



Appendix 12

*The definitions associated with the Adult Cardiac Surgical minimum dataset
of the Society of Cardiothoracic Surgeons of Great Britain and Ireland*

Question title	Definition of response options where appropriate
Cardiac History	
Angina status - as defined by the Canadian Cardiovascular Society (CCS)	CCS0: No angina CCS1: Ordinary physical activity such as walking or climbing stairs does not cause angina. Angina may occur with strenuous, rapid or prolonged exertion. CCS2: There is slight limitation of ordinary activity, angina may occur on walking or climbing stairs rapidly, walking up hill or walking after meals, in the cold, wind or under emotional stress or climbing more than one flight of stairs under normal conditions. CCS3: There is marked limitation of ordinary physical activity, angina may occur after walking 100 yards or climbing one flight of stairs under normal conditions at a normal pace CCS4: Inability to perform any physical activity without discomfort. Angina may occur at rest.
Dyspnoea status - as defined by the New York Heart Association (NYHA)	NYHA1: Patients with cardiac disease but without limitation of physical activity. Ordinary physical activity does not cause undue fatigue, palpitation or dyspnoea. Asymptomatic patients should be classified as Class 1 NYHA2: Cardiac disease resulting in slight limitation of physical activity. They are comfortable at rest. Ordinary physical activity results in fatigue, palpitations or dyspnoea. NYHA3: Cardiac disease resulting in marked limitation of physical activity. They are comfortable at rest. Less than ordinary physical activity results in fatigue, palpitations or dyspnoea. NYHA4: Cardiac disease resulting in an inability to conduct any physical activity without discomfort. Symptoms of cardiac failure may be present even at rest. If any physical activity is undertaken discomfort is increased.
Congestive cardiac failure	Yes: A history of left ventricular failure with pulmonary oedema requiring either admission to hospital or treatment with diuretics.
Previous Q-wave MIs	Number of previous Q-wave myocardial infarctions
Last Q-Wave MI	A transmural myocardial infarct represented by new Q waves in two or more contiguous leads on the ECG.
Recent MI (EuroSCORE)	Yes: MI within the last 90 days. To allow calculation of EuroSCORE from data.
Previous non-surgical interventions	
Recently failed non-surgical intervention	Yes: Any failed cardiological intervention (coronary or valvular) necessitating immediate surgery or surgery during the same admission
Thrombolysis within 24 hours prior to surgery	Yes: Any form of thrombolytic therapy administered within 24 hours of surgery
Date of last intervention	Enter dd/mm/yyyy; use 01 if day unknown and 06 if month unknown
Risk factors for coronary disease	
Hypercholesterolaemia	Yes: A history of a fasting cholesterol of greater than 5.2 mmol l ⁻¹ or lower if on treatment.
Hypertension	Yes: A history of blood pressure greater than 140/90mmHg on two occasions, or lower if on medication
Smoking	Patients who have smoked within one month of surgery should be considered to be current smokers.
Additional medical history and risk factors	
GI tract	No: No history of GI problems Peptic ulcer: Previous surgery, medical treatment or current treatment for known peptic ulceration Previous surgery: Previous gastrointestinal surgery (Exclude groin or abdominal hernias) Other: Any other GI/ or hepatobiliary symptoms. Include symptoms of indigestion or hiatus hernia.
Renal system	No: No history of renal disease and creatinine < 200µmol l ⁻¹ on admission Functioning transplant: Functioning renal transplant, irrespective of creatinine Creatinine > 200µmol l⁻¹: Creatinine > 200µmol/l at the time of surgery Acute renal failure: Renal failure within 6 weeks of surgery necessitating any form of dialysis up to the time of surgery Chronic renal failure: Chronic renal failure on regular dialysis
Pulmonary disease	No: No history of pulmonary disease COAD/Emphysema: Patient requires medication (inhalers, aminophylline or steroids) for chronic pulmonary disease or FEV1 less than 75% predicted value. Venous pO ₂ < 60mmHg, pCO ₂ > 50mmHg Asthma: Intermittent or allergic reversible airways disease treated with bronchodilators or steroids



Question title	Definition of response options where appropriate
Additional medical history and risk factors (continued)	
Cerebrovascular disease	No: No history or symptoms of cerebrovascular disease TIA: Any cerebral neurological deficit lasting less than 24 hours CVA: Any neurological deficit lasting >24 hours irrespective of the extent of recovery Carotid bruit: A carotid bruit on physical examination
Neurological dysfunction EuroSCORE supplement	Yes: Disease severely affecting ambulation or day-to-day functioning. To allow calculation of EuroSCORE from data.
Peripheral vascular disease	Yes: Any one of: * History or evidence of aneurysm, occlusive peripheral vascular disease or carotid disease. * Aortic aneurysm * Previous aortoiliac or peripheral vascular surgery * Reduced or absent peripheral pulses and/or angiographic stenosis of more than 50% * Include carotid bruits as evidence of carotid disease.
Pre-op arrhythmia (Within two weeks of the procedure)	Normal (RS): Patient in sinus rhythm Atrial fibrillation/flutter: Demonstrable, chronic or paroxysmal atrial fibrillation or flutter Complete heart block: No association of P waves to QRS complexes or pacing system in place VF/VT: Sustained VT/VF requiring cardioversion or IV medication (i.e. amiodarone infusion).
Catheterisation data	
Was the patient catheterised?	Yes: Cardiac catheterisation was performed at any time as part of the preoperative assessment
Date of catheterisation	Enter dd/mm/yyyy; use 01 if day unknown and 06 if month unknown
Coronary anatomy	
Extent of coronary vessel disease	The number of major (LAD, Cx, RCA system) vessels with >50% narrowing in any angiographic view. (NB: excludes Left Main Stem - Enter 0 if LMS only)
Indices and pressures	
Left ventricular function (EF)	Good: Left ventricular ejection fraction of ≥50% Fair: Left ventricular ejection fraction of 30-49% Poor: Left ventricular ejection fraction of <30%
Pre-operative support	
Pacemaker	Yes: Patient has any type of pacemaker (temporary or permanent)
Cardiogenic shock	Yes: Any one of (prior to anaesthesia): * Hypoperfusion with a systolic BP < 80mmHg and adequate central filling pressure without inotropes * A cardiac index < 1.8 l min ⁻¹ m ⁻² without inotropes * Inotropes ± IABP required to maintain CI > 1.8 l min ⁻¹ m ⁻²
Intravenous inotropes	Yes: Any inotropic agents, excluding renal dose dopamine commenced prior to the induction of anaesthesia.
Intra-aortic balloon pump	Yes: The presence of a preoperative intra-aortic balloon pump for haemodynamic reasons. Do NOT include IABP's inserted prophylactically just prior to surgery because these represent post-operative support.
Operative status	
Operative Priority	Elective: Routine admission from the waiting list. The procedure can be deferred without risk Urgent: Patients who have not been scheduled for routine admission from the waiting list but who require surgery on the current admission for medical reasons. They cannot be sent home without surgery Emergency: Unscheduled patients with ongoing refractory cardiac compromise. There should be no delay in surgical intervention irrespective of the time of day Salvage: Patients requiring CPR en-route to the operating theatre or prior to anaesthetic induction. CPR following anaesthetic induction should not be included
Surgical training	
Operation performed by	The grade of the operating surgeon.
Type of trainee	1: NTN, VTN or FTTN trainee (UK registered trainee) 2: Other trainee
Calman year of trainee	If the operation is performed by a NTN, VTN or FTTN trainee, the career grade year 1-6



Question title	Definition of response options where appropriate
Coronary bypass, valve and aortic procedure details	
Total number of distal coronary anastomoses	Enter the appropriate number
Coronary artery	Enter site of each anastomosis – the sites are described by AHA segments; CCAD Definition is currently (v1.06) Site: 1 = Prox RCA, 2 = Mid RCA, 3 = Distal RCA, 4 = RCA-PDA, 5 = LMS, 6 = Prox LAD, 7 = Mid LAD, 8 = Distal LAD, 9 = Diag 1, 10 = Diag 2, 11 = Prox LCX, 12 = Int/OM1, 13 = Distal LCX, 14 = OM2, 15 = CX-PDA, 16 = RCA - LV branch
Number of valves replaced / repaired	Enter the appropriate number
Diseased valves replaced / repaired	Enter the site of each valve replaced or repaired 17 = Aortic, 18 = Mitral, 19 = Tricuspid, 20 = Pulmonary
Valve pathology	1 Rheumatic, 2 Congenital, 3 Ischaemic, 4 Marfans, 5 Myxomatous degeneration, 6 Failed prior repair, 7 Prosthetic valve failure, 8 Paraprosthetic leak/dehiscence, 9 Prosthetic valve thrombosis, 10 Active infection, 11 Previous infection, 12 Calcific degeneration, 13 Annuloaortic ectasia, 14 Other degenerative valve disease, 15 Dissection, 16 Tumour, 99 Unknown
Prosthetic valve explant	Local or UK Heart Valve registry Code
Valve implant	Local or UK Heart Valve registry Code
Valve repair / conservation	Type of conservative procedure
Valve / ring serial numbers	Serial number of prosthesis
Aortic procedure	Interposition tube graft: Any interposition graft without a valve, irrespective of whether or not other vessels (e.g. head vessels, intercostals) are implanted into the graft Tube graft + AVR: Include valve details under valve replacement Root replacement composite valve graft: Include details under valve replacement Root replacement native valve conserved: Root replacement with preservation of native valve and coronary reimplantation Homograft root replacement: Include details under valve replacement Autograft root replacement: Autograft root replacement (Ross Procedure) Aortic patch graft: Any patch irrespective of material used
Myocardial protection	
Non-cardioplegic myocardial protection	Enter predominant technique used for NON-CARDIOPLEGIC protection: Aortic cross clamping with fibrillation, fibrillation with perfusion, cross clamp with direct coronary perfusion, cross clamp and beating heart, beating heart without cross clamp.
Bypass related data	
Cardiopulmonary bypass	Yes: Cardiopulmonary bypass used for part or all of the procedure
Cumulative bypass time	Enter time in minutes
Circulatory arrest time	Enter time in minutes
Cum cross clamp time	Enter time in minutes
Longest ischaemic period	Enter time in minutes
Patient height	Enter in centimetres
Patient weight	Enter in kilograms
Body Surface Area	Calculated from height and weight
Body Mass Index	Calculated from height and weight
Post-operative course	
Low cardiac output	Can have multiple values Inotropes: On leaving theatre, or commenced in the ITU (exclude if $<5 \mu\text{g kg}^{-1} \text{min}^{-1}$ Dopamine) Intra-aortic balloon pump: If used at any stage in the post-operative course VAD(s): If used at any stage in the post-operative course
Arrhythmias	Can have multiple values SVT: Includes all atrial tachycardias requiring treatment. VT/VF: Ventricular tachycardia or fibrillation requiring treatment Permanent pacing: Insertion of a permanent pacemaker post-operatively
Blood used	Yes: Blood used intra-operatively or post-operatively
Reoperation	Can have multiple values For bleeding/tamponade: Reoperation for bleeding related reasons Other: Exploration for other reasons e.g.s cardiac arrest, additional grafting
Sternal resuturing	Yes: For any reason – technical failure or infection.
Ventilation (hours)	Whole number of hours, if less than 24



Question title	Definition of response options where appropriate
Post-operative course (continued)	
Ventilation (days)	Whole number of days, if more than 24 hours
Pulmonary complications	Full tracheostomy: Either surgical or percutaneous Pulmonary embolism: Documented pulmonary embolism
Neurological complications	Can have multiple values Transient stroke/neurological deficit: Neurological deficit, which has recovered fully by the time of discharge from hospital. Permanent stroke: Persisting neurological deficit at time of discharge from hospital
Infective complications	Can have multiple values Septicaemia: From any source, known or unknown
GI complications	Can have multiple values Peptic ulceration: Proven peptic ulceration causing, pain, bleeding or perforation Pancreatitis: Amylase >1500iu Other: Any other GI complication delaying recovery
Length-of-stay on ITU	Whole number of nights
Post-operative stay	Whole number of days



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