EACTS
ADULT CARDIAC DATABASE

EACTS Adult Cardiac Database

Quality Improvement Programme

Database Dictionary

Version 3.1, 16 Oct 2024

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** old coding variables of the ACD, will likely be deprecated in the next version.*

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11 Euroscore

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14 Data Audit

- Data Audit

Importance of data

Variables were classified in three categories, according to their importance:

1. **Mandatory**: a limited number of information, which all centres must provide to join and remain in the ACD.

2. **Essential**: very important data leaving to participants' discretion the choice to omit some. This data is selectable in the interactive viewer.

3. **Optional**: mostly new variables, which we strongly encourage centres to provide, but without any formal restrictions.

Patient demographics and other identifiers

Country code

Column name CountryCode
Mandatory **TableSingleChoice:** see table **CTRY** in the Data Specification document

Unique code assigned to each country generated by EACTS.

Hospital code

Column name HospitalCode
Mandatory **TableSingleChoice**

Unique code assigned to each hospital generated by EACTS.

Procedure ID

Column name ProcedureID
Mandatory **String:** can contain any value as long as it is unique to the procedure.

This should be unique to each procedure in the hospital.

If a patient has multiple procedures, each procedure ID must be unique.

Patient identifier

Column name PatientIdentifier
Mandatory **String:** can contain any value as long as it is unique to the patient.

This should be a pseudonymised ID which is unique to each patient. If the same patient undergoes multiple procedures, each procedure should have the same Patient Identifier.

Note: Please do not submit patient names or any other items that would identify the patient.

Age at operation

Column name Age
Mandatory **Integer:** enter a whole number.

Indicate the patient's age in years at the time of surgery. Valid range: 18-110.

Sex

Column name Sex
Mandatory **SingleChoice**: the code only.

Indicate the patient's sex at birth as either male or female.

1 - Male

2 - Female

Hospitalisation

Date of admission

Column name AdmissionDate
Optional **Date:** ODBC date with format yyyy-mm-dd.

Indicate the admission date.

Valid date after 2009-01-01 and <= Date of data submission and <=Date of surgery.

Date of surgery

Column name DateOfSurgery
Mandatory **Date:** ODBC date with format yyyy-mm-dd.

Indicate the date of index cardiac surgical procedure which is defined as the initial major cardiac surgical procedure of the hospitalisation.

Valid date after 2010-01-01 and <= Date of data submission

Cardiac History

Angina

Column name Angina
Essential **SingleChoice:** the code only.

Indicate the CCS (Canadian Cardiovascular Society) class of the patient.

1 - CCS 0	No angina.
2 - CCS 1	Ordinary physical activity does not cause angina, such as walking or climbing stairs. Angina occurs with strenuous, rapid, or prolonged exertion at work or recreation.
3 - CCS 2	Slight limitation of ordinary activity. Angina occurs on walking or climbing stairs quickly, walking uphill, walking or climbing stairs after meals, in the cold, in wind, under emotional stress, or only during the first few hours after awakening. Walking >2 blocks on the level and climbing >1 flight of ordinary stairs at a normal pace under normal conditions.
4 - CCS 3	Marked limitations of ordinary physical activity. Angina occurs on walking 1-2 blocks on the level and climbing 1 flight of stairs in normal condition and at a normal pace.
5 - CCS 4	Inability to carry on any physical activity without discomfort: anginal symptoms may be present at rest.

-1 - Unknown

Dyspnoea

Column name Dyspnoea
Essential **SingleChoice:** the code only.

Indicate the patient's highest New York Heart Association (NYHA) classification within 2 weeks prior to surgery. NYHA classification represents the overall functional status of the patient in relationship to both heart failure and angina. Choose one of the following:

1 – NYHA 1	No limitation of physical activity. Ordinary physical activity does not cause undue fatigue, palpitation or shortness of breath.
2 – NYHA 2	Slight limitation of physical activity. Comfortable at rest. Ordinary physical activity results in fatigue, palpitation, shortness of breath or chest pain.
3 – NYHA 3	Marked limitation of physical activity. Comfortable at rest. Less than ordinary activity causes fatigue, palpitation, shortness of breath or chest pain.
4 – NYHA 4	Symptoms of heart failure at rest. Any physical activity causes further discomfort.

-1 - Unknown

Symptomatic status at time of surgery

Column name SymptomaticStatusAdmission
Essential **SingleChoice:** the code only.

Indicate the symptomatic status at the time of admission.

0 - No symptoms or angina

1 - Symptoms unlikely to be ischaemia

Pain, pressure or discomfort in the chest, neck or arms not clearly exertional or not otherwise consistent with pain or discomfort of myocardial ischaemic origin. This includes patients with non-cardiac pain (e.g., pulmonary embolism, musculoskeletal, or oesophageal discomfort), or cardiac pain not caused by myocardial ischaemia (e.g., acute pericarditis).

2 - Stable angina

Angina without a change in frequency or pattern for the six weeks prior to this surgical intervention. Angina is controlled by rest and / or oral or transcutaneous medications.

3 - Unstable angina

There are three principal presentations of unstable angina:

i. Rest angina
ii. New-onset (less than 2 months) angina
iii. Increasing angina (in intensity, duration and / or frequency).

4 - Non-ST elevation MI

The patient was hospitalized for a non-ST elevation myocardial infarction as documented in the medical record. Non-STEMIs are characterized by the presence of both criteria:

i. Cardiac biomarkers (creatinine kinase-myocardial band, Troponin T or I, and / or myoglobin) exceed the upper limit of normal according to the individual hospital's laboratory parameters with a clinical presentation which is consistent or suggestive of ischaemia. ECG changes and / or ischaemic symptoms may or may not be present.
ii. Absence of ECG changes diagnostic of a STEMI (see STEMI).

5 - ST elevation MI

The patient presented with a ST elevation myocardial infarction as documented in the medical record. STEMIs are characterized by the presence of both criteria:

i. ECG evidence of STEMI: New or presumed new ST-segment elevation or new left bundle branch block not documented to be resolved within 20 minutes. ST-segment elevation is defined by new or presumed new sustained ST-segment elevation (0.1 mV in magnitude) in two or more contiguous electrocardiogram (ECG) leads. If no exact ST-elevation measurement is recorded in the medical chart, physician's written documentation of ST elevation is acceptable. If only one ECG is performed, then the assumption that the ST elevation persisted at least the required 20 minutes is acceptable. Left bundle branch block (LBBB) refers to LBBB that was not known to be old on the initial ECG. For purposes of the Registry, ST elevation in the posterior chest leads (V7 through V9), or ST depression in V1 and V2 demonstrating posterior myocardial infarction is considered a STEMI equivalent and qualifies the patient for re-perfusion therapy.
ii. Cardiac biomarkers (creatinine kinase-myocardial band, Troponin T or I, and / or myoglobin) exceed the upper limit of normal according to the individual hospital's laboratory parameters a clinical presentation which is consistent or suggestive of ischaemia which is consistent or suggestive of ischaemia.

-1 - Unknown

Time of most recent MI

Column name MostRecentMI
Essential **SingleChoice**: the code only.

Indicate the time of the most recent myocardial infarction (MI), if any.

0 - No previous MI

1 - MI <6 hours before operation

2 - MI 6-24 hours before operations

3 - MI 1-7 days before operation

4 - MI 8-30 days before operation

5 - MI 31-90 days before operation

6 - MI >90 days before operation

7 - unspecified <90 days before operation

-1 - Unknown

Type of most recent MI

Column name TypeRecentMI
Essential **SingleChoice**: the code only.

Indicate the type of the myocardial infarction. NSTEMI: Non ST elevation myocardial infarction, STEMI: ST-elevation myocardial infarction.

1 - STEMI

2 - Non-STEMI

-1 - Unknown

-99 - Not applicable

Heart failure within 2 weeks

Column name CongestiveHeartFailure
Essential **SingleChoice**: the code only.

Congestive heart failure is when there has been documentation in the clinical notes that the patient has been in heart failure in the 2 weeks prior to surgery.

0 - No

1 - Yes

-1 – Unknown

Previous PCI

Column name PreviousPCI
Essential **SingleChoice**: the code only.

Indicate if, and when the patient had a previous Percutaneous Coronary Intervention (PCI). PCI is defined as any non-surgical procedure using a catheter to access coronaries via a peripheral artery, to treat a stenosis either with balloon angioplasty and/or deployment of a stent.

0 - No previous PCI

1 - PCI 24 hours before surgery; same admission

2 - PCI >24 hours before surgery; same admission

3 - PCI >24 hours before surgery, previous admission

-1 - Unknown

Previous CABG

Column name PreviousCABG
Essential **SingleChoice**: the code only.

Indicate if the patient had a previous Coronary artery bypass graft (CABG).

0 - No

1 - Yes

-1 – Unknown

Previous valve surgery

Column name PreviousValveSurgery
Essential **SingleChoice**: the code only.

Indicate if the patient had a previous heart valve surgery (in which the pericardium was opened).

0 - No

1 - Yes

-1 – Unknown

Previous other cardiac surgery

Column name PreviousOtherCardiac
Essential **SingleChoice**: the code only.

Indicate if the patient had previous heart surgery other than Coronary artery bypass graft (CABG) or valve surgery (in which the pericardium was opened).

0 - No

1 - Yes

-1 – Unknown

Number of previous heart operations

Column name NoPreviousHeartOperations
Essential **Integer:** enter a whole number

Indicate the number of previous heart surgery (in which the pericardium was opened)

Integer of value 0 or above

Date of last cardiac surgery

Column name DateLastCardiacSurgery
Optional **Date:** ODBC date with format yyyy-mm-dd.

Indicate the date of last cardiac surgery. Leave empty in case of no previous heart surgeries (in which the pericardium was opened)

Previous transcatheter AV procedure

Column name PreviousTransCatheterInterventions_AV
Optional **SingleChoice**: the code only.

Indicate if the patient received previous transcatheter aortic valve (AV) intervention(s)

0 - No

1 - Yes

-1 - Unknown

Previous transcatheter MV procedure

Column name PreviousTransCatheterInterventions_MV
Optional **SingleChoice**: the code only.

Indicate if the patient received previous transcatheter mitral valve (MV) intervention(s)

0 - No

1 - Yes

-1 – Unknown

Previous transcatheter TV procedure

Column name PreviousTransCatheterInterventions_TV
Optional **SingleChoice**: the code only.

Indicate if the patient received previous transcatheter tricuspid valve (TV) intervention(s)

0 - No

1 - Yes

-1 – Unknown

Previous transcatheter PV procedure

Column name PreviousTransCatheterInterventions_PV
Optional **SingleChoice**: the code only.

Indicate if the patient received previous transcatheter pulmonary valve (PV) intervention(s)

0 - No

1 - Yes

-1 – Unknown

Preoperative risk factors and comorbidities

Weight

Column name Weight
Essential **Integer:** enter a whole number

Indicate the weight of the patient in Kg

Please note -1 for unknown

Height

Column name Height
Essential **Integer:** enter a whole number

Indicate the height of the patient in cm

Please note -1 for unknown

BMI

Column name BMI
Essential **Double:** auto calculated

Body mass index in kg/m_2. Auto calculated using the formula: weight (kg)/height $(m)^2$
Valid range: 10-60.

Please note -1 for unknown

Smoking history

Column name SmokingHistory
Essential **SingleChoice**: the code only.

Indicate the smoking history of the patient

0 – Never smoked	The patient has never smoked cigarettes.
1 – Ex-smoker	The patient has stopped to smoke > 1 month before the procedure.
2 – Current smoker	The patient regularly smokes one or more cigarette per day.
-1 - Unknown	

Diabetes with/without treatment

Column name Diabetes
Essential **SingleChoice**: the code only.

Indicate if the patient has diabetes and the highest order of treatment.

Treatment order: Diet -> Oral -> Subcutaneous (non-insulin) -> Insulin

0 - No diabetes

1 - Yes, Diet

2 - Yes, Oral

3 - Yes, Insulin

4 - Yes, Subcutaneous (non-insulin)

5 - Yes, treatment unknown

6 - Yes, no treatment

-1 – Unknown

Hypertension

Column name Hypertension
Essential **SingleChoice**: the code only.

Indicate if the patient has hypertension or receives treatment of hypertension

Indicate whether the patient has a diagnosis of hypertension, documented by one of the following:

a. Documented history of hypertension diagnosed and treated with medication, diet and / or exercise;
b. Prior documentation of blood pressure >140 mmHg systolic or 90 mm Hg diastolic for patients without diabetes or chronic kidney disease, or prior documentation of blood pressure >130 mmHg systolic or 80 mmHg diastolic on at least 2 occasions for patients with diabetes or chronic kidney disease;
c. Currently on pharmacologic therapy to control hypertension.

0 – No hypertension

1 - Hypertension

-1 - Unknown

Hypercholesterolaemia

Column name Hypercholesterolaemia
Essential **SingleChoice**: the code only.

Indicate if the patient has hypercholesterolaemia

Hypercholesterolaemia is defined as: LDL-cholesterol (low-density lipoprotein cholesterol) greater than 190 mg/dL, greater than 160 mg/dL with one major risk factor, or greater than 130 mg/dL with two cardiovascular risk factors. The important risk factors include: Age; male 45 years or older, female 55 years or older, A positive family history of premature atherosclerotic cardiovascular disease (younger than 55 years in a male and younger than 65yrs in a female), Hypertension, Diabetes, Smoking, Low HDL-cholesterol levels (less than 40 mg/dl in male and less than 55 mg/dl in a female). Or patient is treated with for hypercholesterolaemia with either drugs or diet.

0 - No

1 - Yes

-1 – Unknown

Dialysis/CVVH

Column name Dialysis
Essential **SingleChoice**: the code only.

Indicate if the patient is on dialysis for acute or chronic renal failure.

Includes any form of peritoneal or haemodialysis the patient is receiving prior to surgery. Also, may include Continuous Veno-Venous Hemofiltration (CVVH, CVVH-D), and Continuous Renal Replacement Therapy (CRRT) as dialysis.

0 - No dialysis

1 - Dialysis for acute renal failure

2 - Dialysis for chronic renal failure

3 - Dialysis - unspecified

-1 – Unknown

Last pre-operative creatinine

Column name LastPreOperativeCreatinine
Essential **Integer:** enter a whole number

Indicate the last-preoperative creatinine value (micromol/L).

Please note -1 for unknown

GFR

Column name GFR
Essential **Integer:** enter a whole number

Indicate the last known preoperative Glomerular Filtration Rate (GFR) (mL/min/1.73m2).

Creatinine clearance (ml/min) = (140-age (years) x weight (kg) x (0.85 if female) / [72 x serum creatinine (mg/dl)], please note -1 for unknown

Chronic lung disease

Column name ChronicLungDisease
Essential **SingleChoice**: the code only.

Indicate if the patient has chronic lung disease.

Chronic obstructive pulmonary disease (COPD) / emphysema / asthma is when the patient requires medication (inhalers, aminophylline or steroids) for chronic pulmonary disease, has an FEV1 less than 75% predicted value; venous pO2 <60 mmHg, pCO2 >50 mmHg, or has intermittent or allergic reversible airways disease treated with bronchodilators or steroids.

0 - No

1 - COPD / emphysema / asthma

-1 – Unknown

Degree of COPD

Column name DegreeOfCOPD
Essential **SingleChoice**: the code only.

Indicate the degree of COPD. FEV: Forced expiratory volume.

1 - Mild FEV1 60% to 75% of predicted, and/or on chronic inhaled or oral bronchodilator therapy.

2 - Moderate FEV1 50% to 59% of predicted, and/or on chronic oral/systemic steroid therapy aimed at lung disease.

3 - Severe FEV1 < 50% and/or Room Air pO2 < 60 or pCO2 > 50

-1 – Unknown

-99 – Not applicable

Extra-cardiac arteriopathy - Peripheral

Column name ExtraCardiacArteriopathy_Peri
Essential **SingleChoice**: the code only.

Indicate if the patient has peripheral extra-cardiac arteriopathy.

Claudication, >50% stenosis/previous or planned intervention on the abdominal aorta, limb arteries, amputation for arterial disease. PVD excludes disease of thoracic aorta.

0 - No

1 - Yes

-1 - Unknown

Extra-cardiac arteriopathy - cerebral-vascular

Column name ExtraCardiacArteriopathy_CV
Essential **SingleChoice**: the code only.

Indicate if the patient has cerebral-vascular extra-cardiac arteriopathy.

>50% stenosis of major extracranial or intracranial vessels of the brain, previous or planned intervention on the carotids, previous cervical or cerebral artery revascularisation surgery or percutaneous intervention.

0 - No

1 - Yes

-1 - Unknown

Extra-cardiac arteriopathy - unknown origin

Column name ExtraCardiacArteriopathy_unknown
Essential **SingleChoice**: the code only.

Indicate if the patient has extra cardiac arteriopathy, but the origin is unknown.

0 - No

1 - Yes

-1 - Unknown

Previous cerebrovascular events - Stroke

Column name CerebrovascularDisease_Stroke
Essential **SingleChoice**: the code only.

Indicate whether the patient has a history of cerebrovascular event, defined as an acute episode of a focal or global neurological deficit with at least one of the following:
Change in the level of consciousness,
Hemiplegia, hemiparesis, numbness, or sensory loss affecting one side of the body,
Dysphasia or aphasia, hemianopia, amaurosis fugax, or other neurological signs or symptoms consistent with stroke.

Stroke: duration of a focal or global neurological deficit ≥24 h; OR <24 h if available neuroimaging documents a new haemorrhage or infarct; OR the neurological deficit results in death.

0 - No

1 - Yes

-1 - Unknown

Previous cerebrovascular events - TIA

Column name CerebrovascularDisease_TIA
Essential **SingleChoice**: the code only.

Indicate whether the patient has a history of cerebrovascular event, defined as an acute episode of a focal or global neurological deficit with at least one of the following:
Change in the level of consciousness,
Hemiplegia, hemiparesis, numbness, or sensory loss affecting one side of the body,
Dysphasia or aphasia, hemianopia, amaurosis fugax, or other neurological signs or symptoms consistent with stroke.

TIA: duration of a focal or global neurological deficit <24 h, any variable neuroimaging does not demonstrate a new haemorrhage or infarct.

0 - No

1 - Yes

-1 - Unknown

Poor mobility

Column name PoorMobilityDueToNonCardiac
Essential **SingleChoice**: the code only.

Indicate if the patient has poor mobility due to a musculoskeletal or neurologic condition.

Poor mobility is defined as a severe impairment of mobility secondary to musculoskeletal or neurological dysfunction.

0 - No

1 - Yes

-1 - Unknown

Heart rhythm at admission

Column name Rhythm
Optional **SingleChoice**: the code only.

Indicate the rhythm present at the date of admission.

0 - Sinus rhythm

1 - Atrial fibrillation

2 - Atrial flutter

3 - Other Any abnormal rhythm that does not conform to the definitions of Atrial fibrillation / flutter. Includes Pacemaker-induced rhythm.

-1 – Unknown

Pre-operative pacemaker / ICD

Column name PacemakerICD
Essential **SingleChoice**: the code only.

Indicate if the patient had a preoperative ICD or pacemaker.

0 - No

1 - Pacemaker

2 - Implantable cardioverter-defibrillator (ICD)

3 - Cardiac Resynchronization Therapy Pacemaker/Defibrillator (CRT-P/D)

-1 - Unknown

History of Atrial Fibrillation

Column name HistAF
Essential **SingleChoice**: the code only.

Indicate if the patient had a history of atrial fibrillation.

0 - No

1 - Paroxysmal AF that terminates spontaneously or with intervention within 7 days of onset.

2 - Non-paroxysmal Indicates AF permanent or cardioverted (after more than 7 days of onset). Permanent AF is when the patient and clinician make a joint decision to stop further attempts to restore and/or maintain sinus rhythm.

-1 – Unknown

Critical pre-operative state

Column name CriticalState
Essential **SingleChoice**: the code only.

Indicate the clinical preoperative status at the time of procedure.

The patient has a critical preoperative status if one of the following criteria are met: ventricular tachycardia or fibrillation or aborted sudden death, preoperative cardiac massage, preoperative ventilation before arrival in the anaesthetic room, preoperative inotropic support, preoperative intra-aortic ballon pump (IABP) or preoperative acute renal failure (anuria or oliguria < 10 ml/hr).

0 - No

1 - Yes

-1 – Unknown

Component critical pre-operative state - VT/VF

Column name CriticalState_VTVF
Essential **SingleChoice**: the code only.

Indicate the component Ventricular tachycardia (VT)/ ventricular fibrillation (VF) of the preoperative critical state is present.

0 - No

1 - Yes

-1 – Unknown

Component critical pre-operative state - Cardiac massage

Column name CriticalState_cardiacmassage
Essential **SingleChoice**: the code only.

Indicate the component cardiac massage of the preoperative critical state is present

0 - No

1 - Yes

-1 – Unknown

Component critical pre-operative state - Pre-operative invasive ventilation

Column name CriticalState_ventilation
Essential **SingleChoice**: the code only.

Indicate the component preoperative invasive ventilation of the preoperative critical state is present.

0 - No

1 - Yes

-1 – Unknown

Component critical pre-operative state - Pre-operative Inotropes / IntraAortic Balloon Pump / Mechanical Circulatory Support

Column name CriticalState_InoORMCS
Essential **SingleChoice**: the code only.

Indicate the component preoperative Inotropes / Intra-Aortic Balloon Pump / Mechanical Circulatory Support of the preoperative critical state is present.

0 - No

1 - Yes

-1 – Unknown

Component critical pre-operative state - Oliguria/Anuria (except chronic dialysis).

Column name CriticalState_oliguria
Essential **SingleChoice**: the code only.

Indicate the component Oliguria/Anuria (except chronic dialysis) of the preoperative critical state is present

0 - No

1 - Yes

-1 – Unknown

Endocarditis

Column name Endocarditis
Essential **SingleChoice**: the code only.

Indicate if endocarditis (active, non-active is present)

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 and the cultures are negative, then the infection is considered treated.

0 - None

1 - Active

2 - Non-active

3 - Yes, unknown active or non-active

-1 - Unknown

Acute Aortic Syndrome (Type A)

Column name AASTypeA
Essential **SingleChoice**: the code only.

Indicate if the patient had preoperative acute aortic syndrome (dissection/rupture).

Includes also penetrating aortic ulcer (PAU), intramural hematoma (IMH) involving the ascending aorta/arch. Stanford Classification used.

0 - No

1 - Yes

-1 – Unknown

Preoperative haemodynamics and catheterisation and cardiac function

Cardiogenic shock

Column name CardiogenicShock
Essential **SingleChoice**: the code only.

Indicate if the patient was in cardiogenic shock before surgery.

Cardiogenic shock is defined as a clinical state of hypo perfusion sustained for greater than 30 minutes, according to either of the following criteria:
a. Systolic blood pressure (BP) < 80 and / or Cardiac Index < 1.8 despite maximal treatment;
b. IV inotropes and / or IABP necessary to maintain Systolic blood pressure BP > 80 and / or CI > 1.8.

0 - No

1 - Yes

-1 - Unknown

IV nitrates

Column name IVNitrates
Essential **SingleChoice**: the code only.

Indicate if the patient was on Intravenous (IV) nitrates before surgery.

0 - No

1 - Yes

-1 - Unknown

IV inotropes

Column name IVInotropes
Essential **SingleChoice**: the code only.

Indicate if the patient was on Intravenous (IV) inotropes before surgery.

0 - No

1 - Yes

-1 - Unknown

Immunosuppressive therapy within 30 days of operation

Column name ImmunosuppressiveTherapyIn30Days
Essential **SingleChoice**: the code only.

Indicate if the patient received immunosuppressive therapy within 30 days before surgery.

This includes but is not limited to systemic steroid therapy, anti-rejection medications and chemotherapy.

0 - No

1 - Yes

-1 - Unknown

Left main stem disease

Column name LeftMainStemDisease
Essential **SingleChoice**: the code only.

Indicate if Left main stem (LMS) disease is present.

0 - No LMS disease / LMS disease <50% diameter stenosis

1 - LMS Disease >50% stenosis

-1 – Not investigated/unknown

Coronary artery disease – LAD

Column name CoronaryArteryDiseaseLAD
Essential **SingleChoice**: the code only.

Indicate if left anterior descending (LAD) disease is present.

0 - No or system with <50% narrowing pre-operatively

1 - System with >=50% narrowing pre-operatively

-1 – Not investigated/unknown

Coronary artery disease – Circumflex

Column name CoronaryArteryDiseaseCircumflex
Essential **SingleChoice**: the code only.

Indicate if circumflex disease is present.

0 - No or system with <50% narrowing pre-operatively

1 - System with >=50% narrowing pre-operatively

-1 – Not investigated/unknown

Coronary artery disease – Right

Column name CoronaryArteryDiseaseRight
Essential **SingleChoice**: the code only.

Indicate if right coronary artery (RCA) disease is present.

0 - No or system with <50% narrowing pre-operatively

1 - System with >=50% narrowing pre-operatively

-1 - Not investigated/unknown

Ejection fraction category

Column name EjectionFractionCategory
Essential **SingleChoice**: the code only.

Indicate the Left ventricular ejection fraction (LVEF) in categories

1 - Good (> 49%)

2 - Fair (30-49%)

3 - Poor (20-29%)

4 - Very Poor (< 20%)

-1 - Unknown

Ejection fraction value

Column name EjectionFractionValue
Optional **Integer:** enter a whole number

Indicate the Left ventricular ejection fraction (LVEF) value (Percent).

Please note -1 for unknown

PA systolic category

Column name PulmonaryHypertension
Essential **SingleChoice**: the code only.

Indicate the Pulmonary artery (PA) systolic pressure in categories.

1 - Normal

2 - Moderate hypertension (31-55 mmHg)

3 - Severe hypertension (>55 mmHg)

-1 - Unknown

PA systolic value

Column name PASystolic
Optional **Integer:** enter a whole number

Indicate the Pulmonary artery (PA) systolic pressure (mm/Hg)

Please note -1 for unknown

RV dysfunction

Column name RVDysfunction
Essential **SingleChoice**: the code only.

Indicate if Right ventricle (RV) dysfunction is present.

Indicate right ventricular failure as defined by echocardiogram findings or mentioned in echo report.

Echocardiographic Parameters of RV function

Parameter	View		Abnormal value
	TEE	TTE	
RV:LV area ratio	ME four chamber	Apical four chamber	> 0.6
LV eccentricity index	TG midpapillary short axis	Parasternal midpapillary short axis	> 1
RVFAC	ME four chamber	Apical four chamber	< 35%
TAPSE	Deep TG RV	Apical four chamber	< 1.6 cm
Peak velocity of systolic exursion at the annulus	Deep TG RV	Apical four chamber	< 10 cm/s
Pulmonary artery flow acceleration time	Ascending aortic short-axis	Parasternal RV outflow	< 100 ms

ME - midesophageal; RVFAC = right ventricular fractional area change; TAPSE = tricuspid annular plane systolic exursion; TEE = transesophageal echocardiography; TG = transgrastic; TTE = transthoracic echocardiography

0 - No

1 - Yes

-1 - Unknown

Operation

Operation urgency

Column name OperationUrgency
Essential **SingleChoice**: the code only.

Indicate the operation urgency.

1 - Elective — 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. Routine admission for operation.

2 – Urgent — Procedure required during same hospitalization in order to minimize chance of further clinical deterioration.

3 - Emergency — Operation before the beginning of the next working day after decision to operate.

4 - Salvage — The patient is undergoing cardio-pulmonary resuscitation on route to the operating theatre or prior to anaesthetic induction.

-1 - Unknown

Procedure group

Column name ProcedureGroup
Mandatory **SingleChoice**: the code only.

Indicate the procedure group. CABG: Coronary artery bypass graft.

1 - CABG alone

2 - CABG & valve

3 - CABG & valve & other (cardiac)

4 - CABG & other (cardiac)

5 - Valve alone

6 - Valve and other (cardiac)

7 - Other (cardiac)

Other cardiac procedures - Left ventricular aneurysm repair.

Column name OtherCardiacProcedures_LVAR
Mandatory **SingleChoice**: the code only.

Indicate if the patient underwent Left ventricular aneurysm repair.

0 - No

1 - Yes

Other cardiac procedures - Ventricular septal defect repair

Column name OtherCardiacProcedures_VSD

Indicate if the patient underwent Ventricular septal defect repair.

Mandatory **SingleChoice**: the code only.
0 - No

1 – Yes

Other cardiac procedures - Atrial septal defect repair

Column name OtherCardiacProcedures_ASD
Mandatory **SingleChoice**: the code only.

Indicate if the patient underwent Atrial septal defect repair.

0 - No

1 – Yes

Other cardiac procedures - Surgical Ventricular Restoration

Column name OtherCardiacProcedures_SVR
Mandatory **SingleChoice**: the code only.

Indicate if the patient underwent Surgical Ventricular Restoration.

0 - No

1 – Yes

Other cardiac procedures – Congenital

Column name OtherCardiacProcedures_cong
Mandatory **SingleChoice**: the code only.

Indicate if the patient underwent Congenital cardiac surgery.

Exclude atrial septal defect (ASD) and ventricular septal defect (VSD) repair.

0 - No

1 – Yes

Other cardiac procedures - Cardiac trauma

Column name OtherCardiacProcedures_trauma
Mandatory **SingleChoice**: the code only.

Indicate if the patient underwent surgery for cardiac trauma.

0 - No

1 – Yes

Other cardiac procedures - Cardiac transplant

Column name OtherCardiacProcedures_htx
Mandatory **SingleChoice**: the code only.

Indicate if the patient underwent a cardiac transplant.

0 - No

1 – Yes

Other cardiac procedures - Permanent pacemaker

Column name OtherCardiacProcedures_pace
Mandatory **SingleChoice**: the code only.

Indicate if the patient underwent planned pacemaker implant.

0 - No

1 – Yes

Other cardiac procedures – AICD

Column name OtherCardiacProcedures_AICD
Mandatory **SingleChoice**: the code only.

Indicate if the patient underwent planned Automatic Implantable Cardioverter-Defibrillator (AICD) implant.

0 - No

1 – Yes

Other cardiac procedures - AF ablation surgery

Column name OtherCardiacProcedures_ablation
Mandatory **SingleChoice**: the code only.

Indicate if the patient underwent AF ablation surgery.

0 - No

1 – Yes

Other cardiac procedures - Surgery on thoracic aorta

Column name OtherCardiacProcedures_thor_aorta
Mandatory **SingleChoice**: the code only.

Indicate if the patient underwent surgery on thoracic aorta.

0 - No

1 – Yes

Other cardiac procedures - Other procedure not listed above

Column name OtherCardiacProcedures_other
Mandatory **SingleChoice**: the code only.

Indicate if the patient underwent another cardiac procedure not listed above.

0 - No

1 – Yes

Non-cardiac procedure - Surgery on the abdominal aorta

Column name OtherNonCardiacProcedures_abdom
Essential **SingleChoice**: the code only.

Indicate if the patient underwent concomitant surgery on the abdominal aorta.

0 - No

1 – Yes

Non-cardiac procedure - Carotid endarterectomy

Column name OtherNonCardiacProcedures_carotid
Essential **SingleChoice**: the code only.

Indicate if the patient underwent concomitant carotid endarterectomy.

0 - No

1 – Yes

Non-cardiac procedure - Other thoracic surgery

Column name OtherNonCardiacProcedures_oth_thorac
Essential **SingleChoice**: the code only.

Indicate if the patient underwent other concomitant thoracic surgery.

0 - No

1 – Yes

Non-cardiac procedure - Other vascular surgery

Column name OtherNonCardiacProcedures_oth_vasc
Essential **SingleChoice**: the code only.

Indicate if the patient underwent other concomitant vascular surgery.

0 - No

1 – Yes

Segments of the aorta treated - Root

Column name SegmentsOfTheAortaTreated_root
Mandatory **SingleChoice**: the code only.

Indicate if the patient underwent surgery on the aortic root.

0 - No

1 – Yes

Segments of the aorta treated – Ascending

Column name SegmentsOfTheAortaTreated_asc
Mandatory **SingleChoice**: the code only.

Indicate if the patient underwent surgery on the ascending aorta.

0 - No

1 – Yes

Segments of the aorta treated - Arch

Column name SegmentsOfTheAortaTreated_arch
Mandatory **SingleChoice**: the code only.

Indicate if the patient underwent surgery on the aortic arch.

0 - No

1 – Yes

Segments of the aorta treated - Descending

Column name SegmentsOfTheAortaTreated_desc
Mandatory **SingleChoice**: the code only.

Indicate if the patient underwent surgery on the descending aorta

0 - No

1 – Yes

Aortic root procedure

Column name AoRootProc
Essential **SingleChoice**: the code only.

Indicate which aortic root procedure was performed. (AVR: Aortic valve replacement, VSRR: Valve sparing root replacement, PEARS: Personalized external aortic root support.)

0 - None

1 - Replacement with AVR

2 - VSRR - reimplantation (David)

3 - VSRR - Root-remodelling (Yacoub)

4 - Only excluding non-coronary sinus (partial-Yacoub)

5 - PEARS

6 - Other

-1 – Unknown

Ascending aortic procedure

Column name AoAscProc
Essential **SingleChoice**: the code only.

Indicate which ascending aortic procedure was performed.

0 - None

1 - Replacement

2 - Reduction arterioplasty (RAA)

3 - PEARS

4 - Other

-1 – Unknown

Aortic arch procedure

Column name AorArchProc
Essential **SingleChoice**: the code only.

Indicate which aortic arch procedure was performed. TEVAR: Thoracic endovascular aortic replacement.

0 - None

1 - Open distal anastomosis

2 - Hemi-arch replacement (Zone 0)

3 - Partial arch replacement (1-2 branches reimplanted, Zone 0,1,2)

4 - Total arch replacement, island technique (Zone 0,1,2,3)

5 - Total arch replacement, selective reimplantation (Zone 0,1,2,3)

6 - Total arch replacement, technique unknown (Zone 0,1,2,3)

7 - Dissection stent

8 - Only debranching

9 - TEVAR

10 - TEVAR and debranching

11 – Other

-1 – Unknown

Aortic descending procedure

Column name AoDescProc
Essential **SingleChoice**: the code only.

Indicate which descending aortic procedure was performed. TEVAR: Thoracic endovascular aortic replacement.

0 - None

1 - Elephant Trunk (free-floating graft)

2 - Frozen elephant trunk

3 - Replacement, only thoracic

4 - Replacement, thoracic-abdominal

5 - TEVAR

6 - Other

-1 – Unknown

Number of treated aortic arch branches

Column name NumArchBranch
Optional **Integer:** enter a whole number

Indicate the number of treated aortic arch branches.

Please note -99 for not applicable and -1 for unknown.

Aortic root enlargement

Column name AorticRootEnlargement
Essential **SingleChoice**: the code only.

Indicate if aortic root/ annulus enlargement was performed.

0 - No

1 – Yes

-1 – Unknown

Type of thoracic Aortic Procedure

Column name TypeofThorAorticProcedure
Optional **SingleChoice**: the code only.

Indicate the type of thoracic aortic procedure.

0 - None

1 - Open surgery

2 - TEVAR

3 - Combination open and TEVAR

Type of abdominal Aortic Procedure

Column name TypeAbdoAorticProcedure
Optional **SingleChoice**: the code only.

Indicate the type of abdominal aortic procedure (old).

0 - None

1 - Open surgery

2 - Single EVAR

3 - Complex EVAR

4 - Combination open and EVAR

Aortic procedure - Interposition tube graft

Column name AorticProcedure_tube
Optional **SingleChoice**: the code only.

Indicate if an interposition tube graft was inserted during the surgery (old).

Exclude: composite grafts (valve + graft, bentall), or valve graft with valve reimplantation/root remodelling (david/yacoub).

0 - No

1 - Yes

Aortic procedure - Root replacement (composite valve graft & coronary reimplantation)

Column name AorticProcedure_composite_graft
Optional **SingleChoice**: the code only.

Indicate if a root replacement with composite valve graft was performed during the surgery (e.g. Bentall procedure) (old).

Both commercially available composite valve grafts and surgically fashioned composite graft + aortic valve prosthesis can be included. Please note that in this case aortic valve treatment and aortic valve implantation should also be checked.

0 - No

1 - Yes

Aortic procedure - Root replacement (preservation native valve & coronary reimplantation)

Column name AorticProcedure_root_replacement
Optional **SingleChoice**: the code only.

Indicate if a valve sparing root replacement (VSRR) was used during surgery (old).

Please note that in this case aortic valve repair should also be checked.

0 - No

1 – Yes

Aortic procedure - Homograft root replacement

Column name AorticProcedure_homo
Optional **SingleChoice**: the code only.

Indicate if a homograft root replacement was used during surgery (old).

Please note that aortic valve replacement should also be checked.

0 - No

1 – Yes

Aortic procedure - Ross procedure

Column name AorticProcedure_ross
Optional **SingleChoice**: the code only.

Indicate if a ross procedure use performed (old).

Please note that aortic valve replacement and pulmonary valve replaced should also be checked.

0 - No

1 – Yes

Aortic procedure - Aortic patch graft

Column name AorticProcedure_patch
Optional **SingleChoice**: the code only.

Indicate if an aortic patch graft was used during surgery (old).

0 - No

1 – Yes

Aortic procedure - Sinus of valsalva repair

Column name AorticProcedure_sinus
Optional **SingleChoice**: the code only.

Indicate if a sinus of valsalva repair was performed (old).

0 - No

1 - Yes

Aortic procedure - Reduction aortoplasty

Column name AorticProcedure_reductionplast
Optional **SingleChoice**: the code only.

Indicate if a reduction aortoplasty was performed (old).

0 - No

1 - Yes

Aortic procedure – Other

Column name AorticProcedure_other
Optional **SingleChoice**: the code only.

Indicate if another thoracic aortic procedure was performed (old).

0 - No

1 - Yes

Coronary surgery

CABG targets - Main LAD

Column name Target_LAD
Essential **SingleChoice**: the code only.

Indicate if the left anterior descending (LAD) was one of the conduit targets.

0 - No

1 - Yes

-1 - Unknown

-99 - Not applicable

CABG targets - Main RCA

Column name Target_RCA
Essential **SingleChoice**: the code only.

Indicate if the main right coronary artery (RCA) was one of the conduit targets.

0 - No

1 - Yes

-1 - Unknown

-99 - Not applicable

CABG targets - LAD branches

Column name Target_LADbranch
Essential **SingleChoice**: the code only.

Indicate if the left anterior descending (LAD) branches was one of the conduit targets.

0 - No

1 - Yes

-1 - Unknown

-99 - Not applicable

CABG targets - RCA branches

Column name Target_RCAbranch
Essential **SingleChoice**: the code only.

Indicate if the right coronary artery (RCA) branches was one of the conduit targets.

0 - No

1 - Yes

-1 - Unknown

-99 - Not applicable

CABG targets - Circumflex branches

Column name Target_Cxbranch
Essential **SingleChoice**: the code only.

Indicate if the circumflex branches was one of the conduit targets.

0 - No

1 - Yes

-1 - Unknown

-99 - Not applicable

Distal Coronary Anastomosis (DCAs) - number of arterial conduits

Column name DCAsNoatratialConduits
Essential **Integer:** enter a whole number

Indicate the number of distal coronary anastomosis.

Please note -99 for not applicable and -1 for unknown

DCAs - number of venous conduits

Column name DCAsNoVenousConduits
Essential **Integer:** enter a whole number

Indicate the number of venous conduits.

Please note -99 for not applicable and -1 for unknown.

Conduits used as grafts - Right IMA

Column name Conduits_rightIMA
Essential **SingleChoice**: the code only.

Indicate if the right Internal mammary artery (IMA) was used as conduit.

0 - No

1 - Yes

-1 - Unknown

-99 - Not applicable

Conduits used as grafts - Left IMA

Column name Conduits_leftIMA
Essential **SingleChoice**: the code only.

Indicate if the left Internal mammary artery (IMA) was used as conduit.

0 - No

1 - Yes

-1 - Unknown

-99 - Not applicable

Conduits used as grafts – Radial

Column name Conduits_radial
Essential **SingleChoice**: the code only.

Indicate if the radial artery was used as conduit

0 - No

1 - Yes

-1 - Unknown

-99 - Not applicable

Conduits used as grafts - Long/great SV

Column name Conduits_longSV
Essential **SingleChoice**: the code only.

Indicate if the long/great Saphenous vein (SV) was used as conduit.

0 - No

1 - Yes

-1 - Unknown

-99 - Not applicable

Conduits used as grafts - Short/small SV

Column name Conduits_shortSV
Essential **SingleChoice**: the code only.

Indicate if the short/small Saphenous vein (SV) was used as conduit.

0 - No

1 - Yes

-1 - Unknown

-99 - Not applicable

Conduits used as grafts - Other

Column name Conduits_other
Essential **SingleChoice**: the code only.

Indicate if other conduits (e.g. Gastroepiploic artery (GEA)) were used.

0 - No

1 - Yes

-1 - Unknown

-99 - Not applicable

Target of LIMA (in situ)

Column name LIMA_target
Essential **SingleChoice**: the code only.

Target of distal anastomosis of LIMA. LIMA: Left internal mammary artery, LAD: left anterior descending artery.

1 - LIMA to LAD

2 - LIMA to other branches

-1 - Unknown

-99 - Not applicable

Target of RIMA (in situ)

Column name RIMA_target
Essential **SingleChoice**: the code only.

Target of distal anastomosis of RIMA. RIMA: Right internal mammary artery, LAD: left anterior descending artery.

1 - RIMA to LAD

2 - RIMA to other branches

-1 - Unknown

-99 - Not applicable

Valve surgery

Aortic Valve treated

Column name AV_Treat
Mandatory **SingleChoice**: the code only.

Indicate if the aortic valve was treated.

0 - No

1 - Yes

Mitral Valve treated

Column name MV_Treat
Mandatory **SingleChoice**: the code only.

Indicate if the mitral valve was treated.

0 - No

1 - Yes

Tricuspid Valve treated

Column name TV_Treat
Mandatory **SingleChoice**: the code only.

Indicate if the tricuspid valve was treated.

0 - No

1 - Yes

Pulmonary Valve treated

Column name PV_Treat
Mandatory **SingleChoice**: the code only.

Indicate if the pulmonary valve was treated.

0 - No

1 - Yes

Aortic valve indication for valve surgery

Column name AV_Indication
Essential **SingleChoice**: the code only.

Indicate the primary indication for aortic valve surgery.

1 - Stenosis

2 - Regurgitation

3 - Mixed stenosis/regurgitation

4 - Aneurysm

5 - Active Endocarditis

6 - Reoperation

7 - Other

-1 - Unknown

-99 - Not applicable

Aortic valve explant type

Column name AV_ExplantType
Essential **SingleChoice**: the code only.

Indicate which type of valve was explanted.

0 - Native valve

1 - Mechanical

2 - Biological

3 - Homograft

4 - Autograft

5 - Ring

-99 - Not applicable

Aortic valve native valve pathology

Column name AV_NativePath
Essential **SingleChoice**: the code only.

Indicate the native valve pathology.

0 - Native valve not present

1 - Bicuspid valve

2 - Other congenital

3 - Degenerative

4 - Active infective endocarditis

5 - Previous infective endocarditis

6 - Rheumatic

7 - Supravalvular Aortic Stenosis

8 - Primary aortic pathology

9 - LV Outflow Tract Pathology

10 - Other native valve pathology

-1 - Unknown

-99 - Not applicable

Aortic valve reason for repeat valve surgery

Column name AV_ReasonRepeatSurg
Essential **SingleChoice**: the code only.

Indicate the reason for repeat valve surgery.

1 - Valve Thrombosis/embolism

2 - Non-structural valve dysfunction (NSVD)

3 - Infection/prosthetic valve endocarditis

4 - Intrinsic failure (SVD)

5 - Haemolysis

6 - Failure of previous valve repair

7 - Patient wish

8 - Other reason

-1 - Unknown

-99 - Not applicable

Aortic valve procedure

Column name AV_Procedure
Mandatory **SingleChoice**: the code only.

Indicate the type of surgical aortic valve procedure.

1 - Replacement

2 - Repair

-99 - Not applicable

Aortic valve repair annuloplasty

Column name AV_RepairType_anp
Essential **SingleChoice**: the code only.

Indicate the type of aortic valve repair.

0 - Not done

1 - External Suture Annuloplasty

2 - Ring annuloplasty External Ring

3 - Ring annuloplasty Internal Ring

4 - Commissural suture annuloplasty

5 - Yes, technique unknown

-1 - Unknown

-99 - Not applicable

Aortic valve repair leaflet

Column name AV_RepairType_leaflet
Essential **SingleChoice**: the code only.

Indicate the if any leaflet repair was applied.

Leaflet repair includes: plication, leaflet resection suture, division of fused leaflet raphe, leaflet pericardial patch, shaving, debridement, nodular release, pannus/thrombus removal, leaflet free edge reinforcement, Leaflet commissural resuspension suture. If this was in combination with root aortic ascending surgery, please indicate this also in variable AoRootProc.

0 - No

1 – Yes

-1 - Unknown

-99 - Not applicable

Aortic valve implant type

Column name AV_ImplantType
Mandatory **SingleChoice**: the code only.

Indicate which type of implant was used in the aortic valve replacement.

If the prosthesis was from a composite graft and prosthesis (Bentall) or Ross procedure, please also indicate AoRootProc.

1 - Mechanical

2 - Biological

3 - Homograft

4 - Autograft

5 - Other

-99 - Not applicable

Aortic valve implant code

Column name AV_ImplantCode
Optional **SingleChoice**: the code only. See table **IMP** in the Data Specification document.

Indicate the implant code; for implant codes please see table in the specification document.

Aortic valve Implant code UDI

Column name AV_ImplantCodeOther
Optional **String**

Indicate the Unique device identification (UDI) code of the implanted device.

Aortic valve prosthesis / ring size

Column name AV_Size
Optional **Integer:** enter a whole number

Indicate the size (mm) of the implanted ring or prosthesis.

Please note -99 for not applicable and -1 for unknown.

Mitral valve indication for valve surgery

Column name MV_Indication
Essential **SingleChoice**: the code only.

Indicate the primary indication for mitral valve surgery.

1 - Stenosis

2 - Regurgitation, unspecified

3 - Regurgitation, primary

4 - Regurgitation, secondary

5 - Mixed stenosis/regurgitation

6 - Active Endocarditis

7 - Reoperation

8 - Other

-1 - Unknown

-99 - Not applicable

Mitral valve explant type

Column name MV_ExplantType
Essential **SingleChoice**: the code only.

Indicate which type of valve was explanted.

0 - Native valve

1 - Mechanical

2 - Biological

3 - Homograft

4 - Autograft

5 - Ring

-1 - Unknown

-99 - Not applicable

Mitral valve native valve pathology

Column name MV_NativePath
Essential **SingleChoice**: the code only.

Indicate the native valve pathology.

0 - Native valve not present

1 - Congenital

2 - Degenerative

3 - Active infective endocarditis

4 - Previous infective endocarditis

5 - Rheumatic

6 - Ischaemic

7 - HCOM

8 - Non-ischemic cardiomyopathy

9 - Pure annulus dilation

10 - Carcinoid

11 - Tumour

12 - Other native valve pathology

-1 - Unknown

-99 - Not applicable

Mitral valve reason for repeat valve surgery

Column name MV_ReasonRepeatSurg
Essential **SingleChoice**: the code only.

Indicate the reason for repeat valve surgery.

1 - Valve Thrombosis/embolism

2 - Non-structural valve dysfunction (NSVD)

3 - Infection/prosthetic valve endocarditis

4 - Intrinsic failure (SVD)

5 - Haemolysis

6 - Failure of previous valve repair

7 - Patient wish

8 - Other reason

-1 - Unknown

-99 - Not applicable

Mitral valve procedure

Column name MV_Procedure
Mandatory **SingleChoice**: the code only.

Indicate the type of surgical mitral valve procedure.

1 - Replacement

2 - Repair

-99 - Not applicable

Mitral valve repair annuloplasty

Column name MV_RepairType_ann
Essential **SingleChoice**: the code only.

Indicate if mitral valve repair annuloplasty was performed.

0 - Not done

1 - Annuloplasty with ring

2 - Annuloplasty without ring

-1 - Unknown

-99 - Not applicable

Mitral valve repair leaflet

Column name MV_repairtype_leaflet
Essential **SingleChoice**: the code only.

Indicate if a leaflet repair type was performed.

Leaflet repairs includes: resection, plication, extensions/replacement patch, edge to edge repair, cleft repair, pannus/thrombus removal.

0 - No

1 – Yes

-1 - Unknown

-99 - Not applicable

Mitral valve repair subannular

Column name MV_repairtype_subann
Essential **SingleChoice**: the code only.

Indicate if a subannular repair type was performed.

Subannular repair includes: Neochords and chordal transfer.

0 - No

1 - Yes

-1 - Unknown

-99 - Not applicable

Mitral valve repair commissural

Column name MV_repairtype_commisural
Essential **SingleChoice**: the code only.

Indicate of the mitral commissural repair was performed.

Commissural repair includes: commissurotomy, commissuroplasty.

0 - No

1 - Yes

-1 - Unknown

-99 - Not applicable

Mitral valve implant type

Column name MV_ImplantType
Mandatory **SingleChoice**: the code only.

Indicate which type of implant was used in the mitral valve replacement.

1 - Mechanical

2 - Biological

3 - Homograft

4 - Autograft

5 - Other

-99 - Not applicable

Mitral valve implant code

Column name MV_ImplantCode
Optional **SingleChoice**: the code only.

Indicate the implant code; for implant codes please see table.

See IMP table

Mitral valve Implant code UDI

Column name MV_ImplantCodeUDI
Optional **String**

Indicate the Unique device identification (UDI) code of the implanted device.

Mitral valve prosthesis / ring size

Column name MV_Size
Optional **Integer:** enter a whole number

Indicate the size (mm) of the implanted ring or prosthesis.

Please note -99 for not applicable and -1 for unknown.

Tricuspid valve indication for valve surgery

Column name TV_Indication
Essential **SingleChoice**: the code only.

Indicate the primary indication for tricuspid valve surgery.

1 - Stenosis

2 - Regurgitation, unspecified

3 - Regurgitation, primary

4 - Regurgitation, secondary

5 - Mixed regurgitation/stenosis

6 - Annular dilation with no regurgitation

7 - Active Endocarditis

8 - Reoperation

9 - Other

-1 - Unknown

-99 - Not applicable

Tricuspid valve explant type

Column name TV_ExplantType
Essential **SingleChoice**: the code only.

Indicate which type of valve was explanted.

0 - Native valve

1 - Mechanical

2 - Biological

3 - Homograft

4 - Autograft

5 - Ring

-1 - Unknown

-99 - Not applicable

Tricuspid valve native valve pathology

Column name TV_NativePath
Essential **SingleChoice**: the code only.

Indicate the native valve pathology.

0 - Native valve not present

1 - Congenital

2 - Degenerative

3 - Active infective endocarditis

4 - Previous infective endocarditis

5 - Rheumatic

6 - Functional / secondary

7 - Carcinoid

8 - Tumour

9 - Pacemaker wire induced

10 - Other native valve pathology

-1 - Unknown

-99 - Not applicable

Tricuspid valve reason for repeat valve surgery

Column name TV_ReasonRepeatSurg
Essential **SingleChoice**: the code only.

Indicate the reason for repeat valve surgery.

1 - Valve Thrombosis/embolism

2 - Non-structural valve dysfunction (NSVD)

3 - Infection/prosthetic valve endocarditis

4 - Intrinsic failure (SVD)

5 - Haemolysis

6 - Failure of previous valve repair

7 - Patient wish

8 - Other reason

-1 - Unknown

-99 - Not applicable

Tricuspid valve procedure

Column name TV_Procedure
Mandatory **SingleChoice**: the code only.

Indicate the type of surgical tricuspid valve procedure.

1 - Replacement

2 - Repair

-99 - Not applicable

Tricuspid valve repair annuloplasty

Column name TV_RepairType_ann
Essential **SingleChoice**: the code only.

Indicate the type of tricuspid annuloplasty.

0 - Not done

1 - Annuloplasty including ring/band

2 - Suture annuloplasty

-1 - Unknown

-99 - Not applicable

Tricuspid valve repair leaflets

Column name TV_repairType_leaflet
Essential **SingleChoice**: the code only.

Indicate if leaflet repair of the tricuspid valve was performed.

Leaflet repair includes: resection, pannus/thrombosis removal.

0 - No

1 – Yes

-1 - Unknown

-99 - Not applicable

Tricuspid valve implant type

Column name TV_ImplantType
Mandatory **SingleChoice**: the code only.

Indicate which type of implant was inserted.

1 - Mechanical

2 - Biological

3 - Homograft

4 - Autograft

5 - Other

-99 - Not applicable

Tricuspid valve implant code

Column name TV_ImplantCode
Optional **SingleChoice**: the code only.

Indicate the implant code; for implant codes please see table.

See IMP table.

Tricuspid valve Implant code UDI

Column name TV_ImplantCodeUDI
Optional **String**

Indicate the Unique device identification (UDI) code of the implanted device.

Tricuspid valve prosthesis / ring size

Column name TV_Size
Optional **Integer:** enter a whole number

Indicate the size (mm) of the implanted ring or prosthesis.

Please note -99 for not applicable and -1 for unknown.

Pulmonary valve indication for valve surgery

Column name PV_Indication
Essential **SingleChoice**: the code only.

Indicate the primary indication for pulmonary valve surgery.

1 - Stenosis

2 - Regurgitation

3 - Mixed stenosis / regurgitation

4 - Active Endocarditis

5 - Reoperation

6 - Other

-1 - Unknown

-99 - Not applicable

Pulmonary valve explant type

Column name PV_ExplantType
Essential **SingleChoice**: the code only.

Indicate which type of valve was explanted.

0 - Native valve

1 - Mechanical

2 - Biological

3 - Homograft

4 - Autograft

5 - Ring

-1 - Unknown

-99 - Not applicable

Pulmonary valve native valve pathology

Column name PV_NativePath
Essential **SingleChoice**: the code only.

Indicate the native valve pathology.

0 - Native valve not present

1 - Congenital

2 - Degenerative

3 - Active infective endocarditis

4 - Previous infective endocarditis

5 - Rheumatic

6 - Other native valve pathology

-1 - Unknown

-99 - Not applicable

Pulmonary valve reason for repeat valve surgery

Column name PV_ReasonRepeatSurg
Essential **SingleChoice**: the code only.

Indicate the reason for repeat valve surgery.

1 - Valve Thrombosis/embolism

2 - Non-structural valve dysfunction (NSVD)

3 - Infection/prosthetic valve endocarditis

4 - Intrinsic failure (SVD)

5 - Haemolysis

6 - Failure of previous valve repair

7 - Patient wish

8 - Other reason

-1 - Unknown

-99 - Not applicable

Pulmonary valve procedure

Column name PV_Procedure
Mandatory **SingleChoice**: the code only.

Indicate the type of surgical pulmonary valve procedure.

1 - Replacement

2 - Repair

-99 - Not applicable

Pulmonary valve repair leaflet

Column name PV_RepairType_leaflet
Essential **SingleChoice**: the code only.

Indicate the type of surgical pulmonary valve repair.

0 - Not done

1 - leaflet repair (including pannus removal)

2 - Valvectomy

-1 - Unknown

-99 - Not applicable

Pulmonary valve implant type

Column name PV_ImplantType
Mandatory **SingleChoice**: the code only.

Indicate the type of implant.

Other includes surgeon fashioned valve implant.

1 - Mechanical

2 - Biological

3 - Homograft

4 - Autograft

5 - Other

-99 - Not applicable

Pulmonary valve implant code

Column name PV_ImplantCode
Optional **SingleChoice**: the code only.

Indicate the implant code; for implant codes please see table.

See IMP table.

Pulmonary valve Implant code other

Column name PV_ImplantCodeOther
Optional **String**

Indicate the UDI code of the implanted device.

Pulmonary valve prosthesis

Column name PV_Size
Optional **Integer:** enter a whole number

Indicate the size (mm) of the implanted prosthesis.

Please note -99 for not applicable and -1 for unknown.

Perfusion and myocardial protection

Cardio-pulmonary bypass

Column name CPB
Essential **SingleChoice**: the code only.

Indicate if cardiopulmonary bypass was used.

0 - No

1 - Yes (planned)

2 - Yes (conversion from off-pump)

3 - Yes (unspecified)

-1 - Unknown

Predominant form of myocardial protection

Column name PredominantFormOfMyocardialProtection
Essential **SingleChoice**: the code only.

Indicate the predominant form of myocardial protection.

1 - Cardioplegic

2 - Non-cardioplegic

-1 - Unknown

Cardioplegia - solution

Column name CardioplegiaSolution
Essential **SingleChoice**: the code only.

Indicate the cardioplegia solution.

1 - Blood

2 - Crystalloid

-1 - Unknown

-99 - Not applicable

Cardioplegia - temperature warm

Column name CardioplegiaTemp_warm
Essential **SingleChoice**: the code only.

Indicate if warm cardioplegia was used.

0 - No

1 - Yes

-1 - Unknown

-99 - Not applicable

Cardioplegia - temperature Cold

Column name CardioplegiaTemp_cold
Essential **SingleChoice**: the code only.

Indicate if cold cardioplegia was used.

0 - No

1 – Yes

-1 - Unknown

-99 - Not applicable

Cardioplegia - antegrade infusion mode

Column name CardioplegiaInfusion_ant
Optional **SingleChoice**: the code only.

Indicate if antegrade cardioplegia infusion was used.

0 - No

1 – Yes

-1 - Unknown

-99 - Not applicable

Cardioplegia - retrograde infusion mode

Column name CardioplegiaInfusion_retro
Optional **SingleChoice**: the code only.

Indicate if retrograde cardioplegia infusion was used.

0 - No

1 – Yes

-1 - Unknown

-99 - Not applicable

Cardioplegia - timing

Column name CardioplegiaTiming
Essential **SingleChoice**: the code only.

Indicate the timing of cardioplegia administration.

1 - Continuous

2 - Intermittent

-1 - Unknown

-99 - Not applicable

Non-cardioplegia myocardial protection

Column name NonCardioplegiaMyocardialProtection
Essential **SingleChoice**: the code only.

Indicate which forms of non-cardioplegia myocardial protection was used.

1 - Fibrillation with perfusion

2 - Cross-clamp and beating heart

3 - Aortic cross-clamp

4 - Cross-clamp with direct coronary perfusion

5 - Beating heart without cross-clamp

-1 - Unknown

-99 - Not applicable

Selective cerebral perfusion

Column name CerbralPerf
Optional **SingleChoice**: the code only.

Indicate if selective cerebral perfusion was used.

0 - No

1 - Antegrade, left

2 - Antegrade, right

3 - Antegrade, both sides

4 - Antegrade, sides unknown

5 - Retrograde

-1 - Unknown

-99 - Not applicable

Cerebral perfusion time

Column name CerbralPerfTime
Optional **Integer:** enter a whole number

Indicate how long (minutes) cerebral perfusion was used.

Please note -99 for not applicable and -1 for unknown.

Intra-aortic balloon pump used - pre operative

Column name IABP_pre
Essential **SingleChoice**: the code only.

Indicate if an intra-aortic balloon pump (IABP) was used preoperatively.

0 - No

1 - Yes

-1 - Unknown

Intra-aortic balloon pump used - intra operative

Column name IABP_intra
Essential **SingleChoice**: the code only.

Indicate if an intra-aortic balloon pump (IABP) was used intraoperatively.

0 - No

1 - Yes

-1 - Unknown

Intra-aortic balloon pump used - post operative

Column name IABP_post
Essential **SingleChoice**: the code only.

Indicate if an intra-aortic balloon pump (IABP) was used postoperatively.

0 - No

1 - Yes

-1 - Unknown

Extracorporeal Life Support (Veno-Arterial ECMO/ECLS) - pre operative

Column name ECMO_pre
Essential **SingleChoice**: the code only.

Indicate if Extracorporeal membrane oxygenation (ECMO)/ ExtraCorporeal Life Support (ECLS) was used preoperatively.

0 - No

1 - Yes

-1 - Unknown

Extracorporeal Life Support (Veno-Arterial ECMO/ECLS) - intra operative

Column name ECMO_intra
Essential **SingleChoice**: the code only.

Indicate if Extracorporeal membrane oxygenation (ECMO)/ ExtraCorporeal Life Support (ECLS) was used intraoperatively.

0 - No

1 - Yes

-1 - Unknown

Extracorporeal Life Support (Veno-Arterial ECMO/ECLS) - post operative

Column name ECMO_post
Essential **SingleChoice**: the code only.

Indicate if Extracorporeal membrane oxygenation (ECMO)/ ExtraCorporeal Life Support (ECLS) was used postoperatively.

0 - No

1 - Yes

-1 - Unknown

Ventricular Assist Device used - pre operative

Column name VAD_pre
Essential **SingleChoice**: the code only.

Indicate if Ventricular assist device (VAD) was used preoperatively.

0 - No

1 - Yes

-1 - Unknown

Ventricular Assist Device used - intra operative

Column name VAD_intra
Essential **SingleChoice**: the code only.

Indicate if Ventricular assist device (VAD) was used intraoperatively.

0 - No

1 - Yes

-1 - Unknown

Ventricular Assist Device used - post operative

Column name VAD_post
Essential **SingleChoice**: the code only.

Indicate if Ventricular assist device (VAD) was used postoperatively.

0 - No

1 - Yes

-1 - Unknown

Bypass time

Column name BypassTime
Essential **Integer:** enter a whole number

Indicate the length of Bypass time (minutes); if used.

Please note -99 for not applicable and -1 for unknown.

Cumulative cross-clamp time

Column name CumulativeCrossClamp
Essential **Integer:** enter a whole number

Indicate the cumulative cross clamp time (minutes).

Please note -99 for not applicable and -1 for unknown.

Circulatory arrest time

Column name TotalCirculatoryArrestTime
Essential **Integer:** enter a whole number

Indicate the cumulative circulatory arrest time (minutes).

Please note -99 for not applicable and -1 for unknown.

Surgical access - Full median sternotomy

Column name Access_FullSternotomy
Essential **SingleChoice**: the code only.

Indicate if a full median sternotomy was used during this surgery.

Also indicate yes if a conversion to this access site took place during surgery after another initial access site.

0 - No

1 - Yes

-1 - Unknown

Surgical access - Partial sternotomy

Column name Access_PartialSternotomy
Essential **SingleChoice**: the code only.

Indicate if a partial sternotomy was used during this surgery.

Partial sternotomy: include J, T, inverted J and T sternotomy. Also indicate yes if a conversion to this access site took place during surgery after another initial access site.

0 - No

1 - Yes

-1 - Unknown

Surgical access - Thoracotomy

Column name Access_Thoracotomy
Essential **SingleChoice**: the code only.

Indicate if a thoracotomy access was used during this surgery.

Also indicate yes if a conversion to this access site took place during surgery after another initial access site.

0 - No

1 - Yes

-1 - Unknown

Surgical access - Mini-thoracotomy

Column name Access_miniThoracotomy
Essential **SingleChoice**: the code only.

Indicate if a mini thoracotomy was used during this surgery.

Mini thoracotomy: skin incision ≤ 10 cm. Also indicate yes if a conversion to this access site took place during surgery after another initial access site.

0 - No

1 - Yes

-1 - Unknown

Surgical access - Other

Column name Access_Other
Essential **SingleChoice**: the code only.

Indicate if an other access site was used than full/partial sternotomy or (mini) thoracotomy.

Also indicate yes if a conversion to this access site took place during surgery after another initial access site.

0 - No

1 - Yes

-1 - Unknown

Arterial cannulation site - Ascending aorta/Arch

Column name CannulationSite_AscArch
Essential **SingleChoice**: the code only.

Indicate if arterial cannulation site at ascending aorta / branches.

0 - No

1 - Yes

-1 - Unknown

-99 - Not applicable

Arterial cannulation site – Axillary

Column name CannulationSite_Axi
Essential **SingleChoice**: the code only.

Indicate if arterial cannulation site at ascending axillary.

0 - No

1 - Yes

-1 - Unknown

-99 - Not applicable

Arterial cannulation site - Arch branches

Column name CannulationSite_ArchBranch
Essential **SingleChoice**: the code only.

Indicate if arterial cannulation site at arch branches.

0 - No

1 - Yes

-1 - Unknown

-99 - Not applicable

Arterial cannulation site - Femoral

Column name CannulationSite_Femoral
Essential **SingleChoice**: the code only.

Indicate if arterial cannulation site at femoral arteries.

0 - No

1 - Yes

-1 - Unknown

-99 - Not applicable

Arterial cannulation site - Others

Column name CannulationSite_Other_ART
Essential **SingleChoice**: the code only.

Indicate if arterial cannulation site at other arteries.

0 - No

1 - Yes

-1 - Unknown

-99 - Not applicable

Venous cannulation site - Right atrium

Column name CannulationSite_RA
Essential **SingleChoice**: the code only.

Indicate if venous cannulation site at right atrium.

0 - No

1 - Yes

-1 - Unknown

-99 - Not applicable

Venous cannulation site - Bicaval

Column name CannulationSite_Bicaval
Essential **SingleChoice**: the code only.

Indicate if venous cannulation site at bicaval vein(s).

0 - No

1 - Yes

-1 - Unknown

-99 - Not applicable

Venous cannulation site - Jugular vein

Column name CannulationSite_JV
Essential **SingleChoice**: the code only.

Indicate if venous cannulation site at jugular vein(s).

0 - No

1 - Yes

-1 - Unknown

-99 - Not applicable

Venous cannulation site - Femoral vein

Column name CannulationSite_FV
Essential **SingleChoice**: the code only.

Indicate if venous cannulation site at femoral vein(s).

0 - No

1 - Yes

-1 - Unknown

-99 - Not applicable

Venous cannulation site - Others

Column name CannulationSite_other_VEN
Essential **SingleChoice**: the code only.

Indicate if venous cannulation site at other vein(s).

0 - No

1 - Yes

-1 - Unknown

-99 - Not applicable

Outcomes

New permanent pacemaker/ICD implanted

Column name NewPostopPM
Essential **SingleChoice**: the code only.

Indicate whether patient developed a new dysrhythmia requiring insertion of a new permanent device in the postoperative period.

Include permanent pacemakers (PM), Implantable cardioverter defibrillators (ICD) and combination devices. Do not code if the patient experiences third degree block and has temporary pacemaker wires inserted, but the block resolves and the patient does not require a permanent pacemaker. Do not code if patient had preoperatively a device implanted and the device is changed during surgery.

0 - No

1 - Yes, PM

2 - Yes, ICD

3 - Yes, combination device

-1 - Unknown

Post-operative AF

Column name PostopAF
Essential **SingleChoice**: the code only.

Indicate if the patient developed new atrial flutter or fibrillation after surgery.

Indicate whether the patient experienced atrial fibrillation/flutter (AF), lasting longer than one hour, and requiring treatment (either pharmacological or DC cardioversion). Exclude patients who were in AFib at the start of surgery.

0 - No

1 - Yes

-1 - Unknown

Rhythm at discharge

Column name Rhythm_discharge
Essential **SingleChoice**: the code only.

Indicate the rhythm at discharge.

Other includes a pacemaker initiated rhythm.

0 - Sinus Rhythm

1 - Atrial fibrillation

2 - Atrial flutter

3 – Other

-1 - Unknown

AMI postop

Column name AMI_postop
Essential **SingleChoice**: the code only.

Indicate if the patient developed postoperative myocardial infarction.

Post-operative acute myocardial infarction (AMI), defined as:
New ischaemic symptoms (e.g. chest pain or shortness of breath), or new ischaemic signs (e.g. ventricular arrhythmias, new or worsening heart failure, new ST-segment changes, haemodynamic instability, new pathological Q-waves in at least two contiguous leads, imaging evidence of new loss of viable myocardium or new wall motion abnormality)
AND
Elevated cardiac biomarkers (preferable CK-MB), consisting of at least one sample post-procedure with a peak value exceeding 15× as the upper reference limit for troponin or 5× for CK-MBa. If cardiac biomarkers are increased at baseline (>99th percentile), a further increase in at least 50% post-procedure is required AND the peak value must exceed the previously stated limit.

0 - No

1 - Yes

-1 - Unknown

New CerebroVascular Event

Column name NewPostOperativeStroke
Essential **SingleChoice**: the code only.

Indicate if the patient developed a postoperative stroke or transient ischemic attack (TIA).

Indicate whether the patient has a history of cerebrovascular event, defined as an acute episode of a focal or global neurological deficit with at least one of the following:
1) change in the level of consciousness,
2) hemiplegia, hemiparesis, numbness, or sensory loss affecting one side of the body,
3) dysphasia or aphasia, hemianopia, amaurosis fugax, or other neurological signs or symptoms consistent with stroke.

Specify the type of cerebrovascular event as follows:
Stroke: duration of a focal or global neurological deficit ≥24 h; OR <24 h if available neuroimaging documents a new haemorrhage or infarct; OR the neurological deficit results in death..
TIA: duration of a focal or global neurological deficit <24 h, any variable neuroimaging does not demonstrate a new haemorrhage or infarct.

0 - None

1 - Transient Ischemic Attack (TIA)	Duration of a focal or global neurological deficit <24 h, any variable neuroimaging does not demonstrate a new haemorrhage or infarct.
2 - Stroke	Duration of a focal or global neurological deficit ≥24 h; OR <24 h if available neuroimaging documents a new haemorrhage or infarct; OR the neurological deficit results in death..

-1 - Unknown

New post-operative dialysis

Column name NewPostOperativeDialysis
Essential **SingleChoice**: the code only.

Indicate if the patient requires new post operative dialysis.

Include dialysis/Continuous Veno-Venous Hemofiltration (CVVH). Exclude patient on preoperative dialysis.

0 - No

1 - Yes

-1 - Unknown

Peak post-operative creatinine

Column name PostopPeakCreat
Optional **Integer:** enter a whole number

Indicate the peak post-operative creatinine (micromol/L).

Please note -1 for unknown.

Prolonged ventilation >48hrs

Column name ProlongedVentilation
Essential **SingleChoice**: the code only.

Indicate if the patient required >48 hours of ventilation.

The hours of postoperative ventilation time include operating room (OR) exit until extubation, plus any additional hours following reintubation.

Do not include the hours ventilated if a patient returns to the operating room suite and requires re-intubation as part of general anaesthesia but does not require ventilation beyond the time in the operating room (i.e. after OR Exit Time).

0 - No

1 - Yes

-1 - Unknown

Tracheostomy

Column name Tracheostomy
Essential **SingleChoice**: the code only.

Indicate if the patient required a tracheostomy.

0 - No

1 - Yes

-1 - Unknown

Sternal wound infection

Column name SternalWoundInfection
Essential **SingleChoice**: the code only.

Indicate if the patient developed a superficial, deep sternal wound infection or mediastinitis.

0 - No

1 - Superficial — Limited to the skin/subcutaneous tissue.

2 - Deep — Involving the muscle and/or the sternal bone.

3 – Mediastinitis — Must meet at least 1 of the following criteria:
1. Organisms cultured from mediastinal tissue or fluid obtained during an invasive procedure.
2. Evidence of mediastinitis seen during an invasive procedure or histopathologic examination.
3. Patient has at least 1 of the following signs or symptoms:
• Fever (>38°C)
• Chest pain*
• Sternal instability* and at least 1 of the following:
o Purulent discharge from mediastinal area
o Organisms cultured from blood or discharge from mediastinal area
o Mediastinal widening on imaging test.
* With no other recognized cause

-1 - Unknown

Pneumonia

Column name PostopPneumonia
Essential **SingleChoice**: the code only.

Indicate if the patient required treatment of suspected or confirmed pneumonia.

See link: https://www.cdc.gov/nhsn/pdfs/pscmanual/6pscvapcurrent.pdf

0 - No

1 - Yes

-1 - Unknown

Urinary tract infection (UTI)

Column name PostopUTI
Essential **SingleChoice**: the code only.

Indicate if the patient required treatment of suspected or confirmed urinary tract infection (UTI).

See link:
http://www.rochesterpatientsafety.com/Images_Content/Site1/Files/Pages/UTI_Treatment_Guidelines.pdf

0 - No

1 - Yes

-1 - Unknown

Sepsis

Column name PostopSepsis
Essential **SingleChoice**: the code only.

Indicate if the patient developed postoperative sepsis.

Sepsis is defined as having 2 or more of the SIRS (systemic inflammatory response syndrome) criteria AND a known or suspected infection.
SIRS criteria included:
• HR > 90 (acute and not a chronic condition)
• Temp >38.5 <36.0
• Resp >20 bpm or PaCO2 <32 mmHg
• WBC <4000 or >12000 or >10% Bands.

0 - No

1 - Yes

-1 - Unknown

Re-operation - Re-operation for graft problems

Column name Reop_graft
Essential **SingleChoice**: the code only.

Indicate if the patient required reoperation for graft problems.

Problems with the coronary artery bypass graft requiring re-intervention.

0 - No

1 - Yes

-1 - Unknown

Re-operation - Re-operation for valve problems

Column name Reop_valve
Essential **SingleChoice**: the code only.

Indicate if the patient required reoperation for valve problems.

Problems with a cardiac valve requiring re-intervention.

0 - No

1 - Yes

-1 - Unknown

Re-operation - Re-operation for bleeding or tamponade

Column name Reop_bleeding
Essential **SingleChoice**: the code only.

Indicate if the patient required reoperation for bleeding or tamponade.

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. Tamponade is a situation which occurs when there is compression or restriction placed on the heart within the chest that creates hemodynamic instability or a hypoperfused state. Do not include medically (non-operatively) treated excessive post-operative bleeding/tamponade events.

Include patients that return to an OR suite or equivalent OR environment (i.e., ICU setting) as identified by your institution, that require surgical re-intervention to investigate/correct bleeding with or without tamponade. Include only those interventions that pertain to the mediastinum or thoracic cavity.

0 - No

1 - Yes

-1 - Unknown

Re-operation - Sternal resuturing for any reason

Column name Reop_sternalresuture
Essential **SingleChoice**: the code only.

Indicate if the patient required sternal resuturing.

0 - No

1 - Yes

-1 - Unknown

Re-operation - Re-operation for other reasons.

Column name Reop_other
Essential **SingleChoice**: the code only.

Indicate if the patient required reoperation for other problems.

Any other cardiac problem not defined above requiring re-operation.

0 - No

1 - Yes

-1 - Unknown

Blood transfusion

Column name BloodTransfusion
Optional **SingleChoice**: the code only.

Indicate if the patient required blood transfusion.

Only include units of packed whole blood or units of packed red blood cells during or after surgery.

0 - None

1 - One unit

2 - 2 to 3 units

3 – >= 4 units

-1 - Unknown

Patient status at discharge

Column name PatientStatusAtDischarge
Mandatory **SingleChoice**: the code only.

Indicate the patient status at discharge.

0 - Alive

1 - Deceased

Discharge date/death date

Column name DischargeDate
Mandatory **Date:** ODBC date with format yyyy-mm-dd.

Indicate the date of discharge or death if the patient died during hospitalisation.

Discharge destination

Column name DischargeDestination
Optional **SingleChoice**: the code only.

Indicate the destination of discharge.

0 - Not applicable - patient deceased

1 - Home

2 - Convalescence / nursing home

3 - Another unit within the same hospital

4 - Another hospital

-1 - Unknown

Date of latest follow-up

Column name Datelastfup
Essential **Date:** ODBC date with format yyyy-mm-dd.

Indicate the date of last follow-up.

At least follow-up of 30 days after surgery (irrespective of patient location) is required.

Date of death (in case of death)

Column name Deathdate
Mandatory **Date:** ODBC date with format yyyy-mm-dd.

Indicate the date of death, if applicable. If not, leave empty.

Status at latest follow-up

Column name Statuslastfup
Essential **SingleChoice**: the code only.

Indicate the status of last follow-up.

At least follow-up of 30 days after surgery (irrespective of patient location) is required. Last potential date can only be date of death.

0 - Alive

1 - Deceased

Operative mortality

Column name Operativemort
Mandatory **SingleChoice**: the code only.

Indicate if the patient died during 30 days after surgery; irrespective of location.

Auto calculated if date of follow-up is >30 days and patient status at last follow-up is supplied.

0 - No

1 - Yes

Short stay (<6D)

Column name ShortStay
Essential **SingleChoice**: the code only.

Indicate if the patient was hospitalized <6 days.

Auto calculated if date of discharge is supplied; if not please supply these values.

0 - No

1 - Yes

-1 - Unknown

Long stay (>14 d)

Column name LongStay
Essential **SingleChoice**: the code only.

Indicate if the patient was hospitalized >14 days.

Auto calculated if date of discharge is supplied; if not please supply these values.

0 - No

1 - Yes

-1 - Unknown

Euroscore

Euroscore II

Column name Euroscore2
Mandatory **Double**

Indicate the EuroScore II of the patient.

Can be auto calculated if all EuroScore II variables are supplied. Please see:
https://www.euroscore.org/index.php?id=17

STS variables

Race

Column name STS_Race
Optional **SingleChoice**: the code only.

Indicate the race of the patient.

1 - White

2 - Black/African American

3 - Asian

4 - Am Indian/Alaskan

5 - Hawaiian/Pacific islander

6 - Hispanic

7 - Other

-1 - Unknown

Payor / Insurance

Column name STS_Payor
Optional **SingleChoice**: the code only.

Indicate the payor/insurance of the patient.

1 - none/self

2 - medicare

3 - medicaid

4 - commercial

5 - HMO

6 - military

7 - Non-US plan

8 - Other

-1 - Unknown

Hematocrit (%)

Column name STS_Hemtrocrit
Optional **Integer:** enter a whole number

Indicate the hematocrit of the patient closest to surgery prior anaesthesia (%).

Capture only measured hematocrit levels, not calculated values, please note -99 for not applicable and -1 for unknown.

WBC Count (10^3/µL)

Column name STS_WBC
Optional **Integer:** enter a whole number

Indicate the white blood cell count (WBC) closest to the surgery prior anaesthesia. (10^3/microliter).

Please note -99 for not applicable and -1 for unknown.

Platelet Count (cells/µL)

Column name STS_Platelet
Optional **Integer:** enter a whole number

Indicate platelet count closest to the surgery prior anaesthesia (cells/microliter).

Please note -99 for not applicable and -1 for unknown.

ACE Inhibitors/ARBs ≤ 48 hrs

Column name STS_med_ACE_ARB
Optional **SingleChoice**: the code only.

Indicate if the patient received Angiotensin-converting enzyme (ACE) inhibitors/ Angiotensin receptor blockers (ARB) <48 hours before surgery.

0 - No

1 - Yes

-1 - Unknown

Steroids < 48 hrs

Column name STS_Steroids_48
Optional **SingleChoice**: the code only.

Indicate if the patient received steroids <48 hours before surgery.

0 - No

1 - Yes

-1 - Unknown

ADP inhibitors < 5 days

Column name STS_ADP_inhib
Optional **SingleChoice**: the code only.

Indicate if the patient received Adenosine diphosphate (ADP) inhibitors <5 days before surgery.

0 - No

1 - Yes

-1 - Unknown

Family Hx of CAD

Column name STS_fam_CAD
Optional **SingleChoice**: the code only.

Indicate if the patient has a familial history of heart disease or coronary artery disease.

Indicate if the patient has any direct blood relatives (parents, siblings, children) who have had any of the following at age <55 y for male relatives or <65 y for female relatives:

1) Angina
2) Acute myocardial infarction (MI)
3) Sudden cardiac death without obvious cause
4) Coronary artery bypass grafting (CABG) surgery
5) Percutaneous coronary intervention (PCI)

0 - No

1 - Yes

-1 - Unknown

Liver disease

Column name STS_LiverDisease
Optional **SingleChoice**: the code only.

Indicate if the patient is diagnosed with liver disease.

Liver disease is defined as: a history of hepatitis B, hepatitis C, drug induced hepatitis, auto-immune hepatitis, cirrhosis, portal hypertension, esophageal varices, liver transplant, or congestive hepatopathy. Exclude non-alcoholic steatosis hepaticus (NASH) in the absence of cirrhosis.

0 - No

1 - Yes

-1 - Unknown

Mediastinal radiation

Column name STS_MediastinalRadiation
Optional **SingleChoice**: the code only.

Indicate if the patient ever received mediastinal/chest radiation.

0 - No

1 - Yes

-1 - Unknown

Unresponsive state

Column name STS_UnresponsiveState
Optional **SingleChoice**: the code only.

Indicate if the patient as a history of non-medically induced responsive state.

Unresponsive state is defined as: non-medically induced, unresponsive state within 24 hours of the time of surgery. Patient experienced complete mental unresponsiveness and no evidence of psychological or physiologically appropriate responses to stimulation, includes patients who experience sudden cardiac death.

Cancer <5 y

Column name STS_Cancer5y
Optional **SingleChoice**: the code only.

Indicate if the patient received a diagnosis of cancer within 5 years of surgery.

Do not capture low grade skin cancers such as basal cell or squamous cell carcinoma.

0 - No

1 - Yes

-1 - Unknown

Syncope

Column name STS_Syncope
Optional **SingleChoice**: the code only.

Indicate if the patient suffered syncope in the last year before surgery, with believed cardiac origin.

Syncope is defined as: a sudden loss of consciousness with loss of postural tone, not related to anesthesia, with spontaneous recovery and believed to be related to cardiac condition. Capture events occurring within the past one year as reported by patient or observer. Patient may experience syncope when supine.

0 - No

1 - Yes

-1 - Unknown

Illicit Drug Use

Column name STS_IlicitDrugUse
Optional **SingleChoice**: the code only.

Indicate if there is a history of illicit drug use.

e.g. heroin, cocaine, or methamphetamine, or abuse of a controlled substance.

0 - No

1 - Yes

-1 - Unknown

Alcohol Use

Column name STS_AlcoholUse
Optional **SingleChoice**: the code only.

Indicate if there is a history of alcohol use in the last year.

0 - None

1 - <=1 drink/week

2 - 2-7 drink/week

3 - >=8 drinks/week

-1 - Unknown

Chronic Lung Disease

Column name STS_ChronicLungDisease
Optional **SingleChoice**: the code only.

Indicate whether the patient has chronic lung disease, and the severity level according to the following classification: (FEV: Forced expiratory volume)

0 - No	Normal function FEV1 > 75% of predicted.
1 - Mild	FEV1 60% to 75% of predicted or on chronic inhaled or oral bronchodilator therapy.
2 - Moderate	FEV1 50% to 59% of predicted or on chronic oral/systemic steroid therapy aimed at lung disease.
3 - Severe	FEV1 < 50% or Room Air pO2 < 60 or pCO2 > 50 / CLD present.
4 - Yes, severity unknown	Severity not documented.

-1 - Unknown

Recent pneumonia

Column name STS_RecentPneumonia
Optional **SingleChoice**: the code only.

Indicate if the patient is diagnosed with recent (<30d) pneumonia.

0 - No

1 - Yes

-1 - Unknown

Sleep apnea

Column name STS_sleepApnea
Optional **SingleChoice**: the code only.

Indicate if the patient has a diagnosis of sleep apnea.

May be described as obstructive sleep apnea or OSA (obstructive sleep apnea).

0 - No

1 - Yes

-1 - Unknown

Home O2

Column name STS_homeO2
Optional **SingleChoice**: the code only.

Indicate if the patient receives home o2 therapy.

O2 should be used at home.
0 - No

1 - Yes

-1 - Unknown

Cerebrovascular Dis. (STS coding)

Column name STS_cerebrovascularDisease
Optional **SingleChoice**: the code only.

Indicate if the patient has a history of cerebrovascular disease.

Cerebrovascular disease includes:
a. Stroke
b. Transient ischemic attack (TIA)
c. Non-invasive or invasive arterial imaging test demonstrating ≥ 50% stenosis of any of the major extracranial or intracranial vessels to the brain.
d. Vertebral artery disease and/or internal carotid disease and/or intracranial disease ≥ 50% stenosis. External carotid disease is excluded.
e. Previous cervical or cerebral artery revascularization surgery or percutaneous intervention
f. Brain/cerebral aneurysm.
g. Occlusion of vertebral artery, internal carotid artery, and intracranial due to dissection. This does not include chronic (nonvascular) neurological diseases or other acute neurological insults such as metabolic and anoxic ischemic encephalopathy. Subdural hematoma or Arteriovenous malformations (AVM) is not cerebral vascular disease.

0 - No

1 - CVA <30d

2 - CVA >30d

3 - CVA, timing unknown

4 - TIA

5 - Other CVD

-1 - Unknown

Right carotid stenosis > 80%

Column name STS_RightCarotidStenosis
Optional **SingleChoice**: the code only.

Indicate if the patient has right carotid stenosis > 80%.

0 - No

1 - Yes

-1 - Unknown

Prior Carotid surgery

Column name STS_PriorCarotidSurg
Optional **SingleChoice**: the code only.

Indicate if the patient has prior carotid surgery.

0 - No

1 - Yes

-1 – Unknown

Left Carotid stenosis >80%

Column name STS_LeftCarotidStenosis
Optional **SingleChoice**: the code only.

Indicate if the patient has left carotid stenosis > 80%

0 - No

1 - Yes

-1 - Unknown

Heart Failure (STS coding)

Column name STS_HeartFailure
Optional **SingleChoice**: the code only.

Indicate if the patient is diagnosed with heart failure.

Specify if the heart failure is acute or chronic.

0 - No

1 - Yes, acute

2 - Yes, chronic

3 - Yes, both

-1 - Unknown

Aortic stenosis

Column name STS_AorticStenosis
Optional **SingleChoice**: the code only.

Indicate if aortic stenosis is present.

0 - No

1 - Yes

-1 - Unknown

Mitral stenosis

Column name STS_MitralStenosis
Optional **SingleChoice**: the code only.

Indicate if mitral stenosis is present.

0 - No

1 - Yes

-1 - Unknown

Aortic root abscess

Column name STS_AorticRootAbscess
Optional **SingleChoice**: the code only.

Indicate if an aortic root abscess is present.

0 - No

1 - Yes

-1 - Unknown

Aortic regurgitation

Column name STS_AorticRegurgitation
Optional **SingleChoice**: the code only.

Indicate the degree of aortic regurgitation.

0 - No

1 - Trivial/trace

2 - Mild

3 - Moderate

4 - Severe

-1 - Unknown

Mitral regurgitation

Column name STS_MitralRegurgitation
Optional **SingleChoice**: the code only.

Indicate the degree of mitral regurgitation.

0 - No

1 - Trivial/trace

2 - Mild

3 - Moderate

4 - Severe

-1 - Unknown

Tricuspid regurgitation

Column name STS_TricuspidRegurgitation
Optional **SingleChoice**: the code only.

Indicate the degree of tricuspid regurgitation.

0 - No

1 - Trivial/trace

2 - Mild

3 - Moderate

4 - Severe

-1 - Unknown

V. Tach / V. Fib (STS coding)

Column name STS_VTVF
Optional **SingleChoice**: the code only.

Indicate if Ventricular tachycardia (VT)/ ventricular fibrillation (VF) was present.

Select remote if present > 30 days preoperatively and recent if present within 30 days of this procedure.

0 - No

1 - Remote

2 - Recent

-1 - Unknown

Atrial Fibrillation (STS coding)

Column name STS_AF
Optional **SingleChoice**: the code only.

Indicate if Atrial fibrillation (AF) was present.

Select remote if present > 30 days preoperatively and recent if present within 30 days of this procedure.

0 - No

1 - Remote

2 - Recent

-1 – Unknown

Sick Sinus Syn.

Column name STS_SSS
Optional **SingleChoice**: the code only.

Indicate if sick sinus syndrome (SSS) was present.

Select remote if present > 30 days preoperatively and recent if present within 30 days of this procedure.

0 - No

1 - Remote

2 - Recent

-1 - Unknown

2nd Degree Block

Column name STS_2ndDegreeBlock
Optional **SingleChoice**: the code only.

Indicate if a 2nd degree heart block was present.

Select remote if present > 30 days preoperatively and recent if present within 30 days of this procedure.

0 - No

1 - Remote

2 - Recent

-1 – Unknown

3rd Degree Block

Column name STS_3rdDegreeBlock
Optional **SingleChoice**: the code only.

Indicate if a 3rd degree heart block was present.

Select remote if present > 30 days preoperatively and recent if present within 30 days of this procedure.

0 - No

1 - Remote

2 - Recent

-1 - Unknown

Graft formula

Proximal anastomosis and graft 1

Column name Graft_prox_an_1
Optional **SingleChoice**: the code only.

Indicate the graft type and proximal anastomosis of the 1st graft/conduit. LIMA: Left internal mammary artery, RIMA: right internal mammary artery; AO: aorta; FRIMA: Free right internal mammary artery; FLIMA: free left internal mammary artery; GEA: gastroepiploic artery.

1 - LIMA

2 - AO-VENE

3 - LIMA-Y-graft-Frima

4 - RIMA

5 - LIMA-Y-graft-VENE

6 - AO-VENE-Y-graft-VENE

7 - AO-FLIMA

8 - GEA

9 - AO-RADIALIS

10 - LIMA-Y-graft-RADIALIS

-99 - Not applicable

Distal anastomosis 1 of graft 1

Column name Dist_an_1_1
Optional **SingleChoice**: the code only.

Indicate the 1st distal anastomosis of graft/conduit 1.

1 - AL
2 - AL1
3 - AL2
4 - D
5 - D1
6 - D2
7 - D3
8 - LAD
9 - LAD(prox)
10 - LAD(mid)
11 - LAD(dist)
12 - LM
13 - MAM
14 - MO1
15 - MO1a
16 - MO1b
17 - MO2
18 - MO2a
19 - MO2b
20 - MO3
21 - MO3b
22 – PLCx
23 - PLCx1
24 - PLCx2
25 - PLR
26 - PLR1
27 - PLR2
28 - RCA
29 - RDP
30 - RDP1
31 - RDP2
-99 - Not applicable

Distal anastomosis 2 of graft 1

Column name Dist_an_1_2
Optional **SingleChoice**: the code only.

Indicate the 2nd distal anastomosis of graft/conduit 1, if applicable.

1 - AL
2 - AL1
3 - AL2
4 - D
5 - D1
6 - D2
7 - D3
8 - LAD
9 - LAD(prox)
10 - LAD(mid)
11 - LAD(dist)
12 - LM
13 - MAM
14 - MO1
15 - MO1a
16 - MO1b
17 - MO2
18 - MO2a
19 - MO2b
20 - MO3
21 - MO3b
22 – PLCx
23 - PLCx1
24 - PLCx2
25 - PLR
26 - PLR1
27 - PLR2
28 - RCA
29 - RDP
30 - RDP1
31 - RDP2
-99 - Not applicable

Distal anastomosis 3 of graft 1

Column name Dist_an_1_3
Optional **SingleChoice**: the code only.

Indicate the 3rd distal anastomosis of graft/conduit 1, if applicable.

1 - AL
2 - AL1
3 - AL2
4 - D
5 - D1
6 - D2
7 - D3
8 - LAD
9 - LAD(prox)
10 - LAD(mid)
11 - LAD(dist)
12 - LM
13 - MAM
14 - MO1
15 - MO1a
16 - MO1b
17 - MO2
18 - MO2a
19 - MO2b
20 - MO3
21 - MO3b
22 – PLCx
23 - PLCx1
24 - PLCx2
25 - PLR
26 - PLR1
27 - PLR2
28 - RCA
29 - RDP
30 - RDP1
31 - RDP2
-99 - Not applicable

Distal anastomosis 4 of graft 1

Column name Dist_an_1_4
Optional **SingleChoice**: the code only.

Indicate the 4th distal anastomosis of graft/conduit 1, if applicable

1 - AL
2 - AL1
3 - AL2
4 - D
5 - D1
6 - D2
7 - D3
8 - LAD
9 - LAD(prox)
10 - LAD(mid)
11 - LAD(dist)
12 - LM
13 - MAM
14 - MO1
15 - MO1a
16 - MO1b
17 - MO2
18 - MO2a
19 - MO2b
20 - MO3
21 - MO3b
22 – PLCx
23 - PLCx1
24 - PLCx2
25 - PLR
26 - PLR1
27 - PLR2
28 - RCA
29 - RDP
30 - RDP1
31 - RDP2
-99 - Not applicable

Distal anastomosis 5 of graft 1

Column name Dist_an_1_5
Optional **SingleChoice**: the code only.

Indicate the 5th distal anastomosis of graft/conduit 1, if applicable.

1 - AL
2 - AL1
3 - AL2
4 - D
5 - D1
6 - D2
7 - D3
8 - LAD
9 - LAD(prox)
10 - LAD(mid)
11 - LAD(dist)
12 - LM
13 - MAM
14 - MO1
15 - MO1a
16 - MO1b
17 - MO2
18 - MO2a
19 - MO2b
20 - MO3
21 - MO3b
22 – PLCx
23 - PLCx1
24 - PLCx2
25 - PLR
26 - PLR1
27 - PLR2
28 - RCA
29 - RDP
30 - RDP1
31 - RDP2
-99 - Not applicable

Proximal anastomosis and graft 2

Column name Graft_prox_an_2
Optional **SingleChoice**: the code only.

Indicate the graft type and proximal anastomosis of the 2nd graft/conduit. LIMA: Left internal mammary artery, RIMA: right internal mammary artery; AO: aorta; FRIMA: Free right internal mammary artery; FLIMA: free left internal mammary artery; GEA: gastroepiploic artery.

1 - LIMA

2 - AO-VENE

3 - LIMA-Y-graft-Frima

4 - RIMA

5 - LIMA-Y-graft-VENE

6 - AO-VENE-Y-graft-VENE

7 - AO-FLIMA

8 - GEA

9 - AO-RADIALIS

10 - LIMA-Y-graft-RADIALIS

-99 - Not applicable

Distal anastomosis 1 of graft 2

Column name Dist_an_2_1
Optional **SingleChoice**: the code only.

Indicate the 1st distal anastomosis of 2nd graft/conduit.

1 - AL

2 - AL1

3 - AL2

4 - D

5 - D1

6 - D2

7 - D3

8 - LAD

9 - LAD(prox)

10 - LAD(mid)

11 - LAD(dist)

12 - LM

13 - MAM

14 - MO1

15 - MO1a

16 - MO1b

17 - MO2

18 - MO2a

19 - MO2b

20 - MO3

21 - MO3b

22 – PLCx

23 - PLCx1

24 - PLCx2

25 - PLR

26 - PLR1

27 - PLR2

28 - RCA

29 - RDP

30 - RDP1

31 - RDP2

-99 - Not applicable

Distal anastomosis 2 of graft 2

Column name Dist_an_2_2
Optional **SingleChoice**: the code only.

Indicate the 2nd distal anastomosis of graft/conduit 2, if applicable.

1 - AL
2 - AL1
3 - AL2
4 - D
5 - D1
6 - D2
7 - D3
8 - LAD
9 - LAD(prox)
10 - LAD(mid)
11 - LAD(dist)
12 - LM
13 - MAM
14 - MO1
15 - MO1a
16 - MO1b
17 - MO2
18 - MO2a
19 - MO2b
20 - MO3
21 - MO3b
22 – PLCx
23 - PLCx1
24 - PLCx2
25 - PLR
26 - PLR1
27 - PLR2
28 - RCA
29 - RDP
30 - RDP1
31 - RDP2
-99 - Not applicable

Distal anastomosis 3 of graft 2

Column name Dist_an_2_3
Optional **SingleChoice**: the code only.

Indicate the 3rd distal anastomosis of graft/conduit 2, if applicable.

1 - AL
2 - AL1
3 - AL2
4 - D
5 - D1
6 - D2
7 - D3
8 - LAD
9 - LAD(prox)
10 - LAD(mid)
11 - LAD(dist)
12 - LM
13 - MAM
14 - MO1
15 - MO1a
16 - MO1b
17 - MO2
18 - MO2a
19 - MO2b
20 - MO3
21 - MO3b
22 – PLCx
23 - PLCx1
24 - PLCx2
25 - PLR
26 - PLR1
27 - PLR2
28 - RCA
29 - RDP
30 - RDP1
31 - RDP2
-99 - Not applicable

Distal anastomosis 4 of graft 2

Column name Dist_an_2_4
Optional **SingleChoice**: the code only.

Indicate the 4th distal anastomosis of graft/conduit 2, if applicable.

1 - AL
2 - AL1
3 - AL2
4 - D
5 - D1
6 - D2
7 - D3
8 - LAD
9 - LAD(prox)
10 - LAD(mid)
11 - LAD(dist)
12 - LM
13 - MAM
14 - MO1
15 - MO1a
16 - MO1b
17 - MO2
18 - MO2a
19 - MO2b
20 - MO3
21 - MO3b
22 – PLCx
23 - PLCx1
24 - PLCx2
25 - PLR
26 - PLR1
27 - PLR2
28 - RCA
29 - RDP
30 - RDP1
31 - RDP2
-99 - Not applicable

Distal anastomosis 5 of graft 2

Column name Dist_an_2_5
Optional **SingleChoice**: the code only.

Indicate the 5th distal anastomosis of graft/conduit 2, if applicable

1 - AL
2 - AL1
3 - AL2
4 - D
5 - D1
6 - D2
7 - D3
8 - LAD
9 - LAD(prox)
10 - LAD(mid)
11 - LAD(dist)
12 - LM
13 - MAM
14 - MO1
15 - MO1a
16 - MO1b
17 - MO2
18 - MO2a
19 - MO2b
20 - MO3
21 - MO3b
22 – PLCx
23 - PLCx1
24 - PLCx2
25 - PLR
26 - PLR1
27 - PLR2
28 - RCA
29 - RDP
30 - RDP1
31 - RDP2
-99 - Not applicable

Proximal anastomosis and graft 3

Column name Graft_prox_an_3
Optional **SingleChoice**: the code only.

Indicate the graft type and proximal anastomosis of the 3rd graft/conduit. LIMA: Left internal mammary artery, RIMA: right internal mammary artery; AO: aorta; FRIMA: Free right internal mammary artery; FLIMA: free left internal mammary artery; GEA: gastroepiploic artery.

1 - LIMA

2 - AO-VENE

3 - LIMA-Y-graft-Frima

4 - RIMA

5 - LIMA-Y-graft-VENE

6 - AO-VENE-Y-graft-VENE

7 - AO-FLIMA

8 - GEA

9 - AO-RADIALIS

10 - LIMA-Y-graft-RADIALIS

-99 - Not applicable

Distal anastomosis 1 of graft 3

Column name Dist_an_3_1
Optional **SingleChoice**: the code only.

Indicate the 1st distal anastomosis of graft/conduit 3.

1 - AL

2 - AL1

3 - AL2

4 - D

5 - D1

6 - D2

7 - D3

8 - LAD

9 - LAD(prox)

10 - LAD(mid)

11 - LAD(dist)

12 - LM

13 - MAM

14 - MO1

15 - MO1a

16 - MO1b

17 - MO2

18 - MO2a

19 - MO2b

20 - MO3

21 - MO3b

22 – PLCx

23 - PLCx1

24 - PLCx2

25 - PLR

26 - PLR1

27 - PLR2

28 - RCA

29 - RDP

30 - RDP1

31 - RDP2

-99 - Not applicable

Distal anastomosis 2 of graft 3

Column name Dist_an_3_2
Optional **SingleChoice**: the code only.

Indicate the 2nd distal anastomosis of graft/conduit 3, if applicable.

1 - AL
2 - AL1
3 - AL2
4 - D
5 - D1
6 - D2
7 - D3
8 - LAD
9 - LAD(prox)
10 - LAD(mid)
11 - LAD(dist)
12 - LM
13 - MAM
14 - MO1
15 - MO1a
16 - MO1b
17 - MO2
18 - MO2a
19 - MO2b
20 - MO3
21 - MO3b
22 – PLCx
23 - PLCx1
24 - PLCx2
25 - PLR
26 - PLR1
27 - PLR2
28 - RCA
29 - RDP
30 - RDP1
31 - RDP2
-99 - Not applicable

Distal anastomosis 3 of graft 3

Column name Dist_an_3_3
Optional **SingleChoice**: the code only.

Indicate the 3rd distal anastomosis of graft/conduit 3, if applicable.

1 - AL
2 - AL1
3 - AL2
4 - D
5 - D1
6 - D2
7 - D3
8 - LAD
9 - LAD(prox)
10 - LAD(mid)
11 - LAD(dist)
12 - LM
13 - MAM
14 - MO1
15 - MO1a
16 - MO1b
17 - MO2
18 - MO2a
19 - MO2b
20 - MO3
21 - MO3b
22 – PLCx
23 - PLCx1
24 - PLCx2
25 - PLR
26 - PLR1
27 - PLR2
28 - RCA
29 - RDP
30 - RDP1
31 - RDP2
-99 - Not applicable

Distal anastomosis 4 of graft 3

Column name Dist_an_3_4
Optional **SingleChoice**: the code only.

Indicate the 4th distal anastomosis of graft/conduit 3, if applicable.

1 - AL
2 - AL1
3 - AL2
4 - D
5 - D1
6 - D2
7 - D3
8 - LAD
9 - LAD(prox)
10 - LAD(mid)
11 - LAD(dist)
12 - LM
13 - MAM
14 - MO1
15 - MO1a
16 - MO1b
17 - MO2
18 - MO2a
19 - MO2b
20 - MO3
21 - MO3b
22 – PLCx
23 - PLCx1
24 - PLCx2
25 - PLR
26 - PLR1
27 - PLR2
28 - RCA
29 - RDP
30 - RDP1
31 - RDP2
-99 - Not applicable

Distal anastomosis 5 of graft 3

Column name Dist_an_3_5
Optional **SingleChoice**: the code only.

Indicate the 5th distal anastomosis of graft/conduit 3, if applicable.

1 - AL
2 - AL1
3 - AL2
4 - D
5 - D1
6 - D2
7 - D3
8 - LAD
9 - LAD(prox)
10 - LAD(mid)
11 - LAD(dist)
12 - LM
13 - MAM
14 - MO1
15 - MO1a
16 - MO1b
17 - MO2
18 - MO2a
19 - MO2b
20 - MO3
21 - MO3b
22 – PLCx
23 - PLCx1
24 - PLCx2
25 - PLR
26 - PLR1
27 - PLR2
28 - RCA
29 - RDP
30 - RDP1
31 - RDP2
-99 - Not applicable

Proximal anastomosis and graft 4

Column name Graft_prox_an_4
Optional **SingleChoice**: the code only.

Indicate the graft type and proximal anastomosis of the 4th graft/conduit. LIMA: Left internal mammary artery, RIMA: right internal mammary artery; AO: aorta; FRIMA: Free right internal mammary artery; FLIMA: free left internal mammary artery; GEA: gastroepiploic artery.

1 - LIMA

2 - AO-VENE

3 - LIMA-Y-graft-Frima

4 - RIMA

5 - LIMA-Y-graft-VENE

6 - AO-VENE-Y-graft-VENE

7 - AO-FLIMA

8 - GEA

9 - AO-RADIALIS

10 - LIMA-Y-graft-RADIALIS

-99 - Not applicable

Distal anastomosis 1 of graft 4

Column name Dist_an_4_1
Optional **SingleChoice**: the code only.

Indicate the 1st distal anastomosis of graft/conduit 4.

1 - AL
2 - AL1
3 - AL2
4 - D
5 - D1
6 - D2
7 - D3
8 - LAD
9 - LAD(prox)
10 - LAD(mid)
11 - LAD(dist)
12 - LM
13 - MAM
14 - MO1
15 - MO1a
16 - MO1b
17 - MO2
18 - MO2a
19 - MO2b
20 - MO3
21 - MO3b
22 – PLCx
23 - PLCx1
24 - PLCx2
25 - PLR
26 - PLR1
27 - PLR2
28 - RCA
29 - RDP
30 - RDP1
31 - RDP2
-99 - Not applicable

Distal anastomosis 2 of graft 4

Column name Dist_an_4_2
Optional **SingleChoice**: the code only.

Indicate the 2nd distal anastomosis of graft/conduit 4, if applicable.

1 - AL
2 - AL1
3 - AL2
4 - D
5 - D1
6 - D2
7 - D3
8 - LAD
9 - LAD(prox)
10 - LAD(mid)
11 - LAD(dist)
12 - LM
13 - MAM
14 - MO1
15 - MO1a
16 - MO1b
17 - MO2
18 - MO2a
19 - MO2b
20 - MO3
21 - MO3b
22 – PLCx
23 - PLCx1
24 - PLCx2
25 - PLR
26 - PLR1
27 - PLR2
28 - RCA
29 - RDP
30 - RDP1
31 - RDP2
-99 - Not applicable

Distal anastomosis 3 of graft 4

Column name Dist_an_4_3
Optional **SingleChoice**: the code only.

Indicate the 3rd distal anastomosis of graft/conduit 4, if applicable.

1 - AL
2 - AL1
3 - AL2
4 - D
5 - D1
6 - D2
7 - D3
8 - LAD
9 - LAD(prox)
10 - LAD(mid)
11 - LAD(dist)
12 - LM
13 - MAM
14 - MO1
15 - MO1a
16 - MO1b
17 - MO2
18 - MO2a
19 - MO2b
20 - MO3
21 - MO3b
22 – PLCx
23 - PLCx1
24 - PLCx2
25 - PLR
26 - PLR1
27 - PLR2
28 - RCA
29 - RDP
30 - RDP1
31 - RDP2
-99 - Not applicable

Distal anastomosis 4 of graft 4

Column name Dist_an_4_4
Optional **SingleChoice**: the code only.

Indicate the 4th distal anastomosis of graft/conduit 4, if applicable.

1 - AL
2 - AL1
3 - AL2
4 - D
5 - D1
6 - D2
7 - D3
8 - LAD
9 - LAD(prox)
10 - LAD(mid)
11 - LAD(dist)
12 - LM
13 - MAM
14 - MO1
15 - MO1a
16 - MO1b
17 - MO2
18 - MO2a
19 - MO2b
20 - MO3
21 - MO3b
22 – PLCx
23 - PLCx1
24 - PLCx2
25 - PLR
26 - PLR1
27 - PLR2
28 - RCA
29 - RDP
30 - RDP1
31 - RDP2
-99 - Not applicable

Distal anastomosis 5 of graft 4

Column name Dist_an_4_5
Optional **SingleChoice**: the code only.

Indicate the 5th distal anastomosis of graft/conduit 4, if applicable.

1 - AL
2 - AL1
3 - AL2
4 - D
5 - D1
6 - D2
7 - D3
8 - LAD
9 - LAD(prox)
10 - LAD(mid)
11 - LAD(dist)
12 - LM
13 - MAM
14 - MO1
15 - MO1a
16 - MO1b
17 - MO2
18 - MO2a
19 - MO2b
20 - MO3
21 - MO3b
22 – PLCx
23 - PLCx1
24 - PLCx2
25 - PLR
26 - PLR1
27 - PLR2
28 - RCA
29 - RDP
30 - RDP1
31 - RDP2
-99 - Not applicable

Proximal anastomosis and graft 5

Column name Graft_prox_an_5
Optional **SingleChoice**: the code only.

Indicate the graft type and proximal anastomosis of the 5th graft/conduit. LIMA: Left internal mammary artery, RIMA: right internal mammary artery; AO: aorta; FRIMA: Free right internal mammary artery; FLIMA: free left internal mammary artery; GEA: gastroepiploic artery.

1 - LIMA

2 - AO-VENE

3 - LIMA-Y-graft-Frima

4 - RIMA

5 - LIMA-Y-graft-VENE

6 - AO-VENE-Y-graft-VENE

7 - AO-FLIMA

8 - GEA

9 - AO-RADIALIS

10 - LIMA-Y-graft-RADIALIS

-99 - Not applicable

Distal anastomosis 1 of graft 5

Column name Dist_an_5_1
Optional **SingleChoice**: the code only.

Indicate the 1st distal anastomosis of graft/conduit 5.

1 - AL
2 - AL1
3 - AL2
4 - D
5 - D1
6 - D2
7 - D3
8 - LAD
9 - LAD(prox)
10 - LAD(mid)
11 - LAD(dist)
12 - LM
13 - MAM
14 - MO1
15 - MO1a
16 - MO1b
17 - MO2
18 - MO2a
19 - MO2b
20 - MO3
21 - MO3b
22 – PLCx
23 - PLCx1
24 - PLCx2
25 - PLR
26 - PLR1
27 - PLR2
28 - RCA
29 - RDP
30 - RDP1
31 - RDP2
-99 - Not applicable

Distal anastomosis 2 of graft 5

Column name Dist_an_5_2
Optional **SingleChoice**: the code only.

Indicate the 2nd distal anastomosis of graft/conduit 5, if applicable.

1 - AL
2 - AL1
3 - AL2
4 - D
5 - D1
6 - D2
7 - D3
8 - LAD
9 - LAD(prox)
10 - LAD(mid)
11 - LAD(dist)
12 - LM
13 - MAM
14 - MO1
15 - MO1a
16 - MO1b
17 - MO2
18 - MO2a
19 - MO2b
20 - MO3
21 - MO3b
22 – PLCx
23 - PLCx1
24 - PLCx2
25 - PLR
26 - PLR1
27 - PLR2
28 - RCA
29 - RDP
30 - RDP1
31 - RDP2
-99 - Not applicable

Distal anastomosis 3 of graft 5

Column name Dist_an_5_3
Optional **SingleChoice**: the code only.

Indicate the 3rd distal anastomosis of graft/conduit 5, if applicable.

1 - AL
2 - AL1
3 - AL2
4 - D
5 - D1
6 - D2
7 - D3
8 - LAD
9 - LAD(prox)
10 - LAD(mid)
11 - LAD(dist)
12 - LM
13 - MAM
14 - MO1
15 - MO1a
16 - MO1b
17 - MO2
18 - MO2a
19 - MO2b
20 - MO3
21 - MO3b
22 – PLCx
23 - PLCx1
24 - PLCx2
25 - PLR
26 - PLR1
27 - PLR2
28 - RCA
29 - RDP
30 - RDP1
31 - RDP2
-99 - Not applicable

Distal anastomosis 4 of graft 5

Column name Dist_an_5_4
Optional **SingleChoice**: the code only.

Indicate the 4th distal anastomosis of graft/conduit 5, if applicable.

1 - AL
2 - AL1
3 - AL2
4 - D
5 - D1
6 - D2
7 - D3
8 - LAD
9 - LAD(prox)
10 - LAD(mid)
11 - LAD(dist)
12 - LM
13 - MAM
14 - MO1
15 - MO1a
16 - MO1b
17 - MO2
18 - MO2a
19 - MO2b
20 - MO3
21 - MO3b
22 – PLCx
23 - PLCx1
24 - PLCx2
25 - PLR
26 - PLR1
27 - PLR2
28 - RCA
29 - RDP
30 - RDP1
31 - RDP2
-99 - Not applicable

Distal anastomosis 5 of graft 5

Column name Dist_an_5_5
Optional **SingleChoice**: the code only.

Indicate the 5th distal anastomosis of graft/conduit 5, if applicable.

1 - AL
2 - AL1
3 - AL2
4 - D
5 - D1
6 - D2
7 - D3
8 - LAD
9 - LAD(prox)
10 - LAD(mid)
11 - LAD(dist)
12 - LM
13 - MAM
14 - MO1
15 - MO1a
16 - MO1b
17 - MO2
18 - MO2a
19 - MO2b
20 - MO3
21 - MO3b
22 – PLCx
23 - PLCx1
24 - PLCx2
25 - PLR
26 - PLR1
27 - PLR2
28 - RCA
29 - RDP
30 - RDP1
31 - RDP2
-99 - Not applicable

Data Audit

Data Audit

Column name DataAudit
Mandatory **SingleChoice**: the code only.

Generated by EACTS - Indicate if the data has been audited.

0 - No

1 - Yes

Tables

Table IMP

CODE	Description	CODE	Description `
3F	3F Therapeutics aortic valve	CE	C-E Porcine valve
ADV	Advantage valve	CER	C-E Rigid / classic annuloplasty ring
ANG	Angicor valve	CES	C-E Supra-annular porcine valve
AOT	Aortech valve	COLV	Colvin-Galloway future annuloplasty system
ASP	Aspire procine stented valve	CTR3D	Contour 3D annuloplasty band
ATS	ATS Medical Open Pivot valve	COS	Cosgrove Edwards annuloplasty ring
ATSVG	ATS Open pivot aortic valved graft	CRYO	Cryolife O'Brien valve
AUTO	Autograft	DURA	Dura Mater valve
AUTOGEN	Autologous cardiac valve	DURAFIC	Durafic valve
BIC	Bicer valve	ANCB	Duran Ancore annuloplasty band
BCR	Biocor valve	ANCR	Duran Ancore annuloplasty ring
BFO	Bioflow pericardial valve	DM	Duromedics valve
IBP	BioIntegral Injectable BioPulmonic valve	INTY	Edwards Intuity valve
BiVC	Biovalsalva HVC valve	MC	Edwards MC3 Tricuspid annuloplasty system
BSC / C	Bjork Shiley 60 Convexo-Concave valve	MIRA	Edwards Mira valve
BSCCVG	Bjork Shiley 60 Convexo-Concave valve graft	MAGNA	Edwards Perimount Magna bioprosthetic valve
BSCC	Bjork Shiley 70 Convexo-Concave valve	THEON	Edwards Perimount Theon pericardial valve
BSM	Bjork Shiley Monostrut valve	ET	Edwards Tekna valve
BSMVG	Bjork Shiley Monostrut valve graft	ELAN-VG	Elan root graft valve
BSPC	Bjork Shiley pyrolitic carbon conical valve	ELAN	Elan valve
BSS	Bjork Shiley spherical disc valve	FASCIA	Fascia Lata valve
CARVG	Carbomedics (Carboseal valve graft)	GEO	Geoform annuloplasty ring
ANFLEX	Carbomedics Annuloflex annuloplasty ring	HA2	Hancock modified orifice II valve
ANF	Carbomedics Annuloflo annuloplasty ring	HA	Hancock modified orifice valve
CAR	Carbomedics standard valve	HAP	Hancock pericardial valve
CMND	Cardiomend	HAVC	Hancock valve conduit
CDM	Cardiomend autograft valve	CONFORMA	Heartline Conforma valve
CEP	C-E Pericardial bovine valve	HOAF	Homograft aortic +4 C Storage
CEPHYS	C-E Physio annuloplasty ring	HOAC	Homograft aortic cryopreserved
CEPHYS2	C-E Physio II annuloplasty ring	HOAV	Homograft aortic Homovita

Table CTRY

1	Afghanistan	50	Ecuador	99	Liberia	148	San Marino
2	Albania	51	Egypt	100	Libya	149	Sao Tome & Principe
3	Algeria	52	El Salvador	101	Liechtenstein	150	Saudi Arabia
4	Andorra	53	Equatorial Guinea	102	Lithuania	151	Senegal
5	Angola	54	Eritrea	103	Luxembourg	152	Serbia
6	Antigua and Barbuda	55	Estonia	104	Macao	153	Seychelles
7	Argentina	56	Eswatini	105	Madagascar	154	Sierra Leone
8	Armenia	57	Ethiopia	106	Malawi	155	Singapore
9	Austria	58	Faeroe Islands	107	Malaysia	156	Slovakia
10	Azerbaijan	59	Finland	108	Maldives	157	Slovenia
11	Bahrain	60	France	109	Mali	158	Somalia
12	Bangladesh	61	French Guiana	110	Malta	159	South Africa
13	Barbados	62	Gabon	111	Mauritania	160	South Korea
14	Belarus	63	Gambia	112	Mauritius	161	South Sudan
15	Belgium	64	Georgia	113	Mayotte	162	Spain
16	Belize	65	Germany	114	Mexico	163	Sri Lanka
17	Benin	66	Ghana	115	Moldova	164	State of Palestine
18	Bhutan	67	Gibraltar	116	Monaco	165	Sudan
19	Bolivia	68	Greece	117	Mongolia	166	Suriname
20	Bosnia and Herzegovina	69	Grenada	118	Montenegro	167	Sweden
21	Botswana	70	Guatemala	119	Morocco	168	Switzerland
22	Brazil	71	Guinea	120	Mozambique	169	Syria
23	Brunei	72	Guinea-Bissau	121	Myanmar	170	Taiwan
24	Bulgaria	73	Guyana	122	Namibia	171	Tajikistan
25	Burkina Faso	74	Haiti	123	Nepal	172	Tanzania
26	Burundi	75	Holy See	124	Netherlands	173	Thailand
27	Cabo Verde	76	Honduras	125	Nicaragua	174	The Bahamas
28	Cambodia	77	Hong Kong	126	Niger	175	Timor-Leste
29	Cameroon	78	Hungary	127	Nigeria	176	Togo
30	Canada	79	Iceland	128	North Korea	177	Trinidad and Tobago
31	Central African Republic	80	India	129	North Macedonia	178	Tunisia
32	Chad	81	Indonesia	130	Norway	179	Turkey
33	Channel Islands	82	Iran	131	Oman	180	Turkmenistan
34	Chile	83	Iraq	132	Pakistan	181	Uganda
35	China	84	Ireland	133	Panama	182	Ukraine
36	Colombia	85	Isle of Man	134	Paraguay	183	United Arab Emirates
37	Comoros	86	Israel	135	Peru	184	United Kingdom
38	Congo	87	Italy	136	Philippines	185	United States
39	Costa Rica	88	Jamaica	137	Poland	186	Uruguay
40	Côte d'Ivoire	89	Japan	138	Portugal	187	Uzbekistan
41	Croatia	90	Jordan	139	Qatar	188	Venezuela
42	Cuba	91	Kazakhstan	140	Réunion	189	Vietnam
43	Cyprus	92	Kenya	141	Romania	190	Western Sahara
44	Czech Republic	93	Kuwait	142	Russia	191	Yemen
45	Denmark	94	Kyrgyzstan	143	Rwanda	192	Zambia
46	Djibouti	95	Laos	144	Saint Helena	193	Zimbabwe
47	Dominica	96	Latvia	145	Saint Kitts and Nevis		
48	Dominican Republic	97	Lebanon	146	Saint Lucia		
49	DR Congo	98	Lesotho	147	Saint Vincent and the Grenadines		