Cardiac Surgery Report, Adult
(Age 18 and Over)
Form DOH-2254a

Instructions and Data Element Definitions
January 2004

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Revision Highlights and Coding Clarification

New Data Elements

Please note that several new elements have been added to the CSRS data collection effective January 1, 2004. The definitions for these elements can be found on the pages indicated below:

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Revised Data Elements

- Creatinine will be collected as a continuous variable. It will be the highest pre-procedure Creatinine (in mg/dl) recorded during this hospital admission. This will replace Risk Factor 23 – "Renal Failure Creatinine > 2.5".

- Risk Factor 8 – "Stroke" and Risk Factor 9 – "Carotid/Cerebrovascular Disease" have been combined into one data element Risk Factor 9 – "Cerebrovascular Disease." (page 22)

- Risk Factor 10 – "Aortoiliac Disease" and Risk Factor 11 – "Femoral/Popliteal Disease" have been combined into one data element Risk Factor 10 – "Peripheral Vascular Disease." (page 22)

Data Element Clarifications

Procedure Codes

CABG CODES:
Starting in 2004 a CABG will be coded with a 670 and the data elements under CABG Information must be completed.

CODE THE FOLLOWING ONLY WHEN PERFORMED IN THE SAME OPERATING ROOM VISIT AS A CABG:
Carotid Endarterectomies (722)
Implantation of an AICD   (723)

CSRS FORM REQUIRED:
When removal of a thyoma, cyst, adhesion, etc. is the only procedure performed in a hospital admission, 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

Procedure Codes (Cont.)

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

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. A pericardial window is a small hole in the pericardium usually done by removing a small amount of the pericardial wall. It is usually done for a large or symptomatic collection of pericardial fluid or for diagnosis (biopsy).

Pulmonary Endarterectomy:
This procedure should be coded as a 498 or 998.

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

Procedural Information

CABG Information:
New in 2004: If any of the following procedure codes: 670, 720-723, or 740-747 are indicated, you must complete the three data elements under this section: Total Conduits, Arterial Conduits, and Distal Anastomoses.

Pre-Op Surgical Risk Factors

Valve Information:
The information in this section (Aortic, Mitral, and Tricuspid Stenosis and Incompetence) has not changed, however the layout has. Please see page 20 for instructions on completing this section.

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.

Revision Highlights and Coding Clarification (Cont.)

Pre-Op Surgical Risk Factors (Cont.)

Extensive Aortic Atherosclerosis:
In April 2003, this replaced the risk factor Extensively Calcified Ascending Aorta. Please see page 27 for an updated definition.

Shock:
Code "Shock" for any patient that is Ventricular Assist Device (VAD) dependent.

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.

Cardiomegaly:
The definition has been updated to be: any Left Atrial, Left Ventricular, or Right Ventricular enlargement as documented by Echo, MRI, CXR, or CT.

Major Events Following Surgery

Unplanned Cardiac Reoperation or Interventional Procedure:
This major event has been updated. Please see the definition and interpretation on page 34.

Revision Highlights and Coding Clarification (Cont.)

Deleted Data Elements

The following data elements have been deleted from the Cardiac Surgery Reporting System as of January 1, 2004.

- **Procedural Information**
  - o VATS
  - o Cardioplegia
  - o LIMA to LAD
  - o Global Myocardial Ischemic Time in minutes
  - o Total Circulatory Arrest Time in minutes
  - o Cardiopulmonary Bypass Time in minutes
  - o IV Heparin within 48 hours pre-op

- **Pre-Op Surgical Risk Factors**
  - o Ejection Fraction - Calculated/Estimated/Unknown
  - o Stress Test Results
  - o Pulmonary Artery Pressure (Systolic and Mean Wedge)
  - o Cardiac Index
  - o Risk Factor 8   - Previous Stroke
  - o Risk Factor 9   - Carotid/Cerebrovascular Disease
  - o Risk Factor 10 - Aortoiliac Disease
  - o Risk Factor 11 - Femoral/Popliteal Disease
  - o Risk Factor 37 - CPR
  - o Risk Factor 14 - More than one Previous MI
  - o Risk Factor 15 - Hypertension History
  - o Risk Factor 16 - IV NTG within 24 hours before operation
  - o Risk Factor 22 - Myocardial Rupture
  - o Risk Factor 26 - Renal Failure, Creatinine > 2.5 mg/dl
  - o Risk Factor 29 - IABP Pre-op
  - o Risk Factor 34 - Thrombolytic Therapy within 7 days
  - o Risk Factor 35 - Smoking History, in past 2 weeks
  - o Risk Factor 36 - Smoking History, in past year

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, for every visit to the operating room for cardiac surgery.

If the patient went to the operating room more than once for cardiac surgery during a single hospital stay, **complete a separate form for each operating room visit.** (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 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 (DOH).

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 DOH.

Procedure Code 710: Transmyocardial Revascularization combined with a CABG. This procedure will be counted as an isolated CABG case in any analyses performed by the DOH.

Procedure Code 715: Growth Factor Installation combined with a CABG. This procedure will be counted as an isolated CABG case in any analyses performed by the DOH.

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

Procedure Code 722: Carotid Endarterectomy combined with a CABG. This procedure will be counted as an isolated CABG case in any analyses performed by the DOH.

Procedure Code 723: Implantation of AICD combined with a CABG. This procedure will be counted as an isolated CABG case in any analyses performed by the DOH.

Procedure Codes: 830-834: Ventricular Assist Devices combined with a CABG or valve when pre-op risk factor Heart Transplant Candidate is NOT coded will be counted as an isolated CABG and/or Valve case in any analyses performed by the DOH. 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 his/her 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.

Race

Check the appropriate box. For White Hispanics, check "White"; for Black Hispanics, check "Black".

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 or in cases where more than one of the above responses could be coded. Please provide the specific race for any case marked "Other."

The CSRS race codes are parallel to SPARCS race categories and are based on CDC codes that follow guidelines for minimum race and ethnicity categories as established for Federal programs by the Office of Management and Budget (OMB). More information on these reporting categories and the process of developing them can be found at www.whitehouse.gov/omb/fedreg/ombdir15.html.

I. Patient Information (Cont.)

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 you enter a valid NYS County Code then the "State or Country" field may 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

Enter the date that the current hospital stay began.

Primary Payer

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

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.

II. Procedural Information

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

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

Cardiac Procedures This OR Visit

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 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.

CABG Information

If Procedure Codes 670, 720-723, or 740-747are indicated, then the following information must be completed.

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

Arterial Conduits: List the number of arterial conduits or grafts used up to 9. For more than 9, write 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, write 9. *A distal anastomosis is defined as a hole between a conduit or graft and a coronary touchdown site for the conduit or graft.* Therefore, sequential conduits or grafts may not have a distal anastomosis.

Minimally Invasive

If the cardiac surgical procedure began through an incision other than a complete sternotomy or thoracotomy (les*s 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 standard incision.

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

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.

Entire Procedure Off Pump

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

IMA Grafting

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

Within 24 hours Post-op

Extubation

Check this box for patients who were extubated within 24 hours post-op.

Extubation Contraindicated

Check this box for patients who were not extubated within 24 hours post-op because of one of the following: myocardial dysfunction; valvular heart disease; active systemic illness; respiratory disease; or problems with communication secondary to language or psychiatric state.

Beta Blocker Use

Check this box for all patients who received beta blockers within 24 hours post surgery.

Beta Blockers Contraindicated

Check this box for any patient who did not receive beta blockers within 24 hours after surgery for 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.

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

Ejection Fraction and Measure

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

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

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

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

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

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

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

CCS Functional Class

Enter the number (1-4) corresponding to the patient's Canadian Cardiovascular Society (CCS) Functional Class, as defined below.

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.

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.

Creatinine

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

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 re-vascularized.

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 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 - *This Section is Required for Valve Patients*

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

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.

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 operating room visit, 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.

Include any surgeries that occurred prior to this one during the current admission.

If there was a previous surgery this admission, please be sure that the date of the most recent surgery is indicated next to "Prior Surgery This Admission" on the front of the form.

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.)

9. Cerebrovascular Disease

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); 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 cerebrovascular disease.

Interpretation:

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	

10. Peripheral Vascular Disease

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.

Interpretation:

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. 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
9. A negative popliteal pulse alone (1+1- or 1-1+)		X
10. Palpable Dorsalis Pedis and Posterior Tibial pulses		X
11. If pulses are non-palpable, but is Dopplerable	X	
12. If Dorsalis Pedis and Posterior Tibial pulses are absent in the right or the left or both	X	
13. Below the knee amputation of one or both legs	X	
14. Inability to insert a catheter or IABP in femoral arteries	X	
15. 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.

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

Fluid replacement alone does not constitute hemodynamic support for documentation of "Unstable".

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

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

Key elements for documentation of "Unstable" include: 1) evidence of hypotension or low cardiac output and 2) administration of mechanical or pharmacological support prior to the induction of anesthesia.

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

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

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.

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

Key elements for the documentation of "Shock" include: 1) documented acute hypotension (systolic blood pressure < 80 mmHg) or low cardiac index (< 2.0 liters/min/m^2), 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) subsequent to mechanical or pharmacological support.

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

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 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:
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 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. 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

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

23. Extensive Aortic Atherosclerosis

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

Interpretation:

Documentation of the advanced aortic pathology by either transesophageal echocardiography, epiaortic 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.

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.

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.

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

27. Renal Failure, Dialysis

The patient is on chronic peritoneal or hemodialysis.

Interpretation:

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

28. Immune System Deficiency

Chronic use, that continues until surgery, of steroids, anti-neoplastic therapy, cyclosporine, or other immunosuppressive therapy **or** the presence of acute phase HIV/AIDS, acute Leukemia, or acute phase of other type of Immune System Disease.

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.

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.

Interpretation:
Also code for bone marrow transplant.

Do not code for skin transplant (grafting).

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.

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

The following risk factors are specific to valve surgery.

61. Cardiomegaly

Any left atrial (LA), left ventricular (LV), right ventricular (RV) enlargement as documented by Echocardiography, Magnetic Resonance Imaging (MRI), Chest X-ray (CXR), or Computed Tomography (CT) Scan.

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.

IV. Major Events Following Operation (Cont.)

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 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

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.

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 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 (-) 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 (e.g. 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 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.

Interpretation:
This major event should be reported for any cardiac surgery, not just those reportable in the NYS Cardiac Surgery Reporting System (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 procedures not reportable are: pacemaker insertion, pericardiocentesis, and pleural effusion.

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

V. Discharge Information

Medications on Discharge

Aspirin

Check this box for all patients who received aspirin or dipyridamole on discharge. If the patient is allergic to aspirin check for all patients discharged on clopidogrel or ticlopidine.

Aspirin Contraindicated

Check this box for any patient who did not receive aspirin, clopidogrel, or ticlopidine on discharge because of any of the following conditions: allergy, active bleeding on arrival or during the hospital stay, Warfarin/Coumadin prescribed at discharge, or other reasons documented by a physician, nurse practitioner, or physician's assistant in the medical chart.

Plavix

Enter the appropriate number in the box:
- 0   Not Discharged on Plavix
- 1   Discharged on Plavix and Aspirin
- 2   Discharged on Plavix but not on Aspirin

V. Discharge Information (Cont.)

Medications on Discharge (Cont.)

Beta Blocker Use

Check this box for all patients who were discharged on beta blockers.

Beta Blockers Contraindicated

Check this box for any patient who were not discharged on beta blockers for any of the following conditions: 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.

LDL $\geq$ 100 mg/dl

Check this box if the patients' low-density lipoprotein (LDL) cholesterol is $\geq$ 100 mg/dl at discharge.

Lipid Lowering Medications

Check this box for all patients who were discharged on lipid lowering medications.

Lipid Lowering Medications Contraindicated

Check this box for all patients who have a contraindication to lipid lowering medications.

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 only be checked for a live discharge status not otherwise specified in this section (e.g. AMA).

Any status 19 that is reported without an indication of where the patient was discharged to will be sent back during data verification and validation efforts.

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
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
1165	Jacobi Medical Center
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.
1456	Mount Sinai Hospital

ATTACHMENT A

PFI NUMBERS FOR CARDIAC DIAGNOSTIC AND SURGICAL CENTERS

PFI #	HOSPITAL
0528	Nassau University Medical Center
2968	North General Hospital
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
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

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	Putnum
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
08   Worker's Compensation
09   Family Health Plus
10   Other Federal Program
11   Self Pay
19   Other

ATTACHMENT D

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 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 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

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

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 D – 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

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	4	Failed Valvuloplasty
1	Periprosthetic Leak	5	Disease of Another Valve
2	Prosthetic Endocarditis	8	Other Reason
3	Prosthetic Malfunction		

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

Coronary Artery Bypass Grafts

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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

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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

> *Please Note: If you code a 720-723 then you must complete the CABG Information under the Procedural Information Section of the Form.*

Valve Surgery And CABG

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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, <u>not</u> 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

> *Please Note: If you code a 740-747 then you must complete the CABG Information under the Procedural Information Section of the Form.*

Surgery For Complication Of CAD Without CABG

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

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

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 D – 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