

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

**July - December 2009 Discharges**

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

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

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# Revision Highlights and Coding Clarifications

## New Data Elements

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The following data elements have been added to the CSRS data collection system effective July 2009. The definitions for these elements are provided in the main text of this document.

Anesthesiologist(s) name and license number – Pg 19  
Congenital Diagnosis Code – Pg 18 and Attachment E  
Skin Closure Time – Pg 22  
Pre-Induction Blood Pressure – Pg 22  
Temperature Route – Pg 23  
Hematocrit, 1<sup>st</sup> in OR – Pg 23  
Hematocrit, Lowest on Cardiopulmonary Bypass – Pg 23  
Hematocrit, Last on Cardiopulmonary Bypass – Pg 23  
Stress Test Done – Pg 26  
Stress Test Type – Pg 27  
Stress Test Result – Pg 27  
Anti-Anginal Medical Therapy – Pg 33  
Other Patient Characteristics – Pg 33  
Previous CABG, No Patent Grafts – Pg 34

## Deleted Data Elements

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The following data elements have been deleted from the CSRS data collection system effective July 1, 2009.

Extubation Contraindicated  
Post-OP Beta Blocker Contraindicated  
Pre-Op Beta Blocker Contraindicated

## Revised Data Elements

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The following data element revisions are effective July 1, 2009. Please see further details in full text of this document.

Procedure Codes – Attachment D  
Several procedure codes representing combination procedures (e.g. CABG and Valve) have been deleted. Individual codes for each portion of the procedure should be used instead. Space has been added to accommodate an additional procedure code. Procedure codes have been added for Pulmonary Valve Repair (503), Carotid Endarterectomy (763) and AICD Implantation (764).

Procedure codes have been added in the section for Congenital Heart Disease for Great Vessel Anomalies, Aortic Repair, Coarctation or Interruption, End to side anastomosis (348), and Anomalies of Ventricular Outflow Tract, Pulmonary Valve Replacement, Xenograft (192).

# Revision Highlights and Coding Clarifications

## Revised Data Elements (continued)

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### Time of Induction of Anesthesia – Pg 22

The data element “Procedure Start Time” has been renamed “Time of Induction of Anesthesia”. The definition is unchanged.

### Post- Op Temperature – Pg 22

If temperature via pulmonary artery is available upon arrival in next level of care, report temperature via this route, otherwise report using other method.

### Pre-Op Beta Blocker – Pg 24

Response categories for “Pre-Op Beta Blocker” have been changed to include Yes, Contraindicated and Neither. As an associated change, the data element for “Beta Blocker Contraindicated” has been removed.

### Extubation in 24 hours – Pg 24

Response categories for “Extubation in 24 hours” have been changed to include Yes, Contraindicated and Neither. As an associated change, the data element for “Extubation Contraindicated” has been removed.

### Post- OP Beta Blocker – Pg 25

Response categories for “Post-Op Beta Blocker” have been changed to include Yes, Contraindicated and Neither. As an associated change the data element for, “Post- Op Beta Blocker Contraindicated” has been removed.

### Any Other Previous Cardiac Surgery – Pg 35

With the addition of “Previous CABG – No Patent Grafts”, this risk factor now refers to any previous cardiac surgery other than CABG.

Please see slightly revised instruction for reporting surgery on patients with bi-cuspid aortic valves on page 10.

## 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.

If the patient went to the operating room more than once for cardiac surgery during a single hospital stay, complete a separate form for each operating room visit where a reportable cardiac surgery was performed.

### DO NOT CODE:

- Implantation or removal of a pacemaker and its leads or wires
- Removal of an AICD and its leads or wires
- Coronary Endarterectomies
- Femoral Artery Repair or Bypass
- Innominate Artery Bypass
- Aortic Subclavian Bypass
- Exploration of the atria, aorta, valves, ventricles, or pulmonary artery
- Removal of thymoma
- Thymectomy
- VAD Removal

When the following procedures are the ONLY cardiac surgery performed in a hospital admission code them as a 498 or 998, otherwise the procedures are NOT CODED.

- Surgical Removal of a Stent
- Aortic Endarterectomy
- Pulmonary Artery Endarterectomy

*During quarterly and annual data verification and validation efforts, we will be asking for supporting documentation for cases coded as 398, 498, or 998. 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 in the same operating room visit as another reportable cardiac surgery

- Carotid Endarterectomy (763)
- Implantation of an AICD (764)

## When to Complete an Adult CSRS Form (continued)

**Intra-Operative PCI:** Code as a CABG (670). Code CABG information using the following criteria: count this procedure as a distal anastomosis of the saphenous vein. Therefore, this procedure done in isolation should have 1 Total Conduit, 0 Arterial Conduits, and 1 Distal Anastomoses. This procedure, when performed with a single arterial graft should have 2 Total Conduits, 1 Arterial Conduit, and 2 Distal Anastomoses.

**Repair of Cardiac Laceration due to Trauma (907):** Should be coded for repair of cardiac laceration due to trauma including a procedure to repair an injury to the heart that has resulted from a cardiac diagnostic or interventional procedure or from cardiac surgery.

**Radiofrequency or Operative Ablation (770-772):** A 772 (Maze) should be coded when there is a surgical procedure (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.

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.

*All procedures coded 772 will require an operative note to verify coding.*

**Pericardiectomy (402):** Any time the procedure consists of more than a pericardial window (i.e. stripping or partial pericardiectomy) and the procedure is performed on CP bypass it should be coded 402. A pericardial window is a small hole in the pericardium usually done by removing a small amount of the pericardial wall. It is usually done for a large or symptomatic collection of pericardial fluid or for diagnosis (biopsy).

**Aortic Root Replacement or Repair, With Graft, With Coronary Reimplantation (785):** This code only refers to procedures that involve the aortic root repair/replacement and an aortic valve replacement. An Ascending Aorta, with Graft, With Coronary Reimplantation should be coded 780.

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

## When to Complete an Adult CSRS Form (continued)

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

**Ventricular Assist Device as a Destination Therapy (840):** If an LVAD is placed as the final therapy, code 840 in addition to the LVAD. For example, if the patient is not a candidate for a heart transplant, but an LVAD is placed as a long-term treatment option this code would be appropriate.

**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).

# 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 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 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 30 days after discharge, evidence of subsequent hospital admission 30 days after initial discharge, and evidence of death 30 days or more 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.

## **Cardiogenic Shock Cases**

Beginning with cases discharged January 1, 2006 and continuing for a period of at least two years, cases in pre-procedural Cardiogenic Shock will not be included in the publicly released reports and analyses. This applies only to cases that meet the NYS Cardiac Services Program definition of Cardiogenic Shock (risk factor #13). Data for these cases must still be submitted electronically and will be subject to data verification activities. To ensure that the appropriate cases are identified as "Shock" cases, we will continue to require submission of medical record documentation of any case reported with this risk factor. 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. In addition, we anticipate that there will be increased requirements for medical record documentation for cases coded as "Hemodynamically Unstable" as well. It is strongly suggested that all appropriate staff closely review the definitions and documentation requirements for these two risk factors.

Note: The above policy regarding cases in Shock will be continued for at least another year (2009 discharges) while the data is evaluated.

## **CSRS Data Reporting Policies (continued)**

### **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.

### **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 2009 reporting schedule is as follows.

Quarter 1 (1/1/09 – 3/31/09 Discharges) due on or before May 31, 2009

Quarter 2 (4/1/09 – 6/30/09 Discharges) due on or before August 31, 2009

Quarter 3 (7/1/09 – 9/30/09 Discharges) due on or before November 30, 2009

Quarter 4 (10/1/09 – 12/31/09 Discharges) due on or before February 28, 2009

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.

# Item-By-Item Instructions

## **PFI Number**

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*Variable Name: PFI*

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

## **Sequence Number**

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*Variable Name: SEQUENCE*

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.

## **I. Patient Information**

### **Patient Name**

---

*Variable Names: LASTNAME, FIRSTNAME*

Enter the patient's last name followed by his/her first name.

### **Medical Record Number**

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*Variable Name: MEDRECNO*

Enter the patient's medical record number.

### **Social Security Number**

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*Variable Name: SSNO*

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.

### **Date of Birth**

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*Variable Name: DOB*

Enter the patient's exact date of birth.

# I. Patient Information (continued)

## Sex

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*Variable Name: SEX*

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

**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.

## Ethnicity

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*Variable Name: ETHNIC*

Check the appropriate box.

**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.

## Race

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*Variable Names: RACE, RACESPEC*

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. Terms such as "Haitian" or "Negro" can be used in addition to "Black or African American."

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. 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.

5 - Native Hawaiian or Other Pacific Islander. A person having origins 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."

# I. Patient Information (continued)

## Race (continued)

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**Note:** Please note that 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."

## Residence Code

---

*Variable Names: RESIDENC, STATE*

Enter the county code of the patient's principal residence, as shown in Attachment B. If the patient lives outside NYS, use code 99 and print the name of the state or country where the patient resides in the space provided. If you enter a valid NYS County Code then the "State or Country" field should be left blank.

If the patient is from a foreign country, but is staying in the US during the pre-operative and post-operative time period, you must enter 99 and print the name of the country that the patient is from. Do not enter the residence code of where the patient is staying in the US.

## Hospital Admission Date

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*Variable Name: ADMIDATE*

Enter the date that the current hospital stay began.

## Primary Payer

---

*Variable Name: PAYER*

Enter the primary source of payment for this hospital stay as shown in Appendix C.

Please note that Worker's Compensation, Family Health Plus, and Other Federal Programs are reported as code "19-Other".

**Interpretation:** Primary Payer and Medicaid: 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".

# I. Patient Information (continued)

## Primary Payer (continued)

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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).

If the patient has Blue Cross and Medicare, code Medicare if there is no indication of which is primary.

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

If you know a patient has Medicare or Medicaid, but do not know if it is Fee for Service or Managed Care, code Fee for Service.

## Medicaid

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*Variable Name: MEDICAID*

Check this box if the patient has Medicaid that will provide payment for any portion of this hospital stay. If the patient’s primary payer is Medicaid, check this box in addition to entering “03” or “04” under Primary Payer.

## PFI of Transferring Hospital

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*Variable Name: TRANS\_PFI*

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

This element only needs to be completed for transfer patients.

A list of PFIs for cardiac diagnostic centers in NYS is provided in Attachment A. If transferred from a Veterans Administration hospital in NYS, enter "8888"; if transferred from outside NYS, enter "9999". For patients transferred from another hospital in NYS, please see <http://hospitals.nyhealth.gov/> for a complete listing of NYS hospitals, including PFI.

**Note:** PFI on the above website is listed without leading 0s. For purposes of cardiac reporting, PFI should always be four (4) numeric characters. For example, PFI “1” should be reported as “0001”.

## II. Procedural Information

**REMINDER:** Fill out a separate CSRS form for each visit to the operating room for cardiac surgery involving the heart or great vessels during the hospital admission.

### **Hospital that Performed Diagnostic Cath**

---

*Variable Name: CATHPFI*

If the cardiac surgery was preceded by a diagnostic catheterization, enter the name and PFI number of the hospital in the spaces provided. If the catheterization was at a cardiac diagnostic center in NYS, enter its PFI Number from Attachment A; 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 (e.g. CT) other than catheterization.

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

### **Date of Surgery**

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*Variable Name: SURGDATE*

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

Complete a separate CSRS form for each visit to the operating room that included a reportable cardiac surgery.

### **Prior Surgery this Admission**

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*Variable Names: PRIOSURG, PRIODATE*

Check the appropriate box to indicate whether the patient had any cardiac operations prior to the present operating room visit during the same hospital admission.

If "Yes" then the date of the previous cardiac operation **MUST** be entered. This is very important because this date aids in combining multiple procedures that occurred during the same admission in the proper order.

## II. Procedural Information (continued)

### **Cardiac Procedures This OR Visit**

---

*Variable Names: PROC1, PROC2, PROC3, PROC4, PROC5*

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 5 cardiac procedures performed during this operating room visit.

If there are more than 5, list the 5 most significant.

**Note:** Combination codes for multiple valve surgery (610-638), combined valve plus CABG (740-747) and combined CABG with other (720-724) have been removed and are no longer valid. Individual procedure codes should be reported for each part of a cardiac surgery. For example, replacement of the Aortic and Mitral valves using mechanical valves and not a reoperation would now be coded as 520 and 550 rather than 610.

Codes 760, 761 and 762 can now be used when performed with or without CABG.

Code 503 has been added for Pulmonary Valve repair.

Code 763 has been added for Carotid Endarterectomy and Code 764 has been added for AICD implantation. These procedures should only be reported when performed with another reportable cardiac surgery as listed in Attachment D.

Procedure codes have been added to the section for Congenital Heart Disease for Great Vessel Anomalies, Aortic Repair, Coarctation or Interruption, End to side anastomosis (348), and Anomalies of Ventricular Outflow Tract, Pulmonary Valve Replacement, Xenograft (192).

Please see “When to Complete an Adult CSRS Form” on pages 8-10 for additional coding instructions and scenarios for reporting procedure codes.

## II. Procedural Information (continued)

### **Congenital Diagnosis**

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*Variable Names: DIAG1, DIAG2*

For patients with a diagnosis of congenital heart disease, use the Primary Cardiac Diagnosis Codes found in Attachment E to report the diagnosis. Report up to two diagnoses. If there are more than two, first report the condition(s) being corrected and then others in order of severity.

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.

If the patient has no congenital heart disease, these fields should be left blank.

### **Primary Physician Performing Operation**

---

*Variable Name: PHYSNUM*

Enter the name and license number of the primary physician who performed the cardiac surgical procedure.

**Interpretation:** The primary physician for each operating room visit should be the one who performed the majority of the cardiac operation in that operating room visit.

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. It does not matter that the ablation was performed before the CABG.

**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.

### **Anesthesiologist (Start)**

---

*Variable Name: Anesnum1*

Enter the name and license number of the responsible anesthesiologist at the start of the cardiac surgery.

**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.

## II. Procedural Information (continued)

### Anesthesiologist (End)

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*Variable Name: Anesnum2*

Enter the name and license number of the responsible anesthesiologist at the end of the cardiac surgery.

**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.

### CABG Information

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*Variable Names: TOT\_COND, ART\_COND, DISTAL*

The following information must be completed for all CABG procedures.

**Total Conduits:** List the total number of conduits or grafts performed up to 9. For more than 9, report 9.

**Arterial Conduits:** List the number of arterial conduits or grafts used up to 9. For more than 9, report 9. The number of arterial conduits cannot be larger than the total number of conduits.

**Distal Anastomoses:** List the total number of distal anastomoses up to 9. For more than 9, report 9. A distal anastomosis is defined as a hole between a conduit or graft and a coronary touchdown site for the conduit or graft. The number of distal anastomoses could be larger than the total number of conduits, especially in the case of sequential grafts.

### Minimally Invasive

---

*Variable Name: MINI\_INV*

If the cardiac surgical procedure began through an incision other than a complete sternotomy or thoracotomy (less than 12 centimeters in length) check "Yes," regardless of whether the case converted to a standard incision or cardiopulmonary bypass was used. Otherwise check "No."

## II. Procedural Information (continued)

### **Converted to Standard Incision**

---

*Variable Name: STND\_INC*

Check this box to indicate that the minimally invasive procedure was modified to a standard incision.

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

### **Converted from Off Pump to On Pump**

---

*Variable Name: CONVERT*

Check this box 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.

### **Entire Procedure Off Pump**

---

*Variable Name: ALL\_OFF*

Check this box if the cardiac procedure was performed entirely without the use of cardiopulmonary bypass.

### **Internal Mammary Artery (IMA) Grafting**

---

*Variable Name: IMA*

Check the appropriate box.

For any patient who has never had a left or right internal mammary artery (IMA) graft, code "0" (Never). If the patient is having an IMA graft during this operating room visit, code "1" (This OR Visit). If at anytime prior to this operating room visit (including this admission) the patient has had an IMA graft, code "2" (Prior to this OR Visit).

If the patient has had an IMA graft anytime prior to this operating room visit and is having one during the operating room visit, code "1".

## Ila. Peri-Operative Information

### **Time of Induction of Anesthesia**

---

*Variable Name: SURGHOUR, SURGMIN*

Enter the time of induction of anesthesia using 24 hour clock (e.g. 1:00 am is 01:00, and 1:00 pm is 13:00).

### **Skin Closure Time**

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*Variable Name: CLOSEHOUR, CLOSEMIN*

Capture the date and time (using 24 hour clock) to the minute, that the skin incision was closed, or its equivalent. If the patient leaves the operating room with an open incision, collect the time that the dressings were applied to the incision.

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

### **Pre-Induction Blood Pressure**

---

*Variable Name: BP\_SYS, BP\_DIA*

Enter the patient's blood pressure just prior to the induction of anesthesia as measured by any means.

### **Post-Op Temperature**

---

*Variable Name: POST\_TEMP*

Report the patient's post-op temperature in degrees Celsius.

This should be the temperature on arrival at the next level of care after the operating room (e.g. Critical Care, PACU, Recovery, etc).

If a pulmonary artery temperature is available upon arrival at the next level of care, report that value. Otherwise report temperature via other method.

If no post-operative temperature is available (e.g. patient expires prior to arrival at next level of care), report temperature as 00.0.

## Ila. Peri-Operative Information

### Temperature Route

---

*Variable Name: TEMP\_RT*

Report the route of post-operative temperature measurement using the following codes:

1. Pulmonary Artery
2. Rectal/Bladder
3. Nasopharyngeal
4. Tympanic
8. Other
9. Unknown

If Post-op Temperature is reported as "00.0" because none is available (e.g. patient expires prior to arrival at next level of care), report Temperature Route as "9-Unknown".

### Hematocrit

---

*Variable Name: CRIT\_OR, CRIT\_LOW, CRIT\_LST, CRIT*

Report the patient's hematocrit at the following specified time periods.

- First recorded in the operating room
- Lowest on Cardiopulmonary Bypass - report as "00" or leave blank if entire procedure was "off-pump."
- Last on Cardiopulmonary Bypass - report as "00" or leave blank if entire procedure was "off-pump."
- Post-Op – Value on arrival at next level of care after the operating room (e.g. Critical Care, PACU, Recovery, etc). If no value is available (e.g. patient expires prior to arrival at next level of care) then report as "00" or leave blank.

#### **Clarification:**

Values from any source are acceptable (e.g. lab, Istat, ABG), however if available from multiple sources for the same time-frame, central lab values are preferred to point of care values.

If blood is drawn for "post-op" labwork just prior to leaving the operating room, that value may be reported for "Post-op, on arrival at next level of care."

In the event that only one Hematocrit value is recorded for the entire time that the patient is on Cardiopulmonary Bypass, then this value would be reported as both "Lowest" and "Last."

## Ila. Peri-Operative Information

### **Pre-Op Beta Blocker Use**

---

*Variable Name: PRE\_BETA*

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

1. Yes - The patient received beta blockers within 48 hours pre-op.
2. Contraindicated - The patient did not receive beta blockers within 48 hours pre-op due to contraindication. Contraindication includes any of the following reasons: 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 48 hours pre-op and there was no contraindication as defined above.

### **Extubation in 24 hours – Report only for CABG patients**

---

*Variable Name: EXTUBATE*

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.

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

## Ila. Peri-Operative Information

### **Post-Op Beta Blocker Use - Report only for CABG patients**

---

*Variable Name: PO\_BETA*

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.

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

### **Glucose Control Protocol**

---

*Variable Name: GLUCOSE*

Check this box 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

#### **Surgical Priority**

---

*Variable Name: PRIORITY*

Check the appropriate box.

Elective: All cases not classified as urgent or emergency as defined below.

Urgent: The patient is too ill or unstable to be discharged from the hospital, but is not classified as an emergency as defined below.

Emergency: Patients with ongoing, refractory, unrelenting cardiac compromise, with or without hemodynamic instability.

Typical emergency patients include those in arrest with CPR administered immediately prior to the procedure, shock, ongoing ischemia including rest angina, acute evolving MI within 24 hours of procedure, and/or pulmonary edema requiring intubation.

#### **Height**

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*Variable Name: HEIGHT*

Enter the patient's height in centimeters (cm).

Centimeters = 2.54 x inches

#### **Weight**

---

*Variable Name: WEIGHT*

Enter the patient's weight in kilograms (kg).

Kilograms = pounds ÷ 2.2

#### **Stress Test / Imaging Study Done**

---

*Variable Name: STRS\_DONE*

Use the codes below to indicate if a stress test was performed prior to this procedure but within 6 months.

1. Yes
2. No
9. Unknown

### III. Pre-Op Surgical Risk Factors (continued)

#### Stress Test / Imaging Study Type

---

Variable Name: *STRS\_TYP*

Use the codes below to indicate the type of stress test performed

1. Standard Exercise Stress Test – without imaging
2. Stress Echocardiogram
3. Stress Testing with single photon emission computed tomography (SPECT) myocardial perfusion imaging (MPI)
4. Stress Testing with cardiac magnetic resonance (CMR)
9. Not Done / Unknown

If more than one type of stress test was performed within the past 6 months, report on the most recent test.

#### Stress Test / Imaging Study Results

---

Variable Name: *STRS\_RES*

Use the codes below to indicate the stress test results.

1. Negative –  
A stress test or imaging study is negative when the electrocardiogram is normal or not suggestive of ischemia; or the imaging study reveals no change in wall motion during the procedure, or the imaging study revealed no myocardial perfusion defect. ECGs are not suggestive of ischemia when  $< 1$  mm of horizontal or downsloping ST segment depression or evaluation for  $\geq 60 - 80$  milliseconds after the end of the QRS complex, either during or after exercise.
2. Positive, Low Risk – Any of the following:
  - a. Low-risk treadmill score (score  $\geq 5$ )
  - b. Normal or small myocardial perfusion defect at rest or with stress.\*
  - c. Normal stress echocardiographic wall motion or no change of limited resting wall motion abnormalities during stress.\*

\*Although the published data are limited, patients with these findings will probably not be at low risk in the presence of either a high-risk treadmill score or severe resting left ventricular dysfunction (LVEF  $< 35\%$ ).
3. Positive, Intermediate Risk – Any of the following:
  - a. Mild/moderate resting left ventricular dysfunction (LVEF = 35-49%)
  - b. Intermediate risk treadmill score ( $- 11 < \text{score} < 5$ )

### III. Pre-Op Surgical Risk Factors (continued)

#### **Stress Test / Imaging Study Results (continued)**

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- c. Stress-induced moderate perfusion defect without LV dilation or increased lung uptake (thallium-201).
- d. Limited stress echocardiographic ischemia with a wall motion abnormality only at higher doses of dobutamine involving less than or equal to two segments.
4. Positive, High Risk – Any of the following:
  - a. Severe resting left ventricular dysfunction (LVEF < 35%)
  - b. High-risk treadmill score ( $\leq$ - 11).
  - c. Severe exercise left ventricular dysfunction (exercise LVEF < 35%)
  - d. Stress-induced large perfusion defect (particularly if anterior)
  - e. Stress-induced multiple perfusion defects of moderate size
  - f. Large, fixed perfusion defect with LV dilation or increased lung uptake (thallium 201).
  - g. Echocardiographic wall motion abnormality (involving greater than two segments) developing at low dose of dobutamine (less than or equal to 10 mg/kg/min) or at a low heart rate (<120 beats /min).
  - h. Stress echocardiographic evidence of extensive ischemia.
5. Positive, Risk Unavailable – Stress test / imaging study positive but risk or extent of ischemia not available.
6. Indeterminate - Results were indeterminate or un-interpretable. They cannot be considered positive or negative.
7. Unavailable –The results of the test are not available.
9. Not Done/ Unknown – No stress test/imaging study was performed within the past 6 months or it is not known if a stress test/imaging study was performed in the past 6 months.

**Note:**

Inclusion of stress test reports in the medical record is encouraged to allow for accurate and complete reporting of these data elements.

If the stress test report is not in the chart and the only documentation is a note of “positive stress test,” please report as follows:

Stress Test Done = “1 -Yes”

Stress Test Type = “9 - Not Done / Unknown”

Stress Test Result = “5 - Positive, risk unavailable”

### III. Pre-Op Surgical Risk Factors (continued)

#### Ejection Fraction and Measure

---

*Variable Names: EJEC\_FRA, MEASURE*

Record the pre-operative ejection fraction taken closest to but before the start of the cardiac procedure. If a calculated measure is unavailable, the ejection fraction should be estimated visually from the ventriculogram or by echocardiography.

If an ejection fraction is unavailable, enter "0" and then enter "9 – Unknown" for the measure.

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

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

**Interpretation:** Any ejection fraction that is well documented in the chart is acceptable, but give precedence to the one closest to (but before) the cardiac procedure.

Intra-operative TEE is acceptable, if no other pre-operative Ejection Fraction is available.

Any ejection fraction that is described as "Normal" in the medical record should be considered 55%.

*Any cases with a missing or < 10% ejection fraction will be sent back during quarterly and annual data validation to verify accuracy of this data element.*

## III. Pre-Op Surgical Risk Factors (continued)

### CCS Functional Class

---

*Variable Name: CCS\_CLAS*

Enter the number (1-4) corresponding to the patient's Canadian Cardiovascular Society (CCS) Functional Class or 8 for No Angina, as defined below.

Anginal equivalent symptoms (e.g. shortness of breath) can be used to determine the appropriate functional class.

#### **Canadian Cardiovascular Society (CCS) Functional Classification:**

1. Class I Ordinary physical activity, such as walking or climbing stairs, does not cause angina. Angina may occur with strenuous or rapid or prolonged exertion at work or recreation.
2. Class II There is slight limitation of ordinary activity. Angina may occur with walking or climbing stairs rapidly, walking uphill, walking or stair climbing after meals or in the cold, in the wind, or under emotional stress, or walking more than two blocks on the level, or climbing more than one flight of stairs under normal conditions at a normal pace.
3. Class III There is marked limitation of ordinary physical activity. Angina may occur after walking one or two blocks on the level or climbing one flight of stairs under normal conditions at a normal pace.
4. Class IV There is inability to carry on any physical activity without discomfort; angina may be present at rest.
8. None Patient does not have Angina CCS Class I-IV as defined above and includes those who do not have documented history of angina but may present with chest pain associated with an MI.

**Note:** The determination of functional class should be based on the typical level of exertion required to produce angina. The CCS class should be based on the patient's history or pattern of angina, not the presenting symptoms. For example, a patient with no history of angina that is experiencing ischemic chest pain at rest in the ED should be classified as "8-None".

### III. Pre-Op Surgical Risk Factors (continued)

#### Creatinine

---

*Variable Name: CREATININE*

Enter the patient's highest pre-operative creatinine (in mg/dL) recorded during this hospital admission.

**Interpretation:** If no pre-operative creatinine values are available from the current hospital stay, it is acceptable to use values found during Pre-Admission Testing (up to 2 weeks prior to the intervention). If the patient is transferred, the creatinine can come from the transferring hospital.

#### Vessels Diseased

---

*Variable Name: LMT, PROX\_LAD, MID\_LAD, RCA, LCX*

For each diseased vessel, check the appropriate box to indicate the percent diameter stenosis. Include all vessels diseased, even branches.

**Interpretation:** This section must be completed for all CABG cases. If this information is available for other procedures, please indicate the vessels diseased, 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 re-vascularized.

Use the ranges listed below when the medical record describes the percent stenosis in the following ways:

MILD	= < 50%
MODERATE	= 50-69%
SEVERE	= > 70%

If a vessel or branch is described as having "Mild" stenosis then the vessel would NOT be coded as diseased, since we only code 50-100% 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%.

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

## III. Pre-Op Surgical Risk Factors (continued)

### Vessels Diseased (continued)

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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: then code the Mid LAD and not the Proximal LAD.

### Valve Disease

---

*Variable Names: STEN\_AOR, STEN\_MIT, STEN\_TRI, INCO\_AOR, INCO\_MIT, INCO\_TRI*

This section is required for valve patients, if the information is available for other patients, please report it.

Enter an assessment of the degree of stenosis or incompetence (acute or chronic) for each valve (Aortic, Mitral, Tricuspid). Both lines should be completed for all valve patients.

Please enter the following values for each valve to indicate the degree of stenosis or incompetence:

0. None
1. Mild
2. Moderate
3. Severe

**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.

**Note:** If a patient is not having a valve procedure, but disease (stenosis or incompetence) is indicated, please code.

### III. Pre-Op Surgical Risk Factors (continued)

#### Anti-Anginal Medication within 2 Weeks

---

*Variable names: MED\_BB, MED\_CA, MED\_NIT, MED\_RAN, MED\_OTH*

Indicate if the patient was taking any of the following agents to treat anginal symptoms within the past two weeks. Check all that apply.

- Beta-Blockers
- Calcium Channel Blockers
- Long Acting Nitrates
- Ranolazine
- Other

#### **Interpretation:**

If the patient is taking the medication for any reason, then report. It does not have to be documented as a prescription to treat anginal symptoms.

If the patient has been prescribed the medication but is known to be not taking it, then do not report.

Nitro paste and nitro patch are considered Long Acting Nitrates.

Other is a category created for medications not on the market at this time.

#### Other Patient Characteristics

---

*Variable Names: FFR\_IVUS, CTO, GRFTFAIL, LIMA\_FAIL, LIMA\_PAT*

Indicate which, if any, of the following characteristics apply to this patient. Check all that apply.

- 50-69% stenosis with significant findings on Fractional Flow Reserve (<0.75) and/or IVUS with significant reduction in cross sectional area.  
Note: Significant reduction in cross sectional area by IVUS is defined as 6mm<sup>2</sup> for the left main and 4mm<sup>2</sup> for major epicardial vessels other than the left main.
- Chronic Total Occlusion (CTO) is the only stenosis – Indicate if patient has a CTO and no other lesion in that vessel or any other vessel. CTO is defined as a vessel with 100% pre-procedure stenosis presumed to be 100% occluded for at least 3 months previous to this procedure.  
Note: If timeframe of 3 months is not specified, but lesion is described as “CTO,” this is acceptable.

### III. Pre-Op Surgical Risk Factors (continued)

#### Other Patient Characteristics (cont.)

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- Prior CABG with native 3 vessel disease and failure of multiple bypass grafts.
- LIMA was used as a graft but is no longer functional
- LIMA was used as a graft and remains patent to a native coronary artery.

#### 0. None

---

*Variable Name: NORISK*

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

#### 1. Previous CABG - Patent Grafts

---

*Variable Name: PAT\_GRAFT*

Indicate if prior to this OR visit the patient has undergone CABG and currently has one or more patent grafts.

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

**Note:** Check this box if there are any patent grafts, even if there are also occluded grafts. If the patient has had multiple previous operations (e.g. CABG and Valve) and has patent grafts, it is only necessary to check this box. It is not also necessary to check Risk #2- Any Other Previous Cardiac Surgery.

### III. Pre-Op Surgical Risk Factors (continued)

#### 1a. Previous CABG – No Patent Grafts

---

*Variable Name: OTH\_CABG*

Indicate if prior to this OR visit the patient has previously undergone CABG and has no patent grafts.

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

**Note:** If the patient has had multiple previous operations (e.g. CABG and Valve) and has no patent grafts, it is only necessary to check this box. It is not also necessary to check Risk #2- Any Other Previous Cardiac Surgery.

#### 2. Any Other Previous Cardiac Surgery

---

*Variable Name: OTH\_SURG*

Indicate if prior to this OR visit the patient has had any cardiac surgery other than CABG.

**Note:** Do not include catheter-based interventions.

#### 4. - 6. Previous MI (most recent)

---

*Variable Names: PREMILT6, PREMI623, PREMIDAY*

If the patient had one or more myocardial infarctions before surgery, report the length of time since the most recent MI. 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 myocardial infarction.

If less than 6 hours, check box "4".

If 6-23 hours, check box "5".

If 24 hours or more, enter the number of days in the space provided next to "6".

If 21 days or more, enter "21".

### III. Pre-Op Surgical Risk Factors (continued)

#### 9. Cerebrovascular Disease

*Variable Name: CEREBRO*

Code if there is documentation of a history of stroke, with or without residual deficit, angiographic or ultrasound demonstration of at least 50% narrowing in a major cerebral or carotid artery (common or internal), or previous surgery for such disease. A history of bruits or transient ischemic attacks (TIA) is not sufficient evidence of cerebrovascular disease.

**Examples:**

Cerebrovascular Disease	Code	Do Not Code
1. Patient with TIA, vertigo per history & physical		X
2. Cerebral aneurysm and clipping residual deficit	X	
3. External carotid artery has >50% stenosis		X
4. Internal or common carotid artery has >50% stenosis	X	
5. Carotid endarterectomy is scheduled for after surgery, but there is no pre-operative documentation of the carotid stenosis.		X

**Note:** #5 is different from what is acceptable documentation in the Percutaneous Coronary Interventions Reporting System.

### III. Pre-Op Surgical Risk Factors (continued)

#### 10. Peripheral Vascular Disease

Variable Name: *PERIPH*

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.

#### Examples:

Peripheral Vascular 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	

### III. Pre-Op Surgical Risk Factors (continued)

#### 12. Unstable

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*Variable Name: UNSTABLE*

In the immediate pre-operative period, the patient requires pharmacologic or mechanical support to maintain blood pressure or cardiac index.

**Interpretation:**

Key elements for documentation of Unstable include evidence in the pre-operative period of the following:

1. Hypotension or low cardiac index and
2. Administration of mechanical or pharmacological support.

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

- The procedure itself does not constitute support.
- Fluid replacement alone does not constitute support.
- IABP constitutes support only when documented that it was placed for hemodynamics. Pain control, anatomy, or undocumented indication for IABP do not support coding Unstable.

*Unstable cannot be coded with SHOCK.*

## III. Pre-Op Surgical Risk Factors (continued)

### 13. Shock

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*Variable Name: SHOCK*

In the immediate pre-operative period, the patient has acute hypotension (systolic blood pressure < 80 mmHg) or low cardiac index (< 2.0 liters/min/m<sup>2</sup>), despite pharmacologic or mechanical support.

**Interpretation:** Key elements for the documentation of Shock include evidence in the immediate pre-operative period of all three of the following elements:

1. Documented acute hypotension (systolic blood pressure < 80 mmHg) or low cardiac index (< 2.0 liters/min/m<sup>2</sup>), **and**
2. Mechanical or pharmacological support, **and**
3. Persistent acute hypotension (systolic blood pressure < 80 mmHg) or low cardiac index (< 2.0 liters/min/m<sup>2</sup>) while receiving mechanical or pharmacological support.

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

- The procedure itself does not constitute mechanical support.
- Fluid replacement alone does not constitute support.
- IABP constitutes support only when documented that it was placed for hemodynamics. Pain control, anatomy, or undocumented indication for IABP do not support coding Shock.

Ongoing resuscitation warrants the coding of Shock.

If the patient has an IABP – the non-augmented BP should be < 80 mmHg to code Shock.

If the patient is Ventricular Assist Device (VAD) dependent then code Shock. The type of VAD (Right, Left, Bi) is not important.

*Shock cannot be coded with Unstable.*

**Clarification:** The intent of this data element is to capture patients with pre-operative cardiogenic shock, whose hemodynamics cannot be stabilized with pharmacologic or mechanical support. Patients whose hemodynamics are maintained (SBP ≥ 80 or CI ≥ 2.0) by pharmacological or mechanical support should be coded as Unstable, not as Shock.

### **III. Pre-Op Surgical Risk Factors (continued)**

#### **18. Congestive Heart Failure, Current**

---

*Variable Name: CHF\_CUR*

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

Note: Physician diagnosis of CHF 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 CHF, evidence of symptoms, and treatment for CHF.

#### **19. Congestive Heart Failure, Past**

---

*Variable Name: CHF\_PAST*

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

Note: Physician diagnosis of CHF 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 CHF and evidence of treatment for CHF. Patient's clinical status may be compensated.

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

#### **63. BNP, three times normal**

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*Variable name: BNP3X*

Report if prior to surgery but within this admission, the BNP was at least three times the lab's upper limit of normal value.

For transfer patients, BNP from a transferring institution is acceptable.

### III. Pre-Op Surgical Risk Factors (continued)

#### 20. Malignant Ventricular Arrhythmia

---

*Variable Name: MAL\_VENT*

Recent (within the past 14 days) sustained ventricular tachycardia requiring electrical defibrillation or conversion with intravenous antiarrhythmic 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.

**Interpretation:**

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

If a patient is experiencing V-Tach or V-Fib that otherwise meets the above criteria, but is within 6 hours of an MI, you may still code this risk factor, IF the arrhythmia is not responding well to treatment. That is, if it continues despite electrical defibrillation or conversion with intravenous anti-arrhythmic agents.

If the patient has an AICD that is documented to have fired then CODE, unless the patient has had an MI within the last 6 hours.

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

### III. Pre-Op Surgical Risk Factors (continued)

#### 21. Chronic Obstructive Pulmonary Disease

---

*Variable name: COPD*

Patients who require chronic (longer than three months) bronchodilator therapy to avoid disability from obstructive airway disease,

Or

Have a forced expiratory volume in one second of less than 75% of the predicted value or less than 1.25 liters,

Or

Have a room air PO<sub>2</sub> <60 or a PCO<sub>2</sub> >50.

**Note:** COPD should not be checked unless the patient's medical record contains documented evidence of the above criteria, regardless of how much the patient may have smoked.

**Examples:**

COPD	Code	Do Not Code
1. Chest X-ray as documentation		X
2. Patient required bronchodilators prior to surgery		X
3. Fibrotic lungs on chest X-ray		X
4. Hyperinflated lungs at operation		X
5. Chart states asthma without medications		X
6. Sleep apnea without any of the above criteria		X
7. History of tobacco use		X

## III. Pre-Op Surgical Risk Factors (continued)

### 23. Extensive Aortic Atherosclerosis

---

*Variable Name: CALCAORT*

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

**Interpretation:** It is necessary to demonstrate that the intended surgical procedure is altered.

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.

An operative note that dictates a change in the intended surgical procedure (i.e. clamp moved, procedure performed off pump) is acceptable documentation. Changes to the intended surgical procedure may also include documentation that more extensive evaluation/exploration of the aorta, for example epi aortic scanning, was performed.

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

### 24. Diabetes Requiring Medication

---

*Variable Name: DIABETES*

The patient is receiving either oral hypoglycemics or insulin.

**Interpretation:** The patient must be on oral hypoglycemics or insulin prior to hospital admission.

The following scenario would not be coded since the medication was not ongoing: Patient admitted on 12/28. Nurse's note on 12/29: "patient has no hx DM but had Insulin (stat) in another hospital." Glucose level 155 on no meds.

### 25. Hepatic Failure

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*Variable Name: HEPATICF*

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

### **III. Pre-Op Surgical Risk Factors (continued)**

#### **27. Renal Failure, Dialysis**

---

*Variable Name: REN\_DIAL*

The patient is on chronic peritoneal or hemodialysis.

**Interpretation:** A single dialysis treatment does not constitute coding this risk factor.

#### **30. Emergency Transfer to OR after DX Cath**

---

*Variable Name: EME\_CATH*

The patient requires immediate surgery following a diagnostic catheterization.

#### **31. Emergency Transfer to OR after PCI**

---

*Variable Name: EME\_PCI*

The patient requires immediate surgery following a Percutaneous Coronary Intervention (PCI).

#### **32. Previous PCI, This Admission**

---

*Variable Name: PCITHIS*

The patient has had a PCI during this admission, prior to the current cardiac surgery.

#### **33. PCI Before This Admission**

---

*Variable Name: PCIBEFO*

The patient has had a PCI before this admission.

## III. Pre-Op Surgical Risk Factors (continued)

### 38. Stent Thrombosis

---

*Variable Name: THROMBOS*

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.

**Interpretation:** 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 coded.

### 39. Any Previous Organ Transplant

---

*Variable Name: ORGAN*

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.

**Interpretation:** 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.

### **III. Pre-Op Surgical Risk Factors (continued)**

#### **40. Heart Transplant Candidate**

---

*Variable Name: HT\_TRANS*

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

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, we will be asking for supporting documentation for cases coded with this risk factor. Therefore, we highly recommend that at the time of coding you keep supporting documentation in a place for easy retrieval at a later date.

#### **62. Active Endocarditis**

---

*Variable Name: ENDOCARD*

Two or more positive blood cultures without other obvious source with demonstrated valvular vegetations or acute valvular dysfunction caused by infection.

Includes patients who are on antibiotics at the time of surgery.

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

## IV. Major Events Following Operation

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:** 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.

### 0. None

---

*Variable Name: NOCOMPS*

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

### 1. Stroke (New Neurological Deficit) Intra-Op to 24 hours

---

*Variable Name: STROKE*

Permanent new focal neurological deficit occurring either intra-operatively or within 24 hrs post-op.

**Interpretation:** Exacerbation of a previous CVA with no new neurological deficit would not be coded.

Transient neurological deficits, such as TIA, are not reported as a post-op event.

If the new deficit is still present at discharge, the event should be coded.

### 1A. Stroke (New Neurological Deficit) over 24 hours

---

*Variable Name: STROKE24*

Permanent new focal neurological deficit occurring more than 24 hours post-op.

**Interpretation:** Exacerbation of a previous CVA with no new neurological deficit would not be coded.

Transient neurological deficits, such as TIA, are not reported as a post-op event.

If the new deficit is still present at discharge, the event should be coded.

## IV. Major Events Following Operation (Cont.)

## 2. Q-Wave MI

---

*Variable Name: POSTMI*

New Q waves occurring within 48 hours after surgery.

## 4. Deep Sternal Wound Infection (Bone-Related)

---

*Variable Name: STERNINF*

Drainage of purulent material from the sternotomy wound and instability of the sternum.

**Note:** A deep sternal wound infection should be reported as a major event following operation even if it does not become apparent until after the patient is discharged from the hospital. It should be reported if diagnosed up to 6 months post-op.

**Interpretation:** If there is documentation of a deep sternal wound infection anywhere in the patient's medical record, then it should be coded. This is true even if the information is in documentation from a subsequent admission.

Do not code based solely on the following:

- Debridement secondary to necrosis, with negative (-) infection
- Positive (+) drainage, negative (-) cellulitis, sternum is showing no instability.

## 5. Bleeding Requiring Reoperation

---

*Variable Name: BLEDTREOP*

Unplanned reoperation within 36 hours post-op to control bleeding or evacuate large hematomas in the thorax or pericardium.

**Interpretation:** No matter where the bleeding was controlled (e.g. ICU, OR, bedside), if it occurred within 36 hours of the procedure, code it.

The following scenario would not be coded because the chest was left open intentionally and therefore does not qualify as a major event:

CABG surgery on 11/7 – chest left open  
Evacuate clots on 11/8  
Operating room to close chest on 11/9

## IV. Major Events Following Operation (Cont.)

### 8. Sepsis or Endocarditis

---

*Variable Name: SEPSIS*

Sepsis: Fever and positive blood cultures related to the procedure.

Endocarditis: Two or more positive blood cultures without other obvious source, demonstrated valvular vegetation, or acute valvular dysfunction caused by infection.

### 9. G-I Bleeding, Perforation, or Infarction

---

*Variable Name: GIBLEED*

Any post-operative episode of vomiting blood, gross blood in the stool, perforation or necrosis of the stomach or intestine.

The episode must occur post-surgery, but before hospital discharge.

### 10. Renal Failure

---

*Variable Name: RENAL\_FAI*

The need for temporary or permanent renal dialysis of any type.

Do not code this item if Risk Factor 27 - Renal Failure, Dialysis is coded.

Initiation of dialysis is always considered a major event regardless of the pre-op creatinine or expectation of future need for dialysis.

### 13. Respiratory Failure

---

*Variable Name: RESP\_FAI*

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.

**Interpretation:** 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.

## IV. Major Events Following Operation (Cont.)

### 14. Unplanned Cardiac Reoperation or Interventional Procedure

---

*Variable Name: UNPLANREOP*

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 occurs within 36 hours of the surgery.

**Interpretation:** 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.

This event would not be coded under the following situation: the patient has a reoperation to control bleeding less than 36 hours after surgery and then goes back greater than 36 hours to once again control bleeding. In this instance coding the major event "5 - Bleeding Requiring Reoperation" is sufficient.

## V. Discharge Information

### **Discharged Alive To**

---

*Variable Name: STATUS, DISWHERE*

Check the appropriate box.

If a patient is discharged to hospice (including home with hospice), code the status a “12”. Note that for purposes of analysis a hospice discharge (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 on page 11 of the “Revision Highlights and Coding Clarifications”

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.

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

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

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

Any status “19” that is reported without an indication of where the patient was discharged to will be returned during data validation for completion.

### **Died in**

---

*Variable Name: STATUS, DISWHERE*

Check the appropriate box.

If “8 – Elsewhere in Hospital (specify)” is checked, specify where the patient died.

Any status “8” that is reported without an indication of where the patient died will be sent back during data verification and validation efforts.

### **Hospital Discharge Date**

---

*Variable Name: DISDATE*

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.

## V. Discharge Information (continued)

### 30 Day Status

---

*Variable Name: THIRTYDAY*

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

## VI. Person Completing Report

### Name

---

This space is provided as an aid to the hospital. 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 cardiac services program.

### Referring Physician

---

*Variable Name: REF\_PHYS*

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.

# Attachment A

## PFI Numbers for Cardiac Diagnostic and Surgical Centers

### **PFI Facility**

---

#### ***ALBANY AREA***

0001 Albany Medical Center Hospital  
0135 Champlain Valley Physicians Hospital Medical Center  
0829 Ellis Hospital  
1005 Glens Falls Hospital  
0746 Mary Imogene Bassett Hospital  
0755 Rensselaer Regional Heart Institute – St. Mary’s  
0756 Rensselaer Regional Heart Institute – Samaritan  
0818 Saratoga Hospital  
0005 St. Peter’s Hospital

#### ***BUFFALO AREA***

0207 Buffalo General Hospital  
0208 Children’s Hospital of Buffalo  
0210 Erie County Medical Center  
0213 Mercy Hospital of Buffalo  
0215 Millard Fillmore Gates  
0103 Women’s Christian Association

#### ***ROCHESTER AREA***

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

#### ***SYRACUSE AREA***

0977 Cayuga Medical Center at Ithaca  
0628 Community General  
0636 Crouse Hospital  
0599 Faxton-St. Luke’s Healthcare, St. Luke’s Division  
0367 Samaritan Medical Center  
0598 St. Elizabeth Medical Center  
0630 St. Joseph’s Hospital Health Center  
0058 United Health Services Hospital, Inc.-Wilson Hospital Division  
0635 University Hospital SUNY Health Science Center (Upstate)

## Attachment A (continued)

### PFI Numbers for Cardiac Diagnostic and Surgical Centers

#### **PFI Facility**

---

##### ***NEW ROCHELLE AREA***

0989 Benedictine Hospital  
0779 Good Samaritan Hospital-Suffern  
0990 Kingston Hospital  
0513 Mercy Medical Center  
0686 Orange Regional Medical Center  
1072 Sound Shore Medical Center-Westchester  
0180 St. Francis Hospital (Poughkeepsie)  
0694 St. Luke's Cornwall Hospital/Newburgh  
0181 Vassar Brothers Medical Center  
1139 Westchester Medical Center  
1045 White Plains Hospital Center

##### ***LONG ISLAND AREA***

0885 Brookhaven Memorial Hospital  
0925 Good Samaritan Hospital Medical Center-West Islip  
0913 Huntington Hospital  
0528 Nassau University Medical Center  
0541 North Shore University Hospital  
0527 South Nassau Communities Hospital  
0924 Southside Hospital  
0943 St. Catherine of Siena Medical Center  
0563 St. Francis Hospital (Roslyn)  
0245 Stony Brook University Hospital  
0511 Winthrop University Hospital

##### ***NY CITY AREA***

1438 Bellevue Hospital Center  
1439 Beth Israel Medical Center / Petrie Campus  
1178 Bronx-Lebanon Hospital Center-Concourse Division  
1286 Brookdale Hospital Medical Center  
1288 Brooklyn Hospital Center-Downtown  
1294 Coney Island Hospital  
1626 Elmhurst Hospital Center  
1445 Harlem Hospital Center  
1300 Interfaith Medical Center, Jewish Hospital Medical Center of  
Brooklyn Division  
1165 Jacobi Medical Center  
1629 Jamaica Hospital Medical Center  
1301 King's County Medical Center  
1450 Lenox Hill Hospital

## Attachment A (continued)

### PFI Numbers for Cardiac Diagnostic and Surgical Centers

#### PFI Facility

---

##### *NY CITY AREA (CONT.)*

- 1302 Long Island College Hospital
  - 1630 Long Island Jewish Medical Center
  - 1304 Lutheran Medical Center
  - 1305 Maimonides Medical Center
  - 3058 Montefiore Medical Center-Jack D. Weiler Hospital of  
A. Einstein College Division
  - 1169 Montefiore Medical Center-Henry and Lucy Moses Division
  - 1456 Mount Sinai Hospital
  - 1637 NY Hospital Medical Center of Queens
  - 1306 NY Methodist Hospital
  - 1464 NY Presbyterian-Columbia Presbyterian Center
  - 1458 NY Presbyterian-NY Weill Cornell Center
  - 1463 NYU Medical Center
  - 2968 North General Hospital
  - 1176 St. Barnabas Hospital
  - 1466 St. Luke's Roosevelt Hospital Center-Roosevelt Hospital Division
  - 1469 St. Luke's Roosevelt Hospital-St. Luke's Hospital Division
  - 1740 Staten Island University Hospital-North
  - 1471 SVCMC-St. Vincent's Manhattan
  - 1738 Richmond University Medical Center
  - 1320 University Hospital of Brooklyn
  - 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://hospitals.nyhealth.gov/> .

# Attachment B

## Residence Codes

---

The county codes shown below are also used in the SPARCS Discharge Data Abstract:

01 Albany	35 Oswego
02 Allegany	36 Otsego
03 Broome	37 Putnam
04 Cattaraugus	38 Rensselaer
05 Cayuga	39 Rockland
06 Chautauqua	40 St. Lawrence
07 Chemung	41 Saratoga
08 Chenango	42 Schenectady
09 Clinton	43 Schoharie
10 Columbia	44 Schuyler
11 Cortland	45 Seneca
12 Delaware	46 Steuben
13 Dutchess	47 Suffolk
14 Erie	48 Sullivan
15 Essex	49 Tioga
16 Franklin	50 Tompkins
17 Fulton	51 Ulster
18 Genesee	52 Warren
19 Greene	53 Washington
20 Hamilton	54 Wayne
21 Herkimer	55 Westchester
22 Jefferson	56 Wyoming
23 Lewis	57 Yates
24 Livingston	58 Bronx
25 Madison	59 Kings
26 Monroe	60 Manhattan
27 Montgomery	61 Queens
28 Nassau	62 Richmond
29 Niagara	
30 Oneida	
31 Onondaga	88 Unknown
32 Ontario	
33 Orange	99 Outside NYS
34 Orleans	

# Attachment C

## Payer Codes

---

- 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

# 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

## **Attachment D (continued)**

### **Congenital and Acquired Cardiac Procedure Codes**

#### **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

##### 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)

## Attachment D (continued)

### Congenital and Acquired Cardiac Procedure Codes

#### Anomalies of Ventricular Outflow Tract(s) (continued)

---

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

## Attachment D (continued)

### Congenital and Acquired Cardiac Procedure Codes

#### Univentricular Heart (Single Ventricle) (continued)

---

	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
	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

## Attachment D (continued)

### Congenital and Acquired Cardiac Procedure Codes

#### Great Vessel Anomalies (continued)

---

- 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

## Attachment D (continued)

### Congenital and Acquired Cardiac Procedure Codes

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

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

#### **Repair Of Aortic Deceleration Injury**

---

- 420 With Shunt
- 421 Without Shunt

#### **Other**

---

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

#### **Valve Repair**

---

- 500 Aortic
- 501 Mitral
- 502 Tricuspid
- 503 Pulmonary

#### **Valve Replacement**

---

- 510-518\* Ross Procedure
- 520-528\* Aortic Mechanical
- 530-538\* Aortic Heterograft
- 540-548\* Aortic Homograft
- 550-558\* Mitral Mechanical
- 560-568\* Mitral Heterograft
- 570-578\* Tricuspid Mechanical
- 580-588\* Tricuspid Heterograft
- 590-598\* Pulmonary
- 600-608\* Mitral Homograft

# Attachment D (continued)

## Congenital and Acquired Cardiac Procedure Codes

\*REOPERATIONS: For Valve Replacement (510-608), use third digit to indicate reason for reoperation, as follows:

---

- |                           |                            |
|---------------------------|----------------------------|
| 0 Not a Reoperation       | 4 Failed Valvuloplasty     |
| 1 Periprosthetic Leak     | 5 Disease of Another Valve |
| 2 Prosthetic Endocarditis | 8 Other Reason             |
| 3 Prosthetic Malfunction  |                            |

### Valve Conduits

---

660 Apical Aortic Conduit

Note: Record Aortic Valve and Ascending Aorta Replacement under Aneurysms.

### Coronary Artery Bypass Grafts

---

670 Coronary Artery Bypass Graft

Please Note: If you code a 670 then you must complete the CABG Information under the Procedural Information Section of the Form.

### Other Revascularization

---

710 Transmyocardial Revascularization

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 cardiac procedure)

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

### Radiofrequency or Operative Ablation

---

770 Atrial

771 Ventricular

772 Maze Procedure

## Attachment D (continued)

### Congenital and Acquired Cardiac Procedure Codes

#### **Aortic Aneurysm Repair/Aortic Root Replacement**

---

- 780 Ascending Aorta, With Graft, With Coronary Reimplantation
- 781 Ascending Aorta, Replacement or Repair, Without Coronary Reimplantation
- 782 Transverse Aorta
- 783 Descending Thoracic Aorta (Excluding Acute Deceleration Injury)
- 784 Thoracoabdominal
- 785 Aortic Root Replacement or Repair, With Graft, With Coronary Reimplantation

#### **Dissecting Aneurysm Surgery**

---

- 800 Intraluminal Graft
- 801 Intraluminal Graft with Aortic Valve Suspension
- 802 Tube Graft with Aortic Valve Suspension
- 803 Tube Graft with Aortic Valve Replacement
- 818 Other Dissecting Aneurysm Surgery

#### **Transplant Procedures**

---

- 820 Heart Transplant
- 821 Heart and Lung Transplant
- 822 Lung Transplant
- 830 Left Ventricular Assist Device (LVAD) – Extracorporeal
- 831 Left Ventricular Assist Device (LVAD) – Implantable
- 832 Right Ventricular Assist Device (RVAD)
- 833 Bi-Ventricular Assist Device (BIVAD)
- 834 Extracorporeal Membrane Oxygenation (ECMO)
- 840 Ventricular Assist Device as a Destination Therapy (must also code either 830 or 831)
- 901 Artificial Heart

## Attachment D (continued)

### Congenital and Acquired Cardiac Procedure Codes

#### Other

---

- 902 Pulmonary Embolectomy
- 903 Stab Wound of Heart or Great Vessel Repair (with extracorporeal circulation)
- 904 Removal of Intracardiac Tumor
- 905 Removal of Intracardiac Catheter
- 906 Repair of Aortic Deceleration Injury (With Aortofemoral Bypass)
- 907 Repair of a Cardiac Laceration due to Trauma
- 915 Septal Myomectomy
- 916 Ventricular Myomectomy
- 920 Ventricular Free Wall Rupture
- 998 Other Operation for Acquired Heart Disease (with extracorporeal circulation)

# Attachment E

## Primary Cardiac Diagnosis Codes NYSDOH Cardiac Advisory Committee

### Atrial Situs Anomalies

---

- 010 Situs Inversus
- 011 Situs Ambiguous/Heterotaxy Syndrome

### Cardiac Position Anomalies

---

- 020 Dextrocardia
- 021 Mesocardia
- 022 Ectopia cordis

### Anomalies of Pulmonary Veins

---

- 100 Partial Anomalous Return  
Total Anomalous Return
- 101 Supracardiac
- 102 Cardiac
- 103 Infracardiac
- 104 Mixed
- 105 Pulmonary Vein Stenosis
- 106 Cor Triatriatum

### Anomalies of Atrial Septum

---

- 110 Secundum ASD
- 111 Single Atrium
- 112 Unroofed Coronary Sinus
- 113 Sinus Venosus ASD
- 114 PFO

## Attachment E

### Primary Cardiac Diagnosis Codes (continued)

#### **Anomalies of Atrioventricular Valve(s)**

---

	Tricuspid Valve
120	Ebstein's Anomaly
121	Tricuspid Stenosis
122	Tricuspid Regurgitation
123	Straddling Tricuspid Valve
	Mitral Valve
130	Supravalvular Mitral Stenosis
131	Valvular Mitral Stenosis
132	Subvalvular Mitral Stenosis
133	Mitral Regurgitation
134	Straddling Mitral Valve
135	Papillary Muscle Abnormality
	Common AV Valve Abnormality
140	Stenosis
141	Regurgitation
142	Malaligned

#### **Anomalies of Ventricular Septum**

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150	Perimembranous VSD
151	Doubly committed VSD (Subarterial)
152	Inlet VSD
153	Muscular VSD
154	Multiple VSDs
155	Malalignment VSD

#### **Atrioventricular Septal Defects (AVSD)**

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160	Partial AVSD (Primum ASD)
163	Transitional / Intermediate AV Canal
	Complete AVSD
161	Balanced
162	Unbalanced

## Attachment E

### Primary Cardiac Diagnosis Codes (continued)

#### Univentricular Heart (Single Ventricle)

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170	Double/Common Inlet LV
171	Double/Common Inlet RV Tricuspid Atresia
172	With IVS
173	With VSD
174	With TGA
175	Mitral Atresia
176	Indeterminate Ventricle Hypoplastic Right Ventricle
180	Pulmonary atresia with IVS
181	Other type of hypoplastic RV Hypoplastic Left Ventricle
190	Classical HLHS (Aortic Atresia w/ Hypoplastic LV)
191	Any other Hypoplastic LV

#### Anomalies of Ventricular Outflow Tracts

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200	Pulmonary Ventricular Outflow Tract
201	Pulmonary Valve Stenosis
209	Supravalvular Pulmonary Stenosis
202	Subvalvular/Infundibular Pulmonary Stenosis
203	Double Chamber Right Ventricle
204	Branch Pulmonary Artery Stenosis
205	Hypoplastic Pulmonary Arteries
206	Pulmonary Valve Regurgitation
207	Main Pulmonary Artery Atresia
208	Branch Pulmonary Artery Atresia Aortic Ventricular Outflow Tract
210	Valvular Aortic Stenosis Subvalvular Aortic Stenosis
211	Discrete
212	Long Segment/Tunnel
220	Supravalvular Aortic Stenosis
230	Aortic Valve Atresia
231	Aortic Valve Regurgitation
232	Aorto-Ventricular Tunnel

#### Tetralogy of Fallot (TOF)

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240	RV-PA Continuity
241	TOF with Pulmonary Valve Atresia
242	Absent Pulmonary Valve Syndrome

## **Attachment E**

### **Primary Cardiac Diagnosis Codes (continued)**

#### **Truncus Arterious**

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- 250 Type I
- 251 Type II
- 252 Type III

#### **Transposition of the Great Arteries (TGA)**

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- 260 D-TGA
- 261 Congenitally Corrected Transposition

#### **Double Outlet Right Ventricle (DORV)**

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- 270 Subaortic VSD
- 271 Subpulmonic VSD
- 272 Uncommitted VSD
- 273 Doubly Committed VSD
- 274 Restrictive VSD

#### **Great Vessel Anomalies**

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- 280 Aortopulmonary Window
- 281 Patent Ductus Arteriosus
- 282 Origin of L/R PA from Aorta
- 283 Sinus of Valsalva Aneurysm/Fistula
- 284 Aortic Coarctation
- 297 Hypoplastic Aortic Arch
- 285 Aortic Interruption
- Aortic Aneurysm
- 286 Ascending
- 287 Descending
- 288 Transverse
- 289 Vascular Ring
- 290 Origin of LPA from RPA (PA sling)
- 291 Discontinuous PAs
- 292 Bronchial PA Blood Flow (MAPCA)
- 293 Isolated LSVC
- 294 Bilateral SVCs
- 295 Azygous/Hemiazygous Continuous IVC
- 296 Other Great Vessel Anomalies

## Attachment E

### Primary Cardiac Diagnosis Codes (continued)

#### Coronary Artery Anomalies

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- 300 Coronary Artery Fistula
- 301 Coronary Artery Sinusoids
- 302 Coronary Artery Stenosis
- 303 Coronary Artery Aneurysm
- 304 Anomalous Origin Coronary Artery
- 305 Atresia Left Main Coronary Artery
- 306 Atresia Right Main Coronary Artery

#### Cardiac Rhythm Anomalies

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- 310 Supraventricular tachycardia
- 311 Ventricular tachycardia
- 312 Sinus bradycardia
- 313 Heart Block

#### Cardiomyopathies

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- Hypertrophic
- 320       Left Ventricle
- 321       Right Ventricle
- 322 Dilated
  
- 398 Other Diagnoses NOT Listed

#### Acquired Disease

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- 400 Kawasaki's Disease
- 401 Endocarditis
- 402 Myocarditis
- 403 Traumatic

#### Organ Failure

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- 820 Cardiac
- 821 Pulmonary

#### Cardiac Neoplasms

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- 900 Atrial
- 901 Ventricular
- 902 Valvular
- 903 Great Vessel