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

## 2011 Discharges

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

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


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# Table of Contents


| Topic | Page |
|---|---|
| Revision Highlights and Coding Clarifications…… | 6 |
| When to Complete an Adult CSRS Form …….. | 9 |
| Guidance on Selecting Appropriate Procedure Codes …….. | 11 |
| CSRS Data Reporting Policies …… | 13 |
| **ITEM-BY-ITEM INSTRUCTIONS** | |
| PFI Number ……... | 15 |
| Sequence Number ……... | 15 |
| **I. Patient Information** | |
| Patient Name …… | 15 |
| Medical Record Number ……. | 15 |
| Social Security Number …….. | 15 |
| Date of Birth …… | 15 |
| Sex …… | 16 |
| Ethnicity ……... | 16 |
| Race …….. | 16 |
| Residence Code …….. | 17 |
| Hospital Admission Date …… | 17 |
| Primary Payer …….. | 17 |
| Medicaid …….. | 18 |
| PFI of Transferring Hospital …….. | 18 |
| **II. Procedural Information** | |
| Hospital That Performed Diagnostic Cath …… | 19 |
| Date of Surgery …… | 19 |
| Prior Surgery This Admission …… | 19 |
| Cardiac Procedures This OR Visit …… | 20 |
| Congenital Diagnosis …… | 20 |
| Primary Physician Performing Operation …… | 21 |
| Anesthesiologist (Start) …… | 21 |
| Anesthesiologist (End) …… | 21 |
| CABG Information ……... | 22 |
| Minimally Invasive ……... | 22 |
| Converted to Standard Incision …… | 22 |
| Converted From Off Pump to On Pump ……. | 22 |

# Table of Contents (continued)


| Topic | Page |
|---|---|
| **II. Procedural Information (continued)** | |
| Entire Procedure Off Pump | 23 |
| Internal Mammary Artery (IMA) Grafting | 23 |
| **IIa. Peri-Operative Information** | |
| Induction of Anesthesia Time | 24 |
| Skin Closure Time | 24 |
| Pre-Induction Blood Pressure | 24 |
| Post-Op Temperature | 24 |
| Temperature Route | 25 |
| Hematocrit | 25 |
| Pre-Op Beta Blocker Use | 26 |
| Extubation at 24 Hours | 26 |
| Post-Op Beta Blocker Use | 27 |
| Intra-Operative Blood Transfusion | 27 |
| Glucose Control Protocol | 27 |
| **III. Pre-op Surgical Risk Factors** | |
| Surgical Priority | 28 |
| Height | 28 |
| Weight | 28 |
| Stress Test / Imaging Study Done | 29 |
| Stress Test / Imaging Study Type | 29 |
| Stress Test / Imaging Study Results | 29 |
| Ejection Fraction and Measure | 30 |
| CCS Functional Class | 31 |
| Angina Type | 32 |
| Creatinine | 33 |
| Vessels Diseased | 33 |
| Valve Disease | 34 |
| Anti-Anginal Medication Within 2 Weeks | 35 |
| Other Patient Characteristics | 36 |
| Pre-op Risk Factors (None) | 37 |
| Previous CABG- Patent Grafts .. | 37 |
| Previous CABG- No Patent Grafts | 37 |
| Previous Valve Surgery ... | 38 |
| Any Other Previous Cardiac Surgery | 38 |
| Previous MI (most recent) | 38 |
| Cerebrovascular Disease | 39 |
| Peripheral Vascular Disease | 40 |

# Table of Contents (continued)


| Topic | Page |
|---|---|
| **III. Pre-op Surgical Risk Factors (continued)** | |
| Hemodynamic Instability at Time of Procedure | |
| Unstable | 41 |
| Shock | 42 |
| Congestive Heart Failure, Current | 43 |
| Congestive Heart Failure, Past | 43 |
| BNP, 3 Times Normal | 43 |
| Malignant Ventricular Arrhythmia | 44 |
| Chronic Obstructive Pulmonary Disease | 45 |
| Extensive Aortic Atherosclerosis | 46 |
| Diabetes Requiring Medication | 46 |
| Hepatic Failure | 46 |
| Renal Failure, Dialysis | 47 |
| Emergency Transfer to OR after DX Cath | 47 |
| Emergency Transfer to OR after PCI | 47 |
| Previous PCI, This Admission | 47 |
| PCI Before This Admission | 47 |
| Stent Thrombosis | 47 |
| Any Previous Organ Transplant | 48 |
| Heart Transplant Candidate | 48 |
| Active Endocarditis | 48 |
| **IV. Major Events Following Operation** | |
| None | 49 |
| Stroke (new neurological deficit) Intra-Op to 24 hours | 49 |
| Stroke (new neurological deficit) over 24 hours | 49 |
| Q-wave MI | 50 |
| Deep Sternal Wound Infection (bone related) | 50 |
| Bleeding Requiring Reoperation | 50 |
| Sepsis or Endocarditis | 51 |
| G-I Bleeding, Perforation, or Infarction | 51 |
| Renal Failure | 51 |
| Respiratory Failure | 51 |
| Unplanned Cardiac Reoperation or Interventional Procedure | 52 |
| **V. Discharge Information** | |
| Discharged Alive to | 53 |
| Died in | 53 |
| Hospital Discharge Date | 53 |
| 30 Day Status | 54 |

# Table of Contents (continued)


| Topic | Page |
|---|---|
| **VI. Person Completing Report** | |
| Name …….. | 54 |
| Referring Physician …….. | 54 |
| **Attachments** | |
| A: PFI Numbers for Cardiac Diagnostic and Surgical Centers | |
| B: Residence Codes | |
| C: Payer Codes | |
| D: Congenital and Acquired Cardiac Procedure Codes | |
| E: Primary Cardiac Diagnosis Codes | |
| F: Stress Test Results Definitions and Clarification | |

# Revision Highlights and Coding Clarifications

## New Data Elements

The following data elements have been added to CSRS effective January 2011. The definitions for these elements are provided in the main text of this document.

Intra-Op Blood Transfusion – Pg 27
Angina Type – Pg 32
Previous Valve Surgery – Pg 38

## Revised Data Elements

The following revisions are effective January 2011.

**Previous Cardiac Procedures (pg 37- 38)**
It is now acceptable to report both Previous CABG and Any Other Previous Cardiac Surgery. These data elements can also be reported in conjunction with the new risk factor for Previous Valve Surgery.

**Congenital and Acquired Cardiac Procedure Codes – Attachment D**

Adjunct Valve Information codes (641 – 642) have been added for transcatheter valve replacement. Use these codes in conjunction with the valve replacement codes if the valve replacement was performed using a transcatheter (transcutaneous) approach. You must also report the appropriate code for valve replacement. Report these procedures no matter where in the hospital they are performed.

Third digit for valve replacement (510-608) - Clarification has been added that the third digit information (reason for re-operation) is relative to the valve being replaced in the current operation. Codes for re-operation due to failed catheter-based or surgical valve repair and as a complication of a transcatheter valve replacement have also been added.

PCI in same setting as CABG or Valve Surgery (711) – A procedure code has been added to indicate if percutaneous coronary intervention (PCI) was performed in the same procedure room visit as CABG or valve surgery. This may take place in the OR or some other location such as a hybrid procedure room. This procedure should only be reported if done at the same time as CABG or valve surgery. Data for the PCI must be reported to the Percutaneous Coronary Interventions Reporting System.

# Revision Highlights and Coding Clarifications (continued)

## Data Element Clarifications

The following clarifications are added as of January 2011.

**When to Complete an Adult CSRS Form (pg 9)**
Unless otherwise specified, forms should be submitted for reportable cardiac surgery no matter where in the hospital the operation is performed. For purposes of this reporting system, references to the "operating room" in these instructions can be interpreted to mean "the location where the cardiac procedure is occurring."

Transcatheter valve replacement procedures should be reported to CSRS, even if not performed in the operating room.

**Skin Closure Time – Pg 24**
A clarification has been added that if the patient expires in the OR prior to skin closure, time of death should be reported in place of skin closure time.

**Ejection Fraction – Pg 30**
If multiple values for Ejection Fraction are available, report the one determined closest to, but before, the cardiac surgery.

**Anti-Anginal Meds – Pg 35**
Clarification is now provided for reportable timing and form of these medications

**Stress Test Results – Attachment F**
Stress test result information has been reorganized so that the results are grouped together based on the type of test performed.

# Revision Highlights and Coding Clarifications (continued)

## Recent Clarifications and Revisions

The following revisions and clarifications were added in January 2010 and are presented here as reminders of the recent changes.

***Reportable Procedures***

The following procedures should not be reported in CSRS. New procedure codes specific to these procedures may be added in the future.

- Intra-cardiac thrombus removal
- Intra-coronary thrombus removal
- Epicardial lead placement
- Ventricular support device (e.g. Heartnet restraint)
- Coronary aneurysm repair (other than CABG)

***Other Patient Characteristics – Pg 36***

For the items regarding LIMA patency, the graft would be considered "no longer functional" if there is angiographic stenosis of 70% or more or there is evidence of significant flow restriction documented by FFR or by stress test (with echo or nuclear) to localize the ischemia.

***Peripheral Vascular Disease – Pg 40***

Ankle-Brachial Index (ABI) and subclavian artery stenosis have been added as acceptable forms of documentation for peripheral vascular disease.

# When to Complete an Adult CSRS Form

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

Unless otherwise specified, forms should be submitted for reportable cardiac surgery no matter where in the hospital the operation is performed. For purposes of this reporting system, references to the "operating room" in these instructions can be interpreted to mean "the location where the cardiac procedure is occurring."

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

Transcatheter valve replacement procedures should be reported to CSRS, wherever the procedure may occur. Use Adjunct Valve Information codes (641-642) to indicate a transcatheter valve replacement 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
- Intra-cardiac thrombus removal
- Intra-coronary thrombus removal
- Epicardial lead placement
- Ventricular support device (e.g. Heartnet restraint)
- Coronary aneurysm repair (other than CABG)

# When to Complete an Adult CSRS Form (continued)

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 at the same time as another reportable cardiac surgery:

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

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

Percutaneous Coronary Intervention (711)

# Guidance on Selecting Appropriate Procedure Codes

**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):** 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.

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.

*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 and 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.

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

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

# Guidance on Selecting Appropriate Procedure Codes (continued)

**Adjunct Valve Information (640-641)**: Use these codes to indicate a transcatheter valve replacement has been performed by either transfemoral (640) or transapical (641) approach. These procedures should be reported even if they do not occur in the operating room. A valve replacement code must also be reported.

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

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

Codes for re-operation due to failed catheter-based or surgical valve repair and as a complication of a transcatheter valve replacement have also been added. Use code 7 (Complication of Transcatheter Valve Replacement) in the event of an unsuccessful transcatheter valve replacement which requires urgent or emergent surgical valve replacement.

**PCI in same setting as CABG or Valve Surgery (711)**: Use this procedure code to indicate percutaneous coronary intervention (PCI) was performed in the same procedure room visit as CABG or valve surgery. This may take place in the OR or some other location such as a hybrid procedure room. This procedure should only be reported if done at the same time as CABG or valve surgery. Data for the PCI must be reported to the Percutaneous Coronary Interventions Reporting System.

**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.

# 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 (2011 discharges).

# 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 2011 reporting schedule is as follows.

Quarter 1 (1/1/11 – 3/31/11 Discharges) due on or before May 31, 2011
Quarter 2 (4/1/11 – 6/30/11 Discharges) due on or before August 31, 2011
Quarter 3 (7/1/11 – 9/30/11 Discharges) due on or before November 30, 2011
Quarter 4 (10/1/11 – 12/31/11 Discharges) due on or before February 28, 2012

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

*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

*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

*Variable Name: MEDRECNO*

Enter the patient's medical record number.

## Social Security Number

*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

*Variable Name: DOB*

Enter the patient's exact date of birth.

# I. Patient Information (continued)

## Sex

*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

*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

*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)

**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

*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)

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

*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

*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 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

*Variable Name: SURGDATE*

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

## Prior Surgery this Admission

*Variable Names: PRIOSURG, PRIODATE*

Check the appropriate box to indicate whether the patient had any reportable (form generating) cardiac operation prior to the present operation 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**:
Please see Attachment D: Congenital and Acquired Cardiac Procedure Codes and "When to Complete an Adult CSRS Form" and "Guidance on Selecting Appropriate Codes" (pg 9-12) for additional coding instructions and scenarios for reporting procedure codes.

## Congenital Diagnosis

*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.

# II. Procedural Information (continued)

## 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 should be the one who performed the majority of the cardiac procedure in that surgery.

The following is one of many possible examples: In a single trip to the OR, a radiofrequency ablation is performed by one surgeon and then a CABG by a second surgeon. The primary physician reported on the CSRS form should be the one who performed the CABG. It does not matter that the ablation was performed before the CABG.

If a procedure includes both a cardiac surgeon and a cardiologist (e.g. hybrid revascularization, transcatheter valve replacement) report the cardiac surgeon as the primary physician for these purposes.

**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.

## Anesthesiologist (End)

*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.

# II. Procedural Information (continued)

## CABG Information

*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.”

## 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.

# II. Procedural Information (continued)

## 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 operation, 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”.

# IIa. Peri-Operative Information

## Induction of Anesthesia Time

*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

*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.

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

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

If the patient expires in the OR prior to skin closure, time of death should be reported in place of skin closure time.

## 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.

# IIa. Peri-Operative Information (continued)

## 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” lab work 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.”

# IIa. Peri-Operative Information (continued)

## 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 at 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

# IIa. Peri-Operative Information (continued)

## 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.

## Intra-operative Blood Transfusion

*Variable Name:* TRANSFUS

Check this box if the patient received a transfusion of red cells at any point between the induction of anesthesia and arrival in the next level of care after the operating room.

## 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

*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

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

## 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

## 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. Definitions and clarification can be found Attachment F: Stress Test Results.

1. Negative
2. Positive, Low Risk
3. Positive, Intermediate Risk
4. Positive, High Risk
5. Positive, Risk Unavailable
6. Indeterminate
7. Unavailable
9. Not Done/ Unknown

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

# 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 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:**
Intra-operative TEE is acceptable, if no 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 unusual 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)

## Angina Type

*Variable Name: ANGINA*

Enter the appropriate number (1, 2, or 8) indicating the patient's angina type.

1. Stable — Angina without a change in frequency or pattern for the 6 weeks prior to this procedure.

   Angina is controlled by rest and/or oral or transcutaneous medications.

2. Unstable — Angina has increased in frequency during the last 6 weeks, including new onset.

   Angina is produced by less effort or provocation and occurring in a crescendo pattern.

   Angina can be experienced at rest and pain may last for longer periods of time and be more difficult to relieve.
   Includes progressive, rest, and variant.

8. None — Patient does not have angina as defined above. This includes those who do not have angina but present with chest pain associated with an MI.

**Note:** Angina type should not be confused with CCS Class. CCS is a "snapshot" of the level of activity which brings on the angina and does not consider the changes in pattern or intensity over time, which are considered in the stable/unstable categorization. For example, new onset angina could be only a CCS Class II based on the level of activity associated with angina, but it is still "unstable." In a similar fashion, CCS class III angina, if it has not changed in intensity or pattern in 6 weeks, could be "stable."

# 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)

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

**Clarification**:
Do not report if the patient was given sublingual, IV, or short acting formula of the medications.

Do not report if the patient has been prescribed the medication but is known to be not taking it.

Report if the patient was started on an oral form of the medication after admission but prior to this surgical procedure.

Report if this medication was prescribed for this patient, but you are unsure it has been prescribed specifically to treat anginal symptoms.

Nitro paste and nitro patch are considered Long Acting Nitrates.

“Other” excludes short acting anti-anginal medications such as nitroglycerin sublingual tablets or spray that is used to relieve an acute episode of chest pain.

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

## 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 $6mm^2$ for the left main and $4mm^2$ 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.

- 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.

Interpretation: For the items regarding LIMA patency, the graft would be considered "no longer functional" if there is angiographic stenosis of 70% or more or there is evidence of significant flow restriction documented by FFR or by stress test (with echo or nuclear) to localize the ischemia.

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

## 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 cardiac surgery, 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. Only check box 1 or box 1a, not both.

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

## 1a. Previous CABG – No Patent Grafts

*Variable Name: OTH_CABG*

Indicate if, prior to this cardiac surgery, 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:** Check this box only if there are no patent grafts. Only check box 1 or box 1a, not both.

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

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

## 2a. Previous Valve Surgery

*Variable Name: PRE_VALV*

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

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

## 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 or valve repair / replacement.

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

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

## 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. Ankle-Brachial Index < 0.9 is also acceptable documentation.

**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 | |
| 14. Subclavian artery with significant stenosis | X | |

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

## 12. Unstable

*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

*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/$m^2$)*, 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/$m^2$), **and**
2. Mechanical or pharmacological support, **and**
3. Persistent acute hypotension (systolic blood pressure < 80 mmHg) or low cardiac index (< 2.0 liters/min/$m^2$) 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 $\geq$ 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

*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 $P_{O_2}$ <60 or a $P_{CO_2}$ >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

*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.

## 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.

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

## 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.

## 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 (Continued)

## 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: BLEDREOP*

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 (Continued)

## 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 (Continued)

## 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), the discharge status should be reported with code "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 13 of the "CSRS Data Reporting Policies"

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

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 a specific discharge location will be sent back during data validation.*

## 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 expired will be sent back during data validation.*

## 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 |
| 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 |
| 0471 | Park Ridge Hospital |
| 0411 | Rochester General Hospital |
| 0413 | Strong Memorial Hospital |
| | ***SYRACUSE AREA*** |
| 0977 | Cayuga Medical Center at Ithaca |
| 0628 | Community General |
| 0636 | Crouse Hospital |
| 0599 | Faxton-St. Luke's Healthcare, St. Luke's Division |
| 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) |

| PFI | Facility |
|---|---|
| | ***NEW ROCHELLE AREA*** |
| 0989 | Benedictine Hospital |
| 0779 | Good Samaritan Hospital-Suffern |
| 0925 | Good Samaritan Hospital Medical Center-West Islip |
| 0913 | Huntington Hospital |
| 0513 | Mercy Medical Center |
| 0528 | Nassau University Medical Center |
| 0541 | North Shore University Hospital |
| 0686 | Orange Regional Medical Center |
| 1072 | Sound Shore Medical Center-Westchester |
| 0527 | South Nassau Communities Hospital |
| 0924 | Southside Hospital |
| 0943 | St. Catherine of Siena Medical Center |
| 0563 | St. Francis Hospital (aka St. Francis Hosptial The Heart Center, Roslyn) |
| 0180 | St. Francis Hospital (aka St. Francis Hostipal & Health Ctrs, Poughkeepsie) |
| 0694 | St. Luke's Cornwall Hospital/Newburgh |
| 0245 | Stony Brook University Hospital |
| 0990 | The Kingston Hospital |
| 0181 | Vassar Brothers Medical Center |
| 1139 | Westchester Medical Center |
| 1045 | White Plains Hospital Center |
| 0511 | Winthrop University Hospital |
| | ***NY CITY AREA*** |
| 1438 | Bellevue Hospital Center |
| 1439 | Beth Israel Medical Center / Petrie Campus |
| 1164 | Bronx-Lebanon Hospital Center-Fulton Division |
| 1286 | Brookdale Hospital Medical Center |
| 1288 | Brooklyn Hospital Center-Downtown |
| 1626 | City Hospital Center-Elmhurst |
| 1294 | Coney Island Hospital |
| 1445 | Harlem Hospital Center |
| 1300 | Interfaith Med Ctr, Jewish Hospital Med Ctr of Brooklyn Division |
| 1165 | Jacobi Medical Center |
| 1629 | Jamaica Hospital Medical Center |
| 1301 | King's County Medical Center |
| 1450 | Lenox Hill Hospital |
| 1302 | Long Island College Hospital |
| 1630 | Long Island Jewish Medical Center |
| 1304 | Lutheran Medical Center |
| 1305 | Maimonides Medical Center |

| PFI | Facility |
|---|---|
| ***NY CITY AREA (CONT.)*** | |
| 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 |
| 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 |
| 1634 | SVCMC-St. John's Queens |
| 1738 | SVCMC-St. Vincent's Staten Island |
| 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

### Anomalies of Atrioventricular Valves

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

## Anomalies of Atrioventricular Valves (continued)

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

## Anomalies of Ventricular Outflow Tract(s)

Pulmonary Ventricular Outflow Tract
180 Pulmonary Valvotomy/Valvectomy
181 Resection of subvalvular PS
182 Repair of supravalvular 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 Supravalvular AS
231 Resection of Discrete Subvalvular AS
235 Aortoventriculoplasty (Konno Procedure)
Aortic Valve Replacement
240 Autograft (Ross Procedure)
241 Homograft
242 Prosthetic
243 Heterograft
Aortic Root Replacement
250 Autograft (Ross Procedure)
251 Homograft
252 Prosthetic
255 LV Apex to Aorta Conduit

## Tetralogy of Fallot

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

## Truncus Arteriosus

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

## Univentricular Heart (Single Ventricle)

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

## Transposition of Great Arteries or Double Outlet RV

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

## Transposition of Great Arteries or Double Outlet RV (continued)

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

## Great Vessel Anomalies

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

## Coronary Artery Anomalies

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

## Cardiomyopathies

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

## Interval Procedures

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

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

401 Mitral Valvotomy
402 Pericardiectomy (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

## Valve Replacement (continued)

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

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

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

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

## Adjunct Valve Information

Transcatheter Valve Replacement
640 Transfemoral Approach
641 Transapical Approach

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

## 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
711 Percutaneous Coronary Intervention in the same setting as CABG or Valve surgery
715 Growth Factor Installation

## Additional Procedures with or without CABG

760 Acquired Ventricular Septal Defect
761 Resection or Plication of LV Aneurysm
762 Ventricular Reconstruction (Batiste Procedure, Surgical Ventricular Restoration)
763 Carotid Endarterectomy (report only if done with another reportable cardiac surgical procedure)
764 Implantation of AICD (report only if done with another reportable cardiac surgical procedure)

## Radiofrequency or Operative Ablation

770 Atrial
771 Ventricular
772 Maze Procedure

## 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

## Transplant Procedures (continued)

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

## 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 (surgical)
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 Triatrialum

## Anomalies of Atrial Septum

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

## 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

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

134 Straddling Mitral Valve
135 Papillary Muscle Abnormality
Common AV Valve Abnormality
140 Stenosis
141 Regurgitation
142 Malaligned

## Anomalies of Ventricular Septum

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

## Atrioventricular Septal Defects (AVSD)

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

## Univentricular Heart (Single Ventricle)

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

200 Pulmonary Ventricular Outflow Tract
201 Pulmonary Valve Stenosis
209 Supravalvar Pulmonary Stenosis

## Anomalies of Ventricular Outflow Tracts (continued)

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)

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

## Truncus Arterious

250 Type I
251 Type II
252 Type III

## Transposition of the Great Arteries (TGA)

260 D-TGA
261 Congenitally Corrected Transposition

## Double Outlet Right Ventricle (DORV)

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

## Great Vessel Anomalies

280 Aortopulmonary Window
281 Patent Ductus Arteriosus
282 Origin of L/R PA from Aorta
283 Sinus of Valsalva Aneurysm/Fistula

## Great Vessel Anomalies (continued)

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

## Coronary Artery Anomalies

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

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

## Cardiomyopathies

Hypertrophic
320 Left Ventricle
321 Right Ventricle
322 Dilated

398 Other Diagnoses NOT Listed

## Acquired Disease

400 Kawasaki's Disease
401 Endocarditis
402 Myocarditis
403 Traumatic

## Organ Failure

820 Cardiac
821 Pulmonary

## Cardiac Neoplasms

900 Atrial
901 Ventricular
902 Valvular
903 Great Vessel

# Attachment F – Stress Test Results Definition and Clarification

Use the codes and descriptions below to indicate the stress test results based on the type of performed.

## *Standard Exercise Stress Test*

**1. Negative:** A stress test is negative when the electrocardiogram (ECG) is normal or not suggestive of ischemia. ECGs are not suggestive of ischemia when there is <1 mm of horizontal or downsloping ST-segment depression or elevation for >= 60 - 80 milliseconds after the end of the QRS complex, either during or after exercise.

**Positive:** A stress test is positive when the electrocardiogram (ECG) suggests ischemia. ECGs suggestive of ischemia can be described as having >= 1 mm of horizontal or downsloping ST-segment depression or elevation for >=60-80 milliseconds after the end of the QRS complex, either during or after exercise. It is also suggestive of ischemia if the patient had symptoms of ischemia (i.e. chest pain), arrhythmias, and/or a fall in blood pressure during or immediately after the procedure. If more than one study was performed with conflicting results and one study suggested coronary artery disease, code positive.

**2. Positive, Low Risk:** Low-risk treadmill score (score >=5)
**3. Positive Intermediate Risk:** Intermediate risk treadmill score (-11 <score<5).
**4. Positive, High Risk*:*** High risk treadmill score (score <= - 11).
**5. Positive, Risk Unknown:** Positive as above, but risk is unknown.

## *Stress Echo Imaging Results*

**1. Negative:** The imaging study was normal. There was no change in wall motion during the procedure.

**Positive:** The imaging study was abnormal. There were changes that reflected wall motion abnormalities during the procedure.

**2. Positive Low Risk:** (any of the following)

a. Low-risk treadmill score (score >=5).

b. Normal stress echocardiographic wall motion or no change of limiting 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%).

## *Stress Echo Imaging Results (continued)*

**3. Positive Intermediate Risk:** (any of the following)
- a. Mild/moderate resting left ventricular dysfunction (LVEF =35% to 49%)
- b. Intermediate-risk treadmill score (-11 <score<5).
- c. 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 (score <= -11).
- c. Severe exercise left ventricular dysfunction (exercise LVEF <35%)
- d. Echocardiographic wall motion abnormality (involving greater than two segments) developing at low dose of dobutamine (<=10 mg/kg/min) or at a low heart rate (<120 beats/min).
- e. Stress echocardiographic evidence of extensive ischemia.

**5. Positive, Risk Unknown:** Positive as above, but risk is unknown.

## *SPECT MPI Imaging Results and Stress Test With CMR :*

***1. Negative:*** The results of the imaging study revealed no myocardial perfusion defects.

***Positive:*** The result of the imaging study revealed one or more stress-induced myocardial perfusion defects.

**2. Positive, Low Risk:** (any of the following)
- a. Low-risk treadmill score (score >=5).
- b. Normal or small myocardial perfusion defect at rest or with 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% to 49%).
- b. Intermediate-risk treadmill score (-11 < score <5)
- c. Stress-induced moderate perfusion defect without LV dilation or increased lung intake (thallium-201)

**4. Positive, High Risk:** (any of the following)
- a. Severe resting left ventricular dysfunction (LVEF <35%)
- b. High-risk treadmill score (score <=-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 update (thallium-201)
- g. Stress-induced moderate perfusion defect with LV dilation or increased lung uptake (thallium-201)

**5. Positive, Risk Unknown:** Positive as above, but risk is unknown.

## For All Test Types:

**6. Indeterminate:** The results of the study were indeterminate or un-interpretable. They cannot be considered positive or negative.
**7. Unavailable:** The results of the study were 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.