyclone, Enclose, Cardica Passport, Heart String, etc.



- None (isolated in-situ mammary) – **Update January 2020 none can also be selected for patients who are under circ arrest during proximal graft anastomosis.**
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**SEQ. #:** 2730

**Long Name:** CAB Distal Site 01

**Short Name:** CABDistSite01

**Definition:** Indicate distal insertion site of bypass.

**Intent/Clarification:**

- These order does not matter, include up to 10 grafts. One graft = one distal insertion.
- Left Main - Left Main
- Prox LAD - Proximal Left Anterior Descending
- Mid LAD - Middle Left Anterior Descending
- Distal LAD - Distal Left Anterior Descending
- Diagonal 1 - First Diagonal
- Diagonal 2 - Second Diagonal
- Diagonal 3 - Third Diagonal
- Circumflex - Circumflex
- Obtuse Marginal 1 - First Obtuse Marginal
- Obtuse Marginal 2 - Second Obtuse Marginal
- Obtuse Marginal 3 - Third Obtuse Marginal
- Ramus - Ramus Intermedius
- RCA - Right Coronary Artery
- Acute Marginal (AM) - Acute Marginal
- Posterior Descending (PDA) - Posterior Descending Artery
- Posterolateral (PLB) - Posterolateral Branch
- Other - Any other site

**FAQ September 2017:** Pt with previous CAB in January of this year now presents with Aortic Dissection. The dissection was repaired and cadaver vein graft extensions were used to reimplant the PDA/PL grafts. The OM and Diag grafts were occluded by the dissection. How is this captured in the CAB grid?

Answer: Do not complete the CAB grid, a distal coronary artery graft is not constructed using the cadaver vein.

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**SEQ. #:** 2740

**Long Name:** CAB Proximal Site 01

**Short Name:** CABProximalSite01

**Definition:** Indicate proximal site of the bypass graft.

**Intent/Clarification:**

- In Situ Mammary
- Ascending aorta
- Descending aorta
- Subclavian artery
- Innominate artery
- T-graft off SVG
- T-graft off Radial
- T-graft off LIMA
- T-graft off RIMA
- Natural Y vein graft
- Other

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**SEQ. #: 2750**

**Long Name:** CAB Conduit 01

**Short Name:** CABConduit01

**Definition:** Indicate the conduit type used.

**Intent/Clarification:**

- Vein graft
- In Situ LIMA
- In Situ RIMA
- Free IMA
- Radial artery
- Other arteries, homograft
- Synthetic graft
- Composite artery-vein

**FAQ August 2017:** What is a composite artery vein?

Answer: A composite is an extension of the IMA with a vein to allow the reach its intended distal coronary target. Using composite does not exclude the IMA from the composite measure for IMA usage.

**FAQ August 2018:** What conduit type should be used when the composite is artery-artery, for example, IMA and radial artery?

Answer: Code composite artery-vein. This will have to be addressed in the next version upgrade.

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**SEQ. #: 2755**

**Long Name:** CAB Distal Position 01

**Short Name:** CABDistPos01

**Definition:** Indicate anastomotic position.

**Intent/Clarification:**

**End to side:** the end of the graft is inserted into the side of the target vessel

• **Sequential (side to side):** sometimes called a jump graft, the side of the graft is inserted into the side of the target vessel and the end of the graft is inserted elsewhere on that vessel or on another target vessel.

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**SEQ. #:** 2760

**Long Name:** CAB Endarterectomy 01

**Short Name:** CABEndArt01

**Definition:** Indicate whether endarterectomy was performed.

**Intent/Clarification:**

Endarterectomy is a surgical procedure to remove the atheromatous plaque material, or blockage, in the lining of an artery constricted by the buildup of soft/hardening deposits. It is carried out by separating (peeling) the plaque from the arterial wall.

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**SEQ. #:** 2765

**Long Name:** CAB Vein Patch Angioplasty 01

**Short Name:** CABVeinPatAng01

**Definition:** Indicate whether a vein/**arterial** patch angioplasty was performed.

**Intent/Clarification:**

A patch constructed from a piece of vein, suturing the vein around the arteriotomy to reconstruct the coronary artery without narrowing it. . A bypass graft is then often, but not always, placed into the vein patch reconstruction to provide new inflow.

NOTE: this explanatory note is valid for all subsequent fields related to CAB vein patch angioplasty

**FAQ October 2017:** The surgeon completed a patch angioplasty using the radial artery instead of a vein, how is this coded?

Answer: Code as vein patch angioplasty. This can apply to either vein or arterial patch.

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**SEQ. #:** 2770

**Long Name:** CAB 02 **Short Name:** CAB02

**Definition:** Indicate whether a second Coronary Artery Bypass graft was done.

FAQ October 2017: A patient has a four vessel bypass. During the procedure he also has an endarterectomy and vein patch angioplasty of the circumflex (no bypass). Do I code that a coronary bypass graft was done? Do I capture this as Other Cardiac thus throwing this out of the isolated CABG category?

Answer: In order to open the child fields in the coronary bypass grid to complete the fields for endarterectomy you must code 'Yes'. Leave proximal site blank. Do not code as 'Other Cardiac'.

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**SEQ. #: 2790**

**Long Name:** CAB Distal Site 02

**Short Name:** CABDistSite02

**Definition:** Indicate distal insertion site of bypass.

FAQ October 2017: A patient has a four vessel bypass. During the procedure he also has an endarterectomy and vein patch angioplasty of the circumflex (no bypass). How do I capture the distal insertion site?

Answer: Code distal insertion site circumflex.

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**SEQ. #: 2800**

**Long Name:** CAB Proximal Site 02

**Short Name:** CABProximalSite02

**Definition:** Indicate proximal site of the bypass graft.

**FAQ October 2017:** A patient has a four vessel bypass. During the procedure he also has an endarterectomy and vein patch angioplasty of the circumflex (no bypass). How do I capture the proximal site?

Answer: Leave proximal site blank.

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**SEQ. #: 2810**

**Long Name:** CAB Conduit 02

**Short Name:** CABConduit02

**Definition:** Indicate the conduit type used.

**FAQ October 2017:** A patient has a four vessel bypass. During the procedure he also has an endarterectomy and vein patch angioplasty of the circumflex (no bypass). How do I capture conduit type?

Answer: Leave conduit blank.

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**SEQ. #: 2815**

**Long Name:** CAB Distal Position 02

**Short Name:** CABDistPos02

**Definition:** Indicate anastomotic position.

**FAQ October 2017:** A patient has a four vessel bypass. During the procedure he also has an endarterectomy and vein patch angioplasty of the circumflex (no bypass). How do I capture anastomotic position?

**Answer:** Leave anastomotic position blank.

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**SEQ. #:** 2820

**Long Name:** CAB Endarterectomy 02

**Short Name:** CABEndArt02

**Definition:** Indicate whether endarterectomy was performed.

**FAQ October 2017:** A patient has a four vessel bypass. During the procedure he also has an endarterectomy and vein patch angioplasty of the circumflex (no bypass). How do I capture endarterectomy performed?

**Answer:** Code yes, an endarterectomy was performed.

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**SEQ. #:** 2825

**Long Name:** CAB Vein Patch Angioplasty 02

**Short Name:** CABVeinPatAng02

**Definition:** Indicate whether a vein/**arterial** patch angioplasty was performed.

**FAQ October 2017:** A patient has a four vessel bypass. During the procedure he also has an endarterectomy and vein patch angioplasty of the circumflex (no bypass). How do I capture vein/arterial patch angioplasty?

**Answer:** Code yes, a vein patch angioplasty was constructed.

**FAQ October 2017:** The surgeon completed a patch angioplasty using the radial artery instead of a vein, how is this coded?

**Answer:** Code as vein patch angioplasty. This can apply to either vein or arterial patch.

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**SEQ. #:** 2830

**Long Name:** CAB 03

**Short Name:** CAB03

**Definition:** Indicate whether a third Coronary Artery Bypass graft was done.

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**SEQ. #:** 2850

**Long Name:** CAB Distal Site 03

**Short Name:** CABDistSite03

**Definition:** Indicate distal insertion site of bypass.

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**SEQ. #:** 2860  
**Long Name:** CAB Proximal Site 03  
**Short Name:** CABProximalSite03  
**Definition:** Indicate proximal site of the bypass graft.

---

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**SEQ. #:** 2870  
**Long Name:** CAB Conduit 03  
**Short Name:** CABConduit03  
**Definition:** Indicate the conduit type used.

---

---

**SEQ. #:** 2875  
**Long Name:** CAB Distal Position 03  
**Short Name:** CABDistPos03  
**Definition:** Indicate anastomotic position.

---

---

**SEQ. #:** 2880  
**Long Name:** CAB Endarterectomy 03  
**Short Name:** CABEndArt03  
**Definition:** Indicate whether endarterectomy was performed.

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---

**SEQ. #:** 2885  
**Long Name:** CAB Vein Patch Angioplasty 03  
**Short Name:** CABVeinPatAng03  
**Definition:** Indicate whether a vein/**arterial** patch angioplasty was performed.

**FAQ October 2017:** The surgeon completed a patch angioplasty using the radial artery instead of a vein, how is this coded?  
Answer: Code as vein patch angioplasty. This can apply to either vein or arterial patch.

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**SEQ. #:** 2890  
**Long Name:** CAB 04  
**Short Name:** CAB04  
**Definition:** Indicate whether a fourth Coronary Artery Bypass graft was done.

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**SEQ. #:** 2910  
**Long Name:** CAB Distal Site 04  
**Short Name:** CABDistSite04  
**Definition:** Indicate distal insertion site of bypass.

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**SEQ. #:** 2920  
**Long Name:** CAB Proximal Site 04  
**Short Name:** CABProximalSite04  
**Definition:** Indicate proximal site of the bypass graft.

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**SEQ. #:** 2930  
**Long Name:** CAB Conduit 04  
**Short Name:** CABConduit04  
**Definition:** Indicate the conduit type used.

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**SEQ. #:** 2935  
**Long Name:** CAB Distal Position 04  
**Short Name:** CABDistPos04  
**Definition:** Indicate anastomotic position.

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-----  
**SEQ. #:** 2940  
**Long Name:** CAB Endarterectomy 04  
**Short Name:** CABEndArt04  
**Definition:** Indicate whether endarterectomy was performed.

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**SEQ. #:** 2945  
**Long Name:** CAB Vein Patch Angioplasty 04  
**Short Name:** CABVeinPatAng04  
**Definition:** Indicate whether a vein/**arterial** patch angioplasty was performed.

**FAQ October 2017:** The surgeon completed a patch angioplasty using the radial artery instead of a vein, how is this coded?

Answer: Code as vein patch angioplasty. This can apply to either vein or arterial patch.

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**SEQ. #: 2950**

**Long Name:** CAB 05

**Short Name:** CAB05

**Definition:** Indicate whether a fifth Coronary Artery Bypass graft was done.

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**SEQ. #: 2970**

**Long Name:** CAB Distal Site 05

**Short Name:** CABDistSite05

**Definition:** Indicate distal insertion site of bypass.

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---

**SEQ. #: 2980**

**Long Name:** CAB Proximal Site 05

**Short Name:** CABProximalSite05

**Definition:** Indicate proximal site of the bypass graft.

---

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**SEQ. #: 2990**

**Long Name:** CAB Conduit 05

**Short Name:** CABConduit05

**Definition:** Indicate the conduit type used.

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**SEQ. #: 2995**

**Long Name:** CAB Distal Position 05

**Short Name:** CABDistPos05

**Definition:** Indicate anastomotic position.

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**SEQ. #: 3000**

**Long Name:** CAB Endarterectomy 05

**Short Name:** CABEndArt05

**Definition:** Indicate whether endarterectomy was performed.



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**SEQ. #:** 3005

**Long Name:** CAB Vein Patch Angioplasty 05

**Short Name:** CABVeinPatAng05

**Definition:** Indicate whether a vein/**arterial** patch angioplasty was performed.

**FAQ October 2017:** The surgeon completed a patch angioplasty using the radial artery instead of a vein, how is this coded?

Answer: Code as vein patch angioplasty. This can apply to either vein or arterial patch.

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**SEQ. #:** 3010

**Long Name:** CAB 06

**Short Name:** CAB06

**Definition:** Indicate whether a sixth Coronary Artery Bypass graft was done.

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**SEQ. #:** 3030

**Long Name:** CAB Distal Site 06

**Short Name:** CABDistSite06

**Definition:** Indicate distal insertion site of bypass.

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**SEQ. #:** 3040

**Long Name:** CAB Proximal Site 06

**Short Name:** CABProximalSite06

**Definition:** Indicate proximal site of the bypass graft.

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**SEQ. #:** 3050

**Long Name:** CAB Conduit 06

**Short Name:** CABConduit06

**Definition:** Indicate the conduit type used.

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**SEQ. #:** 3055

**Long Name:** CAB Distal Position 06

**Short Name:** CABDistPos06

**Definition:** Indicate anastomotic position.

---

---

**SEQ. #:** 3060

**Long Name:** CAB Endarterectomy 06

**Short Name:** CABEndArt06

**Definition:** Indicate whether endarterectomy was performed.

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**SEQ. #:** 3065

**Long Name:** CAB Vein Patch Angioplasty 06

**Short Name:** CABVeinPatAng06

**Definition:** Indicate whether a vein/**arterial** patch angioplasty was performed.

**FAQ October 2017:** The surgeon completed a patch angioplasty using the radial artery instead of a vein, how is this coded?

**Answer:** Code as vein patch angioplasty. This can apply to either vein or arterial patch.

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---

**SEQ. #:** 3070

**Long Name:** CAB 07

**Short Name:** CAB07

**Definition:** Indicate whether a seventh Coronary Artery Bypass graft was done.

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**SEQ. #:** 3090

**Long Name:** CAB Distal Site 07

**Short Name:** CABDistSite07

**Definition:** Indicate distal insertion site of bypass.

---

---

**SEQ. #:** 3100

**Long Name:** CAB Proximal Site 07

**Short Name:** CABProximalSite07

**Definition:** Indicate proximal site of the bypass graft.

---

---

**SEQ. #:** 3110

**Long Name:** CAB Conduit 07

**Short Name:** CABConduit07

**Definition:** Indicate the conduit type used.

---

---

**SEQ. #:** 3115

**Long Name:** CAB Distal Position 07

**Short Name:** CABDistPos07

**Definition:** Indicate anastomotic position.

---

---

**SEQ. #:** 3120

**Long Name:** CAB Endarterectomy 07

**Short Name:** CABEndArt07

**Definition:** Indicate whether endarterectomy was performed.

---

---

**SEQ. #:** 3125

**Long Name:** CAB Vein Patch Angioplasty 07

**Short Name:** CABVeinPatAng07

**Definition:** Indicate whether a vein/**arterial** patch angioplasty was performed.

**FAQ October 2017:** The surgeon completed a patch angioplasty using the radial artery instead of a vein, how is this coded?

Answer: Code as vein patch angioplasty. This can apply to either vein or arterial patch.

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**SEQ. #:** 3130

**Long Name:** CAB 08

**Short Name:** CAB08

**Definition:** Indicate whether an eighth Coronary Artery Bypass graft was done.

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**SEQ. #:** 3150

**Long Name:** CAB Distal Site 08

**Short Name:** CABDistSite08

**Definition:** Indicate distal insertion site of bypass.

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**SEQ. #:** 3160

**Long Name:** CAB Proximal Site 08  
**Short Name:** CABProximalSite08  
**Definition:** Indicate proximal site of the bypass graft.

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**SEQ. #: 3170**  
**Long Name:** CAB Conduit 08  
**Short Name:** CABConduit08  
**Definition:** Indicate the conduit type used.

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---

**SEQ. #: 3175**  
**Long Name:** CAB Distal Position 08  
**Short Name:** CABDistPos08  
**Definition:** Indicate anastomotic position.

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**SEQ. #: 3180**  
**Long Name:** CAB Endarterectomy 08  
**Short Name:** CABEndArt08  
**Definition:** Indicate whether endarterectomy was performed.

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**SEQ. #: 3185**  
**Long Name:** CAB Vein Patch Angioplasty 08  
**Short Name:** CABVeinPatAng08  
**Definition:** Indicate whether a vein/**arterial** patch angioplasty was performed.

**FAQ October 2017:** The surgeon completed a patch angioplasty using the radial artery instead of a vein, how is this coded?  
Answer: Code as vein patch angioplasty. This can apply to either vein or arterial patch.

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**SEQ. #: 3190**  
**Long Name:** CAB 09  
**Short Name:** CAB09  
**Definition:** Indicate whether a ninth Coronary Artery Bypass graft was done.

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**SEQ. #:** 3210

**Long Name:** CAB Distal Site 09

**Short Name:** CABDistSite09

**Definition:** Indicate distal insertion site of bypass.

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---

**SEQ. #:** 3220

**Long Name:** CAB Proximal Site 09

**Short Name:** CABProximalSite09

**Definition:** Indicate proximal site of the bypass graft.

---

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**SEQ. #:** 3230

**Long Name:** CAB Conduit 09

**Short Name:** CABConduit09

**Definition:** Indicate the conduit type used.

---

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**SEQ. #:** 3235

**Long Name:** CAB Distal Position 09

**Short Name:** CABDistPos09

**Definition:** Indicate anastomotic position.

---

---

**SEQ. #:** 3240

**Long Name:** CAB Endarterectomy 09

**Short Name:** CABEndArt09

**Definition:** Indicate whether endarterectomy was performed.

---

---

**SEQ. #:** 3245

**Long Name:** CAB Vein Patch Angioplasty 09

**Short Name:** CABVeinPatAng09

**Definition:** Indicate whether a vein/**arterial** patch angioplasty was performed.

**FAQ October 2017:** The surgeon completed a patch angioplasty using the radial artery instead of a vein, how is this coded?

Answer: Code as vein patch angioplasty. This can apply to either vein or arterial patch.

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**SEQ. #:** 3250

**Long Name:** CAB 10

**Short Name:** CAB10

**Definition:** Indicate whether a tenth Coronary Artery Bypass graft was done.

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**SEQ. #:** 3270

**Long Name:** CAB Distal Site 10

**Short Name:** CABDistSite10

**Definition:** Indicate distal insertion site of bypass.

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**SEQ. #:** 3280

**Long Name:** CAB Proximal Site 10

**Short Name:** CABProximalSite10

**Definition:** Indicate proximal site of the bypass graft.

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**SEQ. #:** 3290

**Long Name:** CAB Conduit 10

**Short Name:** CABConduit10

**Definition:** Indicate the conduit type used.

---

---

**SEQ. #:** 3295

**Long Name:** CAB Distal Position 10

**Short Name:** CABDistPos10

**Definition:** Indicate anastomotic position.

---

---

**SEQ. #:** 3300

**Long Name:** CAB Endarterectomy 10

**Short Name:** CABEndArt10

**Definition:** Indicate whether endarterectomy was performed.

---

---

**SEQ. #:** 3305

**Long Name:** CAB Vein Patch Angioplasty 10

**Short Name:** CABVeinPatAng10

**Definition:** Indicate whether a vein/**arterial** patch angioplasty was performed.

**FAQ October 2017:** The surgeon completed a patch angioplasty using the radial artery instead of a vein, how is this coded?

Answer: Code as vein patch angioplasty. This can apply to either vein or arterial patch.

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## Valve Surgery

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**SEQ. #:** 3310

**Long Name:** Valve Prosthesis Explant

**Short Name:** ValExp

**Definition:** Indicate whether a prosthetic valve or annuloplasty was explanted during this procedure.

**Intent/Clarification:**

The intent is to capture as much information as possible about explanted devices. This will assist with post market device surveillance and provide information on device longevity. Having this information will help surgeons and patients make informed decisions on device selection.

Code the valve explant even if the sewing cuff is retained.

Do not code a valve explant if a valve is implanted and explanted during the same operation due to the fact the valve did not work or fit.

**FAQ September 2018:** A patient had previous Ross procedure with Pulmonary Autograft implanted in Aortic Position, with reconstruction of aortic annulus with reduction annuloplasty and reconstruction of RVOT. He now has aneurysmal dilation of the ascending aorta and returns for AVR + Aortic Root Reconstruction and replacement of the ascending aorta. Do I collect the Pulmonary Autograft as an explant for seq 3310?

Answer: Yes, code the autograft as the aortic explant.

An OnyxAAP Conduit was used, is this coded in the Aortic Devices?

---

**SEQ. #:** 3315

**Long Name:** Valve Prosthesis Explant Position

**Short Name:** ValExpPos

**Definition:** Indicate the location of the first explanted prosthetic valve or annuloplasty device.

**Intent/Clarification:**

- Aortic
- Mitral

- Tricuspid
  - Pulmonic
- 
- 

**SEQ. #:** 3320

**Long Name:** Valve Explant Type

**Short Name:** ValExpTyp

**Definition:** Indicate the first type of valve device explanted or enter unknown.

**Intent/Clarification:**

- Mechanical Valve
- Leaflet clip
- Bioprosthetic Valve
- Transcatheter Device
- Homograft
- Other
- Annuloplasty Device
- Unknown

**FAQ November 2017:** Accurate collection of the valve type is necessary for device longitudinal surveillance. This can be determined by the valve model number. If you are unsure check the valve manufacture website.

**FAQ September 2018:** A patient had previous Ross procedure with Pulmonary Autograft implanted in Aortic Position, with reconstruction of aortic annulus with reduction annuloplasty and reconstruction of RVOT. He now has aneurysmal dilation of the ascending aorta and returns for AVR + Aortic Root Reconstruction and replacement of the ascending aorta. Do I collect the Pulmonary Autograft as an explant for seq 3310?

Answer: Yes, code the explant type as other.

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---

**SEQ. #:** 3325

**Long Name:** Valve Explant Etiology

**Short Name:** ValExpEt

**Definition:** Indicate the primary reason for explanting valve device.

**Intent/Clarification:**

Choose the most critical reason that the patient is having the valve explanted.

- Endocarditis
- Failed repair
- Hemolysis: Valve causes destruction of red blood cells.
- Incompetence
- Pannus: Mobility of the leaflets obstructed or impaired by a membrane of tissue.
- Para-valvular leak: Leak around the valve



- Prosthetic deterioration
- Sizing/positioning issue: Valve size or position is suboptimal
- Stenosis
- Thrombosis
- Other
- Unknown

When coding the replacement of a calcified homograft code prosthetic deterioration.

**FAQ September 2018:** A patient had previous Ross procedure with Pulmonary Autograft implanted in Aortic Position, with reconstruction of aortic annulus with reduction annuoplasty and reconstruction of RVOT. He now has aneurysmal dilation of the ascending aorta and returns for AVR + Aortic Root Reconstruction and replacement of the ascending aorta. Do I collect the Pulmonary Autograft as an explant for seq 3310?

Answer: Yes, code the explant etiology other.

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**SEQ. #: 3330**

**Long Name:** Valve Explant Device Known

**Short Name:** ValExpDevKnown

**Definition:** Indicate whether the type of explanted valve device is known.

**Intent/Clarification:**

Information is available to identify the explanted valve device. This may include the patient's device card from the manufacturer.

**FAQ August 2018:** When the patient has had a Ross procedure and then presents for reoperation, how is the explant of the AV conduit coded?

Answer: Code no to device known.

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**SEQ. #: 3335**

**Long Name:** Valve Explant Device

**Short Name:** ValExpDev

**Definition:** Indicate the model number of the first prosthesis explanted.

**Intent/Clarification:**

Choose the device type from the device list.

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**SEQ. #: 3340**

**Long Name:** Valve Explant Unique Device Identifier (UDI)

**Short Name:** ValExpUDI

**Definition:** Indicate the device UDI if available, otherwise leave blank.

**Intent/Clarification:**

This is a unique identifier that will be on each valve. It may not be available immediately. If not available leave blank. Please refer to the FDA web site for detailed explanation of UDI.

[https://www.fda.gov/MedicalDevices/DeviceRegulationandGuidance/UniqueDeviceIdentification/default.htm?utm\\_source=Members%E2%80%90Only+Updates&utm\\_campaign=c7c1e8c870%E2%80%90Proposed\\_Rules\\_7\\_5\\_2012&utm\\_medium=email](https://www.fda.gov/MedicalDevices/DeviceRegulationandGuidance/UniqueDeviceIdentification/default.htm?utm_source=Members%E2%80%90Only+Updates&utm_campaign=c7c1e8c870%E2%80%90Proposed_Rules_7_5_2012&utm_medium=email)

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**SEQ. #: 3350**

**Long Name:** Second Valve Prosthesis Explant

**Short Name:** ValExp2

**Definition:** Indicate whether a second prosthetic valve or annuloplasty was explanted during this procedure.

**Intent/Clarification:**

In the event that more than one device is explanted, capture both. Code the valve explanted even if the sewing cuff is retained. Do not code a valve explant if a valve is implanted and explanted during the same operation due to the fact the valve did not work or fit.

---

**SEQ. #: 3355**

**Long Name:** Second Valve Prosthesis Explant Position

**Short Name:** ValExpPos2

**Definition:** Indicate the location of the second explanted prosthetic valve or annuloplasty.

**Intent/Clarification:**

- Aortic
- Mitral
- Tricuspid
- Pulmonic

---

**SEQ. #: 3360**

**Long Name:** Second Valve Explant Type

**Short Name:** ValExpTyp2

**Definition:** Indicate the second type of valve device explanted or enter unknown.

**Intent/Clarification:**

- Mechanical Valve
- Leaflet clip
- Bioprosthetic Valve
- Transcatheter Device
- Homograft
- Other
- Annuloplasty Device
- Unknown

**November 2017:** Accurate collection of the valve type is necessary for device longitudinal surveillance. This can be determined by the valve model number. If you are unsure check the valve manufacture website.

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**SEQ. #: 3365**

**Long Name:** Second Valve Explant Etiology

**Short Name:** ValExpEt2

**Definition:** Indicate the primary reason for explanting valve device.

**Intent/Clarification:**

Choose the most critical reason that the patient had their valve replaced.

- Endocarditis
  - Failed repair
  - Hemolysis: Valve causes destruction of red blood cells.
  - Incompetence
  - Pannus: Mobility of the leaflets obstructed or impaired by a membrane of tissue.
  - Para-valvular leak: Leak around the valve
  - Prosthetic deterioration
  - Sizing/positioning issue: Valve size or position is suboptimal
  - Stenosis
  - Thrombosis
  - Other
  - Unknown
- -----

**SEQ. #: 3370**

**Long Name:** Second Valve Explant Device Known

**Short Name:** ValExpDevKnown2

**Definition:** Indicate whether the type of explanted valve device is known.

**Intent/Clarification:**

Information is available to identify the explanted valve device.

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**SEQ. #:** 3375

**Long Name:** Second Valve Explant Device

**Short Name:** ValExpDev2

**Definition:** Indicate the model number of the second prosthesis explanted.

**Intent/Clarification:**

Choose the device type from the device list.

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**SEQ. #:** 3380

**Long Name:** Second Valve Explant Device Unique Device Identifier (UDI)

**Short Name:** ValExpDevUDI

**Definition:** Indicate the device UDI if available, otherwise leave blank.

**Intent/Clarification:**

This is a unique identifier that will be on each valve. It may not be available immediately. If not available leave blank. Please refer to the FDA web site for detailed explanation of UDI.

[https://www.fda.gov/MedicalDevices/DeviceRegulationandGuidance/UniqueDeviceIdentification/default.htm?utm\\_source=Members%E2%80%90Only+Updates&utm\\_campaign=c7c1e8c870%E2%80%90%20Proposed\\_Rules\\_7\\_5\\_2012&utm\\_medium=email](https://www.fda.gov/MedicalDevices/DeviceRegulationandGuidance/UniqueDeviceIdentification/default.htm?utm_source=Members%E2%80%90Only+Updates&utm_campaign=c7c1e8c870%E2%80%90%20Proposed_Rules_7_5_2012&utm_medium=email)

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**SEQ. #:** 3390

**Long Name:** VS-Aortic Valve

**Short Name:** VSAV

**Definition:** Indicate whether an aortic valve procedure was performed.

**Intent/Clarification:**

- Yes, planned
- Yes, unplanned due to surgical complication
- Yes, unplanned due to unsuspected disease or anatomy

- No

**FAQ November 2018:** Patient returns to the hospital 2 years post year AVR. Found to have thrombus in the AV and required open removal of the clot and pannus, the leaflets of the valve are then functioning well, and the aorta is closed.

Answer: Code this as a valve repair with all repair options marked 'no'.

**FAQ Sept 2019** - If a patient has a root repair with a valve resuspension, should you code both aortic valve repair (3395), then repair type (3425) for leaflet commissural resuspension in addition to the root proc (3462) & valve sparing root operation (3466), and the resuspension of the AV?

Answer - You do not need to code the AV repair Seq 3395 / 3425 since it is already captured in sequence 3467 (Resuspension AV with replacement of Ascending Aorta).

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**SEQ. #: 3395**

**Long Name:** VS-Aortic Valve Procedure

**Short Name:** VSAVPr

**Definition:** Indicate the type of procedure that was performed on the aortic valve and/or ascending aorta.

**Intent/Clarification:**

Options include:

- Replacement
- Repair / Reconstruction
- ~~Root replacement with valved conduit (Bentall) (Remove)~~
- ~~Replacement AV and insertion aortic non-valved conduit in supra-coronary position (Remove)~~
- ~~Replacement AV and major root reconstruction/debridement with valved conduit (Remove)~~
- ~~Resuspension AV without replacement of ascending aorta (Remove)~~
- ~~Resuspension AV with replacement of ascending aorta (Remove)~~
  - ~~Apico-aortic conduit (Aortic valve bypass) (Remove)~~
  - ~~Autograft with pulmonary valve (Ross procedure) (Remove)~~
  - ~~Homograft Root Replacement (Remove)~~
  - ~~Valve sparing root reimplantation (David) (Remove)~~
  - ~~Valve sparing root remodeling (Yacoub) (Remove)~~
  - ~~Valve Sparing root reconstruction (Florida Sleeve) (Remove)~~

**FAQ September 2017:** Surgeon performed the following mitral valve procedure “anterior mitral leaflet endarterectomy/decalcification” done in conjunction with an Aortic Valve Replacement. How is this documented under the options provided for MV repair?

**Answer:** No, anterior mitral leaflet endarterectomy/decalcification is considered part of the AVR and should not be coded as a mitral valve procedure.

**FAQ June 2019:** Patient had an AVR for endocarditis. The surgeon also performed unroofing of the mitral valve sub annular abscess. How do I code the mitral valve procedure?

**Answer:** Don't code--part of the AVR for endocarditis.

**FAQ June 2019:** Is an aortic endarterectomy considered part of the AVR procedure or does this need to be coded elsewhere?

**Answer:** This can be part of an AVR and should not be coded elsewhere.

**FAQ June 2019:** My facility is working on a form for the physicians to complete following the valve sections. They have brought up a question due to repeated questions. If a patient only has a Bentall would you capture no to replacement (3395) and then only complete Yes starting at root procedure (3462) then continue to complete section M?

**Answer:** No complete both sections 3395 and 3462.

---

**SEQ. #: 3400**

**Long Name:** VS-Aortic Transcatheter Valve Replacement

**Short Name:** VSTCV

**Definition:** Indicate whether the aortic valve replacement was done using a transcatheter valve device.

**Intent/Clarification:**

Transcatheter Aortic Valve Replacement (TAVR) technology is designed to allow some patients, who may not be candidates for conventional open-heart valve replacement surgery due to excessive risk, to obtain a life-saving valve.

Catheter based access is obtained through an artery.

If you participate in the TVT registry you may opt to submit transcatheter cases to the STS adult cardiac surgery registry in addition to the TVT registry, but it is not required.

**FAQ November 2018:** Our surgeon (who is an STS participant) did the TAVR along with the cardiologist but the cardiologist also did the TMVR by himself.

Both TAVR + TMVR done during same operative episode.

Do we capture just the TAVR in the ACSD since that's the only procedure our surgeon participated in?

Or do we capture the TMVR also (since it was done during same operation...like capturing CEA done by vascular when done during CABG)?

Answer: This is an optional case for ACSD. Double valve should be entered if the site enters TAVR/TMVR cases into the ACSD. It will not be analyzed.

**FAQ May 2019:** I had a patient who had a planned CABG for 1 day and a planned TVAR the next day. Is the TAVR captured, if so, where?

Answer: Yes, please code the TAVR in the Aortic Valve Section even though it was done on a different day. This patient will appropriately fall out of the isolated CAB category considering the additional risk of the TAVR procedure.

**FAQ Sept 2019** - I had a patient who had a planned CABG for 1 day and a planned TVAR the next day. Per the Training Manual, I am to capture this as one procedure in the Aortic Valve Section even though it was done on a different day. In this scenario, do I enter the OR times from the CABG or TAVR procedure?

Answer - Use the OR times Seq 2245, 2250, 2253, 2265, 2270, and 2275 from the CABG in this scenario.

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**SEQ. #: 3405**

**Long Name:** VS-Transcatheter Valve Replacement Approach

**Short Name:** VSTCVR

**Definition:** Indicate transcatheter valve replacement approach.

**Intent/Clarification:**

TAVR devices may be implanted via multiple vascular approaches:

- Transapical
- Transaxillary
- Transfemoral
- Transaortic
- Subclavian
- Other

---

**SEQ. #: 3407**

**Long Name:** VS-Aortic Surgical Valve Replacement

**Short Name:** VSAVSurgRep

**Definition:** Indicate whether the aortic valve replacement was done using a surgical procedure.

**Intent/Clarification:**

An open surgical valve procedure was performed.

---

**SEQ. #:** 3408

**Long Name:** VS-Aortic Surgical Valve Replacement Device Type

**Short Name:** VSAVSurgType

**Definition:** Indicate the type of device used to surgically replace the aortic valve.

**Intent/Clarification:**

Choose the device type:

- Mechanical
- Bioprosthetic
- Surgeon fashioned pericardium (Ozaki)
- Other

**November 2017:** Accurate collection of the valve type is necessary for device longitudinal surveillance. This can be determined by the valve model number. If you are unsure check the valve manufacture website.

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**SEQ. #:** 3409

**Long Name:** VS-Aortic Surgical Bioprosthetic Replacement Valve Type

**Short Name:** VSAVSurgBioT

**Definition:** Indicate the type of bioprosthetic device used to surgically replace the aortic valve.

**Intent/Clarification:**

If bioprosthetic, choose valve type:

- Stented
  - Stentless subcoronary valve only
  - Sutureless/rapid deployment
- -----

**SEQ. #:** 3410

**Long Name:** VS-Aortic Valve Repair - Commissural Suture Annuloplasty

**Short Name:** VSAVRComA

**Definition:** Indicate whether the aortic valve repair procedure included a commissural annuloplasty.

**Intent/Clarification:** Sometimes referred to as “subcommissural annuloplasty”. Identifies repairs involving placement of pledgeted mattress sutures across the upper portion of the commissural post to improve leaflet coaptation. These annuloplasty sutures are contained with the inside of the aorta, in contrast to the sutures for commissural resuspension (seq# 3425).

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**SEQ. #:** 3411

**Long Name:** VS-Aortic Valve Repair - External Suture Annuloplasty

**Short Name:** VSAVRExSutAn

**Definition:** Indicate whether the aortic valve repair procedure included an external suture annuloplasty.

**Intent/Clarification:** To identify placement of the annuloplasty suture outside the right/left commissure, passing the needle through the septal myocardium.

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**SEQ. #:** 3415

**Long Name:** VS-Aortic Valve Repair - Leaflet Plication

**Short Name:** VSAVRLPlic

**Definition:** Indicate whether the aortic valve repair procedure included leaflet plication.

**Intent/Clarification:** To identify repair with central plication stitches, shortening the leaflet free-edge length for the correction of leaflet prolapse.

**FAQ January 2019:** How is AV repair with free margin shortening coded, is it part of a Tirone David, or is it a stand alone procedure?

Answer: Code this free margin shortening as leaflet plication.

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**SEQ. #:** 3416

**Long Name:** VS-Aortic Valve Repair - Nodular Release

**Short Name:** VSAVRNodRel

**Definition:** Indicate whether the aortic valve repair procedure included nodular release.

**Intent/Clarification:** -

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**SEQ. #:** 3420

**Long Name:** VS-Aortic Valve Repair - Leaflet Free Edge Reinforcement (PTFE) Suture

**Short Name:** VSAVRPTFE

**Definition:** Indicate whether the aortic valve repair procedure included leaflet free edge reinforcement (PTFE) suture.

**Intent/Clarification:** The free edge reinforcement technique is performed by using suture passed in running fashion over and over along the entire length of the free margin.

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**SEQ. #:** 3425

**Long Name:** VS-Aortic Valve Repair - Leaflet Commissural Resuspension Suture

**Short Name:** VSAVRComRS

**Definition:** Indicate whether the aortic valve repair procedure included leaflet commissural resuspension suture.

**Intent/Clarification:** A commissural resuspension suture is a pledgeted mattress suture placed at the top end of the commissural post. The stitch is placed transmurally, so that one pledget is on the inside of the aorta and the other pledget is on the outside of the aorta. This suture has the effect of compressing all aortic layers together and is often used in repair of aortic dissections.

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**SEQ. #:** 3430

**Long Name:** VS-Aortic Valve Repair - Division of Fused Leaflet Raphe

**Short Name:** VSAVRRaphe

**Definition:** Indicate whether the aortic valve repair procedure included division of fused leaflet raphe.

**Intent/Clarification:** The division of the raphe (the two commissures or hinge points that are fused) in bicuspid valves.

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**SEQ. #:** 3435

**Long Name:** VS-Aortic Valve Repair - Ring Annuloplasty

**Short Name:** VSAVRRingA

**Definition:** Indicate whether the aortic valve repair procedure included a ring annuloplasty.

**Intent/Clarification:** Describes a ring sewn around the base to the annulus to reshape it and provide support. Rings may be flexible or rigid.

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**SEQ. #:** 3436

**Long Name:** VS-Aortic Valve Repair - Ring Annuloplasty - Type

**Short Name:** VSAVRRingATy

**Definition:** Indicate the type of ring annuloplasty that was used in this procedure.

**Intent/Clarification:**

- External ring
- Internal ring

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**SEQ. #:** 3440

**Long Name:** VS-Aortic Valve Repair - Leaflet Resection Suture

**Short Name:** VSAVRLResect

**Definition:** Indicate whether the aortic valve repair procedure included leaflet resection.

**Intent/Clarification:** Sutures places to mark the edges of the resection.

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**SEQ. #:** 3441

**Long Name:** VS-Aortic Valve Repair - Leaflet Shaving

**Short Name:** VSAVRLLeafShav

**Definition:** Indicate whether the aortic valve repair procedure included leaflet shaving.

**Intent/Clarification:** Removing the growth

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**SEQ. #:** 3445

**Long Name:** VS-Aortic Valve Repair - Leaflet Pericardial Patch

**Short Name:** VSAVRLPPatch

**Definition:** Indicate whether the aortic valve repair procedure included leaflet pericardial patch.

**Intent/Clarification:** A pericardial patch can be used to repair larger perforations in the valve leaflets

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**SEQ. #:** 3450

**Long Name:** VS-Aortic Valve Repair - Leaflet Debridement

**Short Name:** VSAVRDeb

**Definition:** Indicate whether the aortic valve repair procedure included leaflet debridement.

**Intent/Clarification:** A debridement technique can be used to remove small leaflet lesions such as LambI's excrescence, fibroelastomas and small calcific deposits. When tumors such as fibroelastoma or myxoma are removed, also code in seq # 4115.

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**SEQ. #:** 3455

**Long Name:** VS-Aortic Valve Repair - Repair of Peri-prosthetic Leak

**Short Name:** VSAVRPeriLeak

**Definition:** Indicate whether the aortic valve repair procedure included repair of a Peri-prosthetic leak.

**Intent/Clarification:** Leak of a previously place valve prosthesis. A periprosthetic leak occurs because of gap between the valve sewing ring and the native annulus. Repair of such a leak may mandate removal of the entire valve and re-replacement. This is not the intent of this field. Rather, this field pertains to the repair of a peri-prosthetic leak with one or more repair sutures without needing to remove the existing prosthesis.

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**SEQ. #:** 3460

**Long Name:** VS-Aortic Proc-Aortic Annular Enlargement

**Short Name:** AnlrEnl

**Definition:** Indicate whether an annular enlargement procedure was performed on the Aortic Valve. An aortic annular enlargement is defined as incision of the aortic annulus to enlarge the aortic orifice. Annular enlargement techniques include but are not limited to Manougian, Konno and Nicks.

**Intent/Clarification:**

Enlargement of the aortic annulus during aortic valve replacement permits insertion of a larger prosthetic valve or allows for optimal positioning. The enlarging procedure typically employs a patch of either pericardium or Dacron. In the classic Nick's or Manougian, the patch extends across the annulus (an aorto-annuloplasty). A patch that extends down to but not across the actual annulus (supra-annular aortoplasty) is considered a modification of the Nick's or Manougian and is coded as Nick's or Manougian as appropriate.

**FAQ July 2018:** How is a bovine pericardial patch enlargement of the aortic root and left atrial roof coded?

**Answer:** Code this patch enlargement as annular enlargement, code the root in sequence number 3462.

**FAQ October 2018:** How is a Konno-Rastan procedure coded?

**Answer:** Konno-Rastan's should be captured as a Konno procedure by coding sequence numbers 2125, 3460 and 3461 (Konno). Konno-Rastans are more extensive outflow tract procedures and are not captured in this version.

**FAQ October 2019 -** For Aortic annular enlargement with a patch, do you code 3460 (Aortic annular enlargement with patch) and Seq 3469 (patch used)?

**Answer –** Code Yes to Seq 3460. Do not code Seq 3469.

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**SEQ. #:** 3461

**Long Name:** VS-Aortic Proc-Aortic Annular Enlargement With Patch - Technique

**Short Name:** AnlREnlTech

**Definition:** Indicate the technique used for the aortic annular enlargement procedure.

**Intent/Clarification:**

Intended to capture whether a Nicks-Nunez, Manougian, Konno, Other or Unknown was performed utilizing patch material.

**FAQ October 2018:** How is a Konno-Rastan procedure coded?

Answer: Konno-Rastan's should be captured as a Konno procedure by coding sequence numbers 2125, 3460 and 3461 (Konno). Konno-Rastans are more extensive outflow tract procedures and are not captured in this version.

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**SEQ. #:** 3462

**Long Name:** VS-Aortic Root Procedure

**Short Name:** VSAVRroot

**Definition:** Indicate whether an aortic root procedure was performed during this operation.

**Intent/Clarification:** For AV surgery involving the aortic root, also complete section M2.

**FAQ July 2018:** How is a bovine pericardial patch enlargement of the aortic root and left atrial roof coded?

Answer: Code the root in sequence number 3462 and code this patch enlargement as annular enlargement in sequence number 3460.

**FAQ June 2019:** My facility is working on a form for the physicians to complete following the valve sections. They have brought up a question due to repeated questions. If a patient only has a Bentall would you capture no to replacement (3395) and then only complete Yes starting at root procedure (3462) then continue to complete section M.

**Answer:** No complete both sections 3395 and 3462.

**FAQ Sept 2019** - If a patient has a root repair with a valve resuspension, should you code both aortic valve repair (3395), then repair type (3425) for leaflet commissural resuspension in addition to the root proc (3462) & valve sparing root operation (3466), and the resuspension of the AV?

Answer - You do not need to code the AV repair Seq 3395 / 3425 since it is already captured in sequence 3467 (Resuspension AV with replacement of Ascending Aorta).

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**SEQ. #:** 3463

**Long Name:** VS-Aortic Root Procedure With Coronary Ostial Reimplantation (Bentall)

**Short Name:** VSAVRootOReimp

**Definition:** Indicate whether the root replacement procedure included coronary Ostial Reimplantation (Bentall).

**Intent/Clarification:** The coronary ostia are reimplanted following the replacement of the aortic root.

**FAQ November 2017:** How/where should a Cabrol procedure be captured.

Answer: Code only the aortic root procedure, there is no other field to capture this technique to reimplant the coronary buttons.

**FAQ November 2017:** Following a David procedure, due to bleeding at the right coronary anastomosis, a Kay Zubiaste reconstruction was required to reconstruct the ostium of the RCA using a segment of saphenous vein. How is this coded?

Answer: Code only the aortic root procedure, there is no other field to capture this technique to repair the ostium of the RCA.

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**SEQ. #:** 3464

**Long Name:** VS-Aortic Root Procedure With Coronary Ostial Reimplantation (Bentall) - Type

**Short Name:** VSAVRootOReimpTy

**Definition:** Indicate the type of device used for root replacement.

**Intent/Clarification:**

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**SEQ. #:** 3465

**Long Name:** VS-Aortic Root Procedure With Coronary Ostial Reimplantation - Bioprosthetic Type

**Short Name:** VSAVRepBioTy

**Definition:** Indicate the type of bioprosthetic device used during the aortic root replacement with coronary Ostial Reimplantation

**Intent/Clarification:**

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**SEQ. #:** 3466

**Long Name:** VS-Aortic Valve Sparing Root Operation Performed

**Short Name:** VSAVSparRt

**Definition:** Indicate whether a valve sparing root operation was performed.

**Intent/Clarification:**

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**SEQ. #:** 3467

**Long Name:** VS-Aortic Valve Sparing Root Operation

**Short Name:** VSAVSparRtOp

**Definition:** Indicate the type of aortic valve sparing root operation that was performed.

**Intent/Clarification:**

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**SEQ. #:** 3468

**Long Name:** VS-Aortic Valve Major Root Reconstruction

**Short Name:** VSAVRRootRecon

**Definition:** Indicate whether the procedure included aortic valve major root reconstruction / debridement with or without pericardial patch.

**Intent/Clarification:**

**FAQ June 2018:** Would a Mitral valve repair, closure of LVOT-left atrium fistula, Aortic valve replacement, Debridement and patch of abscess cavity in intervalvular fibrosa, and closure of PFO case be considered risk adjusted? Also how would the Debridement and patch of abscess cavity in intervalvular fibrosabe coded?

Answer: This is a major root reconstruction.

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**SEQ. #:** 3469

**Long Name:** VS-Aortic Valve Patch

**Short Name:** VSAVPat

**Definition:** Indicate whether a patch was used

**Intent/Clarification:**

**FAQ December 2017:** There was a peri-annular abscess along the right coronary annulus extending from below the right coronary ostium to the right coronary and noncoronary commissure. Once it was debrided, there was now communication with the right ventricle and the tricuspid valve was visible. All the infected material was debrided and the ventricular septal defect was repaired with a prolene suture. An autologous pericardial patch was used to cover the abscess cavity. It part of the aortic valve procedure but should aortic valve patch also be coded?

Answer: Yes, code patch in this case.

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**SEQ. #:** 3470

**Long Name:** VS-Aortic Valve Patch Type

**Short Name:** VSAVPatTy

**Definition:** Indicate the type of patch used

**Intent/Clarification:**

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**SEQ. #:** 3472

**Long Name:** VS-Aortic Valve Implant

**Short Name:** AorticImplant

**Definition:** Indicate whether an aortic valve or valve repair device was implanted.

**Intent/Clarification:**

**FAQ August 2017:** When will the updated valve/VAD list be published?

Answer: The STS will not be publishing a Valve/VAD list. It is the responsibility of your vendor to maintain the lists in the drop-downs in your software.

**FAQ March 2018:** How is apical-aortic conduit coded?

Answer: Code the valve implant as an aortic valve implant only and code then code the distal aortic location.

**FAQ September 2018:** A patient had previous Ross procedure with Pulmonary Autograft implanted in Aortic Position, with reconstruction of aortic annulus with reduction annuoplasty and reconstruction of RVOT. He now has aneurysmal dilation of the ascending aorta and returns for AVR + Aortic Root Reconstruction and replacement of the ascending aorta. An OnyxAAP was used, is this coded in the aortic devices.

Answer: Code this as an aortic valve implant and code it in the aorta device section, include any additional conduits in the aorta section as well.

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**SEQ. #:** 3480

**Long Name:** VS-Aortic Proc-Implant Model Number

**Short Name:** VSAoIm

**Definition:** Indicate the name of the prosthesis implanted. The names provided include the manufacturer's model number with "xx" substituting for the device size.

**Intent/Clarification:**

Choose the device type from the device list. **The device list will only be updated by the vendors with the specification upgrades. Devices not listed should be entered as Other – FDA approved or Other Non-FDA approved devices and entering the UDI will allow for valve identification.**



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**SEQ. #:** 3485

**Long Name:** VS-Aortic Proc-Imp-Size

**Short Name:** VSAoImSz

**Definition:** Indicate the Aortic implant size.

**Intent/Clarification:**

**FAQ Sept 2019** - Our hospital is using ON-X valves with sizes such as 27/29. Our software only allows 2 numbers, which one should I use, 27 or 29?

Answer - Code this valve as a 27.

**FAQ Sept 2019** – The Perceval Sutureless Valve comes in 4 sizes, S, M, L, XL. How should I code the size of the valve?

Answer – Code the size of the last digits in the model number. For example, PSV23 will be coded as 23.

REF	SIZE	AORTIC ANNULUS DIAMETER [A] (mm)	SINOTUBULAR JUNCTION DIAMETER [ $\leq 1.3 A$ ] (mm)
PVS21	S	19-21	$\leq 24.7-27.3$
PVS23	M	21-23	$\leq 27.3-29.9$
PVS25	L	23-25	$\leq 29.9-32.5$
PVS27	XL	25-27	$\leq 32.5-35.1$

**Table 1:** Patient anatomical characteristics

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**SEQ. #:** 3490

**Long Name:** VS-Aortic Proc-Imp - Unique Device Identifier (UDI)

**Short Name:** VSAoImUDI

**Definition:** Indicate the device UDI if available, otherwise leave blank.

**Intent/Clarification:**

This is a unique identifier that will be on each patch. It may not be available immediately. If not available leave blank. Please refer to the FDA web site for detailed explanation of UDI.

[https://www.fda.gov/MedicalDevices/DeviceRegulationandGuidance/UniqueDeviceIdentification/default.htm?utm\\_s%20our%20ce=Members%E2%80%90Only+Updates&utm\\_campaign=c7c1e8c870%E2%80%90%20Proposed Rules 7 5 2012&utm\\_medium=email](https://www.fda.gov/MedicalDevices/DeviceRegulationandGuidance/UniqueDeviceIdentification/default.htm?utm_s%20our%20ce=Members%E2%80%90Only+Updates&utm_campaign=c7c1e8c870%E2%80%90%20Proposed+Rules+7+5+2012&utm_medium=email)

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**SEQ. #:** 3495

**Long Name:** VS-Mitral Valve

**Short Name:** VSMV

**Definition:** Indicate whether a mitral valve procedure was performed.

**Intent/Clarification:**

- Yes, planned
  - Yes, unplanned due to surgical complication
  - Yes, unplanned due to unsuspected disease or anatomy
  - No
- -----

**SEQ. #:** 3500

**Long Name:** VS-Mitral Valve Procedure

**Short Name:** VSMVPr

**Definition:** Indicate the type of procedure that was performed on the mitral valve.

**Intent/Clarification:**

- Repair
- Replacement

**FAQ September 2017:** Surgeon performed the following mitral valve procedure “anterior mitral leaflet endarterectomy/decalcification” done in conjunction with an Aortic Valve Replacement. How is this documented under the options provided for MV repair?

Answer: No, anterior mitral leaflet endarterectomy/decalcification is considered part of the AVR and should not be coded as a mitral valve procedure.

**FAQ November 2018:** The patient had a MVR with reconstruction of the atrium with atrioplasty. Excerpt from op note:

We then visualized the valve. There was calcification in the wall of the atrium. We identified the defect and then got 2-0 Ethibond sutures, 3 in number, brought through the sewing ring of the mechanical valve and then deep bites through the annulus with felt buttress exteriorly. We did this in multiple locations all on the area of the repair taking deep bites into the annulus for annular reconstruction. We then found no other abnormalities that we could identify and so I got a Dacron patch 4 x 4 cm and then did a complex reconstruction of the atrium with atrioplasty. This was required because the atrium was stuck to the pulmonary artery and had to be peeled and dissected off. We then did a running 4-0 Prolene suture circumferentially around the Dacron patch in order to reconstruct the atrium.

Answer: This was a technical addition, nothing else to code.

**FAQ June 2019:** Patient had MVR for endocarditis. There was erosion of the abscess into the left ventricle posteriorly causing atrioventricular disruption measuring about 2 x 3 cm. This area was repaired with a pericardial patch. Would this be coded under "other cardiac procedures", seq # 4135?

Answer: No, it is an inherent part of the procedure for a MVR for endocarditis.

**FAQ June 2019:** Patient had an AVR for endocarditis. The surgeon also performed unroofing of the mitral valve sub annular abscess. How do I code the mitral valve procedure?

Answer: Don't code-- part of the AVR for endocarditis.

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**SEQ. #: 3501**

**Long Name:** VS-Mitral Valve - Repair Approach

**Short Name:** VSMVRepApp

**Definition:** Indicate the approach that was used to repair the Mitral Valve.

**Intent/Clarification:**

- Transcatheter
  - Surgical
- 
- 

**SEQ. #: 3505**

**Long Name:** VS-Mitral Valve Repair - Annuloplasty

**Short Name:** VSMitRAnnulo

**Definition:** Indicate whether the mitral valve repair procedure included an annuloplasty.

**Intent/Clarification:**

FAQ August 2018: How should a Kay annuloplasty of the posterior-medial commissure of the mitral valve be coded?

Answer: Code as annuloplasty only and do not include an implant.

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**SEQ. #: 3510**

**Long Name:** VS-Mitral Valve Repair - Leaflet Resection

**Short Name:** VSMitRLeafRes

**Definition:** Indicate whether the mitral valve repair procedure included a leaflet resection.

**Intent/Clarification:**

**FAQ May 2019:** This patient had a mitral valve replacement in 2017 and the ECHO showed the medial disk of the valve was stuck. Pt. had a redo Sternotomy and repair of the mechanical valve by excision of pannus. Findings: The anterior leaflet of the mechanical valve was obstructed by pannus formation. This pannus was removed without injuring the leaflets. After the pannus was removed both leaflets were found to be opening and closing normally. How do you abstract for excision of pannus.

Answer: Code repair and leave repair options as no. This will be updated in the next version. Refer to seq 3390.

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**SEQ. #:** 3515

**Long Name:** VS-Mitral Leaflet Resection Type

**Short Name:** VSLeafResTyp

**Definition:** Indicate the type of leaflet resection.

**Intent/Clarification:**

- Triangular
- Quadrangular
- Other

**FAQ November 2018:** Patient had a mitral valve repair with a triangular resection of A2 and quadrangular resection of P2. When coding resection type for SN 3515, should this be coded as other? What classifies as other resection?

Answer: Code quadrangular resection of P2. This will be address in the revision discussions for the next version.

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**SEQ. #:** 3517

**Long Name:** VS-Mitral Repair Leaflet - Anterior Resection

**Short Name:** VSLeafAntRes

**Definition:** Indicate whether anterior MV leaflet resection was performed

**Intent/Clarification:**

- Yes
  - No
- 
- 

**SEQ. #:** 3518

**Long Name:** VS-Mitral Repair Leaflet - Anterior Resection - Location Documented

**Short Name:** VSLeafAntResLocD

**Definition:** Indicate whether the location of the anterior resection was documented.

**Intent/Clarification:**

- Yes
  - No
- 
-

**SEQ. #:** 3519

**Long Name:** VS-Mitral Repair Leaflet - Anterior Resection - A1

**Short Name:** VSLeafAntResA1

**Definition:** Indicate whether the anterior leaflet resection included location A1

**Intent/Clarification:**

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**SEQ. #:** 3520

**Long Name:** VS-Mitral Repair Leaflet - Anterior Resection - A2

**Short Name:** VSLeafAntResA2

**Definition:** Indicate whether the anterior leaflet resection included location A2

**Intent/Clarification:**

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**SEQ. #:** 3521

**Long Name:** VS-Mitral Repair Leaflet - Anterior Resection - A3

**Short Name:** VSLeafAntResA3

**Definition:** Indicate whether the anterior leaflet resection included location A3

**Intent/Clarification:**

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**SEQ. #:** 3522

**Long Name:** VS-Mitral Repair Leaflet - Posterior Resection

**Short Name:** VSLeafPostRes

**Definition:** Indicate whether posterior MV leaflet resection was performed

**Intent/Clarification:**

- Yes
  - No
- -----

**SEQ. #:** 3523

**Long Name:** VS-Mitral Repair Leaflet - Posterior Resection - Location Documented

**Short Name:** VSLeafPostResLocD

**Definition:** Indicate whether posterior MV leaflet resection location was documented

**Intent/Clarification:**

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**SEQ. #:** 3524

**Long Name:** VS-Mitral Repair Leaflet - Posterior Resection - P1

**Short Name:** VSLeafPostResP1

**Definition:** Indicate whether the posterior leaflet resection included location P1

**Intent/Clarification:**

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**SEQ. #:** 3525

**Long Name:** VS-Mitral Repair Leaflet - Posterior Resection - P2

**Short Name:** VSLeafPostResP2

**Definition:** Indicate whether the posterior leaflet resection included location P2

**Intent/Clarification:**

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**SEQ. #:** 3526

**Long Name:** VS-Mitral Repair Leaflet - Posterior Resection - P3

**Short Name:** VSLeafPostResP3

**Definition:** Indicate whether the posterior leaflet resection included location P3

**Intent/Clarification:**

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**SEQ. #:** 3527

**Long Name:** VS-Mitral Repair Leaflet - Commissure Resection

**Short Name:** VSLeafComRes

**Definition:** Indicate whether resection of the mitral commissure was performed

**Intent/Clarification:**

- Yes
  - No
- 
- 

**SEQ. #:** 3528

**Long Name:** VS-Mitral Repair Leaflet - Commissure Resection - Location

**Short Name:** VSLeafComResLoc

**Definition:** Indicate the location of the mitral commissure resection

**Intent/Clarification:**

- Medial
  - Lateral
  - Both
  - Not Documented
- 
- 

**SEQ. #:** 3532

**Long Name:** VS-Mitral Valve Repair - Neochords (PTFE)

**Short Name:** VSMitRPTFE

**Definition:** Indicate whether the mitral valve repair procedure included neochords (PTFE).

**Intent/Clarification:** Intended to replace damaged chordae by delivering artificial chordae tendineae.

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**SEQ. #:** 3534

**Long Name:** VS-Mitral Valve Repair - Anterior Neochords

**Short Name:** VSNeoAnt

**Definition:** Indicate whether anterior neochords were placed

**Intent/Clarification:**

- Yes
  - No
- 
- 

**SEQ. #:** 3535

**Long Name:** VS-Mitral Valve Repair - Anterior Neochords - Location Documented

**Short Name:** VSNeoAntLocD

**Definition:** Indicate whether location of anterior neochord placement was documented

**Intent/Clarification:**

- Yes
  - No
- 
- 

**SEQ. #:** 3536

**Long Name:** VS-Mitral Valve Repair - Anterior Neochords - A1

**Short Name:** VSNeoAntA1

**Definition:** Indicate whether neochord location included location A1

**Intent/Clarification:**

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**SEQ. #:** 3537

**Long Name:** VS-Mitral Valve Repair - Anterior Neochords - A2

**Short Name:** VSNeoAntA2

**Definition:** Indicate whether neochord location included location A2

**Intent/Clarification:**

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**SEQ. #:** 3538

**Long Name:** VS-Mitral Valve Repair - Anterior Neochords - A3

**Short Name:** VSNeoAntA3

**Definition:** Indicate whether neochord location included location A3

**Intent/Clarification:**

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**SEQ. #:** 3539

**Long Name:** VS-Mitral Valve Repair - Posterior Neochords

**Short Name:** VSNeoPost

**Definition:** Indicate whether posterior neochords were placed

**Intent/Clarification:**

- Yes
  - No
- -----

**SEQ. #:** 3540

**Long Name:** VS-Mitral Valve Repair - Posterior Neochords - Location Documented

**Short Name:** VSNeoPostLocD

**Definition:** Indicate whether location of posterior neochord placement was documented

**Intent/Clarification:**

- Yes
- No



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**SEQ. #:** 3541

**Long Name:** VS-Mitral Valve Repair - Posterior Neochords - P1

**Short Name:** VSNeoPostP1

**Definition:** Indicate whether posterior neochord location included location P1

**Intent/Clarification:**  
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**SEQ. #:** 3542

**Long Name:** VS-Mitral Valve Repair - Posterior Neochords - P2

**Short Name:** VSNeoPostP2

**Definition:** Indicate whether posterior neochord location included location P2

**Intent/Clarification:**  
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**SEQ. #:** 3543

**Long Name:** VS-Mitral Valve Repair - Posterior Neochords - P3

**Short Name:** VSNeoPostP3

**Definition:** Indicate whether posterior neochord location included location P3

**Intent/Clarification:**  
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**SEQ. #:** 3544

**Long Name:** VS-Mitral Valve Repair - Commissure Neochords

**Short Name:** VSNeoCom

**Definition:** Indicate whether commissural neochords were placed

**Intent/Clarification:**

- Yes
  - No
- -----

**SEQ. #:** 3545

**Long Name:** VS-Mitral Valve Repair - Commissure Neochords - Location

**Short Name:** VSNeoComLoc

**Definition:** Indicate location of commissural neochord placement

**Intent/Clarification:**

- Medial
  - Lateral
  - Both
  - Not Documented
- 
- 

**SEQ. #:** 3550

**Long Name:** VS-Mitral Valve Repair - Chordal / Leaflet Transfer

**Short Name:** VSMitRChord

**Definition:** Indicate whether the mitral valve repair procedure included a chordal / leaflet transfer.

**Intent/Clarification:**

- Yes
  - No
- 
- 

**SEQ. #:** 3551

**Long Name:** VS-Mitral Valve Repair - Chordal Leaflet Transfer - Anterior

**Short Name:** VSChorLfAnt

**Definition:** Indicate whether chordal leaflet transfer was anterior

**Intent/Clarification:**

- Yes
  - No
- 
- 

**SEQ. #:** 3552

**Long Name:** VS-Mitral Valve Repair - Chordal Leaflet Transfer - Anterior Location Documented

**Short Name:** VSChorLfAntLocD

**Definition:** Indicate whether location of anterior chordal leaflet transfer was documented

**Intent/Clarification:**

- Yes
  - No
- 
- 

**SEQ. #:** 3553

**Long Name:** VS-Mitral Valve Repair - Chordal Leaflet Transfer - Anterior - A1

**Short Name:** VSChorLfAntA1

**Definition:** Indicate whether anterior chordal leaflet transfer location was A1

**Intent/Clarification:**

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**SEQ. #:** 3554

**Long Name:** VS-Mitral Valve Repair - Chordal Leaflet Transfer - Anterior - A2

**Short Name:** VSChorLfAntA2

**Definition:** Indicate whether anterior chordal leaflet transfer location was A2

**Intent/Clarification:**

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**SEQ. #:** 3555

**Long Name:** VS-Mitral Valve Repair - Chordal Leaflet Transfer - Anterior - A3

**Short Name:** VSChorLfAntA3

**Definition:** Indicate whether anterior chordal leaflet transfer location was A3

**Intent/Clarification:**

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**SEQ. #:** 3556

**Long Name:** VS-Mitral Valve Repair - Chordal Leaflet Transfer - Posterior

**Short Name:** VSChorLfPost

**Definition:** Indicate whether chordal leaflet transfer was posterior

**Intent/Clarification:**

- Yes
  - No
- -----

**SEQ. #:** 3557

**Long Name:** VS-Mitral Valve Repair - Chordal Leaflet Transfer - Posterior Location Documented

**Short Name:** VSChorLfPostLocD

**Definition:** Indicate whether location of posterior chordal leaflet transfer was documented

**Intent/Clarification:**

- Yes
- No

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**SEQ. #: 3558**

**Long Name:** VS-Mitral Valve Repair - Chordal Leaflet Transfer - Posterior - P1

**Short Name:** VSChorLfPostP1

**Definition:** Indicate whether posterior chordal leaflet transfer location was P1

**Intent/Clarification:**

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**SEQ. #: 3559**

**Long Name:** VS-Mitral Valve Repair - Chordal Leaflet Transfer - Posterior - P2

**Short Name:** VSChorLfPostP2

**Definition:** Indicate whether posterior chordal leaflet transfer location was P2

**Intent/Clarification:**

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**SEQ. #: 3560**

**Long Name:** VS-Mitral Valve Repair - Chordal Leaflet Transfer - Posterior - P3

**Short Name:** VSChorLfPostP3

**Definition:** Indicate whether posterior chordal leaflet transfer location was P3

**Intent/Clarification:**

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**SEQ. #: 3561**

**Long Name:** VS-Mitral Valve Repair - Chordal Leaflet Transfer - Commissure

**Short Name:** VSChorLfCom

**Definition:** Indicate whether chordal leaflet transfer was commissural

**Intent/Clarification:**

- Yes
- No

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**SEQ. #: 3562**

**Long Name:** VS-Mitral Valve Repair - Chordal Leaflet Transfer - Commissure Location

**Short Name:** VSChorLfComLoc

**Definition:** Indicate location of commissural leaflet transfer

**Intent/Clarification:**

- Medial
- Lateral
- Both
- Not Documented

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**SEQ. #: 3565**

**Long Name:** VS-Mitral Valve Repair - Folding Plasty

**Short Name:** VSMitRFold

**Definition:** Indicate whether the mitral valve repair procedure included folding plasty.

**Intent/Clarification:**

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**SEQ. #: 3566**

**Long Name:** VS-Mitral Valve Repair - Sliding Plasty

**Short Name:** VSMitRSlidP

**Definition:** Indicate whether the mitral valve repair procedure included a sliding plasty.

**Intent/Clarification:**

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**SEQ. #: 3567**

**Long Name:** VS-Mitral Valve Repair - Annular Decalcification / Debridement

**Short Name:** VSMitRADecalc

**Definition:** Indicate whether the mitral valve repair procedure included an annular decalcification / debridement.

**Intent/Clarification:**

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**SEQ. #: 3568**

**Long Name:** VS-Mitral Valve Repair - Leaflet Extension / Replacement / Patch

**Short Name:** VSMitRLeafERP

**Definition:** Indicate whether the mitral valve repair procedure included a leaflet extension / replacement / patch.

**Intent/Clarification:**

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**SEQ. #: 3569**

**Long Name:** VS-Mitral Valve Repair - Leaflet Extension / Replacement / Patch - Location  
**Short Name:** VSMitRLeafERPLoc

**Definition:** Indicate the location of the mitral leaflet extension/replacement patch

**Intent/Clarification:**

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**SEQ. #: 3570**

**Long Name:** VS-Mitral Valve Repair - Edge To Edge Repair

**Short Name:** VSMitREdge

**Definition:** Indicate whether the mitral valve repair procedure included an edge to edge repair.

**Intent/Clarification:**

Edge-to-edge repair is a surgical approximation of the mitral valve leaflets, sometimes called the Alfieri procedure or Bow Tie procedure.

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**SEQ. #: 3580**

**Long Name:** VS-Mitral Valve Repair - Mitral Commissurotomy

**Short Name:** VSMitRMitComm

**Definition:** Indicate whether the mitral valve repair procedure included a mitral commissurotomy.

**Intent/Clarification:** Disruption of the components of a commissure fused as a result of valvular disease.

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**SEQ. #: 3585**

**Long Name:** VS-Mitral Valve Repair - Mitral Commissuroplasty

**Short Name:** VSMitRMitCplasty

**Definition:** Indicate whether the mitral valve repair procedure included a mitral commissuroplasty.

**Intent/Clarification:**

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**SEQ. #:** 3590

**Long Name:** VS-Mitral Valve Repair - Mitral Cleft Repair (Scallop Closure)

**Short Name:** VSMitRMitCleft

**Definition:** Indicate whether the mitral valve repair procedure included a mitral cleft repair.

**Intent/Clarification:**

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**SEQ. #:** 3591

**Long Name:** VS-Mitral Valve Repair - Paraprosthentic Leak Repair

**Short Name:** VSMitParaprosLeak

**Definition:** Indicate whether there was repair of a mitral paraprosthentic leak

**Intent/Clarification:** Leak of a previously place valve prosthesis.

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---

**SEQ. #:** 3600

**Long Name:** VS-Mitral Repair Attempted

**Short Name:** MitralIntent

**Definition:** Indicate whether a Mitral Valve Repair was attempted prior to the Mitral Valve Replacement.

**Intent/Clarification:**

- Yes
  - No
- 
- 

**SEQ. #:** 3605

**Long Name:** VS-Mitral Chordal Preservation

**Short Name:** VSChorPres

**Definition:** Indicate whether native chords were preserved.

**Intent/Clarification:**

- Anterior
- Posterior
- Both
- None

**FAQ October 2019** - Due to endocarditis, the entire mitral valve and subleaflet apparatus was excised and a replacement performed. The surgeon also placed artificial chords from each papillary muscle to the annulus. How would this be coded?  
Answer – Code Yes to chords preserved in this scenario. Additional clarification Nov 2019 - STS realizes that native chords are ideal, however, given the current limitations in this version it is believed this is the best way to signify the presence of artificial chords.

**FAQ Nov 2019** - For an MVR, if the surgeon dictates that he removed the anterior leaflet, does that mean the chords came out with it?  
Answer - That is correct. If it is dictated that the anterior leaflet is removed and it is not specified specifically that the anterior chords were preserved, and the posterior leaflet is left intact then it should be recorded as posterior preservation only. This is the most common scenario.

---

**SEQ. #: 3610**

**Long Name:** VS-Mitral Transcatheter Valve Replacement

**Short Name:** VSTCVMit

**Definition:** Indicate whether the mitral valve replacement was done using a transcatheter valve device.

**Intent/Clarification: Sept 2019 Update:** Transcatheter Mitral Valve Replacement (TMVR) technology is designed to allow some patients, who may not be candidates for conventional open-heart valve replacement surgery due to excessive risk, to obtain a life-saving valve. Catheter based access is obtained through an artery.

If you participate in the TVT registry you may opt to submit transcatheter cases to the STS adult cardiac surgery registry in addition to the TVT registry, but it is not required.

---

**SEQ. #: 3615**

**Long Name:** VS-Mitral Implant

**Short Name:** MitralImplant

**Definition:** Indicate whether a mitral valve or valve device was implanted.

**Intent/Clarification:**

- Yes
- No

**FAQ August 2017:** When will the updated valve/VAD list be published?

Answer: The STS will not be publishing a Valve/VAD list. It is the responsibility of your vendor to maintain the lists in the dropdowns in your software.



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**SEQ. #:** 3620

**Long Name:** VS-Mitral Implant - Type

**Short Name:** MitralImplantTy

**Definition:** Indicate the type of mitral valve or valve device implanted.

**Intent/Clarification:**

- Mechanical Valve
- Bioprosthetic valve
- Annuloplasty device
- Mitral Leaflet clip
- Transcatheter device
- Surgically implanted transcatheter device
- Other

**FAQ November 2017:** Accurate collection of the valve type is necessary for device longitudinal surveillance. This can be determined by the valve model number. If you are unsure check the valve manufacture website.

**FAQ July 2018:** The surgeon did a redo open MV replacement but used a transcatheter valve (9600CT). We answered "no" for seq 3610 Mitral Transcatheter Valve Replacement and answered 3620 as Transcatheter Device. The TAVR valve was placed upside down into the previous mechanical valve. The DQR is showing that the case is not eligible for analysis due "Transcatheter Valve Procedure". Is this correct? Should the case not be analyzed due to the valve type? Or should we change the valve type to bioprosthetic instead since it wasn't a transcatheter procedure?

Answer: When a "transcatheter" valve is used in an open cardiac procedure regard it as a valve replacement. Because the procedure is performed on CPB under direct vision code the implant type as bioprosthetic and include the model number (9600CT) of the transcatheter valve.

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**SEQ. #:** 3625

**Long Name:** VS-Mitral Proc-Implant Model Number

**Short Name:** VSMilm

**Definition:** Indicate the model number of the device implanted. The names provided include the manufacturer's model number with "xx" substituting for the device size.

**Intent/Clarification:**

Choose the device type from the device list.

---

---

**SEQ. #:** 3630

**Long Name:** VS-Mitral Proc-Imp-Size

**Short Name:** VSMilmSz

**Definition:** Indicate the Mitral implant size.

**Intent/Clarification:**

**FAQ Sept 2019** - Our hospital is using ON-X valves with sizes such as 27/29. Our software only allows 2 numbers, which one should I use, 27 or 29?

Answer - Code this valve as a 27.

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**SEQ. #:** 3635

**Long Name:** VS-Mitral Proc-Imp-Unique Device Identifier (UDI)

**Short Name:** VSMilmUDI

**Definition:** Indicate the device UDI if available, otherwise leave blank.

**Intent/Clarification:**

This is a unique identifier that will be on each valve. It may not be available immediately. If not available leave blank. Please refer to the FDA web site for detailed explanation of UDI.

[https://www.fda.gov/MedicalDevices/DeviceRegulationandGuidance/UniqueDeviceIdentification/default.htm?utm\\_source=Members%E2%80%90Only+Updates&utm\\_campaign=c7c1e8c870%E2%80%90%20Proposed\\_Rules\\_7\\_5\\_2012&utm\\_medium=email](https://www.fda.gov/MedicalDevices/DeviceRegulationandGuidance/UniqueDeviceIdentification/default.htm?utm_source=Members%E2%80%90Only+Updates&utm_campaign=c7c1e8c870%E2%80%90%20Proposed_Rules_7_5_2012&utm_medium=email)

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**SEQ. #:** 3640

**Long Name:** VS-Tricuspid Valve

**Short Name:** VSTV

**Definition:** Indicate whether a tricuspid valve procedure was performed.

**Intent/Clarification:**

- Yes, planned
- Yes, unplanned due to surgical complication
- Yes, unplanned due to unsuspected disease or anatomy
- No

-----  
-----

**SEQ. #:** 3646

**Long Name:** VS-Tricuspid Repair

**Short Name:** VSTrRepair

**Definition:** Indicate whether tricuspid repair was performed

**Intent/Clarification:**

- Yes
  - No
- 
- 

**SEQ. #:** 3647

**Long Name:** VS-Tricuspid Repair - Annuloplasty

**Short Name:** VSTrRepAnnulo

**Definition:** Indicate whether the tricuspid repair included an annuloplasty

**Intent/Clarification:**

- Yes
  - No
- 
- 

**SEQ. #:** 3648

**Long Name:** VS-Tricuspid Repair - Annuloplasty Type

**Short Name:** OpTricusAnTy

**Definition:** Indicate type of annuloplasty procedure.

**Intent/Clarification:**

- Pericardium
  - Suture
  - Prosthetic ring
  - Prosthetic band
  - Other
- 
- 

**SEQ. #:** 3649

**Long Name:** VS-Tricuspid Repair - Leaflet Resection

**Short Name:** VSTrLeafRes

**Definition:** Indicate whether the tricuspid repair included leaflet resection

**Intent/Clarification:**

- Yes
- No

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**SEQ. #:** 3650

**Long Name:** VS-Tricuspid Replacement

**Short Name:** VSTrReplace

**Definition:** Indicate whether tricuspid replacement was performed

**Intent/Clarification:**

- Yes
- No

**FAQ August 2017:** When will the updated valve/VAD list be published?

Answer: The STS will not be publishing a Valve/VAD list. It is the responsibility of your vendor to maintain the lists in the drop-downs in your software.

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**SEQ. #:** 3652

**Long Name:** VS-Tricuspid Transcatheter Valve Replacement

**Short Name:** VSTCVTri

**Definition:** Indicate whether the tricuspid valve replacement was done using a transcatheter valve device.

**Intent/Clarification:**

- Yes
  - No
- -----

**SEQ. #:** 3653

**Long Name:** VS-Tricuspid Valvectomy **Short Name:** VSTrValvec

**Definition:** Indicate whether tricuspid valvectomy was performed

**Intent/Clarification:**

Intended to capture procedures where the tricuspid valve is removed.

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**SEQ. #:** 3660

**Long Name:** VS-Tricuspid Implant **Short Name:** TricuspidImplant

**Definition:** Indicate whether a tricuspid valve or device was implanted.

**Intent/Clarification:**

- Yes

- No

FAQ January 2019: How is a tricuspid replacement coded when it is fashioned from CorMatrix?

Answer: Code the implant as other.

---

**SEQ. #: 3665**

**Long Name:** VS-Tricuspid Implant - Type

**Short Name:** TricusImplantTy

**Definition:** Indicate the type of tricuspid valve or valve device implanted.

**Intent/Clarification:**

- Mechanical valve
- Annuloplasty device
- Bioprosthetic valve
- Transcatheter device
- Homograft
- Other

**November 2017:** Accurate collection of the valve type is necessary for device longitudinal surveillance. This can be determined by the valve model number. If you are unsure check the valve manufacture website.

---

**SEQ. #: 3670**

**Long Name:** VS-Tricuspid Proc-Implant Model Number

**Short Name:** VSTrlm

**Definition:** Indicate the model number of the prosthesis implanted. The names provided include the manufacturer's model number with "xx" substituting for the device size.

**Intent/Clarification:**

Choose the device type from the device list.

---

**SEQ. #: 3675**

**Long Name:** VS-Tricuspid Proc-Imp-Size

**Short Name:** VSTrlmSz

**Definition:** Indicate the Tricuspid implant size.

**Intent/Clarification:**

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**SEQ. #:** 3680

**Long Name:** VS-Tricuspid Proc-Imp-Unique Device Identifier (UDI)

**Short Name:** VSTrlmUDI

**Definition:** Indicate the device UDI if available, otherwise leave blank.

**Intent/Clarification:**

This is a unique identifier that will be on each valve. It may not be available immediately. If not available leave blank. Please refer to the FDA web site for detailed explanation of UDI.

[https://www.fda.gov/MedicalDevices/DeviceRegulationandGuidance/UniqueDeviceIdentification/default.htm?utm\\_source=Members%E2%80%90Only+Updates&utm\\_campaign=c7c1e8c870%E2%80%90Proposed\\_Rules\\_7\\_5\\_2012&utm\\_medium=email](https://www.fda.gov/MedicalDevices/DeviceRegulationandGuidance/UniqueDeviceIdentification/default.htm?utm_source=Members%E2%80%90Only+Updates&utm_campaign=c7c1e8c870%E2%80%90Proposed_Rules_7_5_2012&utm_medium=email)

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**SEQ. #:** 3685

**Long Name:** VS-Pulmonic Valve

**Short Name:** VSPV

**Definition:** Indicate whether a pulmonic valve procedure was performed.

**Intent/Clarification:**

- Yes, planned
- Yes, unplanned due to surgical complication
- Yes, unplanned due to unsuspected disease or anatomy
- No

**FAQ December 2018:** Pulmonic valve insufficiency status post repair of tetralogy of Fallot.

Pulmonary valve replacement and patch revision of right ventricular outflow tract.

"Under cold quiet diastolic arrest, the RV outflow tract patch was opened midway between the RV and the pulmonary artery. The incision was extended proximally and distally. Some calcified areas of patch were excised. A 25 mm Medtronic Mosaic mitral valve was positioned at the neo-annulus and then anastomosed here posteriorly with running 4-0 Prolene. Photosensitized bovine pericardial patch was trimmed and anastomosed beginning at the pulmonary artery and then extending both suture lines, a 4-0 Prolene proximally to complete the outflow patch closure. Following this, anterior suture line was used to fix the anterior portion of the valve to the patch with running 4-0 Prolene. How is the patch coded?

Answer: Code this as a pulmonary valve replacement only.

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**SEQ. #:** 3690

**Long Name:** VS-Pulmonic Proc-Procedure

**Short Name:** OpPulm

**Definition:** Indicate the type of procedure that was performed on the pulmonic valve.

**Intent/Clarification:**

- Replacement
- Reconstruction
- Valvectomy

**FAQ June 2018:** Redo pulmonary valve replacement with insertion of a 29 mm Edwards magna pericardial tissue heart valve. Patching of the pulmonary artery using bovine pericardium. How do you code for Patch?

Answer: The PA was most likely narrowed because of the prior surgery. The narrowing would require a patch for closure. Do not code anything additional.

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**SEQ. #:** 3695

**Long Name:** VS-Pulmonic Transcatheter Valve Replacement

**Short Name:** VSTCVPu

**Definition:** Indicate whether the pulmonic valve replacement was done using a transcatheter valve device.

**Intent/Clarification:**

- Yes
  - No
- -----

**SEQ. #:** 3700

**Long Name:** VS-Pulmonic Implant

**Short Name:** PulmonicImplant

**Definition:** Indicate whether a pulmonic valve or device was implanted.

**Intent/Clarification:**

- Yes
- No

**FAQ August 2017:** When will the updated valve/VAD list be published?

Answer: The STS will not be publishing a Valve/VAD list. It is the responsibility of your vendor to maintain the lists in the drop-downs in your software.

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**SEQ. #:** 3701

**Long Name:** VS-Pulmonic - Type Of Implant

**Short Name:** VSPuTypeImp

**Definition:** Indicate the type of pulmonic implant

**Intent/Clarification:**

- Surgeon Fashioned
  - Commercially Supplied
- 
- 

**SEQ. #:** 3702

**Long Name:** VS-Pulmonic - Surgeon Fashioned Implant Material

**Short Name:** VSPulmpMat

**Definition:** Indicate the material used to fashion the pulmonic implant

**Intent/Clarification:** Unlike conventional valve replacement, measured and crafted to meet specific dimensions of the annulus.

- PTFE (Gore-Tex)
  - Pericardium
  - Other
- 
- 

**SEQ. #:** 3705

**Long Name:** VS-Pulmonic Implant - Type **Short Name:** PulmonicImplantTy

**Definition:** Indicate the type of pulmonic valve or valve device implanted.

**Intent/Clarification:**

- Mechanical valve
- Annuloplasty device
- Bioprosthetic valve
- Transcatheter device
- Homograft
- Other

**November 2017:** Accurate collection of the valve type is necessary for device longitudinal surveillance. This can be determined by the valve model number. If you are unsure check the valve manufacture website.

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**SEQ. #:** 3710

**Long Name:** VS-Pulmonic Proc-Implant Model Number

**Short Name:** VSPulm



**Definition:** Indicate the model number of the prosthesis implanted. The names provided include the manufacturer's model number with "xx" substituting for the device size.

**Intent/Clarification:**

Choose the device type from the device list.

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**SEQ. #: 3715**

**Long Name:** VS-Pulmonic Proc-Imp-Size

**Short Name:** VSPulmSz

**Definition:** Indicate the Pulmonic implant size.

**Intent/Clarification:**

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**SEQ. #: 3720**

**Long Name:** VS-Pulmonic Proc-Imp-Unique Device Identifier **Short Name:**

VSPulmUDI

**Definition:** Indicate the device UDI if available, otherwise leave blank.

**Intent/Clarification:**

This is a unique identifier that will be on each valve. It may not be available immediately. If not available leave blank. Please refer to the FDA web site for detailed explanation of UDI.

[https://www.fda.gov/MedicalDevices/DeviceRegulationandGuidance/UniqueDeviceIdentification/default.htm?utm\\_source=Members%E2%80%90Only+Updates&utm\\_campaign=c7c1e8c870%E2%80%90%20Proposed\\_Rules\\_7\\_5\\_2012&utm\\_medium=email](https://www.fda.gov/MedicalDevices/DeviceRegulationandGuidance/UniqueDeviceIdentification/default.htm?utm_source=Members%E2%80%90Only+Updates&utm_campaign=c7c1e8c870%E2%80%90%20Proposed_Rules_7_5_2012&utm_medium=email)

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**Mechanical Cardiac Assist Devices**

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**SEQ. #: 3725**

**Long Name:** IABP

**Short Name:** IABP

**Definition:** Indicate whether the patient was placed on an Intra-Aortic Balloon Pump (IABP).

**Intent/Clarification:**

IABP is a device inserted into the descending thoracic aorta distal to the left subclavian and proximal to the renal arteries used to increase coronary blood flow and decrease work of the left ventricle. Balloon catheter inflates and deflates rapidly in conjunction with cardiac cycle. Inflation of the balloon partially obstructs the aorta, diverting more blood into coronary arteries. Deflation of the balloon just prior to systole, allows blood to be more easily ejected by the left ventricle. This applies to IABP devices in at the time of surgery, not previously placed and removed devices.

- Yes
- No

---

**SEQ. #: 3730**

**Long Name:** IABP-When Inserted

**Short Name:** IABPWhen

**Definition:** Indicate when the IABP was inserted.

**Intent/Clarification:**

Identify when the IABP was inserted as it relates to the cardiac operation.

- **Preop** refers to the IABP placement in the Cath lab or in the ICU prior to patient entering the operating room. This applies to IABP devices in at the time of surgery, not previously placed and removed devices.
- **Intraop** refers to insertion of the IABP during the cardiac operation (after the patient has entered the operating room and before the patient leaves the operating room).
- **Postop** refers to insertion of the IABP after the patient has left the operating room.

---

**SEQ. #: 3735**

**Long Name:** IABP-Indication

**Short Name:** IABPInd

**Definition:** Indicate the primary reason for inserting the IABP.

**Intent/Clarification:**

The reason for inserting an IABP as it relates to the cardiac operation. Choose one of the following:

- Hemodynamic instability (hypotension/shock)
- Procedural support
- Unstable angina
- Cardiopulmonary Bypass (CPB) weaning failure

- Prophylactic
  - Other
- 
- 

**SEQ. #:** 3745

**Long Name:** Catheter Based Assist Device Used

**Short Name:** CathBasAssist

**Definition:** Indicate whether the patient was placed on a catheter-based assist device (e.g., Impella).

**Intent/Clarification:**

Catheter based assist devices offer short term minimally invasive circulatory support. Catheter Based Assist Devices are only captured in this section and are not included in section L.2 Ventricular Assist Devices. Examples include Impella, Tandem Heart. Do not capture devices inserted and removed prior to the operation.

**FAQ March 2019:** Are NUPULSE (implantable IABP's) to be captured in the adult Cardiac STS database?

Answer: This implantable device is not captured in the database currently and is not captured in INTERMACS.

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**SEQ. #:** 3755

**Long Name:** Catheter Based Assist Type

**Short Name:** CathBasAssistTy

**Definition:** Indicate the type of catheter-based assist device.

**Intent/Clarification:**

- RV (Right Ventricular)
  - LV (Left Ventricular)
  - BiVAD (Biventricular)
- 
- 

**SEQ. #:** 3760

**Long Name:** Catheter Based Assist Device When Inserted

**Short Name:** CathBasAssistWhen

**Definition:** Indicate when the catheter-based assist device was inserted.

**Intent/Clarification:**

Identify when the assist device was inserted as it relates to the cardiac operation.

- **Preop** refers to the assist device placement in the Cath lab or in the ICU prior to patient entering the operating room.

- **Intraop** refers to insertion of the assist device during the cardiac operation (after the patient has entered the operating room and before the patient leaves the operating room).
  - **Postop** refers to insertion of the assist device after the patient has left the operating room.
  - **Non-operative** refers to patients who have a catheter-based assist initiated by a CT surgeon but are not having a CT surgery procedure. These may be for victims of near drowning, influenza, amniotic fluid embolus. Stand-alone procedures are not mandatory to collect, however if your surgeon(s) elects to track these, use this harvest code.
- 
- 

**SEQ. #: 3765**

**Long Name:** Catheter Based Assist Device Indication

**Short Name:** CathBasAssistInd

**Definition:** Indicate the primary reason for inserting the device.

**Intent/Clarification:**

The goal is to identify the reason the device was inserted.

- Hemodynamic Instability
  - Cardiopulmonary Bypass (CPB) weaning failure
  - PCI Failure
  - Procedural support
  - Other
- 
- 

**SEQ. #: 3775**

**Long Name:** Extracorporeal Membrane Oxygenation

**Short Name:** ECMO

**Definition:** Indicate whether the patient was placed on ECMO.

**Intent/Clarification:**

ECMO, which stands for Extracorporeal Membrane Oxygenation, functions as a replacement for a critically ill patient's heart and lungs. It is used to support a patient who is awaiting surgery, or to give vital organs time to recover from heart surgery or disease. It can also be used to rewarm victims of hypothermia or drowning.

ECMO initiation may be done in the OR or at the bedside in the ICU.

- Venous-Venous
- Venous-Arterial
- Venous-venous converted to Venous-arterial
- No (ECMO not initiated)

ECMO: ECMO is to be captured as a status of 'Salvage' in sequence 1975 and as 'Resuscitation – Yes' in sequence 935. ECMO is a supportive modality and not a procedural type. The risk of the patient on ECMO is accounted for when 'Status = salvage' and should be left in the intended procedural category.

**FAQ November 2018:** Patient was placed on VA ECMO intra-op. Post op VA ECMO was removed but VV ECMO was initiated due to continued failure. Which one is coded?  
Answer: Code the VA – it was place intraop probably for failure to wean so this is probably the most important ECMO site.

**FAQ June 2019** Had a patient that was placed on VV ECCO2R. Is this coded as ECMO?  
Answer: Yes

**FAQ Nov 2019** - Currently if ECMO is placed via thoracic catheters (chest opened) at bedside it is considered a return to OR, other cardiac. If ECMO is inserted peripherally it is captured in the timing of ECMO and not captured as a return to OR. Please clarify how we are to capture ECMO?  
Answer - Capture institution of post operative ECMO in Seq 3775 - 3785 and as Seq 6778 a return to OR for any ECMO regardless of where ECMO is performed.

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**SEQ. #: 3780**  
**Long Name:** ECMO When Initiated  
**Short Name:** ECMOWhen  
**Definition:** Indicate when patient was placed on ECMO.

**Intent/Clarification:**

- **Preop** refers to placement in the Cath lab or in the ICU prior to patient entering the operating room.
- **Intraop** refers to insertion during the cardiac operation.
- **Postop** refers to insertion after the patient has left the operating room.
- **Non-Operative** refers to patients who have ECMO initiated by a CT surgeon but are not having a CT surgery procedure. Stand-alone procedures are not mandatory to collect, however if your surgeon(s) elects to track these, use this harvest code.

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**SEQ. #: 3785**  
**Long Name:** ECMO Indication  
**Short Name:** ECMOInd

**Definition:** Indicate clinical indication for placing patient on ECMO.

**Intent/Clarification:**

The intent is to capture the indication for ECMO

- Cardiac Failure
- Respiratory Failure
- Hypothermia (Intended to capture rewarming for hypothermic/drowning victims)
- Rescue/salvage (Intended to capture cath lab or other disasters requiring support)
- Other

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**Ventricular Assist Devices**

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**General Information:** It is required that VADs inserted in conjunction with a CV surgery be captured with the associated procedure.

**SEQ. #:** 3790

**Long Name:** VAD-Patient Admitted With VAD

**Short Name:** PrevVAD

**Definition:** Indicate if at the time of this procedure, the patient has a VAD in place that was inserted during a previous admission or from an outside hospital.

**Intent/Clarification:**

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**SEQ. #:** 3795

**Long Name:** Previous VAD Facility

**Short Name:** PrevVADF

**Definition:** Indicate if the previously implanted assist device was implanted at another facility.

**Intent/Clarification:**

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**SEQ. #:** 3800

**Long Name:** Previous VAD Insertion Date

**Short Name:** PrevVADD

**Definition:** Indicate insertion date of previous VAD.

**Intent/Clarification:**

Required date format: mm/dd/yyyy.

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**SEQ. #:** 3805

**Long Name:** Previous VAD Indication

**Short Name:** PrevVADIn

**Definition:** Specify indication for VAD insertion.

**Intent/Clarification:**

- **Bridge to Transplantation:** Includes those patients who are supported with a VAD until a heart transplant is possible.
  - **Bridge to Recovery:** Includes those patients who are expected to have ventricular recovery. (i.e. Myocarditis patients, viral cardiomyopathies, AMI w/ revascularization, and post-transplant reperfusion injury).
  - **Destination:** Includes those patients where a heart transplant is not an option. The VAD is placed for permanent life sustaining support.
  - **Post Cardiectomy Ventricular Failure:** Includes those postcardiotomy patients who receive a VAD because of failure to separate from the heart-lung machine. Postcardiotomy refers to those patients with the inability to wean from cardiopulmonary bypass secondary to left, right, or biventricular failure.
  - **Device Malfunction:** Includes those patients who are currently VAD supported and are experiencing device failure.
  - **End of (device) Life:** Mechanical device pump has reached functional life expectancy and requires replacement.
  - **Salvage:** Moribund patients unresponsive to medical interventions.
- 
- 

**SEQ. #:** 3810

**Long Name:** Previous VAD Type

**Short Name:** PrevVADTy

**Definition:** Indicate type of VAD previously inserted.

**Intent/Clarification:**

- Right VAD (RVAD) - Right Ventricular Assist Device
  - Left VAD (LVAD) - Left Ventricular Assist Device
  - Biventricular VAD (BiVAD) - Biventricular Assist Device
  - Total Artificial Heart (TAH)
- 
-

**SEQ. #:** 3815

**Long Name:** Previous VAD Device Model Number

**Short Name:** PrevVADDevice

**Definition:** Indicate Previous VAD device.

**Intent/Clarification:**

Choose the device type from the device list.

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**SEQ. #:** 3820

**Long Name:** Previous VAD Unique Device Identifier (UDI)

**Short Name:** PrevVADUDI

**Definition:** Indicate the device UDI if available, otherwise leave blank.

**Intent/Clarification:**

This is a unique identifier that will be on each device. It may not be available immediately. If not available leave blank. Please refer to the FDA web site for detailed explanation of UDI.

[https://www.fda.gov/MedicalDevices/DeviceRegulationandGuidance/UniqueDeviceIdentification/default.htm?utm\\_source=Members%E2%80%90Only+Updates&utm\\_campaign=c7c1e8c870%E2%80%90%20Proposed+Rules+7+5+2012&utm\\_medium=email](https://www.fda.gov/MedicalDevices/DeviceRegulationandGuidance/UniqueDeviceIdentification/default.htm?utm_source=Members%E2%80%90Only+Updates&utm_campaign=c7c1e8c870%E2%80%90%20Proposed+Rules+7+5+2012&utm_medium=email)

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**SEQ. #:** 3825

**Long Name:** Previous VAD Explanted During This Admission **Short Name:**

PrevVADExp

**Definition:** Indicate whether the previously inserted VAD was explanted during this hospitalization.

**Intent/Clarification:**

This is a unique identifier that will be on each VAD. It may not be available immediately. If not available leave blank.

[https://www.fda.gov/MedicalDevices/DeviceRegulationandGuidance/UniqueDeviceIdentification/default.htm?utm\\_source=Members%E2%80%90Only+Updates&utm\\_campaign=c7c1e8c870%E2%80%90%20Proposed+Rules+7+5+2012&utm\\_medium=email](https://www.fda.gov/MedicalDevices/DeviceRegulationandGuidance/UniqueDeviceIdentification/default.htm?utm_source=Members%E2%80%90Only+Updates&utm_campaign=c7c1e8c870%E2%80%90%20Proposed+Rules+7+5+2012&utm_medium=email)

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**SEQ. #:** 3830

**Long Name:** Previous VAD Explanted During This Admission - Reason



**Short Name:** PrevVADExpRsn

**Definition:** Indicate the primary reason the VAD was explanted.

**Intent/Clarification:**

- Yes, not during this procedure
- Yes, during this procedure
- No

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**SEQ. #:** 3835

**Long Name:** Previous VAD Explanted During This Admission - Date

**Short Name:** PrevVADExpDt

**Definition:** Indicate date of explant.

**Intent/Clarification:**

Choose the device type from the device list.

**FAQ July 2018:** The pt. had LVAD implanted in 2015 and no longer needs it. It was "decommissioned" in the cath lab (by surgeon + cardiologist) where they removed the driveline but the pump was left in situ so pt. wouldn't have to undergo major surgery to remove it. Do we need to capture this in adult cardiac database?

Answer: While this is fairly common in Intermacs, this would be included in Intermacs database only. Do not to include in ACSD.

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**SEQ. #:** 3840

**Long Name:** Ventricular Assist Device Implanted During This Hospitalization

**Short Name:** VADImp

**Definition:** Indicate whether a VAD was inserted during this hospitalization.

**Intent/Clarification:**

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**SEQ. #:** 3845

**Long Name:** VAD-Implant Timing

**Short Name:** VADImpTmg

**Definition:** Indicate timing of VAD insertion.

**Intent/Clarification:**

Indicate the timing of insertion:

- Pre-operative (during the same hospitalization but not the same OR trip as the

cardiovascular surgical procedure.

- Stand-alone VAD procedure-this was the only procedure performed.
- In conjunction with the cardiovascular surgical procedure (same trip to the OR)-planned. In conjunction with a CV surgical procedure and planned before surgery, consent in the chart.
- In conjunction with the cardiovascular surgical procedure (same trip to the OR)-unplanned. In conjunction with a CV surgical procedure and not planned before surgery.
- Post-operative (after the surgical procedure during reoperation)

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**SEQ. #:** 3850

**Long Name:** VAD-Indication for this VAD

**Short Name:** VADInd

**Definition:** Indicate the reason for implanting a Ventricular Assist Device (VAD) during this hospitalization.

**Intent/Clarification:**

- **Bridge to Transplantation:** Includes those patients who are supported with a VAD until a heart transplant is possible.
- **Bridge to Recovery:** Includes those patients who are expected to have ventricular recovery. (i.e. Myocarditis patients, viral cardiomyopathies, AMI w/revascularization, post-transplant reperfusion injury).
- **Destination:** Includes those patients where a heart transplant is not an option. The VAD is placed for permanent life sustaining support.
- **Post Cardiectomy Ventricular Failure:** Includes those postcardiotomy patients who receive a VAD because of failure to separate from the heart-lung machine. Postcardiotomy refers to those patients with the inability to wean from cardiopulmonary bypass secondary to left, right, or biventricular failure.
- **Device Malfunction:** Includes those patients who are currently VAD supported and are experiencing device failure.
- **End of (device) Life:** Mechanical device pump has reached functional life expectancy and requires replacement.
- **Salvage:** Moribund patients unresponsive to medical interventions.

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**SEQ. #:** 3855

**Long Name:** VAD-Implant Type

**Short Name:** VImpTy

**Definition:** Indicate the first type of VAD implanted during this hospitalization.

**Intent/Clarification:**

- Right VAD (RVAD) - Right Ventricular Assist Device

- Left VAD (LVAD) - Left Ventricular Assist Device
- Biventricular VAD (BiVAD) - Biventricular Assist Device
- Total Artificial Heart (TAH)

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**SEQ. #:** 3860

**Long Name:** VAD-Device

**Short Name:** VProdTy

**Definition:** Indicate the VAD brand name implanted. Implant defined as physical placement of the VAD.

**Intent/Clarification:**

Choose the device type from the device list.

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**SEQ. #:** 3865

**Long Name:** VAD-Implant Date

**Short Name:** VImpDt

**Definition:** Indicate the date the VAD was implanted.

**Intent/Clarification:**

Required date format: mm/dd/yyyy

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**SEQ. #:** 3870

**Long Name:** VAD-Implant Unique Device Identifier (UDI)

**Short Name:** VImpUDI

**Definition:** Indicate the device UDI if available, otherwise leave blank.

**Intent/Clarification:**

This is a unique identifier that will be on each device. It may not be available immediately. If not available leave blank. Please refer to the FDA web site for detailed explanation of UDI.

[https://www.fda.gov/MedicalDevices/DeviceRegulationandGuidance/UniqueDeviceIdentification/default.htm?utm\\_source=Members%E2%80%90Only+Updates&utm\\_campaign=c7c1e8c870%E2%80%90%20Proposed\\_Rules\\_7\\_5\\_2012&utm\\_medium=email](https://www.fda.gov/MedicalDevices/DeviceRegulationandGuidance/UniqueDeviceIdentification/default.htm?utm_source=Members%E2%80%90Only+Updates&utm_campaign=c7c1e8c870%E2%80%90%20Proposed_Rules_7_5_2012&utm_medium=email)

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**SEQ. #:** 3875

**Long Name:** VAD-Explant

**Short Name:** VExp

**Definition:** Indicate if the VAD was explanted. Explant is defined as physical removal of the VAD.

**Intent/Clarification:**

- Yes, not during this procedure
- Yes, during this procedure
- No

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**SEQ. #: 3880**

**Long Name:** VAD-Explant Reason

**Short Name:** VExpRsn

**Definition:** Indicate the reason the VAD was explanted.

**Intent/Clarification:**

- **Cardiac Transplant** -VAD was explanted for cardiac transplant.
- **Recovery** -VAD was removed after cardiac recovery.
- **Device Transfer** -VAD was explanted in order to implant another assist device.
- **Device-Related Infection** - An infection within the pump pocket, driveline, VAD endocarditis, or other infection requiring explantation of the VAD. The body of the VAD has an active infection requiring removal to eliminate the infection. "Device-related infections" are defined as positive culture in the presence of leukocytosis, and/or fever requiring medical or surgical intervention.
- **Device Malfunction** -The VAD pump itself is not functioning properly causing hemodynamic compromise, and/or requiring immediate intervention or VAD replacement.
- **End of (device) Life** -Mechanical device pump has reached functional life expectancy and requires replacement.

**Note: Code "No" if the patient expires with the VAD in place; the VAD was not explanted.**

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**SEQ. #: 3885**

**Long Name:** VAD-Explant Date

**Short Name:** VExpDt

**Definition:** Indicate the date the VAD was explanted.

**Intent/Clarification:**

Required date format: mm/dd/yyyy

**SEQ. #:** 3895

**Long Name:** VAD-Implant #2

**Short Name:** VImp2

**Definition:** Indicate whether a second ventricular assist device was implanted.

**Intent/Clarification:**

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**SEQ. #:** 3900

**Long Name:** VAD-Implant Timing #2

**Short Name:** VADImpTmg2

**Definition:** Indicate timing of VAD #2 insertion.

**Intent/Clarification:**

- Pre-operative (during the same hospitalization but not the same OR trip as the cardiovascular surgical procedure.
  - Stand-alone VAD procedure-this was the only procedure performed.
  - In conjunction with the cardiovascular surgical procedure (same trip to the OR)-planned. In conjunction with a CV surgical procedure and planned before surgery, consent in the chart.
  - In conjunction with the cardiovascular surgical procedure (same trip to the OR)-unplanned. In conjunction with a CV surgical procedure and not planned before surgery.
  - Post-operative (after the surgical procedure during reoperation).
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**SEQ. #:** 3905

**Long Name:** VAD-Indication for this VAD #2

**Short Name:** VADInd2

**Definition:** Indicate the reason for implanting a Ventricular Assist Device (VAD) #2 during this hospitalization.

**Intent/Clarification:**

- **Bridge to Transplantation:** Includes those patients who are supported with a VAD until a heart transplant is possible.
- **Bridge to Recovery:** Includes those patients who are expected to have ventricular recovery. (i.e. Myocarditis patients, viral cardiomyopathies, AMI w/revascularization, post-transplant reperfusion injury).
- **Destination:** Includes those patients where a heart transplant is not an option. The VAD is placed for permanent life sustaining support.
- **Post Cardiectomy Ventricular Failure:** Includes those postcardiotomy patients who receive a VAD because of failure to separate from the heart-lung machine.

Postcardiotomy refers to those patients with the inability to wean from cardiopulmonary bypass secondary to left, right, or biventricular failure.

- **Device Malfunction:** Includes those patients who are currently VAD supported and are experiencing device failure.
- **End of (device) Life:** Mechanical device pump has reached functional life expectancy and requires replacement.
- **Salvage:** Moribund patients unresponsive to medical interventions.

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**SEQ. #:** 3910

**Long Name:** VAD-Implant Type #2

**Short Name:** VImpTy2

**Definition:** Indicate the second type of ventricular assist device implanted.

**Intent/Clarification:**

- Right VAD (RVAD) - Right Ventricular Assist Device
- Left VAD (LVAD) - Left Ventricular Assist Device
- Biventricular VAD (BiVAD) - Biventricular Assist Device
- Total Artificial Heart (TAH)

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**SEQ. #:** 3915

**Long Name:** VAD-Device #2

**Short Name:** VProdTy2

**Definition:** Indicate the specific product #2 implanted. Implant defined as physical placement of the VAD.

**Intent/Clarification:**

Choose the device type from the device list.

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**SEQ. #:** 3920

**Long Name:** VAD-Implant Date #2

**Short Name:** VImpDt2

**Definition:** Indicate the date the VAD #2 was implanted.

**Intent/Clarification:**

Required date format: mm/dd/yyyy

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**SEQ. #:** 3925

**Long Name:** VAD-Implant Unique Device Identifier (UDI) #2

**Short Name:** VImpUDI2

**Definition:** Indicate the device UDI if available, otherwise leave blank.

**Intent/Clarification:**

This is a unique identifier that will be on each device. It may not be available immediately. If not available leave blank. Please refer to the FDA web site for detailed explanation of UDI.

[https://www.fda.gov/MedicalDevices/DeviceRegulationandGuidance/UniqueDeviceIdentification/default.htm?utm\\_source=Members%E2%80%90Only+Updates&utm\\_campaign=c7c1e8c870%E2%80%90%20Proposed\\_Rules\\_7\\_5\\_2012&utm\\_medium=email](https://www.fda.gov/MedicalDevices/DeviceRegulationandGuidance/UniqueDeviceIdentification/default.htm?utm_source=Members%E2%80%90Only+Updates&utm_campaign=c7c1e8c870%E2%80%90%20Proposed_Rules_7_5_2012&utm_medium=email)

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**SEQ. #: 3930**

**Long Name:** VAD-Explant #2

**Short Name:** VExp2

**Definition:** Indicate if the VAD #2 was explanted. Explant is defined as physical removal of the VAD.

**Intent/Clarification:**

- Yes, not during this procedure
- Yes, during this procedure
- No

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**SEQ. #: 3935**

**Long Name:** VAD-Explant Reason #2

**Short Name:** VExpRsn2

**Definition:** Indicate the reason the VAD #2 was explanted.

**Intent/Clarification:**

- **Cardiac Transplant** -VAD was explanted for cardiac transplant.
- **Recovery** -VAD was removed after cardiac recovery.
- **Device Transfer** -VAD was explanted in order to implant another assist device.
- **Device-Related Infection** - An infection within the pump pocket, driveline, VAD endocarditis, or other infection requiring explantation of the VAD. The body of the VAD has an active infection requiring removal to eliminate the infection. "Device-related infections" are defined as positive culture in the presence of leukocytosis, and/or fever requiring medical or surgical intervention.
- **Device Malfunction** -The VAD pump itself is not functioning properly causing hemodynamic compromise, and/or requiring immediate intervention or VAD replacement.

- **End of (device) Life** -Mechanical device pump has reached functional life expectancy and requires replacement.

**Note: Code “No” if the patient expires with the VAD in place; the VAD was not explanted.**

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**SEQ. #: 3940**

**Long Name:** VAD-Explant Date #2

**Short Name:** VExpDt2

**Definition:** Indicate the date the VAD #2 was explanted.

**Intent/Clarification:**

Required date format: mm/dd/yyyy

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**SEQ. #: 3950**

**Long Name:** VAD-Implant #3

**Short Name:** VImp3

**Definition:** Indicate whether a third ventricular assist device was implanted.

**Intent/Clarification:**

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**SEQ. #: 3955**

**Long Name:** VAD-Implant Timing #3

**Short Name:** VADImpTmg3

**Definition:** Indicate timing of VAD #3 insertion.

**Intent/Clarification:**

- Pre-operative (during the same hospitalization but not the same OR trip as the cardiovascular surgical procedure.
  - Stand-alone VAD procedure-this was the only procedure performed.
  - In conjunction with the cardiovascular surgical procedure (same trip to the OR)-planned. In conjunction with a CV surgical procedure and planned before surgery, consent in the chart.
  - In conjunction with the cardiovascular surgical procedure (same trip to the OR)-unplanned. In conjunction with a CV surgical procedure and not planned before surgery.
  - Post-operative (after the surgical procedure during reoperation).
- -----



**SEQ. #:** 3960

**Long Name:** VAD-Indication for this VAD #3

**Short Name:** VADInd3

**Definition:** Indicate the reason for implanting a Ventricular Assist Device (VAD)#3 during this hospitalization.

**Intent/Clarification:**

- **Bridge to Transplantation:** Includes those patients who are supported with a VAD until a heart transplant is possible.
- **Bridge to Recovery:** Includes those patients who are expected to have ventricular recovery. (i.e. Myocarditis patients, viral cardiomyopathies, AMI w/revascularization, post-transplant reperfusion injury).
- **Destination:** Includes those patients where a heart transplant is not an option. The VAD is placed for permanent life sustaining support.
- **Post Cardiectomy Ventricular Failure:** Includes those postcardiotomy patients who receive a VAD because of failure to separate from the heart-lung machine. Postcardiotomy refers to those patients with the inability to wean from cardiopulmonary bypass secondary to left, right, or biventricular failure.
- **Device Malfunction:** Includes those patients who are currently VAD supported and are experiencing device failure.
- **End of (device) Life:** Mechanical device pump has reached functional life expectancy and requires replacement.
- **Salvage:** Moribund patients unresponsive to medical interventions.

---

**SEQ. #:** 3965

**Long Name:** VAD-Implant Type #3

**Short Name:** VImpTy3

**Definition:** Indicate the third type of ventricular assist device implanted.

**Intent/Clarification:**

- Right VAD (RVAD) - Right Ventricular Assist Device
- Left VAD (LVAD) - Left Ventricular Assist Device
- Biventricular VAD (BiVAD) - Biventricular Assist Device
- Total Artificial Heart (TAH)

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**SEQ. #:** 3970

**Long Name:** VAD-Device #3

**Short Name:** VProdTy3

**Definition:** Indicate the specific product #3 implanted. Implant defined as physical placement of the VAD.

**Intent/Clarification:**

Choose the device type from the device list.

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**SEQ. #:** 3975

**Long Name:** VAD-Implant Date #3 **Short Name:** VImpDt3

**Definition:** Indicate the date the VAD #3 was implanted.

**Intent/Clarification:**

Required date format: mm/dd/yyyy

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**SEQ. #:** 3980

**Long Name:** VAD-Implant Unique Device Identifier (UDI) #3 **Short Name:** VImpUDI3

**Definition:** Indicate the device UDI if available, otherwise leave blank.

**Intent/Clarification:**

This is a unique identifier that will be on each device. It may not be available immediately. If not available leave blank. Please refer to the FDA web site for detailed explanation of UDI.

[https://www.fda.gov/MedicalDevices/DeviceRegulationandGuidance/UniqueDeviceIdentification/default.htm?utm\\_source=Members%E2%80%90Only+Updates&utm\\_campaign=c7c1e8c870%E2%80%90Proposed\\_Rules\\_7\\_5\\_2012&utm\\_medium=email](https://www.fda.gov/MedicalDevices/DeviceRegulationandGuidance/UniqueDeviceIdentification/default.htm?utm_source=Members%E2%80%90Only+Updates&utm_campaign=c7c1e8c870%E2%80%90Proposed_Rules_7_5_2012&utm_medium=email)

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**SEQ. #:** 3985

**Long Name:** VAD-Explant #3

**Short Name:** VExp3

**Definition:** Indicate if the VAD #3 was explanted. Explant is defined as physical removal of the VAD.

**Intent/Clarification:**

- Yes, not during this procedure
  - Yes, during this procedure
  - No
- -----

**SEQ. #:** 3990

**Long Name:** VAD-Explant Reason #3

**Short Name:** VExpRsn3

**Definition:** Indicate the reason the VAD #3 was explanted.

**Intent/Clarification:**

- **Cardiac Transplant** -VAD was explanted for cardiac transplant.
- **Recovery** -VAD was removed after cardiac recovery.
- **Device Transfer** -VAD was explanted in order to implant another assist device.
- **Device-Related Infection** - An infection within the pump pocket, driveline, VAD endocarditis, or other infection requiring explantation of the VAD. The body of the VAD has an active infection requiring removal to eliminate the infection. "Device-related infections" are defined as positive culture in the presence of leukocytosis, and/or fever requiring medical or surgical intervention.
- **Device Malfunction** -The VAD pump itself is not functioning properly causing hemodynamic compromise, and/or requiring immediate intervention or VAD replacement.
- **End of (device) Life** -Mechanical device pump has reached functional life expectancy and requires replacement.

**Note: Code "No" if the patient expires with the VAD in place; the VAD was not explanted.**

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**SEQ. #:** 3995

**Long Name:** VAD-Explant Date #3

**Short Name:** VExpDt3

**Definition:** Indicate the date the VAD #3 was explanted.

**Intent/Clarification:**

Required date format: mm/dd/yyyy

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**Other Cardiac Procedures**

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**SEQ. #:** 4030

**Long Name:** Other Card-ASD Repair - PFO Type

**Short Name:** OCarASDPFO

**Definition:** Indicate whether a patent foramen ovale (PFO) was repaired.

**Intent/Clarification:**

Normally, the opening between the left and right atria closes before birth, but if it does not, the child is born with a hole in this area called patent foramen ovale (PFO). Other types of atrial septal defects occur, most commonly, secundum atrial septal defects, which account for about 70 percent of all ASDs and occur in the middle of the atrial septum.

**PFO (Patent Foramen Ovale):** Small interatrial communication in the region of the foramen ovale characterized by no deficiency of the septum primum and a normal limbus with no deficiency of the septum secundum.

FAQ September 2018: Should endovascular PFO closures performed by CV surgery with Cardiology assist be captured in the ACSD?

Answer: This is not a surgical procedure and is not included in the adult cardiac surgery database.

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**SEQ. #: 4035**

**Long Name:** Other Card-ASD Repair - Secundum Or Sinus Venosus

**Short Name:** OCarASDSec

**Definition:** Indicate whether a secundum or sinus venosus ASD was repaired.

**Intent/Clarification:**

Atrial Septal Defect (ASD) is closed with/without patch. During normal development of the heart, there is an opening in the atrial septum. ASDs in the upper part of the atrial septum (called sinus venosus) where the superior vena cava and right atrium join and can involve the right upper pulmonary vein.

- **Secundum:** An ASD confined to the region of the fossa ovalis; it's most common etiology is a deficiency of the septum primum, but deficiency of the limbus or septum secundum may also contribute.
- **Sinus Venosus:** An ASD with a vena cava or pulmonary vein (or veins) that overrides the atrial septum or the superior interatrial fold (septum secundum) producing an interatrial or anomalous veno-atrial communication. Although the term sinus venosus atrial septal defect is commonly used; the lesion is more properly termed a sinus venosus communication because, while it functions as an interatrial communication, this lesion is not a defect of the true atrial septum.

When the Mitral Valve procedure is performed via a trans-septal incision the closure of the septum should not be coded as an ASD repair.

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**SEQ. #: 4040**

**Long Name:** Other Card-AFib Intracardiac Lesions

**Short Name:** OCarAFibIntraLes

**Definition:** Indicate whether intracardiac lesions were created for the purpose of AFib ablation.

**Intent/Clarification:**

Lesions created inside the heart (i.e. Maze procedures; lesions to mitral annulus; etc). Intracardiac procedures carry a higher risk.

**FAQ Nov 2019** - How can I determine primarily intracardiac vs primarily epicardial lesions? Is there a specific number of lesion sets that qualifies the ablation as intracardiac?

Answer - If the procedure includes any intracardiac lesions then code this as intracardiac. Once the heart is open and an intracardiac lesion set is performed, then it is an intracardiac ablation no matter how many lesion sets are performed.

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**SEQ. #: 4045**

**Long Name:** Other Card-AFib Epicardial Lesions

**Short Name:** OCarAFibEpLes

**Definition:** Indicate whether epicardial lesions were created for the purpose of AFib ablation.

**Intent/Clarification:**

Lesions created on the outside surface of the heart (i.e. pulmonary vein isolation with or without connection to the left atrial appendage).

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**SEQ. #: 4050**

**Long Name:** Other Card-Atrial Appendage Procedure

**Short Name:** OCarAAProc

**Definition:** Indicate whether atrial appendage ligation/exclusion was performed.

**Intent/Clarification:** This should also be coded in the AFib section if done in conjunction with creation of lesions for AFib ablation

- RAA – Right Atrial Appendage
- LAA – Left Atrial Appendage
- Both – Right and Left Atrial Appendage
- No

**FAQ September 2017:** If a patient has an extensive atrial fibrillation procedure and an LAA clipping how would we include the atrial ligation/exclusion method and device?

Answer: Multiple sequence numbers will be required to code the ligation/exclusion and device.

First capture sequence numbers 2140 and 2145 to open section M and M-1.

Then capture the atrial appendage procedure in sequence 4050; then ligation/exclusion method in sequence 4051 and Model in sequence number 4052 as well as the UDI, if available, in sequence 4053.

Code the extensive ablation procedure in section M-1 as described by your physician including lesion number 7 to complete the LAA.

**FAQ December 2017:** The patient had a thoracoscopy for clipping of the LAA performed by the CV surgeon as a primary procedure. No other procedures were performed. Should this case be included in the adult cardiac surgery database?

Answer: Yes, these cases should be included.

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**SEQ. #:** 4051

**Long Name:** Other Card-Atrial Appendage Ligation/Exclusion Method

**Short Name:** OCarAAMeth

**Definition:** Indicate the method used to ligate/exclude the atrial appendage

**Intent/Clarification:**

- Intra-atrial over-sewing
- Epicardial suture ligation
- Amputation with over-sewing
- Stapler (cutting)
- Stapler (noncutting)
- Epicardially applied occlusion device

**FAQ September 2017:** If a patient has an extensive atrial fibrillation procedure and an LAA clipping how would we include the atrial ligation/exclusion method and device?

Answer: Multiple sequence numbers will be required to code the ligation/exclusion and device.

First capture sequence numbers 2140 and 2145 to open section M and M-1.

Then capture the atrial appendage procedure in sequence 4050; then ligation/exclusion method in sequence 4051 and Model in sequence number 4052 as well as the UDI, if available, in sequence 4053.

Code the extensive ablation procedure in section M-1 as described by your physician including lesion number 7 to complete the LAA.

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**SEQ. #:** 4052

**Long Name:** Other Card-Atrial Appendage Ligation/Exclusion Model

**Short Name:** OCarAAModel

**Definition:** Indicate the epicardial occlusion device model used

**Intent/Clarification:**

Capture commercially produced exclusion devices:

- AtriClip
- Lariat
- Other

**FAQ September 2017:** If a patient has an extensive atrial fibrillation procedure and an LAA clipping how would we include the atrial ligation/exclusion method and device?

Answer: Multiple sequence numbers will be required to code the ligation/exclusion and device.

First capture sequence numbers 2140 and 2145 to open section M and M-1.

Then capture the atrial appendage procedure in sequence 4050; then ligation/exclusion method in sequence 4051 and Model in sequence number 4052 as well as the UDI, if available, in sequence 4053.

Code the extensive ablation procedure in section M-1 as described by your physician including lesion number 7 to complete the LAA.

**FAQ September 2017:** Is there supposed to be a drop-down list of atrial ligation devices in this field? Answer: No, there is no drop-down list.

**Update July 2019** Sites are to manually enter in the device model used. Sites should only type in AtriClip, Lariat, or Other. **DO NOT PUT OTHER INFORMATION IN THIS FIELD.** This will be addressed in the upgrade.

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**SEQ. #:** 4053

**Long Name:** Other Card-Atrial Appendage Ligation/Exclusion UDI

**Short Name:** OCarAAUDI

**Definition:** Indicate the Unique Device Identifier of the epicardial occlusion device

**Intent/Clarification:**

This is a unique identifier that will be on each device. It may not be available immediately. If not available leave blank. Please refer to the FDA web site for detailed explanation of UDI.

[https://www.fda.gov/MedicalDevices/DeviceRegulationandGuidance/UniqueDeviceIdentification/default.htm?utm\\_source=Members%E2%80%90Only+Updates&utm\\_campaign=c7c1e8c870%E2%80%90%20Proposed\\_Rules\\_7\\_5\\_2012&utm\\_medium=email](https://www.fda.gov/MedicalDevices/DeviceRegulationandGuidance/UniqueDeviceIdentification/default.htm?utm_source=Members%E2%80%90Only+Updates&utm_campaign=c7c1e8c870%E2%80%90%20Proposed_Rules_7_5_2012&utm_medium=email)

**FAQ September 2017:** If a patient has an extensive atrial fibrillation procedure and an LAA clipping how would we include the atrial ligation/exclusion method and device?

Answer: Multiple sequence numbers will be required to code the ligation/exclusion and device.

First capture sequence numbers 2140 and 2145 to open section M and M-1.

Then capture the atrial appendage procedure in sequence 4050; then ligation/exclusion method in sequence 4051 and Model in sequence number 4052 as well as the UDI, if available, in sequence 4053.

Code the extensive ablation procedure in section M-1 as described by your physician including lesion number 7 to complete the LAA.

---

**SEQ. #:** 4055

**Long Name:** Other Card-Arrhythmia Device Surgery

**Short Name:** OCarACD

**Definition:** Indicate which arrhythmia correction device was surgically placed in conjunction with the primary surgical procedure.

**Intent/Clarification:**

- **Permanent Pacemaker:** An internal electronic generator that controls the heart rate
- **Permanent Pacemaker with Cardiac Resynchronization Technique (CRT-P):** An internal permanent pacemaker that uses biventricular electrical stimulation to synchronize ventricular contraction
- **Implantable Cardioverter Defibrillator (ICD):** An internal device that defibrillates the heart
- **ICD with CRT (CRT-D):** An internal ICD that uses biventricular electrical stimulation to synchronize ventricular contraction
- **Implantable recorder**
- **None**

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**SEQ. #: 4060**

**Long Name:** Other Card-Lead Insertion

**Short Name:** OCarLeadInsert

**Definition:** Indicate whether lead(s) insertion was performed. Do not capture temporary lead placement.

**Intent/Clarification:**

These include leads for pacemakers, implantable defibrillators or combination devices.

- Yes
- No

Do not capture leads placed for temporary pacemakers.

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**SEQ. #: 4065**

**Long Name:** Other Card-Arrhythmia Correction Surgery-Lead Extraction

**Short Name:** OCarACDLE

**Definition:** Indicate whether procedure included lead extraction for a device intended to treat cardiac arrhythmias.

**Intent/Clarification:**

- Yes, planned
- Yes, planned due to surgical complication
- Yes, unplanned due to unsuspected disease or anatomy
- No



**FAQ September 2018:** How does a LVAD explant, ICD explant, and lead extraction get coded as part of a heart transplant?

Answer: LVAD explant gets coded. ICD implant and lead extraction are part of the previous heart and should not be captured.

**FAQ May 2019:** Patient with endocarditis underwent redo tricuspid valve replacement with explantation of Micra leadless ventricular pacemaker. Does this get abstracted?

Answer: Code as lead extraction, even though there are not traditional leads it still connects to the myocardium. STS will consider adding this to the next upgrade.

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**SEQ. #: 4070**

**Long Name:** Other Card-Congenital

**Short Name:** OCarCong

**Definition:** Indicate whether the patient had a congenital defect repair either in conjunction with, or as the primary surgical procedure. Do not include bicuspid Aortic valve or PFO here as these are captured elsewhere.

**Intent/Clarification:**

Indicate if a congenital procedure was performed.

- Yes
- No

**FAQ October 2019 -** Could you advise how unroofing of an anomalous coronary artery should be captured?

Answer - If only anomalous vessel CABG, then this should be captured as a congenital procedure, not ISOCAB. If in conjunction with other atherosclerotic vessels, then it is an ISOCAB only. If bypass is performed for an anomalous, kinked or damaged vessel, this vessel is counted as one diseased or abnormal vessel in Seq 1170.

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**SEQ. #: 4075**

**Long Name:** Other Card-LVA

**Short Name:** OCarLVA

**Definition:** Indicate whether the patient had a Left Ventricular Aneurysm Repair either in conjunction with, or as the primary surgical procedure.

**Intent/Clarification:**

Indicate if a LV aneurysm repair was performed.

- Yes
- No

**FAQ August 2018:** The patient was taken to the HYBRID suite for repair of LV aneurysm using a transcatheter approach using the Revivent Transcatheter Ventricular Enhancement System #4. The CV surgeon worked in conjunction with the cardiologist. The surgical approach was mini-thoracotomy. Should this be included in the ACSD?

Answer: Do not include this catheter based procedure.

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**SEQ. #:** 4080

**Long Name:** Other Card-Myocardial Stem Cell Therapy

**Short Name:** OCarStemCell

**Definition:** Indicate whether myocardial stem cell procedure was performed.

**Intent/Clarification:**

Indicate if regenerative stem cell therapy used for cardiac repair was performed.

- Yes
  - No
- 
- 

**SEQ. #:** 4085

**Long Name:** Other Card-Pulmonary Thromboemblectomy **Short Name:**

OCPulThromDis

**Definition:** Indicate whether the patient had surgery for pulmonary thromboembolic disease.

**Intent/Clarification:**

Indicate if an embolectomy and endarterectomy was performed.

- Yes, Acute
  - Yes, Chronic
- 
- 

**SEQ. #:** 4090

**Long Name:** Other Card-Subaortic Stenosis Resection

**Short Name:** OCarSubaStenRes

**Definition:** Indicate whether resection of subaortic stenosis was performed.

**Intent/Clarification:**

Subaortic stenosis (or subvalvular aortic stenosis) is a narrowing of the area below the aortic valve. This may vary from a thin layer of extra tissue to large bundles of heart muscle. **Update Dec 2019 - Subaortic stenosis (or subvalvular aortic stenosis) is a narrowing of the area below the aortic valve. This may vary from a thin layer of extra tissue to large bundles of heart muscle. This procedure is sometimes called septal myomectomy.**

This can be performed alone or in conjunction with an aortic valve procedure.

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**SEQ. #:** 4100

**Long Name:** Other Card-Subaortic Stenosis Resection Type

**Short Name:** OCarSubaStenResTy

**Definition:** Indicate the type of subaortic stenosis.

**Intent/Clarification:**

- Muscle
  - Ring
  - Membrane
  - Web
  - Not reported
- 
- 

**SEQ. #:** 4105

**Long Name:** Other Card-Surgical Ventricular Restoration

**Short Name:** OCarSVR

**Definition:** Indicate whether the patient had a Surgical Ventricular Restoration either in conjunction with, or as the primary surgical procedure. Surgical Ventricular Restorations are procedures that restore the geometry of the heart after an anterior MI. They include the Dor procedure or the SAVER procedure. This SVR procedure is distinct from an anterior left ventricular aneurysmectomy (LVA) and from a Batista procedure (left ventricular volume reduction procedure).

**Intent/Clarification:** Used to treat congestive heart failure caused by myocardial infarction (heart attack). The goal of the SVR is to restore the heart to a more normal size and shape, therefore improving function.

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**SEQ. #:** 4110

**Long Name:** Other Card-Transmyocardial Laser Revascularization

**Short Name:** OCarLasr

**Definition:** Indicate whether the patient underwent the creation of multiple channels in left ventricular myocardium with a laser fiber either in conjunction with, or as the primary surgical procedure.

**Intent/Clarification:**

A laser is used to make small transmural perforations in the heart. These channels allow for blood to enter the myocardium directly from the ventricle chamber or through communications with the native coronary circulations. Used primarily in areas of the heart where bypass grafting is not feasible, to improve collateralization of circulation.

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**SEQ. #:** 4115

**Long Name:** Other Card-Tumor

**Short Name:** OCTumor

**Definition:** Indicate whether the patient had resection of an intracardiac tumor.

**Intent/Clarification:**

Cardiac tumors are abnormal growths that can occur in the heart or on the heart valves. The tumors can be malignant or benign. Tumors can begin in the heart or in another part of the body. Tumors cause problems because of their size and location and can embolize:

- Myxoma
- Fibroelastoma
- Hypernephroma
- Sarcoma
- Other
- No

---

**SEQ. #:** 4120

**Long Name:** Other Card-Card Tx

**Short Name:** OCarCrTx

**Definition:** Indicate whether the patient had a Heterotopic or Orthotopic heart transplantation either in conjunction with, or as the primary surgical procedure.

**Intent/Clarification:**

- **Heterotopic Transplant** – The transplant recipient’s heart is not explanted. A donor’s heart is implanted as a “piggy back” to the patient’s native heart. The donor heart acts as an assist pump for the diseased heart. The patient now has two hearts.
- **Orthotopic** – The patient’s diseased native heart is excised and replaced with a donor heart. The recipient heart is removed completely except for small cuff of right and left atrium.

**FAQ January 2020** – My patient has a VAD inserted and then later in the same episode of care has a heart transplant. Which procedure is considered the index procedure in this EOC? **Answer** - The transplant is the index procedure in this EOC. The mechanical assist device should be coded as previous CV interventions.

---

**SEQ. #:** 4125

**Long Name:** Other Card-Cardiac Trauma

**Short Name:** OCarTrma

**Definition:** Indicate whether the patient had a surgical procedure for an injury due to Cardiac Trauma either in conjunction with, or as the primary surgical procedure.

**Intent/Clarification:** Injury to the heart such as a gunshot wound, stab wound, car accident or other trauma induced injury.

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**SEQ. #:** 4130

**Long Name:** Other Card-VSD

**Short Name:** OCarVSD

**Definition:** Indicate whether the patient had a Ventricular Septal Defect Repair either in conjunction with, or as the primary surgical procedure.

**Intent/Clarification:** (VSD) Defect of the ventricular septum is closed with/without patch.

- Yes, congenital
  - Yes, acquired
  - No
- 
- 

**SEQ. #:** 4135

**Long Name:** Other Card-Other

**Short Name:** OCarOthr

**Definition:** Indicate whether the patient had another cardiac procedure performed either in conjunction with, or as the primary surgical procedure that is not included within this section.

**Intent/Clarification:** The following is a guideline for assessing which procedures to capture for Other Card - Other:

Code procedures that have a high likelihood of negatively impacting a patient's outcome (survival, quality of life, ability to recover) and/or prolong the patient's length of stay. You do not want to code this if minor procedures were done in conjunction with a CABG or a Valve and lose the patient in the analysis of isolated procedures!

Due to the difficulty of publishing a complete list of procedures to include and not to include in this field, the STS encourages sites to submit the procedure in question as a clinical question. Whether to include or not to include a procedure will be dealt with on a procedure by procedure basis.

**FAQ October 2018:** Per my surgeon, are these included in the STS case list (previous version 2.7 they were not, but just double checking)? I have 2 patients with cardiac tamponade: subxiphoid window with pericardial fluid drainage and pericardial biopsy. The first patient also had anterior mediastinal mass biopsy that turned out to be non-Hodgkin lymphoma. The second patient had pericardial fluid d/t scleroderma.

Answer: No, isolated pericardial windows are not included in the adult cardiac surgery database, they can be included in the General Thoracic Database.

**FAQ January 2019:** Should a pulmonary artery aneurysm repair be entered into adult cardiac database. No other procedure was performed. The pericardium was opened and the pt. was done pump assist.

Answer: This case may be entered as Other-Cardiac.

**FAQ February 2019:** During cannulation for a MVR, the superior vena cava was perforated. When coming off bypass the posterior wal of the SVC continued to bleed and ultimately required reconstruction with a 22 mm dacron graft. Should this be considered an 'other cardiac procedure'?

Answer: Code other cardiac procedure, due to surgical complication.

**FAQ May 2019–** The patient went to the OR for redo MV replacement & left atrium clot evacuation. Would I capture the LA clot removal under 'other cardiac' procedure?

Answer: You do not need to capture the clot removal since the left atrium is already open.

**FAQ June 2019:** Patient had MVR for endocarditis. There was erosion of the abscess into the left ventricle posteriorly causing atrioventricular disruption measuring about 2 x 3 cm. This area was repaired with a pericardial patch. Would this be coded under "other cardiac procedures", seq # 4135?

Answer: No, it is inherent to the MVR for endocarditis.

**FAQ June 2019:** Patient had a CABG with a pericardiectomy performed during the procedure. Do I code the pericardiectomy as other cardiac procedure?

Answer: Pericardiectomy is coded as other cardiac procedure only when the pericardium is removed from the left phrenic nerve to the right phrenic nerve.

A partial resection is not included as other cardiac procedure.

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### Atrial Fibrillation Procedures

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**SEQ. #:** 4191

**Long Name:** AFib Lesion Location

**Short Name:** OCarAFibLesLoc

**Definition:** Indicate the location of the majority of lesions created to treat atrial fibrillation.

**Intent/Clarification:**

Indicate whether the lesions created were primarily epicardial or primarily intracardiac.

**FAQ December 2017:** Should subxiphoid pericardial window or subxiphoid thoracoscopic epicardial ablation, a convergent procedure, be coded as other as other cardiac?

Answer: Yes, code this as a primarily epicardial procedure.

**FAQ May 2019:** How are we capturing epicardial botox injections for treatment of atrial fibrillation if done in conjunction with another database procedure?

Answer: Code this as yes to Other Cardiac, Afib seq 2145 and in the a-fib section code primarily epicardial for lesion location at seq 4191 but leave method blank.

**FAQ May 2019:** Is the surgical component of the Convergent MAZE procedure that is completed by a Cardiothoracic Surgeon, required data entry for STS?

Answer: Yes, this can be captured in the Afib section as primarily epicardial.

---

**SEQ. #:** 4200

**Long Name:** Atrial Fibrillation Surgical Procedure-Method of Lesion Creation - Radio Frequency

**Short Name:** OCarAFibMethRad

**Definition:** Indicate whether the method used to create the lesion(s) for the AFib ablation procedure included radio frequency.

**Intent/Clarification:** Radiofrequency energy uses an alternating current resulting in thermal injury to disrupt atrial fibrillation pathways. These probes can be applied to either endocardial or epicardial heart surfaces to create transmural linear lesions that block atrial conduction.

**FAQ December 2017:** Should subxiphoid pericardial window or subxiphoid thoracoscopic epicardial ablation in a convergent procedure, be coded as radiofrequency?

Answer: Yes, code radiofrequency energy for the lesions created in this convergent procedure.

---

**SEQ. #:** 4205

**Long Name:** Atrial Fibrillation Surgical Procedure-Method of Lesion Creation - Radio Frequency - Bipolar

**Short Name:** OCarAFibMethRadBi

**Definition:** Indicate whether the radiofrequency method used to create the lesion(s) for the AFib ablation was bipolar.

**Intent/Clarification:** If radiofrequency was used, was it bipolar.

**FAQ December 2017:** Should subxiphoid pericardial window or subxiphoid thoracoscopic epicardial ablation, a convergent procedure, be coded as radiofrequency-bipolar?

Answer: Yes, code the lesions created using bipolar radiofrequency energy in this convergent procedure.

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**SEQ. #:** 4210

**Long Name:** Atrial Fibrillation Surgical Procedure-Method of Lesion Creation - Cut-And-Sew

**Short Name:** OCarAFibMethCAS

**Definition:** Indicate whether the method used to create the lesion(s) for the AFib ablation procedure included cut-and-sew.

**Intent/Clarification:** A technically difficult procedure where the lesions are created using a scalpel creating surgical incisions in the atrium and sewing them to create scars that inhibit re-entry rhythms.

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**SEQ. #:** 4215

**Long Name:** Atrial Fibrillation Surgical Procedure-Method of Lesion Creation - Cryo

**Short Name:** OCarAFibMethCryo

**Definition:** Indicate whether the method used to create the lesion(s) for the A-Fib ablation procedure included cryoablation.

**Intent/Clarification:** Cryoablation used to restore normal heart rhythm. It freezes the heart tissue that triggers an irregular heartbeat. Cryoablation is performed with a nitrous oxide cooled probe that, when applied to atrial tissue, produces transmural lesions that block atrial conduction.

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**SEQ. #:** 4240

**Long Name:** Lesions Documented

**Short Name:** OCarLesDoc

**Definition:** Indicate whether the lesions created during the atrial fibrillation surgery are documented.

**Intent/Clarification:** Indicate whether the lesions were documented in the medical record.

- Yes – there is documentation of lesion lines
- No – documentation is not available for the lesion lines used in the ablation procedure.



**FAQ December 2017:** Should subxiphoid pericardial window or subxiphoid thoracoscopic epicardial ablation lesions in a convergent procedure be coded?  
Answer: Yes, code the lesions created according to the documentation by the surgeon.

---

**SEQ. #:** 4250

**Long Name:** AFib Lesion Location - ~~Bilateral~~ Pulmonary Vein Isolation

**Short Name:** AFibLes1

**Definition:** Indicate whether the AFib lesion was pulmonary vein isolation.

**Intent/Clarification:**

Pulmonary vein ablation is a treatment for atrial fibrillation in which both the left and right pulmonary veins are ablated.

Refer to the pictures and the corresponding numbers graph on the data collection form.

**FAQ August 2019** - How should a unilateral pulmonary vein isolation be captured? Previously, in version 2.81, this same field was named "Pulmonary Vein Isolation." The word bilateral was added to the field in v2.9.

Answer – Code both unilateral pulmonary vein isolation and bilateral pulmonary vein isolation in Seq 4520.

---

**SEQ. #:** 4255

**Long Name:** AFib Lesion Location - Box Lesion Only

**Short Name:** AFibLes2

**Definition:** Indicate whether the AFib lesion was a box lesion

**Intent/Clarification:**

Box is a treatment for atrial fibrillation was performed.

Refer to the pictures and the corresponding numbers graph on the data collection form.

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**SEQ. #:** 4260

**Long Name:** AFib Lesion Location - Inferior Pulmonary Vein Connecting Lesion

**Short Name:** AFibLes3a

**Definition:** Indicate whether the AFib lesion was an Inferior Pulmonary Vein Connecting Lesion

**Intent/Clarification:**

Refer to the pictures and the corresponding numbers graph on the data collection form.

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**SEQ. #:** 4265

**Long Name:** AFib Lesion Location - Superior Pulmonary Vein Connecting Lesion

**Short Name:** AFibLes3b

**Definition:** Indicate whether the AFib lesion was a Superior Pulmonary Vein Connecting Lesion

**Intent/Clarification:**

Refer to the pictures and the corresponding numbers graph on the data collection form.

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**SEQ. #:** 4270

**Long Name:** AFib Lesion Location - Posterior Mitral Annular Line Lesion

**Short Name:** AFibLes4

**Definition:** Indicate whether the AFib lesion was a Posterior Mitral Annular Line

**Intent/Clarification:** Indicate whether the A-fib lesion was a Pulmonary Vein Connecting Lesion to Posterior Mitral Annulus lesion.

Refer to the pictures and the corresponding numbers graph on the data collection form.

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**SEQ. #:** 4275

**Long Name:** AFib Lesion Location - Pulmonary Vein Connecting Lesion to Anterior Mitral Annulus

**Short Name:** AFibLes5

**Definition:** Indicate whether the AFib lesion was a - Pulmonary Vein Connecting Lesion to Anterior Mitral Annulus lesion.

**Intent/Clarification:** Indicate whether the afib lesion was a - Pulmonary Vein Connecting Lesion to Anterior Mitral Annulus lesion.

Refer to the pictures and the corresponding numbers graph on the data collection form.

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**SEQ. #:** 4280

**Long Name:** AFib Lesion Location - Mitral Valve Annular Lesion

**Short Name:** AFibLes6

**Definition:** Indicate whether the AFib lesion was a Mitral Valve Cryo Lesion

**Intent/Clarification:**

Refer to the pictures and the corresponding numbers graph on the data collection form.

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**SEQ. #: 4285**

**Long Name:** AFib Lesion Location - LAA Ligation/Removal/Obliteration

**Short Name:** AFibLes7

**Definition:** Indicate whether the left Atrial Appendage was ligated or removed

**Intent/Clarification:**

Refer to the pictures and the corresponding numbers graph on the data collection form.

**FAQ September 2017:** If a patient has an extensive atrial fibrillation procedure and an LAA clipping how would we include the atrial ligation/exclusion method and device?

Answer: Multiple sequence numbers will be required to code the ligation/exclusion and device.

First capture sequence numbers 2140 and 2145 to open section M and M-1.

Then capture the atrial appendage procedure in sequence 4050; then ligation/exclusion method in sequence 4051 and Model in sequence number 4052 as well as the UDI, if available, in sequence 4053.

Code the extensive ablation procedure in section M-1 as described by your physician including lesion number 7 to complete the LAA.

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**SEQ. #: 4290**

**Long Name:** AFib Lesion Location - Pulmonary Vein to LAA Lesion

**Short Name:** AFibLes8

**Definition:** Indicate whether the AFib lesion was a Pulmonary Vein to LAA lesion

**Intent/Clarification:**

Refer to the pictures and the corresponding numbers graph on the data collection form.

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**SEQ. #: 4295**

**Long Name:** AFib Lesion Location - Intercaval Line to Tricuspid Annulus ('T' lesion)

**Short Name:** AFibLes9

**Definition:** Indicate whether the AFib lesion was an Intercaval Line to Tricuspid Annulus ('T' lesion)

**Intent/Clarification:**

Refer to the pictures and the corresponding numbers graph on the data collection form.

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**SEQ. #: 4300**

**Long Name:** AFib Lesion Location - Tricuspid Cryo Lesion, Medial (10)

**Short Name:** AFibLes10

**Definition:** Indicate whether the AFib lesion was a Tricuspid Cryo Lesion, Medial (10)

**Intent/Clarification:**

Refer to the pictures and the corresponding numbers graph on the data collection form.

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**SEQ. #:** 4305

**Long Name:** AFib Lesion Location - Intercaval Line (SVC and IVC)

**Short Name:** AFibLes11

**Definition:** Indicate whether the AFib lesion was an Intercaval Line

**Intent/Clarification:**

Refer to the pictures and the corresponding numbers graph on the data collection form.

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**SEQ. #:** 4310

**Long Name:** AFib Lesion Location - Tricuspid Annular Line to RAA

**Short Name:** AFibLes12

**Definition:** Indicate whether the AFib lesion was a Tricuspid Annular Line to RAA lesion

**Intent/Clarification:**

Refer to the pictures and the corresponding numbers graph on the data collection form.

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**SEQ. #:** 4315

**Long Name:** AFib Lesion Location - Tricuspid Cryo Lesion (13)

**Short Name:** AFibLes13

**Definition:** Indicate whether the Afib lesion was a Tricuspid Cryo Lesion (13)

**Intent/Clarification:**

Refer to the pictures and the corresponding numbers graph on the data collection form.

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**SEQ. #:** 4320

**Long Name:** AFib Lesion Location - RAA Ligation/Removal/Obliteration

**Short Name:** AFibLes14

**Definition:** Indicate whether the Right Atrial Appendage was ligated or removed

**Intent/Clarification:**

Refer to the pictures and the corresponding numbers graph on the data collection form.

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**SEQ. #:** 4325

**Long Name:** AFib Lesion Location - RAA Lateral Wall (Short)

**Short Name:** AFibLes15a

**Definition:** Indicate whether the Afib lesion was a RAA Lateral Wall (Short) lesion

**Intent/Clarification:**

Refer to the pictures and the corresponding numbers graph on the data collection form.

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**SEQ. #:** 4330

**Long Name:** AFib Lesion Location - RAA Lateral Wall to 'T' Lesion

**Short Name:** AFibLes15b

**Definition:** Indicate whether the Afib lesion was a RAA Lateral Wall to 'T' Lesion

**Intent/Clarification:**

Refer to the pictures and the corresponding numbers graph on the data collection form.

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**SEQ. #:** 4336

**Long Name:** AFib Lesion Location - Coronary Sinus Lesion

**Short Name:** AFitLesCSL

**Definition:** Indicate whether the Afib lesion was a Coronary Sinus Lesion.

**Intent/Clarification:**

Refer to the pictures and the corresponding numbers graph on the data collection form.

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## **Aorta and Aortic Root Procedures**

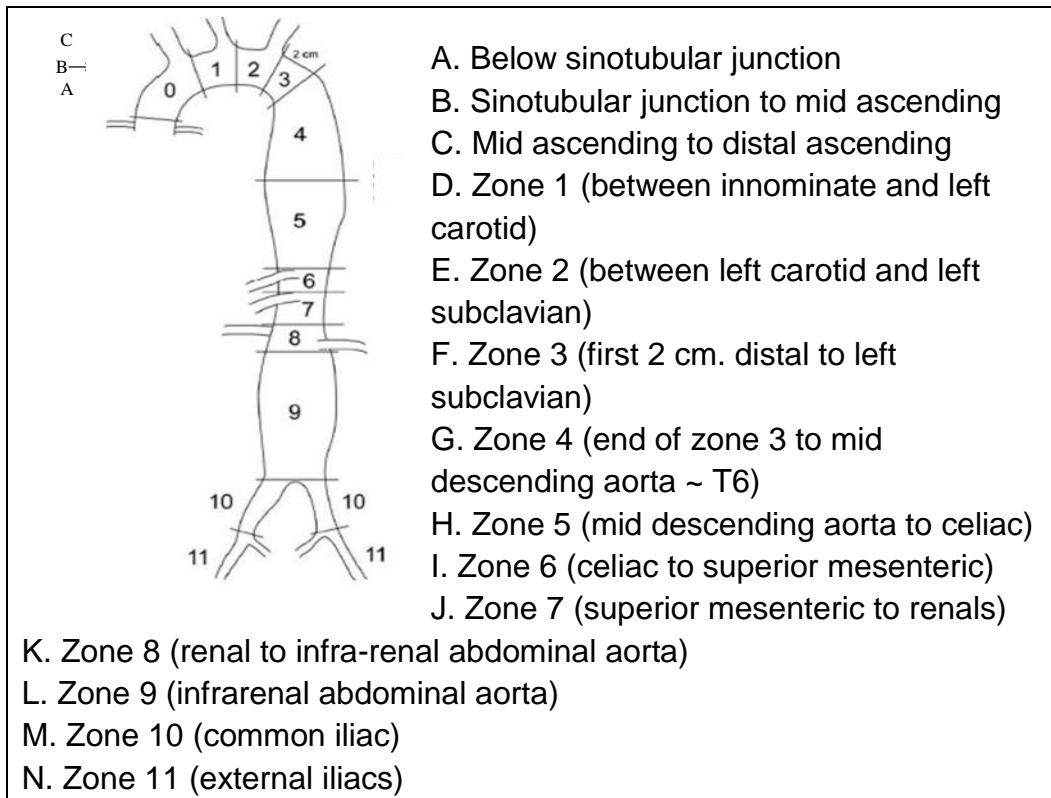
### **GENERAL INFORMATION:**

**FAQ November 2018:** Proximal aorta punch holes: Can you tell me how/where I would abstract this 'procedure' done to the aorta during a CABG: "Intraaortic debridement of loose atheromatous debris at the aortic proximal to punch holes used to sew the proximal anastomosis to the aorta."

Answer: Code nothing in the aorta fields.

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Please use the following diagram for reference in section M2



**FAQ August 2019** - Use the following table only as a guide to the anatomical location of zones. **Please verify with your surgeon the proximal and distal locations using zones, do not assume.** For example, do not assume that the procedure was performed in Zone 2 if you surgeon states it was an “Arch” procedure. You will to verify with your surgeon if it was Zone 1, 2, or 3.

Root/Ascending	Zone 0 (A) - Below STJ Zone 0 (B) - STJ – Midascending Zone 0 (C) - Midascending – distal ascending
Arch	Zone 1 Zone 2 Zone 3
Descending	Zone 4 Zone 5
Thoracoabdominal	Zone 6 Zone 7 Zone 8 Zone 9 Zone 10 Zone 11
Dissections: Stanford Type A	Starts in zone 0 – verify with your surgeon what section of zone 0
Dissections: Stanford Type B	Starts in zone 3 - verify with your surgeon for the proximal and distal zones
Dissections: Non-A or non-B	Starts in zone 1 or zone 2 and is less common – verify with your surgeon for the proximal and distal zones

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**SEQ. #:** 4500

**Long Name:** Family History of Disease Of The Aorta

**Short Name:** FamHistAorta

**Definition:** Indicate whether there is a family history of disease of the aorta

**Intent/Clarification:**

For the purposes of this database (and published guidelines), family history means any alive or dead first-degree relative ('FDR': sibling, parent, child) with either a thoracic aortic aneurysm (include 'dilated' or 'enlarged' aorta), or aortic dissection/rupture. Abdominal aneurysms should be excluded, as they are typically not familial in nature. Thoracic location is sometimes described as 'near' or 'above' the heart, or 'in the chest'. For this database, in the case of family history of an unexplained death of a first-degree family member select 'unknown'. Patients with a family history of thoracic aneurysm and especially with a history of dissection/rupture who require aortic surgery may have more fragile aortic tissue or require a more extensive procedure, which could affect procedural outcomes.

Excludes isolated abdominal aortic aneurysm/dissections.

**FAQ July 2019** – How are half-siblings captured?

Answer- Half-siblings are considered second-degree relatives and will not be coded as family history of first degree / direct blood relatives.

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**SEQ. #:** 4505

**Long Name:** Genetic History

**Short Name:** PatGenHist

**Definition:** Indicate the genetic history of the patient

**Intent/Clarification:**

Indicate whether or not the patient has a history of any of the listed (well-known) genetically triggered thoracic aortic conditions.

- Non-specified' Familial Aneurysm: patients in whom another family member(s) had thoracic aneurysm but no specific gene mutation was identified when tested.
- Other: patient has been told they have a relevant gene mutation related to thoracic aneurysm but did not match any of the choices listed above; these will include known pathogenic mutations familiar to specialists but not associated with a 'named' syndrome like the other choices.
- None: patient has undergone genetic testing with no positive findings.
- Unknown: no known syndromic/genetic diagnosis, but has not specifically been

tested for pathogenic mutations.

The diagnosis has been made and is documented in the medical record by clinical or genetic testing.

**FAQ Sept 2019** - I have a patient had a pre-operative diagnosis of Bicuspid aortic valve and Ascending Aortic Aneurysm. Once patient was in the OR the surgeon notes that the aortic valve was unicuspid. What do I choose for Seq 1646 Aortic Etiology and Seq 4505 Patient's genetic history?

Answer – Code bicuspid in both Seq 1646 and Seq 4505 as these are along the same pathophysiologic process and are variants of valve morphology. This will be addressed in the upgrade.

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**SEQ. #: 4510**

**Long Name:** Prior Aortic Intervention

**Short Name:** PriorAorta

**Definition:** Indicate whether the patient had prior aortic intervention

**Intent/Clarification:**

Includes both open surgical and/or endovascular (stent) intervention of any part of the aorta.

---

**SEQ. #: 4520**

**Long Name:** Prior Aortic Intervention - Previous Repair - Root

**Short Name:** PriorRepRoot

**Definition:** Indicate whether the prior intervention involved the aortic root

**Intent/Clarification:**

The aortic root is the 'sinus' segment of the aorta that immediately exits the heart, and contains the aortic valve and coronary artery origins. It ends anatomically at the sinotubular junction where the tubular ascending aorta begins.

The region of the aorta designated in zone 0 from the below the sinotubular junction.

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**SEQ. #: 4521**

**Long Name:** Prior Aortic Intervention - Previous Repair Type - Root

**Short Name:** PriorRepTyRoot

**Definition:** Indicate the type of prior root repair

**Intent/Clarification:**



In this location, surgery would either name aortic root replacement as well as designations of 'mechanical' or biological', also called "Bentall" procedures and also includes 'valve-sparing' root procedures ("David", "Re-implantation", "Yacoub", "Remodeling", "Florida Sleeve).

The only applicable choice for root repair type is open.

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**SEQ. #:** 4522

**Long Name:** Prior Aortic Intervention - Repair Failure - Root

**Short Name:** PriorFailRoot

**Definition:** Indicate whether there is failure of the prior root repair

**Intent/Clarification:**

Either a secondary 'false' pseudo-aneurysm has developed in or near the previous aortic root repair, or a portion of preserved aortic root tissue (typically the coronary origins or 'buttons') has become aneurysmal.

There are four areas of prior root failure. These include proximal, distal and right coronary and left coronary button suture line issues.

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**SEQ. #:** 4523

**Long Name:** Prior Aortic Intervention - Disease Progression - Root

**Short Name:** PriorProgRoot

**Definition:** Indicate whether there is progression of disease following the prior root repair

**Intent/Clarification:**

If only a portion of the aortic root (typically the non-coronary sinus) was replaced during the initial root procedure, aneurysmal progression of the left and or right coronary sinuses may have occurred. Also, development of coronary button aneurysms would be considered progression of disease.

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**SEQ. #:** 4525

**Long Name:** Prior Aortic Intervention - Previous Repair - Ascending

**Short Name:** PriorRepAsc

**Definition:** Indicate whether the prior intervention involved the ascending aorta

**Intent/Clarification:**

The ascending aorta is also called the tubular ascending segment and is the portion above the aortic root ('sinus segment') beginning at the sinotubular junction and extending to the first aortic arch vessel (innominate or brachiocephalic artery).

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**SEQ. #:** 4526

**Long Name:** Prior Aortic Intervention - Previous Repair Type - Ascending

**Short Name:** PriorRepTyAsc

**Definition:** Indicate the type of prior ascending aorta repair

**Intent/Clarification:**

Most simply classified as ascending aortic replacement with a prosthetic graft, but also includes ascending aortic resection (removal of the aneurysm with end-to-end proximal and distal aortic connection), aortoplasty (reduction of the diameter of the ascending aorta with sutures or by removing a longitudinal segment).

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**SEQ. #:** 4527

**Long Name:** Prior Aortic Intervention - Repair Failure - Ascending

**Short Name:** PriorFailAsc

**Definition:** Indicate whether there is failure of the prior ascending repair

**Intent/Clarification:**

A situation where there has been a previous replacement or aortoplasty of the (tubular) ascending aortic segment in which the patient has manifested a pseudo-aneurysm and/or further aortic expansion, contained rupture of the proximal or distal suture line.

The region of the aorta designated in zone 0 from the sinotubular junction to distal ascending aorta.

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**SEQ. #:** 4528

**Long Name:** Prior Aortic Intervention - Disease Progression - Ascending

**Short Name:** PriorProgAsc

**Definition:** Indicate whether there is progression of disease following the prior ascending aorta repair/

**Intent/Clarification:**

A situation could arise where the ascending aorta was previously replaced with a tube graft, but a small segment of the ascending aorta (usually the ascending to proximal arch transition) was not removed, and has subsequently become aneurysmal, now requiring intervention. Another scenario is if an ascending (reduction) aortoplasty was

employed as the previous repair, and this segment has become aneurysmal to an extent requiring intervention currently.

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**SEQ. #:** 4530

**Long Name:** Prior Aortic Intervention - Previous Repair - Arch

**Short Name:** PriorRepArch

**Definition:** Indicate whether the prior intervention involved the aortic arch

**Intent/Clarification:**

The aortic arch is the segment of aorta beyond the tubular ascending segment, and begins at the level of the first branching vessel of the aorta (typically the innominate or brachiocephalic artery), and terminating just after the last branch vessel of the aortic arch (left subclavian artery), before transitioning to the descending thoracic aorta; specifically zones 1, 2 and 3.

The region of the aorta designated in zones 1, 2, & 3 from the distal ascending to the proximal descending thoracic aorta.

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**SEQ. #:** 4531

**Long Name:** Prior Aortic Intervention - Previous Repair Type - Arch

**Short Name:** PriorRepTyArch

**Definition:** Indicate the type of prior arch repair

**Intent/Clarification:**

Open arch repairs may include 'hemi-arch' repairs, where branch arteries are not re-implanted or bypassed, and extent of arch replacement with a graft includes a significant portion of the lesser curve (non-branched portion) of the aortic arch, as well as 'total' arch replacement (all branch vessels re-implanted or bypassed in addition to graft replacement of the aorta), or 'partial' arch replacement (one or more, but not all arch vessels re-implanted or replaced in addition to graft replacement of a portion the aortic arch). Additionally, 'hybrid' repairs may combine surgical bypasses to one or more arch vessels with endograft (stent) repair of the aortic arch, and total endovascular arch replacement (rare) includes endovascular perfusion of arch vessels using special techniques.

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**SEQ. #:** 4532

**Long Name:** Prior Aortic Intervention - Repair Failure - Arch

**Short Name:** PriorFailArch

**Definition:** Indicate whether there is failure of the prior arch repair

**Intent/Clarification:**

Relates to pseudo-aneurysms that have formed as part of arch repair, or failure of an endograft to 'seal' with an endoleak leading to further aortic expansion. Could also indicated a bypassed or re-implanted arch vessel failure that requires a later re-intervention.

An **endoleak** is defined as persistent blood flow in the aneurysm sac through and around the endovascular seal and is the most common complication after endovascular aneurysm repair.

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**SEQ. #: 4533**

**Long Name:** Prior Aortic Intervention - Disease Progression - Arch

**Short Name:** PriorProgArch

**Definition:** Indicate whether there is progression of disease following the prior arch repair

**Intent/Clarification:** Cases of partial arch replacement or hemi-arch aortic replacement where the residual aortic arch has become aneurysmal to an extent requiring re-intervention, or a re-implanted branch vessel has become aneurysmal requiring intervention.

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**SEQ. #: 4535**

**Long Name:** Prior Aortic Intervention - Previous Repair - Descending

**Short Name:** PriorRepDesc

**Definition:** Indicate whether the prior intervention involved the descending aorta

**Intent/Clarification:**

The descending thoracic aorta begins after the aortic arch (beyond the left subclavian artery) and extends to the level of the aortic hiatus at the diaphragm.

The region of the aorta designated in zones 4 & 5 from the distal arch to the celiac arteries.

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**SEQ. #: 4536**

**Long Name:** Prior Aortic Intervention - Previous Repair Type - Descending

**Short Name:** PriorRepTyDesc

**Definition:** Indicate the type of prior descending aorta repair

**Intent/Clarification:**

The descending thoracic aorta can be replaced with a tube graft (open surgical) or using endovascular (stent) repair. Hybrid repairs include the use of an 'elephant trunk' extension of an aortic arch repair and secondary open surgical or endograft connection to the elephant trunk extension.

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**SEQ. #:** 4537

**Long Name:** Prior Aortic Intervention - Repair Failure - Descending

**Short Name:** PriorFailDesc

**Definition:** Indicate whether there is failure of the prior descending repair

**Intent/Clarification:**

Formation of pseudo-aneurysm or failure of an endograft repair to 'seal' or an endoleak causing aneurysm expansion at the site of previous treatment.

An **endoleak** is defined as persistent blood flow in the aneurysm sac through and around the endovascular seal and is the most common complication after endovascular aneurysm repair.

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**SEQ. #:** 4538

**Long Name:** Prior Aortic Intervention - Disease Progression - Descending

**Short Name:** PriorProgDesc

**Definition:** Indicate whether there is progression of disease following the prior descending aorta repair

**Intent/Clarification:**

A situation where a segment of the descending thoracic aorta was previously replaced and an adjacent non-replaced segment has expanded to an extent requiring a new intervention. Also, a pre-emptive elephant trunk extension was created at the time of a previous arch repair, and the descending thoracic aorta has become large enough to complete treatment.

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**SEQ. #:** 4540

**Long Name:** Prior Aortic Intervention - Previous Repair - Suprarenal Abdominal

**Short Name:** PriorRepSupraAb

**Definition:** Indicate whether the prior intervention involved the suprarenal abdominal aorta

**Intent/Clarification:**

The segment of aorta beginning at the level of the diaphragm and ending just below the renal artery branches. This segment includes major branches to the abdominal organs,

including the celiac and superior mesenteric artery, but not the inferior mesenteric artery.

The region of the aorta designated in zone 6 & 7 from the celiac to the renal arteries.

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**SEQ. #:** 4541

**Long Name:** Prior Aortic Intervention - Previous Repair Type - Suprarenal Abdominal

**Short Name:** PriorRepTySupraAb

**Definition:** Indicate the type of prior suprarenal abdominal aorta repair

**Intent/Clarification:**

Similar to the aortic arch, when this segment is replaced either with open surgery or with endovascular (stent) grafting, its major vessels require either re-implantation or bypass.

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**SEQ. #:** 4542

**Long Name:** Prior Aortic Intervention - Repair Failure - Suprarenal Abdominal

**Short Name:** PriorFailSupraAb

**Definition:** Indicate whether there is failure of the prior suprarenal abdominal repair

**Intent/Clarification:**

This includes pseudo-aneurysms as well as failure of endograft 'seal' or endoleak causing continued expansion of the aorta requiring another intervention. Additionally, stenosis or occlusion of a bypassed or re-implanted visceral vessel indicates a repair failure that could mandate a re-intervention.

An **endoleak** is defined as persistent blood flow in the aneurysm sac through and around the endovascular seal and is the most common complication after endovascular aneurysm repair.

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**SEQ. #:** 4543

**Long Name:** Prior Aortic Intervention - Disease Progression - Suprarenal Abdominal

**Short Name:** PriorProgSupraAb

**Definition:** Indicate whether there is progression of disease following the prior suprarenal abdominal aorta repair

**Intent/Clarification:**

If a portion of the supra-renal aorta was not replaced during the initial surgery (most typically proximally, near the diaphragm, during open surgery), aneurysm progression in this location could occur, requiring another intervention. Aneurysm formation of the

proximal portions of the visceral vessels themselves could also occur (more likely in genetic aneurysm syndromes) and require re-intervention as well.

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**SEQ. #:** 4545

**Long Name:** Prior Aortic Intervention - Previous Repair - Infrarenal Abdominal

**Short Name:** PriorRepInfraAb

**Definition:** Indicate whether the prior intervention involved the infrarenal abdominal aorta

**Intent/Clarification:**

This is the segment of aorta below the renal arteries, and terminating just before the bifurcation of the aorta into the common iliac arteries.

The region of the aorta designated in zone 9 the infrarenal abdominal aorta.

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**SEQ. #:** 4546

**Long Name:** Prior Aortic Intervention - Previous Repair Type - Infrarenal Abdominal

**Short Name:** PriorRepTyInfraAb

**Definition:** Indicate the type of prior infrarenal abdominal aorta repair

**Intent/Clarification:**

The infra-renal aorta can be replaced either with open surgery or endovascular (stent) graft repair. The latter usually involves from the kidneys and branching graft into the common iliac arteries.

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**SEQ. #:** 4547

**Long Name:** Prior Aortic Intervention - Repair Failure - Infrarenal Abdominal

**Short Name:** PriorFaillInfraAb

**Definition:** Indicate whether there is failure of the prior infrarenal abdominal repair

**Intent/Clarification:**

This includes pseudo-aneurysms as well as failure of endograft 'seal' or endoleak causing continued expansion of the aorta requiring another intervention.

An **endoleak** is defined as persistent blood flow in the aneurysm sac through and around the endovascular seal and is the most common complication after endovascular aneurysm repair.

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**SEQ. #:** 4548

**Long Name:** Prior Aortic Intervention - Disease Progression - Infrarenal Abdominal

**Short Name:** PriorProgInfraAb

**Definition:** Indicate whether there is progression of disease following the prior infrarenal abdominal aorta repair

**Intent/Clarification:**

A situation where a segment of infra-renal aorta was left behind or un-treated during a previous procedure and has now become aneurysmal to an extent requiring re-intervention.

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**SEQ. #:** 4620

**Long Name:** Endoleak

**Short Name:** Endoleak

**Definition:** Indicate whether endoleak is present

**Intent/Clarification:**

An endoleak is defined as the presence of blood leaking through or around an endograft into the aneurysm sac resulting in perfusion and persistent pressurization of the aneurysm sac, it is the most common complication after endovascular aneurysm repair. In the case of an aortic dissection, an endoleak refers to persistent false lumen perfusion. The intent is to identify the efficacy of the procedure with the optimal therapy resulting in the absence of any endoleak.

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**SEQ. #:** 4625

**Long Name:** Endoleak - Type I - Leak At Graft Attachment Site

**Short Name:** EndoleakTypeI

**Definition:** Indicate whether endoleak is type I

**Intent/Clarification:**

The intent is to identify the presence of a Type I endoleak. A Type I endoleak is defined as leakage of blood around a graft at the proximal or distal seal zones. This results due to a gap between the aortic wall and the endograft at either the proximal or distal seal zone.

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**SEQ. #:** 4630

**Long Name:** Endoleak - Type I - Location **Short Name:** EndoleakTyILoc

**Definition:** Indicate the location of the type I endoleak



**Intent/Clarification:**

The intent is to identify the location of the Type I endoleak. A Type Ia endoleak is defined as a leak occurring at the proximal seal zone. A Type Ib endoleak is defined as a leak occurring at the distal seal zone. A Type Ic endoleak is defined as a non-occluded iliac artery in patients with an aorto-uni-iliac device with a patent femoral-femoral bypass.

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**SEQ. #: 4635****Long Name:** Endoleak - Type II - Aneurysm Sac Filling Via Branch Vessel**Short Name:** EndoleakTypeII**Definition:** Indicate whether endoleak is type II**Intent/Clarification:**

The intent is to identify the presence of a Type II endoleak. A Type II endoleak is defined as retrograde filling of the aneurysm sac or false lumen in the case of dissection by aortic branch vessels (e.g. left subclavian artery, intercostal arteries, etc.).

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**SEQ. #: 4640****Long Name:** Endoleak - Type II - Number Of Vessels**Short Name:** EndoleakVessNum**Definition:** Indicate the number of vessels involved in the type II endoleak**Intent/Clarification:**

The intent is to identify the number of vessels providing retrograde flow into the aneurysm sac or false lumen. A Type IIa endoleak is defined as one branch vessel with retrograde flow causing an endoleak. A Type IIb endoleak is defined as more than one branch vessel with retrograde flow causing an endoleak.

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**SEQ. #: 4645****Long Name:** Endoleak - Type III - Leak Through Defect In Graft**Short Name:** EndoleakTypeIII**Definition:** Indicate whether endoleak is type III**Intent/Clarification:**

The intent is to identify the presence of a Type III endoleak. A Type III endoleak is defined as leakage of blood into the aneurysm sac, or false lumen in the case of dissection, due to either a gap between separate endograft components, or a defect in the fabric of the graft secondary to graft strut fracture or erosion.

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**SEQ. #:** 4650

**Long Name:** Endoleak - Type III - Graft Defect Type

**Short Name:** EndoleakType

**Definition:** Indicate the graft defect type

**Intent/Clarification:**

The intent is to identify which type of Type III endograft exists. A Type IIIa defect (junctional separation of modular components) occurs when an endoleak occurs secondary to junctional separation of overlapping endografts. A Type IIIb defect (endograft fracture or holes) occurs when an endoleak occurs secondary to a perforation in the fabric of an endograft secondary to graft strut fracture or erosion.

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**SEQ. #:** 4655

**Long Name:** Endoleak - Type IV - Leak Through Graft Fabric - Porosity

**Short Name:** EndoleakTypeIV

**Definition:** Indicate whether endoleak is type IV

**Intent/Clarification:**

The intent is to identify the presence of a Type IV endoleak. A Type IV endoleak is defined as the presence of an endoleak secondary to graft porosity. All other types of endoleaks must be definitively ruled out prior to selecting this diagnosis.

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**SEQ. #:** 4660

**Long Name:** Endoleak - Type V - Endotension-Expansion Aneurysm Sac Without Leak

**Short Name:** EndoleakTypeV

**Definition:** Indicate whether endoleak is type V

**Intent/Clarification:**

The intent is to identify the presence of a Type V endoleak. A Type V endoleak, also known as endotension, is defined as persistent aneurysm expansion in the absence of a confirmed endoleak.

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**SEQ. #:** 4665

**Long Name:** Aorta Infection

**Short Name:** Infection

**Definition:** Indicate whether infection is present

**Intent/Clarification:**

The intent is to establish the presence of a primary aortic infection (either native aorta or prosthetic graft). This can be prospectively established preoperatively with diagnostic cultures (i.e. perigraft fluid or phlegmon aspiration) or other imaging such (tagged WBC scan or characteristic MRI or CT changes). The final diagnosis should depend on surgeon report, intraoperative cultures and pathologic data.

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**SEQ. #:** 4670

**Long Name:** Aorta Infection Type **Short Name:** InfecType

**Definition:** Indicate the type of aortic infection

**Intent/Clarification:**

Intent is to establish the type of an infection within the aorta including the sinus of Valsalva and the aortic valve. Infection may involve native tissues or prosthetic graft or prosthetic valve material. Multiples infection types might be described as involving more than one type, i.e. Graft and native aorta.

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**SEQ. #:** 4675

**Long Name:** Aorta Trauma **Short Name:** Trauma

**Definition:** Indicate whether there was aortic trauma

**Intent/Clarification:**

Aortic trauma will include blunt trauma (i.e. blunt aortic injury in motor vehicle accident), penetrating trauma (i.e. gun shot, stabbing, etc.), and iatrogenic trauma (i.e. endovascular catheter induced perforation or dissection). Do not include surgical complications; may include catheter trauma.

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**SEQ. #:** 4680

**Long Name:** Trauma Location - Root

**Short Name:** TraumacRoot

**Definition:** Indicate whether the aortic trauma involved the root

**Intent/Clarification:**

Includes the sinus of Valsalva, aortic valve leaflets and aortoventricular junction.

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**SEQ. #:** 4685

**Long Name:** Trauma Location - Ascending

**Short Name:** TraumaAsc

**Definition:** Indicate whether the aortic trauma involved the ascending aorta

**Intent/Clarification:**

Sinotubular junction to the innominate artery

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**SEQ. #:** 4690

**Long Name:** Trauma Location - Arch

**Short Name:** TraumaArch

**Definition:** Indicate whether the aortic trauma involved the arch

**Intent/Clarification:**

Proximal aspect of the innominate artery to the distal aspect of the left subclavian artery/aortic isthmus

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**SEQ. #:** 4695

**Long Name:** Trauma Location - Descending

**Short Name:** TraumaDesc

**Definition:** Indicate whether the aortic trauma involved the descending aorta

**Intent/Clarification:**

Aorta distal to the left subclavian to the diaphragmatic hiatus

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**SEQ. #:** 4700

**Long Name:** Trauma Location - Thoracoabdominal

**Short Name:** TraumaThorac

**Definition:** Indicate whether the aortic trauma involved the thoracoabdominal aorta

**Intent/Clarification:**

Location of trauma includes parts of the descending thoracic aorta and abdominal aorta.

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**SEQ. #:** 4705

**Long Name:** Trauma Location - Abdominal

**Short Name:** TraumaAbdom

**Definition:** Indicate whether the aortic trauma involved the abdominal aorta

**Intent/Clarification:**

Location of trauma includes parts of the descending thoracic aorta and abdominal aorta.  
Trauma isolated to infradiaphragmatic abdominal aorta

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**SEQ. #:** 4710

**Long Name:** Aorta Presentation

**Short Name:** Presentation

**Definition:** Indicate the clinical presentation

**Intent/Clarification:**

This is intended to define the presenting symptoms that lead to the diagnosis and operative intervention and might include: Pain, CHF, Cardiac Arrest, Syncope, Stroke, limb numbness, Paralysis, Fatigue, Infection, Weakness, Hoarseness (vocal cord dysfunction). However, some patients may be asymptomatic.

There is no specific hierarchy and the primary presentation should be indicated by the surgeon.

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**SEQ. #:** 4715

**Long Name:** Aorta Primary indication **Short Name:** PrimIndic

**Definition:** Indicate the primary indication for intervention

**Intent/Clarification:**

The intent is to identify the condition/diagnosis/pathology for which surgery is being conducted and may include: Aneurysm, Dissection, Valvular Dysfunction, Obstruction, Intramural Hematoma, Infection, Stenosis, and Coarctation.

**Intramural hematoma** is when there is blood in the wall of the aorta but no dissection flap is visualized.

**Aortic coarctation** is a narrowing of the aorta and usually a congenital issue

There is no specific hierarchy and the primary presentation should be indicated by the surgeon.

**FAQ October 2017:** How should the primary indication be coded for the patient with a penetrating ulcer of the descending aorta?

Answer: Code aneurysm.

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**SEQ. #: 4720**

**Long Name:** Aneurysm - Etiology

**Short Name:** AnEtiology

**Definition:** Indicate the aneurysm etiology

**Intent/Clarification:**

Choices here are Atherosclerosis, Infection, inflammatory, Connective Tissue Disorder, Penetrating Ulcer, Pseudoaneurysm, Mycotic, Traumatic transection, Intercostal visceral patch, Anastomotic site, Unknown.

**Mycotic aneurysm** refers to a native tissue infection.

**Inflammatory** refers to an autoimmune disease - Ehlers Danlos

**Connective Tissue Disorder** refers to Marfans, etc.

**Pseudoaneurysm** is an outpouching that does not involve all layers of the aortic wall.

If the patient has a Bicuspid Aortic Valve, code connective tissue disorder and choose Bicuspid in sequence number 4505.

**FAQ October 2017:** If the etiology of the aortic aneurysm is described by the surgeon as systemic hypertension, how is that coded?

Answer: Code unknown.

**FAQ October 2017:** If the etiology of the aortic aneurysm is described by the surgeon as degenerative, how is that coded?

Answer: Code unknown.

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**SEQ. #: 4725**

**Long Name:** Aneurysm - Type

**Short Name:** AnType

**Definition:** Indicate the aneurysm type

**Intent/Clarification:**

**Saccular aneurysm** is a focal dilation of all layers of the aorta.

**Fusiform aneurysm** is a diffuse dilation of all layers of the aortic wall involving an extended segment.

Most aneurysms tend to be fusiform. Saccular aneurysms would be dictated as such.

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**SEQ. #: 4730**

**Long Name:** Aneurysm - Rupture

**Short Name:** AnRupt

**Definition:** Indicate whether the aneurysm ruptured

**Intent/Clarification:**

Aneurysm rupture is a complete breakdown in the integrity of the aortic wall and if not “contained” will result in exsanguination.

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**SEQ. #:** 4735

**Long Name:** Aneurysm - Rupture - Contained

**Short Name:** AnRuptCon

**Definition:** Indicate whether the rupture was contained

**Intent/Clarification:**

Contained rupture is a complete breakdown in the integrity of the aortic wall but is being “contained” by some clot or another structure. It is an unstable situation. When seen on CT scan, it is almost always “contained” as frank rupture is usually fatal.

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**SEQ. #:** 4740

**Long Name:** Aneurysm - Location

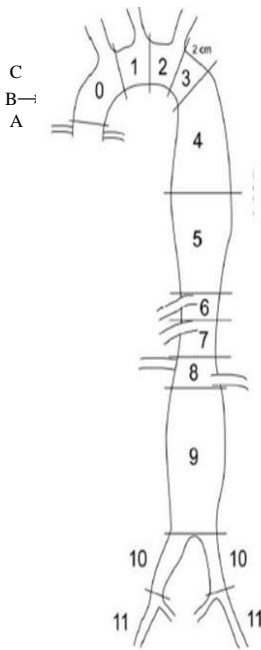
**Short Name:** AnLoc

**Definition:** Indicate the location of the aneurysm

**Intent/Clarification:**

STJ is the Sino-tubular Junction and identifies the boundary between the aortic root and the ascending aorta and is marked as Zone 0 which includes everything from above the aortic root to the innominate artery, i.e.: both the aortic root and ascending aorta.

There is no specific hierarchy and choose the primary zone of maximum diameter indicated by the surgeon.



- A. Below sinotubular junction
- B. Sinotubular junction to mid ascending
- C. Mid ascending to distal ascending
- D. Zone 1 (between innominate and left carotid)
- E. Zone 2 (between left carotid and left subclavian)
- F. Zone 3 (first 2 cm. distal to left subclavian)
- G. Zone 4 (end of zone 3 to mid descending aorta ~ T6)
- H. Zone 5 (mid descending aorta to celiac)
- I. Zone 6 (celiac to superior mesenteric)
- J. Zone 7 (superior mesenteric to renals)
- K. Zone 8 (renal to infra-renal abdominal aorta)
- L. Zone 9 (infrarenal abdominal aorta)
- M. Zone 10 (common iliac)
- N. Zone 11 (external iliacs)

**FAQ October 2017:** If the aneurysm spans more than one zone how should this be coded?

Answer: Code the most proximal zone with largest diameter.

**SEQ. #: 4745**

**Long Name:** Dissection - Timing

**Short Name:** DisTiming

**Definition:** Indicate the timing of the aortic dissection

**Intent/Clarification:**

The intent is to define the time interval from occurrence of dissection until presentation of the patient. The best assessment of dissection is the onset of symptoms. Usually found either in the EMS report or history of present illness on the H&P, record the time from first onset of pain until the patient is evaluated for treatment. Report "unknown" ONLY if the patient cannot describe a specific onset of symptoms.

**SEQ. #: 4746**

**Long Name:** Dissection Onset Date Known

**Short Name:** DisOnsetDtKnown

**Definition:** Indicate whether the date of dissection onset is known

**Intent/Clarification:**



The intent is to confirm the duration of symptoms preceding the patient's evaluation for treatment. While dissection timing (seq 4745) describes fairly broad intervals, this sequence refers to the patient's recall of specific date when symptoms were first felt. Typical symptoms include sudden onset of pain which is usually memorable. Report "no" ONLY for any patient whose dissection is incidentally discovered or if the patient does not recall the onset of pain.

**FAQ October 2018:** The patient presented with chronic pain after a chronic aortic dissection with substantial aneurysmal change of his thoracoabdominal aorta. The previous history includes repair of an acute aortic dissection of the ascending aorta and hemiarch in 2014 with a chronic dissection of the descending following the procedure. He now presents for an open repair of the chronic dissection of the thoracoabdominal aorta. What timing in sequence 4746 should be recorded?  
Answer: The chronic dissection occurred after the repair of the ascending and hemiarch in 2014. Code the previous date of surgery at the timing for onset.

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**SEQ. #: 4747**

**Long Name:** Dissection Onset Date **Short Name:** DisOnsetDt

**Definition:** Indicate dissection onset date

**Intent/Clarification:**

Report the date of symptoms onset if it is known by the patient. If the patient's recall is non-specific (e.g. "Sometime last week") leave this item blank. Use 8-digit format (mm/dd/yyyy).

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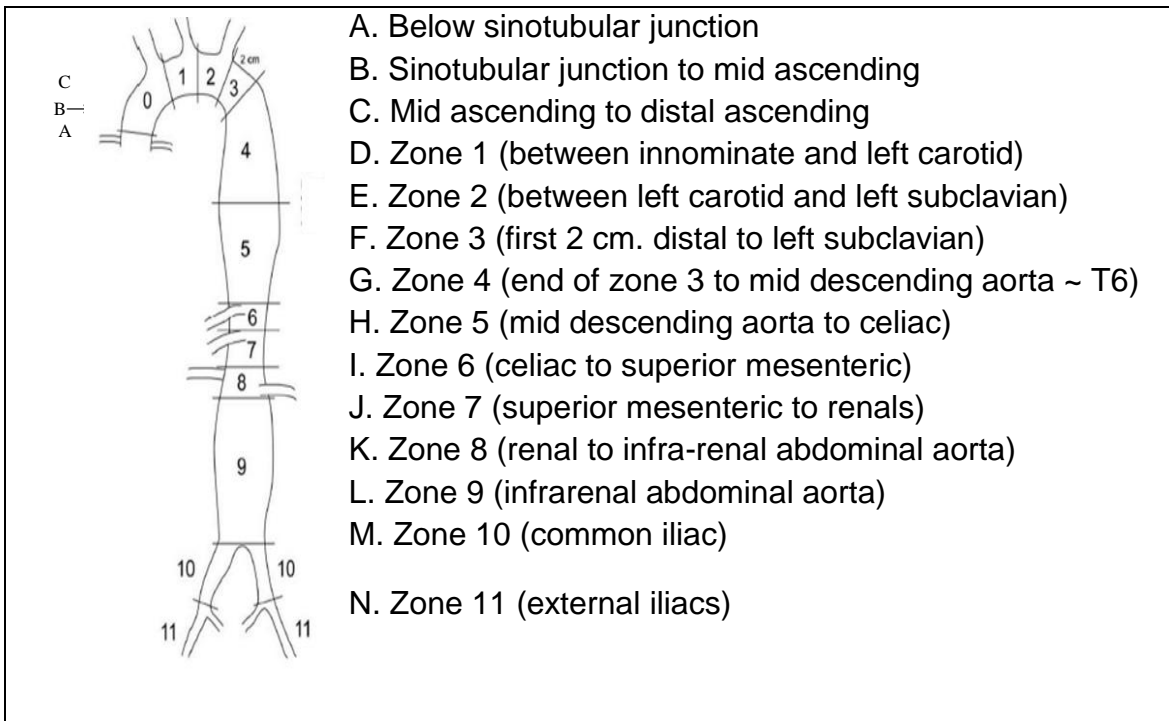
**SEQ. #: 4750**

**Long Name:** Dissection - Primry Tear Location **Short Name:** DisTearLoc

**Definition:** Indicate location of the primary tear

**Intent/Clarification:**

The intent is to identify the primary entry tear for the dissection. As most dissections include multiple re-entry tears it may be difficult to confirm the primary site and the surgeon MUST be the final arbiter of this definition. This is the site identified by the surgeon at an open operation or judged by the surgeon from imaging as the primary site to be covered by endovascular stent. If the radiology report names a primary entry point and the surgeon concurs, report this location.



Zone “0” is subdivided into 3 sections:

- A. Below sinotubular junction
- B. Sinotubular junction to mid-ascending aorta
- C. Mid-ascending to distal ascending (at the innominate artery)

**SEQ. #:** 4755

**Long Name:** Dissection - Secondary Tear Location **Short Name:** DisSecLoc

**Definition:** Indicate location of secondary tear

**Intent/Clarification:**

The intent is to identify any secondary tear for the dissection. This would be a re-entry site resulting from flow within the false lumen returning to the true lumen. The surgeon MUST be the final arbiter of this definition. This is the site identified by the surgeon at open operation or judged by the surgeon from imaging as a secondary site to be covered by endovascular stent.

Refer to the image showing the zones and note that zone “0” is subdivided into 3 sections:

- A. Below sinotubular junction
- B. Sinotubular junction to mid-ascending aorta

C. Mid-ascending to distal ascending (at the innominate artery)

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**SEQ. #:** 4760

**Long Name:** Dissection - Retrograde Extension **Short Name:** DisRetExt

**Definition:** Indicate whether there was retrograde extension

**Intent/Clarification:**

The intent is to determine whether the dissection propagates proximal (toward the aortic valve) from the primary tear location. Report yes if imaging indicates an extension of the false lumen proximal (toward the aortic valve) to the primary tear location.

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**SEQ. #:** 4765

**Long Name:** Dissection - Retrograde Location

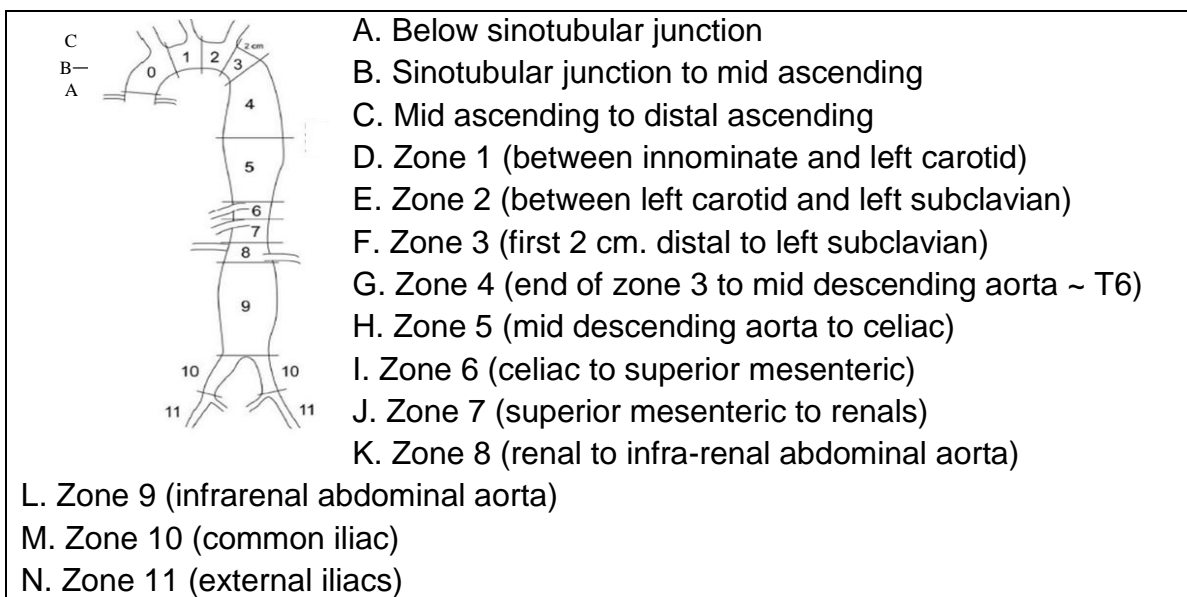
**Short Name:** DisRetLoc

**Definition:** Indicate location of retrograde extension

**Intent/Clarification:**

The intent is to define how far the retrograde dissection extends toward the aortic valve. This would be the point at which the false lumen comes closest to the aortic valve. The surgeon or radiologist can be the final arbiter of this definition. Refer to the image showing the zones and note that zone "0" is subdivided into 3 sections:

- A. Below sinotubular junction
- B. Sinotubular junction to mid-ascending aorta
- C. Mid-ascending to distal ascending (at the innominate artery)



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**SEQ. #: 4770**

**Long Name:** Dissection - Post TEVAR

**Short Name:** DisPosTEVAR

**Definition:** Indicate whether dissection occurred following TEVAR

**Intent/Clarification:**

The intent is to identify whether RETROGRADE dissection occurred or extended during TEVAR (Thoracic Endovascular Aortic Repair)

Report yes if:

- A. Retrograde dissection is noted on post TEVAR imaging that was not present on imaging before TEVAR
- OR
- B. Retrograde dissection (false lumen) extends closer to the aortic valve than was noted on pre TEVAR imaging

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**SEQ. #: 4775**

**Long Name:** Dissection - Distal Extension

**Short Name:** DistalExt

**Definition:** Indicate whether there is distal extension

**Intent/Clarification:** The intent is to identify where distal (antegrade) dissection occurred or extended.

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**SEQ. #: 4780**

**Long Name:** Dissection - Distal Extension Location

**Short Name:** DistalExtLoc

**Definition:** Indicate location of distal extension

**Intent/Clarification:**

The intent is to define the how far along the aorta (away from the valve) any new or extended dissection goes. Refer to the image showing the zones and report the most distal (highest # zone) extent of the false lumen.

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**SEQ. #:** 4785

**Long Name:** Dissection - Malperfusion

**Short Name:** DisMal

**Definition:** Indicate whether malperfusion was present

**Intent/Clarification:**

The intent is to identify whether there is compromised blood flow to any branch vessel as a consequence of the dissection or repair. Radiology report or the surgeon's evaluation may be used to define this. If any vessel has compromised blood flow report "yes". Report "unknown" if the surgeon or radiologist indicate that the imaging is inadequate to confirm the presence or absence of malperfusion.

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**SEQ. #:** 4790

**Long Name:** Dissection - Malperfusion - Coronary

**Short Name:** DisMalCor

**Definition:** Indicate whether coronary malperfusion was present

**Intent/Clarification:**

The intent is to identify which vessels have compromised flow as a consequence of the dissection or repair. If the answer to Dissection – malperfusion (sequence 4785) is "yes" AND any coronary blood flow is compromised report yes. The surgeon is the final arbiter of this definition.

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**SEQ. #:** 4791

**Long Name:** Dissection - Malperfusion - Right Subclavian

**Short Name:** DisMalRtSubclav

**Definition:** Indicate whether right subclavian malperfusion was present

**Intent/Clarification:**

The intent is to identify which vessels have compromised flow as a consequence of the dissection or repair. If the answer to Dissection – malperfusion (sequence 4785) is "yes" AND right subclavian blood flow is compromised report yes. The surgeon is the final arbiter of this definition.

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**SEQ. #:** 4792

**Long Name:** Dissection - Malperfusion - Right Common Carotid

**Short Name:** DisMalRtComCar

**Definition:** Indicate whether right common carotid malperfusion was present

**Intent/Clarification:**

The intent is to identify which vessels have compromised flow as a consequence of the dissection or repair. If the answer to Dissection – malperfusion (sequence 4785) is “yes” AND right common carotid blood flow is compromised report yes. The surgeon is the final arbiter of this definition.

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**SEQ. #:** 4800

**Long Name:** Dissection - Malperfusion - Left Common Carotid

**Short Name:** DisMalComL

**Definition:** Indicate whether left common carotid malperfusion was present

**Intent/Clarification:**

The intent is to identify which vessels have compromised flow as a consequence of the dissection or repair. If the answer to Dissection – malperfusion (sequence 4785) is “yes” AND left common carotid blood flow is compromised report yes. The surgeon is the final arbiter of this definition.

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**SEQ. #:** 4805

**Long Name:** Dissection - Malperfusion - Left Subcalvian

**Short Name:** DisMalSubL

**Definition:** Indicate whether left subclavian malperfusion was present

**Intent/Clarification:**

The intent is to identify which vessels have compromised flow as a consequence of the dissection or repair. If the answer to Dissection – malperfusion (sequence 4785) is “yes” AND left subclavian blood flow is compromised report yes. The surgeon is the final arbiter of this definition.

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**SEQ. #:** 4810

**Long Name:** Dissection - Malperfusion - Celiac

**Short Name:** DisMalCel

**Definition:** Indicate whether celiac malperfusion was present

**Intent/Clarification:**

The intent is to identify which vessels have compromised flow as a consequence of the dissection or repair. If the answer to Dissection – malperfusion (sequence 4785) is “yes” AND celiac blood flow is compromised report yes. The surgeon is the final arbiter of this definition.

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**SEQ. #: 4815**

**Long Name:** Dissection - Malperfusion - Superior Mesenteric

**Short Name:** DisMalSup

**Definition:** Indicate whether superior mesenteric malperfusion was present

**Intent/Clarification:**

The intent is to identify which vessels have compromised flow as a consequence of the dissection or repair. If the answer to Dissection – malperfusion (sequence 4785) is “yes” AND superior mesenteric blood flow is compromised report yes. The surgeon is the final arbiter of this definition.

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**SEQ. #: 4820**

**Long Name:** Dissection - Malperfusion - Renal, Left

**Short Name:** DisMalRenL

**Definition:** Indicate whether left renal malperfusion was present

**Intent/Clarification:**

The intent is to identify which vessels have compromised flow as a consequence of the dissection or repair. If the answer to Dissection – malperfusion (sequence 4785) is “yes” AND left renal blood flow is compromised report yes. The surgeon is the final arbiter of this definition.

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**SEQ. #: 4825**

**Long Name:** Dissection - Malperfusion - Renal, Right

**Short Name:** DisMalRenR

**Definition:** Indicate whether right renal malperfusion was present

**Intent/Clarification:**

The intent is to identify which vessels have compromised flow as a consequence of the dissection or repair. If the answer to Dissection – malperfusion (sequence 4785) is “yes” AND left renal blood flow is compromised report yes. The surgeon is the final arbiter of this definition.

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**SEQ. #: 4830**

**Long Name:** Dissection - Malperfusion - Iliofemoral

**Short Name:** DisMalIlio

**Definition:** Indicate whether iliofemoral malperfusion was present

**Intent/Clarification:**

The intent is to identify which vessels have compromised flow as a consequence of the dissection or repair. If the answer to Dissection – malperfusion (sequence 4785) is “yes” AND either or both iliofemoral systems blood flow is compromised report yes. The surgeon is the final arbiter of this definition.

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**SEQ. #: 4835**

**Long Name:** Dissection - Malperfusion - Spinal

**Short Name:** DisMalSpin

**Definition:** Indicate whether spinal malperfusion was present

**Intent/Clarification:**

The intent is to identify which vessels have compromised flow as a consequence of the dissection or repair. If the answer to Dissection – malperfusion (sequence 4785) is “yes” AND any spinal artery blood flow is compromised report yes. The surgeon is the final arbiter of this definition.

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**SEQ. #: 4836**

**Long Name:** Dissection - lower Extremity Motor Function **Short Name:** DisLowMotFun

**Definition:** Indicate status of lower extremity motor function

**Intent/Clarification:**

The intent is to identify if any NEW motor deficit of either lower extremity as a presenting symptom. This is preoperative status and does not include new post-operative paralysis or paraplegia.

This is intended to capture new sensory-motor deficit due to vascular malperfusion and not due to post-operative complication.

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**SEQ. #: 4837**

**Long Name:** Dissection - Lower Extremity Sensory Deficit

**Short Name:** DisLowSenDef

**Definition:** Indicate whether lower extremity sensory deficit is present

**Intent/Clarification:**

The intent is to identify any NEW sensory deficit of either lower extremity is present following dissection. Report “yes” if any note comments on numbness or insensate areas that were not recorded in the past medical history. Only report “unknown” if there is no comment in the medical record regarding sensation in the lower extremities.



This is preoperative status and does not include post-operative paralysis or paraplegia.

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**SEQ. #:** 4840

**Long Name:** Dissection - Rupture

**Short Name:** DisRupt

**Definition:** Indicate whether dissection ruptured

**Intent/Clarification:**

Report “yes” if any volume of blood is extravascular (outside the aortic adventitial layer), i.e. beyond the outmost layer of the aortic wall.

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**SEQ. #:** 4845

**Long Name:** Dissection - Rupture - Contained

**Short Name:** DisRuptCon

**Definition:** Indicate whether the rupture was contained.

**Intent/Clarification:**

Report “yes” if extravascular blood is contained by surrounding structures such that bleeding has stopped.

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**SEQ. #:** 4850

**Long Name:** Dissection - Rupture Location

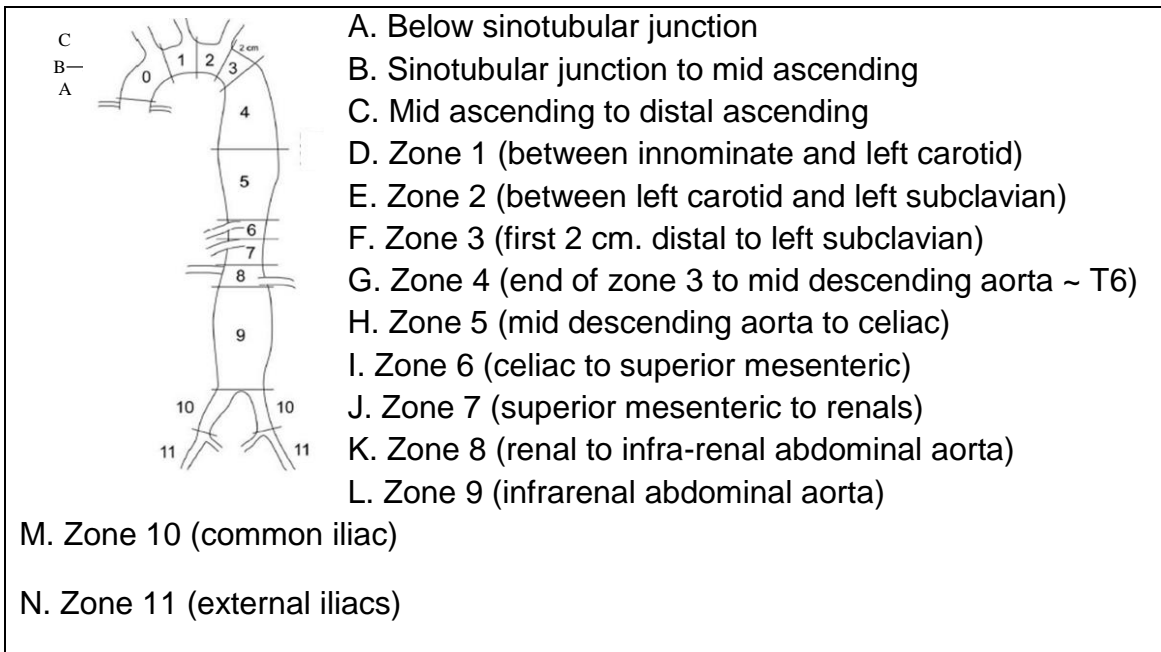
**Short Name:** DisRuptLoc

**Definition:** Indicate the rupture location

**Intent/Clarification:**

Intent is to identify where the rupture occurred. This is the site identified by the surgeon at an open operation or judged by the surgeon or radiologist from imaging as the rupture site to be covered by endovascular stent. Refer to the image showing the zones and note that zone “0” is subdivided into 3 sections:

- A. Below sinotubular junction
- B. Sinotubular junction to mid-ascending aorta
- C. Mid-ascending to distal ascending (at the innominate artery)



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**SEQ. #: 4855**

**Long Name:** Root - Aorto-Annular Ectasia

**Short Name:** RootAAnnEctasia

**Definition:** Indicate whether aorto-annular ectasia is present

**Intent/Clarification:**

Annuloaortic ectasia refers to dilatation of the aortic root involving the annulus and/or the sinuses and/or the sinotubular junction and typically giving rise to aortic insufficiency. The intent of capturing this field is to identify patients with aortic root dilatation specifically that impacts aortic valvular function.

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**SEQ. #: 4870**

**Long Name:** Root - Asymmetric Root Dilatation

**Short Name:** RootDilaAsym

**Definition:** Indicate whether asymmetric root dilatation is present

**Intent/Clarification:**

Asymmetric root dilatation refers to predominance of dilatation present in one or two sinus segments as opposed to more uniform root dilatation involving all 3 sinus segments (these may often be associated with aortic insufficiency). The intent of this field is to determine the relative frequency of asymmetric sinus dilatation and its relationship to other clinical manifestations (e.g. aortic insufficiency or aortic dissection) as opposed to more uniform root dilatation.

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**SEQ. #: 4875**

**Long Name:** Root - Asymmetric Root Dilatation - Location

**Short Name:** RootDilaAsym

**Definition:** Indicate location of asymmetric root dilatation

**Intent/Clarification:**

The intent is to clarify left, right, or non-coronary aortic root dilatation.

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**SEQ. #: 4880**

**Long Name:** Root - Sinus Of Valsalva Aneurysm

**Short Name:** RootSinus

**Definition:** Indicate whether there is a sinus of Valsalva aneurysm

**Intent/Clarification:**

SOV aneurysm specifically refers to distinct dilatation of a single sinus segment, i.e. does not involve a second sinus segment as would be the case with “asymmetric root dilatation”.

The intent of this field is to identify the frequency of distinct sinus segment aneurysms as opposed to other root pathologies.

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**SEQ. #: 4881**

**Long Name:** Root - Sinus of Valsalva Aneurysm - Location

**Short Name:** RootSinusLoc

**Definition:** Indicate location of sinus of Valsalva aneurysm

**Intent/Clarification:** The intent is to clarify left, right, or non-coronary sinus of Valsalva aneurysm.

**FAQ September 2017:** An aortic dissection case had Sinus of Valsalva aneurysm within the right, left and non-coronary sinuses, it was symmetrical. Since you cannot answer all three, what should be answered?

Answer: Answer yes to sequence number 4880 and leave sequence number 4881 blank.

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**SEQ. #: 4882**

**Long Name:** Arch Type

**Short Name:** ArchType

**Definition:** Indicate arch type

**Intent/Clarification:**

**Right arch:** a right arch implies that the aortic arch travels around (anteriorly) to the right mainstem bronchus and right pulmonary artery and then passes posterior to the trachea.

**Left arch:** a left arch implies that the aortic arch travels anterior to the trachea and then passes over and around the left pulmonary artery.

Grouped Intent/Clarification: The intent of these arch fields is to establish a concise characterization of the arch anatomy and its brachiocephalic branches at the time of arch interventions in order to allow for correlations of specific anatomy with other clinical findings/characterizations.

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**SEQ. #: 4884**

**Long Name:** Arch - Aberrant Right Subclavian

**Short Name:** ArchAbRtSub

**Definition:** Indicate whether the right subclavian is aberrant

**Intent/Clarification:**

An aberrant right subclavian artery is any artery that does not emanate from the innominate artery (these are typically associated with left arch anatomy).

Grouped Intent/Clarification: The intent of these arch fields is to establish a concise characterization of the arch anatomy and its brachiocephalic branches at the time of arch interventions in order to allow for correlations of specific anatomy with other clinical findings/characterizations.

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**SEQ. #: 4885**

**Long Name:** Arch - Aberrant Left Subclavian

**Short Name:** ArchAbLtSub

**Definition:** Indicate whether the left subclavian is aberrant

**Intent/Clarification:**

An aberrant left subclavian is any left subclavian that does not emanate from the distal arch as a separate ostium sequential and distal to the takeoff of the left common carotid artery on the greater curvature of the aortic arch.

Grouped Intent/Clarification: The intent of these arch fields is to establish a concise characterization of the arch anatomy and its brachiocephalic branches at the time of arch interventions in order to allow for correlations of specific anatomy with other clinical findings/characterizations.

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**SEQ. #: 4886**

**Long Name:** Arch - Kommerell

**Short Name:** ArchKom

**Definition:** Indicate whether Kommerell arch type is present

**Intent/Clarification:**

**Kommerell's diverticulum:** This is not a true diverticulum but a remnant of the left fourth aortic arch and is a bulbous dilatation at the origin of the left subclavian artery. It is often associated with other arch anomalies.

**Grouped Intent/Clarification:** The intent of these arch fields is to establish a concise characterization of the arch anatomy and its brachiocephalic branches at the time of arch interventions in order to allow for correlations of specific anatomy with other clinical findings/characterizations.

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**SEQ. #:** 4887

**Long Name:** Arch - Bovine

**Short Name:** ArchBovine

**Definition:** Indicate whether bovine arch type is present

**Intent/Clarification:**

This entity refers to a common origin of both the innominate artery and the left common carotid artery as they emanate from the greater curve of the arch.

**Grouped Intent/Clarification:** The intent of these arch fields is to establish a concise characterization of the arch anatomy and its brachiocephalic branches at the time of arch interventions in order to allow for correlations of specific anatomy with other clinical findings/characterizations.

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**SEQ. #:** 4888

**Long Name:** Arch - Variant Vertebral Origin

**Short Name:** ArchVarVertOr

**Definition:** Indicate whether there is variant origin of the vertebral

**Intent/Clarification:**

This refers to any vertebral artery that emanates directly from the aortic arch rather than a branch of either subclavian artery.

**Grouped Intent/Clarification:** The intent of these arch fields is to establish a concise characterization of the arch anatomy and its brachiocephalic branches at the time of arch interventions in order to allow for correlations of specific anatomy with other clinical findings/characterizations.

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**SEQ. #:** 4889

**Long Name:** Arch - Patent Internal Mammary Artery Bypass Graft

**Short Name:** ArchPatIMA

**Definition:** Indicate whether there is a patent internal mammary bypass graft present

**Intent/Clarification:**

Patent internal mammary artery bypass graft: this refers specifically to a patient who has undergone prior CABG and has a patent internal mammary graft (either left or right) present.

Grouped Intent/Clarification: The intent of these arch fields is to establish a concise characterization of the arch anatomy and its brachiocephalic branches at the time of arch interventions in order to allow for correlations of specific anatomy with other clinical findings/characterizations.

**FAQ July 2019** - How does one answer the Patient IMA bypass graft when a patient did not have a previous CABG. To select 'No' implies they did have a CABG and it is not patent OR if "No" to CABG in Previous interventions is marked it will be analyzed correctly by DCRI?  
Answer: Leave this blank since there is not IMA Graft. We will add N/A to the upgrade

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**SEQ. #: 4891**

**Long Name:** Ascending Asymmetric Dilatation

**Short Name:** AscAsymDil

**Definition:** Indicate whether there is asymmetric dilatation of the ascending aorta

**Intent/Clarification:**

Asymmetric dilatation refers to non-uniform dilatation of the aorta distal to the sinotubular junction, as is often noted as a pattern of dilatation that affects the greater curvature of the ascending aorta.

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**SEQ. #: 4892**

**Long Name:** Ascending Proximal Coronary Bypass Grafts

**Short Name:** AscProxGr

**Definition:** Indicate whether proximal bypass grafts are present on the aorta

**Intent/Clarification:**

These refer to any saphenous vein graft, radial artery or free internal mammary artery graft that emanates from the ascending aorta.

The intent is to tabulate the relative frequency of bypass grafts from the ascending aorta during reoperative cases that require aortic reconstruction.

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**General Statements:**

November 2017: Record dimension in millimeters (mm). If reported in centimeters you will need to convert. Example 5.3cm = 53mm.

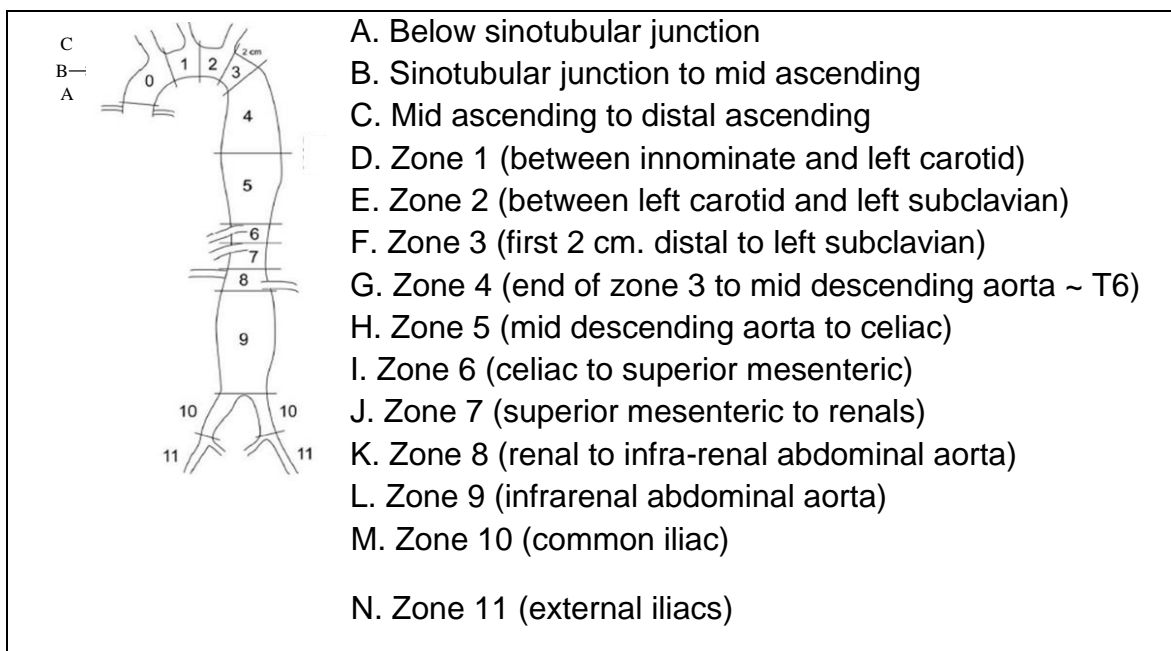
**SEQ. #: 4895**

**Long Name:** 3-D Reconstruction Aortic Diameter Measurements Available

**Short Name:** Diameter3DMeas

**Definition:** Indicate whether 3-D reconstruction aortic diameter measurements are available

**Intent/Clarification: Update October Timeframe - capture results closest and prior to OR Entry, within 1 year of OR date.** 3-D reconstruction of CT imaging of the aorta, which accounts for the 3-dimensional curvature of the aorta, draws a cross section perpendicular to the centerline direction of blood flow and is more accurate than 2-D axial, coronal, or sagittal images, which may show a cross-section of the aorta diagonal to the centerline direction of blood flow. 3-D reconstruction is most accurate when the CT scan is obtained with ECG-gating, which accounts for cardiac pulsation and motion of the aortic root. The Radiology report should note whether 3-D reconstruction was performed. Alternately, CT images may be sent by the surgeon to an outside laboratory for 3-D reconstruction (e.g., M2S). When measuring the largest diameter of the aorta, this should be done from adventitia to adventitia (i.e., including the wall of the aorta, not just the area with contrast).



**FAQ October 2017:** If 3D measurements are available in the PACs system, can the data manager use the values to code 3D measurements.

Answer: The data manager should not use the measurements from the PACs unless the measurements are supported by documentation from the surgeon. It is not the intention of the STS that the data manager should interpret the measurements.

**SEQ. #:** 4900

**Long Name:** Diameter Measurements 3D - Annulus

**Short Name:** Diam3DAnnulus

**Definition:** Indicate diameter of the annulus

**Intent/Clarification:**

The annulus is the region where the left ventricular outflow tract meets the aortic root and lies at the level of a plane defined by the lowest point of the aortic sinuses. It is usually oval-shaped with minimum and maximum diameters. Provide the average of the minimum and maximum diameters in millimeters.

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**SEQ. #:** 4905

**Long Name:** Diameter Measurements 3D - Sinus Segment

**Short Name:** Diam3DSinus

**Definition:** Indicate diameter of the sinus segment

**Intent/Clarification:**

This is the widest diameter of the aortic root, usually at the mid-sinus level.

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**SEQ. #:** 4910

**Long Name:** Diameter Measurements 3D - Sinotubular Junction

**Short Name:** Diam3DSinotubular

**Definition:** Indicate the diameter of the sinotubular junction

**Intent/Clarification:**

This is the region where the bulbous aortic root meets the tubular ascending aorta. Provide the largest diameter.

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**SEQ. #:** 4915

**Long Name:** Diameter Measurements 3D - Mid-ascending

**Short Name:** Diam3DMidAsc

**Definition:** Indicate the diameter of the mid-ascending aorta

**Intent/Clarification:**

The mid ascending aorta is usually measured at the bifurcation of the pulmonary artery. Provide the largest diameter.

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**SEQ. #:** 4920

**Long Name:** Diameter Measurements 3D - Distal Ascending

**Short Name:** Diam3DDistalAsc

**Definition:** Indicate the diameter of the distal ascending aorta

**Intent/Clarification:**



The distal ascending aorta is usually measured just proximal to the origin of the innominate artery. Provide the largest diameter.

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**SEQ. #: 4925**

**Long Name:** Diameter Measurements 3D - Zone 1

**Short Name:** Diam3DZone1

**Definition:** Indicate the diameter of zone 1

**Intent/Clarification:**

Zone 1 of the aorta includes the segment of aorta between the innominate artery and left carotid artery as well as the segment of aorta from which the left carotid artery arises (see figure). Provide the largest diameter.

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**SEQ. #: 4930**

**Long Name:** Diameter Measurements 3D - Zone 2

**Short Name:** Diam3DZone2

**Definition:** Indicate the diameter of zone 2

**Intent/Clarification:**

Zone 2 of the aorta includes the segment of aorta between the left carotid artery and left subclavian artery as well as the segment of aorta from which the left subclavian artery arises (see figure). Provide the largest diameter.

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**SEQ. #: 4935**

**Long Name:** Diameter Measurements 3D - Zone 3

**Short Name:** Diam3DZone3

**Definition:** Indicate the diameter of zone 3

**Intent/Clarification:**

Zone 3 of the aorta is the 2 cm segment of aorta just beyond the left subclavian artery (see figure). Provide the largest diameter.

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**SEQ. #: 4940**

**Long Name:** Diameter Measurements 3D - Zone 4

**Short Name:** Diam3DZone4

**Definition:** Indicate the diameter of zone 4

**Intent/Clarification:**

Zone 4 of the aorta extends from 2 cm beyond the left subclavian artery to the mid descending thoracic aorta, which is usually defined by the T6-T7 vertebral bodies (see figure). Provide the largest diameter.

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**SEQ. #:** 4941

**Long Name:** Diameter Measurements 3D - Zone 5

**Short Name:** Diam3DZone5

**Definition:** Indicate the diameter of zone 5

**Intent/Clarification:**

Zone 5 of the aorta extends from the mid descending thoracic aorta (at T6-T7) to the origin of the celiac artery but does not include the origin of the celiac artery (see figure). Provide the largest diameter.

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**SEQ. #:** 4942

**Long Name:** Diameter Measurements 3D - Zone 6

**Short Name:** Diam3DZone6

**Definition:** Indicate the diameter of zone 6

**Intent/Clarification:**

Zone 6 of the aorta extends from the celiac artery to the origin of the superior mesenteric artery but does not include the origin of the superior mesenteric artery (see figure). Provide the largest diameter.

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**SEQ. #:** 4943

**Long Name:** Diameter Measurements 3D - Zone 7

**Short Name:** Diam3DZone7

**Definition:** Indicate the diameter of zone 7

**Intent/Clarification:**

Zone 7 of the aorta extends from the superior mesenteric artery to the origin of the first renal artery but does not include the origin of the first renal artery (see figure). Provide the largest diameter.

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**SEQ. #:** 4944

**Long Name:** Diameter Measurements 3D - Zone 8

**Short Name:** Diam3DZone8

**Definition:** Indicate the diameter of zone 8

**Intent/Clarification:**

Zone 8 of the aorta is the segment of aorta from which all the renal arteries arise (usually two but may be more) (see figure). Provide the largest diameter.

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**SEQ. #:** 4945

**Long Name:** Diameter Measurements 3D - Zone 9

**Short Name:** Diam3DZone9

**Definition:** Indicate the diameter of zone 9

**Intent/Clarification:**

Zone 9 of the aorta is the segment of aorta between the last renal artery take-off and the aortic bifurcation (see figure). Provide the largest diameter.

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**SEQ. #:** 4946

**Long Name:** Diameter Measurements 3D - Zone 10

**Short Name:** Diam3DZone10

**Definition:** Indicate the diameter of zone 10

**Intent/Clarification:**

Zone 10 is the common iliac arteries (see figure). Provide the largest diameter.

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**SEQ. #:** 4947

**Long Name:** Diameter Measurements 3D - Zone 11

**Short Name:** Diam3DZone11

**Definition:** Indicate the diameter of zone 11

**Intent/Clarification:**

Zone 11 is the external iliac arteries (see figure). Provide the largest diameter.

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**SEQ. #:** 4948

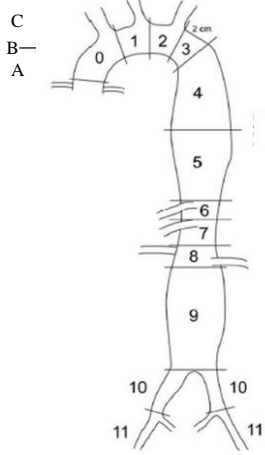
**Long Name:** Diameter Measurements Largest - Annulus

**Short Name:** DiamLgstAnnulus

**Definition:** Indicate diameter of the annulus.

**Intent/Clarification:**

The annulus is the region where the left ventricular outflow tract meets the aortic root and is a plane defined by the nadir of the aortic sinuses. It may be best seen on a coronal or sagittal image. Provide the largest measurement. Use 3D measurements if available.



A. Below sinotubular junction  
 B. Sinotubular junction to mid ascending  
 C. Mid ascending to distal ascending  
 D. Zone 1 (between innominate and left carotid)  
 E. Zone 2 (between left carotid and left subclavian)  
 F. Zone 3 (first 2 cm. distal to left subclavian)  
 G. Zone 4 (end of zone 3 to mid descending aorta ~ T6)  
 H. Zone 5 (mid descending aorta to celiac)  
 I. Zone 6 (celiac to superior mesenteric)  
 J. Zone 7 (superior mesenteric to renals)  
 K. Zone 8 (renal to infra-renal abdominal aorta)  
 L. Zone 9 (infrarenal abdominal aorta)  
 M. Zone 10 (common iliac)  
 N. Zone 11 (external iliacs)

**FAQ October 2017:** If the diameter measurement is not included in the surgeon dictation or the available 2-D or 3-D studies should the values be 0 or should the field be left blank.

Answer: Leave blank.

**SEQ. #:** 4949

**Long Name:** Diameter Measurements Largest - Sinus Segment

**Short Name:** DiamLgstSinus

**Definition:** Indicate diameter of the sinus segment

**Intent/Clarification:**

This is the widest diameter of the aortic root at the mid-sinus level. This may be best seen on a coronal or sagittal image.

**FAQ October 2017:** If the diameter measurement is not included in the surgeon dictation or the available 2-D or 3-D studies should the values be 0 or should the field be left blank.

Answer: Leave blank.

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**SEQ. #:** 4950

**Long Name:** Diameter Measurements Largest - Sinotubular Junction

**Short Name:** DiamLgstSinotubular

**Definition:** Indicate the diameter of the sinotubular junction

**Intent/Clarification:**

This is the region where the bulbous aortic root meets the tubular ascending aorta. This may be best seen on a coronal image.

**FAQ October 2017:** If the diameter measurement is not included in the surgeon dictation or the available 2-D or 3-D studies should the values be 0 or should the field be left blank.

Answer: Leave blank.

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**SEQ. #:** 4951

**Long Name:** Diameter Measurements Largest - Mid-ascending

**Short Name:** DiamLgstMidAsc

**Definition:** Indicate the diameter of the mid-ascending aorta

**Intent/Clarification:**

The mid ascending aorta is usually measured at the bifurcation of the pulmonary artery. This may be best seen on an axial image with the fullest view of the right pulmonary artery or on a coronal image with the largest view of the mid ascending aorta. On the axial image, the largest diameter should be recorded. On the coronal image, the measurement should be taken perpendicular to the direction of blood flow.

**FAQ October 2017:** If the diameter measurement is not included in the surgeon dictation or the available 2-D or 3-D studies should the values be 0 or should the field be left blank.

Answer: Leave blank.

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**SEQ. #:** 4952

**Long Name:** Diameter Measurements Largest - Distal Ascending

**Short Name:** DiamLgstDistalAsc

**Definition:** Indicate the diameter of the distal ascending aorta

**Intent/Clarification:**

The distal ascending aorta is usually measured just proximal to the origin of the innominate artery. This may be best seen on a coronal image with the largest view of the aorta. The measurement should be taken perpendicular to the direction of blood flow.

**FAQ October 2017:** If the diameter measurement is not included in the surgeon dictation or the available 2-D or 3-D studies should the values be 0 or should the field be left blank.

Answer: Leave blank.

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**SEQ. #:** 4953

**Long Name:** Diameter Measurements Largest - Zone 1

**Short Name:** DiamLgstZone1

**Definition:** Indicate the diameter of zone 1

**Intent/Clarification:**

Zone 1 of the aorta includes the segment of aorta between the innominate artery and left carotid artery as well as the segment of aorta from which the left carotid artery arises (see figure). This may be best seen on a sagittal image. The measurement should be taken perpendicular to the direction of blood flow.

**FAQ October 2017:** If the diameter measurement is not included in the surgeon dictation or the available 2-D or 3-D studies should the values be 0 or should the field be left blank.

Answer: Leave blank.

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**SEQ. #:** 4954

**Long Name:** Diameter Measurements Largest - Zone 2

**Short Name:** DiamLgstZone2

**Definition:** Indicate the diameter of zone 2

**Intent/Clarification:**

Zone 2 of the aorta includes the segment of aorta between the left carotid artery and left subclavian artery as well as the segment of aorta from which the left subclavian artery arises (see figure). This may be best seen on a sagittal image. The measurement should be taken perpendicular to the direction of blood flow.

**FAQ October 2017:** If the diameter measurement is not included in the surgeon dictation or the available 2-D or 3-D studies should the values be 0 or should the field be left blank.

Answer: Leave blank.

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**SEQ. #:** 4955

**Long Name:** Diameter Measurements Largest - Zone 3

**Short Name:** DiamLgstZone3

**Definition:** Indicate the diameter of zone 3

**Intent/Clarification:**

Zone 3 of the aorta is the 2 cm segment of aorta just beyond the left subclavian artery (see figure). This may be best seen on a sagittal image. The measurement should be taken perpendicular to the direction of blood flow.

**FAQ October 2017:** If the diameter measurement is not included in the surgeon dictation or the available 2-D or 3-D studies should the values be 0 or should the field be left blank.

Answer: Leave blank.

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**SEQ. #:** 4956

**Long Name:** Diameter Measurements Largest - Zone 4

**Short Name:** DiamLgstZone4

**Definition:** Indicate the diameter of zone 4

**Intent/Clarification:**

Zone 4 of the aorta extends from 2 cm beyond the left subclavian artery to the mid descending thoracic aorta, which is usually defined by the T6-T7 vertebral bodies (see figure). Provide the largest diameter.

**FAQ October 2017:** If the diameter measurement is not included in the surgeon dictation or the available 2-D or 3-D studies should the values be 0 or should the field be left blank.

Answer: Leave blank.

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**SEQ. #:** 4957

**Long Name:** Diameter Measurements Largest - Zone 5

**Short Name:** DiamLgstZone5

**Definition:** Indicate the diameter of zone 5

**Intent/Clarification:**

Zone 5 of the aorta extends from the mid descending thoracic aorta (at T6-T7) to the origin of the celiac artery but does not include the origin of the celiac artery (see figure). Provide the largest diameter.

**FAQ October 2017:** If the diameter measurement is not included in the surgeon dictation or the available 2-D or 3-D studies should the values be 0 or should the field be left blank.

Answer: Leave blank.

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**SEQ. #: 4958**

**Long Name:** Diameter Measurements Largest - Zone 6

**Short Name:** DiamLgstZone6

**Definition:** Indicate the diameter of zone 6

**Intent/Clarification:**

Zone 6 of the aorta extends from the celiac artery to the origin of the superior mesenteric artery but does not include the origin of the superior mesenteric artery (see figure). Provide the largest diameter.

**FAQ October 2017:** If the diameter measurement is not included in the surgeon dictation or the available 2-D or 3-D studies should the values be 0 or should the field be left blank.

Answer: Leave blank.

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**SEQ. #: 4959**

**Long Name:** Diameter Measurements Largest - Zone 7

**Short Name:** DiamLgstZone7

**Definition:** Indicate the diameter of zone 7

**Intent/Clarification:**

Zone 7 of the aorta extends from the superior mesenteric artery to the origin of the first renal artery but does not include the origin of the first renal artery (see figure). Provide the largest diameter.

**FAQ October 2017:** If the diameter measurement is not included in the surgeon dictation or the available 2-D or 3-D studies should the values be 0 or should the field be left blank.

Answer: Leave blank.



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**SEQ. #:** 4960

**Long Name:** Diameter Measurements Largest - Zone 8

**Short Name:** DiamLgstZone8

**Definition:** Indicate the diameter of zone 8

**Intent/Clarification:**

Zone 8 of the aorta is the segment of aorta from which all the renal arteries arise (usually two but may be more) (see figure). Provide the largest diameter.

**FAQ October 2017:** If the diameter measurement is not included in the surgeon dictation or the available 2-D or 3-D studies should the values be 0 or should the field be left blank.

Answer: Leave blank.  
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**SEQ. #:** 4961

**Long Name:** Diameter Measurements Largest - Zone 9

**Short Name:** DiamLgstZone9

**Definition:** Indicate the diameter of zone 9

**Intent/Clarification:**

Zone 9 of the aorta is the segment of aorta between the last renal artery take-off and the aortic bifurcation (see figure). Provide the largest diameter.

**FAQ October 2017:** If the diameter measurement is not included in the surgeon dictation or the available 2-D or 3-D studies should the values be 0 or should the field be left blank.

Answer: Leave blank.  
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**SEQ. #:** 4962

**Long Name:** Diameter Measurements Largest - Zone 10

**Short Name:** DiamLgstZone10

**Definition:** Indicate the diameter of zone 10

**Intent/Clarification:**

Zone 10 is the common iliac arteries (see figure). Provide the largest diameter.

**FAQ October 2017:** If the diameter measurement is not included in the surgeon dictation or the available 2-D or 3-D studies should the values be 0 or should the field be left blank.

Answer: Leave blank.

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**SEQ. #:** 4963

**Long Name:** Diameter Measurements Largest - Zone 11

**Short Name:** DiamLgstZone11

**Definition:** Indicate the diameter of zone 11

**Intent/Clarification:**

Zone 11 is the external iliac arteries (see figure). Provide the largest diameter.

**FAQ October 2017:** If the diameter measurement is not included in the surgeon dictation or the available 2-D or 3-D studies should the values be 0 or should the field be left blank.

Answer: Leave blank.

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**SEQ. #:** 4970

**Long Name:** Planned Staged Hybrid

**Short Name:** PlanStagHybrid

**Definition:** Indicate whether the procedure was a planned staged hybrid

**Intent/Clarification:**

The intent is to identify procedures that will involve a combination of open and endovascular procedures or devices. In particular, the combination of an open approach with stent grafts which can be deployed open or endovascularly. Staged procedure means that this will be done in more than one setting. For instance, two trips to the operating room or hybrid room.

**FAQ October 2017:** The patient was initially scheduled for TEVAR but after a series of CT scans and manifestations of signs and symptoms, the surgeon opted to repair the ascending aortic flap first and then, 3 days later, he took the patient back to the OR for the TEVAR. Should this be captured as post-operative event aortic reintervention?

Answer: No, code as a planned staged hybrid. Then capture the TEVAR accordingly in Seq. No. 5095.

**FAQ June 2019:** Capture the TEVAR with the index procedure on the same data collection form.

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**SEQ. #:** 4975

**Long Name:** Open Arch **Surgical** Procedure

**Short Name:** ArchProc

**Definition:** Indicate whether there was an open arch **surgical procedure**

**Intent/Clarification:**

The intent is to identify procedures with replacement of or connection to the arch of the aorta. Anything from the base of the innominate through the subclavian takeoff would be included.

**FAQ November 2017:** When coding a Bentall procedure the data manager is further required to complete section M-2. Coding is relatively straight forward until the intervention section where there are no fields related to the ascending aorta. It is a misnomer to code open arch when an arch procedure is not performed. Until such time as the specification can be upgrade, how should the ascending aorta replacement be captured?

Answer: The field name should reflect open surgical procedures, not arch procedures only.

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**SEQ. #:** 4980

**Long Name:** Open Arch Procedure - Distal Technique

**Short Name:** ArchDisTech

**Definition:** Indicate the distal technique for the arch procedure

**Intent/Clarification:**

The intent is to define that the distal anastomosis was done with or without a clamp. Many arch procedures are done with the clamp removed, sewing to the aorta looking down the barrel of the vessel. This of course requires circulatory arrest. The clamp means that the aorta is clamped with an instrument and the anastomosis is completed proximal (close to the heart) to that part of the aorta.

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**SEQ. #:** 4985

**Long Name:** Open Arch Procedure - Distal Site

**Short Name:** ArchDiscSite

**Definition:** Indicate the distal site

**Intent/Clarification:**

The intent of this is to define the level of the distal (far from the heart) anastomosis. Ascending aorta implies the ascending was resected with a clamp on the distal ascending aorta. Hemiarch means a single anastomosis was done somewhere in the ascending or proximal arch without separate grafts to the head vessels. Zone 1 means the innominate was reconnected with a graft between the innominate and left common carotid takeoffs. Zone 2 means the innominate and carotid were reconnected with a graft sewn to between the left common carotid and the left subclavian takeoffs. Zone three means the innominate, carotid and the left subclavian were reconnected with the graft being sewn beyond the left subclavian takeoff. Zone 4 means the graft was sewn to the mid descending thoracic aorta.

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**SEQ. #: 4990**

**Long Name:** Open Arch Procedure - Distal Extention

**Short Name:** ArchDisExt

**Definition:** Indicate distal extension type

**Intent/Clarification:**

The intent of the question is to define whether graft was left that extended (distally) beyond the arch anastomosis. An elephant trunk is a soft graft, while a frozen elephant trunk means a stent was placed distally.

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**SEQ. #: 4995**

**Long Name:** Open Arch Procedure - Arch Branch Reimplantation

**Short Name:** ArchBranReimp

**Definition:** Indicate whether arch branch reimplantation was performed

**Intent/Clarification:**

The intent of this is to define the end branches that were sewn to the graft.

**FAQ July 2019:** The surgeon performed an open elephant trunk and the graft material covered the Left Subclavian. Therefore, he fenestrated the graft and stented into the Left Subclavian. How should this be captured?

Answer: This should be captured as Arch Reimplantation (seq 4995) 'yes', and Left Subclavian (seq 5010) 'yes.' Capture the graft material in the device section, but you do not need to capture the stent in the device section.

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**SEQ. #:** 5000

**Long Name:** Open Arch Procedure - Arch Branch Reimplantation - Innominate

**Short Name:** ArchBranInnom

**Definition:** Indicate whether arch branch reimplantation included the innominate artery

**Intent/Clarification:**

The intent is to determine whether the innominate artery was reattached to the graft.

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**SEQ. #:** 5001

**Long Name:** Open Arch Procedure - Arch Branch Reimplantation - Right Subclavian

**Short Name:** ArchBranRSub

**Definition:** Indicate whether arch branch reimplantation included the right subclavian artery

**Intent/Clarification:**

The intent is to determine whether the right subclavian artery was reattached to the graft. This means the right subclavian was sewn to directly, not from the trunk or bifurcation of the innominate.

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**SEQ. #:** 5002

**Long Name:** Open Arch Procedure - Arch Branch Reimplantation - Right Common Carotid

**Short Name:** ArchBranRComm

**Definition:** Indicate whether arch branch reimplantation included the right common carotid artery

**Intent/Clarification:**

The intent is to determine whether the right carotid artery was reattached to the graft. This means the right subclavian was sewn to directly, not from the trunk or bifurcation of the innominate.

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**SEQ. #:** 5005

**Long Name:** Open Arch Procedure - Arch Branch Reimplantation - Left Common Carotid

**Short Name:** ArchBranLComm

**Definition:** Indicate whether arch branch reimplantation included the left common carotid artery

**Intent/Clarification:**

The intent is to determine whether the left common carotid artery was reattached to the graft.

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**SEQ. #:** 5010

**Long Name:** Open Arch Procedure - Arch Branch Reimplantation - Left Subclavian

**Short Name:** ArchBranLSub

**Definition:** Indicate whether arch branch reimplantation included the left subclavian artery

**Intent/Clarification:**

The intent is to determine whether the left subclavian artery was reattached to the graft.

**FAQ July 2019:** The surgeon performed an open elephant trunk and the graft material covered the Left Subclavian. Therefore, he fenestrated the graft and stented into the Left Subclavian. How should this be captured?

Answer: This should be captured as Arch Reimplantation (seq 4995) 'yes', and Left Subclavian (seq 5010) 'yes.' You do not need to capture the stent in the device section.

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**SEQ. #:** 5011

**Long Name:** Open Arch Procedure - Arch Branch Reimplantation - Left Vertebral **Short Name:** ArchBranLVert

**Definition:** Indicate whether arch branch reimplantation included the left vertebral artery

**Intent/Clarification:**

The intent is to determine whether the left vertebral artery was reattached to the graft. This means a separate graft or anastomosis was created for the vertebral, not when it remains attached to the left subclavian artery.

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**SEQ. #:** 5012

**Long Name:** Open Arch Procedure - Arch Branch Reimplantation - Other

**Short Name:** ArchBranOth

**Definition:** Indicate whether arch branch reimplantation included any other artery

**Intent/Clarification:**

The intent is to determine whether the left vertebral artery was reattached to the graft. This means a separate graft or anastomosis was created for the vertebral, not when it remains attached to the left subclavian artery.

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**SEQ. #: 5015**

**Long Name:** Open Descending Thoracic Aorta or Thoracoabdominal Procedure

**Short Name:** DescAortaProc

**Definition:** Indicate whether there was an open procedure of the descending thoracic or thoracoabdominal aorta

**Intent/Clarification:**

The intent of this is to define procedures involving the descending thoracic aorta or the thoraco-abdominal aorta, usually through the left chest.

**FAQ March 2017:** My surgeon replaces some of the distal arch during an open descending repair operation (SEQ# 5015). Should the surgeon capture the arch procedure in SEQ#4975 or is the distal arch procedure captured in SEQ#5020 DescAortaLoc (proximal location)?

Answer: Code the distal arch site for this procedure.

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**SEQ. #: 5020**

**Long Name:** Proximal Location

**Short Name:** DescAortaLoc

**Definition:** Indicate the proximal location of the descending aorta procedure

**Intent/Clarification:**

The intent of this procedure is to define the proximal extent or coverage of the arch as defined by the zones defined on the collection form or with an open anastomosis to the mid to distal arch, without branch anastomosis, known as a hemiarch. Zones imply the zone branches are taken or revascularized.

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**SEQ. #: 5030**

**Long Name:** Intercostal Reimplantation

**Short Name:** AortaInterReimp

**Definition:** Indicate whether intercostal vessels were reimplanted

**Intent/Clarification:**

The intent of this is to define procedures where either an island of intracostals is sewn to the graft or a separate branch is used to sew them to the graft.

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**SEQ. #: 5035**

**Long Name:** Distal Location

**Short Name:** AortaDisZone

**Definition:** Indicate the distal location of the descending/thoracoabdominal procedure

**Intent/Clarification:**

The intent of this is to define the distal extent of the aortic intervention as defined by the zones defined on the collection form.

**FAQ March 2018:** How is apical-aortic conduit coded?

Answer: Code the valve implant as an aortic valve implant only and code then code the distal aortic location.

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**SEQ. #: 5045**

**Long Name:** Visceral Vessel Intervention

**Short Name:** AortaVisceral

**Definition:** Indicate whether there was visceral vessel intervention

**Intent/Clarification:**

The intent of this is to define whether the celiac artery was revascularized by sewing it to the graft, reimplantation, or using a branch graft.

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**SEQ. #: 5050**

**Long Name:** Visceral Vessel Intervention - Celiac

**Short Name:** AortaViscCel

**Definition:** Indicate whether the visceral vessel intervention involved the celiac artery

**Intent/Clarification:**

The intent of this is to define whether the celiac artery was revascularized by sewing it to the graft, reimplantation, or using a branch graft.

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**SEQ. #: 5055**

**Long Name:** Visceral Vessel Intervention - Superior Mesenteric

**Short Name:** AortaViscSup

**Definition:** Indicate whether the visceral vessel intervention involved the superior mesenteric artery

**Intent/Clarification:**

The intent of this is to define whether the superior mesenteric artery was revascularized by sewing it to the graft, reimplantation, or using a branch graft.

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**SEQ. #:** 5060

**Long Name:** Visceral Vessel Intervention - Right Renal

**Short Name:** AortaViscRenR

**Definition:** Indicate whether the visceral vessel intervention involved the right renal artery

**Intent/Clarification:**

The intent of this is to define whether the right renal artery was revascularized by sewing it to the graft, reimplantation, or using a branch graft.

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**SEQ. #:** 5065

**Long Name:** Visceral Vessel Intervention - Left Renal

**Short Name:** AortaViscRenL

**Definition:** Indicate whether the visceral vessel intervention involved the left renal artery

**Intent/Clarification:**

The intent of this is to define whether the left renal artery was revascularized by sewing it to the graft, reimplantation, or using a branch graft.

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**SEQ. #:** 5066

**Long Name:** Endovascular Procedures

**Short Name:** EndovasProc

**Definition:** Indicate whether there was an endovascular procedure

**Intent/Clarification:**

The intent is to capture catheter-based procedures where a stent is implanted into the aorta.

**FAQ June 2019:** Should TEVAR procedures alone be included in the STS Registry for Adult Cardiac Surgery Database?

Answer: TEVAR are included as endovascular aorta cases if done by a CT surgeon on the participant agreement. EVAR is not included.

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**SEQ. #:** 5067

**Long Name:** Endovascular Procedures - Access

**Short Name:** EndovasAccess

**Definition:** Indicate the access used for the endovascular procedure

**Intent/Clarification:**

Please label the blood vessel through which the stent graft was delivered.

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**SEQ. #: 5068**

**Long Name:** Endovascular Procedures - Percutaneous Access

**Short Name:** EndovasPercAcc

**Definition:** Indicate whether access was percutaneous

**Intent/Clarification:**

The intent is to capture needle access; no incision is required; a stab wound may be required for sheath placement.

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**SEQ. #: 5070**

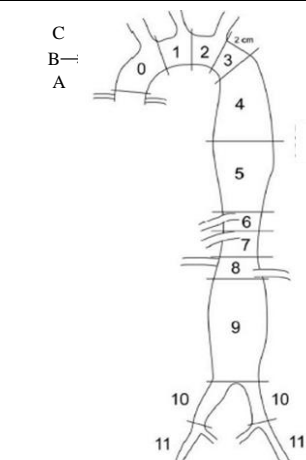
**Long Name:** Endovascular Procedures - Proximal Landing Zone

**Short Name:** EndoProxZone

**Definition:** Indicate the proximal landing zone

**Intent/Clarification:**

The proximal landing zone is the area of the area of the aorta closest to the heart where the graft is located. If two or more stent grafts were used, please label the proximal landing zone according to the site where the most proximal stent graft has its most proximal location.

	<p>A. Below sinotubular junction B. Sinotubular junction to mid ascending C. Mid ascending to distal ascending D. Zone 1 (between innominate and left carotid) E. Zone 2 (between left carotid and left subclavian) F. Zone 3 (first 2 cm. distal to left subclavian) G. Zone 4 (end of zone 3 to mid descending aorta ~ T6) H. Zone 5 (mid descending aorta to celiac) I. Zone 6 (celiac to superior mesenteric) J. Zone 7 (superior mesenteric to renals) K. Zone 8 (renal to infra-renal abdominal aorta) L. Zone 9 (infrarenal abdominal aorta) M. Zone 10 (common iliac) N. Zone 11 (external iliacs)</p>
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**SEQ. #: 5080**

**Long Name:** Endovascular Procedures - Distal Landing Zone

**Short Name:** EndoDistalZone

**Definition:** Indicate the distal landing zone

**Intent/Clarification:**

The distal landing zone defines the closet to the iliac bifurcation (furthest from the heart). If two or more stent grafts were used, please label the distal landing zone according to the site where the most distal stent graft has its most distal location.

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**SEQ. #: 5090**

**Long Name:** Endovascular Procedures - TAVR

**Short Name:** EndovasTAVR

**Definition:** Indicate whether there was a transcatheter aortic valve procedure component

**Intent/Clarification:**

Indicate whether TAVR was performed in conjunction with this endovascular procedure.

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**SEQ. #: 5095**

**Long Name:** Endovascular Procedures - Ascending TEVAR

**Short Name:** EndovasTEVAR

**Definition:** Indicate whether an ascending TEVAR was performed

**Intent/Clarification:**

Intent is to identify whether a stent graft placed in zone 0, a region spanning from the STJ to the innominate artery.

**FAQ October 2017:** The patient was initially scheduled for TEVAR but after a series of CT scans and manifestations of signs and symptoms, the surgeon opted to repair the ascending aortic flap first and then, 3 days later, he took the patient back to the OR for the TEVAR. Should this be captured as post operative event aortic reintervention?

Answer: No, code as a planned staged hybrid. Then capture the TEVAR accordingly in Seq. No. 5095.

**FAQ June 2019:** Capture the TEVAR with the index procedure on the same data collection form.

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**SEQ. #:** 5100

**Long Name:** Arch Vessel Management - Innominate

**Short Name:** Innominate

**Definition:** Indicate the management of the innominate artery

**Intent/Clarification:**

The innominate artery originates in the aortic arch as the first branch of the arch and divides into the right common carotid and right subclavian arteries.

Intent is to understand how the innominate artery received its blood flow following an endovascular procedure. Options included **native flow** where no direct endo-intervention on the vessel was performed or **extra-anatomic bypasses** which may be performed in a staged fashion (i.e. commonly an additional operation previous to the endovascular one, typically done during the same admission).

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**SEQ. #:** 5105

**Long Name:** Innominate - Extra-Anatomic Bypass - Aorta-Innominate

**Short Name:** InAortaInnom

**Definition:** Indicate whether the extra-anatomic bypass was an aorta to innominate bypass

**Intent/Clarification:**

An extra-anatomic bypass refers to any bypass graft that is placed outside of the normal anatomic vascular pathway to provide blood flow following or as part of that strategy

Intent is to describe one option of how the arch branch vessel was managed as part of a hybrid strategy (i.e. separate surgical procedure either done concurrently or at a previous time, typically done during the same admission) to provide blood flow following or as part of that strategy.

Aorta to innominate bypass means a graft was created from the native aorta or surgically replaced aorta to the innominate artery.

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**SEQ. #:** 5110

**Long Name:** Innominate - Extra-Anatomic Bypass - Aorta-Right Carotid

**Short Name:** InAortaCarotid

**Definition:** Indicate whether the extra-anatomic bypass was an aorta to right carotid bypass

**Intent/Clarification:**

An extra-anatomic bypass refers to any bypass graft that is placed outside of the normal anatomic vascular pathway to provide blood flow following or as part of that strategy.

Intent is to describe specifically how the arch branch vessel was managed as part of a hybrid strategy (i.e. separate surgical procedure either done concurrently or at a previous time, typically done during the same admission) to provide blood flow following or as part of that strategy.

Aorta to Right carotid bypass means a graft was created from the native aorta or surgically replaced aorta to the right carotid artery. This bypass is done beyond the innominate and often for aneurysm of the innominate and includes bypass of the right subclavian as well.

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**SEQ. #: 5115**

**Long Name:** Innominate - Extra-Anatomic Bypass - Aorta-Right Subclavian

**Short Name:** InAortaSubclav

**Definition:** Indicate whether the extra-anatomic bypass was an aorta to right subclavian bypass

**Intent/Clarification:**

An extra-anatomic bypass refers to any bypass graft that is placed outside of the normal anatomic vascular pathway to provide blood flow following or as part of that strategy.

Intent is to describe specifically how the arch branch vessel was managed as part of a hybrid strategy (i.e. separate surgical procedure either done concurrently or at a previous time, typically done during the same admission) to provide blood flow following or as part of that strategy.

Aorta to Right subclavian bypass means a graft was created from the native aorta or surgically replaced aorta to the right subclavian artery. This bypass is done beyond the innominate and often for aneurysm of the innominate and includes bypass of the right carotid as well.

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**SEQ. #: 5125**

**Long Name:** Innominate - Extra-Anatomic Bypass - Right Carotid - Right Subclavian

**Short Name:** InCaroSubclav

**Definition:** Indicate whether the extra-anatomic bypass was a right carotid to right subclavian bypass

**Intent/Clarification:**

An extra-anatomic bypass refers to any bypass graft that is placed outside of the normal anatomic vascular pathway to provide blood flow following or as part of that strategy.

Intent is to describe specifically how the arch branch vessel was managed as part of a hybrid strategy (i.e. separate surgical procedure either done concurrently or at a previous time, typically done during the same admission).

This means that either a bypass (i.e. use of a separate graft) or direct transposition was performed to create a communication between the right carotid and subclavian vessels.

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**SEQ. #: 5135**

**Long Name:** Innominate - Extra-Anatomic Bypass - Other

**Short Name:** InOther

**Definition:** Indicate whether any other extra-anatomic innominate bypass was performed

**Intent/Clarification:**

An extra-anatomic bypass refers to any bypass graft that is placed outside of the normal anatomic vascular pathway to provide blood flow following or as part of that strategy.

Intent is to describe specifically how the arch branch vessel was managed as part of a hybrid strategy (i.e. separate surgical procedure either done concurrently or at a previous time, typically done during the same admission).

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**SEQ. #: 5140**

**Long Name:** Arch Vessel Management - Left Carotid

**Short Name:** LeftCarotid

**Definition:** Indicate the management of the left carotid artery

**Intent/Clarification:**

Intent is to describe specifically how the arch branch vessel was managed as part of a hybrid strategy (i.e. separate surgical procedure either done concurrently or at a previous time, typically done during the same admission). Options included native flow where no direct endo-intervention on the vessel was performed or extra-anatomic bypasses which may be performed in a staged fashion (i.e. commonly an additional operation previous to the endovascular one).

The left carotid artery arises from the aortic arch.

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**SEQ. #: 5150**

**Long Name:** Left Carotid - Extra-Anatomic Bypass - Aorta-Left Carotid

**Short Name:** LTCaroAortaCaro

**Definition:** Indicate whether the extra-anatomic bypass was an aorta to left carotid bypass

**Intent/Clarification:**

An extra-anatomic bypass refers to any bypass graft that is placed outside of the normal anatomic vascular pathway to provide blood flow following or as part of that strategy.

Intent is to describe specifically how the arch branch vessel was managed as part of a hybrid strategy (i.e. separate surgical procedure either done concurrently or at a previous time, typically done during the same admission).

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**SEQ. #: 5160**

**Long Name:** Left Carotid - Extra-Anatomic Bypass - Innominate-Left Carotid

**Short Name:** LTCaroInnomCaro

**Definition:** Indicate whether the extra-anatomic bypass was an innominate to left carotid bypass

**Intent/Clarification:**

An extra-anatomic bypass refers to any bypass graft that is placed outside of the normal anatomic vascular pathway to provide blood flow following or as part of that strategy. Intent is to describe specifically how the arch branch vessel was managed as part of a hybrid strategy (i.e. separate surgical procedure either done concurrently or at a previous time, typically done during the same admission).

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**SEQ. #: 5170**

**Long Name:** Left Carotid - Extra-Anatomic Bypass - Right Carotid - Left Carotid

**Short Name:** LTCaroCarotid

**Definition:** Indicate whether the extra-anatomic bypass was a right carotid to left carotid bypass

**Intent/Clarification:**

An extra-anatomic bypass refers to any bypass graft that is placed outside of the normal anatomic vascular pathway to provide blood flow following or as part of that strategy.

Intent is to describe specifically how the arch branch vessel was managed as part of a (i.e. separate surgical procedure either done concurrently or at a previous time, typically done during the same admission). This bypass crossed the midline and may go either in front of or behind the esophagus.

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**SEQ. #:** 5175

**Long Name:** Left Carotid - Extra-Anatomic Bypass - Other

**Short Name:** LTCaroOther

**Definition:** Indicate whether any other extra-anatomic left carotid bypass was performed

**Intent/Clarification:**

An extra-anatomic bypass refers to any bypass graft that is placed outside of the normal anatomic vascular pathway to provide blood flow following or as part of that strategy.

Intent is to describe specifically how the arch branch vessel was managed as part of a (i.e. separate surgical procedure either done concurrently or at a previous time, typically done during the same admission).

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**SEQ. #:** 5180

**Long Name:** Arch Vessel Management - Left Subclavian

**Short Name:** LeftSubclavian

**Definition:** Indicate the management of the left subclavian artery

**Intent/Clarification:**

Intent is to describe specifically how the arch branch vessel was managed as part of a hybrid strategy (i.e. separate surgical procedure either done concurrently or at a previous time, typically done during the same admission). Options included native flow where no direct endo-intervention on the vessel was performed or extra-anatomic bypasses which may be performed in a staged fashion (i.e. commonly an additional operation previous to the endovascular one).

The left subclavian artery arises from the distal aortic arch.

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**SEQ. #:** 5195

**Long Name:** Left Subclavian - Extra-Anatomic Bypass - Aorta-Left Subclavian

**Short Name:** LSubAortaSub

**Definition:** Indicate whether the extra-anatomic bypass was an aorta to left subclavian bypass

**Intent/Clarification:**

An extra-anatomic bypass refers to any bypass graft that is placed outside of the normal anatomic vascular pathway to provide blood flow following or as part of that strategy.



Intent is to describe specifically how the arch branch vessel was managed as part of a hybrid strategy (i.e. separate surgical procedure either done concurrently or at a previous time, typically done during the same admission).

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**SEQ. #: 5205**

**Long Name:** Left Subclavian - Extra-Anatomic Bypass - Left Carotid-Left Subclavian

**Short Name:** LTSubCarotidSub

**Definition:** Indicate whether the extra-anatomic bypass was a left carotid to left subclavian bypass

**Intent/Clarification:**

An extra-anatomic bypass refers to any bypass graft that is placed outside of the normal anatomic vascular pathway to provide blood flow following or as part of that strategy.

Intent is to describe specifically how the arch branch vessel was managed as part of a hybrid strategy (i.e. separate surgical procedure either done concurrently or at a previous time, typically done during the same admission).

This means that either a bypass (i.e. use of a separate graft) or direct transposition was performed to create a communication between the left carotid and subclavian vessels.

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**SEQ. #: 5213**

**Long Name:** Left Subclavian - Extra-Anatomic Bypass - Other

**Short Name:** LTSubOther

**Definition:** Indicate whether any other extra-anatomic left subclavian bypass was performed

**Intent/Clarification:**

An extra-anatomic bypass refers to any bypass graft that is placed outside of the normal anatomic vascular pathway to provide blood flow following or as part of that strategy.

Intent is to describe specifically how the arch branch vessel was managed as part of a hybrid strategy (i.e. separate surgical procedure either done concurrently or at a previous time, typically done during the same admission). Although most strategies are included in the list above this may be checked if another procedure is performed such as a transposition.

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**SEQ. #:** 5214

**Long Name:** Arch Vessel Management - Other Arch Vessels Extra-Anatomic Bypass

**Short Name:** OthArchVes

**Definition:** Indicate whether other arch vessel extra-anatomic bypass was performed

**Intent/Clarification:**

An extra-anatomic bypass refers to any bypass graft that is placed outside of the normal anatomic vascular pathway to provide blood flow following or as part of that strategy.

Intent is to describe specifically how the arch branch vessel was managed as part of a hybrid strategy (i.e. separate surgical procedure either done concurrently or at a previous time, typically done during the same admission) when something other than the vessels described above are included in the description.

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**SEQ. #:** 5215

**Long Name:** Other - Extra-Anatomic Bypass - Innominate - Carotid

**Short Name:** OthInnomCaro

**Definition:** Indicate whether the extra-anatomic bypass was innominate to carotid

**Intent/Clarification:**

An extra-anatomic bypass refers to any bypass graft that is placed outside of the normal anatomic vascular pathway to provide blood flow following or as part of that strategy.

Intent is to describe specifically how the arch branch vessel was managed as part of a hybrid strategy (i.e. separate surgical procedure either done concurrently or at a previous time, typically done during the same admission) when a bypass was created from the innominate to one of the carotid arteries.

This field may be redundant if the bypass was to the left carotid because it is described in a field above but may checked if an innominate to right carotid bypass was performed but that would be a very rare event.

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**SEQ. #:** 5216

**Long Name:** Other - Extra-Anatomic Bypass - Innominate - Subclavian

**Short Name:** OthInnomSub

**Definition:** Indicate whether the extra-anatomic bypass was innominate to subclavian

**Intent/Clarification:**

An extra-anatomic bypass refers to any bypass graft that is placed outside of the normal anatomic vascular pathway to provide blood flow following or as part of that strategy.

Intent is to describe specifically how the arch branch vessel was managed as part of a hybrid strategy (i.e. separate surgical procedure either done concurrently or at a previous time, typically done during the same admission) when a bypass was created from the innominate artery to one of the subclavian arteries.

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**SEQ. #: 5217**

**Long Name:** Other - Extra-Anatomic Bypass - Subclavian - Subclavian

**Short Name:** OthSubSub

**Definition:** Indicate whether the extra-anatomic bypass was subclavian to subclavian

**Intent/Clarification:**

An extra-anatomic bypass refers to any bypass graft that is placed outside of the normal anatomic vascular pathway to provide blood flow following or as part of that strategy.

Intent is to describe specifically how the arch branch vessel was managed as part of a hybrid strategy (i.e. separate surgical procedure either done concurrently or at a previous time, typically done during the same admission) when a bypass was created between the two subclavian arteries.

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**SEQ. #: 5218**

**Long Name:** Other - Extra-Anatomic Bypass - Other

**Short Name:** OthOther

**Definition:** Indicate whether any other extra-anatomic arch vessel bypass was performed

**Intent/Clarification:**

An extra-anatomic bypass refers to any bypass graft that is placed outside of the normal anatomic vascular pathway to provide blood flow following or as part of that strategy.

Intent is to describe specifically how the arch branch vessel was managed as part of a hybrid strategy (i.e. separate surgical procedure either done concurrently or at a previous time, typically done during the same admission). Many patients have their left vertebral artery originating from the aorta directly and this could be bypassed or reconstructed by transposition to the carotid artery or other means.

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**SEQ. #:** 5220

**Long Name:** Visceral Vessel Management - Celiac

**Short Name:** Celiac

**Definition:** Indicate management of the celiac artery

**Intent/Clarification:**

The intent is to clarify whether the celiac axis/artery was revascularized during an endovascular repair of the thoracic or thoracoabdominal aorta.

If the celiac artery was left intact and continues to receive blood flow from the native aorta in the normal manner after the endovascular procedure then “**Native Flow**” should be selected.

If the celiac artery is instrumented with an endovascular branch graft extending from the main body of an aortic endograft and landing distally within the celiac as would be performed in an endovascular thoracoabdominal aortic repair then “**Endovascular Branch Graft**” should be selected.

If the celiac artery is instrumented with a separate endovascular graft that does not extend from an aortic endograft but rather courses parallel to an aortic endograft and lands distally within the celiac with flow through the celiac endovascular graft from the native aorta as would be performed with a “chimney” or “periscope” technique for endovascular thoracoabdominal aortic repair then “**Endovascular Parallel Graft**” should be selected.

If the celiac artery is fed by a surgical bypass graft (e.g. iliac artery to celiac bypass, infrarenal aorta to celiac bypass – see below) with subsequent endovascular coverage of the celiac by the aortic endograft typically as would be performed in a “hybrid” thoracoabdominal aortic repair then “**Extra-anatomic Bypass**” should be selected.

If the celiac artery is covered by an aortic endograft with a fenestration/opening in the endograft corresponding to the location of the celiac and allowing continued antegrade flow into the celiac via this fenestration despite endograft coverage as would be performed in an endovascular juxtarenal or thoracoabdominal aortic repair then “**Fenestrated**” should be selected.

This may include coverage of a graft.

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**SEQ. #:** 5225

**Long Name:** Celiac - Extra-Anatomic Bypass - Aorta-Celiac

**Short Name:** CeliacAortaCeli

**Definition:** Indicate whether the extra-anatomic bypass was aorta to celiac

**Intent/Clarification:**

An extra-anatomic bypass refers to any bypass graft that is placed outside of the normal anatomic vascular pathway to provide blood flow following or as part of that strategy.

The bypass may originate from any segment of the aorta (e.g. ascending, descending, abdominal).

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**SEQ. #: 5245**

**Long Name:** Celiac - Extra-Anatomic Bypass - Iliac-Celiac

**Short Name:** CeliacIliacCeliac

**Definition:** Indicate whether the extra-anatomic bypass was iliac to celiac

**Intent/Clarification:**

An extra-anatomic bypass refers to any bypass graft that is placed outside of the normal anatomic vascular pathway to provide blood flow following or as part of that strategy.

The bypass may originate from any segment of the iliac artery (e.g. common, external, or internal).

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**SEQ. #: 5265**

**Long Name:** Celiac - Extra-Anatomic Bypass - Other

**Short Name:** CeliacOther

**Definition:** Indicate whether another extra-anatomic celiac bypass was performed

**Intent/Clarification:**

An extra-anatomic bypass refers to any bypass graft that is placed outside of the normal anatomic vascular pathway to provide blood flow following or as part of that strategy.

This includes a bypass from any other vessel to the celiac or one of its branches (e.g. hepatic, splenic). Examples would include hepatorenal or splenorenal bypass.

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**SEQ. #: 5270**

**Long Name:** Visceral Vessel Management - Superior Mesenteric

**Short Name:** SupMesenteric

**Definition:** Indicate management of the superior mesenteric artery

**Intent/Clarification:**

The intent is to clarify whether the superior mesenteric artery (SMA) was revascularized during an endovascular repair of the thoracic or thoracoabdominal aorta.

If the SMA was left intact and continues to receive blood flow from the native aorta in the normal manner after the endovascular procedure, then “**Native Flow**” should be selected.

If the SMA is instrumented with an endovascular branch graft extending from the main body of an aortic endograft and landing distally within the SMA as would be performed in an endovascular thoracoabdominal aortic repair, then “**Endovascular Branch Graft**” should be selected.

If the SMA is instrumented with a separate endovascular graft that does not extend from an aortic endograft but rather courses parallel to an aortic endograft and lands distally within the SMA with flow through the SMA endovascular graft from the native aorta as would be performed with a “chimney” or “periscope” technique for endovascular thoracoabdominal aortic repair then “**Endovascular Parallel Graft**” should be selected.

If the SMA is fed by a surgical bypass graft (e.g. iliac artery to SMA bypass, infrarenal aorta to SMA bypass – see below) with subsequent endovascular coverage of the SMA by the aortic endograft typically as would be performed in a “hybrid” thoracoabdominal aortic repair then “**Extra-anatomic Bypass**” should be selected.

If the SMA is covered by an aortic endograft with a fenestration/opening in the endograft corresponding to the location of the SMA and allowing continued antegrade flow into the SMA via this fenestration despite endograft coverage as would be performed in an endovascular juxtarenal or thoracoabdominal aortic repair then “**Fenestrated**” should be selected.

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**SEQ. #: 5280**

**Long Name:** Superior Mesenteric - Extra-Anatomic Bypass - Aorta-Superior Mesenteric

**Short Name:** SupMesAortaSuMe

**Definition:** Indicate whether the extra-anatomic bypass was aorta to superior mesenteric

**Intent/Clarification:**

An extra-anatomic bypass refers to any bypass graft that is placed outside of the normal anatomic vascular pathway to provide blood flow following or as part of that strategy.

The bypass may originate from any segment of the aorta (e.g. ascending, descending, abdominal).

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**SEQ. #:** 5300

**Long Name:** Superior Mesenteric - Extra-Anatomic Bypass - Iliac-Superior Mesenteric

**Short Name:** SupMesIliacSupMe

**Definition:** Indicate whether the extra-anatomic bypass was iliac to superior mesenteric

**Intent/Clarification:**

An extra-anatomic bypass refers to any bypass graft that is placed outside of the normal anatomic vascular pathway to provide blood flow following or as part of that strategy.

The bypass may originate from any segment of the iliac artery (e.g. common, external, or internal).

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**SEQ. #:** 5315

**Long Name:** Superior Mesenteric - Extra-Anatomic Bypass - Other

**Short Name:** SupMesOther

**Definition:** Indicate whether another extra-anatomic superior mesenteric bypass was performed

**Intent/Clarification:**

An extra-anatomic bypass refers to any bypass graft that is placed outside of the normal anatomic vascular pathway to provide blood flow following or as part of that strategy. This includes a bypass from any other vessel to the SMA.

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**SEQ. #:** 5320

**Long Name:** Visceral Vessel Management - Right Renal

**Short Name:** RightRenal

**Definition:** Indicate management of the right renal artery

**Intent/Clarification:**

The intent is to clarify whether the right renal artery was revascularized during an endovascular repair of the thoracic or thoracoabdominal aorta.

If the right renal artery was left intact and continues to receive blood flow from the native aorta in the normal manner after the endovascular procedure, then **“Native Flow”** should be selected.

If the right renal artery is instrumented with an endovascular branch graft extending from the main body of an aortic endograft and landing distally within the right renal artery as would be performed in an endovascular thoracoabdominal aortic repair, then **“Endovascular Branch Graft”** should be selected.

If the right renal artery is instrumented with a separate endovascular graft that does not extend from an aortic endograft but rather courses parallel to an aortic endograft and lands distally within the right renal artery with flow through the right renal artery endovascular graft from the native aorta as would be performed with a “chimney” or “periscope” technique for endovascular thoracoabdominal aortic repair then **“Endovascular Parallel Graft”** should be selected.

If the right renal artery is fed by a surgical bypass graft (e.g. iliac artery to right renal artery bypass, infrarenal aorta to right renal artery bypass – see below) with subsequent endovascular coverage of the right renal artery by the aortic endograft typically as would be performed in a “hybrid” thoracoabdominal aortic repair then **“Extra-anatomic Bypass”** should be selected.

If the right renal artery is covered by an aortic endograft with a fenestration/opening in the endograft corresponding to the location of the right renal artery and allowing continued antegrade flow into the right renal artery via this fenestration despite endograft coverage as would be performed in an endovascular juxtarenal or thoracoabdominal aortic repair then **“Fenestrated”** should be selected.

**FAQ February 2019:** The right and left renal arteries were covered with endograft secondary to emergency rupture. A dialysis catheter was placed. How should visceral vessel right renal be coded?

Answer: Leave blank

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**SEQ. #:** 5335

**Long Name:** Right Renal - Extra-Anatomic Bypass - Aorta-Right Renal

**Short Name:** RtRenAortaRtRe

**Definition:** Indicate whether the extra-anatomic bypass was aorta to right renal

**Intent/Clarification:**

An extra-anatomic bypass refers to any bypass graft that is placed outside of the normal anatomic vascular pathway to provide blood flow following or as part of that strategy.

The bypass may originate from any segment of the aorta (e.g. ascending, descending, abdominal).

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**SEQ. #:** 5355

**Long Name:** Right Renal - Extra-Anatomic Bypass - Iliac-Right Renal

**Short Name:** RtRenIliacRtRen

**Definition:** Indicate whether the extra-anatomic bypass was iliac to right renal.

**Intent/Clarification:**

An extra-anatomic bypass refers to any bypass graft that is placed outside of the normal anatomic vascular pathway to provide blood flow following or as part of that strategy.

The bypass may originate from any segment of the aorta (e.g. ascending, descending, abdominal).

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**SEQ. #:** 5365

**Long Name:** Right Renal - Extra-Anatomic Bypass - Other

**Short Name:** RtRenOther

**Definition:** Indicate whether another extra-anatomic right renal bypass was performed

**Intent/Clarification:**

An extra-anatomic bypass refers to any bypass graft that is placed outside of the normal anatomic vascular pathway to provide blood flow following or as part of that strategy.

This includes a bypass from any other vessel to the right renal artery. An example would include hepatorenal bypass.

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**SEQ. #:** 5370

**Long Name:** Visceral Vessel Management - Left Renal

**Short Name:** LeftRenal

**Definition:** Indicate management of the left renal artery

**Intent/Clarification:**

The intent is to clarify whether the left renal artery was revascularized during an endovascular repair of the thoracic or thoracoabdominal aorta.

If the left renal artery was left intact and continues to receive blood flow from the native aorta in the normal manner after the endovascular procedure, then **“Native Flow”** should be selected.

If the left renal artery is instrumented with an endovascular branch graft extending from the main body of an aortic endograft and landing distally within the left renal artery as

would be performed in an endovascular thoracoabdominal aortic repair, then **“Endovascular Branch Graft”** should be selected.

If the left renal artery is instrumented with a separate endovascular graft that does not extend from an aortic endograft but rather courses parallel to an aortic endograft and lands distally within the left renal artery with flow through the left renal artery endovascular graft from the native aorta as would be performed with a “chimney” or “periscope” technique for endovascular thoracoabdominal aortic repair then **“Endovascular Parallel Graft”** should be selected.

If the left renal artery is fed by a surgical bypass graft (e.g. iliac artery to left renal artery bypass, infrarenal aorta to left renal artery bypass – see below) with subsequent endovascular coverage of the left renal artery by the aortic endograft typically as would be performed in a “hybrid” thoracoabdominal aortic repair then **“Extra-anatomic Bypass”** should be selected.

If the left renal artery is covered by an aortic endograft with a fenestration/opening in the endograft corresponding to the location of the left renal artery and allowing continued antegrade flow into the left renal artery via this fenestration despite endograft coverage as would be performed in an endovascular juxtarenal or thoracoabdominal aortic repair then **“Fenestrated”** should be selected.

**FAQ February 2019:** The right and left renal arteries were covered with endograft secondary to emergency rupture. A dialysis catheter was placed. How should visceral vessel left renal be coded?

Answer: Leave blank.

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**SEQ. #: 5375**

**Long Name:** Left Renal - Extra-Anatomic Bypass - Aorta-Left Renal

**Short Name:** LtRenAortaLtRe

**Definition:** Indicate whether the extra-anatomic bypass was aorta to left renal

**Intent/Clarification:**

An extra-anatomic bypass refers to any bypass graft that is placed outside of the normal anatomic vascular pathway to provide blood flow following or as part of that strategy.

The bypass may originate from any segment of the aorta (e.g. ascending, descending, abdominal).

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**SEQ. #:** 5380

**Long Name:** Left Renal - Extra-Anatomic Bypass - Iliac-Left Renal

**Short Name:** LtRenIliacLtRen

**Definition:** Indicate whether the extra-anatomic bypass was iliac to left renal

**Intent/Clarification:**

An extra-anatomic bypass refers to any bypass graft that is placed outside of the normal anatomic vascular pathway to provide blood flow following or as part of that strategy.

The bypass may originate from any segment of the iliac artery (e.g. common, external, or internal).

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**SEQ. #:** 5385

**Long Name:** Left Renal - Extra-Anatomic Bypass - Other

**Short Name:** LtRenOther

**Definition:** Indicate whether another extra-anatomic left renal bypass was performed

**Intent/Clarification:**

An extra-anatomic bypass refers to any bypass graft that is placed outside of the normal anatomic vascular pathway to provide blood flow following or as part of that strategy.

This includes a bypass from any other vessel to the left renal artery. An example would include splenorenal bypass.

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**SEQ. #:** 5390

**Long Name:** Visceral Vessel Management - Right Iliac

**Short Name:** RightIliac

**Definition:** Indicate management of the right iliac artery

**Intent/Clarification:**

The intent is to clarify whether the right iliac artery was revascularized during an endovascular repair of the thoracic or thoracoabdominal aorta.

If the right iliac artery was left intact and continues to receive blood flow from the native aorta in the normal manner after the endovascular procedure, then **“Native Flow”** should be selected.

If the right iliac artery is instrumented with an iliac limb extending from the main body of an abdominal aortic endograft (either bifurcated or aorto uni-iliac) and landing distally within the right iliac artery, then “**Bifurcated Graft**” should be selected.

If the right iliac artery is fed by a surgical bypass graft and not an endovascular device or native antegrade flow from the aorta, then “**Extra-anatomic Bypass**” should be selected.

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**SEQ. #: 5391**

**Long Name:** Visceral Vessel Management - Right Iliac - Femoral-Femoral

**Short Name:** RtIliacFemFem

**Definition:** Indicate whether the extra-anatomic bypass was femoral to femoral

**Intent/Clarification:**

This would typically be a bypass from the left common femoral artery to the right common femoral artery.

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**SEQ. #: 5392**

**Long Name:** Visceral Vessel Management - Right Iliac - Other

**Short Name:** RtIliacOther

**Definition:** Indicate whether another right iliac extra-anatomic bypass was performed

**Intent/Clarification:**

An extra-anatomic bypass refers to any bypass graft that is placed outside of the normal anatomic vascular pathway to provide blood flow following or as part of that strategy.

This includes a bypass from any other vessel to the right iliac artery. An example would include aorto-iliac bypass.

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**SEQ. #: 5393**

**Long Name:** Visceral Vessel Management - Left Iliac

**Short Name:** LeftIliac

**Definition:** Indicate management of the left iliac artery

**Intent/Clarification:**

The intent is to clarify whether the left iliac artery was revascularized during an endovascular repair of the thoracic or thoracoabdominal aorta.

If the left iliac artery was left intact and continues to receive blood flow from the native aorta in the normal manner after the endovascular procedure, then “**Native Flow**” should be selected.

If the left iliac artery is instrumented with an iliac limb extending from the main body of an abdominal aortic endograft (either bifurcated or aorto uni-iliac) and landing distally within the left iliac artery, then “**Bifurcated Graft**” should be selected.

If the left iliac artery is fed by a surgical bypass graft and not an endovascular device or native antegrade flow from the aorta, then “**Extra-anatomic Bypass**” should be selected.

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**SEQ. #: 5394**

**Long Name:** Visceral Vessel Management - Left Iliac - Femoral-Femoral

**Short Name:** LtIliacFemFem

**Definition:** Indicate whether the extra-anatomic bypass was femoral to femoral

**Intent/Clarification:**

An extra-anatomic bypass refers to any bypass graft that is placed outside of the normal anatomic vascular pathway to provide blood flow following or as part of that strategy.

This would typically be a bypass from the right common femoral artery to the left common femoral artery.

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**SEQ. #: 5395**

**Long Name:** Visceral Vessel Management - Left Iliac - Other

**Short Name:** LtIliacOther

**Definition:** Indicate whether another left iliac extra-anatomic bypass was performed

**Intent/Clarification:**

An extra-anatomic bypass refers to any bypass graft that is placed outside of the normal anatomic vascular pathway to provide blood flow following or as part of that strategy.

This includes a bypass from any other vessel to the left iliac artery. An example would include aorto-iliac bypass.

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**SEQ. #:** 5396

**Long Name:** Visceral Vessel Management - Internal Iliac Preserved

**Short Name:** IntIliacPres

**Definition:** Indicate whether the internal iliac was preserved

**Intent/Clarification:**

The intent is to clarify whether native antegrade flow is maintained within the internal iliac arteries during an endovascular repair of the thoracoabdominal aorta.

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**SEQ. #:** 5397

**Long Name:** Visceral Vessel Management - Other visceral Vessels Extra-Anatomic Bypass

**Short Name:** OthVisVes

**Definition:** Indicate whether extra-anatomic bypass of other visceral vessels was performed

**Intent/Clarification:**

An extra-anatomic bypass refers to any bypass graft that is placed outside of the normal anatomic vascular pathway to provide blood flow following or as part of that strategy.

This includes a bypass to any branch of the major visceral vessels such as the hepatic or splenic branches of the celiac axis, a bypass to the inferior mesenteric artery or accessory renal artery, or a bypass to another named visceral vessel other than the celiac, SMA, left or right renal arteries.

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**SEQ. #:** 5398

**Long Name:** Visceral Vessel Management - Other visceral Vessels Extra-Anatomic Bypass - Aorta-Other

**Short Name:** OthVisAortOth

**Definition:** Indicate whether other extra-anatomic bypass included an aorta to other bypass

**Intent/Clarification:**

An extra-anatomic bypass refers to any bypass graft that is placed outside of the normal anatomic vascular pathway to provide blood flow following or as part of that strategy.

The bypass may originate from any segment of the aorta (e.g. ascending, descending, abdominal).

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**SEQ. #:** 5399

**Long Name:** Visceral Vessel Management - Other visceral Vessels Extra-Anatomic Bypass - Iliac-Other

**Short Name:** OthVisIliacOth

**Definition:** Indicate whether other extra-anatomic bypass included an iliac to other bypass

**Intent/Clarification:**

An extra-anatomic bypass refers to any bypass graft that is placed outside of the normal anatomic vascular pathway to provide blood flow following or as part of that strategy.

The bypass may originate from any segment of the iliac artery (e.g. common, external, or internal).

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**SEQ. #:** 5400

**Long Name:** Visceral Vessel Management - Other visceral Vessels Extra-Anatomic Bypass - Other

**Short Name:** OthVisOther

**Definition:** Indicate whether any other visceral vessel extra-anatomic bypass was performed

**Intent/Clarification:**

An extra-anatomic bypass refers to any bypass graft that is placed outside of the normal anatomic vascular pathway to provide blood flow following or as part of that strategy.

This includes a bypass from any vessel other than the aorta or iliac artery to another named visceral vessel other than the celiac, SMA, left or right renal arteries.

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**SEQ. #:** 5401

**Long Name:** Dissection Proximal Entry Tear Covered

**Short Name:** DisProxTearCov

**Definition:** Indicate whether the proximal entry tear was covered.

**Intent/Clarification:**

If the proximal entry tear (so-called primary tear) of an aortic dissection is fully covered by an aortic endograft then "Yes" should be selected.

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**SEQ. #:** 5402

**Long Name:** Endoleak At End Of Procedure

**Short Name:** EndoEndProc

**Definition:** Indicate whether there was endoleak present at the end of the procedure

**Intent/Clarification:**

The intent is to define whether an endoleak is noted at the completion of an endovascular repair. This would typically be determined by the surgeon's assessment of the intraoperative completion angiogram.

An **endoleak** is defined as persistent blood flow in the aneurysm sac through and around the endovascular seal and is the most common complication after endovascular aneurysm repair.

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**SEQ. #:** 5403

**Long Name:** Endoleak At End Of Procedure - Type

**Short Name:** EndoEndProcTy

**Definition:** Indicate the type of endoleak present

**Intent/Clarification:**

If an endoleak is noted **at the completion** of an endovascular repair before exiting the operating room, the intent is to define the type of endoleak present. This would typically be determined by the surgeon's assessment of the intraoperative completion angiogram.

A **Type Ia endoleak** is defined as a leak occurring at the proximal seal zone.

A **Type Ib endoleak** is defined as a leak occurring at the distal seal zone.

A **Type II endoleak** is defined as retrograde filling of the aneurysm sac or false lumen in the case of dissection by aortic branch vessels (e.g. left subclavian artery, intercostal arteries, etc.).

A **Type III endoleak** is defined as leakage of blood into the aneurysm sac, or false lumen in the case of dissection, due to either a gap between separate endograft components, or a defect in the fabric of the graft secondary to graft strut fracture or erosion.

A **Type IV endoleak** is defined as the presence of an endoleak secondary to graft porosity. All other types of endoleaks must be definitively ruled out prior to selecting this diagnosis.

A **Type V endoleak**, also known as endotension, is defined as persistent aneurysm expansion in the absence of a confirmed endoleak.



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**SEQ. #:** 5404

**Long Name:** Conversion To Open

**Short Name:** ConvToOpen

**Definition:** Indicate whether there was an unplanned conversion to an open procedure

**Intent/Clarification:**

This includes any conversion to open surgery not pre-specified as part of the operative plan.

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**SEQ. #:** 5405

**Long Name:** Conversion To Open - Reason

**Short Name:** ConvToOpenRes

**Definition:** Indicate the reason for conversion to open procedure

**Intent/Clarification:**

If the reason for open conversion was failure of an endograft to deploy, either partially or fully, such that the planned endovascular treatment could not be completed then “**Deployment failure**” should be selected. If the reason for open conversion is a persistent endoleak noted on completion angiogram then “**Endoleak**” should be selected. If the aorta or a branch vessel ruptures intraoperatively requiring open conversion then “**Rupture**” should be selected. If partial or complete (occlusion) loss of antegrade flow within a branch vessel occurs and requires open conversion to restore flow then “**Occlusion/loss of branch**” should be selected.

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**SEQ. #:** 5406

**Long Name:** Intraop Dissection Extension

**Short Name:** IntDisExten

**Definition:** Indicate whether there was intraoperative dissection extension

**Intent/Clarification:**

If a pre-existing aortic dissection is made to propagate either proximally or distally beyond its preoperative extent during the operation, then extension of dissection has occurred. If the pre-existing dissection extends proximally (i.e. back towards the aortic arch or ascending aorta) beyond the original extent, then “**Retrograde**” should be selected. If the pre-existing dissection extends distally (i.e. downstream towards the descending or abdominal aorta) beyond the original extent, then “**Antegrade**” should be selected. If the pre-existing dissection extends both proximally and distally then “**Both**” should be selected.

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**SEQ. #:** 5407

**Long Name:** Unintentional Rupture Of Dissection Septum

**Short Name:** UnintRup

**Definition:** Indicate whether there was unintentional rupture of the dissection septum

**Intent/Clarification:**

The intent is to capture those instances where the dissection membrane/septum is unintentionally ruptured during an endovascular repair of an aortic dissection. This is typically due to the septum being fractured by a balloon or endograft, and the result is the creation of a new fenestration/connection between the true and false lumens of the dissection (so-called stent graft induced new entry tear (SINE)). This would typically be determined by the surgeon's assessment of the intraoperative completion angiogram, intravascular ultrasound, and/or transesophageal echocardiography.

**It should be noted that in certain instances the surgeon may elect to intentionally fracture/rupture the dissection septum/membrane, typically using a balloon, and these cases should not be coded as unintentional rupture.**

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**SEQ. #:** 5408

**Long Name:** Unintentional Rupture Of Dissection Septum - Location

**Short Name:** UnintRupLoc

**Definition:** Indicate the location of the unintentional rupture of the dissection septum

**Intent/Clarification:**

The exact aortic segment in which the unintentional rupture of the dissection septum occurred should be specified. This would typically be determined by the surgeon's assessment of the intraoperative completion angiogram, intravascular ultrasound, and/or transesophageal echocardiography.

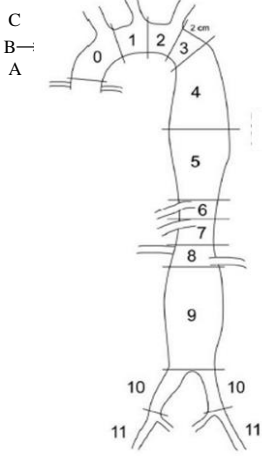
**Zone 0 definitions:**

A. If the unintentional rupture of the dissection septum occurred in the aortic root (sinus of Valsalva segment just above the aortic valve) then "Below STJ" should be selected.

B. If the unintentional rupture of the dissection septum occurred in the segment of the ascending aorta between the sinotubular junction (defined as the junction between the aortic root and tubular ascending aorta) and the mid-point of the ascending aorta (i.e. proximal tubular ascending aorta) then "STJ-midascending" should be selected.

C. If the unintentional rupture of the dissection septum occurred in the segment of the ascending aorta between the mid-point of the ascending aorta and the origin of the

innominate artery or first branch vessel off the aortic arch then “Midascending-distal ascending” should be selected.



The diagram illustrates the aorta with various zones and levels. Zones 0 through 11 are marked along the length of the vessel. Levels A, B, and C are indicated at the top. Zone 0 is at the base of the aorta. Zone 1 is between the innominate and left carotid arteries. Zone 2 is between the left carotid and left subclavian arteries. Zone 3 is the first 2 cm distal to the left subclavian artery. Zone 4 extends from the end of zone 3 to the mid descending aorta at the level of T6. Zone 5 is the mid descending aorta to the celiac artery. Zone 6 is between the celiac and superior mesenteric arteries. Zone 7 is between the superior mesenteric and renal arteries. Zone 8 is between the renal and infra-renal abdominal aorta. Zone 9 is the infra-renal abdominal aorta. Zone 10 is the common iliac arteries. Zone 11 is the external iliac arteries.

A. Below sinotubular junction  
B. Sinotubular junction to mid ascending  
C. Mid ascending to distal ascending  
D. Zone 1 (between innominate and left carotid)  
E. Zone 2 (between left carotid and left subclavian)  
F. Zone 3 (first 2 cm. distal to left subclavian)  
G. Zone 4 (end of zone 3 to mid descending aorta ~ T6)  
H. Zone 5 (mid descending aorta to celiac)  
I. Zone 6 (celiac to superior mesenteric)  
J. Zone 7 (superior mesenteric to renals)  
K. Zone 8 (renal to infra-renal abdominal aorta)  
L. Zone 9 (infrarenal abdominal aorta)  
M. Zone 10 (common iliac)  
N. Zone 11 (external iliacs)

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**SEQ. #: 5420**

**Long Name:** Spinal Drain

**Short Name:** SpinalDrain

**Definition:** Indicate when/if a spinal drain was placed

**Intent/Clarification:**

Indicate whether a cerebrospinal fluid drain was used for the thoracic aortic intervention. Cerebrospinal fluid (CSF) drainage is an adjunct to protect against paraplegia during aortic repairs. CSF pressure may increase during the perioperative period of aortic repair leading to paraplegia. High CSF pressure may reduce spinal cord blood perfusion. CSF drainage reduces CSF pressure promoting spinal cord blood perfusion, reducing the risk of paraplegia. This field will capture the use of the cerebrospinal fluid drain during aortic repair. This is most often placed by anesthesia. This will also include any failed attempt (maldepolyed).

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**SEQ. #: 5425**

**Long Name:** IntraOp Motor Evoked Potential

**Short Name:** MotorEvoke

**Definition:** Indicate whether motor evoked potential was measured intraoperatively

**Intent/Clarification:**

Motor evoked potentials are used to monitor spinal cord function (motor cortex) during aortic intervention. Monitoring involves direct monitoring of electrical impulses used to stimulate the motor cortex and measurement of the response along the spinal cord. Changes in function during aortic intervention may indicate spinal cord injury. Adjunctive measures may be beneficial in restoring MEPs implying improvement in spinal cord function. It requires trained personnel, e.g. neurophysiologist, for monitoring. This will include unsuccessfully attempts at use of MEPs.

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**SEQ. #:** 5426**Long Name:** IntraOp Motor Evoked Potential - Documented MEP Abnormality**Short Name:** MotorEvokeAb**Definition:** Indicate whether any abnormality of motor evoked potential was documented**Intent/Clarification:**

Motor evoked potentials are used to monitor spinal cord function (motor cortex) during aortic intervention. Monitoring involves direct monitoring of electrical impulses used to stimulate the motor cortex and measurement of the response along the spinal cord. Changes in function during aortic intervention may indicate spinal cord injury. Adjunctive measures may be beneficial in restoring MEPs implying improvement in spinal cord function. It requires trained personnel, e.g. neurophysiologist, for monitoring. This will include unsuccessfully attempts at use of MEPs.

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**SEQ. #:** 5430**Long Name:** IntraOp Somatosensory Evoked Potential**Short Name:** SomatEvoke**Definition:** indicate whether somatosensory evoked potential was measured intraoperatively**Intent/Clarification:**

Somatosensory evoked potentials are used to monitor spinal cord function (sensory function) during aortic intervention. Monitoring involves direct monitoring of electrical impulses used to stimulate the sensory ventral tracts and measurement of the sensory response along the spinal cord. Changes in function during aortic intervention may indicate spinal cord injury. Adjunctive measures may be beneficial in restoring SSEPs implying improvement in spinal cord function. SSEPs may be less sensitive than MEPs for spinal cord dysfunction. It requires trained personnel, e.g. neurophysiologist, for monitoring. This will include unsuccessfully attempts at use of SSEPs.

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**SEQ. #:** 5431

**Long Name:** IntraOp Somatosensory Evoked Potential - Documented SEP Abnormality

**Short Name:** SomatEvokeAb

**Definition:** Indicate whether any abnormality of somatosensory evoked potential was documented

**Intent/Clarification:**

Somatosensory evoked potentials are used to monitor spinal cord function (sensory function) during aortic intervention. Monitoring involves direct monitoring of electrical impulses used to stimulate the sensory ventral tracts and measurement of the sensory response along the spinal cord. Changes in function during aortic intervention may indicate spinal cord injury. Adjunctive measures may be beneficial in restoring SSEPs implying improvement in spinal cord function. SSEPs may be less sensitive than MEPs for spinal cord dysfunction. It requires trained personnel, e.g. neurophysiologist, for monitoring. This will include unsuccessfully attempts at use of SSEPs.

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**SEQ. #:** 5432

**Long Name:** IntraOp EEG

**Short Name:** IntraOpEEG

**Definition:** Indicate whether EEG was monitored intraoperatively

**Intent/Clarification:**

Intraoperative electroencephalography may be used to monitor overall brain function during thoracic aortic procedures. Like MEPs and SSEPs, it requires trained personnel, e.g. neurophysiologist, for monitoring.

This will include unsuccessfully attempts at use of IntraOp/EEG.

**FAQ October 2017:** Can intraoperative Bispectral Index monitoring (BIS) be used as an acceptable substitute for EEG, since the measurement is a processed EEG parameter?

**Answer:** No, BIS does not provide the same information.

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**SEQ. #:** 5433

**Long Name:** IntraOp EEG - Documented EEG Abnormality

**Short Name:** IntraOpEEGAb

**Definition:** Indicate whether any abnormality of intraoperative EEG was documented

**Intent/Clarification:**

Intraoperative electroencephalography may be used to monitor overall brain function during thoracic aortic procedures. Like MEPs and SSEPs, it requires trained personnel, e.g. neurophysiologist, for monitoring.

This will include unsuccessfully attempts at use of IntraOp/EEG.

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**SEQ. #: 5434**

**Long Name:** IntraOp Intravascular Ultrasound (IVUS)

**Short Name:** IntraOpIVUS

**Definition:** indicate whether intravascular ultrasound was used intraoperatively

**Intent/Clarification:**

The unique point-of-view picture, generated in real time, yielding information that goes beyond what is possible with routine imaging methods, such as coronary angiography, performed in the Cath lab, or even non-invasive multi-slice CT scans.

**Update Dec 2019 - The use of IVUS is during the actual aorta procedure not IVUS used only to obtain percutaneous access.**

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**SEQ. #: 5435**

**Long Name:** IntraOp Transcutaneous Doppler

**Short Name:** TransDoppler

**Definition:** Indicate whether a transcutaneous Doppler was used intraoperatively

**Intent/Clarification:**

Transcutaneous Doppler enables the surgeon to alter his or her approach depending on the size and the location of aortic atheromatous burden and provides an opportunity for intervention guidance during aortic cannulation, cross clamping and aortotomy.

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**SEQ. #: 5436**

**Long Name:** IntraOp Angiogram

**Short Name:** IntraOpAng

**Definition:** Indicate whether an intraoperative angiogram was performed

**Intent/Clarification:**

An intraoperative angiography allows the surgeon to inspect the anatomic results of the surgical procedure.

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**SEQ. #: 5437**

**Long Name:** IntraOp Angiogram - Volume Of Contrast

**Short Name:** IntraOpAngVol

**Definition:** Indicate the total volume of contrast given intraoperatively.

**Intent/Clarification:**

The volume of contrast used during the intraoperative angiogram documented in the perioperative record, the operative dictation, or the Cath Lab event log.

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**SEQ. #: 5438**

**Long Name:** IntraOp Angiogram - Fluoroscopy Time In Minutes

**Short Name:** IntraOpAngFITm

**Definition:** Indicate the total intraoperative fluoroscopy time in minutes.

**Intent/Clarification:**

The total number of minute's intraoperative fluoroscopy documented in the perioperative record, the operative dictation, or the Cath Lab event log.

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**SEQ. #: 5440**

**Long Name:** Aorta Device Inserted

**Short Name:** ADevIns

**Definition:** Indicate whether one or more devices were inserted into the aorta.

**Intent/Clarification:**

This will include all synthetic prosthetics inserted. This may include Dacron, PTFE, homografts, autografts, stents, and stentgrafts. Some aortic interventions may not require prosthetic materials or device implants such as primary repair of a pseudoaneurysm. This will be indicated as "No."

**FAQ September 2018/Updated July 2019:** A patient had previous Ross procedure with Pulmonary Autograft implanted in Aortic Position, with reconstruction of aortic annulus with reduction annuolplasty and reconstruction of RVOT. He now has aneurysmal dilation of the ascending aorta and returns for AVR + Aortic Root Reconstruction and replacement of the ascending aorta. An OnyxAAP (free-style) valve was used, bard felt and a graft was placed, is this coded in the aortic devices?  
Answer: ~~Code this as an aortic valve implant and code it in the aorta device section, include any additional conduits in the aorta section as well.~~ If a separate valve is used, code the valve in the valve section and the graft should go in the aorta section. Do not capture the felt. If an aortic conduit is used, capture, this device in the Aorta section. Do not enter devices twice.

**FAQ July 2019** - There was an FAQ that suggested we enter the same graft (30 hemashield) twice and choose both "below STJ" and "mid ascending to distal ascending" but that would be entering the same product being inserted twice.

Answer - In the device section you enter the zones the implant covers, both proximal and distal. Therefore, the information for model number, UDI, and if successful is being entered twice in the device section. The only part that is entered once is the locations/zones

**FAQ July 2019:** The surgeon performed an open elephant trunk and the graft material covered the Left Subclavian. Therefore, he fenestrated the graft and stented into the Left Subclavian. How should this be captured?

Answer: This should be captured as Arch Reimplantation (seq 4995) 'yes', and Left Subclavian (seq 5010) 'yes.' Capture the graft material in the device section, but you do not need to capture the stent in the device section.

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**SEQ. #: 5450**

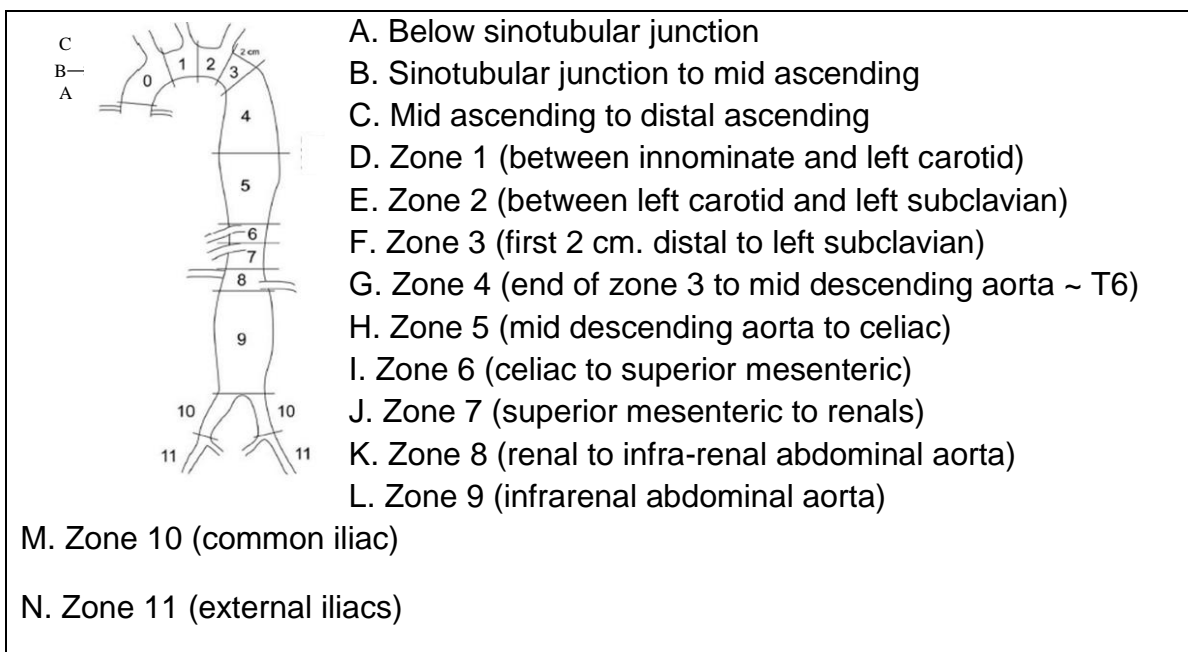
**Long Name:** Aorta Device - Location #01

**Short Name:** ADevLoc01

**Definition:** Indicate the location within the aorta where device #01 was inserted.

**Intent/Clarification:**

Zone 0 is the Ascending Aorta and includes letter A-C. Verify exact location with CV Surgeon. Aortic Root (letter A) is below sinotubular junction.





**FAQ July 2018:** Are we to enter graft devices for starting point and ending point - 2 entries for each piece utilized, do we also list bio-glue? felt pieces used to support suture lines and other supplies??

Answer: Yes, enter the most proximal and most distal locations. Bioglue is not included.

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**SEQ. #:** 5455

**Long Name:** Aorta Device - Delivery Method #01

**Short Name:** ADevDelMeth01

**Definition:** Indicate the delivery method used to insert device #01 within the aorta.

**Intent/Clarification:**

For each device the method of implant should be specified as either “open” or “endovascular.” If a device was attempted to be implanted endo-vascularly but eventually implanted by open techniques, then this is designated “open.”

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**SEQ. #:** 5460

**Long Name:** Aorta Device - Outcome #01

**Short Name:** ADevOut01

**Definition:** Indicate the outcome of the attempt to insert device #01.

**Intent/Clarification:**

**Maldeployed:** This indicates that a device implantation was attempted by endovascular means but was not successfully deployed in the intended position. An example would be attempted deployment of a fenestrated or branched device for transverse arch intervention and mal-alignment of the portal did not allow successful branch vessel bypass. If a device was mal-deployed but later removed this would be classified as “DelivMeth/deploy/remove.”

**Deployed and Removed:** This indicates that a device was attempted to be implanted by endovascular means but was not successfully deployed. An example would be open repair of descending thoracic aortic repair after failed thoracic endovascular aortic repair from rupture or persistent endoleak. This would be classified as TEVAR as “DelivMeth/deploy /remove.”

**Successfully Deployed/Implanted:** This indicates that the device was successfully deployed by endovascular or **open** means.

**November 2017:** For section M2, ‘device’ refers to any implanted material within the aorta; Grafts or stent-grafts.

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**SEQ. #:** 5465

**Long Name:** Aorta Device - Model Number #01

**Short Name:** ADevModel01

**Definition:** Indicate the model number of aorta device #01.

**Intent/Clarification:**

This is the model number from the manufacturer related to the type of device implanted.

**FAQ September 2017:** Is there supposed to be a drop-down list of model numbers for aorta devices in this field?

Answer: No, there is no drop-down list.

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**SEQ. #:** 5470

**Long Name:** Aorta Device - Unique Device Identifier #01

**Short Name:** ADevUDI01

**Definition:** Indicate the Unique Device Identifier (UDI) of aorta device #01 if available, otherwise leave blank. Note that the UDI is not the same as the serial number.

**Intent/Clarification:**

This is the number supplied from the manufacturer to identify the specific to the exact device inserted. This number is used to link the specific patient to the specific device implanted.

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**SEQ. #:** 5475

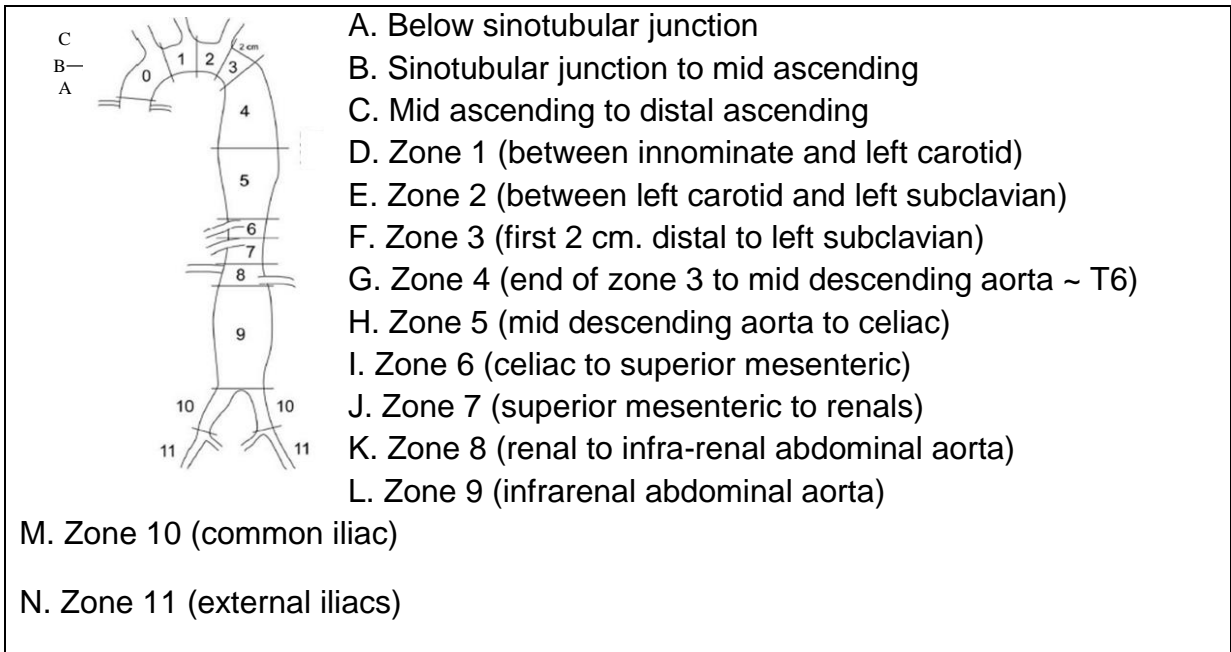
**Long Name:** Aorta Device - Location #02

**Short Name:** ADevLoc02

**Definition:** Indicate the location within the aorta where device #02 was inserted or indicate that no additional devices were inserted.

**Intent/Clarification:**

Zone 0 is the Ascending Aorta and includes letter A-C. Verify exact location with CV Surgeon. Aortic Root (letter A) is below sinotubular junction



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**SEQ. #: 5480**

**Long Name:** Aorta Device - Delivery Method #02

**Short Name:** ADevDelMeth02

**Definition:** Indicate the delivery method used to insert device #02 within the aorta.

**Intent/Clarification:**

For each device the method of implant should be specified as either “open” or “endovascular.” If a device was attempted to be implanted endo-vascularly but eventually implanted by open techniques, then this is designated “open.”

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**SEQ. #: 5485**

**Long Name:** Aorta Device - Outcome #02

**Short Name:** ADevOut02

**Definition:** Indicate the outcome of the attempt to insert device #02.

**Intent/Clarification:**

**Maldeployed:** This indicates that a device implantation was attempted by endovascular means but was not successfully deployed in the intended position. An example would be attempted deployment of a fenestrated or branched device for transverse arch intervention and mal-alignment of the portal did not allow successful branch vessel bypass. If a device was mal-deployed but later removed this would be classified as “DelivMeth/deploy/remove.”

**Deployed and Removed:** This indicates that a device was attempted to be implanted by endovascular means but was not successfully deployed. An example would be open repair of descending thoracic aortic repair after failed thoracic endovascular aortic repair from rupture or persistent endoleak. This would be classified as TEVAR as “DelivMeth/deploy /remove.”

**Successfully Deployed/Implanted:** This indicates that the device was successfully deployed by endovascular or **open** means.

November 2017: For section M2, ‘device’ refers to any implanted material within the aorta; Grafts or stent-grafts.

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**SEQ. #: 5490**

**Long Name:** Aorta Device - Model Number #02

**Short Name:** ADevModel02

**Definition:** Indicate the model number of aorta device #02.

**Intent/Clarification:**

This is the model number from the manufacturer related to the type of device implanted.

FAQ September 2017: Is there supposed to be a drop-down list of model numbers for aorta devices in this field?

Answer: No, there is no drop-down list.

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**SEQ. #: 5495**

**Long Name:** Aorta Device - Unique Device Identifier #02

**Short Name:** ADevUDI02

**Definition:** Indicate the Unique Device Identifier (UDI) of aorta device #02 if available, otherwise leave blank. Note that the UDI is not the same as the serial number.

**Intent/Clarification:**

This is the number supplied from the manufacturer to identify the specific to the exact device inserted. This number is used to link the specific patient to the specific device implanted.

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**SEQ. #: 5500**

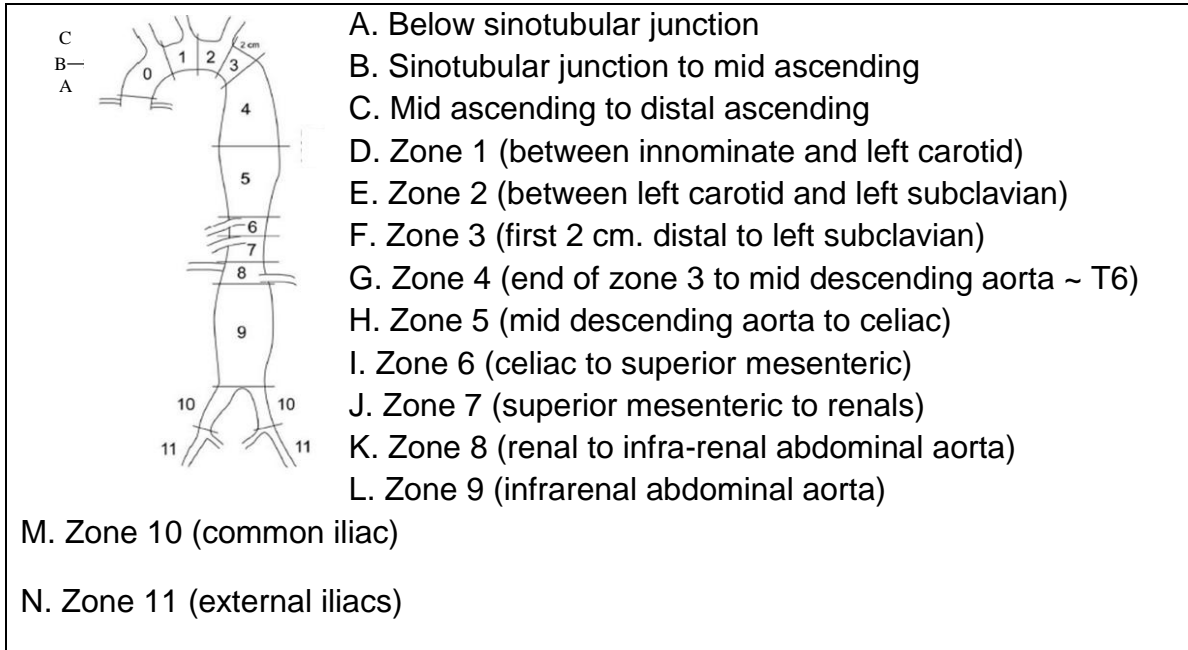
**Long Name:** Aorta Device - Location #03

**Short Name:** ADevLoc03

**Definition:** Indicate the location within the aorta where device #03 was inserted or indicate that no additional devices were inserted.

**Intent/Clarification:**

Zone 0 is the Ascending Aorta and includes letter A-C. Verify exact location with CV Surgeon. Aortic Root (letter A) is below sinotubular junction.



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**SEQ. #: 5505**

**Long Name:** Aorta Device - Delivery Method #03

**Short Name:** ADevDelMeth03

**Definition:** Indicate the delivery method used to insert device #03 within the aorta.

**Intent/Clarification:**

For each device the method of implant should be specified as either “open” or “endovascular.” If a device was attempted to be implanted endovascularly but eventually implanted by open techniques, then this is designated “open.”

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**SEQ. #: 5510**

**Long Name:** Aorta Device - Outcome #03

**Short Name:** ADevOut03

**Definition:** Indicate the outcome of the attempt to insert device #03.

**Intent/Clarification:**

**Maldeployed:** This indicates that a device implantation was attempted by endovascular means but was not successfully deployed in the intended position. An example would be attempted deployment of a fenestrated or branched device for transverse arch intervention and mal-alignment of the portal did not allow successful branch vessel bypass. If a device was mal-deployed but later removed this would be classified as “DelivMeth/deploy/remove.”

**Deployed and Removed:** This indicates that a device was attempted to be implanted by endovascular means but was not successfully deployed. An example would be open repair of descending thoracic aortic repair after failed thoracic endovascular aortic repair from rupture or persistent endoleak. This would be classified as TEVAR as “DelivMeth/deploy /remove.”

**Successfully Deployed/Implanted:** This indicates that the device was successfully deployed by endovascular or **open** means.

November 2017: For section M2, ‘device’ refers to any implanted material within the aorta; Grafts or stent-grafts.

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**SEQ. #: 5515**

**Long Name:** Aorta Device - Model Number #03

**Short Name:** ADevModel03

**Definition:** Indicate the model number of aorta device #03.

**Intent/Clarification:**

This is the model number from the manufacturer related to the type of device implanted.

**FAQ September 2017:** Is there supposed to be a drop-down list of model numbers for aorta devices in this field?

Answer: No, there is no drop-down list.

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**SEQ. #: 5520**

**Long Name:** Aorta Device - Unique Device Identifier #03 **Short Name:** ADevUDI03

**Definition:** Indicate the Unique Device Identifier (UDI) of aorta device #03 if available, otherwise leave blank. Note that the UDI is not the same as the serial number.

**Intent/Clarification:**

This is the number supplied from the manufacturer to identify the specific to the exact device inserted. This number is used to link the specific patient to the specific device implanted.

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**SEQ. #: 5525**

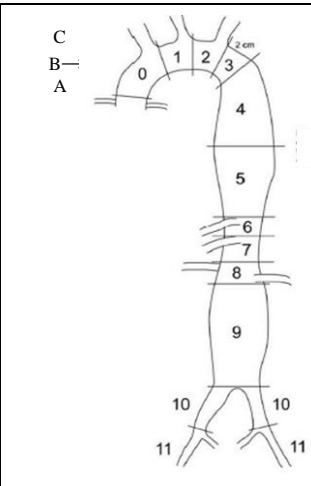
**Long Name:** Aorta Device - Location #04

**Short Name:** ADevLoc04

**Definition:** Indicate the location within the aorta where device #04 was inserted or indicate that no additional devices were inserted.

**Intent/Clarification:**

Zone 0 is the Ascending Aorta and includes letter A-C. Verify exact location with CV Surgeon. Aortic Root (letter A) is below sinotubular junction.



A. Below sinotubular junction  
B. Sinotubular junction to mid ascending  
C. Mid ascending to distal ascending  
D. Zone 1 (between innominate and left carotid)  
E. Zone 2 (between left carotid and left subclavian)  
F. Zone 3 (first 2 cm. distal to left subclavian)  
G. Zone 4 (end of zone 3 to mid descending aorta ~ T6)  
H. Zone 5 (mid descending aorta to celiac)  
I. Zone 6 (celiac to superior mesenteric)  
J. Zone 7 (superior mesenteric to renals)  
K. Zone 8 (renal to infra-renal abdominal aorta)  
L. Zone 9 (infrarenal abdominal aorta)  
M. Zone 10 (common iliac)  
N. Zone 11 (external iliacs)

**SEQ. #: 5530**

**Long Name:** Aorta Device - Delivery Method #04

**Short Name:** ADevDelMeth04

**Definition:** Indicate the delivery method used to insert device #04 within the aorta.

**Intent/Clarification:**

For each device the method of implant should be specified as either “open” or “endovascular.” If a device was attempted to be implanted endo-vascularly but eventually implanted by open techniques, then this is designated “open.”

**SEQ. #:** 5535

**Long Name:** Aorta Device - Outcome #04

**Short Name:** ADevOut04

**Definition:** Indicate the outcome of the attempt to insert device #04.

**Intent/Clarification:**

**Maldeployed:** This indicates that a device implantation was attempted by endovascular means but was not successfully deployed in the intended position. An example would be attempted deployment of a fenestrated or branched device for transverse arch intervention and mal-alignment of the portal did not allow successful branch vessel bypass. If a device was mal-deployed but later removed this would be classified as "DelivMeth/deploy/remove."

**Deployed and Removed:** This indicates that a device was attempted to be implanted by endovascular means but was not successfully deployed. An example would be open repair of descending thoracic aortic repair after failed thoracic endovascular aortic repair from rupture or persistent endoleak. This would be classified as TEVAR as "DelivMeth/deploy /remove."

**Successfully Deployed/Implanted:** This indicates that the device was successfully deployed by endovascular or **open** means November 2017: For section M2, 'device' refers to any implanted material within the aorta; Grafts or stent-grafts.

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**SEQ. #:** 5540

**Long Name:** Aorta Device - Model Number #04

**Short Name:** ADevModel04

**Definition:** Indicate the model number of aorta device #04.

**Intent/Clarification:**

This is the model number from the manufacturer related to the type of device implanted.

**FAQ September 2017:** Is there supposed to be a drop-down list of model numbers for aorta devices in this field?

Answer: No, there is no drop-down list.

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**SEQ. #:** 5545

**Long Name:** Aorta Device - Unique Device Identifier #04

**Short Name:** ADevUDI04

**Definition:** Indicate the Unique Device Identifier (UDI) of aorta device #04 if available, otherwise leave blank. Note that the UDI is not the same as the serial number.

**Intent/Clarification:**



This is the number supplied from the manufacturer to identify the specific to the exact device inserted. This number is used to link the specific patient to the specific device implanted.

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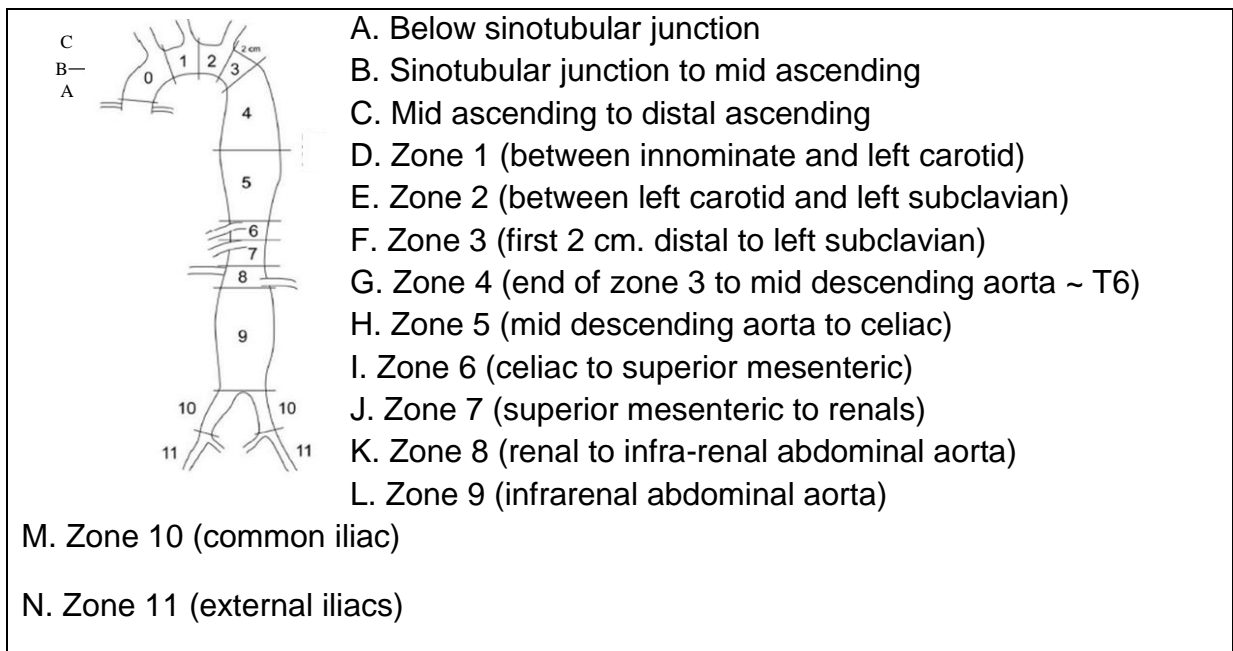
**SEQ. #: 5550**

**Long Name:** Aorta Device - Location #05 **Short Name:** ADevLoc05

**Definition:** Indicate the location within the aorta where device #05 was inserted or indicate that no additional devices were inserted.

**Intent/Clarification:**

Zone 0 is the Ascending Aorta and includes letter A-C. Verify exact location with CV Surgeon. Aortic Root (letter A) is below sinotubular junction.



**SEQ. #: 5555**

**Long Name:** Aorta Device - Delivery Method #05

**Short Name:** ADevDelMeth05

**Definition:** Indicate the delivery method used to insert device #05 within the aorta.

**Intent/Clarification:**

For each device the method of implant should be specified as either “open” or “endovascular.” If a device was attempted to be implanted endo-vascularly but eventually implanted by open techniques, then this is designated “open.”

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**SEQ. #:** 5560

**Long Name:** Aorta Device - Outcome #05

**Short Name:** ADevOut05

**Definition:** Indicate the outcome of the attempt to insert device #05.

**Intent/Clarification:**

**Maldeployed:** This indicates that a device implantation was attempted by endovascular means but was not successfully deployed in the intended position. An example would be attempted deployment of a fenestrated or branched device for transverse arch intervention and mal-alignment of the portal did not allow successful branch vessel bypass. If a device was mal-deployed but later removed this would be classified as “DelivMeth/deploy/remove.”

**Deployed and Removed:** This indicates that a device was attempted to be implanted by endovascular means but was not successfully deployed. An example would be open repair of descending thoracic aortic repair after failed thoracic endovascular aortic repair from rupture or persistent endoleak. This would be classified as TEVAR as “DelivMeth/deploy /remove.”

**Successfully Deployed/Implanted:** This indicates that the device was successfully deployed by endovascular or **open** means November 2017: For section M2, ‘device’ refers to any implanted material within the aorta; Grafts or stent-grafts.

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**SEQ. #:** 5565

**Long Name:** Aorta Device - Model Number #05

**Short Name:** ADevModel05

**Definition:** Indicate the model number of aorta device #05.

**Intent/Clarification:**

This is the model number from the manufacturer related to the type of device implanted.

**FAQ September 2017:** Is there supposed to be a drop-down list of model numbers for aorta devices in this field?

Answer: No, there is no drop-down list.

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**SEQ. #: 5570**

**Long Name:** Aorta Device - Unique Device Identifier #05

**Short Name:** ADevUDI05

**Definition:** Indicate the Unique Device Identifier (UDI) of aorta device #05 if available, otherwise leave blank. Note that the UDI is not the same as the serial number.

**Intent/Clarification:**

This is the number supplied from the manufacturer to identify the specific to the exact device inserted. This number is used to link the specific patient to the specific device implanted.

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**SEQ. #: 5575**

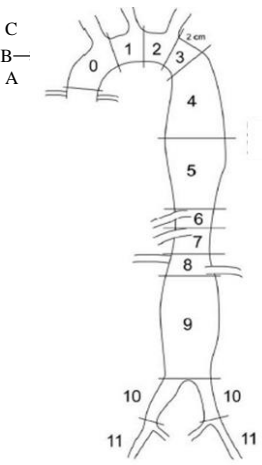
**Long Name:** Aorta Device - Location #06

**Short Name:** ADevLoc06

**Definition:** Indicate the location within the aorta where device #06 was inserted or indicate that no additional devices were inserted.

**Intent/Clarification:**

Zone 0 is the Ascending Aorta and includes letter A-C. Verify exact location with CV Surgeon. Aortic Root (letter A) is below sinotubular junction.



A. Below sinotubular junction  
B. Sinotubular junction to mid ascending  
C. Mid ascending to distal ascending  
D. Zone 1 (between innominate and left carotid)  
E. Zone 2 (between left carotid and left subclavian)  
F. Zone 3 (first 2 cm. distal to left subclavian)  
G. Zone 4 (end of zone 3 to mid descending aorta ~ T6)  
H. Zone 5 (mid descending aorta to celiac)  
I. Zone 6 (celiac to superior mesenteric)  
J. Zone 7 (superior mesenteric to renals)  
K. Zone 8 (renal to infra-renal abdominal aorta)  
L. Zone 9 (infrarenal abdominal aorta)  
M. Zone 10 (common iliac)  
N. Zone 11 (external iliacs)

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**SEQ. #:** 5580

**Long Name:** Aorta Device - Delivery Method #06

**Short Name:** ADevDelMeth06

**Definition:** Indicate the delivery method used to insert device #06 within the aorta.

**Intent/Clarification:**

For each device the method of implant should be specified as either “open” or “endovascular.” If a device was attempted to be implanted endo-vascularly but eventually implanted by open techniques, then this is designated “open.”

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**SEQ. #:** 5585

**Long Name:** Aorta Device - Outcome #06

**Short Name:** ADevOut06

**Definition:** Indicate the outcome of the attempt to insert device #06.

**Intent/Clarification:**

**Maldeployed:** This indicates that a device implantation was attempted by endovascular means but was not successfully deployed in the intended position. An example would be attempted deployment of a fenestrated or branched device for transverse arch intervention and mal-alignment of the portal did not allow successful branch vessel bypass. If a device was mal-deployed but later removed this would be classified as “DelivMeth/deploy/remove.”

**Deployed and Removed:** This indicates that a device was attempted to be implanted by endovascular means but was not successfully deployed. An example would be open repair of descending thoracic aortic repair after failed thoracic endovascular aortic repair from rupture or persistent endoleak. This would be classified as TEVAR as “DelivMeth/deploy /remove.”

**Successfully Deployed/Implanted:** This indicates that the device was successfully deployed by endovascular or **open** means

**November 2017:** For section M2, ‘device’ refers to any implanted material within the aorta; Grafts or stent-grafts.

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**SEQ. #:** 5590

**Long Name:** Aorta Device - Model Number #06

**Short Name:** ADevModel06

**Definition:** Indicate the model number of aorta device #06.

**Intent/Clarification:**

This is the model number from the manufacturer related to the type of device implanted.

**FAQ September 2017:** Is there supposed to be a drop-down list of model numbers for aorta devices in this field?

Answer: No, there is no drop-down list.

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**SEQ. #: 5595**

**Long Name:** Aorta Device - Unique Device Identifier #06

**Short Name:** ADevUDI06

**Definition:** Indicate the Unique Device Identifier (UDI) of aorta device #06 if available, otherwise leave blank. Note that the UDI is not the same as the serial number.

**Intent/Clarification:**

This is the number supplied from the manufacturer to identify the specific to the exact device inserted. This number is used to link the specific patient to the specific device implanted.

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**SEQ. #: 5600**

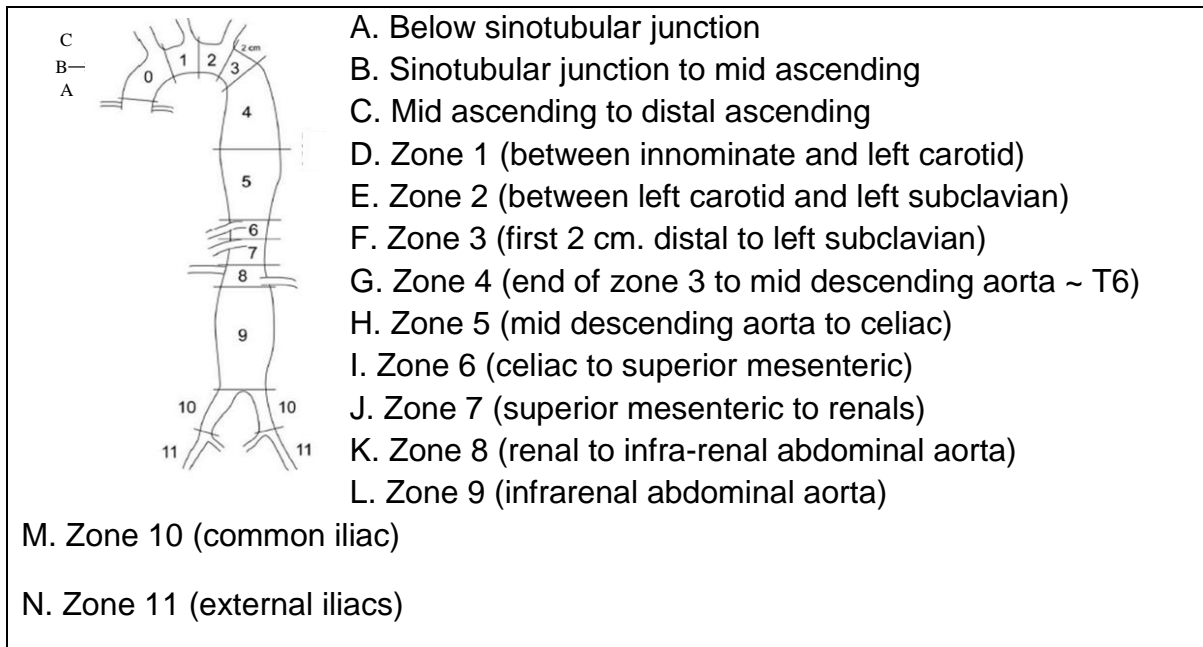
**Long Name:** Aorta Device - Location #07

**Short Name:** ADevLoc07

**Definition:** Indicate the location within the aorta where device #07 was inserted or indicate that no additional devices were inserted.

**Intent/Clarification:**

Zone 0 is the Ascending Aorta and includes letter A-C. Verify exact location with CV Surgeon. Aortic Root (letter A) is below sinotubular junction.



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**SEQ. #:** 5605

**Long Name:** Aorta Device - Delivery Method #07

**Short Name:** ADevDelMeth07

**Definition:** Indicate the delivery method used to insert device #07 within the aorta.

**Intent/Clarification:**

For each device the method of implant should be specified as either “open” or “endovascular.” If a device was attempted to be implanted endo-vascularly but eventually implanted by open techniques, then this is designated “open.”

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**SEQ. #:** 5610

**Long Name:** Aorta Device - Outcome #07

**Short Name:** ADevOut07

**Definition:** Indicate the outcome of the attempt to insert device #07.

**Intent/Clarification: Maldeployed:** This indicates that a device implantation was attempted by endovascular means but was not successfully deployed in the intended position. An example would be attempted deployment of a fenestrated or branched device for transverse arch intervention and mal-alignment of the portal did not allow successful branch vessel bypass. If a device was mal-deployed but later removed this would be classified as “DelivMeth/deploy/remove.”

**Deployed and Removed:** This indicates that a device was attempted to be implanted by endovascular means but was not successfully deployed. An example would be open repair of descending thoracic aortic repair after failed thoracic endovascular aortic repair from rupture or persistent endoleak. This would be classified as TEVAR as “DelivMeth/deploy /remove.”

**Successfully Deployed/Implanted:** This indicates that the device was successfully deployed by endovascular or **open** means

**November 2017:** For section M2, ‘device’ refers to any implanted material within the aorta; Grafts or stent-grafts.

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**SEQ. #:** 5615

**Long Name:** Aorta Device - Model Number #07

**Short Name:** ADevModel07

**Definition:** Indicate the model number of aorta device #07.

**Intent/Clarification:**

This is the model number from the manufacturer related to the type of device implanted.

**FAQ September 2017:** Is there supposed to be a drop-down list of model numbers for aorta devices in this field?

Answer: No, there is no drop-down list.

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**SEQ. #: 5620**

**Long Name:** Aorta Device - Unique Device Identifier #07

**Short Name:** ADevUDI07

**Definition:** Indicate the Unique Device Identifier (UDI) of aorta device #07 if available, otherwise leave blank. Note that the UDI is not the same as the serial number.

**Intent/Clarification:**

This is the number supplied from the manufacturer to identify the specific to the exact device inserted. This number is used to link the specific patient to the specific device implanted.

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**SEQ. #: 5625**

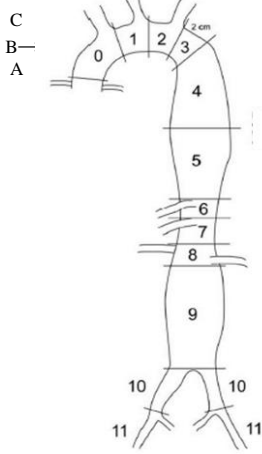
**Long Name:** Aorta Device - Location #08

**Short Name:** ADevLoc08

**Definition:** Indicate the location within the aorta where device #08 was inserted or indicate that no additional devices were inserted.

**Intent/Clarification:**

Zone 0 is the Ascending Aorta and includes letter A-C. Verify exact location with CV Surgeon. Aortic Root (letter A) is below sinotubular junction.

	<p>A. Below sinotubular junction B. Sinotubular junction to mid ascending C. Mid ascending to distal ascending D. Zone 1 (between innominate and left carotid) E. Zone 2 (between left carotid and left subclavian) F. Zone 3 (first 2 cm. distal to left subclavian) G. Zone 4 (end of zone 3 to mid descending aorta ~ T6) H. Zone 5 (mid descending aorta to celiac) I. Zone 6 (celiac to superior mesenteric) J. Zone 7 (superior mesenteric to renals) K. Zone 8 (renal to infra-renal abdominal aorta) L. Zone 9 (infrarenal abdominal aorta)</p>
<p>M. Zone 10 (common iliac)</p>	
<p>N. Zone 11 (external iliacs)</p>	

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**SEQ. #:** 5630

**Long Name:** Aorta Device - Delivery Method #08

**Short Name:** ADevDelMeth08

**Definition:** Indicate the delivery method used to insert device #08 within the aorta.

**Intent/Clarification:**

For each device the method of implant should be specified as either “open” or “endovascular.” If a device was attempted to be implanted endo-vascularly but eventually implanted by open techniques, then this is designated “open.”

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**SEQ. #:** 5635

**Long Name:** Aorta Device - Outcome #08

**Short Name:** ADevOut08

**Definition:** Indicate the outcome of the attempt to insert device #08.

**Intent/Clarification:**

**Maldeployed:** This indicates that a device implantation was attempted by endovascular means but was not successfully deployed in the intended position. An example would be attempted deployment of a fenestrated or branched device for transverse arch intervention and mal-alignment of the portal did not allow successful branch vessel bypass. If a device was mal-deployed but later removed this would be classified as “DelivMeth/deploy/remove.”

**Deployed and Removed:** This indicates that a device was attempted to be implanted by endovascular means but was not successfully deployed. An example would be open repair of descending thoracic aortic repair after failed thoracic endovascular aortic repair from rupture or persistent endoleak. This would be classified as TEVAR as “DelivMeth/deploy /remove.”

**Successfully Deployed/Implanted:** This indicates that the device was successfully deployed by endovascular or **open** means

**November 2017:** For section M2, ‘device’ refers to any implanted material within the aorta; Grafts or stent-grafts.

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**SEQ. #:** 5640

**Long Name:** Aorta Device - Model Number #08

**Short Name:** ADevModel08

**Definition:** Indicate the model number of aorta device #08.

**Intent/Clarification:**

This is the model number from the manufacturer related to the type of device implanted.



**FAQ September 2017:** Is there supposed to be a drop-down list of model numbers for aorta devices in this field?

Answer: No, there is no drop-down list.

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**SEQ. #: 5645**

**Long Name:** Aorta Device - Unique Device Identifier #08

**Short Name:** ADevUDI08

**Definition:** Indicate the Unique Device Identifier (UDI) of aorta device #08 if available, otherwise leave blank. Note that the UDI is not the same as the serial number.

**Intent/Clarification:**

This is the number supplied from the manufacturer to identify the specific to the exact device inserted. This number is used to link the specific patient to the specific device implanted.

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**SEQ. #: 5650**

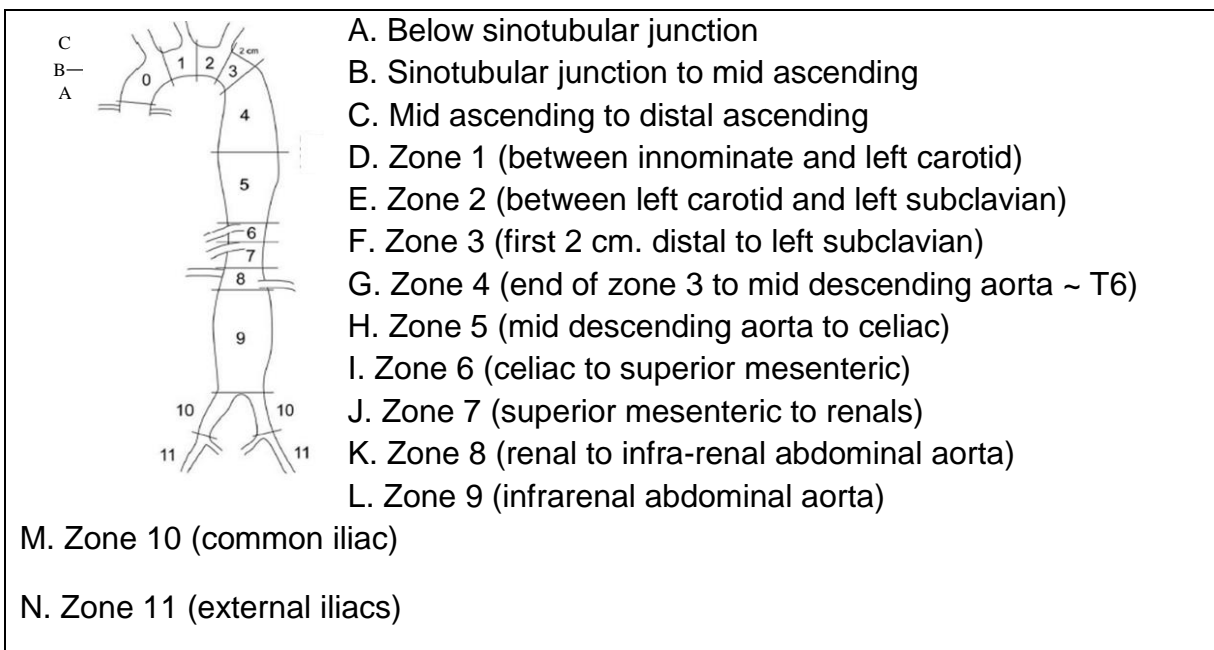
**Long Name:** Aorta Device - Location #09

**Short Name:** ADevLoc09

**Definition:** Indicate the location within the aorta where device #09 was inserted or indicate that no additional devices were inserted.

**Intent/Clarification:**

Zone 0 is the Ascending Aorta and includes letter A-C. Verify exact location with CV Surgeon. Aortic Root (letter A) is below sinotubular junction.



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**SEQ. #:** 5655

**Long Name:** Aorta Device - Delivery Method #09

**Short Name:** ADevDelMeth09

**Definition:** Indicate the delivery method used to insert device #09 within the aorta.

**Intent/Clarification:**

For each device the method of implant should be specified as either “open” or “endovascular.” If a device was attempted to be implanted endo-vascularly but eventually implanted by open techniques, then this is designated “open.”

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**SEQ. #:** 5660

**Long Name:** Aorta Device - Outcome #09

**Short Name:** ADevOut09

**Definition:** Indicate the outcome of the attempt to insert device #09.

**Intent/Clarification:**

**Maldeployed:** This indicates that a device implantation was attempted by endovascular means but was not successfully deployed in the intended position. An example would be attempted deployment of a fenestrated or branched device for transverse arch intervention and mal-alignment of the portal did not allow successful branch vessel bypass. If a device was mal-deployed but later removed this would be classified as “DelivMeth/deploy/remove.”

**Deployed and Removed:** This indicates that a device was attempted to be implanted by endovascular means but was not successfully deployed. An example would be open repair of descending thoracic aortic repair after failed thoracic endovascular aortic repair from rupture or persistent endoleak. This would be classified as TEVAR as “DelivMeth/deploy /remove.”

**Successfully Deployed/Implanted:** This indicates that the device was successfully deployed by endovascular or **open** means

**November 2017:** For section M2, ‘device’ refers to any implanted material within the aorta; Grafts or stent-grafts.

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**SEQ. #:** 5665

**Long Name:** Aorta Device - Model Number #09

**Short Name:** ADevModel09

**Definition:** Indicate the model number of aorta device #09.

**Intent/Clarification:**

This is the model number from the manufacturer related to the type of device implanted.

**FAQ September 2017:** Is there supposed to be a drop-down list of model numbers for aorta devices in this field?

Answer: No, there is no drop-down list.

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**SEQ. #: 5670**

**Long Name:** Aorta Device - Unique Device Identifier #09

**Short Name:** ADevUDI09

**Definition:** Indicate the Unique Device Identifier (UDI) of aorta device #09 if available, otherwise leave blank. Note that the UDI is not the same as the serial number.

**Intent/Clarification:**

This is the number supplied from the manufacturer to identify the specific to the exact device inserted. This number is used to link the specific patient to the specific device implanted.

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**SEQ. #: 5675**

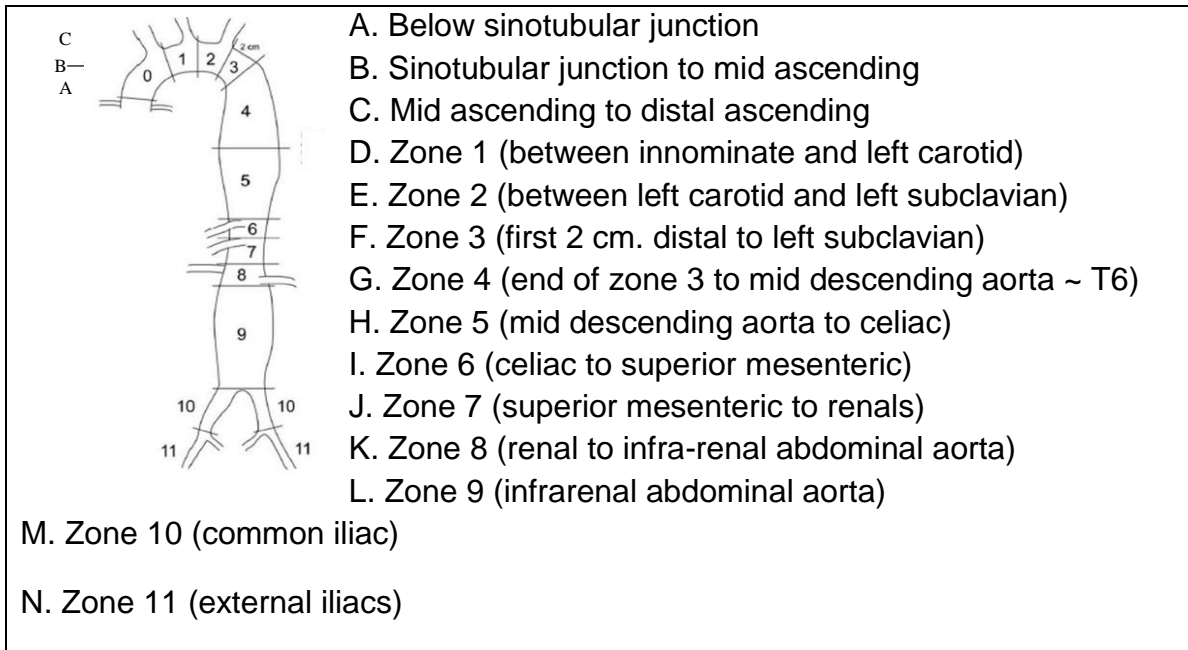
**Long Name:** Aorta Device - Location #10

**Short Name:** ADevLoc10

**Definition:** Indicate the location within the aorta where device #10 was inserted or indicate that no additional devices were inserted.

**Intent/Clarification:**

Zone 0 is the Ascending Aorta and includes letter A-C. Verify exact location with CV Surgeon. Aortic Root (letter A) is below sinotubular junction.



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**SEQ. #: 5680**

**Long Name:** Aorta Device - Delivery Method #10

**Short Name:** ADevDelMeth10

**Definition:** Indicate the delivery method used to insert device #10 within the aorta.

**Intent/Clarification:**

For each device the method of implant should be specified as either “open” or “endovascular.” If a device was attempted to be implanted endovascularly but eventually implanted by open techniques, then this is designated “open.”

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**SEQ. #: 5685**

**Long Name:** Aorta Device - Outcome #10

**Short Name:** ADevOut10

**Definition:** Indicate the outcome of the attempt to insert device #10.

**Intent/Clarification:**

**Maldeployed:** This indicates that a device implantation was attempted by endovascular means but was not successfully deployed in the intended position. An example would be attempted deployment of a fenestrated or branched device for transverse arch intervention and mal-alignment of the portal did not allow successful branch vessel bypass. If a device was mal-deployed but later removed this would be classified as “DelivMeth/deploy/remove.”

**Deployed and Removed:** This indicates that a device was attempted to be implanted by endovascular means but was not successfully deployed. An example would be open

repair of descending thoracic aortic repair after failed thoracic endovascular aortic repair from rupture or persistent endoleak. This would be classified as TEVAR as “DelivMeth/deploy /remove.”

**Successfully Deployed/Implanted:** This indicates that the device was successfully deployed by endovascular or **open** means

**November 2017:** For section M2, ‘device’ refers to any implanted material within the aorta; Grafts or stent-grafts.

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**SEQ. #: 5690**

**Long Name:** Aorta Device - Model Number #10

**Short Name:** ADevModel10

**Definition:** Indicate the model number of aorta device #10.

**Intent/Clarification:**

This is the model number from the manufacturer related to the type of device implanted.

**FAQ September 2017:** Is there supposed to be a drop-down list of model numbers for aorta devices in this field?

Answer: No, there is no drop-down list.

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**SEQ. #: 5695**

**Long Name:** Aorta Device - Unique Device Identifier #10

**Short Name:** ADevUDI10

**Definition:** Indicate the Unique Device Identifier (UDI) of aorta device #10 if available, otherwise leave blank. Note that the UDI is not the same as the serial number.

**Intent/Clarification:**

This is the number supplied from the manufacturer to identify the specific to the exact device inserted. This number is used to link the specific patient to the specific device implanted.

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**SEQ. #: 5700**

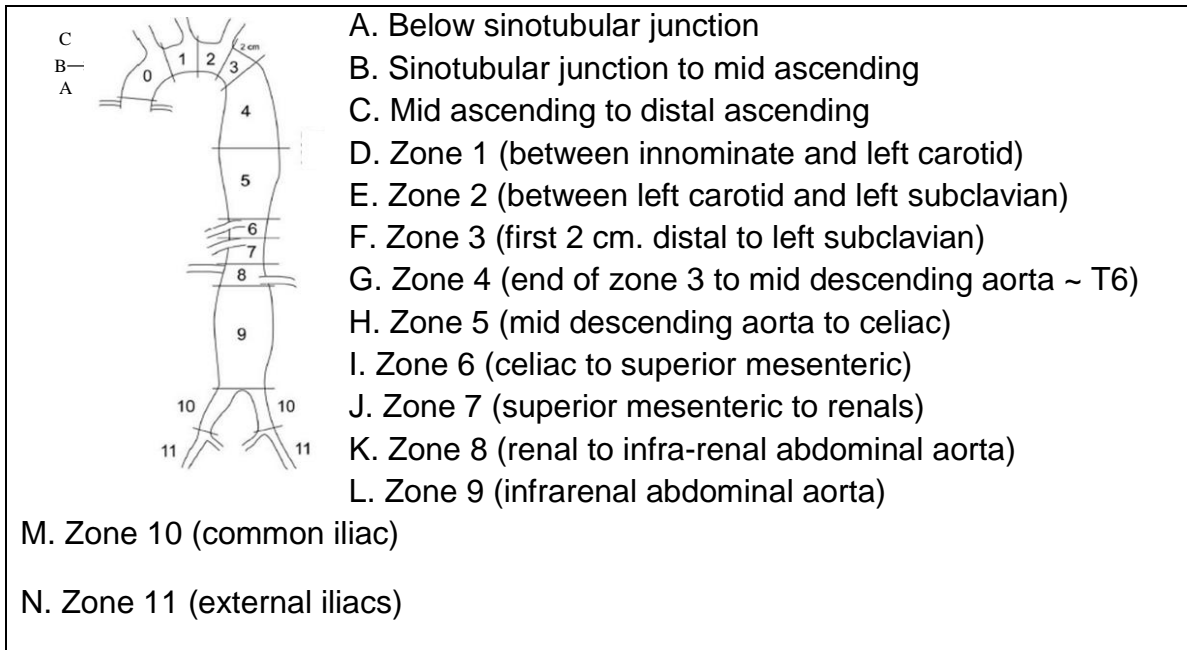
**Long Name:** Aorta Device - Location #11

**Short Name:** ADevLoc11

**Definition:** Indicate the location within the aorta where device #11 was inserted or indicate that no additional devices were inserted.

**Intent/Clarification:**

Zone 0 is the Ascending Aorta and includes letter A-C. Verify exact location with CV Surgeon. Aortic Root (letter A) is below sinotubular junction.



**SEQ. #:** 5705

**Long Name:** Aorta Device - Delivery Method #11

**Short Name:** ADevDelMeth11

**Definition:** Indicate the delivery method used to insert device #11 within the aorta.

**Intent/Clarification:**

For each device the method of implant should be specified as either “open” or “endovascular.” If a device was attempted to be implanted endovascularly but eventually implanted by open techniques, then this is designated “open.”

**SEQ. #:** 5710

**Long Name:** Aorta Device - Outcome #11

**Short Name:** ADevOut11

**Definition:** Indicate the outcome of the attempt to insert device #11.

**Intent/Clarification:**

**Maldeployed:** This indicates that a device implantation was attempted by endovascular means but was not successfully deployed in the intended position. An example would be attempted deployment of a fenestrated or branched device for transverse arch intervention and mal-alignment of the portal did not allow successful branch vessel

bypass. If a device was mal-deployed but later removed this would be classified as "DelivMeth/deploy/remove."

**Deployed and Removed:** This indicates that a device was attempted to be implanted by endovascular means but was not successfully deployed. An example would be open repair of descending thoracic aortic repair after failed thoracic endovascular aortic repair from rupture or persistent endoleak. This would be classified as TEVAR as "DelivMeth/deploy /remove."

**Successfully Deployed/Implanted:** This indicates that the device was successfully deployed by endovascular or **open** means

**November 2017:** For section M2, 'device' refers to any implanted material within the aorta; Grafts or stent-grafts.

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**SEQ. #:** 5715

**Long Name:** Aorta Device - Model Number #11

**Short Name:** ADevModel11

**Definition:** Indicate the model number of aorta device #11.

**Intent/Clarification:**

This is the model number from the manufacturer related to the type of device implanted.

**FAQ September 2017:** Is there supposed to be a drop-down list of model numbers for aorta devices in this field?

Answer: No, there is no drop-down list.

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**SEQ. #:** 5720

**Long Name:** Aorta Device - Unique Device Identifier #11

**Short Name:** ADevUDI11

**Definition:** Indicate the Unique Device Identifier (UDI) of aorta device #11 if available, otherwise leave blank. Note that the UDI is not the same as the serial number.

**Intent/Clarification:**

This is the number supplied from the manufacturer to identify the specific to the exact device inserted. This number is used to link the specific patient to the specific device implanted.

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**SEQ. #:** 5725

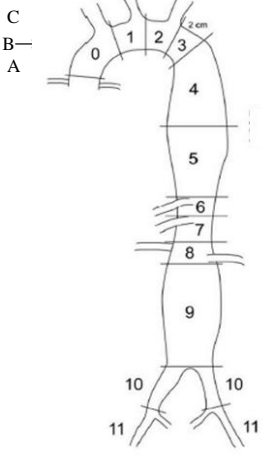
**Long Name:** Aorta Device - Location #12

**Short Name:** ADevLoc12

**Definition:** Indicate the location within the aorta where device #12 was inserted or indicate that no additional devices were inserted.

**Intent/Clarification:**

Zone 0 is the Ascending Aorta and includes letter A-C. Verify exact location with CV Surgeon. Aortic Root (letter A) is below sinotubular junction.

	<p>A. Below sinotubular junction B. Sinotubular junction to mid ascending C. Mid ascending to distal ascending D. Zone 1 (between innominate and left carotid) E. Zone 2 (between left carotid and left subclavian) F. Zone 3 (first 2 cm. distal to left subclavian) G. Zone 4 (end of zone 3 to mid descending aorta ~ T6) H. Zone 5 (mid descending aorta to celiac) I. Zone 6 (celiac to superior mesenteric) J. Zone 7 (superior mesenteric to renals) K. Zone 8 (renal to infra-renal abdominal aorta) L. Zone 9 (infrarenal abdominal aorta) M. Zone 10 (common iliac) N. Zone 11 (external iliacs)</p>
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**SEQ. #: 5730**

**Long Name:** Aorta Device - Delivery Method #12

**Short Name:** ADevDelMeth12

**Definition:** Indicate the delivery method used to insert device #12 within the aorta.

**Intent/Clarification:**

For each device the method of implant should be specified as either “open” or “endovascular.” If a device was attempted to be implanted endovascularly but eventually implanted by open techniques, then this is designated “open.”

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**SEQ. #: 5735**

**Long Name:** Aorta Device - Outcome #12

**Short Name:** ADevOut12

**Definition:** Indicate the outcome of the attempt to insert device #12.



**Intent/Clarification:**

**Maldeployed:** This indicates that a device implantation was attempted by endovascular means but was not successfully deployed in the intended position. An example would be attempted deployment of a fenestrated or branched device for transverse arch intervention and mal-alignment of the portal did not allow successful branch vessel bypass. If a device was mal-deployed but later removed this would be classified as “DelivMeth/deploy/remove.”

**Deployed and Removed:** This indicates that a device was attempted to be implanted by endovascular means but was not successfully deployed. An example would be open repair of descending thoracic aortic repair after failed thoracic endovascular aortic repair from rupture or persistent endoleak. This would be classified as TEVAR as “DelivMeth/deploy /remove.”

**Successfully Deployed/Implanted:** This indicates that the device was successfully deployed by endovascular or **open** means

**November 2017:** For section M2, ‘device’ refers to any implanted material within the aorta; Grafts or stent-grafts.

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**SEQ. #: 5740**

**Long Name:** Aorta Device - Model Number #12

**Short Name:** ADevModel12

**Definition:** Indicate the model number of aorta device #12.

**Intent/Clarification:**

This is the model number from the manufacturer related to the type of device implanted.

**FAQ September 2017:** Is there supposed to be a drop-down list of model numbers for aorta devices in this field?

Answer: No, there is no drop-down list.

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**SEQ. #: 5745**

**Long Name:** Aorta Device - Unique Device Identifier #12

**Short Name:** ADevUDI12

**Definition:** Indicate the Unique Device Identifier (UDI) of aorta device #12 if available, otherwise leave blank. Note that the UDI is not the same as the serial number.

**Intent/Clarification:**

This is the number supplied from the manufacturer to identify the specific to the exact device inserted. This number is used to link the specific patient to the specific device implanted.

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**SEQ. #: 5750**

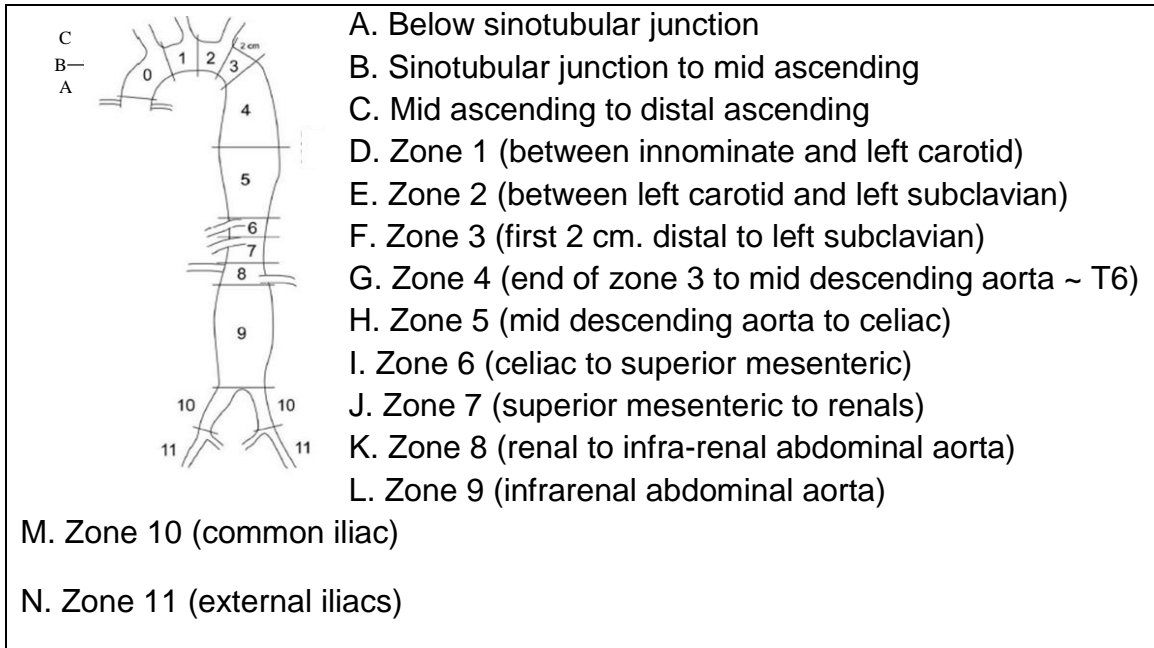
**Long Name:** Aorta Device - Location #13

**Short Name:** ADevLoc13

**Definition:** Indicate the location within the aorta where device #13 was inserted or indicate that no additional devices were inserted.

**Intent/Clarification:**

Zone 0 is the Ascending Aorta and includes letter A-C. Verify exact location with CV Surgeon. Aortic Root (letter A) is below sinotubular junction.



**SEQ. #: 5755**

**Long Name:** Aorta Device - Delivery Method #13

**Short Name:** ADevDelMeth13

**Definition:** Indicate the delivery method used to insert device #13 within the aorta.

**Intent/Clarification:**

For each device the method of implant should be specified as either “open” or “endovascular.” If a device was attempted to be implanted endovascularly but eventually implanted by open techniques, then this is designated “open.”

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**SEQ. #:** 5760

**Long Name:** Aorta Device - Outcome #13

**Short Name:** ADevOut13

**Definition:** Indicate the outcome of the attempt to insert device #13.

**Intent/Clarification:**

**Maldeployed:** This indicates that a device implantation was attempted by endovascular means but was not successfully deployed in the intended position. An example would be attempted deployment of a fenestrated or branched device for transverse arch intervention and mal-alignment of the portal did not allow successful branch vessel bypass. If a device was mal-deployed but later removed this would be classified as "DelivMeth/deploy/remove."

**Deployed and Removed:** This indicates that a device was attempted to be implanted by endovascular means but was not successfully deployed. An example would be open repair of descending thoracic aortic repair after failed thoracic endovascular aortic repair from rupture or persistent endoleak. This would be classified as TEVAR as "DelivMeth/deploy /remove."

**Successfully Deployed/Implanted:** This indicates that the device was successfully deployed by endovascular or **open** means

**November 2017:** For section M2, 'device' refers to any implanted material within the aorta; Grafts or stent-grafts.

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**SEQ. #:** 5765

**Long Name:** Aorta Device - Model Number #13

**Short Name:** ADevModel13

**Definition:** Indicate the model number of aorta device #13.

**Intent/Clarification:**

This is the model number from the manufacturer related to the type of device implanted.

**FAQ September 2017:** Is there supposed to be a drop-down list of model numbers for aorta devices in this field?

Answer: No, there is no drop-down list.

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**SEQ. #:** 5770

**Long Name:** Aorta Device - Unique Device Identifier #13

**Short Name:** ADevUDI13

**Definition:** Indicate the Unique Device Identifier (UDI) of aorta device #13 if available, otherwise leave blank. Note that the UDI is not the same as the serial number.

**Intent/Clarification:**

This is the number supplied from the manufacturer to identify the specific to the exact device inserted. This number is used to link the specific patient to the specific device implanted.

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**SEQ. #: 5775**

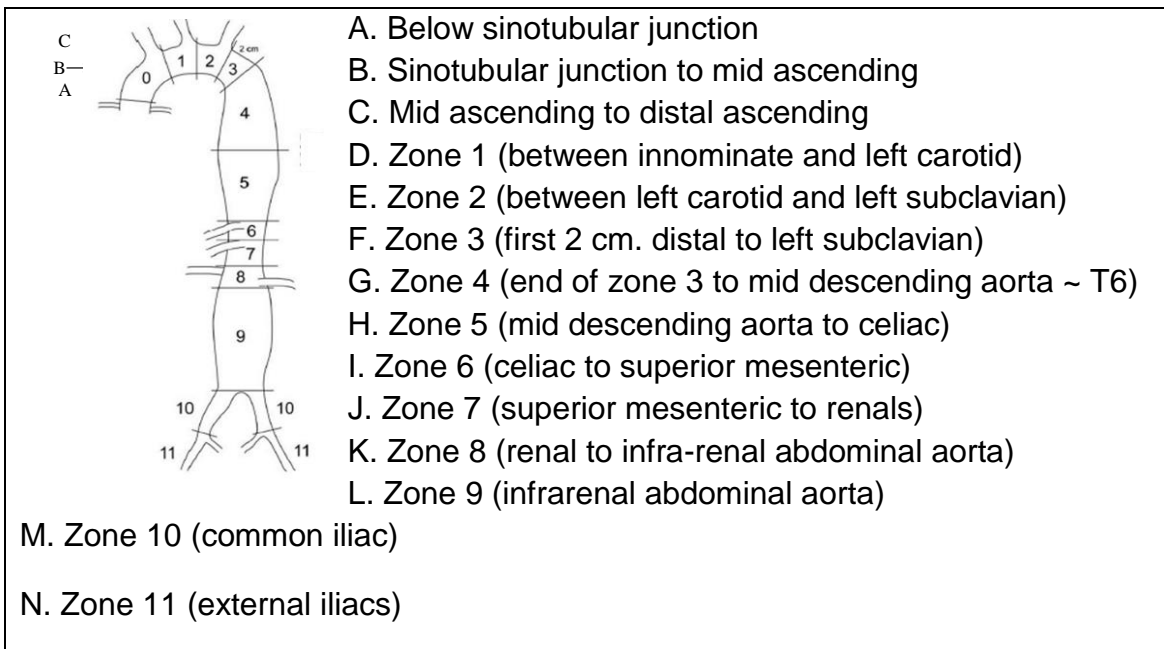
**Long Name:** Aorta Device - Location #14

**Short Name:** ADevLoc14

**Definition:** Indicate the location within the aorta where device #14 was inserted or indicate that no additional devices were inserted.

**Intent/Clarification:**

Zone 0 is the Ascending Aorta and includes letter A-C. Verify exact location with CV Surgeon. Aortic Root (letter A) is below sinotubular junction.



**SEQ. #: 5780**

**Long Name:** Aorta Device - Delivery Method #14

**Short Name:** ADevDelMeth14

**Definition:** Indicate the delivery method used to insert device #14 within the aorta.

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**Intent/Clarification:**

For each device the method of implant should be specified as either “open” or “endovascular.” If a device was attempted to be implanted endovascularly but eventually implanted by open techniques, then this is designated “open.”

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**SEQ. #: 5785**

**Long Name:** Aorta Device - Outcome #14

**Short Name:** ADevOut14

**Definition:** Indicate the outcome of the attempt to insert device #14.

**Intent/Clarification:**

**Maldeployed:** This indicates that a device implantation was attempted by endovascular means but was not successfully deployed in the intended position. An example would be attempted deployment of a fenestrated or branched device for transverse arch intervention and mal-alignment of the portal did not allow successful branch vessel bypass. If a device was mal-deployed but later removed this would be classified as “DelivMeth/deploy/remove.”

**Deployed and Removed:** This indicates that a device was attempted to be implanted by endovascular means but was not successfully deployed. An example would be open repair of descending thoracic aortic repair after failed thoracic endovascular aortic repair from rupture or persistent endoleak. This would be classified as TEVAR as “DelivMeth/deploy /remove.”

**Successfully Deployed/Implanted:** This indicates that the device was successfully deployed by endovascular or **open** means

**November 2017:** For section M2, ‘device’ refers to any implanted material within the aorta; Grafts or stent-grafts.

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**SEQ. #: 5790**

**Long Name:** Aorta Device - Model Number #14

**Short Name:** ADevModel14

**Definition:** Indicate the model number of aorta device #14.

**Intent/Clarification:**

This is the model number from the manufacturer related to the type of device implanted.

**FAQ September 2017:** Is there supposed to be a drop-down list of model numbers for aorta devices in this field?

Answer: No, there is no drop-down list.

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**SEQ. #: 5795**

**Long Name:** Aorta Device - Unique Device Identifier #14

**Short Name:** ADevUDI14

**Definition:** Indicate the Unique Device Identifier (UDI) of aorta device #14 if available, otherwise leave blank. Note that the UDI is not the same as the serial number.

**Intent/Clarification:**

This is the number supplied from the manufacturer to identify the specific to the exact device inserted. This number is used to link the specific patient to the specific device implanted.

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**SEQ. #: 5800**

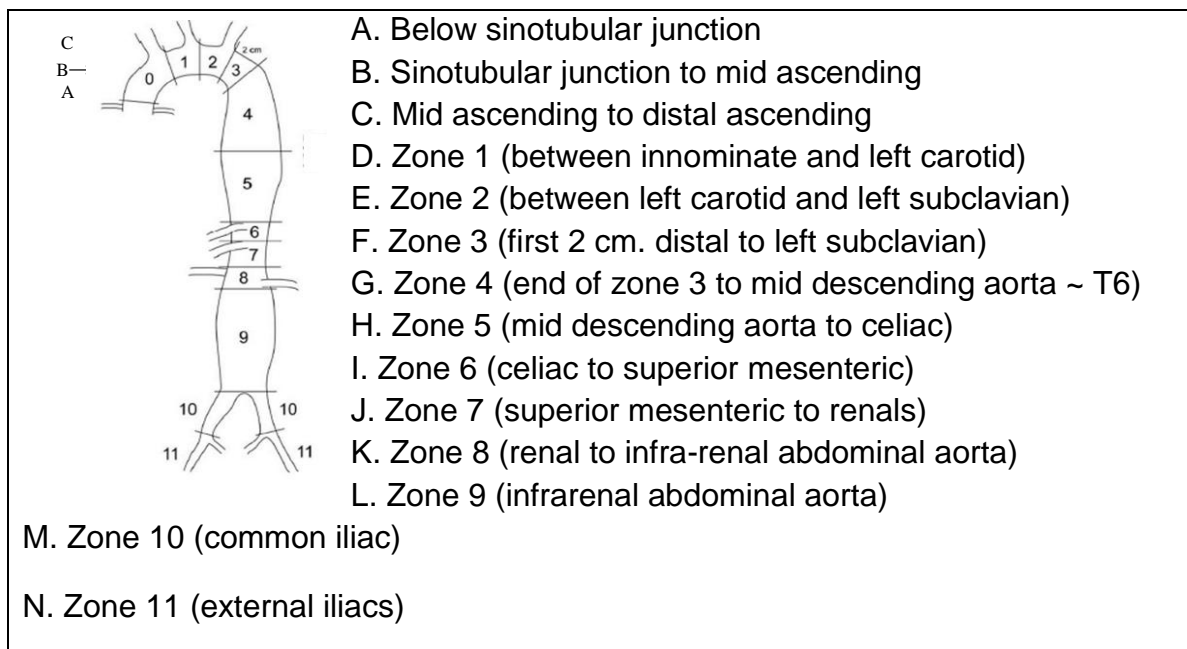
**Long Name:** Aorta Device - Location #15

**Short Name:** ADevLoc15

**Definition:** Indicate the location within the aorta where device #15 was inserted or indicate that no additional devices were inserted.

**Intent/Clarification:**

Zone 0 is the Ascending Aorta and includes letter A-C. Verify exact location with CV Surgeon. Aortic Root (letter A) is below sinotubular junction.



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**SEQ. #:** 5805

**Long Name:** Aorta Device - Delivery Method #15

**Short Name:** ADevDelMeth15

**Definition:** Indicate the delivery method used to insert device #15 within the aorta.

**Intent/Clarification:**

For each device the method of implant should be specified as either “open” or “endovascular.” If a device was attempted to be implanted endovascularly but eventually implanted by open techniques, then this is designated “open.”

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**SEQ. #:** 5810

**Long Name:** Aorta Device - Outcome #15

**Short Name:** ADevOut15

**Definition:** Indicate the outcome of the attempt to insert device #15.

**Intent/Clarification:**

**Maldeployed:** This indicates that a device implantation was attempted by endovascular means but was not successfully deployed in the intended position. An example would be attempted deployment of a fenestrated or branched device for transverse arch intervention and mal-alignment of the portal did not allow successful branch vessel bypass. If a device was mal-deployed but later removed this would be classified as “DelivMeth/deploy/remove.”

**Deployed and Removed:** This indicates that a device was attempted to be implanted by endovascular means but was not successfully deployed. An example would be open repair of descending thoracic aortic repair after failed thoracic endovascular aortic repair from rupture or persistent endoleak. This would be classified as TEVAR as “DelivMeth/deploy /remove.”

**Successfully Deployed/Implanted:** This indicates that the device was successfully deployed by endovascular or **open** means

**November 2017:** For section M2, ‘device’ refers to any implanted material within the aorta; Grafts or stent-grafts.

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**SEQ. #:** 5815

**Long Name:** Aorta Device - Model Number #15

**Short Name:** ADevModel15

**Definition:** Indicate the model number of aorta device #15.

**Intent/Clarification:**

This is the model number from the manufacturer related to the type of device implanted.

**FAQ September 2017:** Is there supposed to be a drop-down list of model numbers for aorta devices in this field?

Answer: No, there is no drop-down list.

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**SEQ. #: 5820**

**Long Name:** Aorta Device - Unique Device Identifier #15

**Short Name:** ADevUDI15

**Definition:** Indicate the Unique Device Identifier (UDI) of aorta device #15 if available, otherwise leave blank. Note that the UDI is not the same as the serial number.

**Intent/Clarification:**

This is the number supplied from the manufacturer to identify the specific to the exact device inserted. This number is used to link the specific patient to the specific device implanted.

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**Congenital Defect Repair**

**SEQ. #: 6500**

**Long Name:** Other Card-Congenital Diagnosis 1

**Short Name:** OCarCongDiag1

**Definition:** Indicate the first of the three most significant congenital diagnoses.

**Intent/Clarification:**

A comprehensive list of diagnoses is available at (under V2.9 Congenital Diagnoses and Procedure List):

<http://www.sts.org/sts-national-database/database-managers/adult-cardiac-surgery-database/data-collection>

**FAQ Sept 2019** - For congenital defect repair, if we are to exclude bicuspid valve, should we also exclude a quadricuspid/unicuspid valve, and leave it in the isolated valve category, instead of completing the congenital section?

Answer – Yes, these are variants of valve morphology and should be left in the isolated valve category do not code as a congenital case.

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**SEQ. #: 6505**

**Long Name:** Other Card-Congenital Diagnosis 2



**Short Name:** OCarCongDiag2

**Definition:** Indicate the second of the three most significant congenital diagnoses.

**Intent/Clarification:**

A comprehensive list of diagnoses is available at (under V2.9 Congenital Diagnoses and Procedure List):

<http://www.sts.org/sts-national-database/database-managers/adult-cardiac-surgery-database/data-collection>

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**SEQ. #:** 6510

**Long Name:** Other Card-Congenital Diagnosis 3

**Short Name:** OCarCongDiag3

**Definition:** Indicate the third of the three most significant congenital diagnoses.

**Intent/Clarification:**

A comprehensive list of diagnoses is available at (under V2.9 Congenital Diagnoses and Procedure List):

<http://www.sts.org/sts-national-database/database-managers/adult-cardiac-surgery-database/data-collection>

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**SEQ. #:** 6515

**Long Name:** Other Card-Congenital Procedure 1

**Short Name:** OCarCongProc1

**Definition:** Indicate the first of the three most significant congenital procedures.

**Intent/Clarification:**

A comprehensive list of diagnoses is available at (under V2.9 Congenital Diagnoses and Procedure List):

<http://www.sts.org/sts-national-database/database-managers/adult-cardiac-surgery-database/data-collection>

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**SEQ. #:** 6520

**Long Name:** Other Card-Congenital Procedure 2

**Short Name:** OCarCongProc2

**Definition:** Indicate the second of the three most significant congenital procedures.

**Intent/Clarification:**

A comprehensive list of diagnoses is available at (under V2.9 Congenital Diagnoses and Procedure List):

<http://www.sts.org/sts-national-database/database-managers/adult-cardiac-surgery-database/data-collection>

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**SEQ. #:** 6525

**Long Name:** Other Card-Congenital Procedure 3

**Short Name:** OCarCongProc3

**Definition:** Indicate the third of the three most significant congenital procedures.

**Intent/Clarification:**

A comprehensive list of diagnoses is available at (under V2.9 Congenital Diagnoses and Procedure List):

<http://www.sts.org/sts-national-database/database-managers/adult-cardiac-surgery-database/data-collection>

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**Other Non-Cardiac Procedures**

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**General information:** When considering skin incision start date and time in sequence number 2265, the first skin incision would apply to the incision made for a Carotid, Vascular, Thoracic and Other non-cardiac procedure.

**SEQ. #:** 6530

**Long Name:** Other Non Card-Caro Endart

**Short Name:** ONCCarEn

**Definition:** Indicate whether the patient underwent surgical removal of stenotic atheromatous plaque or percutaneous/surgical placement of carotid stent in conjunction with the primary surgical procedure.

**Intent/Clarification:** Right and/or left carotid arteries are branches of the arch of the aorta that transverse the neck and supply blood flow to the brain.

- Yes, planned
- Yes, unplanned due to surgical complication
- Yes, unplanned due to unsuspected disease or anatomy
- No

**FAQ May 2019:** The patient was in surgery having Right carotid endarterectomy done (and please note the plan was to have the AVR done tomorrow) when during this procedure the patient became bradycardic and required chest compressions and multiple doses of epi. They were able to get the patient back after 10 minutes of chest compressions. However, the pt. had a second bradycardic cardiac arrest and

the surgeon decided on a salvage aortic valve replacement! So is the Endarterectomy now part of the AVR surgery (How do I mark this on the STS tool?)

Answer: If this was done in the same room then code the the AVR as Salvage and the endarterectomy. You can also code resuscitation.

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**SEQ. #:** 6535

**Long Name:** Other Non Card-Other Vasc

**Short Name:** ONCOVasc

**Definition:** Indicate whether patient had procedures treating peripheral vascular disease or condition in conjunction with the primary surgical procedure.

**Intent/Clarification:** May include bypass of superior vena cava syndrome, renal artery bypass, or lower extremity bypass.

- Yes, planned
- Yes, unplanned due to surgical complication
- Yes, unplanned due to unsuspected disease or anatomy
- No

**FAQ February 2018:** In the OR, after a radial graft harvest, the surgeon writes this: "At this point, there was some concern about the radial artery, not having any backflow after the tourniquet was down, the upper arm was then opened and the hand appeared to have capillary refill; however, a decision was made to freely mobilize proximally the radial artery as well as distally and re-anastomosed using 7-0 Propene in running fashion. Hemostasis was achieved and the wound packed. Vascular Surgery was consulted." Is this considered an other non-cardiac vascular procedure?

Answer: Do not code the radial graft harvest or re-anastomosis as this is part of the CAB procedure. Do not code as a surgical complication; however, code any postoperative complications affiliated with the radial artery harvest.

**FAQ October 2018:** The surgeon took a patient to the hybrid room and placed an endostent to the inferior vena cava where a filter had been removed by someone else and caused a tear. Is this included in the database?

Answer: No, endostent to the vena cava are not included in the database.

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**SEQ. #:** 6540

**Long Name:** Other Non Card-Other Thor

**Short Name:** ONCOTHor

**Definition:** Indicate whether patient underwent procedures involving Thorax/Pleura in conjunction with the primary surgical procedure. This includes but is not limited to [open lung biopsy](#), lung resection, mediastinal mass and/or lung dissection.

**Intent/Clarification:** This includes, but is not limited to, lung resection, mediastinal mass and/or lung dissection. Do not code minor thoracic procedures, such as a biopsy. Only capture procedures that increase the risk of morbidity or mortality when done in conjunction with the index procedure. For procedures considered “major” in the Thoracic Database, review the data collection form:

[http://www.sts.org/sites/default/files/documents/STSThoracicDCF\\_V2\\_3\\_MajorProc\\_Annotated.pdf](http://www.sts.org/sites/default/files/documents/STSThoracicDCF_V2_3_MajorProc_Annotated.pdf)

- Yes, planned
- Yes, unplanned due to surgical complication
- Yes, unplanned due to unsuspected disease or anatomy
- No

**FAQ February 2018:** How is a wedge biopsy done in conjunction with an isolated CAB coded? Answer: Lung biopsy should not be captured as ‘Other Thoracic Procedure’.

**FAQ June 2018:** Is removal of the thymus coded as reoperation other non-cardiac thoracic?

Answer: while removing the thymus might add some time to the procedure, it should not be coded as other non-cardiac thoracic.

**FAQ February 2019:** The patient was admitted for elective AVR and has a history of persistent right pleural effusion. During the surgery a right total lung decortication was performed (prior to the AVR). The pleural effusion was evacuated and the lung exhibited a significant amount of scar and was clearly trapped. Two hours was spent removing the pleural rind and an appropriate level of decortication was achieved. Should this be captured as an ‘other non-cardiac procedure’?

Answer: Yes, code other non-cardiac thoracic.

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**SEQ. #:** 6545

**Long Name:** Other Non Card-Other

**Short Name:** ONCOther

**Definition:** Indicate whether the patient had any other non-cardiac procedure performed in conjunction with the primary surgical procedure that is not included within this section.

**Intent/Clarification:** The goal is to keep as many procedures as possible in the “isolated” category. Only code “yes” for procedures that high likelihood of negatively impacting a patient's outcome (survival, quality of life, ability to recover) and/or prolong the patient's length of stay.

- Yes, planned
- Yes, unplanned due to surgical complication
- Yes, unplanned due to unsuspected disease or anatomy
- No

**FAQ May 2019:** I have a patient who experienced multiple codes prior to surgery requiring multiple episodes of CPR. Because of this pt's sternum was unstable and after the CABG, the surgeon reconstructed the pts flail chest and sternal fracture.  
Answer: Do not code anything for this.

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## Postoperative

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**SEQ. #:** 6550

**Long Name:** Postoperative Peak Glucose

**Short Name:** PostOpPeakGlu

**Definition:** Indicate the postoperative peak glucose measured within 18-24 hours of anesthesia end time.

**Intent/Clarification:** Hyperglycemia has been associated with increased in-hospital morbidity and mortality in patients undergoing surgery. The risk of infection was significantly higher for patients undergoing CABG if blood glucose levels were elevated. Hyperglycemia in the immediate postoperative phase increases infection in both diabetic and nondiabetic patients and the higher the level of hyperglycemia the higher the potential for infection in both populations. **Update Nov 2019 – The unit of measurement for Glucose is mg/dl.**

Cardiac surgery patients must have controlled postoperative blood glucose (less than or equal to 180 mg/dL) in the timeframe of 18 to 24 hours after Anesthesia End Time.

(Van den Berghe, 2001) (Zerr, et al 1997) (Latham, et al, 2001)

Code the highest postoperative glucose **18 – 24 hours after Anesthesia End Time.**  
Can be serum or POC (point of care).

### Inclusion Guidelines for Abstraction (SCIP)

- Blood glucose level
  - Blood sugar
  - Fasting glucose
  - Finger stick glucose
  - Glucometer results
  - Glucose
  - Non-fasting glucose
  - Random glucose
  - Serum glucose
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**SEQ. #:** 6555

**Long Name:** Postoperative Creatinine Level

**Short Name:** PostCreat

**Definition:** Indicate the postoperative Creatinine level. If more than one level is obtained, code the highest level.

**Intent/Clarification:** **Update Nov 2019 – The unit of measurement for Creatinine is mg/dl or mg/100ml or mg%.**

The postoperative creatinine will be used to evaluate renal function according to the RIFLE criteria. The Acute Dialysis Quality Initiative, a multidisciplinary collaboration, defined a range of acute renal dysfunction called the RIFLE Classification system. It is used to define grades of severity based on objective measurements.

STS will use the underlined serum creatinine values to analyze post op renal function. GFR and urine output will not be included at this time. Renal Failure criteria are highlighted. Classifications of Loss and End-stage disease are beyond the current scope of follow-up.

- Risk (R) - Increase in serum creatinine level X 1.5 or decrease in GFR by 25%, or UO <0.5 mL/kg/h for 6 hours
- Injury (I) - Increase in serum creatinine level X 2.0 or decrease in GFR by 50%, or UO <0.5 mL/kg/h for 12 hours
- **Failure (F): Increase in serum creatinine level X 3.0, or serum creatinine level  $\geq$  4.0 mg/dL; acute rise must be  $\geq$  0.5 mg/dL or decrease in GFR by 75%,; UO , 0.3 mL/kg/hr. X 24 hours, or anuria for 12 hours.**
- Loss (L) - Persistent ARF, complete loss of kidney function >4 weeks
- End-stage kidney disease (E) - Loss of kidney function >3 months

Code the highest creatinine level from first postoperative lab to discharge.

Reference: <https://ccforum.biomedcentral.com/articles/10.1186/cc2872>

The data specifications allow only one decimal place for this value. ~~This may require standard rounding for values reported in two decimal places. For example, for creatinine reported 1.75 code 1.8; for creatinine reported as 1.52 code 1.5.~~

**Correction: DCRI has determined that you should not round the values and can only code creatinine to one decimal place.**

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**SEQ. #:** 6556

**Long Name:** Postoperative Hemoglobin

**Short Name:** PostopHemoglobin

**Definition:** Indicate the postoperative hemoglobin closest to discharge

**Intent/Clarification:** The hemoglobin (Hgb) from the laboratory report closest to the time of discharge should be accessed first when coding this variable. If this is

unavailable, then point of care testing results may be used. **Update Nov 2019 – The unit of measurement for Hgb is g/dl or g/100 ml or g%.**

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**SEQ. #:** 6557

**Long Name:** Postoperative Hematocrit

**Short Name:** PostopHct

**Definition:** Indicate the postoperative hematocrit closest to discharge

**Intent/Clarification:** The hematocrit (Hct) from laboratory report closest to the time of discharge should be accessed first when coding this variable. If this is unavailable, then point of care testing results may be used. **Update Nov 2019 – The unit of measurement for Hct is %.**

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**SEQ. #:** 6560

**Long Name:** Blood Prod

**Short Name:** BldProd

**Definition:** Indicate whether blood products were transfused any time postoperatively. Postoperatively is defined as any blood started after the initial surgery. Include blood transfused after the initial surgery, including any blood transfused during a re-operative surgery.

**Intent/Clarification:** The intent is to track postoperative blood utilization. Blood products refer to, RBC (includes whole blood), FFP, Cryoprecipitate, and Platelets.

Do NOT include:

- Pre-donated autologous blood
  - Cell saver blood
  - Pump residual blood
  - Chest tube re-circulated blood
- 
- 

**SEQ. #:** 6565

**Long Name:** Blood Prod - RBC Units

**Short Name:** BdRBCU

**Definition:** Indicate the number of units of packed red blood cells that were transfused any time postoperatively.

Do not include autologous, cell-saver or chest tube recirculated blood.

**Intent/Clarification:** The intent is to track postoperative blood utilization

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**SEQ. #:** 6570

**Long Name:** Blood Prod - FFP Units

**Short Name:** BdFFPU

**Definition:** Indicate the number of units of fresh frozen plasma that were transfused any time postoperatively.

**Intent/Clarification:** The intent is to track postoperative blood utilization

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**SEQ. #:** 6575

**Long Name:** Blood Prod - Cryo Units

**Short Name:** BdCryoU

**Definition:** Indicate the number of units of cryoprecipitate that were transfused postoperatively. One bag of cryo = one unit.

The number of units is not volume dependent.

**Intent/Clarification:** The intent is to track postoperative blood utilization

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**SEQ. #:** 6580

**Long Name:** Blood Prod - Platelet Units

**Short Name:** BdPlatU

**Definition:** Indicate the number of units of platelets that were transfused postoperatively. Count the dose pack as one unit. A dose pack may consist of 4, 6, 8, 10, or any number of donor platelets obtained. The number of units coded is not volume dependent.

**Intent/Clarification:** The intent is to track postoperative blood utilization

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**SEQ. #:** 6585

**Long Name:** Extubated In OR

**Short Name:** ExtubOR

**Definition:** Indicate whether the patient was extubated prior to leaving the operating room during the initial surgery.

If patient expires in the operating room during the initial surgery, answer "Yes".



**Intent/Clarification:**

- Yes: if the patient is extubated in the OR during the initial surgery
- No: if patient extubated after leaving the operating room

FAQ October 2017: If a patient is extubated in the OR, will this patient be counted in the <6 hours metric.

Answer: Yes, they will now be included in the <6 metric and their vent times will calculate to zero hours by DCRI.

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**SEQ. #: 6591**

**Long Name:** Postop Intubation/Reintubation During Hospital Stay

**Short Name:** PostopIntub

**Definition:** Indicate whether the patient was intubated for the first time after leaving the OR from the initial procedure, or re-intubated during the hospital stay after the initial extubation.

**Intent/Clarification:** Do not include reintubation for surgical procedures when the patient is extubated prior to leaving the operating room.

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**SEQ. #: 6595**

**Long Name:** Additional Hours Ventilated

**Short Name:** VentHrsA

**Definition:** Indicate how many additional hours the patient was on ventilator after initial extubation.

**Intent/Clarification:** If the patient was reintubated during the current hospital stay, this value is used in the calculation to determine prolonged ventilation.

Ventilator hours are calculated with a decimal point so that minutes can be included. Divide the number of minutes by 60.

Examples:

0.1 = 6 minutes

0.3 = 15 minutes

0.5 = 30 minutes

0.8 = 45 minutes etc.

**FAQ December 2018:** Do not include the additional hours ventilated if the patient returns to the operating room or **procedure room (Update Nov 2019)** and requires

reintubation for the procedure and is extubated before leaving the operating room **or procedure room (Update Nov 2019).**

**FAQ Nov 2019** - The respiratory therapist always documents the extubation time. However, the ICU nurse also documents the extubation time on her flow sheet. I often get the following scenario, RT time extubated documented as 0700, RN documents on her flowsheet 0703. Which time do I take?

Answer - Capture the time documented by the Respiratory Therapist as priority source documentation in this scenario.

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**SEQ. #:** 6600

**Long Name:** Total Postoperative Ventilation Hours

**Short Name:** VentHrsTot

**Definition:** Calculated variable measuring OR exit time to extubation time plus any additional hours due to reintubation.

**Intent/Clarification:** This will be system calculated by the software by adding initial post-op vent hours plus additional postop vent hours to determine total post op vent time. Anything greater than 24 hours is considered prolonged postop vent time. Total hours ventilated is rounded in the calculation.

**FAQ December 2018:** If the patient leaves the operating room and dies within 4 hours, is that patient included in patients who are extubated in less than 6 hours?

Answer: Yes, the patient is included in patient's extubated in less than 6 hours there is no way to know the extubation was associated with the mortality. This will be reviewed with the next upgrade.

**FAQ October 2019** - How do we count the total ventilation hours when the pt returns to the OR for surgery? The patient was not extubated prior to returning to the OR. Do we count the hours he was in the OR as part of his 24 hr post op ventilation time?

Answer - You must include the hours during re-operation in this situation since the patient was not extubated before return to OR.

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**SEQ. #:** 6605

**Long Name:** ICU Visit

**Short Name:** ICUVisit

**Definition:** Indicate whether the patient received ICU level of care immediately following the initial surgery. Include ICU unit, post-anesthesia recovery, and other similar critical care environments.

**Intent/Clarification:** Indicate whether the patient received ICU level of care immediately following the initial surgery. Include ICU units and other similar critical care environments. Do not include PACU if only used for Phase I **recovery in patients who are sent to non-ICU beds after Phase 1 recovery (Update Dec 2019)**. Do include PACU if used as a critical care unit when an ICU bed was not available.

**Update October 2019 - ICU hours are calculated with a decimal point so that minutes can be included. Divide the number of minutes by 60.**

**Examples:**

**0.1 = 6 minutes**

**0.3 = 15 minutes**

**0.5 = 30 minutes**

**0.8 = 45 minutes etc.**

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**SEQ. #: 6610**

**Long Name:** Initial ICU hours **Short Name:** ICUInHrs

**Definition:** Indicate the number of hours the patient received ICU level of care immediately following the initial surgery until the time of actual transfer out of ICU. Include ICU unit, post-anesthesia recovery, and other similar critical care environments. For those sites providing postop ICU level of care in one single stay unit (admission to ICU to hospital discharge), document the number of hours immediately following the initial surgery until a physician order is written to change the level of care provided.

**Intent/Clarification:** ICU hours begin **from OR Exit Date and Time** ~~when the patient arrives in the ICU or your institutions equivalent to an ICU (Update Dec 2019)~~ and ends when they physically leave the ICU. For those sites with single stay units (admission to ICU to hospital discharge), document the number of hours immediately following the initial surgery until a *physician order is written* to change the level of care provided. If the patient expires, use the date/time on the death certificate (time pronounced dead).

Time frame is OR Exit Date and Time until the patient leaves the ICU.

**The only way to objectively count ICU time is to count the actual time the patient physically leaves the ICU.** Using the time of transfer orders misrepresents actual ICU time.

**December 2017:** For institutions that have single stay units – the patient stays in the ICU the entire hospital stay - use the date and time that they patient's level of care changes in the ADT system to determine ICU days.

**FAQ June 2018:** When patient is transferred to "other acute care hospital" do I only count the ICU hours for my facility or am I to count the ICU hours for the "other" facility as well?

Answer: ICU hours is until leave the acute care hospital system – account for all ICU hours. Sites don't always have documentation. ICU hours are ICU hours – and sites should do their best to get the information. This would never be something that is publicly reported.

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**SEQ. #:** 6615

**Long Name:** Readmission to ICU

**Short Name:** ICUReadm

**Definition:** Indicate whether the patient spent time in an ICU after having been transferred to a step-down unit (lower level care). Specific situations are described below:

- OR → ICU → OR → ICU = No
- OR → ICU → STEP DOWN → ICU = Yes
- OR → STEP DOWN → ICU = Yes

Single care unit:

Code ICU readmission when the level of care increases and is noted in the physician order.

**Intent/Clarification:** The intent is to capture episodes of patient deterioration necessitating a higher level of care. For single stay units, this is indicated by a physician order.

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**SEQ. #:** 6620

**Long Name:** Additional ICU Hours

**Short Name:** ICUAdHrs

**Definition:** Indicate the number of additional hours spent in the ICU, or at the equivalent higher level of care in single stay units.

**Intent/Clarification:** This will be used, along with initial ICU hours, to determine total post op ICU hours, an indication of resource utilization.

For single stay units, time should be calculated by the time stamp on a physician's order to elevate the patient's level of care to Intensive Care until the level of care is deescalated. If the patient expires, time should be counted from order to elevate the level of care to the time of death as noted in the medical record.

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**SEQ. #:** 6625

**Long Name:** Postop Echo

**Short Name:** POpTTEch

**Definition:** Indicate whether an echo was performed postoperatively to evaluate valvular function prior to discharge.

**Intent/Clarification:** Capture echocardiograms performed after the patient leaves the operating room but prior to hospital discharge. Code the exam closest to discharge.

**FAQ Nov 2019** - Patient has three postop echo's, one performed on 9/12, one on 9/17 and the last on 9/18. Echo from 9/18(limited) states 'pulmonic valve was not well visualized'. Echo dated 9/17 (full) states ' PV not well visualized, and echo from 9/12 states "there is mild pulmonic valve regurgitation". How would I answer postop pulmonic valve insufficiency?

Answer - In this scenario, code as mild PV regurgitation since the one closest to discharge and prior to that did not visualize the PV.

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**SEQ. #:** 6630

**Long Name:** Postop Echo Aortic Insufficiency

**Short Name:** POpTTAR

**Definition:** Indicate the level of aortic insufficiency/regurgitation found on post op echo closest to discharge. Mild-to-moderate should be coded as moderate; moderate to severe should be coded as severe.

**Intent/Clarification:** Capture echocardiograms performed after the patient leaves the operating room but prior to hospital discharge. If the report for an echocardiogram does not address valve disease, code "not reported". Use the following to categorize the level of insufficiency/regurgitation:

- None
  - Trace/trivial
  - Mild
  - Moderate
  - Severe
  - Not Reported
- 
- 

**SEQ. #:** 6631

**Long Name:** Postop Echo Aortic Paravalvular Leak

**Short Name:** POpAortParaLk

**Definition:** Indicate the level of aortic paravalvular leak found on post op echo closest to discharge. Mild-to-moderate should be coded as moderate; moderate to severe should be coded as severe.

**Intent/Clarification:** To identify a paravalvular leak in a prosthetic aortic valve.

**FAQ February 2018:** Should paravalvular leak be coded for a TAVR?

Answer: Yes, TAVR valves can have paravalvular leak and should be coded as such.

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**SEQ. #:** 6635

**Long Name:** Postop Echo Mitral Insufficiency

**Short Name:** POpTTMR

**Definition:** Indicate the level of mitral insufficiency/regurgitation found on post op echo closest to discharge. Mild-to-moderate should be coded as moderate; moderate to severe should be coded as severe.

**Intent/Clarification:** Capture echocardiograms performed after the patient leaves the operating room but prior to hospital discharge. If the report for an echo does not address valve disease, code “not reported”. Use the following to categorize the level of insufficiency/regurgitation:

- None
  - Trace/trivial
  - Mild
  - Moderate
  - Severe
  - Not Reported
- 
- 

**SEQ. #:** 6636

**Long Name:** Postop Echo Mitral Paravalvular leak

**Short Name:** POpMitParaLk

**Definition:** Indicate the level of mitral paravalvular leak found on post op echo closest to discharge. Mild-to-moderate should be coded as moderate; moderate to severe should be coded as severe.

**Intent/Clarification:** To identify a paravalvular leak in a prosthetic mitral valve.

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**SEQ. #:** 6640

**Long Name:** Postop Echo Tricuspid Insufficiency

**Short Name:** POpTTTR

**Definition:** Indicate the level of tricuspid insufficiency/ regurgitation found on post op echo closest to discharge. Mild-to-moderate should be coded as moderate; moderate to severe should be coded as severe.

**Intent/Clarification:** Capture echocardiograms performed after the patient leaves the operating room but prior to hospital discharge. If the report for an echo does not

address valve disease, code “not reported”. Use the following to categorize the level of insufficiency/regurgitation:

- None
- Trace/trivial
- Mild
- Moderate
- Severe
- Not Reported

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**SEQ. #: 6645**

**Long Name:** Postop Echo Pulmonic Insufficiency

**Short Name:** POpTTPu

**Definition:** Indicate the level of pulmonic insufficiency/ regurgitation found on post op echo closest to discharge. Mild-to-moderate should be coded as moderate; moderate to severe should be coded as severe.

**Intent/Clarification:** Capture echocardiograms performed after the patient leaves the operating room but prior to hospital discharge. If the report for an echo does not address valve disease, code “not reported”. Use the following to categorize the level of insufficiency/regurgitation:

- None
- Trace/trivial
- Mild
- Moderate
- Severe
- Not Reported

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**SEQ. #: 6650**

**Long Name:** Postop EF Done

**Short Name:** POpEFD

**Definition:** Indicate whether the Ejection Fraction was measured postoperatively.

**Intent/Clarification:**

- Yes
- No

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**SEQ. #: 6655**

**Long Name:** Postop EF

**Short Name:** POpEF

**Definition:** Indicate the percentage of the blood emptied from the left ventricle at the end of the contraction measured postoperatively.

**Intent/Clarification:** Enter a range of 1-99. If a percentage range is reported, report a whole number using the “mean” (i.e., 50- 55% is reported as 53%). If a qualitative description is reported, code the mean value for that range; i.e., normal (50-70%) is coded as 60%.

- Hyperdynamic: >70% (code 71%)
- Normal: 50%–70% (midpoint 60%)
- Mild dysfunction: 40%–49% (midpoint 45%)
- Moderate dysfunction: 30%–39% (midpoint 35%)
- Severe dysfunction: <30% (code 29%)

Note: If no diagnostic report is in the medical record, a value documented in the medical record is acceptable.

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**SEQ. #:** 6660

**Long Name:** Postop Cardiac Enzymes Drawn

**Short Name:** POpEnzDrawn

**Definition:** Indicate whether Cardiac Enzymes (biomarkers) were drawn post procedure.

**Intent/Clarification:** Capture cardiac enzymes that were drawn after surgery, prior to discharge. This does not imply that enzymes should be drawn on all patients; the intent is to capture the values if they were drawn. Include one-time draws if serial enzymes were not drawn.

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**SEQ. #:** 6665

**Long Name:** Postop Peak CKMB

**Short Name:** POpPkCKMB

**Definition:** Indicate the peak CKMB (highest level post procedure).

**Intent/Clarification:** CKMB is the fraction of the enzyme directly related to myocardial tissue. Record the highest level post procedure if multiple were drawn. **Update Nov 2019 – The unit of measurement for CKMB is u/l or IU/l or umol/(min.L)**

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**SEQ. #:** 6670

**Long Name:** Postop Peak Troponin I

**Short Name:** POpPkTrI

**Definition:** Indicate the peak Troponin I (highest level post procedure).



**Intent/Clarification:** Troponin I is a very sensitive and specific indicator of damage to the heart muscle (myocardium). It is used in conjunction with other diagnostic criteria to diagnose myocardial infarction. Record the highest level if multiple were drawn. .

**Update Nov 2019 – The unit of measurement for Troponin I is ng/ml or µg/l**

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**SEQ. #:** 6675

**Long Name:** Postop Peak Troponin T

**Short Name:** POpPkTrT

**Definition:** Indicate the peak Troponin T (highest level post procedure).

**Intent/Clarification:** Troponin T is a very sensitive and specific indicator of damage to the heart muscle (myocardium). It is used in conjunction with other diagnostic criteria to diagnose myocardial infarction. Record the highest level if multiple were drawn. **Update**

**Nov 2019 – The unit of measurement for Troponin T is ng/ml or µg/l**

**FAQ Dec 2019** - Some hospital labs have begun reporting Troponin T in a new HS (highly sensitive) format and it is reported in ng/l. Is there a conversion formula available/recommended, or should HS Troponin T values be ignored, and Field #6675 be left blank? Answer – Yes, it is acceptable to convert. There are many acceptable conversion calculators such as the following online: <http://unitslab.com/node/139>

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**SEQ. #:** 6680

**Long Name:** Postop 12 Lead EKG

**Short Name:** POpEKG

**Definition:** Indicate the post procedure 12 lead EKG findings, if performed.

**Intent/Clarification:** This does not imply 12 leads are standard procedures for all post op patients. If more than one 12 lead EKG is done following surgery, capture the last one done prior to discharge.

- Not Performed
- No ischemic changes
- New ST changes (does not include LBBB or ST elevation)
- New Pathologic Q Wave or LBBB
- New RBBB
- New AV conduction block
- New STEMI
- Other
- N/A (No pre-op EKG for comparison, transplant) Arrhythmias are not captured here.

**FAQ Dec 2019** - When looking at the last postop EKG performed, can the findings be coded if the EKG has not been officially read?

Answer – No, use the last EKG that has been officially read for Seq 6680.

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## Postoperative Events

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**SEQ. #:** 6690

**Long Name:** Post-Op-Surgical Site Infection

**Short Name:** SurSInf

**Definition:** Indicate whether a surgical site infection (SSI) was diagnosed within 30 days of the procedure (**whether in hospital or after discharge**) or any time during the hospitalization for surgery.

**Update Oct 2019 - Refer to the most current CDC definition for SSI which can be found in the training manual via the following link:**

<https://www.cdc.gov/nhsn/pdfs/pscmanual/9pscasicurrent.pdf>

### Intent/Clarification:

- **Superficial Incisional SSI:** Must meet the following criteria:
  - Infection occurs  $\leq$  30 days, **and** involves only skin/subcutaneous tissue of the incision, **and** patient has  $\geq$  one of the following:
    - Purulent drainage from the superficial incision.
    - Organisms isolated from an aseptically-obtained culture of fluid or tissue from the superficial incision.
    - Superficial incision that is deliberately opened by a surgeon, attending physician or other designee and is culture positive or not cultured **and** patient has  $\geq$  one of the following:
      - pain or tenderness
      - localized swelling
      - redness
      - heat
  - ~~A culture with negative findings does not meet this criterion.~~
  - Diagnosis of a superficial incisional SSI by the surgeon or attending physician or other designee.
  - There are two specific types of superficial incisional SSIs:
    - Superficial Incisional Primary (SIP) – a superficial incisional SSI that is identified in the primary incision in a patient that has had an operation with one or more incisions (chest incision for CABG)
    - Superficial Incisional Secondary (SIS) – a superficial incisional SSI that is identified in the secondary incision in a patient that has had an operation with more than one incision (e.g., donor site incision for CABG)

### Do not include:

- A stitch abscess alone (minimal inflammation and discharge confined to the points of suture penetration)

- A localized stab wound or pin site infection.
- Diagnosis of “cellulitis” by itself
  
- **Deep incisional SSI:** Must meet the following criteria
  - Infection occurs within 30 days after the operative procedure, **and** involves deep soft tissues of the incision (e.g., fascial and muscle layers) **and** patient has at least one of the following:
    - Purulent drainage from the deep incision.
    - A deep incision that spontaneously dehisces or is deliberately opened by a surgeon, attending physician or other designee and is culture-positive or not cultured, **and** patient has at least one of the following signs or symptoms:
      - Fever (>38°C)
      - Localized pain or tenderness
      - An abscess or other evidence of infection involving the deep incision that is detected on direct examination, during invasive procedure, or by histopathologic examination or imaging test.
        - A culture with negative findings does not meet this criterion.
  - There are two specific types of deep incisional SSIs:
    - Deep Incisional Primary (DIP) – a deep incisional SSI that is identified in a primary incision in a patient that has had an operation with one or more incisions (e.g., chest incision for CABG)
    - Deep Incisional Secondary (DIS) – a deep incisional SSI that is identified in the secondary incision in a patient that has had an operation with more than one incision (e.g., donor site incision for CABG)
  
- **Organ/Space SSI:** Must meet the following criteria
  - Infection occurs within 30 days after the operative procedure, and infection involves any part of the body, excluding the skin incision, fascia, or muscle layers, that is opened or manipulated during the operative procedure, **and** patient has at least one of the following:
    - Purulent drainage from a drain that is placed into the organ/space
    - Organisms isolated from an aseptically-obtained culture of fluid or tissue in the organ/space
    - An abscess or other evidence of infection involving the organ/space that is detected on direct examination, during invasive procedure, or by histopathologic examination or imaging test, **and** meets at least one criterion for a specific organ/space infection of mediastinitis below:
  
- **MED-Mediastinitis:** Must meet the following criteria
  - Mediastinitis must meet at least 1 of the following criteria:
    - Patient has organisms cultured from mediastinal tissue or fluid obtained during an invasive procedure.
    - Patient has evidence of mediastinitis seen during an invasive procedure or histopathologic examination.
    - Patient has **at least 1** of the following signs or symptoms:

- Fever (>38°C)
- Chest pain\*
- Sternal instability\*
  - and at least 1** of the following:
    - Purulent discharge from mediastinal area
    - Organisms cultured from blood or discharge from mediastinal area
    - Mediastinal widening on imaging test.

\* With no other recognized cause

Report mediastinitis following cardiac surgery that is accompanied by osteomyelitis as SSI-MED rather than SSI-BONE

**FAQ July 2018:** At our site we are putting in wound vac for prophylactic use. Should infection be coded in sequence number 6690 in order to capture the wound intervention in sequence number 6725 and wound VAC in sequence number 6735?

Answer: No, do not code infection or wound intervention and wound VAC.

**FAQ November 2018:** A patient who underwent an isolated CABG developed purulent drainage of the chest tube site within 30 days of the procedure. How is infection of the CT sites captured as it really doesn't fit into any of the categories?

Answer: Don't code anything if this was superficial at the site.

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**SEQ. #: 6695**

**Long Name:** Post-Op-Sternal-Superficial Wound Infection

**Short Name:** CSternalSupInf

**Definition:** Indicate whether a superficial sternal wound infection was diagnosed within 30 days of the procedure or any time during the hospitalization for surgery.

**Intent/Clarification:** See above definition for superficial site infection.

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**SEQ. #: 6700**

**Long Name:** Post-Op-Deep Sternal Infection / Mediastinitis

**Short Name:** DeepSternInf

**Definition:** Indicate whether a deep sternal wound infection or mediastinitis was diagnosed within 30 days of the procedure or any time during the hospitalization for surgery.

**Intent/Clarification:** See above definition for Deep Sternal Infection/Mediastinitis. The STS Composite scores weighs deep sternal wound infection and mediastinitis the same.

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**SEQ. #:** 6705

**Long Name:** Post-Op-Deep Sternal Infection / Mediastinitis - Date

**Short Name:** DeepSternInfDt

**Definition:** Indicate the first date that deep sternal wound infection or mediastinitis was documented.

**Intent/Clarification:** Required date format: mm/dd/yyyy

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**SEQ. #:** 6710

**Long Name:** Post-Op-Infect-Thoracotomy

**Short Name:** CITHor

**Definition:** Indicate whether a surgical site infection involving a thoracotomy or parasternal site was diagnosed within 30 days of the procedure or any time during the hospitalization for surgery.

**Intent/Clarification:** Time frame is from OR Exit time to 30 days post procedure or discharge from initial hospital visit if admitted for greater than 30 days.

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**SEQ. #:** 6715

**Long Name:** Post-Op-Conduit Harvest

**Short Name:** ConduitHarv

**Definition:** Indicate whether a surgical site infection involving a conduit harvest site was diagnosed within 30 days of the procedure or any time during the hospitalization for surgery.

**Intent/Clarification:** Capture infections at the site of an endovascular harvest site or an open harvest site, arm or leg.

Time frame is from OR Exit time to 30 days post hospital visit if admitted for greater than 30 days.

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**SEQ. #:** 6720

**Long Name:** Post-Op-Cannulation Site

**Short Name:** CanSite

**Definition:** Indicate whether a surgical site infection involving a cannulation site was diagnosed within 30 days of the procedure or any time during the hospitalization for surgery.

**Intent/Clarification:**

Capture infections of cannulation sites **for the index procedure aorta / venous sites cannulated during surgery for CPB and the transcatheter cannulation site for transcatheter procedures such as TAVR.** These are considered secondary surgical site infections since they do not involve the primary surgical incision. Follow CDC criteria above.

Time frame is from OR Exit time to 30 days post procedure or discharge from initial hospital visit if admitted for greater than 30 days.

**FAQ March 2019:** A patient was readmitted with an infection at the IABP cannulation site. This readmission infection is only related to the IABP should it only be captured as cannulation site infection in sequence number 6720 and MAD site infection in sequence number 6893?

Answer: No, do not capture as cannulation site infection.

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**SEQ. #:** 6725

**Long Name:** Post-Op-Wound Intervention / Procedure

**Short Name:** WoundInter

**Definition:** Indicate whether a wound intervention or procedure was performed.

**Intent/Clarification:** The intent is to capture treatment strategies employed to treat the surgical site infection(s). Indicate below whether treatment was applied to the primary incision, secondary incision or both. **Update October 2019 - Capture all strategies employed to treat the infection that was diagnosed within 30 days of surgery. The interventions used may occur > 30 days.**

**FAQ July 2018:** At our site we are putting in wound vac for prophylactic use. Should infection be coded in sequence number 6690 in order to capture the wound intervention in sequence number 6725 and wound VAC in sequence number 6735?

Answer: No, do not code infection or wound intervention and wound VAC.

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**SEQ. #:** 6730

**Long Name:** Post-Op-Wound Intervention - Open With Packing / Irrigation

**Short Name:** WoundIntOpen

**Definition:** Indicate whether wound intervention(s) involved opening the wound and packing and/or irrigation.

**Intent/Clarification:** The intent is to capture treatment strategies employed to treat the surgical site infection within 30 days following procedure included leaving the incision open with packing/irrigation.

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**SEQ. #:** 6735

**Long Name:** Post-Op-Wound Intervention - Wound Vac

**Short Name:** WoundIntVac

**Definition:** Indicate whether wound intervention(s) included application of a wound vac.

**Intent/Clarification:** A wound-vac may also be called negative pressure wound therapy. A wound-vac is a device is used to facilitate wound healing by converting an open wound to a closed wound. The application of negative pressure causes removal of excess fluids, increased blood flow and decreased bacterial colonization; promotes granulation tissue formation and wound closure.

**FAQ July 2018:** At our site we are putting in wound vac for prophylactic use. Should infection be coded in sequence number 6690 in order to capture the wound intervention in sequence number 6725 and VAC in sequence number 6735?

Answer: No, do not code infection or wound intervention or wound VAC.

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**SEQ. #:** 6740

**Long Name:** Post-Op-Wound Intervention - Secondary Procedure Muscle Flap

**Short Name:** WoundIntMuscle

**Definition:** Indicate whether wound intervention(s) included a secondary procedure involving a muscle flap.

**Intent/Clarification:** Refer to operative dictations. Muscle flaps are typically performed by a CV Surgeon or Plastic Surgeon.

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**SEQ. #:** 6745

**Long Name:** Post-Op-Wound Intervention - Secondary Procedure Omental Flap

**Short Name:** WoundIntOmental

**Definition:** Indicate whether wound intervention(s) included a secondary procedure involving an Omental flap.

**Intent/Clarification:** Refer to operative dictations.

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**SEQ. #:** 6750

**Long Name:** In Hospital Post-Op Events

**Short Name:** Complics

**Definition:** Indicate whether a postoperative event occurred during the hospitalization for surgery. This includes the entire postoperative period up to discharge, even if over 30 days.

**Intent/Clarification:**

The intent is to document those events/complications that:

- Pose either a life threatening situation or create a potential long-term deficit
- Require pharmacological, surgical or medical intervention to prevent further clinical deterioration
- Increase length of stay and/or resource utilization.

If the patient expires in the operative room, the complications section does not need to be completed. There would not have been a post-operative period for the patient, therefore, no post-operative complications. Code the Complications data fields "No".

**FAQ June 2018:** The patient was transferred to another acute care hospital; following transfer the patient had a number of complications including: prolonged vent and renal failure. In which hospital should the complications be captured?

Answer: The hospital in which the initial procedure was performed is required to capture all complications and outcomes for the patient until the time of discharge from the second hospital.

**FAQ December 2018:** The patient had the following postoperative complications: thrombocytopenia, hemolytic anemia, AKI, AMS, possible thrombotic microangiopathy. Differential diagnoses included TTP, HUS, DITMA but no DIC was identified. The patient ultimately required plasmapheresis. How is plasmapheresis captured as a post operative event?

Answer: Plasmapheresis is not captured as a post operative event.

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**SEQ. #: 6755**

**Long Name:** Post-Op-ReOp Bleed

**Short Name:** COpReBld

**Definition:** Indicate whether the patient was re-explored for mediastinal bleeding with or without tamponade either in the ICU or returned to the operating room.

**Intent/Clarification:** Do not capture reopening of the chest or situations of excessive bleeding that occur prior to the patient leaving the operating room at the time of the primary procedure. Tamponade is a situation which occurs when there is compression or restriction placed on the heart within the chest that creates hemodynamic instability or a hypoperfused state. Do not include medically (non-operatively) treated excessive post-operative bleeding/tamponade events.

Include patients that return to an OR suite or equivalent OR environment (i.e., ICU setting) as identified by your institution, that require surgical re-intervention to investigate/correct bleeding with or without tamponade. Include only those interventions that pertain to the mediastinum or thoracic cavity.

**FAQ Dec 2019 -** Pt returns to OR for exploration of bleed without tamponade. The surgeon documents hematoma evacuation with washout no active bleeding. Is this considered ReopBleed or Reop Non-cardiac?

Answer - This is a reop bleed. The patient was re-explored for mediastinal bleeding and a hematoma was evacuated.

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**SEQ. #:** 6760

**Long Name:** Post-Op-ReOp Bleed Timing

**Short Name:** COpReBldTim

**Definition:** Indicate when reoperation for bleeding took place.

**Intent/Clarification:**

- Acute\* - Within 24 hours of the end of the case
- Late - more than 24 hours after case ends

\*Code exactly 24 hours as Acute

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**SEQ. #:** 6765

**Long Name:** Post-Op-ReOp Vlv Dys

**Short Name:** COpReVlv

**Definition:** Indicate whether the patient returned to the operating room for prosthetic or native valve dysfunction. Dysfunction may be structural and/or non-structural failure. Dysfunction may be of prosthesis, a progressive native disease process, or an acute event process that disrupts valve function and creates either clinical compromising insufficiency/regurgitation or valve orifice narrowing.

**Intent/Clarification:**

- Yes, surgical
- Yes, transcatheter
- No

**FAQ December 2018:** The patient was transferred from my hospital to another hospital following surgery for higher level of care and required valve surgery, how is the valve surgery captured for my hospital?

Answer: The valve done at the second hospital would be captured as reoperation for valve dysfunction if the patient had a primary procedure at your hospital.

**FAQ May 2019:** I had a patient who had a planned CABG for 1 day and a planned TVAR the next day. Is the TAVR captured, if so, where?

Answer: Yes, please code the TAVR in the Aortic Valve Section even though it was done on a different day. This patient will appropriately fall out of the isolated CAB category considering the additional risk of the TAVR procedure.

**FAQ Dec 2019** - Pt presents for AVR but, upon opening the chest, MD discovers significant aortic calcification and feels that the surgery cannot be performed at our facility. Sternotomy is closed and the patient is transferred to another acute care facility and the AVR is performed there. Would I need to code the subsequent surgery at the transferring facility as a reop for the canceled surgery at my facility?

Answer - In this scenario, capture as cancelled case at your facility and complete DCF based on the discharge date at your hospital. The facility that the patient was transferred to will start new DCF for the surgical procedure done there.

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**SEQ. #:** 6771

**Long Name:** Post-Op-Reintervention-Myocardial Ischemia

**Short Name:** CReintMI

**Definition:** Indicate whether the patient required postoperative reintervention for Myocardial Ischemia.

**Intent/Clarification:** Only capture surgical or Cath lab interventions that occur during the hospitalization prior to discharge. **Update Dec 2019 - Capture an unplanned coronary intervention (PCI) or unplanned surgical intervention on a coronary artery in this field.**

- Yes, surgical
- Yes, PCI
- No

**FAQ September 2017:** Patient was 4 days post op CAB developed chest pain with elevated troponin. Patient was taken to the Cath lab and found to have a freshly occluded graft. After opening the graft with "mechanical thrombolysis" the graft was open, but noticed an AV fistula between the graft and the LV. The physician then ballooned the area to re-occlude the graft and seal the fistula. This was successful. How does this get captured?

Answer: Code Yes, PCI.

**FAQ August 2018:** The patient had no chest pain but had a CAB X 2 for large aneurysm originating from the bifurcation of the LAD and Diagonal. Post operatively, the patient was experiencing angina and was taken to the cardiac cath lab where stenting of the proximal LAD was performed. Should this be coded as reop other cardiac?

Answer: No, this is reintervention for myocardial ischemia.

**FAQ May 2019:** Patient had CABG, coded in ICU postop and a few days postop had to go to cath lab and near total graft occlusion (RCA) found. IABP removed and Impella inserted. They were unable to engage RCA and given the contrast amount and improving hemodynamic status with Impella they felt further attempts at revascularization were futile. So no "intervention type: surgery or PCI or both" done. How should this be captured?

Answer: Code this as a reintervention for MI since the PCI was attempted.

**FAQ June 2019:** The patient goes to surgery for a CAB on 3/11/2019. During the operation the surgeon determines that the patient will need a post op PCI on a vessel that is too small to bypass. The patient is taken back to the cath lab on 3/14/2019 for a planned PCI of the vessel that was too small to bypass. There is no information in the

chart after surgery suggesting the patient is having ischemia. Do we capture this as Reintervention Myocardial Ischemia?

Answer: At time of initial surgery if the surgeon determines that a vessel is not bypassable and more suitable for PCI then Seq 2606 can be coded as YES.

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**SEQ. #: 6772**

**Long Name:** Post-Op-Reintervention-Myocardial Ischemia-Vessel

**Short Name:** CReintMIVes

**Definition:** Indicate the type of vessels that required postoperative reintervention for Myocardial Ischemia.

**Intent/Clarification:** Reintervention may involve native coronary arteries, coronary artery bypass grafts or both.

- Native Coronary
- Graft
- Both

**FAQ September 2017:** Patient was 4 days post op CAB developed chest pain with elevated troponin. Patient was taken to the Cath lab and found to have a freshly occluded graft. After opening the graft with "mechanical thrombolysis" the graft was open, but noticed an AV fistula between the graft and the LV. The physician then ballooned the area to re-occlude the graft and seal the fistula. This was successful. How does this get captured?

Answer: Code Graft.

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**SEQ. #: 6773**

**Long Name:** Post-Op-Reintervention-Myocardial Ischemia - Intervention Type

**Short Name:** CReintMIIntTy

**Definition:** Indicate the type of intervention used postoperatively for Myocardial Ischemia.

**Intent/Clarification:** Reintervention may include surgery, PCI or both.

**FAQ September 2017:** Patient was 4 days post op CAB developed chest pain with elevated troponin. Patient was taken to the Cath lab and found to have a freshly occluded graft. After opening the graft with "mechanical thrombolysis" the graft was open, but noticed an AV fistula between the graft and the LV. The physician then ballooned the area to re-occlude the graft and seal the fistula. This was successful. How does this get captured?

Answer: Code PCI.

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**SEQ. #: 6774**

**Long Name:** Post-Op-Aortic Reintervention

**Short Name:** CAortReint

**Definition:** Indicate whether the patient underwent postoperative aortic reintervention.

**Intent/Clarification:**

- Yes
- No

**FAQ October 2017:** The patient was initially scheduled for TEVAR but after a series of CT scans and manifestations of signs and symptoms, the surgeon opted to repair the ascending aortic flap first and then, 3 days later, he took the patient back to the OR for the TEVAR. Should this be captured as post-operative event aortic reintervention?

Answer: No, code as a planned staged hybrid. Then capture the TEVAR accordingly in Seq. No. 5095.

**FAQ Nov 2019** - Patient had an aortic aneurysm repair Elephant Trunk I. On the same admission, he went back to the OR after 7 days for planned Elephant trunk II procedure. Do I capture the return to OR as 6774?

Answer – No capture as one procedure, not return to OR. Use the date and times for OR from the first procedure.

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**SEQ. #: 6775**

**Long Name:** Post-Op-Aortic Reintervention-Type

**Short Name:** CAortReintTy

**Definition:** Indicate the type of aortic intervention the patient received.

**Intent/Clarification:** Reintervention may be open or endovascular.

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**SEQ. #: 6778**

**Long Name:** Post-Op-ReOp Other Card

**Short Name:** COpReOth

**Definition:** Indicate whether the patient returned to the operating room for other cardiac reasons.

**Intent/Clarification:** Capture any other cardiac reasons for reoperation.

- Yes
- No

**Include patients that return to an OR suite or equivalent OR environment (i.e., ICU setting) as identified by your institution, that require surgical re-intervention to investigate/correct other non-bleed cardiac issues such as emergent open chest in the ICU for cardiac arrest.**

**FAQ December 2018:** Would the removal of Impella in the operating room be considered reoperation other cardiac?

Answer: No, this is an expectation and not a complication.

**FAQ February 2019:** The patient returned to the OR on the third postoperative day for the removal of a transthoracic IABP. Should this be a reoperation other cardiac.

Answer: Do not consider this expected procedure as a reoperation.

**FAQ May 2019:** A patient underwent a LVAD procedure. A couple of days later, he returned to the OR for a post op pulmonary embolectomy during the same admission. Should an additional STS form be completed for the pulmonary embolectomy procedure?

Answer: If LVAD is a FDA approved permanent device then it should be entered in the InterMACS Database and the pulmonary embolectomy should be captured for that procedure. If the LVAD is entered in the ACSD then it should be entered as the index procedure with the pulmonary embolectomy as a post-operative event.

**FAQ July 2019 -** A week after CABG, patient continues to be in cardiogenic shock. They are taken back to OR to have an Impella placed to bridge to LVAD and transplant work up. Does this qualify for ReOP for Other Cardiac Reasons? IABP was in right femoral. Surgeon and cardiologist did not feel the patient could tolerate removal of IABP then placement of femoral impella. She was taken to OR for right axillary impella via cut down.

Answer – Do not code as re-op code only under MAD

**FAQ Nov 2019 -** Currently if ECMO is placed via thoracic catheters (chest opened) at bedside it is considered a return to OR, other cardiac. If ECMO is inserted peripherally it is captured in the timing of ECMO and not captured as a return to OR. Please clarify how we are to capture ECMO?

Answer - Capture institution of post operative ECMO in Seq 3775 - 3785 and Seq 6778 return to OR for any ECMO regardless of where ECMO is performed.

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**SEQ. #: 6780**

**Long Name:** Post-Op-Return To OR For Other Non-cardiac Reason

**Short Name:** COpReNon

**Definition:** Indicate whether the patient returned to the operating room for other non-cardiac reasons.

This includes procedures requiring a return to the operating room such as tracheostomy, general surgery procedures.

This does not include procedures performed outside the operating room such as GI Lab for peg tube, shunts for dialysis, etc.

**Intent/Clarification:**

Non-cardiac events include, but are not limited to, events as described in Section N.

Code only those non-cardiac events that require a return to the surgical suite.

**This includes** procedures requiring a return to the operating room, such as a tracheostomy, hematoma evacuation **of a non-cardiac / non-primary operative space such as abdominal hematoma or retroperitoneal hematoma etc... (Update Dec 2019)**

**This does not include** procedures performed outside the operating room, such as GI lab for peg tubes, shunts for dialysis, etc. Due to practice pattern(s) determined by institutional culture or practice driven patterns, some sites may have included in this section cases and/or events that other sites may not. Capture those events that may pose a clinically or resource utilization impact on the patient AND necessitate a return to the OR.

For planned procedures, (i.e. a patient who is scheduled for lower extremity vascular surgery requiring a CAB prior to the scheduled vascular procedure), Code “No,” as this is not a complication, coding it as a complication misrepresents the outcome of the surgery.

*Events captured here are not included in the reoperative measure of the composite score.*

**FAQ September 2017:** Should we code a GI event for an abdominal compartment syndrome leading to a decompressive laparotomy?

Answer: Yes, code GI event for abdominal compartment syndrome in addition to the reoperation other non-cardiac for the decompression laparotomy.

**FAQ October 2017:** If the patient has a percutaneous tracheostomy done at the bedside, is this considered a reoperation other non-cardiac.

Answer: Yes, code ‘Reoperation, other non-cardiac’ for all tracheostomies regardless of the location where the tracheostomy was performed.

**FAQ March 2018:** The patient completed CABG surgery and arrived in CTICU. The OR nurse notified the surgeon about the missing instrument, a chest X-ray was performed and showed a retained foreign body in the chest. The patient was returned to the operating room for the removal of the foreign body. Does this coded as yes or no for 'Returned to the OR for Other Non-Cardiac Reason'?

Answer: Code reoperation other non-cardiac.

**FAQ January 2020 - Patient has a superficial sternal infection and is taken to OR for Sternal I&D. Do I need to code only Seq 6790 or do I need to code both Seq 6780 and Seq 6790?**

Answer – Code both Seq 6780 and Seq 6790 in this scenario.

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**SEQ. #:** 6785

**Long Name:** Post-Op-Open Chest With Planned Delayed Sternal Closure

**Short Name:** COpPIndDelay

**Definition:** Indicate whether the chest was left open with planned delayed sternal closure.

**Intent/Clarification:** This allows capture of patients who have the chest left open with a planned delayed sternal closure. Update Dec 2019 - **The intent is to capture the delayed sternal closure of the chest following the index surgical procedure.**

**FAQ August 2018:** The patient's chest was left open and would have been closed but the patient died before it could be closed. Should this still coded as delayed sternal closure?

Answer: Yes, that was the intent.

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**SEQ. #:** 6790

**Long Name:** Post-Op-Sternotomy Issue

**Short Name:** CSternal

**Definition:** Indicate presence of a post-operative sternotomy issue.

**Intent/Clarification:** Indicate presence of a post-operative sternotomy issue prior to discharge. Any condition requiring operative intervention involving the sternotomy should be coded YES.

**FAQ January 2020 - Patient has a superficial sternal infection and is taken to OR for Sternal I&D. Do I need to code only Seq 6790 or do I need to code both Seq 6780 and Seq 6790?**

Answer – Code both Seq 6780 and Seq 6790 in this scenario.

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**SEQ. #:** 6795

**Long Name:** Post-Op Sternal instability/dehiscence (sterile)

**Short Name:** CSternalDehis

**Definition:** The code indicates sterile dehiscence of the sternal edges without evidence of infection but which requires surgical intervention. Skin and subcutaneous tissue may remain intact.

**Intent/Clarification:** Wound dehiscence (sterile) is defined as separation of the layers of a surgical wound. This separation can either be superficial or deep and can include the sternum in the case of a median sternotomy incision. The code “Sternal instability (sterile)” should be used to record the complication when the superficial and deep layers of the incision remain intact but non-union of the sternal edges is present. Causes of wound dehiscence can include tissue ischemia, nutritional deficiencies, use of corticosteroids, vitamin C deficiency, and others.

Wound dehiscence due to wound infection should be recorded as a wound infection.

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**SEQ. #:** 6800

**Long Name:** Post-Op-Sepsis

**Short Name:** CSepsis

**Definition:** Sepsis is defined as evidence of serious infection accompanied by a deleterious systemic response. In the time period of the first 48 postoperative or post procedural hours, the diagnosis of sepsis requires the presence of a Systemic Inflammatory Response Syndrome (SIRS) resulting from a proven infection (such as bacteremia, fungemia or urinary tract infection). In the time period after the first 48 postoperative or post procedural hours, sepsis may be diagnosed by the presence of a SIRS resulting from suspected or proven infection. During the first 48 hours, a SIRS may result from the stress associated with surgery and/or cardiopulmonary bypass. Thus, the clinical criteria for sepsis during this time period should be more stringent.

A systemic inflammatory response syndrome (SIRS) is present when at least two of the following criteria are present: hypo- or hyperthermia (>38.5 or <36.0), tachycardia or bradycardia, tachypnea, leukocytosis or leukopenia, or thrombocytopenia.

**Intent/Clarification:** Indicate whether sepsis was diagnosed during initial hospitalization. Sepsis is defined as having 2 or more of the SIRS (systemic inflammatory response syndrome) criteria and a known or suspected infection, typically occurring within 6 hours of each other. SIRS may occur unrelated to infection, as in the case of cardiac surgery, and not indicative of Sepsis.

- Within the first 48 hours of cardiac surgery a patient MUST meet 2 SIRS criteria typically within 6 hours of each other and have a PROVEN infection (not suspected). Clinical criteria of sepsis must be more stringent during the first 48 hours following surgery because the stress surgery produces results in SIRS criteria and is not typically related to an infection.
- After 48 hours, the patient must have 2 or more SIRS criteria typically within 6 hours of each other and a known or suspected infection.

SIRS criteria included:

- HR > 90 (acute and not a chronic condition)
- Temp >38.5 <36.0
- Resp >20 bpm or PaCO<sup>2</sup> <32 mmHg
- WBC <4000 or >12000 or >10% Bands

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**SEQ. #:** 6805

**Long Name:** Post-Op-Sepsis-Positive Blood Cultures

**Short Name:** CSepsisPBC

**Definition:** Indicate whether a recognized pathogen is cultured from 1 or more blood cultures and is not related to an infection at another site.

**Intent/Clarification:** Indicate if blood cultures obtained in the post-operative period were positive for infectious pathogen. Staph epidermis (*S. epidermis*) is a common



contaminate of blood cultures. Refer to the ordering physician's interpretation of results if there is a questions.

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**SEQ. #:** 6810

**Long Name:** Post-Op-Neuro-Stroke Perm

**Short Name:** CNStrokP

**Definition:** Indicate whether the patient has a postoperative stroke and the type of stroke (i.e., any confirmed neurological deficit of abrupt onset caused by a disturbance in blood supply to the brain) that did not resolve within 24 hours.

**Intent/Clarification:** Stroke occurs when the blood supply to part of the brain is suddenly interrupted or when a blood vessel in the brain bursts, spilling blood into the spaces surrounding brain cells. Brain cells die when they no longer receive oxygen and nutrients from the blood or there is sudden bleeding into or around the brain.

**Update Nov 2019 - A confirmed stroke on imaging supercedes the 24 -hour time period.**

The symptoms of a stroke include:

- Sudden numbness or weakness, especially on one side of the body
- Sudden confusion or trouble speaking or understanding speech
- Sudden trouble seeing in one or both eyes
- Sudden trouble with walking, dizziness, or loss of balance or coordination
- Sudden severe headache with no known cause

There are two forms of stroke:

- Ischemic - blockage of a blood vessel supplying the brain
- Hemorrhagic - bleeding into or around the brain

Central events are caused by embolic or hemorrhagic events. Neurological deficits such as confusion, delirium and/or encephalopathic (anoxic or metabolic) events are not to be coded in this field.

**Reference:** <https://www.ninds.nih.gov/Disorders/All-Disorders/Stroke-Information-Page>

**FAQ October 2017:** How should embolic stroke be coded?

Answer: Embolic strokes should be coded as ischemic.

**FAQ Sept 2019 -** A patient developed a post-op ischemic stroke. Three days after this diagnosis, a repeat head CT showed "evidence of hemorrhagic transformation". Should the stroke be coded as "ischemic" or as "hemorrhagic"?

**Answer -** Code as ischemic.

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**SEQ. #:** 6815

**Long Name:** Post-Op-Neuro-Transient Ischemic Attack - TIA

**Short Name:** CNStrokTTIA

**Definition:** Indicate whether the patient had a postoperative Transient Ischemic Attack (TIA): Loss of neurological function that was abrupt in onset but with complete return of function within 24 hours.

**Intent/Clarification:** A transient ischemic attack (TIA) is a transient stroke that lasts up to 24 hours. It occurs when the blood supply to part of the brain is briefly interrupted. TIA symptoms, which usually occur suddenly, are similar to those of stroke but do not last as long. Most symptoms of a TIA disappear within an hour, although they may persist for up to 24 hours.

Symptoms can include:

- Numbness or weakness in the face, arm, or leg, especially on one side of the body
- Confusion or difficulty in talking or understanding speech
- Trouble seeing in one or both eyes; and difficulty with walking, dizziness, or loss of balance and coordination.

Patients who have suffered a TIA have an increased risk of peripheral and coronary artery atherosclerosis, and an increased risk of subsequent heart attack and stroke.

**Reference:** <https://www.ninds.nih.gov/Disorders/All-Disorders/Stroke-Information-Page>

**FAQ Nov 2019** - Patient had an MRI that was positive for a post-op stroke. In discussion with the cardiac team it was felt that this would not be captured as a post-op stroke because the symptoms resolved within 24 hours. How would this be captured since the symptoms resolved within 24 hours?

Answer - code YES to post-op CVA in this scenario. A confirmed stroke on imaging supercedes the 24- hour time period.

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**SEQ. #:** 6821

**Long Name:** Post-Op-Neuro-Encephalopathy

**Short Name:** CNEnceph

**Definition:** Indicate the type of postoperative encephalopathy the patient developed, if any.

**Intent/Clarification:**

Encephalopathy is a term for any diffuse disease of the brain that alters brain function or structure. The hallmark of encephalopathy is an altered mental state. Blood tests, spinal fluid examination, imaging studies, electroencephalograms, and similar diagnostic studies may be used to differentiate the various causes of encephalopathy.

Encephalopathy may be caused by:

- Infectious agent (bacteria, virus, or prion),

- Metabolic or mitochondrial dysfunction,
- Brain tumor or increased pressure in the skull,
- Prolonged exposure to toxic elements (including solvents, drugs, radiation, paints, industrial chemicals, and certain metals),
- Chronic progressive trauma,
- Poor nutrition,
- Lack of oxygen or blood flow to the brain

Depending on the type and severity of encephalopathy, common neurological symptoms are:

- progressive loss of memory and cognitive ability
- subtle personality changes
- inability to concentrate
- lethargy
- progressive loss of consciousness.

Other neurological symptoms may include:

- myoclonus (involuntary twitching of a muscle or group of muscles)
- nystagmus (rapid, involuntary eye movement)
- tremor
- muscle atrophy and weakness
- dementia
- seizures
- loss of ability to swallow or speak

If multiple causes, choose first event.

Reference: <https://www.ninds.nih.gov/Disorders/All-Disorders/Stroke-Information-Page>

- None
- Anoxic
- ~~Embolic~~
- Drug
- Metabolic
- ~~Intracranial Bleeding~~
- ~~Other~~
- **Mixed**
- Unknown

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**SEQ. #: 6822**

**Long Name:** Post-Op-Neuro-Coma/Unresponsive State

**Short Name:** CNComa

**Definition:** Indicate whether the patient developed a postoperative coma or unresponsive state (not stroke).

**Intent/Clarification:** A coma, sometimes also called persistent vegetative state, is a profound or deep state of unconsciousness. Persistent vegetative state is not brain-death. An individual in a state of coma is alive but unable to move or respond to his or her environment.

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**SEQ. #:** 6825

**Long Name:** Post-Op-Neuro-Paralysis

**Short Name:** CNParal

**Definition:** Indicate whether the patient had a new postoperative paralysis, paraparesis, or paraplegia related to spinal cord ischemia and not related to a stroke.

**Intent/Clarification:** Paralysis is a loss of purposeful movement as a result of a neurological injury, drugs or toxins. Loss of motor function may be complete (paralysis) or partial (paresis); unilateral (hemiplegic) or bilateral confined to the lower extremities (paraplegic) or present in all four extremities (quadriplegic); and may be accompanied by increased muscular tension and hyperactive reflexes (spastic) or by loss of reflexes (flaccid). Related to spinal cord ischemia, **not related to stroke.**

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**SEQ. #:** 6826

**Long Name:** Post-Op-Neuro-Paralysis Type

**Short Name:** CNParalTy

**Definition:** Indicate whether the new postoperative paralysis, paraparesis, or paraplegia was transient or permanent.

**Intent/Clarification:** Related to spinal cord ischemia, **not related to stroke.**

- **Transient** - is non-lasting and of short (< 24 hours) duration.
  - **Permanent** - is enduring, lasting, or without change for more than 24 hours.
- 
- 

**SEQ. #:** 6829

**Long Name:** Post-Op-Neuro-Paresis

**Short Name:** CNParesis

**Definition:** Indicate whether postoperative paresis was present

**Intent/Clarification:**

- Yes
  - No
- 
- 

**SEQ. #:** 6830

**Long Name:** Post-Op-Neuro-Paresis Type

**Short Name:** CNParesisTy

**Definition:** Indicate the type of post op paresis

**Intent/Clarification:** Paresis may be transient or permanent and is related to spinal cord ischemia and not to stroke. **Update Nov 2019 - Transient - is non-lasting and of short (< 24 hours) duration & Permanent - is enduring, lasting, or without change for more than 24 hours.**

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**SEQ. #:** 6832

**Long Name:** Post-Op-Phrenic Nerve Injury

**Short Name:** PhrenNrvInj

**Definition:** Indicate whether patient has symptoms of phrenic nerve injury, (e.g., immobility or elevation of the diaphragm, etc.).

**Intent/Clarification:** Traumatic or thermal injury to the phrenic nerve can result in paralysis of the hemi diaphragm on the affected side, resulting in respiratory difficulty.

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**SEQ. #:** 6833

**Long Name:** Post-Op-Recurrent Laryngeal Nerve Injury

**Short Name:** RecLaryNrvInj

**Definition:** Indicate whether patient has symptoms of recurrent laryngeal nerve injury, (e.g., hoarseness, difficulty speaking, etc.).

**Intent/Clarification:** The recurrent laryngeal nerve controls movement of the larynx. The larynx contains the apparatus for voice production: the vocal cords, and the muscles and ligaments that move the vocal cords. It also controls the flow of air into the lungs. When the recurrent laryngeal nerve is damaged, the movements of the larynx are reduced. This causes voice weakness, hoarseness, or sometimes the complete loss of voice. The changes may be temporary or permanent.

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**SEQ. #:** 6835

**Long Name:** Post-Op-Pulm-Vent Prolonged

**Short Name:** CPVntLng

**Definition:** Indicate whether the patient had prolonged post-operative pulmonary ventilation > 24.0 hours.

The hours of postoperative ventilation time include OR exit until extubation, plus any additional hours following reintubation.

Include (but not limited to) causes such as ARDS, pulmonary edema, and/or any patient requiring mechanical ventilation > 24 hours postoperatively.

**Intent/Clarification:** To calculate total hours, include initial and additional hours of mechanical ventilation. Extended ventilation may include, but is not limited to, the specific definitional reasons. Example: If a major stroke or coma occurred that required ventilation for life support, code as prolonged if greater than 24 hours. Do not include the hours ventilated if a patient returns to the operating room suite and requires re-

intubation as part of general anesthesia but does not require ventilation beyond the time in the operating room (i.e. after OR Exit Time).

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**SEQ. #:** 6840

**Long Name:** Post-Op-Pulm-Pneumonia

**Short Name:** CPPneum

**Definition:** Indicate whether the patient had pneumonia according to the CDC definition.

**Intent/Clarification:** See the CDC definition below

<https://www.cdc.gov/nhsn/pdfs/pscmanual/6pscvcapcurrent.pdf>

**FAQ June 2019:** Should there be diagnostic evidence the patient has pneumonia or is it sufficient for the patient to have cough and rales, for example?

Answer: To code pneumonia accurately, there should be a physician diagnosis documented in the medical record based on radiologic evidence as well as symptoms, i.e. fever, leukocytosis, sputum, etc. Do not code pneumonia based solely on cough and rales. Code pneumonia based on the CDC definition AND Physician Documentation.

Table 1: Specific Site Algorithms for Clinically Defined Pneumonia (PNU1)

Imaging Test Evidence	Signs/Symptoms/Laboratory
<p>Two or more serial chest imaging test results with at least <u>one</u> of the following<sup>1,2</sup>:</p> <p>New and persistent or Progressive and persistent</p> <ul style="list-style-type: none"> <li>• Infiltrate</li> <li>• Consolidation</li> <li>• Cavitation</li> <li>• Pneumatoceles, in infants <math>\leq 1</math> year old</li> </ul> <p>Note: In patients <u>without</u> underlying pulmonary or cardiac disease (e.g., respiratory distress syndrome, bronchopulmonary dysplasia, pulmonary edema, or chronic obstructive pulmonary disease), <u>one definitive</u> imaging test result is acceptable.<sup>1</sup></p>	<p>For ANY PATIENT, at least <u>one</u> of the following:</p> <ul style="list-style-type: none"> <li>• Fever (<math>&gt;38.0^{\circ}\text{C}</math> or <math>&gt;100.4^{\circ}\text{F}</math>)</li> <li>• Leukopenia (<math>\leq 4000</math> WBC/mm<sup>3</sup>) or leukocytosis (<math>\geq 12,000</math> WBC/mm<sup>3</sup>)</li> <li>• For adults <math>\geq 70</math> years old, altered mental status with no other recognized cause</li> </ul> <p>And <u>at least two</u> of the following:</p> <ul style="list-style-type: none"> <li>• New onset of purulent sputum<sup>3</sup> or change in character of sputum<sup>4</sup>, or increased respiratory secretions, or increased suctioning requirements</li> <li>• New onset or worsening cough, or dyspnea, or tachypnea<sup>4</sup></li> <li>• Rales<sup>4</sup> or bronchial breath sounds</li> <li>• Worsening gas exchange (e.g., O<sub>2</sub> desaturations (e.g., PaO<sub>2</sub>/FiO<sub>2</sub> <math>\leq 240</math>)<sup>2</sup>, increased oxygen requirements, or increased ventilator demand)</li> </ul> <p>ALTERNATE CRITERIA, for infants <math>\leq 1</math> year old:</p> <p>Worsening gas exchange (e.g., O<sub>2</sub> desaturations [e.g., pulse oximetry <math>&lt;94\%</math>], increased oxygen requirements, or increased ventilator demand)</p> <p>And <u>at least three</u> of the following:</p> <ul style="list-style-type: none"> <li>• Temperature instability</li> <li>• Leukopenia (<math>\leq 4000</math> WBC/mm<sup>3</sup>) <u>or</u> leukocytosis (<math>\geq 15,000</math> WBC/mm<sup>3</sup>) and left shift (<math>\geq 10\%</math> band forms)</li> <li>• New onset of purulent sputum<sup>3</sup> or change in character of sputum<sup>4</sup>, or increased respiratory secretions or increased suctioning requirements</li> <li>• Apnea, tachypnea<sup>4</sup>, nasal flaring with retraction of chest wall or nasal flaring with grunting</li> <li>• Wheezing, rales<sup>4</sup>, or rhonchi</li> <li>• Cough</li> <li>• Bradycardia (<math>&lt;100</math> beats/min) or tachycardia (<math>&gt;170</math> beats/min)</li> </ul> <p>ALTERNATE CRITERIA, for child <math>&gt;1</math> year old or <math>\leq 12</math> years old, at least <u>three</u> of the following:</p> <ul style="list-style-type: none"> <li>• Fever (<math>&gt;38.0^{\circ}\text{C}</math> or <math>&gt;100.4^{\circ}\text{F}</math>) or hypothermia (<math>&lt;36.0^{\circ}\text{C}</math> or <math>&lt;96.8^{\circ}\text{F}</math>)</li> <li>• Leukopenia (<math>\leq 4000</math> WBC/mm<sup>3</sup>) or leukocytosis (<math>\geq 15,000</math> WBC/mm<sup>3</sup>)</li> <li>• New onset of purulent sputum<sup>3</sup> or change in character of sputum<sup>4</sup>, or increased respiratory secretions, or increased suctioning requirements</li> <li>• New onset or worsening cough, or dyspnea, apnea, or tachypnea<sup>4</sup>.</li> <li>• Rales<sup>4</sup> or bronchial breath sounds</li> <li>• Worsening gas exchange (e.g., O<sub>2</sub> desaturations [e.g., pulse oximetry <math>&lt;94\%</math>], increased oxygen requirements, or increased ventilator demand)</li> </ul>

SEQ. #: 6845

Long Name: Post-Op-Venous Thromboembolism-VTE

Short Name: CVTE

**Definition:** Indicate whether the patient developed postoperative venous thrombosis or thromboembolic event.

**Intent/Clarification:** A clot within a blood vessel is called a thrombus and the process by which it forms is known as thrombosis. It can be damaging as it might block the flow of blood. Also, part of the clot could embolize, or break off, and block a blood vessel further along, cutting off the blood supply to important organs.

Post-operative patients are at risk of forming clots in the lower extremities that could lead to pulmonary embolism. Capture upper and lower extremity events.

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**SEQ. #: 6850**

**Long Name:** Post-Op-Pulmonary Thromboembolism

**Short Name:** PulmEmb

**Definition:** Indicate whether the patient had a pulmonary thromboembolism diagnosed by radiologic study such as V/Q scan, angiogram, or spiral CT.

**Intent/Clarification:** Pulmonary embolism is a life-threatening clot formation in one or more pulmonary arteries causing partial or complete obstruct of blood flow to the lung(s). Pulmonary embolisms must be documented through diagnostic testing.

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**SEQ. #: 6855**

**Long Name:** Post-Op-Deep Venous Thrombosis

**Short Name:** DVT

**Definition:** Indicate whether patient had thrombosis (clot formation) in a deep vein.

**Intent/Clarification:** Deep vein thrombosis (DVT) is the formation of a blood clot in the deep veins within the body, such as in the leg or pelvis. This kind of thrombosis can occur after surgery and may cause redness, pain and swelling. **Update October 2019 – include upper and lower extremity events.**

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**SEQ. #: 6860**

**Long Name:** Post-Op-Pleural Effusion Requiring Drainage

**Short Name:** CPIEff

**Definition:** Indicate whether a post-operative pleural effusion required drainage via thoracentesis or chest tube insertion.

**Intent/Clarification:** Interventions include chest tube insertion, needle aspiration or other invasive procedure. May include hemothorax.

**FAQ September 2017:** A patient experienced a chylothorax postop from a chest tube that was in place from the OR. No new drains were placed. He ultimately was



transferred to another acute care hospital that had the ability to perform a lymphsynthigraphy and was diagnosed with a thoracic duct injury. Should this get captured as a complication, and if so how?

Answer: Code pleural effusion requiring drainage for this chylothorax.

**FAQ June 2018:** We recently had a couple of patients with persistent pleural drainage, chest tubes remain in from surgery. The surgeon took them to them to the OR for pleural doxycycline infusion for chemical pleurodesis. How should this be coded as pleural effusions (no drainage preformed) or post op reop other non-cardiac?

Answer: Do not code anything additional for this pleurodesis.

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**SEQ. #:** 6865

**Long Name:** Post-Op-Pneumothorax Requiring Intervention

**Short Name:** PostOpPneumo

**Definition:** Indicate whether the patient had a post-operative pneumothorax requiring intervention.

**Intent/Clarification:** Interventions include chest tube insertion, needle aspiration or other invasive procedure. Do not capture a small pneumothorax followed with serial chest X-rays.

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**SEQ. #:** 6870

**Long Name:** Post-Op-Renal-Renal Failure

**Short Name:** CRenFail

**Definition:** Indicate whether the patient had acute renal failure or worsening renal function resulting in ONE OR BOTH of the following:

1. Increase in serum creatinine level 3.0 x greater than baseline, or serum creatinine level  $\geq 4$  mg/dL. Acute rise must be at least 0.5 mg/dl  
2. A new requirement for dialysis postoperatively.

**Intent/Clarification:**

The Acute Dialysis Quality Initiative, a multidisciplinary collaboration, defined a range of acute renal dysfunction called the RIFLE classification system. It is used to define grades of severity based on objective measurements.

**See highlighted Renal Failure criteria below.**

**Classifications of Loss and End-stage disease are beyond the current scope of follow-up. Code yes if the patient meets the highlighted RIFLE Failure criteria or if dialysis was newly required post op.**

**Risk (R)** - Increase in serum creatinine level X 1.5 or decrease in GFR by 25%, or UO  $< 0.5$  mL/kg/h for 6 hours

**Injury (I)** - Increase in serum creatinine level X 2.0 or decrease in GFR by 50%, or UO <0.5 mL/kg/h for 12 hours, or decrease in GFR by 75%; UO <0.3 mL/kg/h for 24 hours, or anuria for 12 hours.

**Failure (F)** – Increase in serum creatinine level X 3.0, or serum creatinine  $\geq$  mg/dL 4.0 with at least a 0.5 mg/dL rise, or decrease in GFR by 75%; UO <0.3 mL/kg/h for 24 hours, or anuria for 12 hours.

**Loss (L)** - Persistent ARF, complete loss of kidney function > 4 weeks

**End-stage kidney disease (E)** - Loss of kidney function >3 months

**CLARIFICATION:** If dialysis (seq# 375) is equal to “No” and if postoperative creatinine level (seq# 6555) is greater than or equal to 3X last creatinine level (seq# 585) or postoperative creatinine (seq# 6555) is greater than or equal to 4.0 with a 0.5 mg/dL rise or new postoperative dialysis (seq# 6875) then, renal failure (seq# 6870) is equal to “Yes”.

**FAQ February 2018:** The patient’s baseline Cr was 0.62 months before admission. Patient taken for urgent CABG had an abnormally low Cr at baseline of 0.45 after aggressive hydration from heart cath. Her highest post-op creat was 1.5. Is this considered renal failure?

Answer: Hydration can cause an abnormally low Cr; however, a consistent guideline must be followed to capture worsening renal function as indicated by the RIFLE criteria adapted by the STS.

**FAQ February 2018:** A patient who has undergone a prolonged MV repair encounters rising lactic acid levels and is placed on hemodialysis which results in signs of improvement. The post operative creatinine levels do bump up but do not exceed STS thresholds. Is this coded a renal failure?

Answer: The requirement for new dialysis postoperatively fulfills the definition for renal failure.

**Updated August 2019 FAQ February 2019:** The right and left renal arteries were covered with endograft secondary to emergency rupture. A dialysis catheter was placed in surgery and dialysis was started post-op. Should renal failure be coded?

Answer: Code yes to renal failure.

**FAQ August 2019** - Dialysis temporary catheters were placed. However, dialysis was not started as the patient’s family decided to withdraw care. Post-op Creatinine does not meet the definition, but the intent was to start dialysis. Do I code post-op renal failure since dialysis was intended but not started?

Answer – Do not code post-op renal failure in this scenario since dialysis was not started and the post-op creatinine did not meet the data definition.

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**SEQ. #:** 6875

**Long Name:** Post-Op-Renal-Dialysis Req

**Short Name:** CRenDial

**Definition:** Indicate whether the patient had a new requirement for dialysis postoperatively, which may include hemodialysis, peritoneal dialysis.

**Intent/Clarification:** May include either hemo or peritoneal dialysis. This includes a one-time need for dialysis as well as implementation of longer term therapy.

If the patient was on preoperative peritoneal dialysis and moved to hemodialysis postoperatively, this does not constitute a worsening of the condition and should not be coded as an event. Does not include aquapheresis.

Continuous Veno-Venous Hemofiltration) (CVVH, CVVH-D), Continuous Renal Replacement Therapy (CRRT), and **iHD (update October 2019)** should be coded here as "Yes." (Code Ultra filtration as "No", it is captured in a separate field).

**FAQ February 2019:** The right and left renal arteries were covered with endograft secondary to emergency rupture. A dialysis catheter was placed. Should renal failure dialysis be coded?

Answer: Code yes to renal failure dialysis.

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**SEQ. #:** 6880

**Long Name:** Post-Op-Dialysis Required After Discharge

**Short Name:** DialDur

**Definition:** Indicate whether dialysis was required after hospital discharge.

**Intent/Clarification:** The intent is to separate patients with possible long term dialysis from those that recovered kidney function prior to discharge.

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**SEQ. #:** 6881

**Long Name:** Post-Op-Dialysis Duration

**Short Name:** DialStat

**Definition:** Indicate the duration of post-discharge dialysis.

**Intent/Clarification:** This may be temporary or permanent.

**FAQ October 2017:** Clarify the difference between temporary and permanent dialysis duration.

Answer: Code temporary if the patient no longer requires dialysis at the time of 30 day follow up after discharge.

Code permanent if the patient continues to require dialysis at the time of 30 day follow up after discharge.

**FAQ January 2018:** When the patient has required new dialysis during the hospitalization but does not require dialysis after discharge, the duration of dialysis does not grey out and still requires a response. How should duration be coded?  
Answer: Code temporary.

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**SEQ. #:** 6885

**Long Name:** Post-Op-Ultra Filtration

**Short Name:** CUltraFil

**Definition:** Indicate whether patient required Ultra filtration.

**Intent/Clarification:** Ultrafiltration is for fluid overload and is not counted as dialysis. Continuous Veno-Venous Hemofiltration) (CVVH, CVVH-D and Continuous Renal Replacement Therapy (CRRT) should be coded here as “No”, they are considered dialysis and should be captured in Seq# 6875

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**SEQ. #:** 6890

**Long Name:** Post-Op-Vasc-Iliac/Fem Dissect

**Short Name:** CVallFem

**Definition:** Indicate whether the patient had a dissection occurring in the iliac or femoral arteries.

**Intent/Clarification:** The origin of the event may have been at the site of cannulation or a preoperative catheterization insertion site, but the dissection occurred post-operatively.

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**SEQ. #:** 6891

**Long Name:** Post-Op-Vasc-Acute Limb Isch

**Short Name:** CVaLblsc

**Definition:** Indicate whether the patient had any complication producing limb ischemia. This may include upper or lower limb ischemia.

**Intent/Clarification:** Ischemic events are restricted to the arterial system. These do not include venous system events, (i.e. DVT (deep vein thrombosis)). Example: A patient had an IABP removed and experienced an emboli which resulted in a necrotic great toe: Code “Yes” for acute limb ischemia.

**FAQ July 2019** - If a patient has a necrotic tip of L thumb and L great toe thought to be related to pressors (IABP was in the R), palpable pulses and Doppler studies of arterial all normal, is this "acute limb ischemia"?

Answer - do not code as acute ischemic event as this was a low flow perfusion situation and not an acute ischemic event that caused the necrosis.

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**SEQ. #: 6892**

**Long Name:** Post-Op-Mechanical Assist Device Related Complication

**Short Name:** CMAD

**Definition:** Indicate whether there was a post-operative event related to a mechanical assist device.

**Intent/Clarification:**

- Yes
  - No
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- 

**SEQ. #: 6893**

**Long Name:** Post-Op-MAD-Cannula / Insertion Site Issue

**Short Name:** CMADCanIns

**Definition:** Indicate whether the mechanical assist device related postoperative event included a cannula/insertion site issue.

**Intent/Clarification:** May include bleeding or infection (Update January 2020).

**Update January 2020 – Capture events that require a procedural intervention or surgery at the site to treat cannula site issue.**

**FAQ March 2019/July 2019:** A patient was readmitted with an infection at the IABP cannulation site. This readmission infection is only related to the IABP should it only be captured as cannulation site infection in sequence number 6720 and MAD site infection in sequence number 6893?

Answer: No, do not capture as cannulation site infection in Seq 6720 since the IABP is not a cannulation sites used for the index procedure aorta / venous sites cannulated during surgery for CPB and/or the transcatheter cannulation site for transcatheter procedures such as TAVR. Capture Readmit reason as Wound Other

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**SEQ. #: 6894**

**Long Name:** Post-Op-MAD-Hemorrhagic

**Short Name:** CMADHem

**Definition:** Indicate whether there was hemorrhage related to a mechanical assist device

**Intent/Clarification:** Patients are at increased risk of bleeding due to anticoagulation and anti-platelet therapy, non-pulsatile blood flow leading to blood vessel malformation, and changes in blood-clotting factors.

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**SEQ. #:** 6895

**Long Name:** Post-Op-MAD-Thrombotic/Embolic

**Short Name:** CMADThromEm

**Definition:** Indicate whether there was a thrombotic or embolic event related to a mechanical assist device

**Intent/Clarification:**

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**SEQ. #:** 6896

**Long Name:** Post-Op-MAD-Hemolytic

**Short Name:** CMADHemolytic

**Definition:** Indicate whether there was a hemolytic event related to a mechanical assist device

**Intent/Clarification:** Patients may experience clinical signs of hemolysis (anemia, low hematocrit, hyperbilirubinemia) and a plasma free hemoglobin >40 mg/dL within 72 hours of VAD implant. Do not include hemolysis resulting from non-device causes.

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**SEQ. #:** 6897

**Long Name:** Post-Op-MAD-Infection

**Short Name:** CMADInf

**Definition:** Indicate whether there was infection related to a mechanical assist device

**Intent/Clarification:** May include driveline/cannula infection, pump pocket infection, VAD endocarditis, sternal wound infection, or sepsis.

**FAQ March 2019:** If the patient had an issue with the cannulation site for an IABP during the hospitalization for the index procedure, it would be captured in sequence number 6720 and sequence number 6893. Because this is a readmission would this be a readmit infection within 30 days? This readmission infection is only related to the IABP should it only be captured as cannulation site infection in sequence number 6720 and MAD site infection in sequence number 6893/6897?

Answer: No, do not capture as MAD - infection.

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**SEQ. #:** 6898

**Long Name:** Post-Op-MAD-Other

**Short Name:** CMADOther

**Definition:** Indicate whether any other mechanical assist device related event occurred

**Intent/Clarification:** Device malfunctions, VAD thrombus, psychiatric episodes.

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**SEQ. #:** 6900

**Long Name:** Post-Op-Rhythm Disturbance Requiring Perm Device

**Short Name:** CRhythmDis

**Definition:** Indicate whether patient developed a new dysrhythmia requiring insertion of a permanent device. Do not code these device insertions in the reoperation section even if performed in the OR.

**Intent/Clarification:** Include permanent pacemakers, Implantable cardioverter defibrillators (ICD) and combination devices. Do not code if the patient experiences third degree block and has temporary pacemaker wires inserted, but the block resolves and the patient does not require a permanent pacemaker.

- Pacemaker
- ICD
- Pacemaker/ICD
- Other
- None

**FAQ July 2019** - We have TWO patients this month who went to OR with permanent pacers implanted a long time before their surgery. During the surgery the leads became dislodged. Postoperatively, they had to go back to the EP lab to get their wires replaced by cardiology. Does this count as "YES" to cardiac rhythm disturbance under the postoperative events, or an "other", or don't code it?

Answer – Do not code as re-op or as rhythm disturbance requiring permanent device

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**SEQ. #:** 6905

**Long Name:** Post-Op-Other-Card Arrest

**Short Name:** COtArrst

**Definition:** Indicate whether the patient had an acute cardiac arrest documented by one of the following:

- Ventricular fibrillation
- Rapid ventricular tachycardia with hemodynamic instability
- Asystole
- ICD shocks

**Intent/Clarification:** The cardiac arrest may be precipitated by ventricular fibrillation/tachycardia, asystole, or pulseless electrical activity (PEA). Code yes for sudden events requiring CPR. It is expected that all deaths inevitably have cardiac arrest, but this field is to capture those events that are sudden or acute in occurrence.

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**SEQ. #:** 6906

**Long Name:** Post-Op-Other-Aortic Endoleak

**Short Name:** COtAortEndo

**Definition:** Indicate whether a post-operative endoleak occurred

**Intent/Clarification:** An **endoleak** is defined as persistent blood flow in the aneurysm sac through and around the endovascular seal and is the most common complication after endovascular aneurysm repair.

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**SEQ. #:** 6907

**Long Name:** Post-Op-Other-Aortic Endoleak Type

**Short Name:** COtAortEndoTy

**Definition:** Indicate the type of endoleak

**Intent/Clarification:**

A **Type Ia endoleak** is defined as a leak occurring at the proximal seal zone.

A **Type Ib endoleak** is defined as a leak occurring at the distal seal zone.

A **Type II endoleak** is defined as retrograde filling of the aneurysm sac or false lumen in the case of dissection by aortic branch vessels (e.g. left subclavian artery, intercostal arteries, etc.).

A **Type III endoleak** is defined as leakage of blood into the aneurysm sac, or false lumen in the case of dissection, due to either a gap between separate endograft components, or a defect in the fabric of the graft secondary to graft strut fracture or erosion.

A **Type IV endoleak** is defined as the presence of an endoleak secondary to graft porosity. All other types of endoleaks must be definitively ruled out prior to selecting this diagnosis.

A **Type V endoleak**, also known as endotension, is defined as persistent aneurysm expansion in the absence of a confirmed endoleak.

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**SEQ. #:** 6908

**Long Name:** Post-Op-Other-Aortic Rupture **Short Name:** COtAortRupt

**Definition:** Indicate whether aortic rupture occurred post op

**Intent/Clarification:**

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**SEQ. #:** 6909

**Long Name:** Post-Op-Other-Aortic Dissection

**Short Name:** CVaAoDis

**Definition:** Indicate whether the patient had a dissection occurring in any part of the aorta.

**Intent/Clarification:** This includes ascending, arch, descending, thoracic or abdominal aorta. Aortic dissection is bleeding into or along the wall of the aorta. This does not include an aneurysmal event, unless it goes on to rupture or dissect.

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**SEQ. #:** 6910

**Long Name:** Post-Op-Other-Aortic DissectionType

**Short Name:** CVaAoDisTy

**Definition:** Indicate the type of aortic dissection.

**Intent/Clarification:** May include antegrade, retrograde or both.

If the dissection extends proximally (i.e. back towards the aortic arch or ascending aorta) beyond the original extent then “**Retrograde**” should be selected.

If the dissection extends distally (i.e. downstream towards the descending or abdominal aorta) beyond the original extent then “**Antegrade**” should be selected.

If the dissection extends both proximally and distally then “**Both**” should be selected.

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**SEQ. #:** 6911

**Long Name:** Post-Op-Other-Aortic Side Branch Malperfusion

**Short Name:** COtAortSide

**Definition:** Indicate whether aortic side branch malperfusion occurred

**Intent/Clarification:** The intent is to identify if aortic branch vessels have compromised flow in the post-operative period.

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**SEQ. #:** 6912

**Long Name:** Post-Op-Other-Aortic Stent Graft Induced Entry Tear

**Short Name:** COtAortTear

**Definition:** Indicate whether an aortic stent graft induced entry tear occurred

**Intent/Clarification:**

This is typically due to the septum being fractured by a balloon or endograft, and the result is the creation of a new fenestration/connection between the true and false lumens of the dissection (so-called stent graft induced new entry tear (SINE)). This would typically be determined by the surgeon's assessment of the intraoperative completion angiogram, intravascular ultrasound, and/or transesophageal echocardiography.

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**SEQ. #:** 6914

**Long Name:** Post-Op-Other-Anticoag Event

**Short Name:** COtCoag

**Definition:** Indicate whether the patient had bleeding, hemorrhage, and/or embolic events related to anticoagulant therapy postoperatively.

This may include patients who experience Disseminated Intravascular Coagulopathy (DIC) or Heparin Induced Thrombocytopenia (HIT).

**Intent/Clarification:** The intent of the field is to capture those patients that bleed, hemorrhage and /or suffer an embolic event related to anticoagulant therapy received post-op.

Abnormal coag lab tests without clinical events are not included.

Patients with DIC or HIT are included.

Patients with bleeding secondarily to surgical suture 'leaking' or general surgical 'oozing' are not to be included.

HIT (Heparin Induced Thrombocytopenia) is diagnosed with Heparin Assay and or D-Dimer laboratory tests only and are more than post-pump excessive bleeding or lower platelet counts. The physiological effects of CPB can reduce post-operative platelet counts as much as 50% within 24 hours.

**June 2019 Update:** Patients with a positive HITA test followed by a negative SRA (Serotonin Release Assay) should not be coded as being HIT positive, even if the SRA results come back after the patient was discharged, since oftentimes these labs are sent out to be read and may take a while to get back.

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**SEQ. #:** 6915

**Long Name:** Post-Op-Other-Pericardiocentesis

**Short Name:** COtTamp

**Definition:** Indicate whether the patient had a pericardiocentesis to remove fluid in the pericardial space compromising cardiac filling.

**Intent/Clarification:** Tamponade, fluid accumulation between the myocardium and pericardium of the heart, inhibits filling of the heart and results in hemodynamic compromise. Severity of tamponade may dictate the degree of intervention (invasive or non-invasive, surgical or Pericardiocentesis).

THIS FIELD IS FOR THOSE EVENTS THAT DO NOT REQUIRE RETURN TO THE OPERATING ROOM FOR TREATMENT.

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**SEQ. #:** 6920

**Long Name:** Post-Op-Other-GI Event

**Short Name:** COtGI

**Definition:** Indicate whether the patient had a postoperative occurrence of any GI event, including but not limited to:

- GI bleeding requiring transfusion
- Pancreatitis with abnormal amylase/lipase requiring nasogastric (NG) suction therapy
- Cholecystitis requiring cholecystectomy or drainage
- Mesenteric ischemia requiring exploration
- ~~Hepatic failure~~
- Prolonged ileus
- Clostridium difficile

**Intent/Clarification:** GI events may require medical management, observational management, or surgical intervention to control. **Both intrinsic and extrinsic factors can cause GI events.**

DO NOT include events such as prolonged nausea and/or vomiting with no other documented physiological cause. Refer to the specific list included within the definition.

**FAQ September 2017:** Should we code a GI event for an abdominal compartment syndrome leading to a decompressive laparotomy?

Answer: Yes, code GI event for abdominal compartment syndrome in addition to the reoperation other non-cardiac for the decompression laparotomy.

**FAQ July 2018:** The patient underwent a CABG/AVR/Maze procedure. Post operatively, developed pneumoperitoneum requiring an exploratory laparotomy where it was discovered the pacemaker wires had perforated the colon. The patient became septic

with renal failure and prolonged ventilation. I collected the reoperation other noncardiac, is this also a GI event?

Answer: This should be coded as a GI event.

**FAQ June 2019** - The definition for prolonged ileus does not give a time frame. How long should a documented ileus last before it is noted as a complication?

Answer: There is no real time frame, it really has to do with treatment and impact on LOS. Example: A patient experiences a postoperative paralytic ileus that does not increase the length of stay and does not require invasive therapy. Do not code a GI complication.

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**SEQ. #: 6921**

**Long Name:** Post-Op-Other-Liver Dysfunction or Failure

**Short Name:** COtLiver

**Definition:** Indicate whether the patient had liver dysfunction or failure.

**Intent/Clarification:** Refer to physician's documentation for diagnosis.

FAQ January 2018: Patient has transient elevation of liver enzymes, should this be considered liver dysfunction?

Answer: No, this is not a complication.

**FAQ June 2019:** Should a patient with post-op shock liver be coded as YES to post-op liver dysfunction?

Answer: Yes

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**SEQ. #: 6925**

**Long Name:** Post-Op-Other-Multi Sys Fail

**Short Name:** COtMSF

**Definition:** Indicate whether the patient had two or more major organ systems suffer compromised functions.

**Intent/Clarification:** Major organ systems are neurological, renal, pulmonary, cardiac, vascular or systemic. Multisystem Organ Failure (MSOF) means multiple organ systems have failed and function cannot be recovered by mechanical and/or pharmacological means. End-stage means irreversible organ failure.

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**SEQ. #: 6930**

**Long Name:** Post-Op-Other-A Fib

**Short Name:** COtAFib

**Definition:** Indicate whether the patient experienced atrial fibrillation/flutter (AF) requiring treatment. Exclude patients who were in AFib at the start of surgery.

**Intent/Clarification:** Include any episode of A-Fib lasting longer than one hour and/or requiring treatment. Capture event(s) in all patients who were not in A-Fib at the start of surgery.

FAQ May 2019: Patient had post-op Afib that was treated with Ablation therapy. How is this captured?

Answer: Code this as yes to COtAFib – sequence 6930. Cardioversion, ablation, and medication are considered treatments so this meets the criteria of this field.

**Update June 2019 (FAQ March 2018):** I have a patient who went back to the cath lab with anesthesia for TEE with cardioversion (for afib). I am not certain if I should code this here or not. There was not an incision, however this is procedural. Afib is already coded. How do I reflect this intervention for STS?

~~Answer: Code comps other other.~~

**Answer:** Code this as a post-op Afib event only.

**Update June 2019 (FAQ March 2018):** My patient had post-op AFlutter and AFib and was taken to the electrophysiology lab for comprehensive electrophysiology study (EPS) and successful radiofrequency ablation (RFA) of cavotricuspid isthmus (CTI). I have coded post-op AF, do I also need to code "re-op other cardiac reasons"?

~~Answer: Code comps other other.~~

**Answer:** Code this as a post-op Afib event only.

**FAQ July 2019** –Is the start of surgery for this Seq 6930 when the incision occurs or when the patient enters the OR?

Answer – When the patient enters the OR

**FAQ Nov 2019** – In order to code this as a post-op event, I need to know if the patient was in Afib at the start of surgery. What is the best way to determine if the patient is in Afib at the start of surgery?

Answer - Use the first rhythm documented on the anesthesia record to see if the patient is in afib upon entry to OR.

**FAQ January 2020** - A patient is on amiodarone prophylactically and has an occurrence of a fib post op. The patient was not in a fib upon entry to the OR. Is this coded as Afib post-op?

**Answer** - Since the patient was on a protocol to prevent Afib and he was not in Afib upon entry to OR, this should be coded "Yes" as a post op Afib.

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**SEQ. #:** 6950

**Long Name:** Post-Op-Other-Other

**Short Name:** COtOther

**Definition:** Indicate whether a postoperative event occurred that is not identified in the categories above yet impacts hospital length of stay and/or outcome.

**Intent/Clarification:** It is advised to restrict the capture of post-operative events to those that create a life-threatening event, extended hospitalization, and/or require medical intervention to ward off clinical deterioration.

**FAQ January 2018:** Should a pseudoaneurysm at the cath site which required a thrombin injection and delayed discharge be captured as a complication?

Answer: No, do not code this as a complication.

**Update June 2019 (FAQ March 2018):** I have a patient who went back to the cath lab with anesthesia for TEE with cardioversion (for afib). I am not certain if I should code this here or not. There was not an incision, however this is procedural. Afib is already coded. How do I reflect this intervention for STS?

~~Answer: Code comps-other-other.~~

**Answer:** Code this as a post-op Afib event only.

**Update June 2019 (FAQ March 2018):** My patient had post-op AFlutter and AFib and was taken to the electrophysiology lab for comprehensive electrophysiology study (EPS) and successful radiofrequency ablation (RFA) of cavotricuspid isthmus (CTI. I have coded post-op AF, do I also need to code "re-op other cardiac reasons"?

~~Answer: Code comps-other-other.~~

**Answer:** Code this as a post-op Afib event only.

**FAQ October 2018:** How is plasmapheresis captured?

Answer: Plasmapheresis is not captured as a postoperative event. Capture only the related complications.

**FAQ January 2019:** Wondering how to mark this post op event. Patient with critical status post op. Note of patient having copious amounts of blood from nose/mouth. ENT does laryngoscopy with noted hole to pyriform sinus--appears this is right above esophagus. Pt requiring 4 RBC. Area cauterized. Sould this be marked as GI event or other?

Answer: Code this as comps-other-other, this is not a GI event.

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## Discharge / Mortality

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**SEQ. #:** 7000

**Long Name:** Date of Last Follow-Up

**Short Name:** LFUDate

**Definition:** Indicate the date on which the last follow-up was made. If patient dies in the hospital, this value will be the same as the date of death. If no follow-up is made after patient is discharged, this value will be the same as the discharge date.

**Intent/Clarification:**

This is the date that is last documented in the chart or obtained by contacting the physician's office. Required date format: mm/dd/yyyy

**FAQ August 2019** - Is the last follow-up limited to appointment with surgeon (post-op check) or can it be with PCM or care call (telephone follow-up)?

Answer - Other methods can be used. It is basically the date that you have verified that the patient is alive so phone, clinic, etc. If you see that the patient has visited the hospital, lab, x-ray, rehab or physician office any time after 30 days you can code that date. If the patient dies within the hospital stay, the date of death is the last follow-up. If the patient is lost to follow-up, the discharge date is the date.

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**SEQ. #: 7001**

**Long Name:** Mort-30d Status

**Short Name:** Mt30Stat

**Definition:** Indicate whether the patient was alive or dead at 30 days post-surgery (whether in hospital or not).

**Intent/Clarification:**

- Alive
- Dead
- Unknown

**GENERAL INFORMATION:** Accurate coding mortality is very important to the integrity of the database.

All patients discharged alive should be followed for 30 days after the date of surgery to capture whether the patient is alive or dead at the end of the 30th day after the day of index surgery. Any patient that dies within 30 days should be coded as a mortality regardless of the cause of death.

Patients that remain in the hospital and die, even if after 30 days following the index surgery are coded as "Died in Hospital".

Patients that are transferred to another acute care hospital should be followed until the time of discharge from that facility. Any patient that dies at another acute care hospital after transfer should be coded as a mortality in the database.

**FAQ January 2018:**

If the patient is placed on palliative care post surgery, does it change the mortality at all?

Does placing the patient on hospice or making a palliative care referral or being placed on end of life care change mortality at all?

Answer: No, if the patient dies within 30 days of the date of surgery, the death is included in the mortality statistics.

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**SEQ. #:** 7002

**Long Name:** Mort-Op Death-Method Of Verification

**Short Name:** Mt30StatMeth

**Definition:** Indicate the primary method used to verify the patient's 30-day mortality status.

**Intent/Clarification:**

- Phone call to patient or family
  - Letter from medical provider
  - Evidence of life or death in medical record
  - Office visit on or after 30 days after the date of surgery.
  - Social Security Death Master File/NDI
  - Other
- 
- 

**SEQ. #:** 7005

**Long Name:** Discharge / Mortality Status

**Short Name:** DischMortStat

**Definition:** Indicate the discharge and current vital status of the patient

**Intent/Clarification:**

- In hospital, alive
- Died in hospital
- Discharged alive, last known status is alive
- Discharged alive, died after discharge

**GENERAL INFORMATION:** Accurate coding mortality is very important to the integrity of the database.

All patients discharged alive should be followed for 30 days after the date of surgery to capture whether the patient is alive or dead at the end of the 30th day after the day of index surgery. Any patient that dies within 30 days should be coded as a mortality regardless of the cause of death.

Patients that remain in the hospital and die, even if after 30 days following the index surgery are coded as "Died in Hospital".

**Any patient that is transferred to another acute care facility should be coded as "in hospital, alive" until the patient is discharged from the acute care facility.**

Patients that are transferred to another acute care hospital should be followed until the time of discharge from that facility. Any patient that dies at another acute care hospital after transfer should be coded as a mortality in the database.

"In hospital, alive" refers to patient's that are in the hospital at the 30-day mark that were never discharged. It is provided so sites do not get marked as missing on the required mortality fields for their composite scores/STAR ratings.



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**SEQ. #:** 7008

**Long Name:** Date of Discharge

**Short Name:** DischDt

**Definition:** Indicate the date the patient was discharged from the hospital (acute care) even if the patient is going to a rehab or hospice or similar extended care unit within the same physical facility. If the patient died in the hospital, the discharge date is the date of death.

**Intent/Clarification:**

Required date format: mm/dd/yyyy. **Date of discharge is a child field of sequence number 7005 and can only be completed when the patient is discharged alive.**

**FAQ May 2018:** If we transfer a patient on ECMO to another hospital, is that transfer date considered the discharge date from our hospital? I understand that it is coded as a transfer to a higher level of care and that any mortality should be coded in my hospital. Answer: Discharge date should be captured from the final disposition from the second hospital.

**FAQ January 2019:** The patient was admitted to site 31059 for an elective same-day CAB. The procedure was canceled after induction, prior to incision due to a cardiac arrest that occurred with induction. The patient was intubated and transferred to site 30823, where the same surgeon performed the CAB 5 days later. Given that I can no longer choose "other acute care hospital" as an option for seq. 7009 (discharge location) and must choose the date that the patient was discharged from site 30823 as my discharge date in seq. 7008, how do I choose the highest post-op peak creatinine and discharge H&H--prior to departure from site 31059 (which was later on the same day as the canceled case), or prior to discharge from site 30823? And since the procedure was canceled at site 31059, do I need to capture postoperative events for that site that occurred after the transfer, or only for site 30823?

Answer: This cancelled case related to cardiac arrest prior to incision that was transferred to another center, the receiving site should be able to capture the high risk (arrest, tx from another cardiac center). No need to follow outcomes at the other facility for this cancelled case if cancelled prior to incision.

**FAQ Dec 2019 -** Pt presents for AVR but, upon opening the chest, MD discovers significant aortic calcification and feels that the surgery cannot be performed at our facility. Sternotomy is closed and the patient is transferred to another acute care facility and the AVR is performed there. Would I need to code the subsequent surgery at the transferring facility as a reop for the canceled surgery at my facility?

Answer - In this scenario, capture as cancelled case at your facility and complete DCF based on the discharge date at your hospital. The facility that the patient was transferred to will start new DCF for the surgical procedure done there.

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**SEQ. #: 7009**

**MVRR Long Name:** Discharge Location

**Short Name:** DisLoctn

**Definition:** Indicate the location to where the patient was discharged.

**Intent/Clarification:**

- **Home** (or, temporarily, at the home of a relative)
- **Extended Care/Transitional Care Unit (TCU)/Rehab** Code LTAC as Extended Care/Transitional Care Unit/Rehab. Do not count as part of acute care stay.
- ~~Other Acute Care Hospital~~
- **Nursing Home**
- **Hospice**
- **Left AMA**
- **Other**

December 2017: For purposes of the STS database, Nursing Home is considered to be a residence where skilled care or acute care is not required. If the intent after discharge from the hospital is to provide rehabilitation services to a patient with a goal to discharge home then chose Extended Care/Transitional Care/Rehab, not Nursing Home.

Long-Term Acute Care (LTAC)'s treat higher acuity patients (i.e. prolonged ventilation) where the goal is medical recovery with return to a residence; home, nursing home, or with family.

Skilled Nursing Facilities (SNF's) are nursing facilities with staff and equipment to give skilled nursing care and, in most cases, skilled rehabilitative care services. You will need to investigate the intent of discharge. If the intent of discharge is for a patient from the hospital to go to a SNF for rehabilitation and to eventually discharge home then Code as Extended Care/Transitional Care/Rehab. If the intent of discharging to a SNF is for a higher level of care without the intent of discharging home then chose nursing home. You will oftentimes be able to locate the intent within the discharge planning documents by Social Service, Case Management, and/or Physical Therapy.

**FAQ January 2020 - Which is the correct location for coding when a patient goes home with hospice? Is it "home" or should we code "hospice"?**

**Answer - Code as Hospice**

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**SEQ. #: 7010**

**Long Name:** Cardiac Rehabilitation Referral

**Short Name:** CardRef

**Definition:** Indicate whether advice was given or discussion conducted with the patient (by physician, nurse, or other personnel) regarding the importance of joining a cardiac rehabilitation program, or an appointment made.

**Intent/Clarification:**

Identify those patients who are referred to post discharge cardiac reconditioning and rehabilitation. Do not count Phase I, in hospital rehab, as "Yes". **Time frame for Cardiac Rehab referral is at or prior to discharge.**

Patients who are clinically, mentally or emotionally inappropriate for a referral, should be identified as "Not Applicable. **Update Nov 2019 - Patients sent to rehab / transitional care/ SNF with plans to return home are not included in this category.**

**Update January 2020 -This is a Joint Commission endpoint and is to be documented on every patient. NQF 0643 - Outpatient Cardiac Rehab (OPCR) is required for patients who had had Coronary Artery Bypass Graft, Percutaneous Coronary Intervention, Cardiac Valve surgery, Cardiac Transplant or Acute Myocardial Infarction.**

Cardiac rehabilitation programs are many times free standing or external to an acute care setting. Cardiac rehabilitation programs are designed specifically for the patients with cardiac disease who have medical and/or surgical recovery needs.

If the surgery was of Non-Cardiac nature (See Section N), code as "Not Applicable".

If the patient is discharged with home health but a discussion regarding Phase II Cardiac Rehab occurred, choose "Yes".

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**SEQ. #: 7011**

**Long Name:** Smoking Cessation Counseling

**Short Name:** SmokCoun

**Definition:** Indicate whether, prior to discharge from the acute care facility, the patient received smoking cessation counseling. Please select "Not Applicable" for those patients with no prior history of smoking or remote (more than 1 year) history.

**Intent/Clarification:**

**This is a Joint Commission endpoint and it must be documented that either literature and/or counseling was offered and provided to the patient. Update October 2019 -Time frame for smoking cessation counseling is at or prior to discharge.**

Counseling should be provided to users of Cigarettes, Pipe, Cigars, Smokeless Cans, Other tobacco products (orbs, strips, sticks, hookah, etc.) It does not include e-cigs.

If the patient was not a smoker on the admission assessment or clinically, mentally or emotionally inappropriate for a referral, select "Not Applicable".

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**GENERAL INFORMATION:**

**FAQ September 2017:** When a patient leaves the hospital AMA and there are no prescriptions, how are discharge medications coded?

Answer: Code no.

**FAQ February 2018:** When a patient is placed on comfort measures only and discharged to hospice how should discharge medications be abstracted: no or contraindicated?

Answer: If medications are not appropriate, code contraindicated as not all centers withhold medications for patients going to hospice.

**FAQ July 2019:** The patient was discharged without an order for Beta-Blocker Therapy. The surgeon's office noticed on the first post-discharge visit and call in the prescription 6 days after discharge. The Surgeon addended his Discharge Summary to indicate that the patient was discharged on Beta Blocker Therapy. Is it ok to code this as Yes to Discharge Beta Blocker?

Answer: No, the medication has to be prescribed at the **time** of discharge. Addendums can be accepted for STS data, but only for events that actually occurred prior to discharge. For example, the patient was not sent home on a Beta Blocker because of a contraindication. The contraindication was not documented at the time of discharge. The data manager notified the Surgeon of the discrepancy in documentation and he addended his discharge summary according to hospital policy to indicate the contraindication. This would be an acceptable addendum.

**General Statement:**

**Discharge medications should only be captured for the patient transferred to another acute care facility at the time of ultimate disposition from the hospital.**

**Update October 2019 - Contraindications for discharge medication requires documentation of a contraindication for the class of medications when applicable such as statin, beta blockers, ADP inhibitors etc. not just one medication in the medication class. For example, a documented contraindication for Toprol at discharge would need to be documented as a contraindication for Beta Blockers, instead of one drug in the medication class.**

**SEQ. #:** 7060

**Long Name:** Aspirin - Discharge

**Short Name:** DCASA

**Definition:** Indicate whether or not the patient was discharged from facility on Aspirin, or if it was contraindicated. The contraindication must be documented in the medical record by a physician, nurse practitioner, pharmacist or physician assistant.

**Intent/Clarification:**

Includes enteric coated and/or baby aspirin. Aspirin acts to “*decrease*” the blood viscosity and inhibits the clotting of platelets.

- **Yes:** Capture those who receive an order for Aspirin at discharge that contains at least 75mg ASA
- **No:** Patient did not receive an Aspirin order at discharge

- **Contraindicated** - Documented evidence of contraindication. If a contraindication is documented explicitly as excluded for medical reasons, or is evidenced clearly within the medical record, such as notation of a medication allergy by Physician, Nurse Practitioner, Anesthesia, Physician Assistant, or Pharmacist.

**FAQ September 2017:** Is the medication bundle excluded for an Isolated CAB due to AMA status?

Answer: No, the medications are not excluded from the composite measures.

**FAQ July 2018:** The patient is in the PREVENT II trial where ASA vs Placebo are given at discharge, the site does not know which is given. How should ASA be coded.

Answer: Leave blank.

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**SEQ. #:** 7070

**Long Name:** ADP Inhibitors - Discharge

**Short Name:** DCADP

**Definition:** Indicate whether or not the patient was discharged from facility on an ADP inhibitor, or if it was contraindicated. The contraindication must be documented in the medical record by a physician, nurse practitioner, pharmacist or physician assistant.

**Intent/Clarification:**

These medications inhibit adenosine diphosphate (ADP) induced platelet aggregation (clotting) are often used to treat patients with a history of atherosclerotic cardiovascular disease to potentially reduce the incidence of major cardiovascular events (stroke, peripheral arterial disease, etc.).

- **Yes:** Capture those who receive an order for an ADP Inhibitor at discharge
- **No:** Patient did not receive an ADP Inhibitor order at discharge
- **Contraindicated:** Documented evidence of contraindication. If a contraindication is documented explicitly as excluded for medical reasons, or is evidenced clearly within the medical record, such as notation of a medication allergy by a Physician, Nurse Practitioner, Anesthesia, Physician Assistant, or Pharmacist.

**FAQ September 2017:** We noticed that there is no variable to capture P2Y12 at discharge in v2.9? How should they be coded.

Answer: Code P2Y12 as an ADP Inhibitor in sequence number 7070.

**FAQ July 2019** - If a physician documents 'no Plavix r/t low platelets', is this sufficient to code contraindicated or does it need to specify the class of medications?

Answer - Seq 7070 refers to ADP's and the contraindication documentation should indicate that the patient is not discharged on ADP inhibitors instead of one drug in the class. Based on your information, code No to discharge ADP Inhibitors.

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**SEQ. #: 7075**

**Long Name:** Other Antiplatelet - Discharge

**Short Name:** DCOthAntiplat

**Definition:** Indicate whether or not the patient was discharged from facility on any other antiplatelet medication, or if it was contraindicated. The contraindication must be documented in the medical record by a physician, nurse practitioner, pharmacist or physician assistant.

**Intent/Clarification:**

- **Yes:** Capture those who receive an order for any other antiplatelet medication at discharge.
  - **No:** Patient did not receive any other antiplatelet medication order at discharge
  - **Contraindicated:** Documented evidence of contraindication. If a contraindication is documented explicitly as excluded for medical reasons, or is evidenced clearly within the medical record (notation of a medication allergy prior to arrival) by a Physician, Nurse Practitioner, Anesthesia, Physician Assistant, or Pharmacist.
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**SEQ. #: 7080**

**Long Name:** Direct Thrombin Inhibitors - Discharge

**Short Name:** DCDirThromIn

**Definition:** Indicate whether or not the patient was discharged from facility on a direct thrombin inhibitor, or if it was contraindicated. The contraindication must be documented in the medical record by a physician, nurse practitioner, pharmacist or physician assistant.

**Intent/Clarification:**

Direct thrombin inhibitors (DTIs) are an innovative class of anticoagulants that bind directly to thrombin to inhibit its actions and impede the clotting process.

**Bivalent:**

- Bivalirudin (transient inhibition - is cleaved by thrombin)
- Lepirudin
- Desirudin

**Univalent:**

- Argatroban
- Melagatran (and its prodrug ximelagatran)
- Dabigatran

### **Allosteric Inhibitors:**

No allosteric thrombin inhibitor has reached the stage of clinical trials.

- **Yes:** Capture those who receive an order for a thrombin inhibitor at discharge.
  - **No:** Patient did not receive a thrombin inhibitor order at discharge.
  - **Contraindicated:** Documented evidence of contraindication. If a contraindication is documented explicitly as excluded for medical reasons, or is evidenced clearly within the medical record, such as notation of a medication allergy by a Physician, Nurse Practitioner, Anesthesia, Physician Assistant, or Pharmacist
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**SEQ. #:** 7085

**Long Name:** Warfarin (Coumadin) - Discharge

**Short Name:** DCCoum

**Definition:** Indicate whether or not the patient was discharged from facility on Warfarin (Coumadin), or if it was contraindicated. The contraindication must be documented in the medical record by a physician, nurse practitioner, pharmacist or physician assistant.

**Intent/Clarification:** The primary action of Coumadin/Warfarin is to prevent or delay blood coagulation.

- **Yes:** Capture those who receive an order for warfarin at discharge
  - **No:** Patient did not receive a warfarin order at discharge
  - **Contraindicated:** Documented evidence of contraindication. If a contraindication is documented explicitly as excluded for medical reasons, or is evidenced clearly within the medical record, such as notation of a medication allergy by a Physician, Nurse Practitioner, Anesthesia, Physician Assistant, or Pharmacist.
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**SEQ. #:** 7090

**Long Name:** Factor Xa Inhibitors - Discharge

**Short Name:** DCFactorXa

**Definition:** Indicate whether or not the patient was discharged from facility on a factor Xa inhibitor, or if it was contraindicated. The contraindication must be documented in the medical record by a physician, nurse practitioner, pharmacist or physician assistant.

**Intent/Clarification:**

Direct factor Xa inhibitors ('xabans') are a class of anticoagulant drugs which act directly upon Factor X in the coagulation cascade, without using Antithrombin as a mediator.

- Apixaban (Eliquis)
  - Betrixaban
  - Darexaban
  - Edoxaban (Savaysa)
  - Otamixaban
  - Rivaroxaban (Xarelto)
  - Arixtra (Fondaparinux)  
(not intended to be inclusive list)
- **Yes:** Capture those who receive an order for a Factor Xa inhibitor medication at discharge.
  - **No:** Patient did not receive a Factor Xa inhibitor medication order at discharge
  - **Contraindicated** - Documented evidence of contraindication. If a contraindication is documented explicitly as excluded for medical reasons, or is evidenced clearly within the medical record (notation of a medication allergy prior to arrival) by a Physician, Nurse Practitioner, Anesthesia, Physician Assistant, or Pharmacist.

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**SEQ. #: 7091**

**Long Name:** Novel Oral Anticoagulant - Discharge

**Short Name:** DCNovOrAnti

**Definition:** Indicate whether or not the patient was discharged from facility on a Novel Oral Anticoagulant, or if it was contraindicated. The contraindication must be documented in the medical record by a physician, nurse practitioner, pharmacist or physician assistant.

**Intent/Clarification:** New agents have been introduced that are collectively referred to as **novel oral anticoagulants (NOACs)** or **directly acting oral anticoagulants (DOACs)**. They have been shown to be as good as or possibly better than the Coumadin with less serious side effects. The newer anticoagulants (NOACs/DOACs), are more expensive than the traditional ones and should be used with care in patients with kidney problems. Additionally, there is no antidote for the factor Xa inhibitors, so it is difficult to stop their effects in the body in cases of emergency (accidents, urgent surgery). Idarucizumab was FDA approved for the reversal of dabigatran in 2015.

- **Yes:** Capture those who receive an order for a Novel Oral Anticoagulant medication at discharge.
- **No:** Patient did not receive a Novel Oral Anticoagulant medication order at discharge
- **Contraindicated** - Documented evidence of contraindication. If a contraindication is documented explicitly as excluded for medical reasons, or is evidenced clearly within the medical record (notation of a medication allergy prior to arrival) by a Physician, Nurse Practitioner, Anesthesia, Physician Assistant, or Pharmacist.

**FAQ September 2017:** Clarify which medications should be coded in this category.



Answer: Confusion lies when the medications could be coded in any or all of the three categories, Factor Xa, Thrombin Inhibitors, or NOAC. Initially all three categories were included to differentiate medications that did not have antidotes. With more antidotes available, the three medications seem redundant. Capture the medication according to the manufacturer's category description. The only caveat to remember is that you should only code ONE of the three medication types so as not to have it appear that the patient is receiving more than one. Code consistently at your site.

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**SEQ. #:** 7095

**Long Name:** Other Anticoagulant - Discharge

**Short Name:** DCOthAnticoag

**Definition:** Indicate whether or not the patient was discharged from facility on any other anticoagulant, or if it was contraindicated. The contraindication must be documented in the medical record by a physician, nurse practitioner, pharmacist or physician assistant.

**Intent/Clarification:** Examples: Heparin (unfractionated), Heparin (Low molecular weight), Enoxaparin/Lovenox, Dalteparin, Tinzaparin

- **Yes:** Capture those who receive an order for any other anticoagulant medication at discharge.
  - **No:** Patient did not receive an order for any other anticoagulant medication at discharge
  - **Contraindicated** - Documented evidence of contraindication. If a contraindication is documented explicitly as excluded for medical reasons, or is evidenced clearly within the medical record (notation of a medication allergy prior to arrival) by a Physician, Nurse Practitioner, Anesthesia, Physician Assistant, or Pharmacist.
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**SEQ. #:** 7100

**Long Name:** ACE or ARB Inhibitors - Discharge

**Short Name:** DCACE

**Definition:** Indicate whether or not the patient was discharged from facility on ACE or ARB Inhibitors, or if it was contraindicated or not indicated (no history of CHF or EF>40%). The contraindication must be documented in the medical record by a physician, nurse practitioner, pharmacist or physician assistant.

**Intent/Clarification:** Primary use is for the treatment of hypertension but is also an essential treatment for congestive heart failure (reduces the workload of the heart). Routine, lifelong use of angiotensin converting enzyme inhibitors (ACEI) or angiotensin receptor blockers (ARB) is recommended for heart failure patients with a lower than usual ejection fraction (40 percent or less). Action is to dilate blood vessels to improve the amount of blood the heart is able to pump and thereby reducing the workload on the heart.

- **Yes** - Capture those who receive an order for an ACE or ARB inhibitor medication at discharge.
- **No** – Patient did not receive a ACE or ARB inhibitor medication order at discharge
- **Contraindicated** - Documented evidence of contraindication. If a contraindication is documented explicitly as excluded or medical reasons, or is evidenced clearly within the medical record (notation of a medication allergy prior to arrival) by a Physician, Nurse Practitioner, Anesthesia, Physician Assistant, or Pharmacist.
- **Not indicated** (no history of CHF or EF > 40%)

**FAQ July 2018:** Pt developed severe heart failure post CAB after suffering MI with graft closures. The pt was discharged on Entresto (Sacubitril-Valsartan) I know its not an ACE alone, but is STS capturing this drug and if so under what category would it be. Answer: Yes, Entresto (Sacubitril/Valsartan) should be captured as ACE or ARB inhibitor at discharge.

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**SEQ. #: 7103**

**Long Name:** Amiodarone - Discharge

**Short Name:** DCAmiodarone

**Definition:** Indicate whether or not the patient was discharged from facility on Amiodarone, or if it was contraindicated. The contraindication must be documented in the medical record by a physician, nurse practitioner, pharmacist or physician assistant.

**Intent/Clarification:** Note that this value is specific to Amiodarone, rather than anti-arrhythmic drugs in general. Amiodarone is effective in situations where other anti-arrhythmic may fall short. **Dronedarone (Multaq) may be coded as Amiodarone.**

- **Yes** - Capture those who receive an order for Amiodarone or Multaq at discharge.
  - **No** – Patient did not receive an Amiodarone or Multaq order at discharge.
  - **Contraindicated** - Documented evidence of contraindication. If a contraindication is documented explicitly as excluded for medical reasons, or is evidenced clearly within the medical record (notation of a medication allergy prior to arrival) by Physician, Nurse Practitioner, Anesthesia, Physician Assistant, or Pharmacist
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**SEQ. #: 7105**

**Long Name:** Beta Blockers - Discharge

**Short Name:** DCBeta

**Definition:** Indicate whether or not the patient was discharged on beta blockers, or if beta blocker was contraindicated. The contraindication must be documented in the medical record by a physician, nurse practitioner, pharmacist or physician assistant.

**Intent/Clarification:** Beta blockers have been proven to increase survival of cardiac patients following MI and in the perioperative period.

Beta blockers are used for the treatment of high blood pressure, treating chest pain or angina, controlling irregular heart rhythms, slowing ventricular rate response and for the treatment of congestive heart failure.

- **Yes** - Capture those who receive an order for a beta blocker medication at discharge.
- **No** – Patient did not receive a beta blocker medication order at discharge.
- **Contraindicated** - Documented evidence of contraindication. If a contraindication is documented explicitly as excluded for medical reasons, or is evidenced clearly within the medical record (notation of a medication allergy prior to arrival) by a Physician, Nurse Practitioner, Anesthesia, Physician Assistant, or Pharmacist.

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**SEQ. #: 7115**

**Long Name:** Lipid Lowering Statin - Discharge

**Short Name:** DCLipLowStat

**Definition:** Indicate whether or not the patient was discharged from facility on a Statin, or if it was contraindicated. The contraindication must be documented in the medical record by a physician, nurse practitioner, pharmacist or physician assistant.

**Intent/Clarification:** Lipid lowering medications block the production of cholesterol and fat. Depending upon the specific medication, each may target unique levels such as HDL (good cholesterol), LDL (bad cholesterol) and triglycerides or polipoprotein B (protein needed to produce cholesterol). They may also reduce the absorption of dietary cholesterol by combining with the cholesterol to remove it from the bloodstream.

Statin medications typically have a generic name ending in the suffix 'statin'. However, some combination statin/non- statin drugs have other generic names. Do not capture non-statins here unless combined with a statin.

- **Yes** - Capture those who receive an order for a statin at discharge.
- **No** – Patient did not receive a statin order at discharge
- **Contraindicated** - Documented evidence of contraindication. If a contraindication is documented explicitly as excluded for medical reasons or is evidenced clearly within the medical record (notation of a medication allergy prior to arrival) by a Physician, Nurse Practitioner, Anesthesia, Physician Assistant, or Pharmacist.

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**FAQ Sept 2019** - If a physician documents "no Lipitor due to elevated liver enzymes", is this sufficient to code contraindicated or does it need to specify the class of medications?

Answer - Seq 7115 refers to statin's and the contraindication documentation should indicate that the patient is not discharged on a statin instead of one drug in the class. Based on your information, code No to discharge statin.

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**SEQ. #: 7120**

**Long Name:** Lipid Lowering - Other - Discharge

**Short Name:** DCLipLowNonStat

**Definition:** Indicate whether or not the patient was discharged from facility on a lipid-lowering medication other than a statin, or if it was contraindicated. The contraindication must be documented in the medical record by a physician, nurse practitioner, pharmacist or physician assistant.

**Intent/Clarification:** Non-statin and other medications prescribed at discharge do not meet the measures according to new Heart Association guidelines.

Lipid lowering medications block the production of cholesterol and fat. Depending upon the specific medication, each may target unique levels such as HDL (good cholesterol), LDL (bad cholesterol) and triglycerides or polipoprotein B (protein needed to produce cholesterol). They may also reduce the absorption of dietary cholesterol by combining with the cholesterol to remove it from the bloodstream. New AHA guidelines favor Statin use and question efficacy of non-statins.

Examples: Fish oils, Niacor, Niaspan, Zetia, Fenofibrate, Tricor, Triglide, Lopid, Colestid, Prevalite, Questran, Welchol

- **Yes** - Capture those who receive an order for a non-statin medication at discharge.
- **No** – Patient did not receive a non-statin medication order at discharge
- **Contraindicated** - Documented evidence of contraindication. If a contraindication is documented explicitly as excluded for medical reasons, or is evidenced clearly within the medical record (notation of a medication allergy prior to arrival) by a Physician, Nurse Practitioner, Anesthesia, Physician Assistant, or Pharmacist.

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**SEQ. #: 7121**

**Long Name:** Mort-Date

**Short Name:** MtDate

**Definition:** Indicate the date the patient was declared dead.

**Intent/Clarification:**

Provide the date the patient died in hospital or was discharged alive, died after discharge within 30 days. **For patients who die in hospital only the mortality date is entered. For patients who are discharged alive and die after discharge, enter both the date of discharge and the mortality date.**

**FAQ Dec 2019** – If I find out that a discharged patient died after 30 days of surgery. Can I enter the mortality date in the database, or should I only enter the mortality date if it occurred within or on the 30th day after surgery?

Answer - Yes, you can enter the mortality date for the discharged patient in the Database regardless of whether it has been greater than 30 days from the date of surgery. However, you are only required to follow patients discharged alive for 30 days after the date of surgery to capture whether the patient is alive or dead at the end of the 30th day after the day of index surgery.

Date in the format mm/dd/yyyy.

**GENERAL INFORMATION:** Accurate coding mortality is very important to the integrity of the database.

All patients discharged alive should be followed for 30 days after the date of surgery to capture whether the patient is alive or dead at the end of the 30th day after the day of index surgery. Any patient that dies within 30 days should be coded as a mortality regardless of the cause of death.

Patients that remain in the hospital and die, even if after 30 days following the index surgery are coded as "Died in Hospital".

Patients that are transferred to another acute care hospital should be followed until the time of discharge from that facility. Any patient that dies at another acute care hospital after transfer should be coded as a mortality in the database.

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**SEQ. #:** 7122

**Long Name:** Mort-Prim Cause

**Short Name:** MtCause

**Definition:** Indicate the PRIMARY cause of death, i.e., the first significant abnormal event which ultimately led to death.

**Intent/Clarification:** If the patient died due to multiple organ system failure, select the system that either was the initiator of the Multisystem Organ Failure (MSOF) or the primary cause of the patient's demise.

- Cardiac
- Neurologic
- Renal
- Vascular
- Infection
- Pulmonary

- Unknown
  - Other
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**SEQ. #:** 7123

**Long Name:** In-Hospital Death location

**Short Name:** InHospDthLoc

**Definition:** Indicate the location within the hospital where the patient died.

**Intent/Clarification:**

- OR During Initial Surgery
  - OR During Reoperation
  - In-hospital (Other than OR)
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**SEQ. #:** 7124

**Long Name:** Mort-Op Death

**Short Name:** MtOpD

**Definition:** Operative Mortality includes: (1) all deaths, regardless of cause, occurring during the hospitalization in which the operation was performed, even if after 30 days (including patients transferred to other acute care facilities); and (2) all deaths, regardless of cause, occurring after discharge from the hospital, but before the end of the thirtieth postoperative day.

**Intent/Clarification:** Includes all causes of death including deaths occurring in hospitals when the patient is transferred to a higher level of care.

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**SEQ. #:** 7125

**Long Name:** Post Discharge Death Location

**Short Name:** PostDisDthLoc

**Definition:** Indicate the location where the patient died after being discharged from the original hospitalization.

**Intent/Clarification:**

- **Home** (or, temporarily, at the home of a relative)
- **Extended Care Facility/Transitional Care Unit (TCU)** Code LTAC as Extended Care/Transitional Care Unit/Rehab. Do not count as part of acute care stay.
- **Hospice**
- **Acute Rehabilitation** (Ultimate plan for patient to return home after a short-stay)
- **Hospital, During Readmission**

- **Other**
- **Unknown**

**FAQ July 2018:** The patient died one day after discharge within thirty days. Cardiac arrest is documented in the ED. How is the location of death after discharge coded?  
 Answer: Code the other for this death that technically occurred outside of the hospital.

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**Readmission**

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**SEQ. #: 7140**

**Long Name:** Readmission

**Short Name:** Readmit

**Definition:** Indicate whether the patient was readmitted to the hospital within 30 days of discharge from hospitalization for this surgery. Code yes for inpatient admission to an acute care facility. Do not capture ED or outpatient visits or admission to a skilled facility or nursing home.

**Intent/Clarification:**

**This is not part of the composite score.**

The intent is to capture inpatient readmissions to acute care and primary care facilities only where the patient **status is listed as “In-Patient”**.

- Obtain information as close to 30 days from date of discharge as possible.
- It is understood that some readmissions are planned; these are still counted as readmissions.
- To code “Yes”, readmissions do not need to be at same institution where the initial surgical procedure was done.
- Discharge and readmission to a psychiatric care facilities, where the patient is considered an in-patient are to be considered as readmissions.
- Do not include Emergency Department visits or observation status visits unless the ED visits leads to status of in-patient.
- If a patient is readmitted to an in-patient rehabilitation hospital, code “No”.
- If a patient is readmitted to an LTAC, code “No”.
- Do not code transfers to higher level of care, this is considered an extension of the same acute care admission. If the patient was discharged to the “Acute Rehab” floor of the same hospital and then readmitted back as an in-patient back into a nursing floor, code “Yes” to admission as an inpatient is considered “Yes.”
- To align with CMS, 30 day readmission should not be coded for patients who remain in observation units, no matter the duration.

On occasion a patient is readmitted twice within the 30 day time frame from the date of the procedure. This is a Yes/No question and does not ask how many times readmitted. Any time the patient is readmitted to a hospital  $\leq$  30 days from the date of discharge

regardless if the readmission was planned or unplanned, related or unrelated. You code the first readmission only.

**FAQ May 2018:** The patient presented in the ED and had a cardiac arrest. The patient died in the ED. Is this is considered a readmission?

Answer: No, this is not considered a readmission, the death should be coded as death outside the hospital.

**FAQ July 2018:** If the patient is transferred to another acute care facility and ultimately discharged, do we tract readmission for 30 days following discharge from the second hospital?

Answer: Yes, the readmission is captured for 30 days following the ultimately discharge.

**FAQ August 2018:** How is readmission to inpatient psych coded? Does that still count as a readmission?

Answer: Yes, this is a readmission.

**FAQ August 2018:** Several days post CAB, the patient left the hospital AMA with his IV still in place. Security caught him and he asked to be taken to a neighboring hospital. Should this be coded as a readmission?

Answer: Yes, code this as a readmission.

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**SEQ. #: 7145**

**Long Name:** Date of Readmission

**Short Name:** ReadmitDt

**Definition:** Indicate the date the patient was readmitted.

**Intent/Clarification:**

Indicate the date the patient was readmitted with a status of In-patient. If the patient was admitted with the status of "Observation" but later changed to "In-patient" code the date the patient was changed to in-patient status.

Required date format: mm/dd/yyyy

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**SEQ. #: 7160**

**Long Name:** Readmit Reason

**Short Name:** ReadmRsn

**Definition:** Indicate the primary reason that the patient was readmitted as an in-patient.

**Intent/Clarification:**

The intent is to identify readmissions where conditions have a physiologic relationship to cardiothoracic surgery.



If the patient was readmitted multiple times, use the first readmission to code this section. Example: If the patient was readmitted twice, the first time with pneumonia and the second time with angina, code pneumonia.

Readmit Reason must be completed if known.

- **Angina:** chest pain or discomfort often spreading to the shoulders, arms, and/or neck, caused by inadequate blood supply to the heart; stable or unstable.
- **Anticoagulant Complication - Pharmacological:** relates to a bleeding complication secondary to the administration of an anticoagulant, IIb/IIIa inhibitor or other platelet inhibitor, for example Plavix, Coumadin, ReoPro etc. This is often diagnosed as Sub-therapeutic or Supra-therapeutic INR.
- **Anticoagulant Complications- Valvular:** relates to thrombus forming in, on and around the prosthetic valve.
- **Aortic Complication:** may relate to issues in the native aorta or be secondary to aortic procedures.
- **Arrhythmia / Heart Block:** Patient admitted due to rhythm irregularities that may have required pharmacological, non- invasive, or invasive treatment.
- **Blood Pressure:** (hyper or hypotension)
- **Chest Pain, non-cardiac**
- **Congestive Heart Failure:** May be manifested as pulmonary edema or only identified as “heart failure”. Must have a diagnosis of Congestive Heart Failure.
- **Coronary Artery / Graft Dysfunction:** This may include native vessels and/or conduit restenosis, spasm or dissection.
- **Depression/psychiatric issue**
- **DVT (Deep Venous Thrombosis):** the formation of a blood clot in the deep veins within the body, such as in the leg or pelvis diagnosed by ultrasound.
- **Electrolyte imbalance**
- **Endocarditis:** Confirmed diagnosis of endocarditis by blood culture and/or vegetation on or around a heart valve. This may include native tissue, ring or prosthetic valve involvement.
- **Failure to thrive:** weight loss of more than 5%, decreased appetite, poor nutrition, and physical inactivity, often associated with dehydration, depression, immune dysfunction.
- **GI issue:** may require medical management, observational management or surgical intervention to control.
- **Infection- Conduit Harvest Site:** Use CDC definitions.
- **Infection- Deep Sternum / Mediastinitis:** Use CDC definitions. May or may not require surgical intervention.
- **Mental status changes:** Any other mental status change not diagnosed as Stroke or Transient Ischemic Attack
- **Myocardial Infarction:** MI diagnosis and/or angina diagnosed by the criteria listed in the definition. Prior to coding as MI, verify with discharge diagnosis to assure that the MI was ‘ruled in’ or that the patient’s reported angina was not secondary to chest wall pain, as diagnosed with echocardiography, chest x- ray or other methods.
- **PE (Pulmonary Embolism):** Pulmonary embolisms must be documented through diagnostic testing such as VQ scan, angiogram, or CT. Do not confuse Pulmonary Embolism with Pulmonary Edema, captured under ‘Respiratory Complication, Other’.

- **Pericardial Effusion and/or Tamponade:** May or may not require invasive intervention on readmission i.e. re-exploration or pericardial tap.
- **Pericarditis/Post Cardiotomy Syndrome:** Inflammatory reaction involving the pericardium that may include fever, effusion, pain.
- **Pleural Effusion Requiring Intervention:** A pleural effusion is a buildup of fluid between the layers of tissue that line the lungs and chest cavity. Diagnosis is often made through imaging studies. Intervention may consist of Thoracentesis (often by Interventional Radiology), Chest tube, Pleural drain (including pleural catheter or pigtail catheter), or Pleural decortication. Intervention does not necessarily entail an OR visit. Many procedures are done at ICU bedside.
- **Pneumonia:** Pneumonia is an inflammation of the lungs, typically diagnosed by microbiology of sputum cultures. It can be detected by imaging studies but should have confirming evidence. Include aspiration pneumonia. Look for documentation in medical record notes.
- **Renal Failure:** Use “Failure” criteria highlighted in RIFLE criteria.
- **Renal Insufficiency:** dysfunction of the kidneys with accumulation of waste products in the blood.
- **Respiratory Complication, Other:** Include acute respiratory failure (often requiring emergent intubation or ECMO cannulation), hypoxemia, pulmonary edema, respiratory acidosis. Pneumonia is separately captured.
- **Sepsis:** See definition of sepsis in the post-operative events section.
- **Stroke:** Confirmed neurological deficit of abrupt onset caused by a disturbance in blood flow to the brain that did not resolve within 24 hours.
- **TIA (Transient Ischemic Attack):** Neurological dysfunction that lasts less than 24 hours and is completely resolved.
- **Transfusion:**
- **Transplant Rejection:** There are two forms of acute rejection: cellular and vascular. The chances of acute cellular rejection are greatest during the first six months after transplant. Acute vascular rejection is a type of acute rejection that occurs early after transplant (within the first four months) in a small number of patients.
- **VAD Complication:** Any device failure or malfunction of a VAD. Some physiologic complications, such as hemorrhagic stroke, hemolysis, or GI bleeds and be related to VAD complications.
- **Valve Dysfunction:** Can be either structural (i.e. leaflet fracture, impaired leaflet function, calcification) or non- structural (perivalvular leak, hemolytic anemia, pannus obstruction) dysfunction. Is applicable to either a mechanical or tissue valve. Dysfunction related to Endocarditis is captured separately.
- **Vascular Complication, Acute:** Any major arterial or venous circulatory compromise that requires pharmacological, non- invasive or invasive treatment to resolve; i.e. peripheral delivery of TPA, peripheral angioplasty. Include acute limb ischemia that may require fasciotomy or amputation for treatment. DVT (Deep Vein Thrombosis) is captured separately.
- **Wound:** Other (drainage, cellulitis)
- **Other – Related Readmission:** Those conditions that may have a correlation to cardiothoracic surgery.
- **Other – Nonrelated Readmission:** All other reasons for admission, i.e., trauma, cancer, that are not related to the initial cardiac surgery or its complications.
- **Other – Planned Readmission:** Readmission for a procedure that was conditional upon surgical remediation of a cardiac condition. Example: A patient

is re-admitted to the hospital after CABG for reasons that were planned prior to cardiac surgery (e.g., colon resection or kidney transplant).

- **Unknown:** Use this field selection only if there is no information available as to the reason why the patient returned. All effort should be made to identify the reason.

**FAQ August 2018:** How is readmission reason coded for the patient who is readmitted to inpatient psych?

Answer: Code Depression/psychiatric issue.

**FAQ March 2019/July 2019:** A patient was readmitted with an infection at the IABP cannulation site. This readmission infection is only related to the IABP should it only be captured as cannulation site infection in sequence number 6720 and MAD site infection in sequence number 6893?

Answer: No, do not capture as cannulation site infection in Seq 6720 since the IABP is not a cannulation sites used for the index procedure aorta / venous sites cannulated during surgery for CPB and/or the transcatheter cannulation site for transcatheter procedures such as TAVR. Capture Readmit reason as Wound Other

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**SEQ. #:** 7165

**Long Name:** Readmit Reason - Primary Procedure

**Short Name:** ReadmPro

**Definition:** Indicate the primary procedure that the patient received after being readmitted as an in-patient.

**Intent/Clarification:**

If the patient was readmitted multiple times, use the first readmission to code this section. Example: If the patient was readmitted twice and did not have any procedures on the first visit, but had a Cath-lab intervention on the second visit, code No Procedure Performed.

- **No Procedure Performed:** There was no invasive or a non-invasive procedure performed. Patient may have been managed by medical observation, pharmacological or other medical therapies. Blood transfusions, ECGs, ordinary x-ray imaging, and IV infusions are not considered 'procedures'.
- **Cath Lab for Valve Intervention:** Valvuloplasty, TAVR, mitral clip and related procedures.
- **Cath Lab for Coronary Intervention (PCI):** Percutaneous coronary intervention, angioplasty, STENT or other coronary occlusive therapies in the Cath Lab.
- **Dialysis:** The patient required new hemo or peritoneal dialysis. May include CRRT.
- **OR for Bleeding:** Bleeding due to pericardial tamponade or related to a prior cardiac surgery. Includes repair of ventricular lacerations. (Note that OR visit is not an absolute requirement. Procedures done at ICU bedside to control mediastinal bleeding are included, as defined under Postoperative Event.)

- **OR for Coronary Artery Intervention:** Any surgical intervention on any of the coronary arteries due to progressive native coronary disease, conduit spasm, occlusion or dissection.
- **OR for Sternal Debridement / Muscle Flap:** Any surgical intervention necessary to debride (clean or remove marginal tissue or muscle) or Plastic Surgeon involvement to perform muscle flap reconstruction for deep sternal wound infection.
- **OR for Valve Intervention:** Any surgical procedure performed (repair and/or replacement) on any heart valve; native, prosthetic or ring/band device.
- **OR for Vascular Procedure:** Any (arterial) vascular surgical procedure required. Examples would include but are not limited to: (femoral hematoma evacuation, PTA, AAA, Carotid Endarterectomy, Fem-Pop bypass etc.)
- **OR for Aorta Intervention:**
- **Pacemaker Insertion / ICD:** Permanent Pacemaker or Implantable Cardioverter Defibrillator for arrhythmia or heart block.
- **Pericardiotomy / Pericardiocentesis:** Pericardiotomy is removal of all or part of the pericardium. Pericardiocentesis is drainage of accumulated fluid from or around the heart that creates hemodynamic compromise for the patient. Pericardiocentesis is typically performed as a non- surgical intervention, but a more invasive approach can be achieved through the surgical procedure of pericardial window.
- **Planned non-cardiac procedure:** Example: Planned colon resection.
- **Thoracentesis / Chest Tube Insertion:** Thoracentesis is a procedure to remove fluid from the space between the lungs and the chest wall called the pleural space. It is done with a needle. For persistent fluid accumulation, a chest tube can be inserted for more long-term drainage.
- **Wound Vac:** Wound Vac therapy promotes surgical wound healing through Negative Pressure Wound Therapy (NPWT). By delivering negative pressure (a vacuum) at the wound site, this helps draw wound edges together, remove infectious materials and actively promote granulation.
- **Other Procedure:** Some type of invasive or non-invasive procedure was performed that is not included in the above referenced list.
- **Unknown:** Use this field selection only if there is no information available as to the treatment/intervention prescribed. All effort should be made to identify the treatment used.

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**SEQ. #:** 7166

**Long Name:** Readmit Reason - Primary Procedure - Aorta Intervention Type

**Short Name:** ReadmAortIntTy

**Definition:** Indicate the type of aortic intervention required during readmission.

**Intent/Clarification:** Indicate if the patient requires an open or endovascular aorta procedure.  
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**SEQ. #:** 7167

**Long Name:** Readmit Reason - Primary Procedure - Aorta Intervention Indication

**Short Name:** ReadmAortIntInd

**Definition:** Select the indication for aortic reintervention

**Intent/Clarification:** Indications for an aorta reintervention procedure include:

- Rupture
- Endoleak
- Infection
- Dissection
- Expansion
- Loss of side branch patency
- Other

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### Risk Scores

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**SEQ. #:** 7170

**Long Name:** Predicted Risk of Mortality

**Short Name:** PredMort

**Definition:** Indicate the Predicted Risk of Mortality.

**Intent/Clarification:** The prediction of risk is calculated within the software according to a DCRI model specified to the vendor. **No user data input is accepted.**

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**SEQ. #:** 7175

**Long Name:** Predicted Deep Sternal Wound Infx

**Short Name:** PredDeep

**Definition:** Indicate the Predicted Risk of Deep Sternal Wound Infection.

**Intent/Clarification:** The prediction of risk is calculated within the software according to a DCRI model specified to the vendor. **No user data input is accepted.**

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**SEQ. #:** 7180

**Long Name:** Predicted Reoperation

**Short Name:** PredReop

**Definition:** Indicate the Predicted Risk of Reoperation.

**Intent/Clarification:** The prediction of risk is calculated within the software according to a DCRI model specified to the vendor. **No user data input is accepted.**

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**SEQ. #:** 7185

**Long Name:** Predicted Permanent Stroke

**Short Name:** PredStro

**Definition:** Indicate the Predicted Risk of Permanent Stroke.

**Intent/Clarification:** The prediction of risk is calculated within the software according to a DCRI model specified to the vendor. **No user data input is accepted.**

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**SEQ. #:** 7190

**Long Name:** Predicted Prolonged Ventilation

**Short Name:** PredVent

**Definition:** Indicate the Predicted Risk of Prolonged Ventilation.

**Intent/Clarification:** The prediction of risk is calculated within the software according to a DCRI model specified to the vendor. **No user data input is accepted.**

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**SEQ. #:** 7195

**Long Name:** Predicted Renal Failure

**Short Name:** PredRenF

**Definition:** Indicate the Predicted Risk of Renal Failure.

**Intent/Clarification:** The prediction of risk is calculated within the software according to a DCRI model specified to the vendor. **No user data input is accepted.**

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**SEQ. #:** 7200

**Long Name:** Predicted Morbidity or Mortality

**Short Name:** PredMM

**Definition:** Indicate the Predicted Risk of Morbidity or Mortality.

**Intent/Clarification:** The prediction of risk is calculated within the software according to a DCRI model specified to the vendor. **No user data input is accepted.**

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**SEQ. #:** 7205

**Long Name:** Predicted Short Length of Stay

**Short Name:** Pred6D

**Definition:** Indicate the Predicted Risk of Short Length of Stay.

**Intent/Clarification:** The prediction of risk is calculated within the software according to a DCRI model specified to the vendor. **No user data input is accepted.**

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**SEQ. #: 7210**

**Long Name:** Predicted Long Length of Stay

**Short Name:** Pred14D

**Definition:** Indicate the Predicted Risk of Long Length of Stay.

**Intent/Clarification:** The prediction of risk is calculated within the software according to a DCRI model specified to the vendor. **No user data input is accepted.**

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**STS Temporary Fields**

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**STS Temporary fields should only be used at the direction of STS. Do not use for local data collection and clear any data that may have been entered prior to submission. See field 7230 below for instructions.**

**SEQ. #: 7215**

**Long Name:** Temporary Yes/No Field #1

**Short Name:** TempYN1

**Definition:** This is a temporary field that should not be used for data collection until expressly instructed to by the STS.

**Intent/Clarification:** Use only as directed by STS, do not add custom field here.

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**SEQ. #: 7220**

**Long Name:** Temporary Yes/No Field #2

**Short Name:** TempYN2

**Definition:** This is a temporary field that should not be used for data collection until expressly instructed to by the STS.

**Intent/Clarification:** Use only as directed by STS, do not add custom field here.

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**SEQ. #: 7225**

**Long Name:** Temporary Date Field

**Short Name:** TempDt

**Definition:** This is a temporary field that should not be used for data collection until expressly instructed to by the STS.

**Intent/Clarification:** Use only as directed by STS, do not add custom field here.

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**SEQ. #:** 7230

**Long Name:** Temporary Coded Field

**Short Name:** TempCode

**Definition:** This is a temporary field that should not be used for data collection until expressly instructed to by the STS.

**Intent/Clarification:** Use only as directed by STS, do not add custom field here.

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**SEQ. #:** 7235

**Long Name:** Temporary Text Field

**Short Name:** TempText

**Definition:** This is a temporary field that should not be used for data collection until expressly instructed to by the STS.

**Intent/Clarification:** Use only as directed by STS, do not add custom field here.

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## **Adult Cardiac Anesthesiology**

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**SEQ. #:** 7310

**Long Name:** Primary Anesthesiologist Name

**Short Name:** PrimAnesName

**Definition:** Indicate the full name of the primary anesthesiologist for the procedure.

**Intent/Clarification:**

Field must be populated. Missing data or information for an anesthesiologist not on your current contract with the STS will cause your data file submission not to process.

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**SEQ. #:** 7315

**Long Name:** Primary Anesthesiologist National Provider Identifier

**Short Name:** PrimAnesNPI

**Definition:** Indicate the individual-level National Provider Identifier (NPI) of the primary anesthesiologist for the procedure.



**Intent/Clarification:**

Field must be populated. Missing or inaccurate data will cause your data file submission not to process. It is crucial to enter the correct anesthesiologist identifier.

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**SEQ. #: 7320**

**Long Name:** Care Team Model

**Short Name:** AnesCareTeamMod

**Definition:** Indicate the anesthesia care team assigned for the predominant portion of the procedure.

**Intent/Clarification:**

Determine the care model primarily responsible for providing anesthesia to the patient intraoperatively. This information can be found on the anesthesia record. Check with your anesthesia team or leave blank if the data is not available.

December 2017: Determine the care model primarily responsible for providing anesthesia for the predominant portion of the procedure, defined as greater than 40% of the duration of the procedure from induction of general anesthesia, to the patient intraoperatively. This information can be found on the anesthesia record.

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**SEQ. #: 7325**

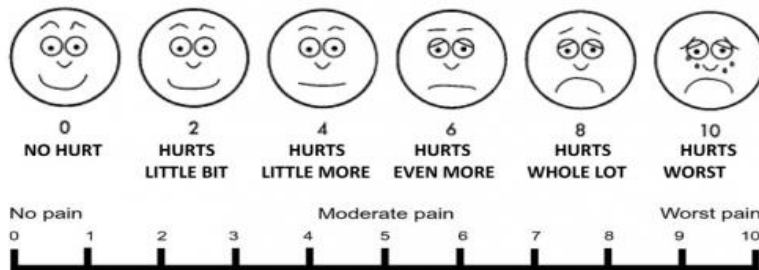
**Long Name:** Pain Score Baseline

**Short Name:** PainScorePre

**Definition:** Indicate the highest baseline (preoperative) pain score on the 0-10 integer scale, or indicate that the score was not recorded.

**Intent/Clarification:**

Pain score, which is a quality metric, is routinely assessed as part of preoperative holding area check in list. This information should be obtainable from a progress note or similar documentation completed by preoperative nurse closest to the OR Entry time.



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**SEQ. #:** 7330

**Long Name:** Transfusion Algorithm to Guide Transfusion

**Short Name:** TransfAlg

**Definition:** Indicate whether a transfusion algorithm or guideline was used to guide transfusion in the patient.

**Intent/Clarification:**

A transfusion algorithm or guideline is a predetermined set of treatment plans specific to various patient specific criteria to aid in transfusing the patient. Check with your anesthesia team or leave blank if the data is not available.

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**SEQ. #:** 7335

**Long Name:** Cell saver volume

**Short Name:** CellSavVol

**Definition:** Indicate the volume of cell-saver blood that was transfused intraoperatively. Include any volume started in the OR, even if the infusion completed postoperatively.

Do not include autologous, allogeneic, pump-residual, or chest-tube recirculated blood. Value should be recorded in milliliters.

**Intent/Clarification:**

Cell-saver blood is blood that the patient loses during surgery which is transfused back to the patient. Time frame includes any cell-saver infusions started intraoperatively regardless if they completion time is after OR Exit date/time. This type of data could be obtained from the Perfusionist record who was assigned to that specific case.

Some hospitals will bag the residual pump blood and the anesthesiologist hangs it and gives some extra protamine. This is not the same as Cell Saver blood and should not be included here.

**FAQ October 2019** - When you ask for cell saver volume, I am correct in that you want total cell saver given back to the patient including cell saver given on CPB by the perfusionist plus amount given by anesthesia?

Answer – Yes, code any amount of cellsaver given to the patient.

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**SEQ. #:** 7340

**Long Name:** Heparin Total Dose

**Short Name:** TotHep

**Definition:** Indicate the total dose of heparin that was administered intraoperatively prior to the initiation of first cardiopulmonary bypass.

Include all doses of heparin given prior to the first cardiopulmonary bypass. Value should be recorded in units.

**Intent/Clarification:**

Heparin administered after OR Entry time and prior to the initiation of cardiopulmonary bypass. Measurement should be recorded in units.

**FAQ October 2019** - For total heparin, the definition states you want the amount of heparin anesthesia gives before going on CPB. Do you not want the total heparin given on the case? Perfusion gives hepain as well, and sometimes it can be substantial. Sometimes perfusion gives extra loading dose heparin through the pump if crashing on bypass, which really could be recorded as part of pre-CPB dose?

Answer – Capture only heparin given by anesthesia prior to initiation of CPB.

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**SEQ. #: 7345**

**Long Name:** Heparin Management

**Short Name:** HepMgmt

**Definition:** Indicate the method of heparin management used intraoperatively.

Different approaches are utilized to measure the adequacy of heparinization for anticoagulation.

**Intent/Clarification:**

The adequacy of heparinization determines the coaguability of the patient’s blood. Heparin titration based on activated clotting time (ACT) measures how quickly the blood will clot. The larger the number the longer it will take for the blood to clot. Heparin titration based on heparin concentration (Hepcon System) measures the concentration of heparin in the blood. If either of these two measurements are not used to determine the level of heparinization then “other” should be chosen.

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**SEQ. #: 7350**

**Long Name:** Protamine total dose

**Short Name:** TotProt

**Definition:** Indicate the total dose of protamine given intraoperatively to reverse heparinization after first cardiopulmonary bypass.

Value should be recorded in milligrams. Do not include doses given in the ICU.

**Intent/Clarification:**

Protamine is a medication given used to reverse the effects of heparin within the operating room. Time frame should be after the initiation of cardiopulmonary bypass and prior to ICU admission.

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**SEQ. #:** 7351

**Long Name:** Antithrombin III Total Dose

**Short Name:** AntithromDose

**Definition:** indicate the total dose of antithrombin III

**Intent/Clarification:**

Antithrombin III is a medication given to enhance the heparin effect to achieve adequate anticoagulation. Time frame should be any amount given within the intraoperative phase after OR Entry time.

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**SEQ. #:** 7360

**Long Name:** Viscoelastic Testing Used During Operation

**Short Name:** IntraViscoTest

**Definition:** Indicate whether viscoelastic testing was used intraoperatively (example: TEG, TEG-FF, or ROTEM).

Viscoelastic testing is a method of measuring coagulation in the blood.

**Intent/Clarification:**

Viscoelastic testing is used to determine which coagulation products to administer when the patient has an anticipated coagulopathy or non-surgical cause of bleeding. CT anesthesia team or patient's lab record may be useful to see whether any of the above indicated viscoelastic tests has been performed.

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**SEQ. #:** 7365

**Long Name:** Volatile Agent Used

**Short Name:** VolAgentUsed

**Definition:** Indicate whether a volatile agent was used.

**Intent/Clarification:**

A volatile anesthetic is an inhaled anesthetic administered via an anesthetic gas machine or via the cardiopulmonary bypass machine.

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**SEQ. #:** 7366

**Long Name:** Volatile Agent - Isoflurane

**Short Name:** VolAgentIso

**Definition:** Indicate whether the volatile agent used was Isoflurane

**Intent/Clarification:**

Indicate if isoflurane was the volatile anesthetic used to provide anesthesia.

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**SEQ. #:** 7367

**Long Name:** Volatile Agent - Sevoflurane

**Short Name:** VolAgentSevo

**Definition:** Indicate whether the volatile agent used was Sevoflurane

**Intent/Clarification:**

Indicate if sevoflurane the volatile anesthetic used to provide anesthesia.

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**SEQ. #:** 7368

**Long Name:** Volatile Agent - Desflurane

**Short Name:** VolAgentDes

**Definition:** Indicate whether the volatile agent used was Desflurane

**Intent/Clarification:**

Indicate if desflurane was the volatile anesthetic used to provide anesthesia.

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**SEQ. #:** 7369

**Long Name:** Volatile Agent - Other

**Short Name:** VolAgentOth

**Definition:** Indicate whether any other volatile agent was used

**Intent/Clarification:**

Although highly unlikely, indicate if any other volatile agents were used to provide anesthesia. Information may be obtained from anesthesia record or perfusion record.

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**SEQ. #:** 7370

**Long Name:** Volatile Agent Timing - Pre-CPB

**Short Name:** VolAgentTimPre

**Definition:** Indicate whether the volatile agent was used prior to the patient being on CPB.

**Intent/Clarification:**

Time frame of administering a volatile agent is after OR entry and prior to CPB initiation.

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**SEQ. #:** 7375

**Long Name:** Volatile Agent Timing - During CPB

**Short Name:** VolAgentTimDur

**Definition:** Indicate whether the volatile agent was used during the period when patient was on CPB.

**Intent/Clarification:**

A volatile agent was administered during the use of cardiopulmonary bypass. This information will either come from intraoperative anesthesia chart or perfusion chart. Leave blank if the information is unavailable.

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**SEQ. #: 7380**

**Long Name:** Volatile Agent Timing - Post CPB

**Short Name:** VolAgentTimPost

**Definition:** Indicate whether the volatile agent was used after the patient was taken off CPB.

**Intent/Clarification:**

Indicate if a volatile agent was administered after the discontinuation of cardiopulmonary bypass and prior to admission to the ICU.

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**SEQ. #: 7385**

**Long Name:** Volatile Agent Timing - Maintenance (no CPB)

**Short Name:** VolAgentTimMaint

**Definition:** Indicate whether a volatile agent was used for maintenance in a non-pump case (no CPB).

**Intent/Clarification:**

A volatile agent was administered after entry into the OR and prior to ICU admission in off-pump cases.

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**SEQ. #: 7390**

**Long Name:** Intraop Infusion: Dexmedetomidine

**Short Name:** DexIntra

**Definition:** Indicate the use of dexmedetomidine infusion during surgery.

Any use of dexmedetomidine infusion during the intraoperative period, usually but not always, in the post-bypass period.

**Intent/Clarification:**

Indicate if dexmedetomidine was administered after OR Entry time and prior to OR Exit time

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**SEQ. #: 7395**

**Long Name:** Intraop Infusion: Propofol

**Short Name:** PropIntra

**Definition:** Indicate the use of propofol infusion during surgery.

Any use of a propofol infusion during the intraoperative period, usually but not always, in the post-bypass period.

**Intent/Clarification:**

Indicate if Propofol was administered by infusion after OR Entry time and prior to OR Exit time.

**Specific attention should be paid to exclude bolus Propofol administration during any time of the intraoperative phase.**

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**SEQ. #: 7400**

**Long Name:** Intraop Mgs of Midazolam

**Short Name:** MidazIntra

**Definition:** Indicate the intraoperative does of midazolam in milligrams. Enter zero if no midazolam used.

**Intent/Clarification:**

Record in milligrams the amount of midazolam administered after OR Entry and prior to OR Exit. Record "0mg" if no midazolam was administered intraoperatively.

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**SEQ. #: 7405**

**Long Name:** Intraop Insulin Total Dose (max units)

**Short Name:** TotInsulIntra

**Definition:** Indicate the total units (bolus and infusion) of insulin administered intraoperatively. Enter zero if no insulin was given.

**Intent/Clarification:**

Record, in units, the amount of insulin administered after OR Entry and prior to OR Exit. This includes bolus and infusion doses. Record "0 units" if no insulin was administered intraoperatively.

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**SEQ. #: 7410**

**Long Name:** Blood Pressure Baseline (Pre-Anesthetic Induction) - Systolic

**Short Name:** PreAnesthBPSys

**Definition:** Indicate the most representative preoperative blood pressure upon arrival in the operating room.

The most representative initial blood pressure (systolic) should be recorded. This number may be an initial single recording or the average or median of a series of BP determinations. In all cases, the values should be recorded in the operating room prior to the induction of anesthesia.

**Intent/Clarification:**

Record the systolic blood pressure closest to, but prior to induction of anesthesia that is most representative of the patient's preoperative status. If the blood pressure closes to induction is debatably abnormal for the patient (erroneously high or low), then a median of the first five (5) blood pressures measurements by the automated record keeping system obtained after OR Entry may be used.

If this information is not available, leave blank.

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**SEQ. #: 7415**

**Long Name:** Blood Pressure Baseline (Pre-Anesthetic Induction) - Diastolic

**Short Name:** PreAnesthBPDia

**Definition:** Indicate the most representative preoperative blood pressure upon arrival in the operating room.

The most representative initial blood pressure (diastolic) should be recorded. This number may be an initial single recording or the average or median of a series of BP determinations. In all cases, the values should be recorded in the operating room prior to the induction of anesthesia.

**Intent/Clarification:**

Record the diastolic blood pressure closest to, but prior to induction of anesthesia that is most representative of the patient's preoperative status.

If the blood pressure closes to induction is debatably abnormal for the patient, then a median of blood pressures obtained after OR Entry may be used. If the blood pressure closes to induction is debatably abnormal for the patient (erroneously high or low), then a median of the first five (5) blood pressures measurements by the automated record keeping system obtained after OR Entry may be used.

If this information is not available, leave blank.

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**SEQ. #: 7420**

**Long Name:** Blood Pressure Baseline (Pre-Anesthetic Induction) - Mean

**Short Name:** PreAnesthBPMean

**Definition:** Indicate the most representative preoperative blood pressure upon arrival in the operating room.

The most representative initial blood pressure (mean) should be recorded. This number may be an initial single recording or the average or median of a series of BP determinations. In all cases, the values should be recorded in the operating room prior to the induction of anesthesia.

**Intent/Clarification:** Record the mean arterial pressure obtained from the arterial line closest to the induction of anesthesia. If the mean arterial pressure closes to induction is debatably abnormal for the patient, then a median of arterial pressures obtained after OR Entry may be used. If the arterial pressure closes to induction is debatably abnormal for the patient (erroneously high or low), then a median of the first five (5) arterial pressures measurements by the automated record keeping system obtained after OR Entry may be used.

If no mean arterial pressure is available, leave blank.

Do not capture mean cuff pressure (NBP).

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**SEQ. #: 7425**

**Long Name:** Heart Rate Baseline (Pre-Anesthetic Induction)

**Short Name:** PreAnesthHR

**Definition:** Indicate the most representative preoperative heart rate upon arrival in the operating room.

The most representative initial heart rate should be recorded. This number may be an initial single recording or the average or median of a series of heart rate determinations. In all cases, the values should be recorded in the operating room prior to the induction of anesthesia. The source of heart rate should derive from the ECG monitor, since pulse rates derived from pulse oximetry/plethysmography or arterial tracings may underestimate the heart rate in tachyarrhythmias and other circumstances.

**Intent/Clarification:**

Record the heart rate closes to, but prior to induction of anesthesia, that is most representative of the patient's preoperative status. If the heart rate closes to induction is debatably abnormal for the patient, then a median of five (5) heart rates obtained after OR Entry may be used.

If no heart rate is available, leave blank.

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**SEQ. #:** 7430

**Long Name:** Pulmonary Artery Catheter Used

**Short Name:** PACIntra

**Definition:** Indicate the preoperative or intraoperative placement of a pulmonary artery catheter (Swan-Ganz type-catheter).

Placement of a pulmonary artery catheter (PAC) in the preoperative or intraoperative period and use of this catheter during the intraoperative period.

**Intent/Clarification:**

Identify if a pulmonary artery catheter was placed pre or intra-operatively and used during the intraoperative period.

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**SEQ. #:** 7435

**Long Name:** Core Temperature Source

**Short Name:** CoreTempSrc

**Definition:** Indicate the source of core temperature data used to guide cooling and/or rewarming during cardiac surgery.

Cardiac centers utilize various sites for measuring core temperature during cardiac procedures. These may include the esophageal, bladder, nasopharyngeal, pulmonary artery catheter thermistor, tympanic, or rectal sources. If more than one temperature is being recorded, the value selected as the core should be noted.

**Intent/Clarification:** Identify what source was used for determining the core temperature. This should coincide with data reported in the Operative section of the adult cardiac surgery data collection form.

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**SEQ. #:** 7440

**Long Name:** Core Temperature Maximum

**Short Name:** CoreTempMax

**Definition:** Indicate the patient's highest core temperature during the procedure in degrees centigrade.

**Intent/Clarification:**

Indicate the patient's highest core temperature after the induction of anesthesia, prior to OR Exit.

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**SEQ. #:** 7445

**Long Name:** Nitric Oxide Therapy Begun Intraoperatively

**Short Name:** NitricOxIntraop

**Definition:** Indicate the usage of inhaled nitric oxide.

Inhaled nitric oxide is used in the treatment of pulmonary hypertension and right ventricular failure. The intent is to capture the usage of inhaled nitric oxide during the cardiac surgical procedure. Do not record the usage of inhaled vasodilating substances other than nitric oxide in this data field.

**Intent/Clarification:**

Indicated if nitric oxide was used intraoperatively; after OR Entry but prior to OR Exit.

The Nitric Oxide (NO) machine is kept separate from the anesthesia machine and is often recoded by the Respiratory Therapist. The information is most likely found on the Respiratory Therapist record if not on the anesthesia record.

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**SEQ. #: 7450**

**Long Name:** Total Crystalloid Administered by Anesthesia Care Team

**Short Name:** TotCrystAnesth

**Definition:** Indicate the total volume of intravenous crystalloid administered by the anesthesia care team. The data should be recorded in milliliters. Enter zero if no crystalloid used.

There is continuing controversy as to the risks and benefits of liberal or restrictive intravenous fluid regimens. Record the total volume of all crystalloid intravenous fluids administered by the anesthesia care team. Do not record any blood products in this data field.

**Intent/Clarification:**

Indicate if crystalloid fluids were administered in the OR by the anesthesia care team.

**This does not include fluid administered by perfusion.** Record in milliliters. Enter "0" if no crystalloid fluids were administered by anesthesia.

Common crystalloid fluids include 0.9% NaCl, Lactated Ringers, Plasmalyte and D5 ½ 0.9%Saline.

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**SEQ. #: 7455**

**Long Name:** Total Synthetic Colloid Administered by Anesthesia Care Team

**Short Name:** TotColloidAnesth

**Definition:** Indicate the total volume of intravenous synthetic colloid fluid administered by the anesthesia care team. The data should be recorded in milliliters. Enter zero if no synthetic colloid used.

There is continuing controversy as to the risks and benefits of liberal or restrictive intravenous fluid regimens. Record the total volume of all synthetic colloid intravenous fluids administered by the anesthesia care team. Do not record any blood products in this data field.

**Intent/Clarification:**

Indicate if colloid fluids were administered in the OR by the anesthesia care team. **This does not include fluid administered by perfusion.** Record in milliliters. Enter "0" if no colloid fluids were administered by anesthesia.

Common colloid fluids are Hespan and Voluven.

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**SEQ. #:** 7460

**Long Name:** Total Albumin Administered by Anesthesia Care Team

**Short Name:** TotAlbumAnesth

**Definition:** Indicate the total volume of intravenous human serum albumin fluid administered by the anesthesia care team. The data should be record in milliliters. Enter zero if no albumin used.

There is continuing controversy as to the risks and benefits of liberal or restrictive intravenous fluid regimens. Record the total volume of all human serum albumin fluid administered by the anesthesia care team. Do not record any blood products in this data field.

**Intent/Clarification:**

Indicate if Albumin was administered in the OR by the anesthesia care team. **This does not include administration by perfusion.** Record in milliliters. Enter "0" if no albumin was administered by anesthesia.

Albumin solutions include: Albumin 5%, Albumin 20% and Plasmanate 5%.

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**SEQ. #:** 7470

**Long Name:** Intraoperative Glucose Trough Value

**Short Name:** GlucTroughIntraop

**Definition:** Indicate the trough value of intraoperative glucose in mg/dl.

Intraoperative glucose values vary widely in cardiac surgery. Administration of glucose containing fluids, stress, insulin, and glucorticoids may all affect intraoperative glycemic levels.

**Intent/Clarification:**

Indicate the patient's lowest intraoperative glucose level in mg/dL. Time frame is after induction of anesthesia and prior to OR Exit time.

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**SEQ. #:** 7475

**Long Name:** Vasodilators used

**Short Name:** Vasodillntraop

**Definition:** Indicate the usage of intravenous vasodilating drugs administered by continuous infusion during the intraoperative phase of cardiac surgery.

Vasodilators are used commonly in cardiac surgical patients for the control of intraoperative hypertension and for afterload reduction to improve ventricular function. For the purposes of this data field, infusions of milrinone and pure vasodilating drugs, such as nitroglycerin, nitroprusside, and nicardipine, should be recorded.

**Intent/Clarification:**

Indicate if the patient received continuous infusion of vasodilating drugs intraoperatively. Do not include one-time dose.

Could include but not limited to: Apresoline/hydralazine, nitroglycerin, nitroprusside, nicardipine, Esmolol, and milrinone.

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**SEQ. #:** 7476

**Long Name:** Intraoperative Processed EEG (BIS)

**Short Name:** IntraProcEEG

**Definition:** Indicate whether an intraoperative processed EEG (BIS) was monitored

**Intent/Clarification:**

Indicate if a processed EEG was utilized intraoperatively regardless if it was a BIS or other similar device.

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**SEQ. #:** 7480

**Long Name:** Intraoperative Pre-procedure TEE Performed

**Short Name:** IntraOpPreTEE

**Definition:** Indicate whether intraoperative TEE was performed pre-procedure.

**Intent/Clarification:**

Indicate if an intraoperative TEE was performed after OR Entry time after induction, but prior to Incision time.

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**SEQ. #:** 7485

**Long Name:** Pre-Procedure Left Ventricular Ejection Fraction Measured

**Short Name:** PreLVEFMeas

**Definition:** Indicate whether left ventricular ejection fraction was measured

**Intent/Clarification:**

Indicate if an ejection fraction was measured during the intraoperative TEE after OR Entry time after induction, but prior to Incision time.

This field is a child to Seq # 7480.

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**SEQ. #:** 7490

**Long Name:** Left Ventricular Ejection Fraction Estimate

**Short Name:** PreLVEF

**Definition:** Indicate the estimate of Left Ventricular ejection fraction determined by intraoperative transesophageal echocardiography.

Enter a range of 1-99. If a percentage range is reported, report a whole number using the "mean" (i.e., 50-55% is reported as 53%). If a qualitative description is reported, code the mean value for that range; i.e., normal (50-70%) is coded as 60%.

- Hyperdynamic: >70%
- Normal: 50%–70% (midpoint 60%)
- Mild dysfunction: 40%–49% (midpoint 45%)
- Moderate dysfunction: 30%–39% (midpoint 35%)
- Severe dysfunction: <30%

Note: If no diagnostic report is in the medical record, a value documented in the medical record is acceptable.

Use the defining terms/percentages listed above to remain consistent with Adult Cardiac Database reporting.

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**SEQ. #:** 7495

**Long Name:** Pre-Procedure Right Ventricular Function

**Short Name:** PreRVFx

**Definition:** Indicate the estimate of RV function determined by intraoperative transesophageal echocardiography.

**Intent/Clarification:**

Use the Right Ventricular function obtained between OR Entry and incision time, but after induction.

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**SEQ. #:** 7500

**Long Name:** Mitral Regurgitation

**Short Name:** PreMR

**Definition:** Indicate the degree of mitral valve regurgitation from intraoperative transesophageal echocardiography.

Enter the highest level recorded in the chart, i.e., worst performance level. "Moderately severe" should be coded as "severe".

**Intent/Clarification:**

Use the degree of mitral valve regurgitation obtained between OR Entry and incision time, but after induction. Enter the highest level of regurgitation in the chart.

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**SEQ. #: 7505**

**Long Name:** Mitral Stenosis

**Short Name:** PreMS

**Definition:** Indicate the degree of mitral valve stenosis from intraoperative transesophageal echocardiography.

Enter the highest level recorded in the chart, i.e., worst performance level. "Moderately severe" should be coded as "severe".

**Intent/Clarification:**

Use the degree of mitral valve regurgitation obtained between OR Entry and incision time, but after induction. Enter the highest level of mitral valve stenosis in the chart.

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**SEQ. #: 7510**

**Long Name:** Aortic Regurgitation

**Short Name:** PreAR

**Definition:** Indicate the degree of aortic valve regurgitation from intraoperative transesophageal echocardiography.

Enter the highest level recorded in the chart, i.e., worst performance level. "Moderately severe" should be coded as "severe".

**Intent/Clarification:**

Use the degree of aortic valve regurgitation obtained between OR Entry and incision time, but after induction. Enter the highest level of aortic valve regurgitation in the chart.

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**SEQ. #: 7515**

**Long Name:** Aortic Stenosis

**Short Name:** PreAS

**Definition:** Indicate the degree of aortic valve stenosis from intraoperative transesophageal echocardiography.

Enter the highest level recorded in the chart, i.e., worst performance level. "Moderately severe" should be coded as "severe".

**Intent/Clarification:**

Use the degree of aortic valve stenosis obtained between OR Entry and incision time, but after induction. Enter the highest level of aortic valve stenosis in the chart.

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**SEQ. #: 7520**

**Long Name:** Aortic Valve Area Assessed

**Short Name:** PreAVAAssessed

**Definition:** Indicate whether the aortic valve areas was assessed from intraoperative transesophageal echocardiography.

**Intent/Clarification:**

Time frame is after OR Entry time.

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**SEQ. #: 7525**

**Long Name:** Aortic Valve Area

**Short Name:** PreAVA

**Definition:** Indicate the aortic valve area from intraoperative transesophageal echocardiography.

Enter numeric value in square centimeters for aortic valve.

**Intent/Clarification:**

Report the aortic valve area obtained between OR Entry and incision time, but after induction. Answer in cm<sup>2</sup>.

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**SEQ. #: 7530**

**Long Name:** Tricuspid Regurgitation

**Short Name:** PreTR

**Definition:** Indicate the degree of tricuspid valve regurgitation from intraoperative transesophageal echocardiography.

Enter the highest level recorded in the chart, i.e., worst performance level. "Moderately severe" should be coded as "severe".

**Intent/Clarification:**

Enter the highest level of tricuspid valve regurgitation obtained between OR Entry and incision time, but after induction.

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**SEQ. #:** 7535

**Long Name:** Patent Foramen Ovale

**Short Name:** PrePFO

**Definition:** Indicate the presence of patent foramen ovale diagnosed by intraoperative transesophageal echocardiography.

**Intent/Clarification:**

Indicated if a patent foramen ovale was identified on the intraoperative TEE. Time frame is between OR Entry and incision time, but after induction.

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**SEQ. #:** 7540

**Long Name:** Ascending Aorta Assessed

**Short Name:** AscAoAssessed

**Definition:** Indicate whether the ascending aorta was assessed using TEE.

**Intent/Clarification:**

The ascending aorta includes the area from the aortic root to proximal of the innominate artery. Indicate if a TEE was performed intraoperatively to assess the ascending aorta. Time frame is after OR Entry time prior to incision, but after induction.

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**SEQ. #:** 7545

**Long Name:** Maximal Ascending Aortic Diameter

**Short Name:** MxAscAo

**Definition:** Indicate the maximal diameter of ascending aorta as determined by intraoperative transesophageal echocardiography.

Indicate maximal diameter of ascending aorta in centimeters as determined by intraoperative transesophageal echocardiography.

**Intent/Clarification:**

Record the maximal diameter of the ascending aorta in centimeters using data obtained from an intraoperative TEE. Time frame is after OR Entry time prior to incision, but after induction.

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**SEQ. #:** 7550

**Long Name:** Maximal Ascending Aortic Atheroma Thickness

**Short Name:** MxAscAoThick

**Definition:** Indicate the maximal ascending aortic atherosclerotic thickness as measured by intraoperative transesophageal echocardiography.

Indicate maximal thickness of ascending aorta plaque in millimeters as determined by intraoperative transesophageal echocardiography. If only intimal thickening and no plaque put numeric value of zero.

**Intent/Clarification:**

Time frame is after OR Entry time prior to incision, but after induction.

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**SEQ. #:** 7555

**Long Name:** Ascending Aortic Atheroma Mobility

**Short Name:** AsAthMo

**Definition:** Indicate the ascending aortic atheroma mobility as measured by intraoperative transesophageal echocardiography.

**Intent/Clarification:**

Indicate if there was atheroma mobility within the ascending aorta. Time frame is after OR Entry time prior to incision, but after induction.

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**EQ. #:** 7560

**Long Name:** Aortic Arch Visualized

**Short Name:** AoArcVis

**Definition:** Indicate whether the aortic arch was visualized.

**Intent/Clarification:**

Indicate if an intraoperative TEE was performed that assessed the aortic arch. The aortic arch is normally located between the innominate artery and left subclavian artery. Time frame is after OR Entry time prior to incision, but after induction.

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**SEQ. #:** 7565

**Long Name:** Maximal Aortic Arch Atheroma Thickness

**Short Name:** MxArcAth

**Definition:** Indicate the maximal aortic arch atherosclerotic thickness as measured by intraoperative transesophageal echocardiography.

Indicate maximal thickness of aortic arch plaque in millimeters as determined by intraoperative transesophageal echocardiography. If only intimal thickening and no plaque put numeric value of zero.

**Intent/Clarification:**

Time frame is after OR Entry time prior to incision, but after induction.

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**SEQ. #: 7570**

**Long Name:** Aortic Arch Atheroma Mobility

**Short Name:** ArcAthMo

**Definition:** Indicate the aortic arch atheroma mobility as measured by pre-CPB intraoperative transesophageal echocardiography.

**Intent/Clarification:**

Indicate if aortic arch atheroma mobility was noted on the intraoperative TEE. Time frame is after OR Entry time prior to incision, but after induction.

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**SEQ. #: 7575**

**Long Name:** Cardiopulmonary Bypass Used

**Short Name:** CPBUsed

**Definition:** Indicate whether cardiopulmonary bypass was used.

**Intent/Clarification:**

Indicate if the patient was placed on cardiopulmonary bypass for any portion of the procedure.

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**SEQ. #: 7580**

**Long Name:** Retrograde Autologous Priming of CPB Circuit

**Short Name:** RetrAutolPrim

**Definition:** Indicate whether retrograde autologous priming was used by the cardiopulmonary perfusion team prior to the onset of cardiopulmonary bypass.

Retrograde autologous priming is technique used by cardiopulmonary perfusionists to minimize hemodilution and hypotension during onset of cardiopulmonary bypass.

**Intent/Clarification:**

Indicate if retrograde autologous priming was used by Perfusion. This information can usually be obtained in the perfusion record.

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**SEQ. #: 7585**

**Long Name:** Total Fluids Crystalloid Administered by Perfusion Team

**Short Name:** TotCrystPerf

**Definition:** Indicate the total volume of intravenous crystalloid fluids administered by cardiopulmonary perfusion team. The data should be record in milliliters. Enter zero if fluid crystalloid not used by perfusion team

There is continuing controversy as to the risks and benefits of liberal or restrictive intravenous fluid regimens. Record the total of all crystalloid intravenous fluids given by the cardiopulmonary perfusion team. Do not record any blood products in this data field.

**Intent/Clarification:**

Record the entire amount of crystalloid fluids administered intravenously by the perfusion team as recorded on the perfusion record. Do not include amount given by anesthesia, this is captured in SEQ. #7450. If input and output amounts are listed, record the input amount.

December 2017: Indicate the adjusted crystalloid prime volume, which is estimated by subtracting the volume of the retrograde autologous prime from the volume of the total crystalloid prime, administered to the patient by cardiopulmonary perfusion team. The data should be recorded in milliliters.

Record the amount of adjusted crystalloid prime fluid given by the perfusion team. The amount of adjusted crystalloid prime is routinely indicated on the perfusion record. If it is not indicated on the perfusion record, but total crystalloid prime and the volume of retrograde autologous prime are indicated on the perfusion record, the volume of the adjusted crystalloid prime can be derived by subtracting the volume of the retrograde autologous prime from the volume of the total crystalloid prime.

Common crystalloid fluids include 0.9% NaCl, Lactated Ringers, and D5 ½-0.9% NaCl.

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**SEQ. #: 7590**

**Long Name:** Total Synthetic Colloid Administered by Perfusion Team

**Short Name:** TotColloidPerf

**Definition:** Indicate the total volume of intravenous synthetic colloid fluids (of any concentration) administered by the cardiopulmonary perfusion team. The data should be recorded in milliliters. Enter zero if synthetic colloid not administered by perfusion team.

There is continuing controversy as to the risks and benefits of liberal or restrictive intravenous fluid regimens. Record the total of all synthetic colloid intravenous fluids given by the cardiopulmonary perfusion team. Synthetic colloids of all concentrations and substitution ratios should be included, Do not record any blood products in this data field.

**Intent/Clarification:**

Record the entire amount of colloid fluids administered intravenously by the perfusion team as recorded on the perfusion record. Do not include amount given by anesthesia, this is captured in SEQ. #7455. If input and output amounts are listed, record the input amount.

December 2017: Indicate the total volume of synthetic colloid fluids (of any concentration) administered by the cardiopulmonary perfusion team to the **cardiopulmonary bypass circuit**.

Common colloid fluids used in the OR are Hespan and Voluven.

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**SEQ. #: 7595**

**Long Name:** Total Albumin Administered by Perfusion Team

**Short Name:** TotAlbumPerf

**Definition:** Indicate the total volume of intravenous human serum albumin fluids (of any concentration) administered by the cardiopulmonary perfusion team. The data should be recorded in milliliters. Enter zero if albumin not administered by perfusion team.

There is continuing controversy as to the risks and benefits of liberal or restrictive intravenous fluid regimens. Record the total of all human serum albumin intravenous fluids given by the cardiopulmonary perfusion team. Albumin-containing fluids of all concentrations should be included. Do not record any blood products in this data field.

**Intent/Clarification:**

Record the entire amount of albumin administered intravenously by the perfusion team. Do not include amount given by anesthesia, this is captured in SEQ. #7460.

December 2017: Record the entire amount of albumin administered to the **cardiopulmonary bypass circuit** by the perfusion team. Do not include amount given by anesthesia, this is captured in SEQ. # 7460.

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**SEQ. #: 7600**

**Long Name:** Hemofiltration Volume Removed by Perfusion Team **Short Name:** HemofilPerf

**Definition:** Indicate the total volume of ultrafiltrate removed by the cardiopulmonary perfusion team during cardiopulmonary bypass and during modified ultra-hemofiltration post-CPB. Record the data in milliliters.

Hemofiltration is used to concentrate the red blood cells and plasma proteins in the circulation during and immediately following CPB.

**Intent/Clarification:**

Indicate the total volume of fluid removed by hemofiltration intraoperatively after the initiation of the initial cardiopulmonary bypass as record on the perfusion record. Record amount in millimeters. Time frame is at the start of the initial cardiopulmonary bypass to admission to the ICU.

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**SEQ. #: 7605**

**Long Name:** Inotropes used to wean from CPB

**Short Name:** InotropWeanCPB

**Definition:** Indicate the usage of inotropic drug infusions to facilitate weaning from cardiopulmonary bypass. For this data field, any drug infusion with inotropic properties, including catecholamines, phosphodiesterase inhibitors, and calcium sensitizers, should be recorded.

Inotropic drugs infusions are used routinely or as required in many cardiac surgical patients during the process of weaning from CPB. Record all usage of drugs with positive inotropic effect, including epinephrine, norepinephrine, dopamine, dobutamine, levosimendan, and milrinone.

**Intent/Clarification:**

Indicate if inotropes were used to facilitate the weaning process from cardiopulmonary bypass. Select "Yes" if any drug with inotropic property was administered during the weaning process.

Inotropic drugs increase the pumping effect of the heart muscle, making the heart pump stronger. Common inotropic drugs include epinephrine, norepinephrine, dopamine, dobutamine, levosimendan, and milrinone. This also includes drugs with inotropic properties such as catecholamines, phosphodiesterase inhibitors, and calcium sensitizers.

If timing is unclear, obtain clarification regarding timing of the weaning process from the Cardiothoracic Anesthesiology team at your facility.

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**SEQ. #: 7610**

**Long Name:** Vasopressors used to wean from CPB

**Short Name:** VasopWeanCPB

**Definition:** Indicate the usage of vasoconstrictive drugs to facilitate weaning from cardiopulmonary bypass. For this data field, any drug infusion at a dosage range with clinically vasoconstrictive properties, including catecholamines and pure vasoconstrictors, should be recorded.

Low systemic vascular resistance (a.k.a. vasoplegia) is a common condition during cardiopulmonary bypass that may be related to preoperative vasodilating drugs or certain antiarrhythmic drugs. Include purely vasoconstrictive drugs. Also record usage of drugs with inotropic effects that have vasoconstrictive properties in higher doses, such as dopamine and epinephrine.

**Intent/Clarification:**

Indicate if vasopressors were used to facilitate the weaning process from cardiopulmonary bypass. Select "Yes" for any drug with vasoconstrictive property that was administered, this includes inotropic drugs (such as epinephrine and dopamine) that can be dosed at vasoconstrictive levels or pure vasoconstrictors such as

vasopressin or phenylephrine. Vasoconstrictive drugs constrict the blood vessels raising blood pressure.

Common vasoconstrictor drugs include dopamine, epinephrine, neosynephrine/phenylephrine, norepinephrine (Levophed) and vasopressin.

If timing is unclear, obtain clarification regarding timing of the weaning process from the Cardiothoracic Anesthesiology team at your facility.

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**SEQ. #: 7615**

**Long Name:** Intraoperative Post-procedure TEE Performed

**Short Name:** IntraOpPostTEE

**Definition:** Indicate whether intraoperative TEE was performed post-procedure.

**Intent/Clarification:**

Indicate if a transesophageal echocardiogram was performed post-procedure intraoperatively. Time frame is after weaning from cardiopulmonary bypass to OR Exit time

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**SEQ. #: 7620**

**Long Name:** Systolic Anterior Motion of Mitral Valve

**Short Name:** PostSAM

**Definition:** Indicate the presence of systolic anterior motion (SAM) of the mitral valve as determined by intraoperative transesophageal echocardiography prior to chest closure.

Choose Yes for any SAM between weaning from CPB and chest closure.

**Intent/Clarification:**

If a post-procedure TEE was performed, indicate if systolic anterior motion of the mitral valve was noted. Choose "Not assessed" if a post-procedure TEE was performed but systolic anterior motion of the mitral valve was not documented. Time frame is after weaning from cardiopulmonary bypass to OR Exit time.

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**SEQ. #: 7625**

**Long Name:** Return to CPB for Echo-Related Diagnosis

**Short Name:** RetCPBEch

**Definition:** Indicate whether surgical revision was performed based on post procedure intraoperative TEE.

**Intent/Clarification:**

Indicate if the patient had to be placed back on cardiopulmonary bypass for a surgical revisit as a result from findings on the post-procedure TEE prior to OR Exit time.

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**SEQ. #:** 7630

**Long Name:** Post-Procedure Left Ventricular Ejection Fraction Measured

**Short Name:** PostLVEFMeas

**Definition:** Indicate whether left ventricular ejection fraction was measured post-procedure by intraoperative transesophageal echocardiography.

**Intent/Clarification:**

Time frame for TEE is the closest time before OR Exit time after final discontinuation of cardiopulmonary bypass time. **Indicate if an ejection fraction was obtained by TEE by the anesthesiologist post-procedure.**

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**SEQ. #:** 7635

**Long Name:** Post-Procedure Left Ventricular Ejection Fraction Estimate **Short Name:** PostLVEF

**Definition:** Indicate the post-procedure estimate of left ventricular ejection fraction determined by intraoperative transesophageal echocardiography.

Enter a range of 1-99. If a percentage range is reported, report a whole number using the “mean” (i.e., 50-55% is reported as 53%). If a qualitative description is reported, code the mean value for that range; i.e., normal (50-70%) is coded as 60%.

- Hyperdynamic: >70%
- Normal: 50%–70% (midpoint 60%)
- Mild dysfunction: 40%–49% (midpoint 45%)
- Moderate dysfunction: 30%–39% (midpoint 35%)
- Severe dysfunction: <30%

Note: If no diagnostic report is in the medical record, a value documented in the medical record is acceptable.

Use the defining terms/percentages listed above to remain consistent with Adult Cardiac Database reporting.

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**SEQ. #:** 7640

**Long Name:** Post-Procedure Right Ventricular Function

**Short Name:** PostRVFx

**Definition:** Indicate the post-procedure estimate of RV function determined by intraoperative transesophageal echocardiography.



**Intent/Clarification:**

Choices are normal, mild dysfunction, moderate dysfunction, severe dysfunction, and not assessed. If a range is reported (i.e. mild-moderate) choose the highest range reported. Choose "unknown" if a post-procedure TEE is performed, but right ventricular dysfunction is not documented. Time frame for TEE is the closest time before OR Exit time after final discontinuation of bypass time.

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**SEQ. #: 7641**

**Long Name:** Intraoperative Cardiac Arrest Related To Anesthesia Care

**Short Name:** IntraCardArr

**Definition:** Indicate whether there was a cardiac arrest related to anesthesia care

**Intent/Clarification:**

Indicate if the patient's heart arrested post-procedure, intraoperatively. Time frame is from induction to ICU arrival time.

**FAQ December 2017:** Indicate if the patient's heart arrested during the period from the induction of general anesthesia to ICU admission. Time frame is from induction of general anesthesia until the initiation of cardiopulmonary bypass and/or after weaning from cardiopulmonary bypass to ICU admission.

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**SEQ. #: 7645**

**Long Name:** Patient Died Within The OR

**Short Name:** ORDeath

**Definition:** Indicate whether the patient died within the OR.

**Intent/Clarification:**

Time frame is from OR Entry to OR Exit time.

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**SEQ. #: 7650**

**Long Name:** Core Temperature Upon Entry To ICU/PACU Measured

**Short Name:** PostTempMeas

**Definition:** Indicate whether the core temperature was measured upon initial arrival in the ICU/PACU following cardiac surgery.

**Intent/Clarification:**

Indicate if the core temperature was measured upon arrival to ICU/PACU immediately following cardiac surgery. Core temperature locations include: bladder, rectum, pulmonary artery, esophageal, nasopharyngeal, and tympanic.

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**SEQ. #:** 7655

**Long Name:** Core Temperature Upon Entry To ICU/PACU

**Short Name:** PostCoreTemp

**Definition:** Indicate the core temperature in degrees Centigrade upon initial arrival in the ICU/PACU following cardiac surgery.

The intent is to capture the initial documented core temperature in the intensive care unit, as per the normal routine for core temperature monitoring in the ICU/PACU.

**Intent/Clarification:**

Document the initial CORE temperature in degrees Celsius upon arrival to the ICU/PACU following cardiac surgery.

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**SEQ. #:** 7660

**Long Name:** Postoperative INR Measured

**Short Name:** PostINRMeas

**Definition:** Indicate whether the International normalized ratio (INR) was measured upon initial arrival in the ICU/PACU following cardiac surgery.

**Intent/Clarification:**

Document if an initial International Normalized Ratio (INR) was measured upon arrival to the ICU/PACU following cardiac surgery. This lab is usually part of the Prothrombin test (PT/INR).

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**SEQ. #:** 7665

**Long Name:** First Postoperative INR

**Short Name:** PostINR

**Definition:** Indicate the first international normalized ratio (INR) value upon initial arrival in the ICU/PACU following cardiac surgery.

INR is the standard unit used to report the result of a prothrombin (PT) test. The hospital laboratory report should be accessed first when coding this variable. If this is unavailable, then additional source documents may be referenced for lab results.

**Intent/Clarification:**

Record the first INR value upon arrival to ICU/PACU following cardiac surgery.

**FAQ September 2017:** What is the timeframe for this component? I have lab results that are 1 hour and 45 min from surgery. Is this too long of a timeframe?

Answer: Laboratory values should be drawn within one hour of arrival in the ICU/PACU.

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**SEQ. #:** 7670

**Long Name:** WBC Upon Entry To ICU/PACU Measured

**Short Name:** PostWBCMeas

**Definition:** Indicate whether the white blood cell count was measured upon initial arrival in the ICU/PACU following cardiac surgery.

**Intent/Clarification:**

Document if an initial white blood cell count (WBC) was measure upon arrival to the ICU/PACU. This is usually part of the complete blood count (CBC) test.

**FAQ September 2017:** What is the timeframe for this component? I have lab results that are 1 hour and 45 min from surgery. Is this too long of a timeframe?

Answer: Laboratory values should be drawn within one hour of arrival in the ICU/PACU.

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**SEQ. #:** 7675

**Long Name:** WBC Upon Entry To ICU/PACU

**Short Name:** PostWBC

**Definition:** Indicate the first white blood cell count upon initial arrival in the ICU/PACU following cardiac surgery.

White Blood Cells (leukocytes) are part of the body's immune defense and are often elevated in the presence of infection. The hospital laboratory report should be accessed first when coding this variable. If this is unavailable, then additional source documents may be referenced for lab results.

**Intent/Clarification:**

Record the first WBC value upon admission to ICU/PACU following cardiac surgery.

**FAQ September 2017:** What is the timeframe for this component? I have lab results that are 1 hour and 45 min from surgery. Is this too long of a timeframe?

Answer: Laboratory values should be drawn within one hour of arrival in the ICU/PACU.

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**SEQ. #:** 7680

**Long Name:** Platelets Upon Entry To ICU/PACU Measured

**Short Name:** PostPltMeas

**Definition:** Indicate whether the platelet count was measured upon initial arrival in the ICU/PACU following cardiac surgery.

**Intent/Clarification:**

Document if an initial platelet count (PLT) was measure upon arrival to the ICU/PACU. This is usually part of the complete blood count (CBC) test.

**FAQ September 2017:** What is the timeframe for this component? I have lab results that are 1 hour and 45 min from surgery. Is this too long of a timeframe?

Answer: Laboratory values should be drawn within one hour of arrival in the ICU/PACU.

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**SEQ. #: 7685**

**Long Name:** Platelets Upon Entry To ICU/PACU

**Short Name:** PostPlt

**Definition:** Indicate the first platelet count upon initial arrival in the ICU/PACU following cardiac surgery.

Platelets are a blood component instrumental in clot formation. The hospital laboratory report should be accessed first when coding this variable. If this is unavailable, then additional source documents may be referenced for lab results.

**Intent/Clarification:**

Record the first platelet count upon admission to ICU/PACU following cardiac surgery.

**FAQ September 2017:** What is the timeframe for this component? I have lab results that are 1 hour and 45 min from surgery. Is this too long of a timeframe?

Answer: Laboratory values should be drawn within one hour of arrival in the ICU/PACU.

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**SEQ. #: 7690**

**Long Name:** Hematocrit Upon Entry To ICU/PACU Measured

**Short Name:** PostHCTMeas

**Definition:** Indicate whether the hematocrit value was measured upon initial arrival in the ICU/PACU following cardiac surgery.

**Intent/Clarification:**

Document if an initial hematocrit level (HCT) was measure upon arrival to the ICU/PACU. This is usually part of the complete blood count (CBC) test or hemoglobin/hematocrit (H/H) test.

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**SEQ. #:** 7695

**Long Name:** Hematocrit Upon Entry To ICU/PACU

**Short Name:** PostHCT

**Definition:** Indicate the first hematocrit value upon initial arrival in the ICU/PACU following cardiac surgery.

Hct, Hematocrit, is the proportion of red cells in the blood. The hospital laboratory report should be accessed first when coding this variable. If this is unavailable, then additional source documents may be referenced for lab results.

**Intent/Clarification:**

Record the first hematocrit (Hct) level upon admission to ICU/PACU following cardiac surgery.

**FAQ September 2017:** Is there a timeframe for the results for this component? I have lab results that are 1 hour and 45 min from surgery. Is this too long of a timeframe?

Answer: Laboratory values should be drawn within one hour of arrival in the ICU/PACU.

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**SEQ. #:** 7696

**Long Name:** Fibrinogen Upon Entry To ICU/PACU Measured

**Short Name:** PostFibrinMeas

**Definition:** Indicate whether fibrinogen was measured upon entry to ICU/PACU

**Intent/Clarification:**

Document if an initial fibrinogen level was measured upon arrival to the ICU/PACU.

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**SEQ. #:** 7697

**Long Name:** Fibrinogen Upon Entry To ICU/PACU

**Short Name:** PostFibrin

**Definition:** Indicate the fibrinogen level upon entry to ICU/PACU

**Intent/Clarification:**

Record the first fibrinogen level upon admission to the ICU/PACU following cardiac surgery.

**FAQ September 2017:** Is there a timeframe for the results for this component? I have lab results that are 1 hour and 45 min from surgery. Is this too long of a timeframe?

Answer: Laboratory values should be drawn within one hour of arrival in the ICU/PACU.

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**SEQ. #:** 7700

**Long Name:** Lactate Upon Entry To ICU/PACU Measured

**Short Name:** PostLactMeas

**Definition:** Indicate whether the lactate value was measured upon initial arrival in the ICU/PACU following cardiac surgery.

**Intent/Clarification:**

Document if an initial Lactate level (Lactic Acid) was measure upon arrival to the ICU/PACU.

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**SEQ. #:** 7705

**Long Name:** Lactate Upon Entry To ICU/PACU

**Short Name:** PostLact

**Definition:** Indicate the value of lactate in ~~mg/dl~~ mmol/L upon initial arrival in the ICU/PACU following cardiac surgery. Do not record missing data as a zero value.

Serum lactate is a marker for the duration and severity of malperfusion during critical states. The magnitude of serum lactate has been associated with mortality and adverse outcomes.

**Intent/Clarification:**

Record the first lactate (lactic acid) level upon admission to the ICU/PACU following cardiac surgery.

**FAQ September 2017:** Is there a timeframe for the results for this component? I have lab results that are 1 hour and 45 min from surgery. Is this too long of a timeframe?

Answer: Laboratory values should be drawn within one hour of arrival in the ICU/PACU.

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**SEQ. #:** 7710

**Long Name:** Postop Infusion: Dexmedetomidine

**Short Name:** DexPost

**Definition:** Indicate the use of dexmedetomidine infusion after surgery.

Any use of dexmedetomidine infusion during the postoperative period, after transport to the ICU/PACU.

**Intent/Clarification:**

Indicate if dexmedetomidine was administered after admission to the ICU/PACU following cardiac surgery. Time frame is from OR Exit to Discharge.

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**SEQ. #:** 7715

**Long Name:** Postop Infusion: Propofol

**Short Name:** PropPost

**Definition:** Indicate the use of Propofol infusion after surgery.

Any use of a Propofol infusion during the postoperative period, after transport to the ICU/PACU.

**Intent/Clarification:**

Indicate if the patient received a Propofol infusion after admission to the ICU/PACU following cardiac surgery. Time frame is from OR Exit to Discharge.

**This does not include bolus doses.**

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**SEQ. #:** 7720

**Long Name:** Postoperative Delirium

**Short Name:** PostopDel

**Definition:** Indicate whether the patient experienced postoperative delirium.

Postoperative altered mental state such as loss of memory and cognitive ability, personality changes, inability to concentrate, or lethargy, without actual evidence of stroke or coma.

**Intent/Clarification:**

Indicate if the patient experienced postoperative delirium as evidenced by change in mental status (including memory loss, personality changes, lethargy, and changes in cognitive ability) without evidence of a stroke or coma. Refer to physician documentation for diagnosis. Time frame is from OR Exit to Discharge.

Definition of Post-operative Delirium

Post-operative delirium is a state of global brain dysfunction occurring after a surgical procedure, the diagnosis of which is made by establishing:

- An acute disturbance in level of arousal (may be thargy-stupor or hypervigilance-agitation) and an acute disturbance in cognition.
  - Identifying these disturbances as representing an acute change in the patient's baseline level of arousal and cognition requires the establishment of baseline functioning in these areas from corroborative sources including family, friends, and caregivers. *Note:* Even patients with poor baseline levels of cognitive function (i.e. pre-existing Dementia) can develop superimposed delirium.

- The hallmark cognitive changes associated with delirium is a disturbance in attention (reduced ability to direct, focus, sustain, or shift attention) and awareness (reduced orientation to environment).
- These changes must develop over a short period of time (usually hours to a few days).
- These changes in cognition and level of arousal must demonstrate a pattern of fluctuation in severity during course of the day (i.e. there can be intervening periods of lucidity).
- Additional cognitive disturbances which may manifest during an episode of Delirium:
  - Memory deficits
  - Disorientation
  - Language
  - Visuospatial ability
- Additional behavioral disturbances which may manifest during an episode of delirium:
  - Changes in sleep-wake cycle
  - Hostility
  - Verbal and physical aggression
  - Unintentional self-harm (i.e. self-extubation, removal of catheters, falling out of bed)
  - Uncooperativeness with care
  - Euphoria
  - Hallucinations (visual or auditory)
  - Delusions (typically paranoid)
  - Disorganized thinking

**FAQ November 2018:** Symptoms of delirium are common in the first few hours after extubation in the immediate post op phase, is there a minimum time frame (i.e.: 24 hours) that the symptoms must persist after OR exit to code delirium?

Answers: Sites need physician documentation to code yes for post op delirium.

**FAQ November 2018:** Should post-operative delirium tremens from alcohol withdrawal be coded as yes in this sequence? Or, is this to represent delirium from other etiologies?

Answer: Yes, code delirium for patients with delirium tremens.

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**SEQ. #: 7725**

**Long Name:** Heparin-Induced Thrombocytopenia (Postop Dx)

**Short Name:** PostHITAnti

**Definition:** Indicate whether Heparin Induced Thrombocytopenia, HIT, is confirmed by antibody testing.

Heparin induced thrombocytopenia (HIT) can be defined as any clinical event best explained by platelet factor 4 (PF4)/heparin-reactive antibodies ('HIT antibodies') in a



patient who is receiving, or who has recently received heparin. Thrombocytopenia is the most common 'event' in HIT and occurs in at least 90% of patients, depending upon the definition of thrombocytopenia. A very small proportion of patients with HIT develop thrombosis. Alternative (nonheparin) anticoagulant therapy reduces the risk of subsequent thrombosis.

**Intent/Clarification:**

Indicate if the patient experienced heparin induced thrombocytopenia (HIT) postoperatively. This is evidenced by the presence of HIT antibodies found via specific laboratory test. Consult with your laboratory to determine the test that your facility uses and the number of positive test used to diagnose a patient. Depending upon the test, some facilities require three positive results before confirming the diagnosis. This is sometimes referred to as being "HITA positive" in documentation. Time frame is from OR Exit to Discharge.

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**SEQ. #: 7730**

**Long Name:** Pain Score POD #3

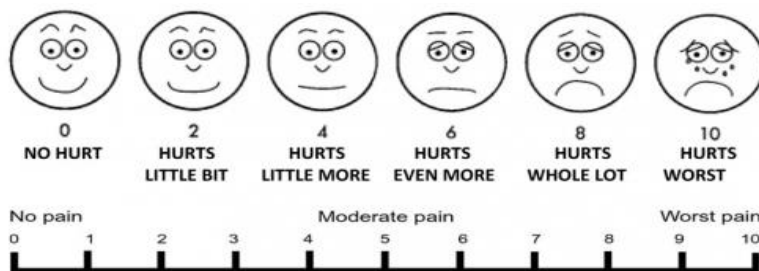
**Short Name:** PainScorePOD3

**Definition:** Indicate the pain score on postoperative day #3 (Integer Rating Scale).

Highest pain score on postoperative day #3 on the 0-10 integer scale, if recorded, or record score as missing.

**Intent/Clarification:**

Record the highest pain score using the integer scale from 0-10 on postoperative day 3. With a score of "0" indicating no pain and a score of "10" indicating the worse possible pain ever imagined. If the patient was evaluated on a non-numerical scale use the corresponding answer related to the 1-10 scale.



**FAQ Sept 2019** - Should the time frame on this field begin at midnight on POD 3, or at 72 hours from OR exit?

Answer - The timeframe is counted by days, not hours so POD 0 is the day of surgery, POD 1 is the day after surgery, etc...

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**SEQ. #: 7735**

**Long Name:** Pain Score Hospital Discharge

**Short Name:** PainScoreDisch

**Definition:** Indicate the pain score on day of discharge (Integer Rating Scale).

Highest pain score recorded on day of discharge on the 0-10 integer scale, if recorded, or record score as missing.

**Intent/Clarification:**

Record the highest pain score using the integer scale from 0-10 on the day of discharge from the hospital inpatient stay. With a score of "0" indicating no pain and a score of "10" indicating the worse possible pain ever imagined. If the patient was evaluated on a non-numerical scale use the corresponding answer related to the 1-10 scale.

