

**NEW YORK STATE DEPARTMENT OF HEALTH
OFFICE OF QUALITY AND PATIENT SAFETY
CARDIAC SERVICES PROGRAM**

**2023 Data Collection:
12/1/2022 – 11/30/2023 Discharges**

**Cardiac Surgery Report, Adult
(Age 18 and Over)**

**Instructions and Data Element
Definitions
Form DOH-2254a**

CARDIAC SERVICES PROGRAM:

**One University Place
George Education Center 2nd Floor, Room 224
Rensselaer, NY 12144-3455
Phone: (518) 402-1016
Email: CardiacServicesProgram@health.ny.gov**

Table of Contents

Revision Highlights and Coding Clarifications	8
CSRS Data Reporting Policies	10
Hospice Policy	10
Refractory Cardiogenic Shock Cases	10
COVID-19 Exclusion	10
Physician Assignment	11
Alignment with STS Data Elements	11
Reporting Schedule	11
Streamlined Data Requirements for Selected Procedures	11
Technical Data Specifications	11
When to Complete an Adult CSRS Form	12
Guidance on Selecting Appropriate Procedure Codes	14
ASD Closure (120)	14
Pericardiectomy (402)	14
Valve Repair and Replacement	14
PCI in Same Setting as CABG or Valve Surgery (711)	15
Radiofrequency or Operative Ablation (770-772)	15
Aorta Surgery	15
TEVAR (Performed at the Same Time as Reportable Cardiac Procedure) (813)	16
Removal of Intracardiac Neoplasm (904)	16
Repair of Traumatic Cardiac or Vascular Injury (907)	16
Removal of Pacemaker or AICD and/or Leads or Wires (908)	16
Attempted / Aborted Procedures	17
Item-By-Item Instructions	18
I. Patient Information	18
PFI Number	18
Sequence Number	18
Patient Last Name	18
Patient First Name	18
Medical Record Number	18
Social Security Number	18
Date of Birth	19
Sex	19
Ethnicity	19
Race	20
Race Specify	20
Detailed AAPI Code	20
AAPI Other Specify	20
ZIP Code	21
State or Country of Residence	21
Hospital Admission Date	21
Primary Payer	22
Medicaid	22
Preferred Language	22
PFI of Transferring Hospital	23

II. Procedural Information	24
Hospital That Performed Diagnostic Cath	24
Date of Surgery	24
Prior Surgery This Admission	24
Date of Prior Surgery This Admission	25
Cardiac Procedures This OR Visit	25
Congenital Diagnosis	25
Primary Physician Performing Operation	26
Anesthesiologist (1)	26
Anesthesiologist (2)	27
Interventional Cardiologist	27
CABG Information.....	27
Number of Distal Anastomoses with Venous Conduits	27
Total Number of Distal Anastomoses with Arterial Conduits	28
Number of Distal Anastomoses using IMA Conduits	28
Number of Distal Anastomoses using Radial Artery Conduits	28
Number of Distal Anastomoses using Other Arterial Conduits	28
Internal Mammary Artery Used as Conduit	29
Primary Reason IMA Not Used	29
LAD Bypassed this OR Visit	29
RCA Bypassed this OR Visit	29
LCX Bypassed this OR Visit	30
Number of Radial Arteries Used for Grafts.....	30
Minimally Invasive.....	30
Converted to Standard Incision.....	30
Converted from Off Pump to On Pump	30
Entire Procedure Off Pump.....	30
Reason PCI Performed During this Procedure.....	31
Aorta Surgery Information.....	31
Concomitant Arch Procedure.....	31
Underlying Condition	31
Immediate Reason for Aorta Surgery (check all that apply)	32
IIa. Peri-Operative Information	33
Skin Incision Time.....	33
Skin Closure Time	33
Pre-Op Beta Blocker Use.....	33
Extubation at 24 Hours – Report Only for CABG Patients.....	34
Post-Op Beta Blocker Use – Report Only for CABG Patients	34
Intra-Operative Blood Transfusion	34
Glucose Control Protocol.....	35
III. Pre-Op Surgical Risk Factors	36
Surgical Priority	36
Height	36
Weight	36
LV End Systolic Dimension.....	36
LV End Diastolic Dimension.....	37
Ejection Fraction.....	37
Ejection Fraction Measure	37
Anginal Classification within 2 Weeks	38
Primary Coronary Symptom for Surgery	39
Creatinine	40

COVID-19.....	40
Vessels Diseased.....	41
LMT.....	41
Proximal LAD.....	42
Mid/Distal LAD.....	42
RCA.....	42
LCX.....	42
Left Main - Minimal Luminal Area.....	43
Proximal LAD - Minimal Luminal Area.....	43
Mid/Distal LAD - Minimal Luminal Area.....	43
RCA - Minimal Luminal Area.....	43
LCX - Minimal Luminal Area.....	43
Left Main – Fractional Flow Reserve.....	43
Proximal LAD - Fractional Flow Reserve.....	44
Mid/Distal LAD - Fractional Flow Reserve.....	44
RCA - Fractional Flow Reserve.....	44
LCX - Fractional Flow Reserve.....	44
MLA Measurement Type.....	44
Flow Measurement Type.....	45
Valve Disease.....	45
Aortic Valve Stenosis.....	46
Mitral Valve Stenosis.....	46
Tricuspid Valve Stenosis.....	46
Aortic Valve Incompetence.....	47
Mitral Valve Incompetence.....	47
Tricuspid Valve Incompetence.....	47
Mitral Regurgitation Type - Secondary.....	48
Mitral Regurgitation Type - Primary.....	48
Etiology for Primary MR.....	48
Leaflet Involvement for Primary MR.....	49
Valve Symptoms.....	49
Five-Meter Walk Test – Result 1.....	49
Five-Meter Walk Test – Result 2.....	50
Five-Meter Walk Test – Result 3.....	50
Pre-Op Surgical Risk Factors: None.....	50
Previous CABG – Patent Grafts.....	50
Previous CABG – No Patent Grafts.....	51
Previous Valve Surgery/Intervention.....	51
Any Other Previous Cardiac Surgery.....	51
Previous MI < 6 hours.....	52
Previous MI 6 - 23 hours.....	52
Previous MI Days.....	52
Neurological Event.....	53
Arterial Imaging Test.....	53
Cervical or Cerebrovascular Procedure.....	53
Cardiogenic Shock.....	54
Refractory Cardiogenic Shock.....	54
Peripheral Arterial Disease.....	55
Heart Failure, Current.....	56
Heart Failure, Past.....	56
Malignant Ventricular Arrhythmia.....	57
Chronic Lung Disease.....	58
Extensive Aortic Atherosclerosis.....	59

Diabetes	59
Diabetes Therapy	60
Hepatic Failure	60
Renal Failure, Dialysis	61
Previous PCI, This Episode of Care.....	61
PCI Before This Episode of Care	61
Stent Thrombosis.....	61
Any Previous Organ Transplant.....	62
Heart Transplant Candidate.....	62
Active Endocarditis	62
Immediate Surgery after Catheter Based Procedure.....	63
IV. Major Events Following Operation	64
Major Events Following Operation: None.....	64
Stroke	64
Post-Op MI	64
Deep Sternal Wound Infection	65
Bleeding Requiring Reoperation	65
Sepsis.....	66
G-I Event	66
Renal Failure	67
Prolonged Ventilator Dependence	67
Unplanned Cardiac Reoperation or Interventional Procedure	68
Bleeding at Primary Access Site	68
Bleeding at Secondary Access Site	69
V. Discharge Information.....	70
Discharge Status	70
Discharge to Other Location - Specify.....	70
Hospital Discharge Date	71
30 Day Status	71
VI. Person Completing Report.....	72
Person Completing Report - Optional	72
Referring Physician - Optional	72
VII. Stages of Shock Classification	73
Pre-Op Biochemical Markers	73
Lactate in mmol/L	73
Lactate Not Documented/Unknown	73
Lactate – Date and Time Drawn	73
Lactate – Date and Time Not Documented/Unknown	73
ALT (Alanine Transaminase) in iU/L	73
ALT Not Documented/Unknown.....	74
ALT – Date and Time.....	74
ALT – Date and Time Not Documented/Unknown.....	74
Arterial pH	74
Arterial pH Not Documented/Unknown	74
Arterial pH – Date and Time	74
Arterial pH – Date and Time Not Documented/Unknown	74
Blood Pressure Before Case Start.....	75
Systolic Blood Pressure, Last Before Start	75
Diastolic Blood Pressure, Last Before Start	75

Blood Pressure, Last Before Start Not Documented/Unknown	75
Mean Arterial Pressure, Last Before Start.....	75
Mean Arterial Pressure, Last Before Start Not Documented/ Unknown.....	75
Systolic Blood Pressure, Lowest in 1 Hour	75
Diastolic Blood Pressure, Lowest in 1 Hour	76
Blood Pressure, Lowest in 1 Hour Not Documented/Unknown	76
Mean Arterial Pressure, Lowest in 1 Hour.....	76
Mean Arterial Pressure, Lowest in 1 Hour Not Documented/ Unknown.....	76
Vasoactive Medications	76
Vasoactive Drugs Used	76
Dobutamine, Dopamine, Epinephrine, Levosimendan, Milrinone, Norepinephrine, Phenylephrine, Vasopressin	77
Other Vasoactive Medication	77
Other Vasoactive Medication Specify.....	77
Mechanical Circulatory Support / Ventricular Assist Device	77
Mechanical Support Used.....	77
IABP	77
Tandem Heart.....	78
Impella 2.5.....	78
Impella CP	78
Impella 5.0/5.5	78
VA ECMO.....	78
Percutaneous RVAD.....	78
Temporary Surgical VAD	78
Implanted Surgical VAD.....	79
Other Mechanical Support	79
Other Mechanical Support Specify.....	79
Invasive Hemodynamic Assessment / Pulmonary Artery Catheterization.....	79
Invasive Hemodynamic Assessment.....	79
Right Atrial Pressure (mean).....	79
Right Atrial Pressure Not Documented/Unknown.....	80
Right Atrial Pressure on Vasoactive Medications.....	80
Right Atrial Pressure on Mechanical Support.....	80
Right Atrial Pressure Recorded at Remote Time	80
Pulmonary Artery Pressure, Systolic.....	80
Pulmonary Artery Pressure, Diastolic.....	80
Pulmonary Artery Pressure Not Documented/Unknown.....	80
Pulmonary Artery Pressure on Vasoactive Medications.....	81
Pulmonary Artery Pressure on Mechanical Support.....	81
Pulmonary Capillary Wedge Pressure (PCWP)	81
Pulmonary Capillary Wedge Pressure Not Documented/Unknown	81
Pulmonary Capillary Wedge Pressure on Vasoactive Medications	81
Pulmonary Capillary Wedge Pressure on Mechanical Support	81
Left Ventricular End Diastolic Pressure.....	81
Left Ventricular End Diastolic Pressure Not Documented/Unknown.....	82
Left Ventricular End Diastolic Pressure on Vasoactive Medications.....	82
Left Ventricular End Diastolic Pressure on Mechanical Support.....	82
Cardiac Index	82
Cardiac Index Not Documented/Unknown	82
Cardiac Index on Vasoactive Medications	82
Cardiac Index on Mechanical Support	82

Attachments

Attachment A: Response Codes for Asian Pacific Islander Groups

Attachment B: Response Codes for Preferred Language

Attachment C: PFI Numbers for Cardiac Diagnostic and Surgical Centers

Attachment D: Congenital and Acquired Cardiac Procedure Codes

Attachment E: Congenital Cardiac Diagnosis Codes

Revision Highlights and Coding Clarifications

Complete data element definitions and coding instructions can be found in the main body of this document. The following changes take effect December 1, 2022.

New Data Collection for Classification of Cardiogenic Shock

Recognizing that cardiogenic shock represents a clinical continuum, and informed by the SCAI Shock Stage Classification, data elements have been added to capture additional information for patients who may be in shock prior to cardiac surgery. These elements include biochemical markers, blood pressures, use of vasoactive medication and mechanical support devices, and invasive hemodynamic assessments. Limited to a subset of patients, these fields will be collected in a separate module appearing on page 3 of the data collection form.

Key Points to know about this change:

1. Cardiogenic Shock and Refractory Cardiogenic Shock will continue to be collected with no changes in the definitions. This will allow historical comparisons and provide a baseline during refinement of the new classification scheme.
2. The new elements will not be used for identifying cases for exclusion at this time. Refractory Cardiogenic Shock as currently defined will continue to exclude cases from publicly reported outcomes analyses.
3. Enhanced data collection for shock patients will be used for:
 - improving risk-adjustment,
 - assessing outcomes for patients in different stages of shock and sharing lessons learned about how these classifications perform when applied to Cardiac Surgery patients in a “real-world” setting,
 - assessing provider or regional variation that may drive policy and/or QI activities.
4. The new data elements are only required for patients with any of the following risk factors: MI < 24 hours, Refractory Cardiogenic Shock, Non-refractory Cardiogenic Shock, Heart Failure - Current (within the past 2 weeks other than elective same-day admission), Emergency or Salvage Surgical Priority.

Enhanced Data Collection for Transcatheter Valve Procedures

Inclusion of Mitral Valve Transcatheter Edge-to-Edge Repair in CSRS

Transcatheter Edge-to-Edge Repair (TEER) of the Mitral Valve (e.g. MitraClip) will now be reported in CSRS. This will facilitate quality improvement activities for the increasingly common procedure and will improve classification of open surgical procedures that occur after a TEER procedure. Procedure code 504 has been added for these procedures.

Revision of “Approach Codes” for Transcatheter Valve Procedures in CSRS

These codes have been updated to better describe the access used for transcatheter valve procedures.

Addition of Major Event for Access Site Bleeding for Transcatheter Valve Procedures

Two new data elements have been added to report major bleeding events associated with transcatheter valve procedures. The elements for Bleeding at Primary Access Site and Bleeding at Secondary Access Site are defined to capture severe bleeding events only.

Additional Procedure Code Variables in CSRS

There is now space to report up-to 7 procedure codes for a single surgical procedure. Although not common, there are instances where very complex cases could not be completely described by the use of 5 procedure codes.

Expanded Categories for Asian/Pacific Islander and Addition of Preferred Language

As required by [recent NYS legislation](#), there are additional response categories for Asian/Pacific Islander groups in the demographic section of the form. There is also a question about the patient's preferred language.

Minor Clarifications

- Time frame for reporting acceptable values has been added to LV End Systolic Pressure and LV End Diastolic Pressure.
- Documentation guidance has been added for Chronic Lung Disease and Stent Thrombosis.
- Pre-Induction Systolic and Diastolic Blood Pressure have been removed to eliminate redundancy with the new shock data collection.

CSRS Data Reporting Policies

Hospice Policy

Beginning with patients discharged on or after January 1, 2003, any patient that is discharged from the hospital after cardiac surgery or PCI to hospice care (inpatient or home with hospice care) and is still alive for 30 days after the discharge from the hospital will be analyzed as a live discharge.

All patients discharged to a hospice or home with hospice care should continue to be reported with Discharge Status – 12: Hospice. If a patient is still alive 30 days after discharge, whether in hospice or not, appropriate supporting documentation should be sent to the Cardiac Services Program. Examples of appropriate documentation include but are not limited to: a dated progress note from the hospice service, evidence of a follow-up doctor's visit more than 30 days after discharge, evidence of subsequent hospital admission more than 30 days after initial discharge, or evidence of death more than 30 days after initial discharge.

It will be the responsibility of the hospital (physician) to send documentation to the Department of Health's Cardiac Services Program to support this change. Upon receipt, review, and verification of the documentation, Cardiac Services Program staff will change the discharge status from dead to alive for purposes of analysis. All documentation must be received before the final volume and mortality for a given year of data is confirmed by the hospital.

Refractory Cardiogenic Shock Cases

Effective January 1, 2015, cases with the risk factor "Refractory Cardiogenic Shock" will be excluded from provider-specific publicly released reports and analyses. Cases with the risk factor "Cardiogenic Shock" will remain in analysis.

This continues the shock exclusion policy which was initiated in 2006 and reflects revised definitions and variable names. All excluded cases must meet the NYS Cardiac Services Program definition of Refractory Cardiogenic Shock and will be subject to medical record documentation review.

All cases will continue to be reported electronically and will be subject to data verification and quality monitoring activities. To ensure that the appropriate cases are identified as "Refractory Cardiogenic Shock" cases, submission of medical record documentation for any case reported with this risk factor will be required. If appropriate documentation is not provided by your center, the risk factor will be removed from the data and the case will be included in analysis. Medical record documentation will also be required for any case reported with the risk factor "Cardiogenic Shock."

It is strongly suggested that all appropriate staff closely review the definitions and documentation requirements for these two risk factors.

COVID-19 Exclusion

Effective for discharges on or after December 1, 2021, cases will be excluded from CSRS analysis and public reporting if the patient had COVID-19 with Acute Respiratory Distress Syndrome (ARDS), with or without intubation required, during the same episode of care as cardiac surgery. Deaths after discharge but within 30-days of the procedure for patients with

COVID-19 with ARDS post-discharge will also be excluded. All cases must still be reported to CSRS.

Physician Assignment

When multiple records exist for the same patient during a hospital admission and two or more surgeons were reported for those operations, the case will be assigned for analysis to the surgeon performing the first surgery. However, the hospital may submit a letter from the CEO or Medical Director requesting that the case be assigned to the surgeon performing the later surgery.

Alignment with STS Data Elements

Some data elements in CSRS have the same definition as data elements collected by the Society of Thoracic Surgeons. Hospitals are encouraged to closely review the data elements and their definitions and response categories to determine if there are opportunities to streamline data abstraction and data entry for data elements that are in common between the two systems. All NYS CSRS data should be reported according to the NYS definitions and reporting requirements.

Reporting Schedule

CSRS data is reported quarterly by discharge date. It is due to the Cardiac Services Program two months after the end of the quarter. The 2023 reporting schedule is as follows.

- Quarter 1: Discharges 12/01/2022 – 02/28/2023 Due: 05/01/2023
- Quarter 2: Discharges 03/01/2023 – 05/31/2023 Due: 08/01/2023
- Quarter 3: Discharges 06/01/2023 – 08/31/2023 Due: 11/01/2023
- Quarter 4: Discharges 09/01/2023 – 11/30/2023 Due: 02/01/2024

Limited extensions to the above deadlines will be granted on a case-by-case basis when warranted by extenuating circumstances. They must be requested in writing prior to the required submission date.

Streamlined Data Requirements for Selected Procedures

CSRS reportable cases that do not include CABG, valve repair or replacement, or surgery on the aorta may now be reported in a streamlined fashion. The only sections of the data collection form required for these cases are:

- I. Patient Information
- II. Procedural Information
- IV. Major Events Following Operation
- V. Discharge Information

Data elements for all other sections may be left blank or filled with 0 (zero, no punctuation). Hospitals may also elect to complete the entire form for these procedures for their own tracking or quality improvement purposes but the non-required fields will not be subject to Cardiac Services Program validation activities.

Technical Data Specifications

This document is supplemented by the 2023 Data Specification document which is available by request (CardiacServicesProgram@health.ny.gov).

When to Complete an Adult CSRS Form

Complete an Adult Cardiac Surgery Reporting System (CSRS) form for every patient age 18 or over on admission undergoing one or more operations on the heart or great vessels, with or without extracorporeal circulation.

Unless otherwise specified, forms should be submitted for reportable cardiac surgery no matter where in the hospital the operation is performed. References to the “operating room” in these instructions can be interpreted to mean “the location where the cardiac procedure is occurring.”

If the patient has more than one cardiac surgery during a single hospital stay, complete a separate form for each reportable cardiac surgery.

Transcatheter valve replacement procedures should be reported to CSRS, wherever the procedure may occur.

Mitral valve transcatheter edge-to-edge repair (TEER), for example MitraClip, is reportable to CSRS wherever the procedure may occur.

Attempted and aborted cardiac surgery, transcatheter valve replacement, and mitral TEER should be reported. See “Guidance on Selecting Appropriate Procedure Codes” for additional details and definitions.

DO NOT CODE:

- Heart transplant*
- Lung transplant*
- Ventricular Assist Device (including ECMO and percutaneous assist device)
- Femoral artery repair or bypass
- Thymectomy
- Coronary endarterectomies
- Subclavian artery bypass
- Innominate artery bypass
- Carotid artery bypass
- Removal of thymoma
- Ventricular support device (e.g. Heartnet restraint)
- Aortic wrapping procedures
- Exploration alone (no repair) for confirmed or suspected bleeding after reportable cardiac surgery in the same admission
- Implantation of pacemaker and/or its leads or wires

*Special Note for hospitals performing transplantation procedures: As in the past, a patient that undergoes CABG and/or Valve surgery in the same admission as a heart transplant will not be included in analysis. If you have any such patients, you must complete a CSRS form for any cardiac surgery other than the transplant and notify the Cardiac Services Program that the patient also underwent heart transplant. These cases will be manually flagged for removal from analysis.

Report the following procedures as “998 – Other” or “498 – Other (No Bypass)” only when they are the only cardiac surgery during the admission. Only report these procedures if they were performed using an open surgical approach; do not report if using a percutaneous approach:

- Intra-cardiac thrombus removal
- Intra-coronary thrombus removal
- Epicardial lead placement
- Coronary aneurysm repair (other than CABG)
- Ligation or excision of left atrial appendage*
- Surgical removal of a stent
- Aortic endarterectomy
- Pulmonary artery endarterectomy

*Left atrial appendage ligation performed at the same time as VAD implantation for bridge to transplant or destination therapy is not reportable. It should be considered incidental to the VAD procedure and is not form generating.

During quarterly and annual data verification and validation efforts, supporting documentation for cases coded as 398, 498, or 998 may be requested. Therefore, we highly recommend that at the time of coding you keep a copy of the operative note as supporting documentation in a place for easy retrieval at a later date.

Code the following procedures only when they are performed at the same time as another reportable cardiac surgery:

- Carotid endarterectomy (763)
- Implantation of an AICD (764)
- Transcatheter Endovascular Aortic Repair (TEVAR) (813)

Code the following only when performed at the same time as a CABG or valve surgery:

- Percutaneous Coronary Intervention (711)

Guidance on Selecting Appropriate Procedure Codes

ASD CLOSURE (120)

This procedure is not reportable when performed in the same setting as VAD placement for destination therapy or bridge to transplant. In this instance it should be considered incidental to the VAD procedure and not form generating.

PERICARDIECTOMY (402)

Performing a total pericardiectomy (meaning phrenic to phrenic pericardiectomy) is always reportable whether or not the patient was on CP bypass for that portion of the procedure. Pericardial window or partial pericardiectomy that is not phrenic-to-phrenic should not be coded.

VALVE REPAIR AND REPLACEMENT

Valve Repair with VAD as Destination Therapy or Bridge to Transplant:

Valve repairs are not reportable in this instance. There must be pre-operative documentation that the primary purpose of the procedure is placement of a ventricular assist device. These cases may be subject to additional auditing. Valve replacements should be reported, but mortalities for these procedures will not be included in the analysis if there is documentation of a “pre-determined VAD.”

Valve Replacements and Repairs: When a repair is attempted, and the valve is ultimately replaced in the same procedure, report both the repair and the replacement.

Aortic Valve Replacements: Do not code aortic root enlargements when performed with aortic valve replacements.

Valve Debridement: If a valve has had debridement, then a valve repair should be coded.

Bicuspid Aortic Valve: When a bicuspid aortic valve is being operated on for a patient who is not in the childhood era and the operation is required due to acquired valve disease, it should be coded as a standard valve procedure (Code 520-548).

Valve Repair or Replacement with Aorta surgery: Please see the Aorta Surgery section for guidance on how to report these procedures.

Mitral Valve Transcatheter Edge to Edge Repair (TEER): Use procedure code 504 to report this procedure. MitraClip is an example of a reportable TEER.

Ross Procedure: Use procedure code 510 – 518 (Ross Procedure) and 810 (Ascending Aorta Replacement / Repair with Coronary Reimplantation).

Third Digit for Valve Replacement (510- 608): When reporting valve replacement surgery (codes 510-608), use the third digit to indicate if the valve currently being replaced has been previously intervened upon and if so the reason for the reoperation.

The third digit information is specific to the valve reported. For example, a patient with previous aortic valve replacement who is now having mitral valve replacement (mechanical) would be reported using code 550 because this is not a re-operation on the mitral valve. In the event of multiple valve surgery, the third digit may be different for each valve code reported, i.e. one valve may be a re-op and the other(s) may not.

Use code 7 (Complication of Transcatheter Valve Replacement) in the event of an unsuccessful transcatheter valve replacement which requires urgent or emergent surgical valve replacement.

Adjunct Valve Information (640-647): Use these codes to indicate a transcatheter valve replacement has been performed and by which approach. These procedures should be reported even if they do not occur in the operating room. A valve replacement code or code 504 for TEER must also be reported.

PCI IN SAME SETTING AS CABG OR VALVE SURGERY (711)

Use this procedure code to indicate percutaneous coronary intervention (PCI) was performed in the same procedure room visit as CABG or valve surgery. This may take place in the OR or some other location such as a hybrid procedure room. This procedure should only be reported if done at the same time as CABG or valve surgery (including transcatheter valve replacement). The PCI must be reported to the Percutaneous Coronary Interventions Reporting System if the PCI was performed for the treatment of pre-existing coronary artery disease.

RADIOFREQUENCY OR OPERATIVE ABLATION (770-772)

Code 770 (Atrial) or 771 (Ventricle) should be used when lesions are created in the atria or ventricle by an energy source (radiofrequency, microwave, cryothermia, etc.). The lesion then disrupts the abnormal re-entry pathways of electrical signals that can lead to fibrillation.

These procedures are not reportable when performed in the same setting as VAD placement for destination therapy or bridge to transplant. In this instance they should be considered incidental to the VAD procedure and not form generating.

Maze (772) should be coded when there is a standard surgical maze procedure in which full thickness incisions are made in the atria of the heart. Sutures are then used to reapproximate the incised tissue. The resulting lesion disrupts the abnormal re-entry pathways of electrical signals that lead to atrial fibrillation. Procedures coded 772 may require an operative note to verify coding.

AORTA SURGERY

Major Surgery on the Aorta (810, 811, 812): The following procedure codes are available for reporting surgery for aortic conditions.

Surgery on the Aorta

810	Ascending Aorta Replacement/Repair with Coronary Reimplantation
811	Ascending Aorta Replacement/Repair without Coronary Reimplantation
812	Descending and Thoracoabdominal Aorta Surgery

Use procedure codes 810-812 for Major surgery on the aorta. Do not report for patch repair, plication, root debridement or use of prosthetic material during valve surgery for endocarditis. Do not report for annular enlargement during valve surgery.

Any case reported with Procedure Codes 810 – 812 must also have the “Aorta Surgery” section of the form completed. These elements include Concomitant Arch, Underlying Condition and Immediate Reason for Aorta surgery.

These codes may be used to indicate repair of an intra-operative injury and should be accompanied by procedure code 907 and reported with “Underlying Condition” code 6 – Intra-operative Event.

Use aortic valve replacement (510 – 548) with procedure code 810 when the root procedure involves replacing the valve. You can also use AVR codes with 811, 812 & 813 procedure codes.

Do not code aortic valve repair (500) in cases that only require re-suspension of the valve as part of the aorta procedure. Aortic valve repair (500) should be reported when there is valve repair beyond resuspension.

Use procedure Code 810 in addition to 510 – 518 for the Ross procedure.

TEVAR (performed at the same time as reportable cardiac procedure) (813)

Use this code to indicate a Transcatheter Endovascular Aortic Repair was performed at the same time as a reportable cardiac surgery procedure. Do not report if there was no reportable cardiac surgery performed at the same time.

REMOVAL OF INTRACARDIAC NEOPLASM (904)

Should be reported when there is histopathological confirmation that the mass removed was a neoplasm. Report only if the mass is removed. Documentation (pathology report) will be required when this code is reported for a CABG or Valve case.

REPAIR OF TRAUMATIC CARDIAC OR VASCULAR INJURY (907)

Should be coded for repair of cardiac or vascular injury due to trauma including a procedure to repair an injury to the heart or great vessels that has resulted from a cardiac diagnostic or interventional procedure or from cardiac surgery. Documentation will be required for any case where the repair is for a pre-operative injury.

REMOVAL OF PACEMAKER OR AICD AND/OR LEADS OR WIRES (908)

Should be coded when device/lead removal is the primary goal of the operation. It should not be used when device/lead removal is an incidental part of another cardiac surgery. Only open procedures are reportable with this code. Do not report laser lead extraction.

Opening the pocket is not considered an “open” procedure in this context. Typically, a case reportable as “908” will involve a sternotomy or a thoracotomy.

The defining criteria for reporting these cases is not who performs them but how they are performed (i.e. open surgical approach with lead/device removal as the primary goal of the operation). It is unusual for an electrophysiologist or cardiologist to perform an open cardiac surgical removal of devices or leads.

If an open surgical procedure is required to remove leads, this may be the primary goal of the operation (the primary reason it was performed with an open surgical approach) and therefore could still be reportable even if new leads or devices were placed.

If an open surgical approach is used for at least one of the leads, then report it. It does not matter if laser is reported for any other leads.

ATTEMPTED / ABORTED PROCEDURES

Attempted Transcatheter Valve Replacement or TEER (930): Should be reported when there is any vascular penetration of the patient designed to carry out a transcatheter valve replacement procedure or mitral valve transcatheter edge-to-edge repair, but the procedure did not proceed to completion. Also report the primary valve code (520-608, 504) and the adjunct valve information code (640-647).

Aborted Transcatheter Valve Replacement or TEER (931): Should be used when the sheath for delivery of the device has been inserted, but the procedure does not proceed to completion. If reporting aborted, you should not also report attempted. Also report the primary valve code (520-608, or 504) and the adjunct valve information code (640-647).

Codes 930 and 931 may be reported in addition to codes for procedures that were performed. For example, an aborted TAVR that leads to a surgical AVR in the same visit may be coded as 530, 640, 931, 537.

Attempted Surgical Procedure (932): Should be reported when the patient entered the operating room or its equivalent for a cardiac surgical procedure and the procedure is discontinued before any incision is made (primary or harvest site incision).

Aborted Surgical Procedure (933): Should be reported when the procedure is aborted after an incision has been made (primary or harvest site incision).

Report exploration of the atria, aorta, valves, ventricles, or pulmonary artery as “Aborted Procedure” if there was no other reportable cardiac surgery performed at the same time – except when the exploration was after a reportable cardiac surgery for suspected or confirmed bleeding. This scenario would be reported as a major event but is not form-generating if there was no surgical intervention performed.

Only report codes 932 and 933 if there was no reportable cardiac procedure performed. Also report the codes for the procedure that was intended to be performed.

Item-By-Item Instructions

I. Patient Information

REMINDER: This section is required for all cases, including procedures that qualify for streamlined reporting.

Descriptive Name: PFI Number

Variable Name: PFI

Format: XXXX

Definition: The PFI Number is a Permanent Facility Identifier assigned by the Department of Health. Enter your facility's PFI Number as shown in Attachment C.

Descriptive Name: Sequence Number

Variable Name: SEQUENCE

Format: Free text

Definition: If your facility assigns a sequence number to each case on a chronological flow sheet or similar log, enter the sequence number here. The sequence number is not required for the Cardiac Surgery Reporting System but has been included on the form in case your facility finds it useful in identifying and tracking cases.

Descriptive Name: Patient Last Name

Variable Name: LASTNAME

Format: Free text

Definition: Enter the patient's last name.

Descriptive Name: Patient First Name

Variable Name: FIRSTNAME

Format: Free text

Definition: Enter the patient's first name.

Descriptive Name: Medical Record Number

Variable Name: MEDRECNO

Format: 0-9 or A-Z; no punctuation or other characters

Definition: Enter the patient's medical record number.

Note:

Characters A-Z and 0-9 may be reported. Do not report punctuation or other symbols of any kind in the medical record number.

Descriptive Name: Social Security Number

Variable Name: SSNO

Format: XXX-XX-XXXX

Definition: Enter the patient's Social Security Number as shown in the medical record. If the medical record does not contain the patient's Social Security Number, leave this item blank.

Descriptive Name: Date of Birth

Variable Name: DOB

Format: MM/DD/YYYY

Definition: Enter the patient's exact date of birth.

Descriptive Name: Sex

Variable Name: SEX

Format: 1 or 2

Definition: Check the appropriate box for the patient's sex at birth.

1 - Male

2 - Female

Note:

In the absence of any other information, it is reasonable to assume that the sex at birth is the same as at the time of admission.

Descriptive Name: Ethnicity

Variable Name: ETHNIC

Format: 1 or 2

Definition: Check the appropriate box.

1 - Hispanic

2 - Non-Hispanic

Note:

The term "Hispanic" refers to persons who trace their origin or descent to Mexico, Puerto Rico, Cuba, Central and South America or other Spanish cultures.

Descriptive Name: Race

Variable Name: RACE

Format: 1-4 or 8

Definition: Choose the appropriate response from the list below.

- 1 - White. A person having origins in any of the original peoples of Europe, the Middle East, or North Africa.
- 2 - Black or African American. A person having origins in any of the black racial groups of Africa.
- 3 - Native American / American Indian or Alaska Native. 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.
- 4 – Asian or Pacific Islander. 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 or in any of the original peoples of Hawaii, Guam, Samoa, or other Pacific Islands.
- 8 - Other. Report for those responses that are not covered by an above category. Provide the specific race for any case marked "Other."

Directions:

Race should be based on the patient's racial/ethnic origins, which is not necessarily the same as their country or place of origin.

Multi-racial can be indicated by checking "8-Other" and providing details in the "specify" field.

For White Hispanics, check "White." For Black Hispanics, check "Black."

Descriptive Name: Race Specify

Variable Name: RACESPEC

Format: Free text

Definition: If RACE was reported as 8 – Other, provide the specific race.

Descriptive Name: Detailed AAPI Code

Variable Name: AAPI_CODE

Format: 01-25

Definition: Report the appropriate code from the list in Attachment A.

Report the detailed Asian or Pacific Islander group information for any case where Race is reported as 4 – Asian or Pacific Islander.

Descriptive Name: AAPI Other Specify

Variable Name: AAPI_OTH

Format: Free text

Definition: Specify the other Asian or Pacific Islander group identification.

For any case where the detailed Asian/Pacific Islander Code was "21 – Other Asian" or "25 – Other Pacific Island group," specify the Asian or Pacific Island group in the space provided.

Descriptive Name: ZIP Code

Variable Name: ZIPCODE

Format: XXXXX

Definition: For patients residing in NYS, enter the ZIP code of the primary residence. If the patient lives outside NYS, enter 99999.

Directions:

If the patient lives in a foreign country but is temporarily staying in the US during the pre-operative and post-operative time period, enter 99999. Do not enter the ZIP code of where the patient is staying in the US.

Descriptive Name: State or Country of Residence

Variable Name: STATE

Format: Free Text

Definition: For patients living outside NYS, enter the name of the state or country where the patient resides.

Directions:

If a valid NYS ZIP Code has been entered, then the “State or Country” field should be left blank.

Descriptive Name: Hospital Admission Date

Variable Name: ADMIDATE

Format: MM/DD/YYYY

Definition: Enter the date that the current hospital stay began.

Note:

Report the date that the patient arrived at the hospital, even if it is not equal to the technical “admission date” (i.e., this date may be prior to official inpatient status).

Descriptive Name: Primary Payer

Variable Name: PAYER

Format: 01-07, 11, or 19

Definition: Enter the primary source of payment for this hospital stay.

- 01 – Medicare—Fee For Service
- 02 – Medicare—Managed Care
- 03 – Medicaid—Fee For Service
- 04 – Medicaid—Managed Care
- 05 – Blue Cross
- 06 – HMO/Managed Care
- 07 – Other Private Insurance Company
- 11 – Self Pay
- 19 – Other

Interpretation:

For “Medicaid Pending” code Primary Payer as “11-Self-Pay” and check the box “Medicaid.”

For patients in prison, code Primary Payer as “19-Other.”

Please note the difference between “07-Other Private Insurance Company” and “19-Other.” Code “07” refers to a Private Insurance Company (also referred to as “Commercial” insurance) that is not listed elsewhere. Code “19” is any other type of insurance that is not given a code of its own (e.g. Corrections, Worker’s Compensation).

Report a PPO (Preferred Provider Organization) as “06 – HMO/Managed Care.”

Descriptive Name: Medicaid

Variable Name: MEDICAID

Format: 1 = Yes, 0 or Blank = No

Definition: Check this box if the patient has Medicaid that will provide payment for any portion of this hospital stay.

Directions:

If the patient’s primary payer is Medicaid, check this box in addition to entering “03” or “04” under Primary Payer.

Descriptive Name: Preferred Language

Variable Name: PREF_LANG

Format: From Attachment B

Definition: Indicate the patient’s preferred language using the responses listed in Attachment B.

Descriptive Name: PFI of Transferring Hospital

Variable Name: TRANS_PFI

Format: XXXX

Definition: If the patient was transferred from another acute care facility, enter the PFI of the transferring hospital.

Directions:

This element should only be completed for transfer patients.

- If transferred from a Veterans Administration hospital in NYS, enter 8888.
- If transferred from outside NYS, enter 9999.
- A list of PFIs for cardiac diagnostic centers in NYS is provided in Attachment C.
- For patients transferred from another hospital in NYS, please see http://www.health.ny.gov/statistics/sparcs/reports/compliance/alpha_facilities.htm for a complete listing of NYS hospitals, including PFI.

Note:

PFI on the above website is listed as 6 digits. For purposes of cardiac reporting, PFI should always be four (4) numeric characters. Do not report the first two digits as provided on the linked website.

II. Procedural Information

REMINDER: This section is required for all cases, including procedures that qualify for streamlined reporting.

Descriptive Name: Hospital That Performed Diagnostic Cath

Variable Name: CATHPFI

Format: XXXX

Definition: If the cardiac surgery was preceded by a diagnostic catheterization, enter the name and PFI number of the hospital in the spaces provided.

Directions:

- If the catheterization was at a cardiac diagnostic center in NYS, enter its PFI Number from Attachment C.
- If done at a Veterans Administration hospital in NYS, enter 8888.
- If done outside NYS, enter 9999.
- If there was no diagnostic catheterization, leave this item blank.

Do not use this field to report any diagnostic procedure other than catheterization (e.g. CT).

File Structure Note:

Diagnostic Catheterization Hospital name is included on the paper form for abstractor convenience. It is not part of the CSRS file structure.

Descriptive Name: Date of Surgery

Variable Name: SURGDATE

Format: MM/DD/YYYY

Definition: Enter the date on which the cardiac surgical procedure was performed.

Clarification:

Report the date of first skin incision.

If there was no skin incision (procedure code 932) report the date of entry to the Operating Room or its equivalent.

Descriptive Name: Prior Surgery This Admission

Variable Name: PRIOSURG

Format: 1, 2

Definition: Indicate whether the patient had any reportable (form generating) cardiac operation prior to the present operation during the same hospital admission.

1 - Yes

2 - No

Descriptive Name: Date of Prior Surgery This Admission

Variable Name: PRIODATE

Format: MM/DD/YYYY

Definition: If the patient had prior surgery this admission (PRIOSURG = 1), enter the date of that prior surgery.

Explanation:

The date of the most recent previous cardiac operation **MUST** be entered. This is very important because this date aids in combining multiple procedures that occurred on the same day in the proper order.

Descriptive Name: Cardiac Procedures This OR Visit

Variable Name: PROC1, PROC2, PROC3, PROC4, PROC5, PROC6, PROC7

Format: XXX

Definition: Enter the 3-digit State Cardiac Advisory Committee Code (SCAC) from the procedure code list in Attachment D – Congenital and Acquired Cardiac Procedure Codes.

List up to 7 cardiac procedures performed during this operating room visit.

If there are more than 7, list the 7 most significant.

Note:

Please see Attachment D: Congenital and Acquired Cardiac Procedure Codes and “When to Complete an Adult CSRS Form” and “Guidance on Selecting Appropriate Codes” for additional coding instructions and scenarios for reporting procedure codes.

Descriptive Name: Congenital Diagnosis

Variable Name: DIAG1, DIAG2, DIAG3

Format: XXXX

Definition: Indicate the three most significant congenital diagnoses for any patient with a congenital diagnosis.

The diagnosis codes in Attachment E are identical to those used for the Pediatric Cardiac Surgery Reporting System. Inclusion of this information will allow for meaningful evaluation of outcomes for adult congenital cardiac surgery.

Report in every case where a congenital diagnosis exists, even if there is no procedure for congenital disease during this operation.

Some diagnoses listed in Attachment E are not congenital cardiac conditions. Those codes should not be used for this data element.

Descriptive Name: Primary Physician Performing Operation

Variable Name: PHYSNUM

Format: XXXXXXXXXXX

Definition: Enter the name and National Provider ID (NPI) number of the primary physician who performed the cardiac surgical procedure.

Directions:

If no surgeon participated in this procedure report 9999999999.

For transcatheter valve replacement and PCI (at the same time as CABG or Valve surgery), report the cardiac surgeon as the primary physician for these purposes and also report the NPI number for the interventional cardiologist in the "Interventional Cardiologist" field.

Explanation:

The primary physician should be the one who performed the majority of the cardiac procedure in that surgery.

The following is one of many possible examples: In a single trip to the OR, a radiofrequency ablation is performed by one surgeon and then a CABG by a second surgeon. The primary physician reported on the CSRS form should be the one who performed the CABG even though the ablation was performed before the CABG.

File Structure Note:

Physician name is included on the paper version of the data collection form for abstractor convenience. Physician name is not part of the required CSRS data structure.

Descriptive Name: Anesthesiologist (1)

Variable Name: ANESNUM1

Format: XXXXXXXXXXX

Definition: Enter the name and National Provider ID (NPI) number of the responsible anesthesiologist at the start of the cardiac surgery.

If no anesthesiologist participated in this procedure report 8888888888.

File Structure Note:

Anesthesiologist name is included on the paper version of the data collection form for abstractor convenience. Anesthesiologist name is not part of the required CSRS data structure.

Descriptive Name: Anesthesiologist (2)**Variable Name:** ANESNUM2**Format:** XXXXXXXXXXX**Definition:** Enter the name and National Provider ID (NPI) number of the responsible anesthesiologist at the end of the cardiac surgery.

If no anesthesiologist participated in this procedure report 8888888888.

File Structure Note:

Anesthesiologist name is included on the paper version of the data collection form for abstractor convenience. Anesthesiologist name is not part of the required CSRS data structure.

Descriptive Name: Interventional Cardiologist**Variable Name:** CARDNUM**Format:** XXXXXXXXXXX**Definition:** If the procedure is a Transcatheter Valve Replacement (procedure code 640-647) or PCI in same setting as CABG or Valve Surgery (procedure code 711), enter the name and National Provider ID (NPI) number of the interventional cardiologist participating in the case.**Directions:**

- For procedure codes 640-647 and 711, if there was no interventional cardiologist participating enter code 0000000000.
- If a case does not include these procedure codes, then the cardiologist identifier is not collected.

Note:

Interventional cardiologist name is included on the paper version of the data collection form for abstractor convenience. Interventional cardiologist name is not part of the required CSRS data structure.

CABG Information

The following information must be completed for all CABG procedures.

Descriptive Name: Number of Distal Anastomoses with Venous Conduits**Variable Name:** DIST_VEIN**Format:** 1-9, 0 or Blank**Definition:** Indicate the total number of distal anastomoses with venous conduits.**Explanation:**

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.

Descriptive Name: Total Number of Distal Anastomoses with Arterial Conduits

Variable Name: DIST_ART

Format: 1-9, 0 or Blank

Definition: Indicate the total number of distal anastomoses with arterial conduits, whether IMA, GEPA, radial artery, etc.

Explanation:

Distal anastomosis refers to the connection between the bypass graft (conduit) and coronary artery. Record the total number of arterial anastomoses constructed using an arterial conduit connection to a coronary artery. Multiple distal anastomoses can be constructed from any conduit. Capture each distal anastomosis.

Example: LIMA to LAD jumped to the diagonal equals two distal anastomoses.

Descriptive Name: Number of Distal Anastomoses using IMA Conduits

Variable Name: DIST_IMA

Format: 1-9, 0 or Blank

Definition: Indicate the total number of distal anastomoses done using Internal Mammary Artery (IMA) grafts.

Explanation:

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.

Descriptive Name: Number of Distal Anastomoses using Radial Artery Conduits

Variable Name: DIST_RA

Format: 1-9, 0 or Blank

Definition: Indicate the total number of distal anastomoses done using radial artery grafts.

Explanation:

More than one anastomosis can be constructed from each radial artery.

Descriptive Name: Number of Distal Anastomoses using Other Arterial Conduits

Variable Name: DIST_OA

Format: 1-9, 0 or Blank

Definition: Indicate the number distal anastomoses that used arterial conduits, other than radial or IMA.

Explanation:

An example is the inferior epigastric artery

Descriptive Name: Internal Mammary Artery Used as Conduit

Variable Name: IMA_USED

Format: 1-4, 0 or Blank

Definition: Use the following codes to indicate which, if any, Internal Mammary Arteries were used for grafts.

- 1 – Left
- 2 – Right
- 3 – Both
- 4 – None

Explanation:

IMA may be used as a free graft or pedicle, in situ, graft. A pedicle graft remains connected at its proximal origin (in situ) and requires only a distal anastomosis; i.e. the internal mammary artery.

Descriptive Name: Primary Reason IMA Not Used

Variable Name: NOT_IMA

Format: 2-7, 0 or Blank

Definition: Use the following codes to indicate the primary reason an Internal Mammary Artery was not used (as documented in medical record).

- 2 – Subclavian stenosis
- 3 – Emergent or salvage procedure
- 4 – Previous cardiac or thoracic surgery
- 5 – No (Bypassable) LAD disease
- 6 – Previous mediastinal radiation
- 7 – Other

Clarification:

Response #5 - No (Bypassable) LAD Disease can include clean LAD, diffusely diseased LAD or other condition resulting in the LAD not being bypassed

Descriptive Name: LAD Bypassed this OR Visit

Variable Name: BYP_LAD

Format: 1 = Yes, 0 or Blank = No

Definition: Indicate if the Left Anterior Descending (LAD) or its branches were bypassed this OR visit.

Descriptive Name: RCA Bypassed this OR Visit

Variable Name: BYP_RCA

Format: 1 = Yes, 0 or Blank = No

Definition: Indicate if the Right Coronary Artery (RCA) or its branches were bypassed this OR visit.

Descriptive Name: LCX Bypassed this OR Visit

Variable Name: BYP_LCX

Format: 1 = Yes, 0 or Blank = No

Definition: Indicate if the Left Circumflex or its branches were bypassed this OR visit.

Descriptive Name: Number of Radial Arteries Used for Grafts

Variable Name: NUM_RA

Format: 1-2, 0 or Blank

Definition: Indicate the number of radial arteries that were used for grafts.

Descriptive Name: Minimally Invasive

Variable Name: MINI_INV

Format: 1 = Yes, 0 or Blank = No

Definition: Indicate if the cardiac surgical procedure began through an incision other than a complete sternotomy or thoracotomy (less than 12 centimeters in length) regardless of whether the case converted to a standard incision or cardiopulmonary bypass was used.

Descriptive Name: Converted to Standard Incision

Variable Name: STND_INC

Format: 1= Yes, 0 or Blank = No

Definition: Indicate if a minimally invasive procedure was modified to a standard incision.

Explanation: This box should never be checked unless Minimally Invasive is also checked.

Descriptive Name: Converted from Off Pump to On Pump

Variable Name: CONVERT

Format: 1 = Yes, 0 or Blank = No

Definition: Indicate if the procedure began without the use of cardiopulmonary bypass, but prior to the completion of the procedure the patient was placed on pump. This should only be checked if the patient was placed on pump unexpectedly.

Descriptive Name: Entire Procedure Off Pump

Variable Name: ALL_OFF

Format: 1 = Yes, 0 or Blank = No

Definition: Indicate if the cardiac procedure was performed entirely without the use of cardiopulmonary bypass.

Descriptive Name: Reason PCI Performed During this Procedure

Variable Name: PCI_RSN

Format: 1-3, 0 or Blank

Definition: For cases that include a CABG and/or Valve procedure and a PCI as part of the same procedure, choose the response that best describes why the PCI was performed.

- 1 – Planned treatment of pre-existing coronary artery disease (CAD)
- 2 – Prophylactic
- 3 – Required due to a complication

Directions:

- Report this element whenever procedure code 711 (“PCI in the same setting as CABG or Valve Surgery”) is reported.
- Leave this item blank if procedure code 711 is not reported.

Cases reported with response category 1-Treatment of pre-existing CAD, must also be reported in PCIRS. Cases with other response categories are not reportable to PCIRS.

Aorta Surgery Information

The following information should be reported for any case with Major Surgery on the Aorta (procedure codes 810, 811 or 812).

Descriptive Name: Concomitant Arch Procedure

Variable Name: AO_ARCH

Format: 1 = Yes, 0 or Blank = No

Definition: Report for any arch procedure requiring circulatory arrest performed at the same time as procedure 810, 811, or 812. This may be: hemiarch, partial arch, total arch, frozen elephant trunk, standard elephant trunk, etc.

Coding Note:

Only report if the arch procedure was performed on circulatory arrest.

Descriptive Name: Underlying Condition

Variable Name: AO_COND

Format: 1-8, 0 or Blank

Definition: Report the underlying condition that led to the Aorta surgery. Select only one.

1. Degenerative Disease (e.g. atherosclerosis, calcified, hypertensive)
 2. Bicuspid Aortopathy
 3. Genetically Triggered (e.g. Ehler-Danlos, Loeys-Dietz, Marfan’s)
 4. Mycotic/Infection
 5. Aortitis
 6. Intraoperative Event
 7. Pseudoaneurysm
 8. Other
-

Descriptive Name: Immediate Reason for Aorta Surgery (check all that apply)

Variable Name: IR_ANEUR, IR_ACDIS, IR_CHDIS, IR_RUPT, IR_OTH

Format: 1 = Yes, 0 or Blank = No

Definition: For patients undergoing aorta surgery, indicate the immediate reason. Select all that apply.

1. Aneurysm
 2. Acute Aortic Dissection
 3. Chronic Aortic Dissection
 4. Rupture
 5. Other
-

All Surgery Procedure Information

The following information is not limited to CABG surgery.

Ila. Peri-Operative Information

REMINDER: This section is optional for procedures that qualify for streamlined reporting.

Descriptive Name: Skin Incision Time

Variable Name: SURGHOUR, SURGMIN

Format: SURGHOUR = HH; SURGMIN = (MM)

Definition: Indicate the time to the nearest minute (using 24-hour clock) that the first skin incision or its equivalent was made.

Explanation:

The intent of this field is to capture the time the first skin incision is made regardless of if the first incision is a harvest site incision or a sternal/ thoracotomy incision.

If there was no skin incision (procedure code 932), report the time of entry to the Operating Room or its equivalent.

Descriptive Name: Skin Closure Time

Variable Name: CLOSEHOUR, CLOSEMIN

Format: CLOSEHOUR = HH; CLOSEMIN = MM

Definition: Capture the time to the nearest minute (using 24-hour clock), that the skin incision was closed, or its equivalent.

Explanation:

This element refers to the time of the final incision closure prior to leaving the operating room.

If the patient leaves the operating room with an open incision, collect the time that the dressings were applied to the incision.

If the patient dies in the OR after incision, but prior to incision stop time, code the incision stop date and time as the time of death.

Descriptive Name: Pre-Op Beta Blocker Use

Variable Name: PRE_BETA

Format: 1, 2, 3

Definition: Use the following codes to indicate pre-op beta blocker use or contraindication.

- 1 – Yes - The patient received beta blockers within 24 hours prior to incision in the OR.
 - 2 – Contraindicated - Beta blocker was contraindicated. The contraindication must be documented in the medical record by a physician, nurse practitioner, or physician assistant.
 - 3 – No - The patient did not receive beta blockers within 24 hours prior to incision in the OR and there is no documented contraindication for beta blockers.
-

Descriptive Name: Extubation at 24 Hours – Report Only for CABG Patients

Variable Name: EXTUBATE

Format: 1, 2, 3, blank or 0

Definition: Use the following codes to indicate extubation at 24 hours post-op.

- 1 – Yes - The patient was extubated at 24 hours post-op.
- 2 – Contraindicated - The patient was not extubated at 24 hours post-op due to a contraindication. Contraindications include the following: myocardial dysfunction; valvular heart disease; active systemic illness; respiratory disease; neuropsychiatric disease or problems with communication secondary to language. This would include stroke (new neurological deficit) and neuropsychiatric state (paranoia, confusion, dementia).
- 3 – Neither - The patient was not extubated at 24 hours post-op and there was no contraindication as defined above.

Directions:

Leave blank or enter 0 for any case that did not include a CABG.

Explanation:

Post-op is defined as starting when the patient leaves the actual procedure room where the cardiac operation occurred.

Descriptive Name: Post-Op Beta Blocker Use – Report Only for CABG Patients

Variable Name: PO_BETA

Format: 1, 2, 3, blank or 0

Definition:

- 1 – Yes - The patient received beta-blockers within 24 hours post-op.
- 2 – Contraindicated - The patient did not receive beta-blockers with 24 hours post-op due to a contraindication. Contraindications include the following: allergy, bradycardia (heart rate less than 60 bpm) and not on beta blockers, second or third degree heart block on ECG on arrival or during hospital stay and does not have a pacemaker, systolic blood pressure less than 90 mmHg and not on beta blockers, or other reasons documented by a physician, nurse practitioner, or physician's assistant in the medical chart.
- 3 – Neither- The patient did not receive beta-blockers within 24 hours post-op and there was no contraindication as defined above.

Directions:

- Leave blank or enter 0 for any case that did not include a CABG.
- Enter 3 -Neither for a patient that expired in the OR.

Explanation:

Post-op is defined as starting when the patient leaves the actual procedure room where the cardiac operation occurred.

Descriptive Name: Intra-Operative Blood Transfusion

Variable Name: TRANSFUS

Format: 1 = Yes, 0 or Blank = No

Definition: Indicate if packed red blood cells were transfused intraoperatively. Do not include autologous, cell-saver, pump-residual or chest tube recirculated blood.

Intraoperatively is defined as any blood started inside of the OR.

Descriptive Name: Glucose Control Protocol

Variable Name: GLUCOSE

Format: 1 = Yes, 0 or Blank = No

Definition: Indicate if a glucose control protocol was used for this patient.

Interpretation:

This element is referring to a post-op glucose control protocol. These may be initiated in the pre- or intra-operative period but continued post-op.

Expected documentation would be an order in the patient's chart indicating use of protocol or evidence that there are standing orders for all patients to be on a protocol.

III. Pre-Op Surgical Risk Factors

REMINDER: This section is optional for procedures that qualify for streamlined reporting.

Descriptive Name: Surgical Priority

Variable Name: PRIORITY

Format: 1-4

Definition: Indicate the clinical status of the patient prior to entering the operating room.

- 1 – 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.
 - 2 – Urgent: Procedure required during same hospitalization in order to minimize chance of further clinical deterioration. Examples include but are not limited to: worsening, sudden chest pain; CHF; acute myocardial infarction; anatomy; IABP; unstable angina with intravenous nitroglycerin or rest angina.
 - 3 – 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.
 - 4 – Emergent Salvage: The patient is undergoing CPR enroute to the OR prior to anesthesia induction or has ongoing ECMO to maintain life.
-

Descriptive Name: Height

Variable Name: HEIGHT

Format: 1-999

Definition: Enter the patient's height in centimeters (cm) closest to the time of OR entry.

Directions:

For patients who have had lower extremity amputations, code the patient's original height.

Descriptive Name: Weight

Variable Name: WEIGHT

Format: 1-999

Definition: Indicate the weight of the patient, in kilograms (kg), closest to the date of the procedure.

Descriptive Name: LV End Systolic Dimension

Variable Name: LVED_SYS

Format: 00.0-99.9, Blank

Definition: Indicate LV End -Systolic Dimension in millimeters.

LV end systolic dimension is the same as left ventricular internal dimension in end systole (LVIDs)

Directions: Report if available from within 6 months prior to surgery.

Descriptive Name: LV End Diastolic Dimension

Variable Name: LVED_DIA

Format: 00.0-99.9, Blank

Definition: Indicate the Left Ventricular End-Diastolic Dimension in millimeters.

LV end diastolic dimension is the same as left ventricular internal dimension in end diastole (LVIDd).

Directions: Report if available from within 6 months prior to surgery.

Descriptive Name: Ejection Fraction

Variable Name: EJEC_FRA

Format: 1-99 or 0 for Unknown

Definition: Record the pre-operative ejection fraction taken closest to, but before, the start of the cardiac procedure.

Directions:

- If an ejection fraction is unavailable, enter "0".
- Any ejection fraction that is described as "Normal" in the medical record should be considered 55%.

Explanation:

Intra-operative direct observation of the heart is NOT an adequate basis for a visual estimate of the ejection fraction.

Intra-operative TEE is acceptable, if no pre-operative ejection fraction is available.

Descriptive Name: Ejection Fraction Measure

Variable Name: MEASURE

Format: 1-4, 8 or 9

Definition: Indicate how the ejection fraction was measured using one of the following:

- 1 – LV Angiogram
- 2 – Echocardiogram
- 3 – Radionuclide Studies
- 4 – Transesophageal Echocardiogram (TEE), this includes intra-operative
- 8 – Other
- 9 – Unknown

Directions:

If an ejection fraction is unavailable, enter "9 – Unknown."

Descriptive Name: Anginal Classification within 2 Weeks

Variable Name: CCS_CLAS

Format: 1-4 or 8

Definition: Indicate the patient's anginal classification or symptom status within the past 2 weeks prior to surgery. The anginal classification or symptom status is classified as the highest grade of angina or chest pain by the Canadian Cardiovascular Angina Classification System (CCA).

- 1 – CCA I - Ordinary physical activity does not cause angina; for example, walking or climbing stairs, angina occurs with strenuous or rapid or prolonged exertion at work or recreation.
- 2 – CCA II - Slight limitation of ordinary activity; for example, angina occurs walking or stair climbing after meals, in cold, in wind, under emotional stress or only during the few hours after awakening, walking more than two blocks on the level or climbing more than one flight of ordinary stairs at a normal pace and in normal conditions.
- 3 – CCA III - Marked limitation of ordinary activity; for example, angina occurs walking one or two blocks on the level or climbing one flight of stairs in normal conditions and at a normal pace.
- 4 – CCA IV - Inability to carry on any physical activity without discomfort - angina syndrome may be present at rest.
- 8 – No Symptoms, No Angina - The patient has no symptoms, no angina.

Directions:

If this is a subsequent episode of care (within 2 weeks), code the most recent Anginal Classification.

When the only chest pain the patient experienced is during an exercise stress test, code no angina, since this system is designed to classify angina during activities of daily living. Do not capture angina that only occurred during diagnostic testing.

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.

Descriptive Name: Primary Coronary Symptom for Surgery

Variable Name: SYMP_SURG

Format: 1-7

Definition: Indicate the patient's worst symptom prior to surgery from Admission to OR Entry.

- 1 – No coronary symptoms – No coronary symptoms, no angina, no acute STEMI, non-STEMI, no anginal equivalent, and no other atypical chest pain.
- 2 – Stable angina – Angina without a change in frequency or pattern for the 6 weeks prior. Angina is controlled by rest and/or oral or transcutaneous medications.
- 3 – Unstable angina - There are three principal presentations of unstable angina.
 - o Rest angina (occurring at rest and prolonged, usually >20 minutes)
 - o New-onset angina (within the past 2 months, of at least Canadian Cardiovascular Society Class III severity)
 - o 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)
- 4 – Non-STEMI - The patient was hospitalized for a non-ST elevation myocardial infarction (NSTEMI) as documented in the medical record. NSTEMIs are characterized by the presence of both criteria:
 - a. Cardiac biomarkers (creatinine kinase-myocardial band, Troponin T or I) exceed the upper limit of normal according to the individual hospital's laboratory parameters with a clinical presentation which is consistent or suggestive of ischemia. ECG changes and/or ischemic symptoms may or may not be present.
 - b. Absence of ECG changes diagnostic of a STEMI (see STEMI).
- 5 – ST Elevation MI (STEMI) - The patient presented with a ST elevation myocardial infarction (STEMI) or its equivalent as documented in the medical record. STEMIs are characterized by the presence of both criteria:
 - a. ECG evidence of STEMI: New or 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 electrocardiogram (ECG) leads with the cutoff points: ≥ 0.2 mV in men or ≥ 0.15 mV in women in leads V2-V3 and/or ≥ 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.
 - b. Cardiac biomarkers (creatinine kinase-myocardial band, Troponin T or I) exceed the upper limit of normal according to the individual hospital's laboratory parameters with 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 and qualifies the patient for reperfusion therapy.

- 6 – 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 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. There needs to be supportive documentation in the medical record that the symptoms are representative of angina. For example, if the patient presents with the symptoms above and it is proven that the patient has documented obstructive CAD, then anginal equivalent may be coded even if there is no Provider documentation specifically stating that the symptoms are an anginal equivalent. For the patient with diabetes who presents with “silent angina”, code anginal equivalent.
- 7 – Other

Explanation:

Choose the worst status from arrival at transferring facility / your facility to OR Entry. For elective patients, choose the CAD presentation that is bringing them into the hospital.

If this is a subsequent episode of care, 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 Coronary Symptoms.”

Descriptive Name: Creatinine

Variable Name: CREATININE

Format: XX.X

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

Directions:

If no preoperative creatinine value is available, enter 00.0.

Explanation:

Acceptable documentation may include that from an outpatient record.

Descriptive Name: COVID-19

Variable Name: COVID19

Format: 1-5, 0 or Blank

Definition: Indicate COVID-19 status.

1 – No History of Prior COVID-19

2 – History of COVID-19 but not positive during this episode of care

3 – COVID + during this episode of care but no ARDS

4 – COVID + during this episode of care with ARDS

5 – COVID + during this episode of care requiring intubation (or intubation declined due to DNR/DNI).

Coding Note:

COVID-19 information should no longer be reported using the Diagnosis Code variable.

Vessels Diseased

Directions:

- This section must be completed for all CABG cases.
- Also report vessels diseased whenever available for other procedures, otherwise leave blank.

If the diseased segment of the native vessel is bypassed by an open artery or vein graft, do not code as diseased. This vessel is revascularized.

Explanation:

Typically, the percent stenosis (as a numeric value) should be well-documented in the medical record for any significant vessel ($\geq 2\text{mm}$). In the absence of this documentation, the ranges listed below may be used.

MILD	< 50%
MODERATE	50-69%
SEVERE	$\geq 70\%$

- If a vessel or branch is described as having “Mild” stenosis then the vessel would NOT be coded as diseased, since that is interpreted as < 50% stenosis.
- If the medical record reports the range “40-50%” stenosis, then DO NOT CODE as diseased.
- If the medical record reports the range “60-70%” stenosis, then code 50-69%.

The term “severe diffuse disease” should not be interpreted to mean that the vessel has a stenosis of $\geq 70\%$.

Always take the highest stenosis reported for a vessel. If the medical record reports the Proximal RCA with a 70% lesion and the Distal RCA with a 50% you should code the RCA as 70-100%, since the Proximal RCA has a 70% lesion.

If the medical record only has documentation that states the LAD was stenosed (and does not specify location within the LAD) then code the Mid LAD and not the Proximal LAD.

Disease of the Major Diagonal should be reported with Mid/Distal LAD. The Ramus Intermediate should be coded as the Diagonal or Marginal.

Descriptive Name: LMT

Variable Name: LMT

Format: 1, 2, 3, blank or 0

Definition: If the Left Main is diseased, check the appropriate box to indicate the percent diameter stenosis as determined by angiography.

- 1 – 50-69%
- 2 – 70-89%
- 3 – 90–100%

Directions and Explanation:

See Vessels Diseased.

Descriptive Name: Proximal LAD

Variable Name: PROX_LAD

Format: 4, 5, blank or 0

Definition: If the Proximal Left Anterior Descending is diseased, check the appropriate box to indicate the percent diameter stenosis as determined by angiography.

4 – 50-69%

5 – 70–100%

Directions and Explanation:

See Vessels Diseased.

Descriptive Name: Mid/Distal LAD

Variable Name: MID_LAD

Format: 6,7, blank or 0

Definition: If the Mid or Distal Left Anterior Descending (or its major branches) are diseased, check the appropriate box to indicate the percent diameter stenosis as determined by angiography. Include significant branches.

6 – 50-69%

7 – 70–100%

Directions and Explanation:

See Vessels Diseased.

Descriptive Name: RCA

Variable Name: RCA

Format: 8,9, blank or 0

Definition: If the Right Coronary Artery (RCA) is diseased, check the appropriate box to indicate the percent diameter stenosis as determined by angiography. Include significant branches.

8 – 50-69%

9 – 70-100%

Directions and Explanation:

See Vessels Diseased.

Descriptive Name: LCX

Variable Name: LCX

Format: 10,11, blank or 0

Definition: If the Left Circumflex is diseased, check the appropriate box to indicate the percent diameter stenosis as determined by angiography. Include significant branches.

10 – 50-69%

11 – 70-100%

Directions and Explanation:

See Vessels Diseased.

Descriptive Name: Left Main - Minimal Luminal Area

Variable Name: LM_MLA

Format: X.X

Definition: Report the minimal luminal area in mm² as found by IVUS or OCT for the Left Main. If IVUS and OCT were not used, leave blank.

Descriptive Name: Proximal LAD - Minimal Luminal Area

Variable Name: PLAD_MLA

Format: X.X

Definition: Report the minimal luminal area in mm² as found by IVUS or OCT for the Proximal LAD. If IVUS and OCT were not used, leave blank.

Descriptive Name: Mid/Distal LAD - Minimal Luminal Area

Variable Name: MLAD_MLA,

Format: X.X

Definition: Report the minimal luminal area in mm² as found by IVUS or OCT for the Mid/Distal LAD or major branches. If IVUS and OCT were not used, leave blank.

Descriptive Name: RCA - Minimal Luminal Area

Variable Name: RCA_MLA

Format: X.X

Definition: Report the minimal luminal area in mm² as found by IVUS or OCT for the RCA or major branches. If IVUS and OCT were not used, leave blank.

Descriptive Name: LCX - Minimal Luminal Area

Variable Name: LCX_MLA

Format: X.X

Definition: Report the minimal luminal area in mm² as found by IVUS or OCT for the LCX or major branches. If IVUS and OCT were not used, leave blank.

Descriptive Name: Left Main – Fractional Flow Reserve

Variable Name: LM_FFR

Format: X.XX

Definition: Indicate the fractional flow reserve ratio (FFR) or instantaneous wave-free ratio (iFR) for the Left Main.

Directions:

- If FFR and iFR were not done, leave blank.
 - If both FFR and iFR were done, report FFR values.
-

Descriptive Name: Proximal LAD - Fractional Flow Reserve

Variable Name: PLAD_FFR

Format: X.XX

Definition: Indicate the fractional flow reserve ratio (FFR) or instantaneous wave-free ratio (iFR) for the Proximal LAD.

Directions:

See Left Main – Fractional Flow Reserve.

Descriptive Name: Mid/Distal LAD - Fractional Flow Reserve

Variable Name: MLAD_FFR

Format: X.XX

Definition: Indicate the fractional flow reserve ratio (FFR) or instantaneous wave-free ratio (iFR) for the Mid/Distal LAD and its major branches.

Directions:

See Left Main – Fractional Flow Reserve.

Descriptive Name: RCA - Fractional Flow Reserve

Variable Name: RCA_FFR

Format: X.XX

Definition: Indicate the fractional flow reserve ratio (FFR) or instantaneous wave-free ratio (iFR) for the RCA and its major branches.

Directions:

See Left Main – Fractional Flow Reserve.

Descriptive Name: LCX - Fractional Flow Reserve

Variable Name: LCX_FFR

Format: X.XX

Definition: Indicate the fractional flow reserve ratio (FFR) or instantaneous wave-free ratio (iFR) for the LCX and its major branches.

Directions:

See Left Main – Fractional Flow Reserve.

Descriptive Name: MLA Measurement Type

Variable Name: MLA_TYPE

Format: 1, 2, blank or 0

Definition: If minimal luminal area (MLA) is reported, indicate if the measurements were obtained from IVUS or OCT evaluation.

1 – IVUS

2 – OCT

Directions:

If no MLA is reported, leave this field blank or enter 0.

Descriptive Name: Flow Measurement Type

Variable Name: FLW_TYPE

Format: 1 or 2

Definition: If fractional flow reserve ratio (FFR) or Instantaneous wave-free ratio (iFR) is reported, indicate if the measurements were obtained from FFR or iFR evaluation.

1 – FFR

2 – iFR

Directions:

- If no FFR/iFR is reported, leave this field blank or enter 0.
 - If both FFR and iFR were used, check FFR and report the values from FFR.
-

Valve Disease

Valve Disease should be reported for all valve surgery patients and for any other patient if the information is available.

Directions and Explanation:

Moderate or Severe Stenosis – Aortic, Mitral, or Tricuspid: Should be demonstrated by appropriate imaging technique, echocardiography, or hemodynamic measurement during cardiac catheterization or operation.

Moderate or Severe Aortic Incompetence: Should be demonstrated by aortography or by pre-op or intraoperative echocardiography.

Moderate or Severe Mitral Incompetence: Should be demonstrated by left ventriculography or by pre-op or intraoperative echocardiography.

Moderate or Severe Tricuspid Incompetence: Should be demonstrated by physical examination or by pre-op or intraoperative echocardiography.

Use pre-incision intra-operative TEE results if either: a) these findings changed the planned surgery or b) no other values are available. Otherwise, use the most recent values from 6 months prior to surgery up to OR entry.

Choose the **highest** level of valve dysfunction when there are differences in interpretation of the most recent study.

Capture when available, even if patient is not scheduled for valve repair and/or replacement.

Report findings of “Trace” or “Trivial” as “None.”

If a report shows “mild to moderate” disease, it would be appropriate to code “moderate.”

Descriptive Name: Aortic Valve Stenosis

Variable Name: STEN_AOR

Format: 0-3 or Blank

Definition: Report the aortic valve stenosis using the following codes.

- 0 – None
- 1 – Mild
- 2 – Moderate
- 3 – Severe

Directions and Explanation:

See Valve Disease.

Descriptive Name: Mitral Valve Stenosis

Variable Name: STEN_MIT

Format: 0-3 or Blank

Definition: Report the mitral valve stenosis using the following codes.

- 0 – None
- 1 – Mild
- 2 – Moderate
- 3 – Severe

Directions and Explanation:

See Valve Disease.

Descriptive Name: Tricuspid Valve Stenosis

Variable Name: STEN_TRI

Format: 0-3 or Blank

Definition: Report the tricuspid valve stenosis using the following codes.

- 0 – None
- 1 – Mild
- 2 – Moderate
- 3 – Severe

Directions and Explanation:

See Valve Disease.

Descriptive Name: Aortic Valve Incompetence

Variable Name: INCO_AOR

Format: 0-3 or Blank

Definition: Report the aortic valve incompetence using the following codes.

- 0 – None
- 1 – Mild
- 2 – Moderate
- 3 – Severe

Directions and Explanation:

See Valve Disease.

Descriptive Name: Mitral Valve Incompetence

Variable Name: INCO_MIT

Format: 0-3 or Blank

Definition: Report the mitral valve incompetence (regurgitation) using the following codes.

- 0 – None
- 1 – Mild
- 2 – Moderate
- 3 – Severe

Directions:

When reporting mitral valve Incompetence, also report information for the type, etiology and leaflet involvement.

See additional directions and explanation under Valve Disease.

Descriptive Name: Tricuspid Valve Incompetence

Variable Name: INCO_TRI

Format: 0-3 or Blank

Definition: Report the tricuspid valve incompetence using the following codes.

- 0 – None
- 1 – Mild
- 2 – Moderate
- 3 – Severe

Directions and Explanation:

See Valve Disease.

Descriptive Name: Mitral Regurgitation Type - Secondary

Variable Name: SEC_MR

Format: 1 = Yes, 0 or Blank = No

Definition: For patients with mitral valve regurgitation, report if Secondary mitral valve disease is present.

Directions:

Report only when "Mitral Incompetence" is reported. (INCO_MIT = 1, 2, 3)

This data element may be skipped for patients with a mitral valve prosthesis in place prior to the current cardiac surgery.

It is acceptable to report both Primary and Secondary Mitral Regurgitation

Explanation:

In "Secondary" MR, the mitral valve is usually normal and LV dysfunction is caused by coronary artery disease, myocardial infarction or idiopathic myocardial disease.

Descriptive Name: Mitral Regurgitation Type - Primary

Variable Name: PRIME_MR

Format: 1 = Yes, 0 or Blank = No

Definition: For patients with mitral valve regurgitation, indicate the presence of Primary mitral valve disease is present.

Directions:

See Secondary Mitral Regurgitation.

Explanation:

"Primary" MR involves pathology of valve component(s), i.e. leaflets, chords, papillary muscle, annulus. This may be evidenced by mitral valve prolapse and associated with Barlow's Valve, Fibroelastic deficiency disease, infective endocarditis, connective tissue disorders, rheumatic heart disease, cleft MV, or Radiation Heart Disease. May also be called "degenerative" disease.

Descriptive Name: Etiology for Primary MR – (select all that apply)

Variable Name: MR_DEGEN, MR_RHEUM, MR_ENDO, MR_CALC, MR_OTH

Format: 1 = Yes, 0 or Blank = No

Definition: For patients with Primary Mitral Regurgitation, indicate the etiology, Select all that apply.

- Degenerative
- Rheumatic
- Endocarditis
- Calcified
- Other

Directions:

Report only when the patient has Primary Mitral Regurgitation (PRIME_MR = 1).

This data element may be skipped for patients with a mitral valve prosthesis in place prior to the current cardiac surgery.

Descriptive Name: Leaflet Involvement for Primary MR

Variable Name: MR_LEAF

Format: 1, 2, 3, blank or 0

Definition: For patients with Primary Mitral Regurgitation, indicate which leaflets are involved.

1 – Posterior

2 – Anterior

3 – Both

Directions:

Report only when the patient has Primary Mitral Regurgitation (PRIME_MR = 1).

This data element may be skipped for patients with a mitral valve prosthesis in place prior to the current cardiac surgery.

Descriptive Name: Valve Symptoms

Variable Name: VALVE_SYMP

Format: 1 or 2, blank or 0

Definition: For patients with any valve disease, indicate their symptom status.

1 – Asymptomatic

2 – Symptomatic

Directions:

- Report for patients with stenosis or incompetence of any valve.
- Leave blank or enter 0 for patients with no valve disease.

Explanation:

Symptomatic patients are those with symptoms believed to be related to their valve disease such as: decreased exercise tolerance, exertional dyspnea, or heart failure symptoms.

Descriptive Name: Five-Meter Walk Test – Result 1

Variable Name: FIVE_WALK1

Format: XXX.XX

Definition: For patients undergoing transcatheter aortic valve replacement or surgical aortic valve replacement, if the five-meter walk test was performed within 90 days of the procedure, report the time the patient took to walk 5 meters for the first test.

Directions:

This may not be available for all TAVR and SAVR patients but should be reported when available.

Descriptive Name: Five-Meter Walk Test – Result 2

Variable Name: FIVE_WALK2

Format: XXX.XX

Definition: For patients undergoing transcatheter aortic valve replacement or surgical aortic valve replacement, if the five-meter walk test was performed within 90 days of the procedure, report the time the patient took to walk 5 meters for the second test.

Directions:

This may not be available for all TAVR and SAVR patients but should be reported when available.

Descriptive Name: Five-Meter Walk Test – Result 3

Variable Name: FIVE_WALK3

Format: XXX.XX

Definition: For patients undergoing transcatheter aortic valve replacement or surgical aortic valve replacement, if the five-meter walk test was performed within 90 days of the procedure, report the time the patient took to walk 5 meters for the third test.

Directions:

This may not be available for all TAVR and SAVR patients but should be reported when available.

Descriptive Name: 0. None

Variable Name: NORISK

Format: 1 = Yes, 0 or Blank = No

Definition: Report if none of the pre-operative risk factors listed below are present.

Descriptive Name: 1. Previous CABG – Patent Grafts

Variable Name: PAT_GRAFT

Format: 1 = Yes, 0 or Blank = No

Definition: Indicate if, prior to this cardiac surgery, the patient has undergone CABG and currently has one or more patent grafts.

Directions:

Include any surgeries that occurred prior to this one including those earlier in the current admission.

Check this box if there are any patent grafts, even if there are also occluded grafts. Only check box 1 or box 1a, not both.

If the patient has a history of CABG and a history of other cardiac surgery, you should report both risk factors.

Descriptive Name: 1a. Previous CABG – No Patent Grafts

Variable Name: OTH_CABG

Format: 1 = Yes, 0 or Blank = No

Definition: Indicate if, prior to this cardiac surgery, the patient has previously undergone CABG and has no patent grafts.

Directions:

Include any surgeries that occurred prior to this one including those earlier in the current admission.

Check this box only if there are no patent grafts. Only check box 1 or box 1a, not both.

If the patient has a history of CABG and a history of other cardiac surgery, you should report both risk factors.

Descriptive Name: 2a. Previous Valve Surgery/Intervention

Variable Name: PRE_VALV

Format: 1 = Yes, 0 or Blank = No

Definition: Indicate if, prior to this cardiac surgery, the patient has previously undergone surgery or catheter-based intervention for valve repair or replacement.

Note:

It is acceptable to report this risk factor as well as a risk factor for previous CABG surgery and/or other previous cardiac surgery.

Descriptive Name: 2. Any Other Previous Cardiac Surgery

Variable Name: OTH_SURG

Format: 1 = Yes, 0 or Blank = No

Definition: Indicate if prior to this OR visit the patient has had any cardiac surgery other than CABG or valve repair / replacement.

Note:

Do not include catheter-based interventions.

If the patient has previously had CABG and/or valve surgery as well as another cardiac surgery, report this risk factor in addition to the appropriate Previous CABG and/or Valve risks.

Descriptive Name: 4. Previous MI < 6 hours

Variable Name: PREMILT6

Format: 1 = Yes, 0 or Blank = No

Definition: Indicate if the symptom onset of the patient's most recent MI was less than 6 hours before surgery.

Explanation:

Timing should be from the onset of symptoms to the start of the surgery. If the exact time that the symptoms started is not available in the medical record, every effort should be made to create a close estimate based on available documentation.

The diagnosis of Acute Coronary Syndrome (ACS) in the medical record is not sufficient to Code risk factors 4 – 6. There must be documentation of a diagnosed myocardial infarction.

Descriptive Name: 5. Previous MI 6 - 23 hours

Variable Name: PREMI623

Format: 1 = Yes, 0 or Blank = No

Definition: Indicate if the symptom onset of the patient's most recent MI was 6 - 23 hours before surgery.

Explanation:

See Previous MI < 6 hours.

Descriptive Name: 6. Previous MI Days

Variable Name: PREMIDAY

Format: 1-21, 0 or Blank

Definition: If the patient's most recent MI was 1 day or more before surgery, enter the number of days since symptom onset. If the MI was 21 days or more prior to surgery, enter 21.

Explanation:

See Previous MI < 6 hours.

Descriptive Name: 64. Neurological Event

Variable Name: CVD_EVENT

Format: 1, 2 or 0 or Blank

Definition: Use the following codes to indicate if the patient has a history of a neurological event:

1 – Stroke

2 – TIA, without history of stroke

Directions:

If no history of stroke or TIA, enter 0 or leave blank.

Explanation:

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.

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.

Descriptive Name: 65. Arterial Imaging Test

Variable Name: CVD_IMG

Format: 1, 2, 0 or Blank

Definition: Use the codes below to indicate if a noninvasive or invasive arterial imaging test demonstrated $\geq 50\%$ stenosis of any of the major extracranial or intracranial vessels to the brain.

1 – 50-79% occlusion

2 – $>79\%$ occlusion

Directions:

If no findings in this range, or no testing performed, enter 0 or leave blank.

Descriptive Name: 66. Cervical or Cerebrovascular Procedure

Variable Name: CVD_PROC

Format: 1 = Yes, 0 or Blank = No

Definition: Check the box to indicate if the patient has previous cervical or cerebral artery surgery or percutaneous intervention.

Explanation:

It is acceptable to report cerebrovascular aneurysm clipping or coiling for this risk factor.

The procedure should be related to cerebrovascular disease, not trauma.

Descriptive Name: 67. Cardiogenic Shock

Variable Name: SHOCK_COND

Format: 1 = Yes, 0 or Blank = No

Definition: Indicate if, in the immediate pre-operative period, the patient was in cardiogenic shock as defined below.

Cardiogenic shock is defined as an episode of systolic blood pressure <90 mmHg and/or cardiac index < 2.2 L/min /m² determined to be secondary to cardiac dysfunction and the requirement for parenteral inotropic or vasopressor agents or mechanical support (e.g., IABP) to maintain blood pressure and cardiac index above those specified levels.

Explanation:

See Refractory Cardiogenic Shock.

Descriptive Name: 68. Refractory Cardiogenic Shock

Variable Name: SHOCK_REFR

Format: 1 = Yes, 0 or Blank = No

Definition: Indicate if, in the immediate pre-operative period, the patient was in refractory cardiogenic shock as defined below.

Refractory cardiogenic shock is defined as an episode of systolic blood pressure <80 mm Hg and/or cardiac index < 2.0 L/min /m² determined to be secondary to cardiac dysfunction despite the use of parenteral inotropic or vasopressor agents or mechanical support (e.g., IABP).

Cases with Refractory Cardiogenic Shock will be excluded from analysis.

Explanation (Applies to Cardiogenic Shock and Refractory Cardiogenic Shock):

Transient episodes of hypotension reversed with IV fluid or atropine do not constitute cardiogenic shock or refractory cardiogenic shock.

For these purposes, the immediate pre-operative period is defined as the period just prior to anesthesiology taking responsibility for the patient.

Ongoing CPR warrants the coding of Refractory Cardiogenic Shock.

If the patient is Ventricular Assist Device (VAD) dependent then Refractory Shock should be coded. For these purposes ECMO is treated like a VAD. Use of Impella is treated like a VAD when there is evidence prior to insertion that the hemodynamic criteria above are met.

If the patient has an IABP, the augmented or non-augmented systolic BP < 80 mmHg may be used as support for coding Refractory Cardiogenic Shock.

Descriptive Name: 10. Peripheral Arterial Disease**Variable Name:** PERIPH**Format:** 1 = Yes, 0 or Blank = No**Definition:** Angiographic demonstration of at least 50% narrowing in a major aortoiliac or femoral/popliteal vessel, previous surgery for such disease, absent femoral or pedal pulses, or the inability to insert a catheter or intra-aortic balloon due to iliac aneurysm or obstruction of the aortoiliac or femoral arteries. Ankle-Brachial Index < 0.9 is also acceptable documentation.**Examples:**

Peripheral Arterial Disease	Code	Do Not Code
1. Tortuosity of the vessel alone		X
2. Tortuosity of the vessel with an inability to insert a Catheter	X	
3. Abdominal aortic aneurysm (AAA)	X	
4. Aneurysm in the ascending or descending aorta	X	
5. Absence of femoral pulse on either the right or the left	X	
6. Diminished femoral pulse on either right or left or both		X
7. Claudication		X
8. A negative popliteal pulse alone (1+1- or 1-1+)		X
9. Palpable dorsalis pedis and posterior tibial pulses		X
10. If pulses are non-palpable, but are dopplerable	X	
11. Inability to insert a catheter or IABP in femoral Arteries	X	
12. Amputated toes, necrotic toes, gangrene of the foot in the absence of other acceptable criteria		X
13. Renal artery with significant stenosis	X	
14. Subclavian artery with significant stenosis	X	
15. Iliac artery aneurysm	X	
16. Infrarenal aortic dissection	X	
17. "Moderate" subclavian artery stenosis with no % documented		X
18. Documentation of Subclavian Steal Syndrome	X	

Descriptive Name: 18. Heart Failure, Current

Variable Name: CHF_CUR

Format: 1 = Yes, 0 or Blank = No

Definition: Within 2 weeks prior to the procedure, the patient has a clinical diagnosis of heart failure and symptoms requiring treatment for heart failure.

Physician diagnosis of heart failure may be based on one of the following:

- Paroxysmal nocturnal dyspnea (PND)
- Dyspnea on exertion (DOE) due to heart failure
- Chest X-Ray showing pulmonary congestion

Documentation must include the presence of a diagnosis of heart failure, evidence of symptoms, and treatment for heart failure.

Explanation:

The diagnosis component may be documented with a variety of terms such as: congestive heart failure (CHF), heart failure (HF), systolic heart failure, diastolic heart failure, heart failure with reduced EF (HFrEF), heart failure with preserved EF (HFpEF).

Renal dialysis is acceptable for the treatment component of this definition, if there is documentation that the patient is receiving dialysis as a treatment for heart failure.

Documentation of NYHA Class III or IV may fulfill both the diagnosis and symptoms components of this definition. Documentation of a lower NYHA class may fulfill the symptoms component, but there must also be documentation of a heart failure diagnosis.

It is acceptable to report both Heart Failure Current and Past.

Descriptive Name: 19. Heart Failure, Past

Variable Name: CHF_PAST

Format: 1 = Yes, 0 or Blank = No

Definition: Between 2 weeks and 6 months prior to the procedure, the patient has a clinical diagnosis / past medical history of heart failure and ongoing treatment for heart failure.

Note:

Physician diagnosis of heart failure may be based on one of the following:

- Paroxysmal nocturnal dyspnea (PND)
- Dyspnea on exertion (DOE) due to heart failure
- Chest X-Ray showing pulmonary congestion

Documentation must include a diagnosis of heart failure and evidence of treatment for heart failure. Patient's clinical status may be compensated.

Explanation:

See Heart Failure, Current.

Descriptive Name: 20. Malignant Ventricular Arrhythmia

Variable Name: MAL_VENT

Format: 1 = Yes, 0 or Blank = No

Definition: Recent (within the past 14 days) sustained ventricular tachycardia requiring electrical defibrillation or conversion with intravenous anti-arrhythmic agents or ventricular fibrillation requiring electrical defibrillation. Excludes V-Tach or V-Fib occurring within 6 hours of the diagnosis of a myocardial infarction and responding well to treatment.

Explanation:

Sustained arrhythmia is that which continues until something is done to stop it; it does not resolve on its own.

For patients within 6 hours of the diagnosis of an MI who are experiencing V-Tach or VFib that otherwise meets the above criteria, you may still code this risk factor if the arrhythmia is not responding well to treatment. In this context, “not responding well to treatment” means there is a recurrent episode of Vtach or VFib that requires additional therapies (multiple shocks or additional pharmacological intervention) or the initial episode required multiple shocks at maximal energy.

If the patient has an AICD that is documented to have performed cardioversion, defibrillation, or anti-tachycardia pacing, then CODE, unless the patient is within 6 hours of the onset of a diagnosed MI.

Regular oral medication for a ventricular arrhythmia is NOT sufficient reason to code the risk factor.

Descriptive Name: 21. Chronic Lung Disease**Variable Name:** COPD**Format:** 1-4**Definition:** Indicate whether the patient has chronic lung disease, and the severity level according to the following classification:

1 – None

2 – Mild – Report for patients with a diagnosis of chronic lung disease and one or more of the following:

- FEV₁ 60% to 75% of predicted,
- DLCO or the DLCO/VA >60% of predicted and < lower limit of normal,
- chronic inhaled or oral bronchodilator therapy or chronic inhaled steroid therapy.

3 – Moderate – Report for patients with a diagnosis of chronic lung disease and one or more of the following:

- FEV₁ 50% to 59% of predicted,
- DLCO or the DLCO/VA 40-60% of predicted,
- chronic oral steroid therapy aimed at lung disease.

4 – Severe – Report for patients with a diagnosis of chronic lung disease and one or more of the following:

- FEV₁ < 50% predicted,
- DLCO or the DLCO/VA <40% of predicted,
- pO₂ < 60 or pCO₂ > 50.

Explanation:

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 are 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. Patients with asthma or seasonal allergies are not considered to have chronic lung disease.

COVID-19, when resulting in reduced lung function and/or need for chronic bronchodilator or steroid therapy for the lung condition, can be accepted as the diagnosis portion of this risk factor.

Acceptable documentation for “severe” includes pO₂ < 60 or pCO₂ > 50 on supplemental oxygen as well as on room air.

Bedside spirometry may be used to identify the severity of chronic lung disease when there is a diagnosis of COPD or other qualifying chronic lung disease in the patient’s medical record. Findings on a full PFT or bedside spirometry such as “moderate obstructive defect” are not a diagnosis of chronic lung disease. For all cases, there must be a diagnosis of pre-procedure chronic lung disease to report this risk factor.

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

Documentation Note:

Diagnosis must be present in the medical record. This information must be included with any medical record documentation submitted for review of this risk factor. When severity is documented based on treatment of chronic lung disease, it is necessary to show that the patient was receiving the treatment at the time of admission or just prior to admission.

Descriptive Name: 23. Extensive Aortic Atherosclerosis

Variable Name: CALCAORT

Format: 1 = Yes, 0 or Blank = No

Definition: Ascending, transverse, and/or descending aortic atherosclerosis marked by either extensive calcification or luminal atheroma such that the intended surgical procedure is altered.

Explanation:

It is necessary to demonstrate that the intended surgical procedure is altered. An operative note that dictates a change in the intended surgical procedure (i.e. clamp moved, procedure performed off pump) is acceptable documentation.

Documentation of the advanced aortic pathology by either transesophageal echocardiography, epi aortic echocardiography, intravascular ultrasound, magnetic resonance angiography or other imaging modality performed in the perioperative period should be available either by official report or dictated in the operative notes.

Calcium in aortic arch on chest X-ray is not enough to code this risk.

Extensive evaluation **does not** represent a change in the intended surgical procedure.

Descriptive Name: 24. Diabetes

Variable Name: DIABETES

Format: 1 = Yes, 0 or Blank = No

Definition: Indicate whether patient has a history of diabetes diagnosed and/or treated by a healthcare provider.

Explanation:

Exclusions are steroid induced hyperglycemia and gestational (transient), without elevated HbA1c and/or treatment.

Not all patients receiving diabetic medications are considered diabetic. It is important to remember, some medications used to treat diabetes may be used to treat other conditions.

A hemoglobin A1c value of $\geq 6.5\%$, collected within 3 months prior to surgery, is acceptable to use for documentation of diabetes.

Patients with a history of diabetes who have had a pancreatic transplant are coded as Yes to Diabetes.

Descriptive Name: 24a. Diabetes Therapy

Variable Name: DM_TRT

Format: 1-7 or Blank

Definition: Indicate the patient's diabetes control method (long-term management) as presented on admission.

Patients placed on a pre-procedure 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.

- 1 – None - No treatment for diabetes
- 2 – Diet only - Treatment with diet only
- 3 – Oral - Treatment with oral agent (includes oral agent with or without diet treatment)
- 4 – Insulin - Insulin treatment (includes any combination with insulin)
- 6 – Other subcutaneous medication - Other subcutaneous medications (such as GLP-1 agonists)
- 5 – Other - Other adjunctive treatment, not oral/insulin/diet
- 7 – Unknown

Directions:

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, not oral/insulin/diet
- Unknown

Report this element for all cases where “Risk Factor #24 - Diabetes” is also reported, otherwise leave the field blank or enter 0.

Explanation:

If the patient has had a pancreatic transplant code “other” since the insulin from the new pancreas is not exogenous insulin.

Descriptive Name: 25. Hepatic Failure

Variable Name: HEPATICF

Format: 1 = Yes, 0 or Blank = No

Definition: The patient has cirrhosis or other liver disease and has a bilirubin > 2 mg/dL and a serum albumin < 3.5 g/dL.

Descriptive Name: 27. Renal Failure, Dialysis

Variable Name: REN_DIAL

Format: 1 = Yes, 0 or Blank = No

Definition: Indicate whether the patient is currently (prior to surgery) undergoing dialysis on a routine basis.

Explanation:

Includes any form of peritoneal or hemodialysis patient is currently receiving routinely prior to surgery with the intent to resume post-op. 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.

Descriptive Name: 32. Previous PCI, This Episode of Care

Variable Name: PCITHIS

Format: 1 = Yes, 0 or Blank = No

Definition: Indicate whether there was a previous PCI 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.

Explanation:

This is reported only for PCI prior to the surgical procedure; therefore, do not report PCI in the same OR visit.

Descriptive Name: 33. PCI Before This Episode of Care

Variable Name: PCIBEFO

Format: 1 = Yes, 0 or Blank = No

Definition: The patient has had a PCI before this episode of care.

Descriptive Name: 38. Stent Thrombosis

Variable Name: THROMBOS

Format: 1 = Yes, 0 or Blank = No

Definition: Formation of a blood clot/thrombus in the stented segment of an artery and/or adjacent area. This usually results in an acute occlusion, chest pain or development of an acute MI. Patient must be currently affected by stent thrombosis as evidenced by AMI, ACS, or clinical angina to code this risk factor.

Explanation:

An occlusion alone, plaque build-up or in-stent restenosis does not constitute coding. There must be documentation noting thrombus. The thrombus needs to be in or around the area that was stented for the risk factor to be code. Patient’s with stent thrombosis that has been resolved prior to this cardiac surgery (for example in the cath lab) should not be coded with this risk factor.

Descriptive Name: 39. Any Previous Organ Transplant

Variable Name: ORGAN

Format: 1 = Yes, 0 or Blank = No

Definition: The patient has had any organ transplant prior to the current cardiac surgery. This includes, but is not limited to, heart, lung, kidney, and liver transplants. If a heart or lung transplant was performed during the operating room visit that generated this form, do not code this risk factor.

Explanation:

Also code for bone marrow transplant. Do not code for corneal or skin transplant (grafting).

If the patient had a previous organ transplant and that organ was later removed, do not code this risk factor.

Descriptive Name: 40. Heart Transplant Candidate

Variable Name: HT_TRANS

Format: 1 = Yes, 0 or Blank = No

Definition: This risk factor should be coded when the patient is an approved heart transplant candidate before the start of the procedure.

Explanation:

Supporting documentation must be included in the patient's medical record showing that the patient was a transplant candidate prior to the start of the procedure. Acceptable documentation includes: notes that a pre-transplant evaluation was performed and patient was accepted, notes from the transplant coordinator that they have discussed this issue with the patient/family, or a note indicating the transplant patient's status based on UNOS urgency criteria.

During quarterly and annual data verification and validation efforts, supporting documentation for cases coded with this risk factor will be requested.

Descriptive Name: 62. Active Endocarditis

Variable Name: ENDOCARD

Format: 1 = Yes, 0 or Blank = No

Definition: Two or more positive blood cultures without other obvious source with demonstrated valvular vegetations or histopathology report with findings of endocarditis.

This can include patients who are still on antibiotics at the time of surgery.

Excludes patients who have completed antibiotic therapy and have no evidence of residual infection.

Descriptive Name: 69. Immediate Surgery after Catheter Based Procedure

Variable Name: IMMED_SURG

Format: 1-7, 0 or Blank

Definition: If the patient required immediate surgery after a catheter-based procedure, select one response from the list below that best describes the procedure or reason for surgery.

- 1 – Diagnostic Catheterization - Complication
- 2 – Diagnostic Catheterization - Cath Findings
- 3 – PCI Complication
- 4 – EP Procedure Complication
- 5 – Valve Procedure Complication
- 6 – Left Atrial Appendage Occlusion Device Complication
- 7 – Other Catheter-Based Procedure Complication

Immediate surgery is defined as surgery as soon as the surgeon and/or operating room could accommodate the patient.

IV. Major Events Following Operation

REMINDER: This section is required for all cases, including procedures that qualify for streamlined reporting.

Check to be sure that all of the listed major events occurred during or after the current cardiac surgery. Check at least one box in this section.

Please Note:

Unless otherwise specified, a documented pre-operative condition that persists post-operatively with no increase in severity is not a major event. This is true even if the pre-operative condition is not part of this reporting system.

Unless otherwise specified, major events are only reported if they occur post-operatively, but before hospital discharge.

Descriptive Name: 0. None

Variable Name: NOCOMPs

Format: 1 = Yes, 0 or Blank = No

Definition: Check if none of the major events listed below occurred following the operation.

Descriptive Name: 1. Stroke

Variable Name: STROKE

Format: 1 = Yes, 0 or Blank = No

Definition: Indicate whether the patient has a postoperative stroke (i.e., any confirmed neurological deficit of abrupt onset caused by a disturbance in blood supply to the brain) that was confirmed by imaging or did not resolve within 24 hours.

Descriptive Name: 2. Post-Op MI

Variable Name: POSTMI

Format: 1 = Yes, 0 or Blank = No

Definition: Report if post-op there is a new MI defined as:

- elevation of cTn values (>5 x 99th percentile URL) in patients with normal baseline values (99th percentile URL)
- or a rise of cTn values >20% if the baseline values are elevated and are stable or falling.

And at least one of the following:

- symptoms suggestive of myocardial ischemia or
 - new ischemic ECG changes or
 - angiographic findings consistent with a procedural complication or
 - imaging demonstration of new loss of viable myocardium or new regional wall motion abnormality.
-

Descriptive Name: 4. Deep Sternal Wound Infection

Variable Name: STERNINF

Format: 1 = Yes, 0 or Blank = 0

Definition: Indicate whether the patient had a deep sternal wound infection within 30 days of surgery (whether in the initial hospital stay or after discharge).

A deep incisional SSI must meet the following criteria:

Infection occurs within 30 days after the operative procedure **and** involves deep soft tissues (e.g., fascial and muscle layers) of the incision **and** patient has at least 1 of the following:

- a. Purulent drainage from the deep incision but not from the organ/space component of the surgical site.
 - b. A deep incision spontaneously dehisces or is deliberately opened by a surgeon and is culture-positive or not cultured when the patient has at least 1 of the following signs or symptoms: fever (>38°C), or localized pain or tenderness. A culture-negative finding does not meet this criterion.
 - c. An abscess or other evidence of infection involving the deep incision is found on direct examination, during reoperation, or by histopathologic or radiologic examination.
 - d. Diagnosis of a deep incisional SSI by a surgeon or attending physician.
-

Descriptive Name: 5. Bleeding Requiring Reoperation

Variable Name: BLEDREOP

Format: 1, 2, Blank or 0

Definition: If the patient was re-explored for mediastinal bleeding with or without tamponade either in the ICU, PACU or returned to the operating room, use the code below to indicate the time frame.

- 1 – Acute (within 24 hours of the end of the case);
2 – Late (more than 24 hours after the case ends).

Interpretation:

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 hypo-perfused 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.

Code exactly 24 hours as acute.

Descriptive Name: 8. Sepsis**Variable Name:** SEPSIS**Format:** 1 = Yes, 0 or Blank = No**Definition:** Sepsis is defined as evidence of serious infection accompanied by a deleterious systemic response.**Explanation:**

In the time period of the first 48 postoperative or postprocedural 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). 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, and thrombocytopenia.

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.

In the time period after the first 48 postoperative or postprocedural hours, sepsis may be diagnosed by the presence of a SIRS resulting from suspected or proven infection.

Descriptive Name: 9. G-I Event**Variable Name:** GIBLEED**Format:** 1 = Yes, 0 or Blank = No**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;
- Prolonged ileus;
- Clostridium difficile

Explanation:

GI events may require medical management, observational management or surgical intervention to control. 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.

Example # 1: A patient has a placement of a Percutaneous Endoscopic Gastrostomy (PEG). Patients that receive PEG's are generally very sick patients that require long term nutritional support because of multiple postoperative complications and the inability to eat. If a PEG is placed in the stomach, it means that the stomach is working well enough to support the nutritional support that the PEG feedings are providing. Do not code a GI complication in this situation.

Example # 2: 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.

Example # 3: A patient has elevated liver enzymes postoperatively; a transient rise in the patient's liver enzymes does not represent a GI complication.

Descriptive Name: 10. Renal Failure

Variable Name: RENAL_FAI

Format: 1 = Yes, 0 or Blank = No

Definition: Indicate whether the patient had a new requirement for dialysis postoperatively, which may include hemodialysis or peritoneal dialysis.

Explanation:

This includes a one-time need for dialysis as well as implementation of longer term therapy.

Do not include patients who need dialysis but refuse or expire prior to initiation of dialysis.

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.

Continuous Venovenous Hemofiltration (CVVH, CVVH-D), Continuous Renal Replacement Therapy (CRRT) and Intermittent hemodialysis (iHD) should be coded here as "Yes."

Does not include aquapheresis or ultrafiltration which is for fluid overload and is not counted as dialysis.

Descriptive Name: 13. Prolonged Ventilator Dependence

Variable Name: RESP_FAI

Format: 1 = Yes, 0 or Blank = No

Definition: Pulmonary insufficiency requiring intubation and ventilation for a period of 72 hours or more, at any time during the post-operative stay. For patients who are placed on and taken off ventilation several times, the total of these episodes should be 72 hours or more.

Explanation:

If the patient is intubated for 72 or more hours after surgery this major event should be coded, even if the patient was intubated prior to the procedure.

The following scenario would be coded:

Patient was extubated 48 hours post-op. Patient was re-intubated sometime the next day. Patient was extubated 32 hours later.

It is not necessary to show that the prolonged ventilatory dependence was due to respiratory failure.

Descriptive Name: 14. Unplanned Cardiac Reoperation or Interventional Procedure

Variable Name: UNPLANREOP

Format: 1 = Yes, 0 or Blank = No

Definition: Any unplanned cardiac reoperation or percutaneous coronary intervention that is required as a result of the current cardiac surgery. This would exclude a reoperation to control bleeding that is reported under Major Event #5.

Explanation:

This major event should be reported for any cardiac surgery, not just those reportable in CSRS. Procedures should be directly related to the heart. Examples of reportable surgeries include but are not limited to: CABG, cardiac massage, or cardiac explorations. Some examples of the procedures not reportable are: pacemaker insertion, pericardiocentesis, and pleurocentesis.

If the chest is left open after surgery with a return to the operating room to close, this would not be considered an unplanned cardiac reoperation. If clots need to be removed from an open chest this would not be considered an unplanned cardiac reoperation.

The procedure does not have to be performed in the operating room or cath lab.

Descriptive Name: 15. Bleeding at Primary Access Site

Variable Name: ACCBLD_P

Format: 1 = Yes, 0 or Blank = No

Definition: Report for any transcatheter valve procedure with a bleeding at the primary access site when any of the following criteria are met:

- Overt bleeding in a critical organ, such as intracranial, intraspinal, intraocular, pericardial (associated with hemodynamic compromise/tamponade and necessitating intervention), or intramuscular with compartment syndrome (BARC 3b, BARC 3c)
- Overt bleeding causing hypovolemic shock or severe hypotension (systolic blood pressure <90 mmHg lasting >30 min and not responding to volume resuscitation) or requiring vasopressors or surgery (BARC 3b)
- Overt bleeding requiring reoperation, surgical exploration, or reintervention for the purpose of controlling bleeding (BARC 3b, BARC 4)
- Post-thoracotomy chest tube output ≥ 2 L within a 24-h period (BARC 4)
- Overt bleeding requiring a transfusion of ≥ 5 units of whole blood/red blood cells (BARC 3a) †
- Overt bleeding associated with a hemoglobin drop ≥ 5 g/dL (≥ 3.1 mmol/L) (BARC 3b).

Primary Access Site refers to the vascular access site used for placement of the valve or device.

Descriptive Name: 16. Bleeding at Secondary Access Site

Variable Name: ACCBLD_S

Format: 1 = Yes, 0 or Blank = No

Definition: Report for any transcatheter valve procedure with a bleeding at a secondary access site when any of the following criteria are met:

- Overt bleeding in a critical organ, such as intracranial, intraspinal, intraocular, pericardial (associated with hemodynamic compromise/tamponade and necessitating intervention), or intramuscular with compartment syndrome (BARC 3b, BARC 3c)
- Overt bleeding causing hypovolemic shock or severe hypotension (systolic blood pressure <90 mmHg lasting >30 min and not responding to volume resuscitation) or requiring vasopressors or surgery (BARC 3b)
- Overt bleeding requiring reoperation, surgical exploration, or reintervention for the purpose of controlling bleeding (BARC 3b, BARC 4)
- Post-thoracotomy chest tube output ≥ 2 L within a 24-h period (BARC 4)
- Overt bleeding requiring a transfusion of ≥ 5 units of whole blood/red blood cells (BARC 3a) †
- Overt bleeding associated with a hemoglobin drop ≥ 5 g/dL (≥ 3.1 mmol/L) (BARC 3b).

Secondary Access Site refers to any vascular access site associated with the procedure other than that used for placement of the valve or device.

V. Discharge Information

REMINDER: This section is required for all cases, including procedures that qualify for streamlined reporting.

Descriptive Name: Discharge Status

Variable Name: STATUS

Format: 2-6, 8, 11-15, or 19

Definition: Enter the appropriate code.

Discharged Alive:

11 – Home

12 – Hospice

13 – Acute Care Facility

14 – Skilled Nursing Facility

15 – Inpatient Physical Medicine and Rehab

19 – Other(specify)

Died In:

2 – Operating Room

3 – Recovery Room

4 – Critical Care Unit

5 – Medical/Surgical Floor

6 – In-transit to Other Facility

8 – Elsewhere in Hospital (specify)

Directions:

If a patient is discharged to hospice (including home with hospice), the discharge status should be reported with code 12. Note that for purposes of analysis a hospice discharge (code 12) is considered an in-hospital mortality unless the hospital can provide documentation that 30 days after discharge the patient was still alive (even if still in hospice). Please see the full hospice policy and reporting requirements in “CSRS Data Reporting Policies.”

If the patient came from a prison or correctional facility and is being discharged back to the same setting then “11 – Home” would be coded.

Use code 14 for patients who arrive from and are discharged to a skilled nursing home.

If the patient is discharged to sub-acute rehab that is in a skilled nursing facility then the discharge status would be code 14. If it is unknown where the sub-acute rehab facility is located, then the discharge status would be code 19.

If the patient is discharged to an inpatient physical medicine and rehabilitation unit, the discharge status should be code 15.

Code 19 – Other (specify) should only be checked for a live discharge status not otherwise specified in this section (e.g. AMA).

Descriptive Name: Discharge to Other Location - Specify

Variable Name: DISWHERE

Format: Free Text

Definition: For patients reported with discharge status 19 – Other Live Discharge or 8 – Died Elsewhere in Hospital, enter the specific discharge disposition or location of death.

Descriptive Name: Hospital Discharge Date

Variable Name: DISDATE

Format: MM/DD/YYYY

Definition: Enter the date the patient was discharged from the hospital.

If the patient died in the hospital, the hospital discharge date is the date of death.

Descriptive Name: 30 Day Status

Variable Name: THIRTYDAY

Format: 1, 2, or 9

Definition: Report the patient's status at 30 days post-procedure using the appropriate code.

1-Live

2-Dead

9-Unknown

VI. Person Completing Report

REMINDER: This section is optional for all cases

Descriptive Name: Person Completing Report - Optional

Variable Name: REPORT_NAME

Format: Free Text (not on upload file)

Definition: This space is provided as an aid to the hospital. This space may be used to enter the name and telephone number of the person completing the report, and the date the report was completed. This field is not required and is not used by the Department of Health. It is provided solely for the use of the individual hospitals.

This field appears only on the hard copy form, it is not part of data entry or file specification for transmission to the Cardiac Services Program.

Descriptive Name: Referring Physician - Optional

Variable Name: REF_PHYS

Format: Free Text

Definition: This space is provided as an aid to the hospital. It is intended to allow the name of the referring cardiologist or primary care physician to be entered. For many hospitals, this is useful for tracking 30-day status. By entering the name of the referring physician, case lists can be generated and sent to the referring physician for follow-up.

This field is not required and is not used by the Department of Health. It is provided solely for the use of the individual hospitals.

VII. Stages of Shock Classification

Note: The data elements in this section are required only for records with any of the following criteria: MI < 24 hours, Refractory Cardiogenic Shock, Non-refractory Cardiogenic Shock, Heart Failure - Current (within the past 2 weeks other than elective same-day admission), Emergency or Salvage Surgical Priority.

Note: For all data elements below, the term “Case Start” refers to the prior just before anesthesiology took responsibility for the patient.

Pre-Op Biochemical Markers

Descriptive Name: Lactate in mmol/L

Variable Name: LACTATE

Format: 0.0 – 99.9 or blank

Definition: Report the last recorded Lactate (in mmol/L) prior to Case Start but within 12 hours.

Clarification:

Report the most recent value obtained. Either venous or arterial may be reported.

Descriptive Name: Lactate Not Documented/Unknown

Variable Name: LACTATE_ND

Format: 1 = Yes, 0 or Blank = No

Definition: Indicate if there was no Lactate recorded within 12 hours prior to Case Start or the value is unknown or not documented.

Descriptive Name: Lactate – Date and Time Drawn

Variable Name: LAC_DT

Format: MM/DD/YYYY HH:MM

Definition: Report the date and time that the lactate reported above was drawn. Use military time.

Descriptive Name: Lactate – Date and Time Not Documented/Unknown

Variable Name: LAC_DT_ND

Format: 1 = Yes, 0 or Blank = No

Definition: Indicate if the date and/or time that the reported lactate was drawn is unknown or not available.

Descriptive Name: ALT (Alanine Transaminase) in iU/L

Variable Name: ALT

Format: 0 – 9999

Definition: Report the last recorded ALT (in iU/L) prior to Case Start but within 12 hours.

Descriptive Name: ALT Not Documented/Unknown

Variable Name: ALT_ND

Format: 1 = Yes, 0 or Blank = No

Definition: Indicate if there was no ALT recorded within 12 hours prior to Case Start or the value is unknown or not documented.

Descriptive Name: ALT – Date and Time

Variable Name: ALT_DT

Format: MM/DD/YYYY HH:MM

Definition: Report the date and time that the ALT reported above was drawn. Use military time.

Descriptive Name: ALT – Date and Time Not Documented/Unknown

Variable Name: ALT_DT_ND

Format: 1 = Yes, 0 or Blank = No

Definition: Indicate if the date and/or time that the reported ALT was drawn is unknown or not available.

Descriptive Name: Arterial pH

Variable Name: PH

Format: 0.00 – 9.99

Definition: Report the last recorded pH prior to Case Start but within 12 hours.

Descriptive Name: Arterial pH Not Documented/Unknown

Variable Name: PH_ND

Format: 1 = Yes, 0 or Blank = No

Definition: Indicate if there was no pH recorded within 12 hours prior to Case Start or the value is unknown or not documented.

Descriptive Name: Arterial pH – Date and Time

Variable Name: PH_DT

Format: MM/DD/YYYY HH:MM

Definition: Report the date and time that the pH reported above was measured. Use military time.

Descriptive Name: Arterial pH – Date and Time Not Documented/Unknown

Variable Name: PH_DT_ND

Format: 1 = Yes, 0 or Blank = No

Definition: Indicate if the date and/or time that the reported pH was measured is unknown or not available.

Blood Pressure Before Case Start

For all Blood Pressure elements below, when both invasive and noninvasive values are available, the invasive value should be reported. Additionally, if the patient is on an IABP, the augmented values should be reported.

Descriptive Name: Systolic Blood Pressure, Last Before Start

Variable Name: LAST_BPSYS

Format: 0-999

Definition: Report the last systolic blood pressure recorded prior to Case Start.

Descriptive Name: Diastolic Blood Pressure, Last Before Start

Variable Name: LAST_BPDIA

Format: 0-999

Definition: Report the last diastolic blood pressure recorded prior to Case Start.

Descriptive Name: Blood Pressure, Last Before Start Not Documented/Unknown

Variable Name: LAST_BP_ND

Format: 1 = Yes, 0 or Blank = No

Definition: Indicate if the systolic and/or diastolic blood pressure before Case Start is unknown, not recorded, unavailable.

Descriptive Name: Mean Arterial Pressure, Last Before Start

Variable Name: LAST_MAP

Format: 0-999

Definition: Report the last Mean Arterial Pressure recorded prior to Case Start.

Clarification:

This may be calculated based on Systolic and Diastolic blood pressure if the MAP is not recorded.

Descriptive Name: Mean Arterial Pressure, Last Before Start Not Documented/Unknown

Variable Name: LAST_MAP_ND

Format: 1 = Yes, 0 or Blank = No

Definition: Indicate if the Mean Arterial Pressure before Case Start is unknown, not recorded, unavailable.

Descriptive Name: Systolic Blood Pressure, Lowest in 1 Hour

Variable Name: LOW_BPSYS

Format: 0-999

Definition: Report the lowest systolic blood pressure within 1 hour prior to Case Start.

Clarification:

In the event of a cardiac arrest within 1 hour prior to Case Start, report "0".

Descriptive Name: Diastolic Blood Pressure, Lowest in 1 Hour

Variable Name: LOW_BPDIA

Format: 0-999

Definition: Report the diastolic blood pressure associated with the lowest systolic blood pressure within 1 hour prior to Case Start.

Clarification:

In the event of a cardiac arrest within 1 hour prior to Case Start, report "0".

Report the diastolic blood pressure recorded at the time of the lowest systolic blood pressure within 1 hour prior to Case Start. This may not be the lowest diastolic blood pressure recorded.

Descriptive Name: Blood Pressure, Lowest in 1 Hour Not Documented/Unknown

Variable Name: LOW_BP_ND

Format: 1 = Yes, 0 or Blank = No

Definition: Indicate if the lowest systolic and/or diastolic blood pressure within 1 hour prior to Case Start is unknown, not documented, unavailable.

Descriptive Name: Mean Arterial Pressure, Lowest in 1 Hour

Variable Name: LOW_MAP

Format: 0-999

Definition: Report the lowest Mean Arterial Pressure (MAP) within 1 hour prior to Case Start.

Clarification:

This may be calculated based on Systolic and Diastolic blood pressure if the MAP is not recorded.

In the event of a cardiac arrest within 1 hour prior to Case Start, report "0".

Report the lowest recorded MAP within 1 hour prior to Case Start, even if it was recorded at a different time than the lowest systolic blood pressure.

Descriptive Name: Mean Arterial Pressure, Lowest in 1 Hour Not Documented/Unknown

Variable Name: LOW_MAP_ND

Format: 1 = Yes, 0 or Blank = No

Definition: Indicate if the lowest Mean Arterial Pressure (MAP) within 1 hour prior to Case Start is unknown, not documented, unavailable.

Vasoactive Medications

Descriptive Name: Vasoactive Drugs Used

Variable Name: VASO_MEDS

Format: 1 = Yes, 0 or Blank = No

Definition: Indicate if the patient was receiving an infusion of vasoactive medications at Case Start or received a bolus of vasoactive medications within 1 hour prior to Case Start.

Descriptive Name: Dobutamine, Dopamine, Epinephrine, Levosimendan, Milrinone, Norepinephrine, Phenylephrine, Vasopressin

Variable Name: VM_DOBUT, VM_DOPA, VM_EPI, VM_LVSDN, VM_MILR, VM_NOREPI, VM_PHEN, VM_VASP

Format: 1 = Bolus Only, 2 = Infusion, 0 or Blank = No

Definition:

Use the codes below to indicate the use of vasoactive medications as listed in this section.

1 = Bolus within 1 hour prior to Case Start

2 = Infusion ongoing at time of Case Start

Leave blank or enter 0 if the patient did not receive a bolus within 1 hour prior to Case Start and was not receiving an infusion at the time of Case Start.

For patient receiving an infusion at Case Start who also received a bolus within 1 hour, report the infusion.

Descriptive Name: Other Vasoactive Medication

Variable Name: VM_OTH

Format: 1 = Bolus Only, 2 = Infusion, 0 or Blank = No

Definition: Use the codes below to indicate use of a vasoactive medication not listed above.

1 = Bolus within 1 hour prior to Case Start

2 = Infusion ongoing at time of Case Start

Descriptive Name: Other Vasoactive Medication Specify

Variable Name: VM_SPEC

Format: Free text

Definition: If Other Vasoactive Medication is reported, indicate specifically what drug was given in the space provided.

Mechanical Circulatory Support / Ventricular Assist Device

Descriptive Name: Mechanical Support Used

Variable Name: MECH_USED

Format: 1 = Yes, 0 or Blank = No

Definition: Indicate if the patient was on a Mechanical Circulatory Support Device or Ventricular Assist Device (VAD) at the time of Case Start.

Descriptive Name: IABP

Variable Name: IABP

Format: 1 = Yes, 0 or Blank = No

Definition: Report the use of IABP at Case Start.

Descriptive Name: Tandem Heart

Variable Name: TANDEM

Format: 1 = Yes, 0 or Blank = No

Definition: Report the use of Tandem Heart at Case Start.

Descriptive Name: Impella 2.5

Variable Name: IMP_25

Format: 1 = Yes, 0 or Blank = No

Definition: Report the use of Impella 2.5 at Case Start.

Descriptive Name: Impella CP

Variable Name: IMP_CP

Format: 1 = Yes, 0 or Blank = No

Definition: Report the use of Impella CP at Case Start.

Descriptive Name: Impella 5.0/5.5

Variable Name: IMP_50

Format: 1 = Yes, 0 or Blank = No

Definition: Report the use of Impella 5.0 or 5.5 at Case Start.

Descriptive Name: VA ECMO

Variable Name: VA_ECMO

Format: 1 = Yes, 0 or Blank = No

Definition: Report the use of VA ECMO at Case Start.

Descriptive Name: Percutaneous RVAD

Variable Name: PERC_RVAD

Format: 1 = Yes, 0 or Blank = No

Definition: Report the use of Percutaneous RVAD at Case Start.

Note:

Impella RP is reported in this category.

Descriptive Name: Temporary Surgical VAD

Variable Name: TEMP_VAD

Format: 1 = Yes, 0 or Blank = No

Definition: Report the use of Temporary Surgical VAD at Case Start.

Note:

Centrimag is reported in this category.

Descriptive Name: Implanted Surgical VAD

Variable Name: IMPLN_VAD

Format: 1 = Yes, 0 or Blank = No

Definition: Report the use of Implanted Surgical VAD at Case Start.

Note:

Heartmate is reported in this category.

Descriptive Name: Other Mechanical Support

Variable Name: MECH_OTH

Format: 1 = Yes, 0 or Blank = No

Definition: Report the use of an Other Mechanical Circulatory Support / VAD at Case Start.

Descriptive Name: Other Mechanical Support Specify

Variable Name: MECH_SPEC

Format: Free text

Definition: If an Other Mechanical Circulatory Support Device or VAD was reported, indicate the specific device used in the space provided.

Invasive Hemodynamic Assessment / Pulmonary Artery Catheterization

Descriptive Name: Invasive Hemodynamic Assessment

Variable Name: INV_HEMO

Format: 1 - 4, blank or 0

Definition: Use the codes below to indicate if there was invasive hemodynamic assessment and the timeframe performed.

- 1 – None within 12 hours of surgery
- 2 – Immediately prior to Case Start (within 1 hour)
- 3 – Between 1 and 12 hours prior to Case Start
- 4 – Not Documented / Unknown

Clarification:

The RA Pressure may have been obtained at an earlier time than the other PA Catheterization values. In that situation, indicate the time frame that the other values were obtained for this question and check the box for “Right Atrial Pressure Recorded at Remote Time.”

Descriptive Name: Right Atrial Pressure (mean)

Variable Name: RA_MEAN

Format: 0-999

Definition: Report the Right Atrial (RA) pressure if available from within 12 hours prior to Case Start.

Descriptive Name: Right Atrial Pressure Not Documented/Unknown

Variable Name: RA_ND

Format: 1 = Yes, 0 or Blank = No

Definition: Indicate if the Right Atrial pressure is not documented or unknown.

Descriptive Name: Right Atrial Pressure on Vasoactive Medications

Variable Name: RA_MEDS

Format: 1 = Yes, 0 or Blank = No

Definition: If the Right Atrial pressure was reported, indicate if that value was recorded while the patient was receiving vasoactive medications.

Descriptive Name: Right Atrial Pressure on Mechanical Support

Variable Name: RA_MECH

Format: 1 = Yes, 0 or Blank = No

Definition: If the Right Atrial pressure was reported, indicate if that value was recorded while the patient was receiving mechanical circulatory support.

Descriptive Name: Right Atrial Pressure Recorded at Remote Time

Variable Name: RA_REMOTE

Format: 1 = Yes, 0 or Blank = No

Definition: Indicate if the Right Atrial pressure was recorded at a time remote from other Pulmonary Artery Catheterization values.

Descriptive Name: Pulmonary Artery Pressure, Systolic

Variable Name: PA_SYS

Format: 0-999

Definition: Report the systolic Pulmonary Artery (PA) pressure if available from within 12 hours prior to Case Start.

Descriptive Name: Pulmonary Artery Pressure, Diastolic

Variable Name: PA_DIA

Format: 0-999

Definition: Report the diastolic Pulmonary Artery (PA) pressure if available from within 12 hours prior to Case Start.

Descriptive Name: Pulmonary Artery Pressure Not Documented/Unknown

Variable Name: PA_ND

Format: 1 = Yes, 0 or Blank = No

Definition: Indicate if the Pulmonary Artery (PA) pressure if not documented or unknown.

Descriptive Name: Pulmonary Artery Pressure on Vasoactive Medications

Variable Name: PA_MEDS

Format: 1 = Yes, 0 or Blank = No

Definition: If the Pulmonary Artery pressure was reported, indicate if that value was recorded while the patient was receiving vasoactive medications.

Descriptive Name: Pulmonary Arterial Pressure on Mechanical Support

Variable Name: PA_MECH

Format: 1 = Yes, 0 or Blank = No

Definition: If the Pulmonary Artery pressure was reported, indicate if that value was recorded while the patient was receiving vasoactive medications.

Descriptive Name: Pulmonary Capillary Wedge Pressure (PCWP)

Variable Name: PCWP

Format: 0-99

Definition: Report the systolic Pulmonary Capillary Wedge Pressure (PCWP) if available from within 12 hours prior to Case Start.

Descriptive Name: Pulmonary Capillary Wedge Pressure Not Documented/Unknown

Variable Name: PCWP_ND

Format: 1 = Yes, 0 or Blank = No

Definition: Indicate if the Pulmonary Capillary Wedge Pressure (PCWP) is not documented or unknown.

Descriptive Name: Pulmonary Capillary Wedge Pressure on Vasoactive Medications

Variable Name: PCWP_MEDS

Format: 1 = Yes, 0 or Blank = No

Definition: If the Pulmonary Capillary Wedge Pressure (PCWP) was reported, indicate if that value was recorded while the patient was receiving vasoactive medications.

Descriptive Name: Pulmonary Capillary Wedge Pressure on Mechanical Support

Variable Name: PCWP_MECH

Format: 1 = Yes, 0 or Blank = No

Definition: If the Pulmonary Capillary Wedge Pressure (PCWP) was reported, indicate if that value was recorded while the patient was receiving mechanical circulatory support.

Descriptive Name: Left Ventricular End Diastolic Pressure

Variable Name: LVEDP

Format: 0-99 or Blank

Definition: Report the Left Ventricular End Diastolic Pressure if available from within 12 hours prior to Case Start.

Clarification:

If the documentation includes only a range and not a specific value, the highest end of the range may be reported.

Descriptive Name: Left Ventricular End Diastolic Pressure Not Documented/Unknown
Variable Name: LVEDP_ND
Format: 1 = Yes, 0 or Blank = No
Definition: Indicate if the Left Ventricular End Diastolic Pressure is not documented or unknown.

Descriptive Name: Left Ventricular End Diastolic Pressure on Vasoactive Medications
Variable Name: LVEDP_MEDS
Format: 1 = Yes, 0 or Blank = No
Definition: If the Left Ventricular End Diastolic Pressure was reported, indicate if that value was recorded while the patient was receiving vasoactive medications.

Descriptive Name: Left Ventricular End Diastolic Pressure on Mechanical Support
Variable Name: LVEDP_MECH
Format: 1 = Yes, 0 or Blank = No
Definition: If the Left Ventricular End Diastolic Pressure was reported, indicate if that value was recorded while the patient was receiving mechanical circulatory support.

Descriptive Name: Cardiac Index
Variable Name: CI
Format: 0.0-9.9 or Blank
Definition: Report the Cardiac Index if available from within 12 hours prior to Case Start.

Descriptive Name: Cardiac Index Not Documented/Unknown
Variable Name: CI_ND
Format: 1 = Yes, 0 or Blank = No
Definition: Indicate if the Cardiac Index is not documented or unknown.

Descriptive Name: Cardiac Index on Vasoactive Medications
Variable Name: CI_MEDS
Format: 1 = Yes, 0 or Blank = No
Definition: If the Cardiac Index was reported, indicate if that value was recorded while the patient was receiving vasoactive medications.

Descriptive Name: Cardiac Index on Mechanical Support
Variable Name: CI_MECH
Format: 1 = Yes, 0 or Blank = No
Definition: If the Cardiac Index was reported, indicate if that value was recorded while the patient was receiving mechanical circulatory support.

Attachment A

Response Codes for Asian and Pacific Islander Groups

These codes are to be used in the field “Detailed Asian / Pacific Islander” (AAPI_CODE) when response to “Race” (RACE) is 4-Asian Pacific Islander.

- 01 Chinese
- 02 Japanese
- 03 Filipino
- 04 Korean
- 05 Vietnamese
- 06 Asian Indian
- 07 Bangladeshi
- 08 Pakistani
- 09 Burmese
- 10 Nepalese
- 11 Taiwanese
- 12 Thai
- 13 Bhutanese
- 14 Cambodian
- 15 Hmong
- 16 Indonesian
- 17 Laotian
- 18 Malaysian
- 19 Mongolian
- 20 Sri Lankan
- 21 Other Asian
- 22 Native Hawaiian
- 23 Guamanian and Chamorro
- 24 Samoan
- 25 Other Pacific Island group

Attachment B

Response Codes for Preferred Language

Acceptable responses for “Preferred Language” (PREF_LANG). The language responses follow the ISO 639.2 conventions and there are two special codes for Other and Unknown/Not Documented.

Language	Response Code
Albanian	sqi
Arabic	ara
Bengali	ben
Cantonese	yue
Chinese	zho
English	eng
French	fra
German	deu
Greek	gre
Haitian-Creole	hat
Hindi	hin
Italian	ita
Japanese	jpn
Korean	kor
Mandarin	cmn
Polish	pol
Russian	rus
Spanish	spa
Tagalog	tgl
Urdu	urd
Yiddish	yid
SPECIAL VALUES	
Other Language Not Above	888
Language Unknown/Not Documented	999

Attachment C

PFI Numbers for Cardiac Diagnostic and Surgical Centers

PFI Facility

ALBANY AREA

0001 Albany Medical Center Hospital
0746 Bassett Medical Center
0829 Ellis Hospital
1005 Glens Falls Hospital
0756 Samaritan Hospital
0818 Saratoga Hospital
0005 St. Peter's Hospital
0135 UVM Health Network - CVPH

BUFFALO AREA

0207 Buffalo General Medical Center
0213 Mercy Hospital of Buffalo
0574 Niagara Falls Memorial Medical Center
0066 Olean General Hospital
0103 Women's Christian Association Hospital

ROCHESTER AREA

0116 Arnot Ogden Medical Center
0411 Rochester General Hospital
0413 Strong Memorial Hospital
0471 The Unity Hospital of Rochester

SYRACUSE AREA

0977 Cayuga Medical Center
0636 Crouse Hospital
0598 St. Elizabeth Medical Center
0630 St. Joseph's Hospital Health Center
0058 UHS-Wilson Medical Center
0635 Upstate University Hospital - SUNY

PFI Facility

NEW ROCHELLE AREA

0699 Garnet Health Medical Center (formerly Orange Regional Medical Center)
0779 Good Samaritan Hospital of Suffern
0925 Good Samaritan University Hospital
0990 HealthAlliance Hospital – Broadway Campus
0913 Huntington Hospital
0895 John T. Mather Memorial Hospital
0885 Long Island Community Hospital
0513 Mercy Medical Center
0180 MidHudson Regional Hospital of Westchester Medical Center
1072 Montefiore New Rochelle Hospital
0776 Montefiore Nyack Hospital
0694 Montefiore St. Luke's Cornwall Hospital
0527 Mount Sinai South Nassau
0528 Nassau University Medical Center
0541 North Shore University Hospital
0192 Northern Dutchess Hospital
1117 Northern Westchester Hospital
1039 NY Presbyterian-Hudson Valley Hospital
1122 NYP Westchester
0511 NYU- Langone Hospital - Long Island
0938 Peconic Bay Medical Center
0924 South Shore University Hospital
0943 St. Catherine of Siena Medical Center
0563 St. Francis Hospital & Heart Center
1097 St. John's Riverside Hospital-St. John's Division
0889 Stony Brook Southampton Hospital
0245 University Hospital at Stony Brook
0181 Vassar Brothers Medical Center
1139 Westchester Medical Center
1045 White Plains Hospital

NY CITY AREA

1438 Bellevue Hospital Center
1178 BronxCare Health System-Concourse
1286 Brookdale University Hospital Medical Center
1288 Brooklyn Hospital Center-Downtown
1294 Coney Island Hospital
1626 Elmhurst Hospital Center
1445 Harlem Hospital Center
1309 Interfaith Medical Center (Brooklyn)
1165 Jacobi Medical Center

PFI Facility

NY CITY AREA (CONT.)

- 1629 Jamaica Hospital Medical Center
- 1301 King's County Hospital Center
- 1450 Lenox Hill Hospital
- 1630 Long Island Jewish Medical Center
- 1305 Maimonides Medical Center
- 1169 Montefiore Medical Center-Henry and Lucy Moses Division
- 3058 Montefiore Medical Center-Jack D. Weiler Hospital of
A. Einstein College Division
- 1439 Mount Sinai Beth Israel
- 1456 Mount Sinai Hospital
- 1469 Mount Sinai Morningside
- 1639 Mount Sinai Queens
- 1306 NYP Hospital - Brooklyn Methodist Hospital
- 1464 NYP Hospital-Columbia Presbyterian Center
- 1458 NYP Hospital-NY Weill Cornell Center
- 1637 NYP Hospital-Queens
- 1463 NYU Hospitals Center
- 1304 NYU Langone Hospital-Brooklyn
- 1738 Richmond University Medical Center
- 1176 St. Barnabas Hospital
- 1740 Staten Island University Hospital-North
- 1320 University Hospital at Downstate
- 1318 Wyckoff Heights Medical Center

8888 Catheterization Laboratory at a Veterans Administration Hospital in New York. (for use in this reporting system; not an official Permanent Facility Identifier)

9999 Catheterization Laboratory Outside New York State (for use in this reporting system; not an official Permanent Facility Identifier)

A complete listing of NYS hospitals, including their PFI can be found at: http://www.health.ny.gov/statistics/sparcs/reports/compliance/alpha_facilities.htm
Use the last four digits of the number listed to the right of the name for the PFI.

Attachment D

Congenital and Acquired Cardiac Procedure Codes NYSDOH CARDIAC ADVISORY COMMITTEE

100-398 Congenital Heart Disease - Operations With or Without Extracorporeal Circulation

Note: Extracorporeal circulation will be determined from the data element Entire Procedure Off Pump reported under Section II. Procedural Information on the front of the form. Please accurately complete this item for all appropriate cases.

Anomalies of Pulmonary Veins

- 100 Repair of Anomalous Pulmonary Venous Return
- 101 Repair of Pulmonary Vein Stenosis
- 103 Repair of Partial Anomalous Pulmonary Venous Return

Anomalies of Atrial Septum

- 120 ASD Closure
- 121 Creation of ASD
- 122 Repair of Cor Triatriatum
- 123 PFO Closure

Atrioventricular Septal Defect (AVSD)

- 130 Repair of Complete AV Canal
- 131 Repair of Partial AV Canal

Anomalies of Ventricular Septum

- 140 Repair of VSD
- 141 Creation/Enlargement of VSD
- 142 Fenestration of VSD Patch

Anomalies of Atrioventricular Valves

- Tricuspid Valve
- 150 Repair (Non-Ebstein's Valve)
Replacement
- 151 Homograft
- 152 Prosthetic
- 153 Tricuspid Valve Closure
- 154 Repair Ebstein's Anomaly

Anomalies of Atrioventricular Valves (continued)

Mitral Valve

- 160 Resect supramitral ring
- 161 Repair (including annuloplasty)
Replacement
- 162 Homograft
- 163 Prosthetic
- 170 Common AV Valve Repair

Anomalies of Ventricular Outflow Tract(s)

Pulmonary Ventricular Outflow Tract

- 180 Pulmonary Valvotomy/Valvectomy
- 181 Resection of subvalvular PS
- 182 Repair of supra-ventricular PS
Pulmonary Valve Replacement
- 190 Homograft
- 191 Prosthetic
- 192 Xenograft

Pulmonary Outflow Conduit

- Valved
- 200 Homograft
- 201 Prosthetic
- 202 Non-Valved
- Transannular Patch
- 210 With Monocusp Valve
- 211 Without Monocusp Valve
- 212 Repair Branch PS

Aortic Ventricular Outflow Tract

- 220 Aortic Valvuloplasty
- 221 Aortic Valvotomy
- 230 Repair Supra-ventricular AS
- 231 Resection of Discrete Subvalvular AS
- 235 Aortoventriculoplasty (Konno Procedure)
Aortic Valve Replacement
- 240 Autograft (Ross Procedure)
- 241 Homograft
- 242 Prosthetic
- 243 Heterograft
- Aortic Root Replacement
- 250 Autograft (Ross Procedure)
- 251 Homograft
- 252 Prosthetic
- 255 LV Apex to Aorta Conduit

Tetralogy of Fallot

- 260 Repair with Pulmonary Valvotomy
- 261 Repair with Transannular Patch
- 262 Repair with Non-valved Conduit
Repair with Valved Conduit
- 263 Homograft
- 264 Prosthetic
- 265 Repair with reduction/plasty of PAs
Repair with pulmonary valve replacement
- 266 Homograft
- 267 Prosthetic

Truncus Arteriosus

- 262 Repair with Non-Valved Conduit
Repair with Valved Conduit
- 263 Homograft
- 264 Prosthetic

Univentricular Heart (Single Ventricle)

- Fontan Operations
- 270 Direct RV-PA Connection
Total Cavopulmonary Connection
- 271 Lateral tunnel – nonfenestrated
- 272 Lateral tunnel – fenestrated
- 273 Extracardiac – nonfenestrated
- 274 Extracardiac – fenestrated
- 275 Septation of Single Ventricle
Hypoplastic Right Ventricle
Valved
- 200 Homograft
- 201 Prosthetic
- 202 Non-Valved
Transannular Patch
- 210 With Monocusp Valve
- 211 Without Monocusp Valve
- Hypoplastic Left Ventricle
- 280 Norwood
- 290 Damus Kaye Stansel (DSK)

Transposition of Great Arteries or Double Outlet RV

- 310 Arterial Switch
- 311 Senning Procedure
- 312 Mustard Procedure
- 313 Intraventricular Repair of DORV

Transposition of Great Arteries or Double Outlet RV (continued)

	Rastelli Procedure
	RV-PA Conduit
	Valved
320	Homograft
321	Prosthetic
322	Non-Valved
325	REV operation (Modified Rastelli)
	LV-PA Conduit
	Valved
326	Homograft
327	Prosthetic
328	Non-Valved

Great Vessel Anomalies

330	PDA Ligation
331	Repair Aortopulmonary Window
332	Reimplantation of left or right pulmonary artery
333	Repair Sinus of Valsalva Aneurysm
	Aortic Repair (Coarctation or Interruption)
340	End to end anastomosis
348	End to side anastomosis
341	Subclavian flap angioplasty
342	Onlay Patch
343	Interposition graft
344	Vascular Ring Division
345	Repair of PA Sling
346	Reimplantation of Innominate Artery
347	Aortoplexy

Coronary Artery Anomalies

	Translocation of LCA to Aorta
350	Direct
351	Transpulmonary Tunnel (Takeuchi)
352	Coronary Artery Ligation
353	Coronary Fistula Ligation

Cardiomyopathies

360	Left Ventricular Reconstruction (Batiste Procedure, Surgical Ventricular Restoration)
361	Radical Myomectomy

Interval Procedures

- 370 Pulmonary Artery Band
- 375 Unifocalization of Pulmonary Vessels
Shunts
- 381 Central Aortopulmonary Shunt
Blalock Taussig Shunts
- 382 Classical
- 383 Modified
- Glenn Shunts
- 384 Unidirectional (Classical)
- 385 Bidirectional
- 386 Bilateral Bidirectional
- 390 Cardiac Arrhythmia Surgery
- 398 Other Operations for Congenital Heart Disease

400-998 Acquired Heart Disease – Operations Performed With or Without Extracorporeal Circulation

- 401 Mitral Valvotomy
- 402 Pericardiectomy
- 403 Stab Wound of Heart or Great Vessel Repair (without extracorporeal
circulation)

Other

- 498 Other Operation for Acquired Heart Disease (without extracorporeal
circulation)

Valve Repair

- 500 Aortic
- 501 Mitral
- 502 Tricuspid
- 503 Pulmonary
- 504 Mitral Transcatheter Edge to Edge Repair (approach code also required)

Valve Replacement

- 510-518* Ross Procedure
- 520-528* Aortic Mechanical
- 530-538* Aortic Heterograft
- 540-548* Aortic Homograft

Valve Replacement (continued)

550-558*	Mitral Mechanical
560-568*	Mitral Heterograft
600-608*	Mitral Homograft
570-578*	Tricuspid Mechanical
580-588*	Tricuspid Heterograft
590-598*	Pulmonary

*REOPERATIONS: For Valve Replacement (510-608), use third digit to indicate reason for reoperation, as below. Note, the information below is specific to the valve reported. For example, a patient with previous aortic valve replacement who is now having mitral valve replacement (mechanical) would be reported using code 550 because this is not a re-operation on the mitral valve. In the event of multiple valve surgery, the third digit may be different for each valve code reported, i.e. one valve may be a re-op and the other(s) may not.

Use code 7 – Complication of Transcatheter Valve Replacement in the event of an unsuccessful Transcatheter Valve Replacement which requires surgical valve replacement.

0 Not a Reoperation	5 Disease of Another Valve
1 Periprosthetic Leak	6 Failed Catheter-based Valve Repair
2 Prosthetic Endocarditis	7 Complication of Transcatheter Valve Replacement
3 Prosthetic Malfunction	
4 Failed Surgical Valve Repair	8 Other Reason

Adjunct Valve Information – “Approach Codes”

640	Transfemoral Arterial
641	Transapical
643	Ascending Aorta (aka “Direct Aorta”)
644	Transcaval
645	Transseptal
646	Transaxillary
647	Transcarotid

Note: Use these codes in conjunction with the valve replacement codes above to indicate if the valve replacement was performed using a transcatheter (transcutaneous) approach. You must also report the appropriate code for valve replacement. Report these procedures no matter where in the hospital they are performed.

An approach code from the list above should also be reported for Mitral Transcatheter Edge to Edge Repair (TEER) – code 504.

Valve Conduits

660	Apical Aortic Conduit
-----	-----------------------

Coronary Artery Bypass Grafts

670 Coronary Artery Bypass Graft

Other Revascularization

710 Transmyocardial Revascularization

711 Percutaneous Coronary Intervention in the same setting as CABG or Valve surgery

715 Growth Factor Installation

Additional Procedures with or without CABG

760 Acquired Ventricular Septal Defect

761 Resection or Plication of LV Aneurysm

762 Ventricular Reconstruction (Batiste Procedure, Surgical Ventricular Restoration)

763 Carotid Endarterectomy (report only if done with another reportable cardiac surgical procedure)

764 Implantation of AICD (report only if done with another reportable cardiac surgical procedure)

Radiofrequency or Operative Ablation

770 Atrial

771 Ventricular

772 Maze Procedure

Surgery on the Aorta

810 Ascending Aorta Replacement / Repair with Coronary Reimplantation

811 Ascending Aorta Replacement / Repair without Coronary Reimplantation

812 Descending and Thoracoabdominal Aorta Surgery

813 TEVAR performed at the same time as reportable cardiac procedure.

Other

- 902 Pulmonary Embolectomy
- 903 Stab Wound of Heart or Great Vessel Repair (with extracorporeal circulation)
- 904 Removal of Intracardiac Neoplasm
- 905 Removal of Intracardiac Catheter (surgical)
- 907 Repair of a Traumatic Cardiac or Vascular Injury
- 908 Removal of Pacemaker or AICD and/or leads or wires
- 915 Septal Myomectomy
- 916 Ventricular Myomectomy
- 920 Ventricular Free Wall Rupture
- 930 Attempted Transcatheter Valve Replacement
- 931 Aborted Transcatheter Valve Replacement
- 932 Attempted Surgical Procedure
- 933 Aborted Surgical Procedure
- 998 Other Operation for Acquired Heart Disease (with extracorporeal circulation)

Attachment E

Congenital Cardiac Diagnosis Codes¹

SEPTAL DEFECTS

ASD

- 10 PFO
- 20 ASD, Secundum
- 30 ASD, Sinus venosus
- 40 ASD, Coronary sinus
- 50 ASD, Common atrium (single atrium)
- 2150 ASD, Postoperative interatrial communication

VSD

- 71 VSD, Type 1 (Subarterial) (Supracristal) (Conal septal defect) (Infundibular)
- 73 VSD, Type 2 (Perimembranous) (Paramembranous) (Conoventricular)
- 75 VSD, Type 3 (Inlet) (AV canal type)
- 77 VSD, Type 4 (Muscular)
- 79 VSD, Type: Gerbode type (LV-RA communication)
- 80 VSD, Multiple

AV Canal

- 100 AVC (AVSD), Complete (CAVSD)
- 110 AVC (AVSD), Intermediate (transitional)
- 120 AVC (AVSD), Partial (incomplete) (PAVSD) (ASD, primum)

AV Window

- 140 AP window (aortopulmonary window)
- 150 Pulmonary artery origin from ascending aorta (hemitruncus)

Truncus Arteriosus

- 160 Truncus arteriosus
- 170 Truncal valve insufficiency
- 2470 Truncal valve stenosis
- 2010 Truncus arteriosus + Interrupted aortic arch

PULMONARY VENOUS ANOMALIES

Partial Anomalous Pulmonary Venous Connection

- 180 Partial anomalous pulmonary venous connection (PAPVC)
- 190 Partial anomalous pulmonary venous connection (PAPVC), scimitar

Total Anomalous Pulmonary Venous Connection

- 200 Total anomalous pulmonary venous connection (TAPVC), Type 1 (supracardiac)
- 210 Total anomalous pulmonary venous connection (TAPVC), Type 2 (cardiac)
- 220 Total anomalous pulmonary venous connection (TAPVC), Type 3 (infracardiac)
- 230 Total anomalous pulmonary venous connection (TAPVC), Type 4 (mixed)

COR TRIARIATUM

- 250 Cor triatriatum

PULMONARY VENOUS STENOSIS

- 260 Pulmonary venous stenosis
- 2480 Pulmonary venous stenosis, acquired
- 2490 Pulmonary venous stenosis, spontaneous

¹Society of Thoracic Surgeons, Adult Cardiac Surgery Database, used with permission.

Attachment E

Congenital Cardiac Diagnosis Codes¹

SYSTEMIC VENOUS ANOMALIES

Anomalous Systemic Venous Connection

270 Systemic venous anomaly

Systemic Venous Obstruction

280 Systemic venous obstruction

RIGHT HEART LESIONS

Tetralogy of Fallot

290 TOF
2140 TOF, Pulmonary stenosis
300 TOF, AVC (AVSD)
310 TOF, Absent pulmonary valve

Pulmonary Atresia

320 Pulmonary atresia
330 Pulmonary atresia, IVS
340 Pulmonary atresia, VSD (Including TOF, PA)
350 Pulmonary atresia, VSD-MAPCA
360 MAPCA(s) (major aortopulmonary collateral[s]) (without PA-VSD)

Tricuspid Valve Disease and Ebstein's Anomaly

370 Ebstein's anomaly
380 Tricuspid regurgitation, non-Ebstein's related
390 Tricuspid stenosis
400 Tricuspid regurgitation and tricuspid stenosis
410 Tricuspid valve, Other

RVOT Obstruction and/or Pulmonary Stenosis

420 Pulmonary stenosis, Valvar
430 Pulmonary artery stenosis (hypoplasia), Main (trunk)
440 Pulmonary artery stenosis, Branch, Central (within the hilar bifurcation)
450 Pulmonary artery stenosis, Branch, Peripheral (at or beyond the hilar bifurcation)
470 Pulmonary artery, Discontinuous
490 Pulmonary stenosis, Subvalvar
500 DCRV

Pulmonary Valve Disease

510 Pulmonary valve, Other
530 Pulmonary insufficiency
540 Pulmonary insufficiency and pulmonary stenosis

SHUNT FAILURE

Shunt Failure

2130 Shunt failure

CONDUIT FAILURE

Conduit Failure

520 Conduit failure

¹Society of Thoracic Surgeons, Adult Cardiac Surgery Database, used with permission.

Attachment E

Congenital Cardiac Diagnosis Codes¹

LEFT HEART LESIONS

Aortic Valve Disease

- 550 Aortic stenosis, Subvalvar
- 560 Aortic stenosis, Valvar
- 570 Aortic stenosis, Supravalvar
- 590 Aortic valve atresia
- 600 Aortic insufficiency
- 610 Aortic insufficiency and aortic stenosis
- 620 Aortic valve, Other
- 2500 Aortic stenosis, subvalvar, discrete
- 2510 Aortic stenosis, subvalvar, IHSS
- 2520 Aortic stenosis, subvalvar, tunnel-like

Sinus of Valsalva Fistula/Aneurysm

- 630 Sinus of Valsalva aneurysm

LV to Aorta Tunnel

- 640 LV to aorta tunnel

Mitral Valve Disease

- 650 Mitral stenosis, Supravalvar mitral ring
- 660 Mitral stenosis, Valvar
- 670 Mitral stenosis, Subvalvar
- 680 Mitral stenosis, Subvalvar, Parachute
- 695 Mitral stenosis
- 700 Mitral regurgitation and mitral stenosis
- 710 Mitral regurgitation
- 720 Mitral valve, Other

Hypoplastic Left Heart Syndrome

- 730 Hypoplastic left heart syndrome (HLHS)

Shone's Syndrome

- 2080 Shone's syndrome

CARDIOMYOPATHY

- 740 Cardiomyopathy (including dilated, restrictive, and hypertrophic)
- 750 Cardiomyopathy, End-stage congenital heart disease

PERICARDIAL DISEASE

- 760 Pericardial effusion
- 770 Pericarditis
- 780 Pericardial disease, Other

SINGLE VENTRICLE

- 790 Single ventricle, DILV
- 800 Single ventricle, DIRV
- 810 Single ventricle, Mitral atresia
- 820 Single ventricle, Tricuspid atresia
- 830 Single ventricle, Unbalanced AV canal
- 840 Single ventricle, Heterotaxia syndrome

¹Society of Thoracic Surgeons, Adult Cardiac Surgery Database, used with permission.

Attachment E

Congenital Cardiac Diagnosis Codes¹

SINGLE VENTRICLE (CONTINUED)

850	Single ventricle, Other
851	Single Ventricle + Total anomalous pulmonary venous connection (TAPVC)

TRANSPOSITION OF THE GREAT ARTERIES

Congenitally Corrected TGA

870	Congenitally corrected TGA
872	Congenitally corrected TGA, IVS
874	Congenitally corrected TGA, IVS-LVOTO
876	Congenitally corrected TGA, VSD
878	Congenitally corrected TGA, VSD-LVOTO

Transposition of the Great Arteries

880	TGA, IVS
890	TGA, IVS-LVOTO
900	TGA, VSD
910	TGA, VSD-LVOTO

DORV

930	DORV, VSD type
940	DORV, TOF type
950	DORV, TGA type
960	DORV, Remote VSD (uncommitted VSD)
2030	DORV + AVSD (AV Canal)
975	DORV, IVS

DOLV

980	DOLV
-----	------

THORACIC ARTERIES AND VEINS

Coarctation of Aorta and Aortic Arch Hypoplasia

990	Coarctation of aorta
1000	Aortic arch hypoplasia
92	VSD + Aortic arch hypoplasia
94	VSD + Coarctation of aorta

Coronary Artery Anomalies

1010	Coronary artery anomaly, Anomalous aortic origin of coronary artery (AAOCA)
1020	Coronary artery anomaly, Anomalous pulmonary origin (includes ALCAPA)
1030	Coronary artery anomaly, Fistula
1040	Coronary artery anomaly, Aneurysm
2420	Coronary artery anomaly, Ostial atresia
1050	Coronary artery anomaly, Other

Interrupted Arch

1070	Interrupted aortic arch
2020	Interrupted aortic arch + VSD
2000	Interrupted aortic arch + AP window (aortopulmonary window)

Patent Ductus Arteriosus

1080	Patent ductus arteriosus
------	--------------------------

¹Society of Thoracic Surgeons, Adult Cardiac Surgery Database, used with permission.

Attachment E

Congenital Cardiac Diagnosis Codes¹

THORACIC ARTERIES AND VEINS (CONTINUED)

Vascular Rings and Slings

- 1090 Vascular ring
- 1100 Pulmonary artery sling

Aortic Aneurysm

- 1110 Aortic aneurysm (including pseudoaneurysm)

Aortic Dissection

- 1120 Aortic dissection

THORACIC AND MEDIASTINAL DISEASE

Lung Disease

- 1130 Lung disease, Benign
- 1140 Lung disease, Malignant

Tracheal Stenosis

- 1160 Tracheal stenosis
- 2430 Tracheomalacia
- 1170 Airway disease

Pleural Disease

- 1430 Pleural disease, Benign
- 1440 Pleural disease, Malignant
- 1450 Pneumothorax
- 1460 Pleural effusion
- 1470 Chylothorax
- 1480 Empyema

Esophageal Disease

- 1490 Esophageal disease, Benign
- 1500 Esophageal disease, Malignant

Mediastinal Disease

- 1505 Mediastinal disease
- 1510 Mediastinal disease, Benign
- 1520 Mediastinal disease, Malignant

Diaphragmatic Disease

- 1540 Diaphragm paralysis
- 1550 Diaphragm disease, Other

Chest Wall

- 2160 Rib tumor, Benign
- 2170 Rib tumor, Malignant
- 2180 Rib tumor, Metastatic
- 2190 Sternal tumor, Benign
- 2200 Sternal tumor, Malignant
- 2210 Sternal tumor, Metastatic

Pectus Excavatum, Carinatum

- 2220 Pectus carinatum
- 2230 Pectus excavatum

¹Society of Thoracic Surgeons, Adult Cardiac Surgery Database, used with permission.

Attachment E

Congenital Cardiac Diagnosis Codes¹

THORACIC AND MEDIASTINAL DISEASE (CONTINUED)

Thoracic Outlet

2240 Thoracic outlet syndrome

ELECTROPHYSIOLOGICAL

1180 Arrhythmia
2440 Arrhythmia, Atrial, Atrial fibrillation
2450 Arrhythmia, Atrial, Atrial flutter
2460 Arrhythmia, Atrial, Other
2050 Arrhythmia, Junctional
2060 Arrhythmia, Ventricular
1185 Arrhythmia, Heart block
1190 Arrhythmia, Heart block, Acquired
1200 Arrhythmia, Heart block, Congenital
1220 Arrhythmia, Pacemaker, Indication for replacement
2530 Short QT syndrome
2540 Long QT syndrome (Ward Romano syndrome)
2550 Wolff-Parkinson-White syndrome (WPW syndrome)

MISCELLANEOUS, OTHER

1230 Atrial Isomerism, Left
1240 Atrial Isomerism, Right
2090 Dextrocardia
2100 Levocardia
2110 Mesocardia
2120 Situs inversus
1250 Aneurysm, Ventricular, Right (including pseudoaneurysm)
1260 Aneurysm, Ventricular, Left (including pseudoaneurysm)
1270 Aneurysm, Pulmonary artery
1280 Aneurysm, Other
1290 Hypoplastic RV
1300 Hypoplastic LV
2070 Postoperative bleeding
1310 Mediastinitis
1320 Endocarditis
1325 Rheumatic heart disease
1330 Prosthetic valve failure
1340 Myocardial infarction
1350 Cardiac tumor
1360 Pulmonary AV fistula
1370 Pulmonary embolism
1385 Pulmonary vascular obstructive disease
1390 Pulmonary vascular obstructive disease (Eisenmenger's)
1400 Primary pulmonary hypertension
1410 Persistent fetal circulation
1420 Meconium aspiration
2250 Kawasaki disease
1560 Cardiac, Other
1570 Thoracic and/or mediastinal, Other
1580 Peripheral vascular, Other
2260 Complication of cardiovascular catheterization procedure
2270 Complication of cardiovascular catheterization procedure, Device embolization
2280 Complication of cardiovascular catheterization procedure, Device malfunction
2290 Complication of cardiovascular catheterization procedure, Perforation

¹Society of Thoracic Surgeons, Adult Cardiac Surgery Database, used with permission.

Attachment E

Congenital Cardiac Diagnosis Codes¹

MISCELLANEOUS, OTHER (CONTINUED)

2300	Complication of interventional radiology procedure
2310	Complication of interventional radiology procedure, Device embolization
2320	Complication of interventional radiology procedure, Device malfunction
2330	Complication of interventional radiology procedure, Perforation
2340	Foreign body, Intracardiac foreign body
2350	Foreign body, Intravascular foreign body
2360	Open sternum with closed skin
2370	Open sternum with open skin (includes membrane placed to close skin)
2380	Retained sternal wire causing irritation
2390	Syncope
2400	Trauma, Blunt
2410	Trauma, Penetrating
2560	Cario-respiratory failure not secondary to known structural heart disease
2570	Myocarditis
2580	Common AV valve insufficiency
2590	Protein-losing enteropathy
2600	Plastic bronchitis
7000	Normal heart
7777	Miscellaneous, Other

¹Society of Thoracic Surgeons, Adult Cardiac Surgery Database, used with permission.