Cardiac Surgery Report, Adult
(Age 18 and Over)

Form DOH-2254a

Instructions and Data Element Definitions
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Table of Contents

Revision Highlights and Coding Clarification

Coding a Cardiac Surgery Case

Starting in 2003, anytime a patient goes to the operating room for a cardiac procedure a Cardiac Surgery Reporting System (CSRS) form needs to be completed.

If a patient goes to the operating room 2 times in the same hospital admission for cardiac surgery, 2 CSRS forms should be filled out. They should both have the same admission and discharge dates, because they occurred during the same hospital admission.

In addition, to allow for one complete Congenital and Acquired Cardiac Procedure Code list, the number of procedures that can be coded for each operating room visit will be 4, rather than the 2 that were previously allowed.

***NOTE**: The congenital codes (100-398) now being used are consistent with the codes the Pediatric CSRS has been using since 2000. These codes are different than the ones that have been used for CSRS prior to 2003. Please look over the codes and contact the Cardiac Services Program with any questions.*

Patient Information

Race:

In addition to collecting information on White, Black, and Other, this data element has been expanded to include Native American, Asian, and Pacific Islander. If Other is checked you must specify the race.

Procedure Codes

New Procedure Codes in 2003:

Radiofrequency or Operative Ablations:
If the procedure was performed on an atrium then code 770, if the procedure was performed on a ventricle code 771.

Repair of a Cardiac Laceration due to Trauma (907):
Use to code any procedures to correct peri-operative or cath lab injuries.

Septal Myomectomy (915)

Ventricular Myomectomy (916)

Ventricular Free Wall Rupture (920)

Procedure Codes (Cont.)

Updated Procedure Codes:

As of 2003, the following procedure codes will be used to code the procedure described:

Other Single Valve Surgery Plus Single or Multiple CABG (746)
Other Multiple Valve Surgery Plus Single or Multiple CABG (747)
These procedure code will now be used to collect the information that was previously collected with SCAC Code 748 (Other Valve Surgery Plus Single or Multiple CABG).

Ventricular Assist Device Codes:
New procedure codes have been added to accommodate the complete coding of ventricular assist devices. The following are codes are being used to replace 823 and 825:

830 Left Ventricular Assist Device *(LVAD)* - *E*xtracorporeal
831 Left Ventricular Assist Device *(LVAD)* - Implantable
832 Right Ventricular Assist Device *(RVAD)*
833 Bi-Ventricular Assist Device *(BIVAD)*
834 Extra Corporeal Membrane Oxygenation *(ECMO)*
840 Ventricular Assist Device as a Destination Therapy

If you code 840 you must also code 830 or 831.

When any of the above ventricular device codes are coded with risk factor 40 – Heart Transplant Candidate the patient will be excluded from most Department of Health analyses.

For patients who do not meet the above criteria, cases coded with an 830 –834 AND a coronary artery bypass graft (CABG) code (671-706, 721,722, or 723) will be considered an isolated CABG procedure in ALL analyses conducted by the Department of Health.

Procedure Code Clarification:

Maze Procedure:
Will now be coded as 772.

Ascending Aorta, Replacement or Repair, Without Coronary Reimplantation (781):
This was previously called “Aortic Root or Ascending Aorta, Replacement or Repair, Without Coronary Reimplantation”. The definition has been adjusted to only include the Ascending Aorta. If the Aortic Valve is also repaired or replaced in combination with this procedure, that would be coded separately. Aortic Root Replacement or Repair can be coded as part of SCAC Code 785 (Aortic Root or Ascending Aorta, Replacement or Repair, With Graft, With Coronary Reimplantation).

Procedure Codes (Cont.)

Procedure Code Clarification (Cont.):

Descending Thoracic Aortic Aneurysm (783):
This definition has been revised to include only the thoracic section of the descending aorta. Thus the name for this procedure code has been changed from Descending Aortic Aneurysm.

Sinus of Valsalva Aneurysm Repair:
If an acquired condition caused the aneurysm, code the repair as an Ascending Aortic Aneurysm (780, 781, or 785). If a congenital condition caused the aneurysm, code Repair Sinus of Valsalva Aneurysm (333).

Right Atrium Repair:
Code as a 907: Repair of a Cardiac Laceration due to Trauma

Pseudo-Aneurysm of the Left Ventricle:
This should be coded as a true aneurysm, 721 if done in the same operating room visit as a CABG, or a 761 if done without a CABG.

CABG CODES:

As a reminder, the definition of CABG Procedures was updated in 2002 to more accurately represent the information in this section. Codes 681-686 and 691-696 now have the additional statement of "with or without Saphenous Vein Grafts" added to their definition.

Examples for coding using the new definitions:

- A double, internal mammary artery graft with two saphenous vein grafts would be coded as 694.
- A single, radial artery graft with a saphenous vein graft would be coded as 682.
- A single, internal mammary, a double, radial artery, and 3 saphenous vein grafts would be coded as 706.

CODE THE FOLLOWING ONLY WHEN PERFORMED IN THE SAME OPERATING ROOM VISIT AS A CABG:

Carotid Endarterectomies (722)
Implantation of an AICD (723)

Procedure Codes (Cont.)

CSRS FORM REQUIRED:

Starting in 2003, when removal of a thymoma, cyst, adhesion, etc. is performed, code it as a 904 "Removal of Intracardiac Tumor"

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

Intra-operative removal of a stent
Aortic endarterectomy

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

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

Intra-Operative PCI:

Code as a CABG. To code this, count this procedure as a distal anastomosis of the saphenous vein. Therefore, this procedure done in isolation should be coded a 671 and when performed with a single arterial graft should be a 682.

Pericardiectomy (402):

Any time the procedure consists of more than a pericardial window (i.e. stripping or partial pericardiectomy) it should be coded as a 402.

Pulmonary Endarterectomy:

This procedure should be coded as a 998 – Other Operation for Acquired Heart Disease Performed with Extracorporeal Circulation.

Valve Debridement:

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

Procedural Information

Heparin:

Should ONLY be reported if it was administered through an intravenous (IV) line. DO NOT report low molecular weight heparin or heparin administered subcutaneously.

Pre-Op Surgical Risk Factors

Previous MI < 24 hours:

Documentation MUST be present in the medical record that reports the date and time the patient was ruled in with an MI, along with the date and time of the surgery.

Congestive Heart Failure, Current and Past:

These have new definitions as of 2001. It is important to recognize the fact that it is now possible to code BOTH risk factors. The definitions are "within 2 weeks" and "2 weeks and 6 months", respectively. It is also important to note that the definitions are no longer subjective NYHA classifications, rather they have specific requirements that need to be met for coding. See the detailed definitions on page 29.

Renal Failure, Creatinine > 2.5 mg/dl:

This risk factor should only be coded if the creatinine level goes above 2.5 mg/dl at least one time PRIOR to the start of the procedure. If the creatinine is equal to 2.5 mg/dl DO NOT CODE.

In addition, it is appropriate to code Renal Failure, Creatinine > 2.5 mg/dl even if Renal Failure, Dialysis is also coded.

Any Previous Organ Transplant:

This risk factor is new to the reporting system in 2003. It should be coded anytime 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.

Pre-Op Surgical Risk Factors (Cont.)

Heart Transplant Candidate:

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, notes from the transplant coordinator that they have discussed this issue with the patient/family and they agree prior to surgery, 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 all 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.

Major Events Following Surgery

New Definitions:

For the following major events, please review updated definitions (pages 37-40).

Transmural MI (new Q waves)
Bleeding Requiring Reoperation
Renal Failure

Unplanned Cardiac Reoperation or Interventional Procedure:

This is a new data element as of 2003. Please review the definition on page 40.

Discharge Status

Discharged Alive to:

"15 Inpatient Physical Medicine and Rehab" is a new code as of 2003. Use this code when a patient is being transferred to an inpatient physical medicine and rehabilitation (PM&R) program. Use this code regardless of whether the PM&R is within your institution (as long as it is an approved PM&R program) or at another institution.

When to Complete an Adult CSRS Form

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

If more than one cardiac surgery occurred during a single hospital stay, **complete a separate form for each operating room visit.** (Example: if a patient's treatment involves 3 separate operating room visits for cardiac surgery, complete 3 CSRS forms).

Only operations on the heart or great vessels should be reported.

A surgical procedure begins at the time of the FIRST skin incision, unless otherwise stated.

Procedure Code 721: Resection or Plication of Left Ventricular (LV) Aneurysm combined with a CABG. This procedure will be counted as an isolated bypass case in any analyses performed by the Department of Health.

Procedure Code 120: Atrial Septal Defect (ASD) Closure when coded with a CABG or a valve will be considered an isolated CABG and/or Valve case in any analyses performed by the Department of Health.

Procedure Code 123: Patent Foreman Ovale (PFO) Closure when coded with a CABG or a valve will be considered an isolated CABG and/or Valve case in any analyses performed by the Department of Health.

Do not code aortic root enlargements when performed with aortic valve replacements.

When an aortic valve repair/replacement is done with an aortic root repair/replacement, code the entire procedure as 785.

ITEM-BY-ITEM INSTRUCTIONS

PFI Number

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

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

Enter the patient's last name followed by their first name.

Medical Record Number

Enter the patient's medical record number.

Social Security Number

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.

This information can usually be found on the face sheet of the hospital medical record.

Age in Years

Enter the patient's age at admission to the hospital. The age should be calculated by subtracting the Date of Birth from the Hospital Admission Date.

Date of Birth

Enter the patient's exact date of birth.

Sex

Check the appropriate box.

Ethnicity

Check the appropriate box.

I. Patient Information (Cont.)

Race

Check the appropriate box. For White Hispanics, check "White"; for Black Hispanics, check "Black". "Other" refers to races other than those listed. If you check “Other” then you MUST specify the patient’s race.

Residence Code

Enter the county code of the patient's principal residence, as shown in Attachment B. If the patient lives outside New York State, use code 99 and print the name of the state or country where the patient resides in the space provided.

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

Enter the date that the current hospital stay began.

II. Procedural Information

REMINDER: *fill out a separate CSRS form for each cardiac surgery involving the heart or great vessels during the current hospital admission.*

Hospital that Performed Diagnostic Cath

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 New York State, enter its PFI Number from Attachment A; if done at a Veterans Administration hospital in New York State, enter "8888"; if done outside New York State, enter "9999". If there was no diagnostic catheterization, leave this item blank.

Primary Physician Performing Operation

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

Date of Surgery

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

Remember to fill out a **separate cardiac surgery form** for *each* visit to the operating room that occurred during the admission.

Prior Surgery this Admission

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

If “Yes” then the date of the previous cardiac operation **MUST** be entered.

II. Procedural Information (Cont.)

Cardiac Procedures This OR Visit

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

List up to 4 cardiac procedures performed during this operating room visit.

If there are more, list the 4 most significant.

If multiple procedures were performed during the same operation and there is a SCAC code for the combination of procedures, use the code for the combination rather than coding the procedures individually.

Minimally Invasive

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

Converted to Standard Incision

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

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

Video Assisted Thoracic Surgery (VATS)

If a video assisted thoracoscope was used to perform all or part of the procedure, check “Yes”, otherwise check “No”.

II. Procedural Information (Cont.)

Cardioplegia

If cardioplegia was **NOT** used, check "None".

If cardioplegia was used, check one box in each of the other four sections:

- Cold, Warm, or Both
- Intermittent or Continuous
- Antegrade, Retrograde, or Both
- Crystalloid, Blood, or Both

LIMA to LAD

For CABG procedures only. Check the appropriate box to indicate the use of the left internal mammary artery (LIMA) to the LAD.

NOTE: This field should ONLY be checked if the procedure was done using the LEFT. A CABG using the right internal mammary artery (RIMA) does NOT constitute coding this item.

IV Heparin within 48 hours Pre-op

Check the appropriate box.

ONLY code when un-fractionated intravenous (IV) Heparin is administered. Subcutaneous or fractionated heparin, are NOT included in this category.

Global Myocardial Ischemic Time

Enter the global myocardial ischemic time in minutes. This should include the Total Cross Clamp Time plus/or the Circulatory Arrest Time.

Total Cross Clamp Time

Enter the cross clamp time in minutes.

II. Procedural Information (Cont.)

Cardiopulmonary Bypass Time

Enter the cardiopulmonary bypass time in minutes.

Since this is the field that determines the use of extracorporeal circulation, it is vital that this field be complete and accurate.

Any cases with a missing or "0" CP Bypass Time will be sent back to the centers during quarterly and annual data validation to verify accuracy of this data element.

Converted from Off Pump to On Pump

Check this box if the procedure began without the use of CP Bypass, but prior to the completion of the procedure the patient was placed on pump.

CP Bypass Time must also be completed for procedures that have this field checked.

Entire Procedure Off Pump

Check this box if the entire procedure was performed without the use of CP Bypass.

If this box is checked then the case SHOULD have a blank or "0" CP Bypass Time and will not be sent back to the center during quarterly and annual data validation.

III. Pre-Op Surgical Risk Factors

Surgical 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 requiring emergency procedures will have ongoing, refractory, unrelenting cardiac compromise, with or without hemodynamic instability.

Typical 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

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

Centimeters = 2.54 x inches

Weight

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

Kilograms = pounds (lbs) / 2.2

III. Pre-Op Surgical Risk Factors (Cont.)

Ejection Fraction and Measure

Record the ejection fraction taken closest to the cardiac procedure. When a calculated measure is unavailable, the ejection fraction should be estimated visually from the ventriculogram or by echocardiography. If an ejection fraction is unavailable, check "Unknown".

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

Interpretation:

Any ejection fraction that is well documented in the chart is acceptable, but give precedence to the one closest to the cardiac procedure.

An Ejection Fraction is acceptable and should be reported if it is measured or estimated by the following:

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

If the measure is unknown, code it as a "9. Unknown".

An ejection fraction, which is described as "Normal" should be considered 55.

Any cases with a missing or "0" ejection fraction will be sent back to the centers during quarterly and annual data validation to verify accuracy of this data element.

Stress Test Results

1. Positive	ECG, radionuclide, or echo stress test was positive by standard criteria.
2. Negative	ECG, radionuclide, or echo stress test was negative by standard criteria.
3. Not Done	Stress test was not performed.
9. Unknown	Stress test was performed, but results are unknown.

III. Pre-Op Surgical Risk Factors (Cont.)

Angina: CCS Functional Class

Check the box corresponding to the patient's Canadian Cardiovascular Society Functional Class, as defined in Attachment D.

Note: The determination of functional class should be based on the typical level of exertion required to produce angina. For example, a single episode of anginal pain at rest does not qualify a patient as Class IV unless it is the initial episode of angina.

Vessels Diseased

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.

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

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

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

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 60-70% stenosis, then code 50-69%.

The Ramus Intermediate can be coded as the LAD or LCX.

ALWAYS take the highest stenosis reported for a vessel. If the medical record reports the Ramus Intermediate with a 70% lesion and the Distal Circumflex Trunk with a 50% you should code the LCX as 70-100%, since the Ramus Intermediate 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.

III. Pre-Op Surgical Risk Factors (Cont.)

Valve Disease – *This Section is Required for Valve Patients*

On each line, enter an assessment of the degree of stenosis or incompetence (*acute or chronic*). All six lines should be completed for all valve patients.

If this information is available for other patients please indicate it, but if it is unknown these items may be left blank.

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.

Pulmonary Artery Pressure

The systolic pulmonary artery pressure and the mean wedge should be reported for patients who have valvular heart disease.

If this information is available for other patients please indicate it, but if it is unknown these items may be left blank.

Cardiac Index

The cardiac index should be entered to the nearest tenth for all patients who have valvular heart disease.

If this information is available for other patients please indicate it, but if it is unknown these items may be left blank.

III. Pre-Op Surgical Risk Factors (Cont.)

0. None

None of the pre-operative risk factors listed below are present.

1-3. Previous Open Heart Operations

If the patient had open-heart surgery prior to the current hospitalization, check the appropriate box to indicate the number of such operations.

For the purposes of this reporting system, minimally invasive procedures are considered open-heart surgery.

4-7. Previous MI (most recent)

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

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".

Transmural MI: If the most recent MI was transmural (new Q waves), check box 7.

III. Pre-Op Surgical Risk Factors (Cont.)

Peripheral Vascular Disease

8. Stroke

A history of stroke, with or without residual deficit.

9. Carotid/ Cerebrovascular

Angiographic or ultrasound demonstration of at least 50% narrowing in a major cerebral or carotid artery (common or internal), history of a non-embolic stroke, or previous surgery for such disease. A history of bruits or transient ischemic attacks (TIA) is not sufficient evidence of carotid/cerebrovascular disease.

10. Aortoiliac

Angiographic demonstration of at least 50% narrowing in a major aortoiliac vessel, previous surgery for such disease, absent femoral pulses, or the inability to insert a catheter or intra-aortic balloon due to iliac aneurysm or obstruction of the aortoiliac arteries.

11. Femoral/Popliteal

Angiographic demonstration of at least 50% narrowing in a major femoral/popliteal vessel, previous surgery for such disease, absent pedal pulses, or inability to insert a catheter or intra-aortic balloon due to obstruction in the femoral arteries.

Peripheral Vascular Disease (Continued)

Interpretation:

Peripheral Vascular Disease	CODE	DO NOT CODE
Stroke		
1. Patient with TIA, vertigo per history & physical		X
2. Cerebral aneurysm and clipping residual deficit	X	
Carotid/Cerebrovascular		
1. External Carotid Artery has > 50% stenosis		X
2. Internal or Common Carotid Artery has > 50% stenosis	X	
Aortoiliac		
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. History of aorto-bifemoral bypass	X	
6. Absence of femoral pulse on either the right or the left	X	
7. Diminished femoral pulse on either right or left or both		X
8. Claudication		X
Femoral/Popliteal		
1. Leg ulceration and diminished leg pulses		X
2. Conflicting doctor note and H&P Cannot feel dorsalis pedis or posterior tibial pulses Consult note: 1+ peripheral pulses	X	
3. Angio report -> because of tortuosity of the vessel, even a sheath could not be passed up the wire.	X	
4. A negative popliteal pulse alone (1+1- or 1-1+)		X
5. A patient with a palpable Dorsalis Pedis and Posterior Tibial pulses and treated with Trental		X
6. If pulses are non-palpable, but is Dopplerable	X	
7. If Dorsalis Pedis and Posterior Tibial pulses are absent in the right or the left or both	X	
8. Below the knee amputation of one or both legs	X	
9. Inability to insert a catheter or IABP in femoral arteries	X	
10. At least 50% narrowing in a major femoral artery	X	

Hemodynamic Instability at Time of Procedure

Determined just prior to, or, at the induction of anesthesia. These patients have hypotension and low cardiac output. The administration of pharmacological or mechanical support ***MUST*** be contained in the patient's medical record. For purposes of reporting, the surgical procedure ***does not*** constitute the mechanical support.

12. Unstable

The patient requires pharmacologic or mechanical support to maintain blood pressure or output.

Interpretation:

Unstable	CODE	DO NOT CODE
1. Patient on IV Nitroglycerin or IV Heparin		X
2. IABP inserted for pain control		X
3. Inability to place IABP because of tortuous and diseased vessels		X
4. Documented evidence of hypotension, with NO pharmacologic or mechanical support		X

When coding "Unstable", be careful of timing. It needs to be prior to, or, at the induction of anesthesia. Once the initial phases of anesthesia have been administered, any instability after that would not constitute the patient being coded "Unstable". Some hospitals are using the terminology "around the time of anesthesia". If you cannot be sure by the rest of the documentation that it was in fact before anesthesia then **DO NOT** code.

There ***MUST*** be actual documentation of blood pressure and/or cardiac output, simply stating that the patient was hypotensive or in cardiogenic shock is ***NOT*** sufficient.

With *documented evidence of hypotension* (low B/P), an IABP would be considered mechanical support and the patient would be considered unstable.

The procedure itself ***DOES NOT*** constitute mechanical support.

*Unstable **CANNOT** be coded with SHOCK*

Hemodynamic Instability at Time of Procedure (Continued)

13. Shock

Acute hypotension *(systolic blood pressure < 80 mmHg)* or low cardiac index *(< 2.0 liters/min/m^2)*, despite pharmacologic or mechanical support.

Interpretation:

To code a patient with "Shock" there must be evidence that all the criteria for "Unstable" have been met and that *DESPITE* the support the patient's hemodynamic status fails to improve or stabilize.

When coding "Shock", be careful of timing. It needs to be prior to or at the induction of anesthesia. Once the initial phases of anesthesia have been administered any factors that would constitute the patient being coded "Shock" would ***NOT*** matter. Some hospitals are using the terminology "around the time of anesthesia". If you cannot be sure by the rest of the documentation that it was in fact before anesthesia, **DO NOT** code.

References in the medical record of "hemodynamics not improved", "continuing instability", etc are acceptable documentation.

*Shock **CANNOT** be coded with Unstable.*

37. CPR

The patient requires cardiopulmonary resuscitation within one hour prior to the procedure.

Interpretation:

To code "CPR", it ***MUST*** occur within ONE hour prior to surgery.

A single defibrillation, even if accompanied by *initial* compressions, ***DOES NOT*** constitute coding "CPR".

*CPR **CAN** be coded with either Unstable or Shock.*

III. Pre-Operative Risk Factors (Cont.)

14. More Than One Previous MI

Clinical or ECG evidence of more than one previous myocardial infarction (MI).

Interpretation:

The MI must be documented to have occurred ***PRIOR*** to the surgery.

If documentation (e.g. op note) indicates an “old scar”, interpret this as an additional MI.

15. Hypertension History

Code if any of the following are present:

- Blood pressure greater than 140/90
- History of hypertension
- Current treatment for hypertension.

16. IV NTG within 24 hours before operation

IV nitroglycerin (NTG) given within 24 hours before surgery for ongoing myocardial ischemia or left ventricular (LV) failure.

Clinical evidence of the ischemia or LV failure should be part of the patient's medical record.

18. Congestive Heart Failure, Current

Within 2 weeks prior to the procedure, a physician has diagnosed CHF by one of the following:

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

NOTE: Pedal edema or dyspnea alone are ***NOT*** diagnostic. Patient should also have received diuretics, digoxin, or vascular therapy such as ace inhibitors.

Interpretation:

Congestive Heart Failure, Current	CODE	DO NOT CODE
1. Patient admitted to Hospital A, with CHF and then transferred to Hospital B (within 2 weeks)	X	
2. Hospital reports: Chest + for rales, treated with Lasix	X	
3. Patient with prior renal transplant, pending renal transplant with creatinine up to 5 and BUN>72. Renal failure would explain the bilateral pleural effusions and DOE. Lasix was used to treat fluid retention secondary to renal failure not CHF. CXR indicating "cannot rule out mild CHF" is pretty consistent with fluid overload due to Renal Failure.		X

If there is documentation to support coding both "Congestive Heart Failure, Current" and "Congestive Heart Failure, Past" – then ***CODE BOTH*** risk factors.

19. Congestive Heart Failure, Past

Between 2 weeks and 6 months prior to the procedure, a physician has diagnosed CHF by one of the following:

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

NOTE: Pedal edema or dyspnea alone are ***NOT*** diagnostic. Patient should also have received diuretics, digoxin, or vascular therapy such as ace inhibitors.

20. Malignant Ventricular Arrhythmia

Recent *(within the past 7 days)* recurrent ventricular tachycardia or ventricular fibrillation requiring electrical defibrillation or the use of intravenous antiarrhythmic agents. **Excludes** a single episode of V-Tach or V-Fib occurring within 6 hours of the diagnosis of a myocardial infarction and responding well to treatment.

Interpretation:

Malignant Ventricular Arrhythmia	CODE	DO NOT CODE
1. Patient has ventricular bigeminy and treated with IV antiarrhythmic.	X	
2. PVC's treated with Lidocaine.		X
3. V-Fib x2 in ambulance while having an MI. D-fib x2 with no further episodes.		X
4. The patient experienced V-tach arrest requiring D-Fib, IV Lidocaine given during an evolving MI.		X
5. 20 beat run of V-tach, treated with Lidocaine. No recurrent episodes for medication.		X
6. Arrhythmia not an ongoing problem by time of cardiac intervention. Episode only in context of admitting acute ischemic event.		X

If the patient has an AICD that is *documented* to have fired then ***CODE***.

The duration of the event ***MUST*** be documented. There ***MUST*** be recurrent episodes. A single episode should ***NOT*** be coded.

Medication for a ventricular arrhythmia is **NOT** sufficient reason to document the risk factor.

21. Chronic Obstructive Pulmonary Disease

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

Or

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

Or

Have a room air pO_2 <60 or a pCO_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.

Interpretation:

COPD	CODE	DO NOT CODE
1. Chest X-Ray as documentation		X
2. Patient required bronchodilators prior to surgery		X
3. Hyperinflated lungs, wheezing		X
4. Fibrotic lungs on chest X-Ray		X
5. Hyperinflated lungs at operation		X
6. Although admitting notes state no history of COPD, documentation in the chart elsewhere as well as chest X-Ray results and a smoking history are apparent		X
7. Patient has a history of asthma, is on bronchodilator and asthma meds	X	
8. Chart states asthma without medications		X
9. Sleep Apnea without any of the above criteria		X

22. Myocardial Rupture

Acute rupture of any of the following:

Ventricular septum (*post-infarction VSD*)
Mitral papillary muscle
Left ventricular free wall

23. Extensively Calcified Ascending Aorta

More than the usual amount (for age) of calcification or plaque formation in the ascending aorta, or plaque, palpable at surgery, in the ascending aorta.

Interpretation:

Documentation in the medical record must *CLEARLY* state that it is the ascending aorta that is calcified. *Descending aorta should not be included.*

Chest X-Rays or TEE documenting aortic plaque alone are *NOT* sufficient documentation to code this risk factor.

Acceptable documentation can include, but is not limited to the following:

- Statement that the patient has severe ascending aorta calcification.
- Statement that a catheter was unable to be inserted due to calcification in the ascending aorta.

24. Diabetes Requiring Medication

The patient is receiving either oral hypoglycemics or insulin.

Interpretation:

The following scenario ***WOULD NOT*** be coded since the medication was not ongoing:

> Patient admitted on 12/28. Nurses 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

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

26. Renal Failure, Creatinine > 2.5 mg/dl

Pre-operative creatinine > 2.5 mg/dl.

Interpretation:

If the patient has at least one creatinine > 2.5 mg/dl prior to the surgery then code.

No matter how many renal transplants the patient has had, if the creatinine *DOES NOT* have at least one value >2.5 mg/dl during this admission, prior to the intervention, ***DO NOT*** code.

If the patient is on dialysis and the creatinine is > 2.5 mg/dl then code both this risk factor and risk factor 27 *(Renal Failure, Dialysis)*

27. Renal Failure, Dialysis

The patient is on chronic peritoneal or hemodialysis.

Interpretation:

A single dialysis treatment ***DOES NOT*** constitute coding this risk factor.

If the patient is on dialysis and the creatinine is > 2.5 mg/dl then code both this risk factor and risk factor 26 *(Renal Failure, creatinine > 2.5 mg/dl)*

28. Immune System Deficiency

Chronic use, that continues until surgery, of steroids, anti-neoplastic therapy, cyclosporine, or other immunosuppressive therapy

or

the presence of HIV/AIDS.

29. IABP (Intra-Aortic Balloon Pump) Pre-Op

The patient arrives in the operating room with an intra-aortic balloon pump in place, or requires its insertion prior to the induction of anesthesia, for ongoing myocardial ischemia, left ventricular failure, or shock. Clinical evidence of which should be contained in the patient's medial record.

Interpretation:

"IABP Pre-op" can be coded if it is inserted at the same time anesthesia is being started.

The following scenario ***WOULD NOT*** be coded:

> IABP inserted at Hospital A. IABP removed before transfer to Hospital B. Surgery was done at Hospital B.

30. Emergency Transfer to OR after DX Cath

The patient requires immediate surgery following a diagnostic catheterization**.**

31. Emergency Transfer to OR after PCI

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

32. Previous PCI, this admission

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

33. PCI before this admission

The patient has had a PCI before this admission.

34. Thrombolytic Therapy within 7 days

Thrombolytic therapy such as streptokinase, urokinase, or thromboplastin activator (*TPA*) for the purpose of dissolving a coronary thrombosis within seven days prior to surgery.

35. Smoking History, in past 2 weeks

The patient has used any tobacco products within the past two weeks.
The use of chewing tobacco would be included here.

36. Smoking History, in past year

The patient has used any tobacco products within the past year.
The use of chewing tobacco would be included here.

38. Stent Thrombosis

Formation of a blood clot/thrombus in the stented segment of the artery and/or adjacent area. This usually results in an acute occlusion, chest pain or development of an acute MI. Stent thrombosis usually occurs up to 30 days following the procedure.

Interpretation:

An occlusion alone or plaque build-up ***DOES NOT*** constitute coding.

The thrombus needs to be in or around the area that is stented for the risk factor to be coded.

39. Any Previous Organ Transplant

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.

40. Heart Transplant Candidate

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, 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.

The following risk factors are specific to valve surgery.

61. Cardiomegaly

C-T ratio greater than 50%, determined from the chest X-ray.

62. Active Endocarditis

Two or more positive blood cultures without other obvious source, 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.

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

0. None

Check if none of the Major Events listed below occurred following the operation.

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

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 NO longer reported as a post-op event.

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

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

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 NO longer reported as a post-op event.

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

2. Transmural MI (New Q Waves)

New Q waves occurring within 48 hours after surgery.

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

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 apparent 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 (-) cellulites, sternum is showing NO instability.

5. Bleeding Requiring Reoperation

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 (i.e. ICU, OR, bedside), if it occurred within 36 hours of the procedure ***CODE***.

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

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

IV. Major Events Following Operation (Cont.)

8. Sepsis or Endocarditis

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

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

Creatinine greater than 2.5 mg/dl for more than 7 post-operative days or at discharge if discharged less than 7 days post-operatively **or** there is need for temporary or permanent renal dialysis of any type.

Do not code this item if Risk Factor 26 *(Renal Failure, Creatinine > 2.5 mg/dl)* or Risk Factor 27 (*Renal Failure, Dialysis*) is coded.

13. Respiratory Failure

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:

The following scenario ***WOULD*** be coded:

Patient was intubated,
Patient was extubated 48 hours later,
Patient was re-intubated within 24 hours,
Patient was extubated 32 hours later.

14. Unplanned Cardiac Reoperation or Interventional Procedure

Any 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.

V. Discharge Information

Discharged Alive To

Check the appropriate box.

Patients discharged to Hospice (including Home with Hospice), code "12". NOTE: for purposes of analysis a hospice discharge ("12") is considered an in-hospital mortality.

If the patient came from a Prison or Institutional 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 NEVER be checked if it is specified as "4 – Died CCU" or "Died", these cases should be coded in the next section.

Any discharge status "19" that does not specify where the patient was discharged to will be sent back to the hospital for verification.

Died in

Check the appropriate box.

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

Hospital Discharge Date

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.

30 Day Status

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

VI. Person Completing Report

Enter the name and telephone number of the person completing the report, and the date the report was completed.

ATTACHMENT A

PFI NUMBERS FOR CARDIAC DIAGNOSTIC AND SURGICAL CENTERS

PFI #	HOSPITAL
0001	Albany Medical Center Hospital
0116	Arnot Ogden Medical Center
1438	Bellevue Hospital Center
1439	Beth Israel Medical Center / Petrie Campus
1164	Bronx Lebanon Hospital Center – Fulton Division
1286	Brookdale Hospital Medical Center
0885	Brookhaven Memorial Hospital Medical Center, Inc.
1288	Brooklyn Hospital Center - Downtown
0207	Buffalo General Hospital
0977	Cayuga Medical Center at Ithaca
0135	Champlain Valley Physicians Hospital Medical Center
0208	Children's Hospital of Buffalo
1626	City Hospital Center at Elmhurst
1294	Coney Island Hospital
0636	Crouse Hospital
0829	Ellis Hospital
0210	Erie County Medical Center
0599	Faxton St. Luke's Healthcare, St. Luke's Division
0407	Genesee Hospital (Closed)
1005	Glens Falls Hospital
0925	Good Samaritan Hospital Medical Center (West Islip)
0779	Good Samaritan Hospital of Suffern
1445	Harlem Hospital Center
0913	Huntington Hospital
1300	Interfaith Medical Center, Jewish Hosp. Med Ctr of Brooklyn Division
1629	Jamaica Hospital 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
0746	Mary Imogene Bassett Hospital
0213	Mercy Hospital of Buffalo
0215	Millard Fillmore Hospital
1169	Montefiore Medical Center – Henry and Lucy Moses Division
3058	Montefiore Medical Center – Jack D. Weiler Hosp. of A. Einstein College Div.

ATTACHMENT A

PFI NUMBERS FOR CARDIAC DIAGNOSTIC AND SURGICAL CENTERS

PFI #	HOSPITAL
1456	Mount Sinai Hospital
0528	Nassau University Medical Center
0541	North Shore University Hospital
1637	NY Hospital Medical Center of Queens
1306	NY Methodist Hospital
1464	NY Presbyterian Hospital Columbia Presbyterian Center
1458	NY Presbyterian Hospital NY Weill Cornell Center
1463	NYU Hospitals Center
0066	Olean General Hospital
0471	Park Ridge Hospital
0411	Rochester General Hospital
0367	Samaritan Medical Center
0818	Saratoga Hospital
1072	Sound Shore Medical Center of Westchester
0527	South Nassau Communities Hospital
0924	Southside Hospital
1176	St. Barnabas Hospital
0943	St. Catherine of Siena Hospital
0598	St. Elizabeth Medical Center
0563	St. Francis Hospital
0870	St. James Mercy Hospital
0630	St. Joseph's Hospital Health Center
1469	St. Luke’s Roosevelt Hospital - St. Luke’s Hospital Division
1466	St. Luke’s Roosevelt Hospital Center, Roosevelt Hospital Division (Closed)
0005	St. Peter's Hospital
1740	Staten Island University Hospital - North
0413	Strong Memorial Hospital
1634	SVCMC – St Johns Queens
1471	SVCMC - St. Vincent’s Manhattan
1738	SVCMC - St. Vincent’s Staten Island

ATTACHMENT A

PFI NUMBERS FOR CARDIAC DIAGNOSTIC AND SURGICAL CENTERS

PFI #	HOSPITAL
0058	United Health Services Hospital, Inc – Wilson Hospital Division
1320	University Hospital of Brooklyn
0245	University Hospital at Stony Brook
0635	University Hospital SUNY Health Science Center (Upstate)
0181	Vassar Brothers Hospital
1139	Westchester Medical Center
0511	Winthrop University Hospital
0103	Woman's Christian Association

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)

ATTACHMENT B

Residence Codes

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

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

88 Unknown

99 Outside NYS

ATTACHMENT C

NEW YORK STATE DEPARTMENT OF HEALTH
STATE CARDIAC ADVISORY COMMITTEE

CONGENITAL AND ACQUIRED CARDIAC PROCEDURE CODES

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

Note: Extracorporeal circulation will be determined from the Cardiopulmonary Bypass Time 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 Triatrialum
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
	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
	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
241	Homograft
242	Prosthetic

ATTACHMENT C – Congenital and Acquired Cardiac Procedure Codes (Cont.)

Anomalies of Ventricular Outflow Tract(s) (Cont.)

Aortic Root Replacement
250 Autograft
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

ATTACHMENT C – Congenital and Acquired Cardiac Procedure Codes (Cont.)

Univentricular Heart (Single Ventricle) (Cont.)

Transannular Patch
210 With Monocusp Valve
211 Without Monocusp Valve
Hypoplastic Left Ventricle
280 Norwood

290 Damus Kaye Stansel *(DSK)*

Transposition of Great Arteries or Double Outlet RV

310 Arterial Switch
311 Senning Procedure
312 Mustard Procedure
313 Intraventricular Repair of DORV
Rastelli Procedure
RV-PA Conduit
Valved
320 Homograft
321 Prosthetic
322 Non-valved
325 REV operation *(Modified Rastelli)*
LV-PA Conduit
Valved
326 Homograft
327 Prosthetic
328 Non-valved

Great Vessel Anomalies

330 PDA Ligation
331 Repair Aortopulmonary Window
332 Reimplantation of left or right pulmonary artery
333 Repair Sinus of Valsalva Aneurysm
Aortic Repair *(Coarctation or Interruption)*
340 End to end 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

ATTACHMENT C – Congenital and Acquired Cardiac Procedure Codes (Cont.)

Coronary Artery Anomalies

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

Cardiomyopathies

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

Interval Procedures

370 Pulmonary Artery Band
375 Unifocalization of Pulmonary Vessels
Shunts
381 Central Aortopulmonary Shunt
Blalock Taussig Shunts
382 Classical
383 Modified
Glenn Shunts
384 Unidirectional *(Classical)*
385 Bidirectional
386 Bilateral Bidirectional

390 Cardiac Arrhythmia Surgery

398 Other Operations for Congenital Heart Disease

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

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

Repair Of Aortic Deceleration Injury

420 With Shunt
421 Without Shunt
498 Other Operation for Acquired Heart Disease, Performed without Extracorporeal Circulation

ATTACHMENT C – Congenital and Acquired Cardiac Procedure Codes (Cont.)

Valvuloplasty - Single Valve

500 Aortic
501 Mitral
502 Tricuspid

Replacement - Single Valve

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

Multiple Valve Surgery - Valvuloplasty Or Replacement

610-618* Double, Including Tricuspid
620-628* Double, Not Including Tricuspid
630-638* Triple

*REOPERATIONS: For Single Valve Replacement or Multiple Valve Surgery (*510-638*), use third digit to indicate reason for reoperation, as follows:

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

Examples: *Aortic Heterograft, not a reoperation: 530*
Valvuloplasty or Replacement, Triple, due to Prosthetic Endocarditis: 632

Valve Conduits
Aortic Valve and Ascending Aorta Replacement: Record Under Aneurysms

660 Apical Aortic Conduit

ATTACHMENT C – Congenital and Acquired Cardiac Procedure Codes (Cont.)

Coronary Artery Bypass Grafts

671-676** Saphenous Vein Graft Only
681-686** Single Artery Graft (*Internal Mammary, Radial, Gastroepopoic, or Other Arterial graft, with or without a Saphenous Vein Graft*)
691-696** Double Artery Graft (*Internal Mammary, Radial, Gastroepopoic, or Other Arterial graft, with or without a Saphenous Vein Graft*)
701-706** Other Graft (*Use for any other combination not listed above; including triple Arterial grafts*)

** For Coronary Artery Bypass Grafts (671-706), use the third digit to indicate the number of distal anastomoses. If more than 6, list as 6.

Examples: *Saphenous Vein Graft Only; three distal anastomoses: 673*
Four saphenous vein anastomoses and double IMA: 696
Three saphenous vein grafts and triple IMA: 706

Other Revascularization

710 Transmyocardial Revascularization
715 Growth Factor Installation

Combined CABG With Other

720 Acquired Ventricular Septal Defect
721 Resection or Plication of LV Aneurysm
722 Carotid Endarterectomy
723 Implantation of AICD

Valve Surgery And CABG

740 Mitral Valve Replacement Plus Single or Multiple CABG
741 Mitral Valvuloplasty Plus Single or Multiple CABG
742 Aortic Valvuloplasty or Replacement Plus Single or Multiple CABG
744 Double Valvuloplasty or Replacement, including Tricuspid, Plus Single or Multiple CABG
745 Double Valvuloplasty or Replacement, not including Tricuspid, plus Single or Multiple CABG
746 Other Single Valve Surgery Plus Single or Multiple CABG
747 Other Multiple Valve Surgery Plus Single or Multiple CABG

ATTACHMENT C – Congenital and Acquired Cardiac Procedure Codes (Cont.)

Surgery For Complication Of CAD Without CABG

760 Acquired Ventricular Septal Defect
761 Resection or Plication of LV Aneurysm
762 Ventricular Reconstruction (*Batiste Procedure, Surgical Ventricular Restoration*)

Radiofrequency or Operative Ablation

770 Atrial
771 Ventricular
772 Maze Procedure

Aortic Aneurysm Repair/Aortic Root Replacement

780 Ascending Aorta, With Graft
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 or Ascending Aorta, Replacement or Repair,
With Graft, With Coronary Reimplantation

Dissecting Aneurysm Surgery

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

Transplant Procedures

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

ATTACHMENT C – Congenital and Acquired Cardiac Procedure Codes (Cont.)

Other

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

998 Other Operation for Acquired Heart Disease, Performed with Extracorporeal Circulation

ATTACHMENT D

Definitions of CCS Functional Classes

Canadian Cardiovascular Society (CCS) Functional Classification:

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.

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.

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.

Class IV There is inability to carry on any physical activity without discomfort; angina may be present at rest.