

California CABG Outcomes Reporting Program  
Data Abstractor Training Handbook

Version 5.1



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**Data Elements in Export Order  
Effective with July 1, 2011 Discharges**



## Overview: DATA ELEMENTS (Effective July 1, 2011 Discharges)

Data Element	Classification	Origin
Medical Record Number	Demographics	STS
Date of Birth	Demographics	STS
Patient Age	Demographics	STS
Sex	Demographics	STS
Race – White	Demographics	STS
Race – Black/ African American	Demographics	STS
Race – Asian	Demographics	STS
Race – American Indian/Alaskan Native	Demographics	STS
Race – Native Hawaiian/Pacific Islander	Demographics	STS
Race – Other	Demographics	STS
Hispanic or Latino or Spanish Ethnicity	Demographics	STS
Date of Surgery	Hospitalization	STS
Date of Discharge	Hospitalization	STS
Facility Identification Number	Hospitalization	Non-STS
Discharge Status	Mortality	STS
Date of Death	Mortality	STS
Weight (kg)	Risk Factors	STS
Height (cm)	Risk Factors	STS
INR	Risk Factors	STS
Total Bilirubin	Risk Factors	STS
Total Albumin	Risk Factors	STS
Last Creatinine Level	Risk Factors	STS
Diabetes	Risk Factors	STS
Diabetes-Control	Risk Factors	STS
Dialysis	Risk Factors	STS
Hypertension	Risk Factors	STS
Infectious Endocarditis	Risk Factors	STS
Infectious Endocarditis Type	Risk Factors	STS
Chronic Lung Disease	Risk Factors	STS
Liver Disease	Risk Factors	STS
Immunocompromise	Risk Factors	STS
Peripheral Arterial Disease	Risk Factors	STS
Cerebrovascular Disease	Risk Factors	STS

**Overview: DATA ELEMENTS** *(continued)*  
**(Effective July 1, 2011 Discharges)**

Data Element	Classification	Origin
Prior CVA	Risk Factors	STS
Prior CVA When	Risk Factors	STS
CVD – TIA	Risk Factors	STS
CVD Carotid Stenosis	Risk Factors	STS
CVD Type Prior Carotid Surgery	Risk Factors	STS
Previous Coronary Artery Bypass Graft	Previous Cardiac Interventions	STS
Previous Valve	Previous Cardiac Interventions	STS
Previous Percutaneous Cardiac Intervention (PCI)	Previous Cardiac Interventions	STS
PCI - Interval	Previous Cardiac Interventions	STS
Prior MI	Preoperative Cardiac Status	STS
MI When	Preoperative Cardiac Status	STS
Heart Failure within 2 weeks	Preoperative Cardiac Status	STS
NYHA Classification	Preoperative Cardiac Status	STS
Cardiogenic Shock	Preoperative Cardiac Status	STS
Resuscitation	Preoperative Cardiac Status	STS
Arrhythmia When	Preoperative Cardiac Status	STS
Arrhythmia Type – Vtach/Vfib	Preoperative Cardiac Status	STS
Arrhythmia Type – Third Degree Heart Block	Preoperative Cardiac Status	STS
Arrhythmia Type – Afib/Aflutter	Preoperative Cardiac Status	STS
Meds – Coumadin	Preoperative Medications	STS
Warfarin	Preoperative Medications	Non-STS
Isolated CABG	Operative	Non-STS
Responsible Surgeon Name (3 separate fields)	Operative	Non-STS
Surgeon Last Name	Operative	Non-STS
Surgeon First Name	Operative	Non-STS
Surgeon Middle Initial	Operative	Non-STS
Responsible Surgeon California License Number	Operative	Non-STS
Incidence	Operative	STS
Status	Operative	STS
Emergent Reason	Operative	STS
CPB Utilization	Operative	STS

**Overview: DATA ELEMENTS** *(continued)*  
**(Effective July 1, 2011 Discharges)**

Data Element	Classification	Origin
CPB Utilization – Combination Plan	Operative	STS
IMA Artery Used	Coronary Bypass	STS
LAD Artery Bypassed	Coronary Bypass	Non-STS
Number of Diseased Coronary Vessels	Hemodynamics / Cath / Echo	STS
Left Main Disease (>= 50%)	Hemodynamics / Cath / Echo	STS
Ejection Fraction Done	Hemodynamics / Cath / Echo	STS
Ejection Fraction (%)	Hemodynamics / Cath / Echo	STS
Ejection Fraction Method	Hemodynamics / Cath / Echo	STS
PA Systolic Pressure Measured	Hemodynamics / Cath / Echo	STS
PA Systolic Pressure	Hemodynamics / Cath / Echo	STS
Mitral Insufficiency	Hemodynamics / Cath / Echo	STS
Valve	Operative	STS
Aortic Valve	Valve Surgery	STS
Aortic Valve Procedure	Valve Surgery	STS
Mitral Valve	Valve Surgery	STS
Mitral Valve Procedure	Valve Surgery	STS
Tricuspid Procedure	Valve Surgery	STS
Pulmonic Procedure	Valve Surgery	STS
Reoperation for Bleed	Postoperative Events	STS
Reintervention - Graft Occlusion	Postoperative Events	STS
Deep Sternal Wound Infection	Postoperative Events	STS
Neuro – Stroke Permanent	Postoperative Events	STS
Pulm - Ventilation Prolonged	Postoperative Events	STS
Renal - Renal Failure	Postoperative Events	STS
Renal - Dialysis Requirement	Postoperative Events	STS
Other - Atrial Fib	Postoperative Events	STS

Data Element and Definition	Comments and Examples
<p><b>Medical Record Number:</b> Indicate the patient's medical record number at the hospital where surgery occurred. This field should be collected in compliance with state/local privacy laws.</p>	
<p><b>Date of Birth:</b> Indicate the patient's date of birth using 4-digit format for year. This field should be collected in compliance with state/local privacy laws.</p>	
<p><b>Patient Age:</b> Indicate the patient's age in years, at time of surgery. This should be calculated from the date of birth and the date of surgery, according to the convention used in the USA (the number of birthdate anniversaries reached by the date of surgery).</p>	
<p><b>Sex:</b> Indicate the patient's sex at birth as either male or female. 1 = Male 2 = Female</p>	<p>Patients who have undergone gender reassignment surgery maintain the risk associated with their chromosomal gender. Code gender at birth.</p>

Data Element and Definition	Comments and Examples
<p><b>Race – White:</b>            Indicate whether the patient's race, as determined by the patient or family, includes White. This includes a person having origins in any of the original peoples of Europe, the Middle East, or North Africa.            1 = Yes            2 = No</p>	<p>The Census Bureau collects race data in accordance with guidelines provided by the U.S. Office of Management and Budget and these data are based on <b>self-identification</b>. The racial categories included in the census form generally reflect a social definition of race recognized in this country, and are not an attempt to define race biologically, anthropologically or genetically. In addition, it is recognized that the categories of the race item include racial and national origin or socio-cultural groups. People may choose to report more than one race to indicate their racial mixture, such as "American Indian and White." People who identify their origin (ETHNICITY) as Hispanic, Latino or Spanish may be of any race. In addition, it is recognized that the categories of the race item include both racial and national origin and socio-cultural groups. You may choose more than one race category.            Source: <a href="http://2010.census.gov/partners/pdf/ConstituentFAQ.pdf">http://2010.census.gov/partners/pdf/ConstituentFAQ.pdf</a></p>
<p><b>Race – Black/African American:</b>            Indicate whether the patient's race, as determined by the patient or family, includes Black / African American. This includes 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."            1 = Yes            2 = No</p>	<p>This includes 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." Definition source: Standards for Maintaining, Collecting, and Presenting Federal Data on Race and Ethnicity: The minimum categories for data on race and ethnicity for Federal statistics, program administrative reporting, and civil rights compliance reporting.            Reference: <a href="http://www.whitehouse.gov/omb/fedreg/1997standards.html">www.whitehouse.gov/omb/fedreg/1997standards.html</a></p>

Data Element and Definition	Comments and Examples
<p><b>Race – Asian:</b> Indicate whether the patient's race, as determined by the patient or family, includes Asian. This includes 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. 1 = Yes 2 = No</p>	<p>This includes 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. Definition source: Standards for Maintaining, Collecting, and Presenting Federal Data on Race and Ethnicity: The minimum categories for data on race and ethnicity for Federal statistics, program administrative reporting, and civil rights compliance reporting. Reference: <a href="http://www.whitehouse.gov/omb/fedreg/1997standards.html">www.whitehouse.gov/omb/fedreg/1997standards.html</a></p>
<p><b>Race – American Indian/Alaskan Native:</b> Indicate whether the patient's race, as determined by the patient or family, includes American Indian / Alaskan Native. This includes 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. 1 = Yes 2 = No</p>	<p>Includes all in North American native peoples such as American Indian/Alaskan Native, Inuit.</p>
<p><b>Race – Native Hawaiian/Pacific Islander:</b> Indicate whether the patient's race, as determined by the patient or family, includes Native Hawaiian / Pacific Islander. This includes a person having origins in any of the original peoples of Hawaii, Guam, Samoa, or other Pacific Islands. 1 = Yes 2 = No</p>	<p>This includes a person having origins in any of the original peoples of Hawaii, Guam, Samoa, or other Pacific Islands. Definition source: Standards for Maintaining, Collecting, and Presenting Federal Data on Race and Ethnicity: The minimum categories for data on race and ethnicity for Federal statistics, program administrative reporting, and civil rights compliance reporting. (<a href="http://www.whitehouse.gov/omb/fedreg/1997standards.html">www.whitehouse.gov/omb/fedreg/1997standards.html</a>)</p>

Data Element and Definition	Comments and Examples
<p><b>Race – Other:</b> Indicate whether the patient's race, as determined by the patient or family, includes any other race. 1 = Yes 2 = No</p>	
<p><b>Hispanic or Latino or Spanish Ethnicity:</b> Indicate if the patient is of Hispanic, Latino or Spanish ethnicity as reported by the patient/family. 1 = Yes 2 = No</p>	<p>Hispanic, Latino or Spanish ethnicity includes patient report of Cuban, Mexican, Puerto Rican, South or Central American, or other Spanish culture or origin, <b>regardless of race</b>. People who identify their origin as Hispanic, Latino or Spanish may be of any race.</p>
<p><b>Date of Surgery:</b> Indicate the date of index cardiac surgical procedure. Index cardiac surgical procedure is defined as the initial major cardiac surgical procedure of the hospitalization.</p>	<p>The date the patient enters the operating room for surgery.</p>
<p><b>Date of Discharge:</b> Indicate the date the patient was discharged from the hospital (acute care) even if the patient is going to a rehab or hospice or similar extended care unit within the same physical facility. If the patient died in the hospital, the discharge date is the date of death.</p>	<p>Do not include transfers to other services, such as renal care unit.</p>

Data Element and Definition	Comments and Examples
<p><b>Facility Identification Number</b> The six-digit facility identification number assigned to a hospital by the Office of Statewide Health Planning and Development, as defined in Section 97170.</p>	
<p><b>Discharge Status:</b> Indicate whether the patient was alive or dead <b>at discharge</b> from the hospitalization in which surgery occurred. 1 = Alive 2 = Dead</p>	<p>It is not necessary to report operative mortalities. CCORP uses the death file from the state’s Vital Statistics program to verify deaths after discharge.</p>
<p><b>Date of Death:</b> Indicate the date the patient was declared dead.</p>	
<p><b>Weight (kg):</b> Indicate the weight of the patient in kilograms closest to the date of procedure.</p>	<p>To convert pounds to kilograms, divide # of lbs by 2.2 <b>1 kg = 2.2 pounds.</b></p>
<p><b>Height (cm):</b> Indicate the height of the patient in centimeters.</p>	<p>To convert Inches to centimeters, multiply # of inches by 2.54. <b>1 inch = 2.54 centimeters.</b></p>

Data Element and Definition	Comments and Examples
<p><b>INR:</b>            Indicate the International Normalized Ratio (INR) closest to the date and time prior to surgery but prior to anesthetic management (induction area or operating room).            Usual range 0.9 - 1.3            Low/High: 0.5 - 30.0</p>	<p><b>Anesthetic management begins when a member of the anesthesiology team initiates care. The administration of IV fluids in the holding area can cause dilution of blood. Do not capture labs drawn after the patient receives fluids in the holding area or O.R.</b></p> <p>INR is the standard unit used to report the result of a prothrombin (PT) test. An individual whose blood clots normally and who is not on anticoagulation should have an INR of approximately 1. The higher the INR is, the longer it takes blood to clot. As the INR increases above a given level, the risk of bleeding and bleeding-related events increases. As the INR decreases below a given level, the risk of clotting events increases.</p>
<p><b>Total Bilirubin:</b>            Indicate the total Bilirubin closest to the date and time prior to surgery but prior to anesthetic management (induction area or operating room).            Usual range 0.2 - 1.3            Low/High: 0.1 - 50.0 (mg/dL)</p>	<p><b>Anesthetic management begins when a member of the anesthesiology team initiates care. The administration of IV fluids in the holding area can cause dilution of blood. Do not capture labs drawn after the patient receives fluids in the holding area or O.R.</b></p> <p>Bilirubin testing checks for levels of bilirubin — an orange-yellow pigment — in blood. Bilirubin is a natural byproduct that results from the normal breakdown of red blood cells. As a normal process, bilirubin is carried in the blood and passes through the liver. Too much bilirubin may indicate liver damage or disease.</p>

Data Element and Definition	Comments and Examples
<p><b>Total Albumin:</b>            Indicate the total albumin closest to the date and time prior to surgery but prior to anesthetic management (induction area or operating room).            Usual range 3.5 - 5.0            Low/High: 1.0 - 10.0 (mg/dL)</p>	<p><b>Anesthetic management begins when a member of the anesthesiology team initiates care. The administration of IV fluids in the holding area can cause dilution of blood. Do not capture labs drawn after the patient receives fluids in the holding area or O.R.</b></p> <p>Albumin, produced only in the liver, is the major plasma protein that circulates in the bloodstream. Albumin is essential for maintaining the oncotic pressure in the vascular system. A decrease in oncotic pressure due to a low albumin level allows fluid to leak out from the interstitial spaces into the peritoneal cavity, producing ascites. Albumin is also very important in the transportation of many substances such as drugs, lipids, hormones, and toxins that are bound to albumin in the bloodstream. A low serum albumin indicates poor liver function. Decreased serum albumin levels are not seen in acute liver failure because it takes several weeks of impaired albumin production before the serum albumin level drops. The most common reason for a low albumin is chronic liver failure caused by cirrhosis. The serum albumin concentration is usually normal in chronic liver disease until cirrhosis and significant liver damage has occurred.</p>
<p><b>Last Creatinine Level:</b>            Indicate the creatinine level closest to the date and time prior surgery but prior to anesthetic management (induction area or operating room). A creatinine level should be collected on all patients, even if they have no prior history. A creatinine value is a high predictor of a patient's outcome and is used in the predicted risk models.</p>	<p><b>Anesthetic management begins when a member of the anesthesiology team initiates care. The administration of IV fluids in the holding area can cause dilution of blood. Do not capture labs drawn after the patient receives fluids in the holding area or O.R.</b></p> <p>Creatinine is a chemical waste molecule that is generated from muscle metabolism. If the kidneys become impaired for any reason, the creatinine level in the blood will rise due to poor clearance by the kidneys. Abnormally high levels of creatinine thus warn of possible malfunction or failure of the kidneys.</p>

Data Element and Definition	Comments and Examples
<p><b>Diabetes:</b> Indicate whether patient has a history of diabetes diagnosed and/or treated by a physician. The American Diabetes Association criteria include documentation of the following:</p> <ol style="list-style-type: none"> <li>1. A1c <math>\geq</math>6.5%; or</li> <li>2. Fasting plasma glucose <math>\geq</math>126 mg/dl (7.0 mmol/l);</li> <li>3. Two-hour plasma glucose <math>\geq</math>200 mg/dl (11.1 mmol/l) during an oral glucose tolerance test;</li> <li>4. In a patient with classic symptoms of hyperglycemia or hyperglycemic crisis, a random plasma glucose <math>\geq</math>200 mg/dl (11.1 mmol/l)</li> </ol> <p>It does not include gestational diabetes. 1 = Yes 2 = No</p>	<p>Capture the presence and/or history of diabetes mellitus, regardless of duration of disease or need for anti-diabetic agents diagnosed prior to surgical intervention.</p> <p>History of diabetes diagnosed and/or treated by a physician and documented in the medical record. ADA criteria are informational only and not provided for data managers to diagnose diabetes.</p> <p>Reference: ADA Position Statement Standards of Medical Care in Diabetes - 2010</p>
<p><b>Diabetes-Control:</b> Indicate the control method the patient presented with on admission. Patients placed on a pre-procedure diabetic pathway of insulin drip at admission but were previously controlled by diet or oral methods are not coded as insulin treated. Choose the most aggressive therapy used prior to admission:</p> <p>1 = None No treatment for diabetes. 2 = Diet Diet treatment only. 3 = Oral Oral agent treatment (includes oral agent with/without diet treatment). 4 = Insulin Insulin treatment (includes any combination with insulin). 5 = Other Other adjunctive therapy.</p>	<p>'Control type' is the long term management therapy used.</p> <ul style="list-style-type: none"> <li>• If a patient has been diet or oral controlled prior to admission and then switched to insulin, the control would be the diet/oral.</li> <li>• If NO control used prior to admission and diabetic protocol to initiate insulin drip was started, control is NONE.</li> </ul> <p>Patients placed on a pre-operative diabetic pathway of Insulin drip but at admission were controlled with NONE, diet or oral methods are not coded as insulin dependent.</p>

Data Element and Definition	Comments and Examples
<p><b>Dialysis:</b> Indicate whether the patient is currently undergoing dialysis. 1 = Yes 2 = No</p> <p>Refers to whether the patient is currently on dialysis, not distant past history.</p>	<p>Includes any form of peritoneal or hemodialysis patient is receiving at the time of admission. Also, may include Continuous Veno-Venous Hemofiltration (CVVH, CVVH-D), and Continuous Renal Replacement Therapy (CRRT) as dialysis.</p> <p>Code “No” for renal dialysis if ultra-filtration is the only documentation found in the record since this is for volume management.</p>
<p><b>Hypertension:</b> Indicate whether the patient has a diagnosis of hypertension, documented by one of the following:</p> <ul style="list-style-type: none"> <li>a. Documented history of hypertension diagnosed and treated with medication, diet and/or exercise.</li> <li>b. Prior documentation of blood pressure &gt;140 mmHg systolic or 90 mmHg diastolic for patients without diabetes or chronic kidney disease, or prior documentation of blood pressure &gt;130 mmHg systolic or 80 mmHg diastolic on at least 2 occasions for patients with diabetes or chronic kidney disease.</li> <li>c. Currently on pharmacologic therapy to control hypertension.</li> </ul> <p>1 = Yes 2 = No</p>	<p>Requires chart documentation of a history of hypertension. Do not make the diagnosis based on BPs or meds if the diagnosis was not made by clinicians caring for the patient. Diagnosis should not be based on a single elevated blood pressure reading.</p> <p>BOTTOM LINE: A clinician has to state in the documentation that the patient has hypertension. Hypertensive medications are used for other symptoms besides hypertension. Do not code “Yes” based on medications alone.</p> <p>Code “Yes” for hypertension if patient has normal blood pressure readings but has a documented history of hypertension.</p>

Data Element and Definition	Comments and Examples
<p><b>Infectious Endocarditis:</b> Indicate whether the patient has a history of infectious endocarditis documented by one of the following:</p> <ol style="list-style-type: none"> <li>1. Positive blood cultures</li> <li>2. Vegetation on echocardiography and/or other diagnostic modality</li> <li>3. Documented history of infectious endocarditis</li> </ol> <p>1 = Yes 2 = No</p> <p><b>BOTTOM LINE CLARIFICATION:</b> The chart has to note the endocarditis. For this to be coded “Yes” and to maintain consistency in data collection, <b>a diagnosis of infectious endocarditis must be a known risk factor preoperatively.</b></p> <p>Positive blood cultures alone are not sufficient to code “Yes”.</p> <p>Code “Yes” if a patient with a past history of infectious endocarditis, treated and received valve replacement surgery.</p>	<p>This applies to any history of endocarditis; even remote history can result in valve damage.</p> <p>According to the CDC: Endocarditis of a natural or prosthetic heart valve must meet at least 1 of the following criteria:</p> <ol style="list-style-type: none"> <li>1. Patient has organisms cultured from valve or vegetation.</li> <li>2. Patient has 2 or more of the following signs or symptoms with no other recognized cause: fever (&gt;38°C), new or changing murmur, embolic phenomena, skin manifestations (i.e., petechiae, splinter hemorrhages, painful subcutaneous nodules), congestive heart failure, or cardiac conduction abnormality</li> </ol> <p><b>AND at least 1 of the following:</b></p> <ol style="list-style-type: none"> <li>a. Organisms cultured from 2 or more blood cultures</li> <li>b. Organisms seen on Gram’s stain of valve when culture is negative or not done</li> <li>c. Valvular vegetation seen during a surgical operation or autopsy</li> <li>d. Positive antigen test on blood or urine (e.g., H influenzae, S pneumoniae, N meningitides, or Group B Streptococcus)</li> <li>e. Evidence of new vegetation seen on echocardiogram and if diagnosis is made antemortem, physician institutes appropriate antimicrobial therapy</li> </ol>
<p><b>Infectious Endocarditis Type:</b> Indicate the type of endocarditis the patient has. If the patient is currently being treated for endocarditis, the disease is considered active. If no antibiotic medication (other than prophylactic medication) is being given at the time of surgery, then the infection is considered treated.</p> <p>1 = Treated 2 = Active</p>	<p>If the patient is currently being treated with antimicrobials for endocarditis, the disease is considered active.</p> <p>If no antimicrobial medication (other than prophylactic medication) is being given at the time of surgery, then the infection is considered treated.</p>

Data Element and Definition	Comments and Examples
<p><b>Chronic Lung Disease:</b> Indicate whether the patient has chronic lung disease, and the severity level according to the following classification: 1 = No 2 = Mild: FEV1 60% to 75% of predicted, and/or on chronic inhaled or oral bronchodilator therapy. 3 = Moderate: FEV1 50% to 59% of predicted, and/or on chronic steroid therapy aimed at lung disease. 4 = Severe: FEV1 &lt;50% predicted, and/or Room Air pO2 &lt; 60 or Room Air pCO2 &gt; 50.</p> <p><b>For CCORP purposes,</b> patients with chart documentation of chronic lung disease treated with chronic home oxygen may be considered severe in the absence of PFT or ABG data.</p> <p><b>BOTTOM LINE:</b> The definition requires 1) documentation of a <b>diagnosis</b> of <i>chronic</i> pulmonary disability, and 2) confirmation based on either pulmonary function test (PFT) data or <i>chronic</i> therapy. Patients do NOT have COPD merely on the basis of a heavy smoking history or being labeled “COPD” in the chart without PFTs or history of prior therapy for COPD. Severity is determined by severity of PFT abnormality or type of chronic therapy.</p>	<p>The diagnosis of chronic lung disease is not based solely on the fact that a person has or currently is smoking, or is on home oxygen. Diagnostic testing and or pharmacological criteria must be met. <u>Chest x-ray is not included in the data specs for inclusion as chronic lung disease and should not be coded as “Yes”.</u></p> <ul style="list-style-type: none"> <li>• A history of chronic inhalation reactive disease (asbestosis, mesothelioma, black lung disease or pneumoconiosis) <u>qualifies</u> as chronic lung disease.</li> <li>• Radiation induced pneumonitis or radiation fibrosis also <u>qualifies</u> as chronic lung disease.</li> <li>• A history of atelectasis is a transient condition and <u>does not qualify</u>.</li> <li>• Patients with asthma or seasonal allergies are <u>not considered</u> to have chronic lung disease.</li> </ul> <p>Chronic lung disease can include patients with chronic obstructive pulmonary disease, chronic bronchitis, or emphysema. It can also include a patient who is currently being chronically treated with inhaled or oral pharmacological therapy (e.g., beta-adrenergic agonist, anti-inflammatory agent, leukotriene receptor antagonist, or steroid).</p>
<p><b>Liver Disease:</b> Indicate whether the patient has a history of hepatitis B, hepatitis C, cirrhosis, portal hypertension, esophageal varices, chronic alcohol abuse or congestive hepatopathy. 1 = Yes 2 = No</p>	<p>Severity can range from mild to severe and will be quantified by the MELD score. Liver diseases such as hepatitis B, hepatitis C, cirrhosis, portal hypertension, esophageal varices, chronic alcohol abuse and congestive hepatopathy affect the cells, tissues, structures, or functions of the liver.</p>

Data Element and Definition	Comments and Examples
<p><b>Immunocompromise:</b>            Indicate whether immunocompromise is present due to immunosuppressive medication therapy within 30 days preceding the operative procedure or existing medical condition. This includes, but is not limited to systemic steroid therapy, anti-rejection medications and chemotherapy. This does not include topical steroid applications, one time systemic therapy, inhaled steroid therapy or preoperative protocol.            1 = Yes            2 = No</p>	<p>DO NOT include topical creams or inhalers that are steroidal in form. DO NOT include patients who receive a one or two time dose of systemic treatment, or a pre-operative/pre-cath protocol. There are four classes of drugs considered to be immunosuppressive. Corticosteroids (only if taken systemically), Cytotoxic drugs, Antimetabolites and Cyclosporine. Immunosuppression can result from radiation therapy, malnutrition, or removal of the spleen. Immunodeficiency can be inherited or acquired. Examples of conditions causing immunocompromise include Hypogammaglobulinemia and HIV infection.</p> <p>Patients post organ transplant or with rheumatologic conditions may be on immunosuppressive therapy other than corticosteroids such as Cyclosporine (Gengraf, Neoral, Sandimmune), Azathioprine (Imuran), Cyclophosphamide (Cytoxan), Methotrexate, Tacrolimus (Prograf), Sirolimus (Rapamune) Mycophenolate mofetil – MMF (Cellcept).</p>
<p><b>Peripheral Arterial Disease:</b>            Indicate whether the patient has a history of peripheral arterial disease (includes upper and lower extremity, renal, mesenteric, and abdominal aortic systems). This can include:            1. Claudication, either with exertion or at rest.            2. Amputation for arterial vascular insufficiency.            3. Vascular reconstruction, bypass surgery, or percutaneous intervention to the extremities (excluding dialysis fistulas and vein stripping).            4. Documented aortic aneurysm with or without repair.            5. Positive noninvasive test (e.g., ankle brachial index <math>\leq</math> 0.9, ultrasound, magnetic resonance or computed tomography imaging of <math>&gt;</math> 50% diameter stenosis in any peripheral artery, i.e., renal, subclavian, femoral, iliac) or angiographic imaging.            1 = Yes            2 = No</p>	<p>Peripheral arterial disease excludes disease in the carotid or cerebrovascular arteries.</p>

Data Element and Definition	Comments and Examples
<p><b>Cerebrovascular Disease:</b>            Indicate whether the patient has Cerebro-Vascular Disease, documented by any one of the following: CVA (symptoms &gt; 24 hrs after onset, presumed to be from vascular etiology); TIA (recovery within 24 hrs); Non-invasive carotid test with &gt; 79% diameter occlusion; or Prior carotid surgery or stenting or prior cerebral aneurysm clipping or coil. Does not include neurological disease processes such as metabolic and/or anoxic ischemic encephalopathy.            1 = Yes            2 = No</p>	<p>DO NOT include any of the peripheral arterial disease processes.</p>
<p><b>Prior CVA:</b>            Indicate whether the patient has a history of stroke (i.e., any confirmed neurological deficit of abrupt onset caused by a disturbance in blood flow to the brain) that did not resolve within 24 hours.            1 = Yes            2 = No</p>	<p>Chart documentation of a diagnosis of CVA or stroke at any time prior to surgery is sufficient. The intent is to differentiate between neurological events that resolve and those that don't.</p> <p>The physical deficit can be in the form of extremity weakness, facial asymmetry, language (speech and/or cognitive thinking) impairment. Code "Yes" if a patient may have had a permanent stroke with residual when over time and/or with therapy regained all deficit function.</p>
<p><b>Prior CVA When:</b>            Indicate when the CVA events occurred. Those events occurring <b>within two weeks</b> of the surgical procedure are considered recent, while all others are considered remote.            1 = Recent (&lt;=2 wk.)            2 = Remote (&gt;2 wk.)</p>	

Data Element and Definition	Comments and Examples
<p><b>CVD – TIA:</b>            Indicate whether the patient has a history of a Transient Ischemic Attack (TIA): Patient has a history of loss of neurological function that was abrupt in onset but with complete return of function within 24 hours.            1 = Yes            2 = No</p>	
<p><b>CVD Carotid Stenosis:</b>            Indicate which carotid artery was determined from any diagnostic test to be more than 79% stenotic.            1 = None            2 = Right            3 = Left            4 = Both</p>	<p>Diagnostic studies may include ultrasound, doppler, angiography, CT, MRI or MRA. If more than one test was performed with different results, choose the highest level of stenosis reported.</p>
<p><b>CVD Type Prior Carotid Surgery:</b>            Indicate whether the patient has a history of previous carotid artery surgery and/or stenting.            1 = Yes            2 = No</p>	<p>Carotid endarterectomy is a surgical procedure during which a surgeon removes atherosclerotic plaque or other material obstructing the flow of blood from the artery. This procedure eliminates a substance called plaque from the artery and can restore blood flow. Carotid artery stenting is a procedure in which a slender, metal-mesh tube, called a stent, is inserted and expands inside the carotid artery to increase blood flow in areas blocked by plaque.</p>

Data Element and Definition	Comments and Examples
<p><b>Previous Coronary Artery Bypass Graft:</b> Indicate whether the patient had a previous Coronary Bypass Graft prior to the current admission. 1 = Yes 2 = No</p>	<p>This applies only to surgical approach to revascularization. Angioplasty or other catheter based coronary artery occlusion treatment does not apply.</p>
<p><b>Previous Valve:</b> Indicate whether the patient had a previous surgical replacement and/or surgical repair of a cardiac valve. This may also include percutaneous valve procedures. 1 = Yes 2 = No</p>	<p>This may include percutaneous valve procedures such as percutaneous valvotomy or valvuloplasty, as well as surgical or transcatheter valve repair or replacement. Capture all procedures that apply.</p>
<p><b>Previous Percutaneous Cardiac Intervention (PCI):</b> Indicate whether a previous Percutaneous Cardiac Intervention (PCI) was performed any time prior to this surgical procedure. PCI refers to those treatment procedures that unblock narrowed coronary arteries without performing surgery. PCI may include, but is not limited to:  <ol style="list-style-type: none"> <li>1. Balloon Catheter Angioplasty, Percutaneous Transluminal Coronary Angioplasty (PTCA)</li> <li>2. Rotational Atherectomy</li> <li>3. Directional Atherectomy</li> <li>4. Extraction Atherectomy</li> <li>5. Laser Atherectomy</li> <li>6. Intracoronary Stent Placement</li> </ol>  1 = Yes 2 = No</p>	<p>There is no time limit on its historical occurrence. PCI refers to those <b>non-surgical</b> methods that unblock narrowed coronary arteries. This procedure may or may not have been in combination with a surgical intervention.</p> <p>PCIs may include coronary angioplasties, stents and/or atherectomies done by interventional cardiologists.</p> <p>A PCI may have been performed during this same admission, BUT prior to the surgical procedure.</p>

Data Element and Definition	Comments and Examples
<p><b>PCI - Interval:</b>            Indicate the interval of time between the previous PCI and the current surgical procedure.            1 = &lt; or = 6 Hours            2 = &gt; 6 Hours</p>	<p>Intervals are calculated from the time of the conclusion of the PCI procedure (removal of the coronary dilation catheter) and surgical skin incision cut time.</p> <p>This field is intended to capture PCIs done during the same episode of care prior to the surgical procedure. Include patients who were transferred for surgery from another facility following PCI. Include patients who had PCI prior to surgery as part of a planned, staged hybrid procedure. Do not code PCIs done after the surgical procedure.</p>
<p><b>Prior MI:</b>            Indicate if the patient has had at least one documented previous myocardial infarction at any time prior to this surgery.            1 = Yes            2 = No</p>	<p>Medical record documentation of prior myocardial infarction is sufficient. ECG or enzyme documentation in the current chart is not required.</p>
<p><b>MI When:</b>            Indicate the time period between the last documented myocardial infarction and surgery.            1 = &lt; or = 6 Hrs                      4 = 8-21 Days            2 = &gt; 6 Hrs but &lt; 24 Hrs        5 = &gt;21 Days            3 = 1 to 7 Days</p>	<p>Time of surgery is documented as the hour the patient entered the operating room. Select the time-interval category based on information available on when the MI occurred. MI occurrence is the time of diagnosis and/or when confirmation of the last MI is documented prior to surgery.</p>

Data Element and Definition	Comments and Examples
<p><b>Heart Failure within 2 weeks:</b>            Indicate if there is physician documentation or report that the patient has been in a state of heart failure within the past 2 weeks. Heart failure is defined as physician documentation or report of any of the following clinical symptoms of heart failure described as unusual dyspnea on light exertion, recurrent dyspnea occurring in the supine position, fluid retention; or the description of rales, jugular venous distension, pulmonary edema on physical exam, or pulmonary edema on chest x-ray presumed to be cardiac dysfunction. A low ejection fraction alone, without clinical evidence of heart failure does not qualify as heart failure.            1 = Yes            2 = No</p>	<p>Since evidence of recent HF symptoms is not always available in current medical record, <b>CCORP accepts chart documentation</b> that the patient was diagnosed with a HF episode within the two weeks prior to surgery (if presented at outside hospital within 2 weeks).</p> <p>The intent is to capture the patient's actual status in the weeks before surgery, the new diagnosis or exacerbation of an existing heart failure condition. DO NOT code stable or asymptomatic compensated failure or patients whose symptoms improved after medical therapy. A low ejection fraction (EF) without clinical presentation does not qualify for history of heart failure.</p>
<p><b>NYHA Classification:</b>            Indicate the patient's worst dyspnea or functional class, coded as the New York Heart Association (NYHA) classification within the past 2 weeks.            1 = Class I Patient has cardiac disease but without resulting limitations of ordinary physical activity. Ordinary physical activity (e.g., walking several blocks or climbing stairs) does not cause undue fatigue, palpitation, dyspnea, or anginal pain. Limiting symptoms may occur with marked exertion.            2 = Class II Patient has cardiac disease resulting in slight limitation of ordinary physical activity. Patient is comfortable at rest. Ordinary physical activity such as walking more than two blocks or climbing more than one flight of stairs results in limiting symptoms (e.g., fatigue, palpitation, dyspnea, or anginal pain).            3 = Class III Patient has cardiac disease resulting in marked limitation of physical activity. Patient is comfortable at rest. Less than ordinary physical activity (e.g., walking one to two level blocks or climbing one flight of stairs) causes fatigue, palpitation, dyspnea, or anginal pain.            4 = Class IV Patient has dyspnea at rest that increases with any physical activity. Patient has cardiac disease resulting in inability to perform any physical activity without discomfort. Symptoms may be present even at rest. If any physical activity is undertaken, discomfort is increased.</p>	<p>Select the <b>highest level</b> of heart failure within the two weeks leading up to episode of hospitalization or at the time of the procedure.</p>

Data Element and Definition	Comments and Examples
<p><b>Cardiogenic Shock:</b> Indicate whether the patient was, at the time of procedure, in a clinical state of end organ hypo-perfusion due to cardiac failure according to the following criteria: persistent hypotension (Systolic BP &lt; 80-90 or mean arterial pressure 30 mmHg lower than baseline) and severe reduction in Cardiac Index (&lt; 1.8 without support or &lt;2.2 with support). 1 = Yes 2 = No ***** continued next page***** <b>BOTTOM LINE: To code “Yes” the definition needs to be met upon entering surgery.</b></p>	<p>****<b>CCORP SPECIFIC CLARIFIATION</b>**** <b>“Shock” = Yes if the patient:</b></p> <ul style="list-style-type: none"> <li>• 1) <b>currently</b> has SBP &lt;80 mmHg and/or mean arterial pressure (MAP) 30 mmHg lower than the baseline documented earlier during the hospitalization and/or CI &lt; 1.8 or</li> <li>• 2) <b>currently</b> has a cardiac index &lt;2.2 on inotropes/IABP or</li> <li>• 3) <b>previously</b> had a SBP &lt; 80 or MAP 30 mmHg lower than baseline but <b><u>now are on inotropes/ IABP to maintain a higher BP.</u></b></li> </ul> <p>Patients left on inotropes/IABP whose BP has markedly improved so that it is clear BP off therapy would be above criteria should be coded “No.”</p> <p><b>NOTE WELL:</b> the “30 mmHg lower than baseline” criteria refers to <i>mean</i> arterial blood pressure; a 30 mmHg drop corresponds to a much larger fall in SBP. Also, since the patient must be in a state “of end organ hypoperfusion,” the 30 mmHg fall in MAP must correspond to a significantly low blood pressure or cardiac index. In practice, very few patients should meet the MAP criteria and not meet the SBP / CI criteria. A patient whose baseline MAP is abnormally high and then falls 30 mmHg into a normal or mildly low range should not be coded as shock. The normal range for MAP is 70-110 mmHg. Normal perfusion occurs at MAPs &gt;=60 mmHg, therefore, do NOT code shock unless the MAP is &lt; 60 mmHg.</p>
<p><b>Resuscitation:</b> Indicate whether the patient required cardiopulmonary resuscitation within one hour before the start of the operative procedure which includes the institution of anesthetic management. 1 = Yes 2 = No</p>	<p>CPR must have been either started, ongoing or concluded within one hour before the start of the operative procedure. This may include complete circulatory support such as ECMO initiated emergently prior to surgery. Do not code yes for resuscitation started after induction of anesthesia, the goal is to capture patients who required CPR prior to entering the O.R.</p>

Data Element and Definition	Comments and Examples
<p><b>Arrhythmia When:</b> Indicate when the patient had a preoperative history of arrhythmia (sustained ventricular tachycardia, ventricular fibrillation, or sudden cardiac death presumed to be lethal arrhythmia, atrial fibrillation, atrial flutter, third degree heart block, second degree heart block, sick sinus syndrome) that has been treated with any of the following modalities:</p> <ol style="list-style-type: none"> <li>1. Ablation therapy</li> <li>2. AICD</li> <li>3. Pacemaker</li> <li>4. Pharmacological treatment</li> <li>5. Electrocardioversion</li> <li>6. Defibrillation</li> </ol> <p>1 = None 2 = Remote (more than 30 days prior to procedure) 3 = Recent (within 30 days prior to procedure)</p>	<p>The arrhythmia must have been treated and/or clinically documented with one or more of the definitional list of therapies. These do not include arrhythmias such as 1st degree heart block, occasional premature ventricular contractions (PVC's) or supraventricular tachycardia (SVT). If the patient had a history of an arrhythmia (i.e. A-fib or V-tach) and is currently on medication to control rate and rhythm, and presents in sinus rhythm, code the patient as having the arrhythmia. To define "treated for an arrhythmia": a patient is considered to be treated for arrhythmia if they are on a medication specifically to treat an arrhythmia. Today, most arrhythmias are treated with antiarrhythmics. Coumadin would not be considered a treatment for A-fib. Patients may take Digoxin to treat arrhythmias. In the past Digoxin was used to treat A-fib, but patients can also be on Digoxin to increase contractility, etc. Therefore, do not assume that all patients that are on Digoxin are being treated for A-fib.</p>
<p><b>Arrhythmia Type – Vtach/Vfib:</b> Indicate whether sustained ventricular tachycardia or fibrillation was present within thirty days of the procedure. 1 = Yes 2 = No</p>	<p><b><u>CCORP suggests the rhythm be sustained for 30 seconds or longer, or require cardioversion.</u></b> Do not include short runs of VT. Note: must be in past 30 days. V-tach rhythm must be sustained/persistent or paroxysmal sufficient as to require some type of intervention (pharmacological and/or electrical) to interrupt and cease the arrhythmia.</p>
<p><b>Arrhythmia Type – Third Degree Heart Block:</b> Indicate whether third degree heart block was present within thirty days of the procedure. 1 = Yes 2 = No</p>	<p>Heart block is applicable only if the patient has or did have 3rd degree heart block (complete heart block) <u>within 30 days</u> of the surgical procedure.</p>

Data Element and Definition	Comments and Examples
<p><b>Arrhythmia Type – Afib/Aflutter:</b>            Indicate whether atrial fibrillation or flutter was present within thirty days of the procedure.            1 = Yes            2 = No</p>	<p>The pre-op arrhythmia is present <u>within 30 days</u> of the procedure, whether chronic, new onset, stable or unstable. The patient may be receiving prescribed medication.</p>
<p><b>Meds – Coumadin:</b>            Indicate whether the patient received Coumadin within 24 hours preceding surgery.            1 = Yes            2 = No</p>	<p><b>Note:</b> While Anisindione is taken orally, it is not Coumadin and should not be captured here.</p> <p>Received Coumadin within 24 hours preceding surgery where <b>surgery = entry into the O.R.</b></p>
<p><b>Warfarin:</b>            Indicate whether the patient received warfarin (Coumadin) within 5 days preceding surgery.            1 = Yes            2 = No</p>	<p>The purpose of this data element is to determine whether the reported INR value was influenced by the patient taking Warfarin within 5 days of surgery, which may raise the INR independently and lead to false indications of liver disease. Note that patients on chronic warfarin therapy who have stopped or been switched to an alternative anticoagulant 5-7 days prior to surgery should be coded as “No”. Notes in the admission H&amp;P or Nurse's assessment (e.g., “stopped 1 week ago”, “switched to Lovenox”, “held x 1 week”) may help in making this determination.</p>
<p><b>Isolated CABG:</b>            See pages 45-46 of this training manual for exclusion criteria.            1 = Yes            2 = No</p>	

Data Element and Definition	Comments and Examples
<p><b>Responsible Surgeon Name (3 separate fields):</b>            17a. Surgeon Last Name            17b. Surgeon First Name            17c. Surgeon Middle Initial            The responsible surgeon is the surgeon as defined in Section 97170.</p>	<p>Hospitals are encouraged to look up their surgeon names and licensing information DIRECTLY from the California Medical Board.</p> <p><a href="http://www2.mbc.ca.gov/LicenseLookupSystem/PhysicianSurgeon/Search.aspx">www2.mbc.ca.gov/LicenseLookupSystem/PhysicianSurgeon/Search.aspx</a></p>
<p><b>Responsible Surgeon CA License Number:</b>            See pages 46 of this training manual for more information criteria.            California physician license number of responsible surgeon, assigned by the Medical Board of California of the Department of Consumer Affairs.</p>	<p>Hospitals are encouraged to look up their surgeon names and licensing information DIRECTLY from the California Medical Board.</p> <p><a href="http://www2.mbc.ca.gov/LicenseLookupSystem/PhysicianSurgeon/Search.aspx">www2.mbc.ca.gov/LicenseLookupSystem/PhysicianSurgeon/Search.aspx</a></p>
<p><b>Incidence:</b>            Indicate if this is the patient's:            1 = First cardiovascular surgery            2 = First re-op cardiovascular surgery            3 = Second re-op cardiovascular surgery            4 = Third re-op cardiovascular surgery            5 = Fourth or more re-op cardiovascular surgery</p>	<p>CV surgeries <b>INCLUDE</b>: CABG, valve replacement/repair, intracardiac repairs (ASD, VSD), ventricular aneurysmectomy, or surgery on the aortic arch. Use of CPB is not required.</p> <p>CV surgeries <b>DO NOT INCLUDE</b>: PCI's and non-cardiac vascular surgeries such as abdominal aortic aneurism repairs or fem-pop bypasses, percutaneous aortic stent grafts, percutaneous valves or pacemaker/ICD implantations.</p> <p>The intent of this field is to capture the incidence of the procedure that the patient is about to go through during the current hospitalization, as compared to those procedures prior to this hospitalization.</p> <p><b>First operative</b> means the patient has never had any procedure on the heart and/or great vessels.</p>

Data Element and Definition	Comments and Examples
<p><b>Status:</b>            Indicate the clinical status of the patient prior to entering the operating room.            1 = <b>Elective</b> The patient's cardiac function has been stable in the days or weeks prior to the operation. The procedure could be deferred without increased risk of compromised cardiac outcome.            2 = <b>Urgent</b> Procedure required during same hospitalization in order to minimize chance of further clinical deterioration. Examples include but are not limited to: Worsening, sudden chest pain, CHF, acute myocardial infarction (AMI), anatomy, IABP, unstable angina (USA) with intravenous (IV) nitroglycerin (NTG) or rest angina.            3 = <b>Emergent</b> Patients requiring emergency operations will have ongoing, refractory (difficult, complicated, and/or unmanageable) unrelenting cardiac compromise, with or without hemodynamic instability, and not responsive to any form of therapy except cardiac surgery. An emergency operation is one in which there should be no delay in providing operative intervention.            4 = <b>Emergent Salvage</b> The patient is undergoing CPR en route to the O.R. or prior to anesthesia induction or has ongoing ECMO to maintain life.</p>	<p>Status refers to the patient's condition immediately <b>before surgery</b>; it should <b>not reflect instability which occurs after the induction of anesthesia</b> or the operative risk but rather how expediently surgery must be performed. Thus some elective patients may be at higher risk than urgent patients; for example, an elderly patient with an ejection fraction of 20% and COPD operated on electively compared to a young patient with a normal ejection fraction that has ongoing unstable angina.</p> <p>RULE OF THUMB: <b>Elective</b> – waits at home. <b>Urgent</b> – waits in hospital. <b>Emergent</b> – cannot wait or is not safe to wait. <b>Emergent Salvage</b> – no pulse.</p> <p><u>Elective</u> surgeries are performed on patients whose cardiac function has been stable. They are usually scheduled at least one day prior to surgery, and the clinical picture allows discharge from the hospital with readmission for surgery later.</p> <p><u>Urgent</u> surgeries are performed on patients whose medical condition requires continuous hospitalization prior to CABG. A critical feature that distinguishes urgent from elective patients is that urgent patients <b>cannot be safely discharged</b> prior to their CABG, but they can safely await ABG in the hospital. An intra-aortic balloon pump or IV nitroglycerin may be part of treatment.</p> <p><u>Emergent</u> surgeries are performed on patients whose condition dictates that the surgery be performed within several hours to prevent morbidity or death. These cases should take precedence over an elective case, cause a new operating room to be opened, or be done at night or on a weekend if necessary. A critical feature which distinguishes emergent from urgent patients is that emergent patients <b>cannot safely delay CABG even while they are in the hospital</b>. Emergent cases are rare. Examples include CABG performed as primary revascularization during an acute MI, immediately (within minutes to a few hours) after angioplasty disaster, or while the patient is <i>still in Cardiogenic shock</i>.</p> <p><u>Emergent Salvage</u> surgeries are performed on a patient undergoing CPR <b>en route</b> to operating room or in the operating room prior to induction of anesthesia. Patient is pulse less within hour prior to surgery.</p>

Data Element and Definition	Comments and Examples
<p><b>Emergent Reason:</b>            Indicate the PRIMARY reason why the patient had Emergent Status. Patients requiring emergency operations will have ongoing, refractory (difficult, complicated, and/or unmanageable) unrelenting cardiac compromise, with or without hemodynamic instability, and not responsive to any form of therapy except cardiac surgery. An emergency operation is one in which there should be no delay in providing operative intervention.</p> <ul style="list-style-type: none"> <li>1 = Shock Circ Support</li> <li>2 = Shock No Circ Support</li> <li>3 = Pulmonary Edema</li> <li>4 = Acute Evolving Myocardial Infarction (AEMI) within 24 hours before surgery</li> <li>5 = Ongoing Ischemia</li> <li>6 = Valve Dysfunction</li> <li>7 = Aortic Dissection</li> <li>8 = Angiographic Accident</li> <li>9 = Cardiac Trauma</li> <li>10 = Infected Device</li> <li>11 = Syncope</li> <li>12 = PCI/CABG Hybrid</li> <li>13 = Anatomy</li> </ul>	<p>If a patient presents with a scenario that does not fit into a definite category; it is reasonable to code the reason that most closely matches the patient's presentation.</p>

Data Element and Definition	Comments and Examples
<p><b>CPB Utilization:</b>            Indicate the level of CPB or coronary perfusion used during the procedure.            1 = <b>None</b> No CPB or coronary perfusion used during the procedure.            2 = <b>Combination</b> With or without CPB and/or with or without coronary perfusion at any time during the procedure (capture conversions from off-pump to on-pump only): (a) At start of procedure: No CPB/No Coronary Perfusion -&gt; conversion to -&gt; CPB, (b) At start of procedure: No CPB/No Coronary Perfusion -&gt; conversion to -&gt; Coronary perfusion, or (c) At start of procedure: No CPB/No Coronary Perfusion -&gt; conversion to -&gt; Coronary perfusion -&gt; conversion to -&gt; CPB.            3 = <b>Full</b> CPB or coronary perfusion was used for the entire procedure.</p>	<p><b>Clarification:</b> Coronary perfusion methods are used as an alternative to complete heart and lung bypass. They are often referred to perfusion assisted devices where just the coronary artery that is being grafted is perfused (distal) to the anastomosis site (a method of supplying distal perfusion to isolated coronary arteries while new grafts are constructed). While not as invasive as cardiopulmonary bypass it is still a method of supporting the myocardium during a period of relative ischemia. These devices allow for continued myocardial perfusion to the area of myocardium that is being revascularized therefore reducing any ischemic time to that region.</p> <p>If the patient started as an off pump case (OPCAB) and then moved to a LHA (Left Heart Assist), this would be considered the same as CPB; code as a "Combination". If LHA is used for an entire case code "Full".</p>
<p><b>CPB Utilization – Combination Plan:</b>            Indicate whether the combination procedure from off-pump to on-pump was a planned or an unplanned conversion.            1 = Planned The surgeon intended to treat with any of the combination options described in "CPB utilization".            2 = Unplanned The surgeon did not intend to treat with any of the combination options described in "CPB utilization".</p>	
<p><b>IMA Artery Used:</b>            Indicate which, if any, Internal Mammary Artery(ies) (IMA) were used for grafts.            1 = Left IMA            2 = Right IMA            3 = Both IMAs            4 = No IMA</p>	<p>To collect which IMA was used to construct grafts: LIMA, RIMA or both or none. IMA may be used as a free graft or pedicled, in situ, graft. A pedicled graft remains connected at its proximal origin (in situ) and requires only a distal anastomosis; i.e. the internal mammary artery.</p> <p>Includes free graft (detached) IMAs.</p>

Data Element and Definition	Comments and Examples
<p><b>LAD Artery Bypassed:</b> Indicate whether any part of the Left Anterior Descending artery (Proximal; Mid; Distal; Diagonal) was bypassed for this surgical intervention. 1 = Yes 2 = No</p>	
<p><b>Number of Diseased Coronary Vessels:</b> Indicate the number of diseased major native coronary vessel systems: LAD system, Circumflex system, and/or Right system with <math>\geq 50\%</math> narrowing of any vessel preoperatively.</p> <p><b>NOTE:</b> <u>Left main disease (<math>\geq 50\%</math>) is counted as TWO vessels (LAD and Circumflex, which may include a Ramus Intermedius). For example, left main and RCA would count as three total.</u> 1 = None 2 = One 3 = Two 4 = Three</p> <p><b>VALVE MISADVENTURES:</b> When NO VESSELS ARE DISEASED and a single vessel bypass is performed, do not report such cases to CCORP.</p>	<p>The number of diseased vessels may not necessarily match the number of bypass grafts performed. The number of vessels refers to the number of major coronary arteries which are diseased. <b>A patient may never have more than three vessel disease.</b> Once a coronary artery is found to be diseased, for the purposes of the STS, the vessel is considered diseased for the remainder of the patient's life and all subsequent reoperations.</p> <p>Consider a major coronary artery as diseased if it or one of its first order branches has a greater than or equal to 50% stenosis. The three major coronary arteries and their first order branches are 1) the left anterior descending (LAD) with its branches the diagonals; 2) the circumflex (Cx) with its branches the obtuse marginals (OM's) or circumflex marginals; and 3) the right coronary artery (RCA) with its branch the posterior descending artery (PDA).</p> <p><b>Note:</b> If bypass is performed for an anomalous kinked vessel, this vessel is counted as one diseased or abnormal vessel.</p>

Data Element and Definition	Comments and Examples
<p><b>Left Main Disease (&gt;= 50%):</b> Indicate whether the patient has Left Main Coronary Disease. Left Main Coronary Disease is present when there is &gt;= 50% compromise of vessel diameter preoperatively.</p> <p>When ranges are reported, such as 45- 50% for stenosis, report as the <b>highest percent in range</b>, in this example 50%.</p>	<p>Qualitative descriptions:</p> <ul style="list-style-type: none"> <li>• “Subtotal” = 99%,</li> <li>• “Critical” = 90%,</li> <li>• “Severe” = 80%,</li> <li>• “Tight” = 80%,</li> <li>• “Significant” = 70%,</li> <li>• “Borderline” = 50%,</li> <li>• “Moderate” = 35%,</li> <li>• “Mild” = 20%</li> </ul> <p>Terms such as ‘plaqueing’ or ‘luminal irregularity’ should be considered mild.</p>
<p><b>Ejection Fraction Done:</b> Indicate whether the Ejection Fraction was measured prior to the induction of anesthesia. 1 = Yes 2 = No</p>	<p>Anesthesia can alter the values to be collected. Do not collect data from intra-operative transeosophageal echography (TEE) after the induction of anesthesia. Collect data from the most recent source before surgery, even it is several months.</p>

Data Element and Definition	Comments and Examples
<p><b>Ejection Fraction (%):</b>            Indicate the percentage of the blood emptied from the left ventricle at the end of the contraction. Use the most recent determination prior to the surgical intervention documented on a diagnostic report. Enter a percentage in the range of 1 - 99. If a percentage range is reported, report a whole number using the "mean" (i.e., 50-55% is reported as 53%). Values reported as:</p> <p>Normal = 60%            Good function = 50%            Mildly reduced = 45%            Fair function = 40%            Moderately reduced = 30%            Poor function = 25%            Severely reduced = 20%</p> <p><b>NOTE:</b> <u>If no diagnostic report is in the medical record, a value documented in the progress record is acceptable.</u></p>	<p>Ejection fraction (EF) is an important predictor of risk. <u>Make every effort to obtain it when available. The official number on a report (documented source) outweighs a surgeon's estimate!</u></p> <p>If a range of EF's are given, enter the mean value (e.g. for "30 to 35%", enter "32" - the system has no space for 32.5).</p>
<p><b>Ejection Fraction Method:</b>            Indicate how the Ejection Fraction measurement information was obtained preoperatively.</p> <p>2 = LV Gram Left Ventriculogram            3 = Radionucleotide MUGA Scan            4 = Estimate From other calculations, based upon available clinical data.            5 = ECHO Echocardiogram            6 = MRI/CT            9 = Other</p>	<p>Since operative conditions may artifactually alter ejection fraction and mitral regurgitation, readings from preoperative trans-thoracic echocardiograms are generally more accurate than those from trans-esophageal echocardiograms (TEE's) done during surgery. Use the last determination of EF prior to surgery. "Estimated" LVEFs based on inspection of an echocardiogram or LV gram is acceptable if documented in the written report for that study. Calculated or quantified LVEF based on planimetry is not required. LVEFs which are guessed at based on clinical presentation (and not based on imaging of the ventricle) are not acceptable.</p>

Data Element and Definition	Comments and Examples
<p><b>PA Systolic Pressure Measured:</b> Indicate whether the PA systolic pressure was measured prior to incision. 1 = Yes 2 = No</p>	<p>PA systolic pressure, measured pre-op is preferable but values obtained in O.R. (awake or after induction) prior to incision can be reported if no other results are available. If more than one preoperative measurement is available, choose the HIGHEST PA systolic pressure recorded before the incision.</p>
<p><b>PA Systolic Pressure:</b> Capture the highest PA systolic pressure recorded prior to incision. Valid values 10.0-150.0</p>	
<p><b>Mitral Insufficiency:</b> Indicate whether there is evidence of Mitral valve regurgitation. Enter level of valve function associated with highest risk (i.e., worst performance). Enter the highest level recorded in the chart. "Moderately severe" should be coded as "Severe". 0 = None 1 = Trivial/Trace 2 = Mild 3 = Moderate 4 = Severe</p>	<p>Enter the highest level recorded in the chart, i.e., worst performance level. "Moderately severe" should be coded as "severe".</p> <p>If a range of mitral valve regurgitation is given, enter the higher value (e.g. for "2 (mild) to 3 (moderate)" enter "3" or moderate). Since operative conditions may artifactually alter ejection fraction and mitral regurgitation, readings from preoperative trans-thoracic echocardiograms are generally more accurate than those from trans-esophageal echocardiograms (TEE's) done during surgery.</p> <p>Mitral prolapse and rheumatic fever are the most common cause of mitral valve regurgitation. Capture even if patient is not scheduled for valve repair and/or replacement when available.</p>

Data Element and Definition	Comments and Examples
<p><b>Valve:</b> Indicate whether a surgical procedure was done on the Aortic, Mitral, Tricuspid or Pulmonic valves. 1 = Yes 2 = No</p>	<p>The intent is to capture valve replacements and/or repairs.</p>
<p><b>Aortic Valve:</b> Indicate whether an aortic valve procedure was performed. 1 = Yes 2 = No</p>	<p>Include <b>all</b> AV procedures (aortic valve replacement, resuspension or repair-see below) done during this surgery.</p>
<p><b>Aortic Valve Procedure:</b> Indicate procedure performed on aortic valve and/or ascending aorta. 1 = Replacement 2 = Repair / Reconstruction 3 = Root Reconstruction with valved conduit 4 = Replacement and insertion aortic non-valved conduit 5 = Resuspension AV without replacement of ascending aorta 6 = Resuspension AV with replacement of ascending aorta 7 = Apico-aortic conduit (Aortic valve bypass) 8 = Autograft with pulmonary valve- Ross procedure 9 = Homograft 10 = Valve sparing root reimplantation (David) 11 = Valve sparing root remodeling (Yacoub)</p>	

Data Element and Definition	Comments and Examples
<p><b>Mitral Valve:</b>            Indicate whether a mitral valve procedure was performed.            1 = Yes            2 = No</p>	
<p><b>Mitral Valve Procedure:</b>            Indicate the type of procedure that was performed on the mitral valve            1 = Repair            2 = Replacement</p>	
<p><b>Tricuspid Procedure:</b>            Indicate whether a surgical procedure was done or not done on the Tricuspid Valve.            1 = No            2 = Annuloplasty Only            3 = Replacement            4 = Reconstruction with Annuloplasty            5 = Reconstruction without Annuloplasty            6 = Valvectomy</p>	
<p><b>Pulmonic Procedure:</b>            Indicate whether a surgical procedure was done or not done on the Pulmonic Valve.            1 = No            2 = Replacement            3 = Reconstruction            4 = Valvectomy</p>	

Data Element and Definition	Comments and Examples
<p><b>Reoperation for Bleed:</b>            Indicate whether the patient was re-explored for mediastinal bleeding with or without tamponade either in the ICU or returned to the operating room.            1 = Yes 2 = No</p>	<p>Requires reopening the chest for bleeding.</p> <p>Do not capture reopening of the chest or situations of excessive bleeding that occur prior to the patient leaving the operating room at the time of the primary procedure. Do not include medically (non-operatively) treated excessive post-operative bleeding/tamponade events. The patient must return to the operating room suite for surgical intervention.</p> <p>Include patients that return to an O.R. suite or equivalent O.R. environment (i.e., ICU setting) as identified by your institution, that require surgical re-intervention to investigate/correct bleeding/tamponade. Include only those bleeding/tamponade interventions that pertain to the mediastinum or thoracic cavity.</p>
<p><b>Reintervention - Graft Occlusion:</b>            Indicate whether the patient returned to the operating room or the cath lab for intervention of coronary graft occlusion due to acute closure, thrombosis, technical or embolic origin.            1 = Yes            2 = No</p>	<p>Does not include post-op PCIs.</p> <p>Requires reopening of the chest to revise a graft.</p> <p><u>Requires</u> a return to an O.R. suite to capture as a complication.</p>

Data Element and Definition	Comments and Examples
<p><b>Deep Sternal Wound Infection:</b>            Indicate whether the patient, within 30 days postoperatively, had a deep sternal infection involving muscle, bone, and/or mediastinum REQUIRING OPERATIVE INTERVENTION. Must have ALL of the following conditions: 1) Wound opened with excision of tissue (I&amp;D) or re-exploration of mediastinum; 2) Positive culture unless patient on antibiotics at time of culture or no culture obtained; 3) Treatment with antibiotics beyond perioperative prophylaxis            1 = Yes            2 = No</p>	<p>A deep incisional SSI (DIP or DIS) must meet the following criteria:            Infection occurs within 30 days after the operative procedure  <b>and</b>            involves deep soft tissues (e.g., fascial and muscle layers) of the incision  <b>and</b>            patient has <u>at least 1</u> of the following:  <b>a.</b> Purulent drainage from the deep incision but not from the organ/space component of the surgical site.  <b>b.</b> A deep incision spontaneously dehisces or is deliberately opened by a surgeon and is culture-positive or not cultured when the patient has at least 1 of the following signs or symptoms: fever (&gt;38°C), or localized pain or tenderness. A culture-negative finding does not meet this criterion.  <b>c.</b> An abscess or other evidence of infection involving the deep incision is found on direct examination, during reoperation, or by histopathologic or radiologic examination.  <b>d.</b> Diagnosis of a deep incisional SSI by a surgeon or attending physician.            Classify infection that involves both superficial and deep incision sites as deep incisional SSI. Classify infection that involves both deep and organ space (like mediastinitis) as organ space.</p>

Data Element and Definition	Comments and Examples
<p><b>Neuro – Stroke Permanent:</b>            Indicate whether the patient has a postoperative stroke (i.e., any confirmed neurological deficit of abrupt onset caused by a disturbance in blood supply to the brain) that did not resolve within 24 hours.            1 = Yes            2 = No</p>	<p>There are two forms of stroke: <i>ischemic</i> - blockage of a blood vessel supplying the brain, and <i>hemorrhagic</i> - bleeding into or around the brain.</p> <p>Central events are caused by embolic or hemorrhagic events. Neurological deficits such as confusion, delirium and/or encephalopathic (anoxic or metabolic) events are not to be coded in this field.</p> <p>Example # 1: A patient had a Coronary Artery Bypass (CAB) and Carotid Artery Endarterectomy (CEA) done by a cardiac surgeon and a vascular surgeon. The patient had a stroke, and it was documented in the notes that it was from the CEA. The stroke is coded as a post operative complication of the CAB. Example # 2: The patient was being sedated, but stopped withdrawing to painful stimuli on one side. A neuro consult suggested a CVA on the left side and ordered a CT Scan. The patient expired later on the same day as the consult before the test could be performed to determine if a CVA has occurred.</p>
<p><b>Pulm - Ventilation Prolonged:</b>            Indicate whether the patient had prolonged pulmonary ventilator &gt; 24 hours. Include (but not limited to) causes such as ARDS, pulmonary edema, and/or any patient requiring mechanical ventilation &gt; 24 hours postoperatively.            1 = Yes            2 = No</p>	<p>Postoperative period begins when patient leaves the O.R.            A total of 24 hours, include initial and additional hours of mechanical ventilation.</p> <p>Do not include the hours ventilated if a patient returns to the operating room suite and requires re intubation as part of general anesthesia.</p> <p>TIME is calculated from the point of leaving the O.R. and NOT when patient was initially intubated.</p>

Data Element and Definition	Comments and Examples
<p><b>Renal - Renal Failure:</b> Indicate whether the patient had acute renal failure or worsening renal function resulting in ONE OR BOTH of the following:</p> <ol style="list-style-type: none"> <li>1. Increase of serum creatinine to <math>\geq 4.0</math> or 3x most recent preoperative creatinine level (baseline),</li> <li>2. A new requirement for dialysis postoperatively</li> </ol> <p>1 = Yes 2 = No</p>	<p>The post operative creatinine will be used to evaluate renal function according to the RIFLE criteria. The Acute Dialysis Quality Initiative, a multidisciplinary collaboration, defined a range of acute renal dysfunction called the RIFLE classification system. It is used to define grades of severity based on objective measurements.</p> <p><b>STS will use the underlined serum creatinine values to analyze post-op renal function.</b> GFR and urine output will not be included at this time. Renal Failure criteria are highlighted. Classifications of Loss and End-stage disease are beyond the current scope of follow-up. <b>See RIFLE description (next page).</b></p> <p><b>Risk (R)</b> - Increase in serum creatinine level X 1.5 or decrease in GFR by 25%, or UO <math>&lt; 0.5</math> mL/kg/h for 6 hours  <b>Injury (I)</b> - Increase in serum creatinine level X 2.0 or decrease in GFR by 50%, or UO <math>&lt; 0.5</math> mL/kg/h for 12 hours  <b>Failure (F)</b> - Increase in serum creatinine level X 3.0, or serum creatinine level <math>\geq 4</math> mg/dL, or decrease in GFR by 75%,; UO <math>&lt; 0.3</math> mL/kg/h for 24 hours, or anuria for 12 hours  <b>Loss (L)</b> - Persistent ARF, complete loss of kidney function <math>&gt; 4</math> weeks  <b>End-stage kidney disease (E)</b> - Loss of kidney function <math>&gt; 3</math> months  Reference: <a href="http://ccforum.com/content/8/4/R204">http://ccforum.com/content/8/4/R204</a></p>
<p><b>Renal - Dialysis Requirement:</b> Indicate whether the patient had a new requirement for dialysis postoperatively, which may include hemodialysis, peritoneal dialysis.</p> <p>1 = Yes 2 = No</p>	<p>May include either hemo or peritoneal dialysis. This includes a onetime need for dialysis as well as implementation of longer term therapy. If the patient was on preoperative peritoneal dialysis and moved to hemodialysis postoperatively, this does not constitute a worsening of the condition and should not be coded as an event.</p> <p>Continuous Veno-Venous Hemofiltration) (CVVH, CVVH-D) and Continuous Renal Replacement Therapy (CRRT) should be coded here as "Yes." (Code Ultra filtration as "No", it is captured in a separate field.)</p>

Data Element and Definition	Comments and Examples
<p><b>Other - Atrial Fib:</b>            Indicate whether the patient had a new onset of atrial fibrillation/flutter (AF) requiring treatment. Does not include recurrence of previously documented AF which had been present preoperatively.            1 = Yes            2 = No</p>	<p><b>DO NOT include</b> patients that had pre-operative atrial fibrillation (treated or non-treated). The event must be of new origin. The intent of this field is to capture new onset A Fib that persists longer than one hour and requires treatment.</p> <p>The intent of this field is to capture new onset A Fib that requires treatment and NOT to capture a reoccurrence of A Fib which was present pre-op.</p> <p>Example # 1: A patient is on beta blockers post-op and is titrating each day to give higher doses. The second post-op day the patient has a two hour run of A Fib. During this run of AFib, the beta blocker is increased or an extra dose of beta blocker is given but no other drugs are given for this two hour period: If the patient did not have A Fib pre-op and this post-op A Fib is new in onset, of greater than one hour duration, and requiring treatment, it is considered a post-op A Fib complication.</p> <p>Example # 2: A patient is on a protocol preoperatively; the patient then goes in to atrial fibrillation (AF) post-operatively and the protocol is not adjusted: If the patient did not have a history of atrial fibrillation preoperatively and was in sinus rhythm and then develops AF postoperatively, this should be coded “Yes” as a complication.</p>

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Isolated CABG (\*\*definitional reference from page 29):

The patient's surgery is defined as follows: when any of the procedures listed in Section A (below) is performed concurrently with the coronary artery bypass surgery, the surgery will be considered non-isolated and the data element coded 'No'. It is not possible to list all procedures because cases can be complex and clinical definitions are not always precise. When in doubt, the data abstractor should first seek an opinion from the responsible surgeon and then consult CCORP.

#### Section A

Valve repairs or replacements

Operations on structures adjacent to heart valves (papillary muscle, chordae tendineae, trabeculae carneae cordis, annuloplasty, infundibulectomy)

Ventriculectomy

Repair of atrial and ventricular septa, excluding closure of patent foramen ovale

Excision of aneurysm of heart

Head and neck, intracranial endarterectomy

Other open heart surgeries, such as aortic arch repair, pulmonary endarterectomy

Endarterectomy of aorta

Thoracic endarterectomy (endarterectomy on an artery outside the heart)

Heart transplantation

Repair of certain congenital cardiac anomalies, excluding closure of patent foramen ovale (e.g., teratology of fallot, atrial septal defect (ASD), ventricular septal defect (VSD), valvular abnormality)

Implantation of cardiomyostimulation system (Note: Refers to cardiomyoplasty systems only, not other heart-assist systems such as pacemakers or internal cardiac defibrillators (ICDs))

Any aortic aneurysm repair (abdominal or thoracic)

Repair of aortic dissection (for clarification only: 3/06)

Aorta-subclavian-carotid bypass

Aorta-renal bypass

Aorta-iliac-femoral bypass

Caval-pulmonary artery anastomosis

Extracranial-intracranial (EC-IC) vascular bypass

Coronary artery fistula

Resection of a lobe or segment of the lung (e.g., lobectomy or segmental resection of lung). Does not include simple biopsy of lung nodule in which surrounding lung is not resected, biopsy of a thoracic lymph node or excision or stapling of an emphysematous bleb.

Mastectomy for breast cancer (not simple breast biopsy)

Amputation of any extremity (e.g., foot or toe)

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If a procedure listed in Section B (next page) is performed concurrently with the coronary artery bypass surgery, the surgery will be considered an isolated CABG and the data element coded 'Yes' (unless a procedure listed in section A is performed during the same surgery). These particular procedures are listed because the Office has received frequent questions regarding their coding.

Section B

Transmyocardial laser revascularization (TMR)

Pericardiectomy and excision of lesions of heart

Repair/restoration of the heart or pericardium. \*\*\*Surgeries whose principal goal is full pericardial stripping for preoperatively identified constrictive pericarditis are non-isolated (clarification: 3/06)

Coronary endarterectomy

Pacemakers

Internal cardiac defibrillators (ICDs)

Fem-fem cardiopulmonary bypass (a form of cardiopulmonary bypass that should not be confused with aortofemoral bypass surgery listed in Section A)

Thymectomy

Thyroidectomy

Maze procedures, surgical or catheter

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Responsible Surgeon Name (\*\*definitional reference from page 30):

“Responsible surgeon” means the principle surgeon who performs a coronary artery bypass procedure.

The first and last name collected should exactly match the name assigned to the license number issued by the California Medical Board.

The middle initial collected should match the first letter of the middle name assigned to the license number issued by the California Medical Board. Example: if a surgeon’s middle name is Harry, the middle initial should be reported as ‘H’. NOTE: do not include period (.).

If a trainee performs this procedure, then the responsible surgeon is the physician responsible for supervising this procedure performed by the trainee. In situations in which a responsible surgeon cannot otherwise be determined, the responsible surgeon is the surgeon who bills for the coronary artery bypass procedure.