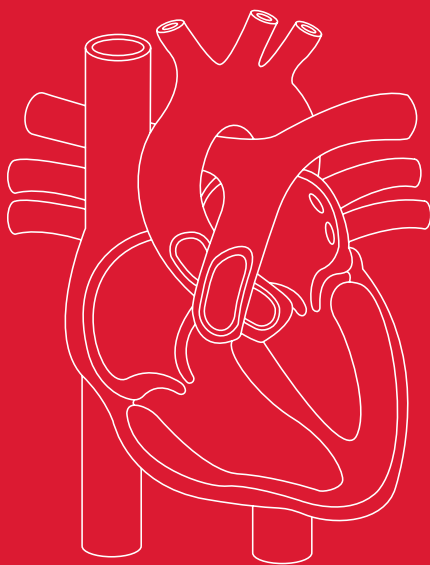


Cardiac Valve & Aortic Root Procedures

2017/18 National
Tariff Payment System



Edwards

Contents

Main changes in the 2017/18 Tariff	03
Prescribed Specialised Services Top-up	03
Heart Valve & Aortic Root Procedure Codes	04
How to Work out the Tariff for a procedure	05
Finding the Root HRG	05
Finding the Final HRG by CC Score	06
Complications and Co-Morbidity (CC) Scores	08
Cardiac Valve Procedures and Aortic Root Replacements, 2017/18 Elective and Non-elective Tariff Prices and Trimpoints	10
Appendix A: Other Cardiac procedures with Aortic Root Repair	12
Appendix B: Other Cardiac procedures with Cardiac Valve Surgery	13
Appendix C: Most Common Complications and Co-Morbidity (CC) Diagnoses	14

Main changes in the 2017/18 Tariff

The 2017/18 Tariff brings several important changes to the reimbursement of cardiac valve and aortic root procedures.

The key changes are:

- A 14.9% top-up for “Prescribed Specialised Services” will apply to TAVI and cardiac surgery. This is over and above the published Tariff prices.
- The Root HRG for TAVI is now split between femoral and non-femoral approaches.
- The Root HRGs for open cardiac valve surgery and aortic root repairs are now split between complex and standard operations.
- All Root HRG’s are further subdivided into either 2 or 3 HRGs depending on the extent of complications and co-morbidities recorded during the admission.

To provide greater planning certainty, the Tariff for 2018/19 has also been published. For the procedures in this booklet the 2018/19 Tariff is 0.4% higher than the 2017/18 Tariff.

Prescribed Specialised Services Top-up

The 14.9% top-up applies to all admissions in one of the 56 listed Trusts commissioned to provide these services, and that meet one of the following criteria:

TAVI

A correctly coded TAVI: Procedure code of K262 followed by a valid approach code (One of Y791, Y792, Y793, Y794, Y798, Y799 or Y494)

Cardiac Surgery

An admission where the consultant’s treatment function code is either 170 (cardiothoracic surgery) or 172 (cardiac surgery)

Heart Valve & Aortic Root Procedure Codes

This booklet outlines the main coding requirements and Tariff for common heart valve replacement and repair procedures and aortic root replacements. It applies to adult admissions where the primary cardiac procedure performed has an OPCS procedure code listed below.

Paediatric procedures and repairs of congenital heart defects have their own coding requirements and tariff rules which are not described here.

Heart valve replacement and repair procedures

Procedure Type	Procedure Code for Valve				
	Mitral	Aortic	Tricuspid	Pulmonary	Other / Unspecified Valve
Valve Replacement or Repair	K251- K259	K261- K269*	K271- K279	K281- K289	K291-K299
Revision of Repair	K301	K302	K303	K304	K305-K309
Valvotomy	K311 & K321	K312 & K322	K313 & K323	K314 & K324	K315-K319 & K325-K329
Annuloplasty	K341	-	K342	-	K343
Closure of Valve	-	-	K345	K346	-
Valvectomy	-	-	K361	K362	K368-K39
Other	K344 - Excision of vegetations of valve of heart K348 - Other specified open operations on valve of heart				

* TAVIs must use the code: K262 "Xenograft replacement of aortic valve"

Minimally invasive operations should use the code Y749 "Unspecified minimal access to thoracic cavity" after the main procedure code

Aortic root procedures

Procedure	Procedure Code
Aortic root replacement using pulmonary valve autograft with right ventricle to pulmonary artery valved conduit	K331
Aortic root replacement using pulmonary valve autograft with right ventricle to pulmonary artery valved conduit and aortoventriculoplasty	K332
Aortic root replacement using homograft	K333
Aortic root replacement using mechanical prosthesis	K334
Aortic root replacement NEC	K335
Aortoventriculoplasty with pulmonary valve autograft	K336
Other specified operations on aortic root	K338

How to Work out the Tariff for a procedure

Determining the tariff that applies to admission is a three step process.

- 1. Determine the Root HRG:** This is a four digit code (e.g. EY20) that applies to all admissions which meet certain criteria

This booklet explains the criteria for TAVI, aortic root replacement and open cardiac valve surgery
- 2. Workout the final HRG based on the Complications and Co-morbidities (CCs) score.** The final HRG is a five digit code (e.g. EY20A) that applies to admissions where the patient has CCs with a point value in a certain range

This booklet has information on the CC ranges for each final HRG
- 3. Lookup the Tariff applicable to the final HRG**

This booklet has the Tariffs for elective and non-elective admissions as well as the trimpoints for each HRG

Finding the Root HRG

TAVI

EY20: Transcatheter Aortic Valve Implantation (TAVI) using Other Approach
Procedure code of K262 followed by an approach code of Y791 (subclavian), Y792 (brachial), Y794 (aortic), Y798 (other specified arterial), Y799 (unspecified arterial) or Y494 (transapical)

EY21: Transcatheter Aortic Valve Implantation (TAVI) using Transfemoral Approach

Procedure code of K262 followed by approach code Y793 (femoral approach)

Aortic Root Repair †

ED12: Complex Repair of Aortic Root either:

- A pulmonary valve autograft is used (procedure codes K331, K332 or K336)
- The procedure is a revision*
- Another cardiac procedure is performed during the admission**
- The patient has a diagnosis of endocarditis, atherosclerosis, arteritis, or infection and inflammation due to cardiac valve prosthesis or other cardiac device

ED13: Standard Repair of Aortic Root

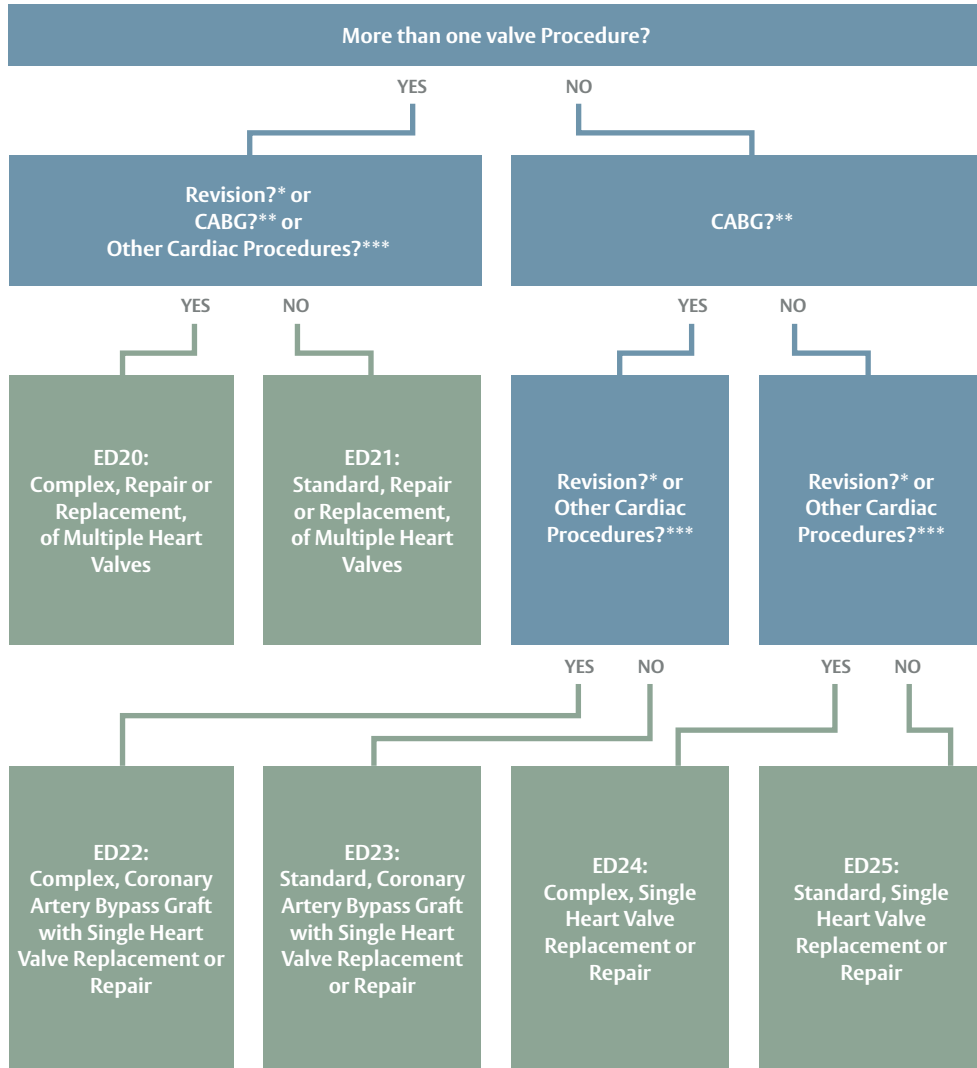
None of the above conditions apply

† If an admission includes both aortic root repair and cardiac valve surgery, the Root HRG is ED12

* Revisions are where the main procedure code is followed by a general revision code (Y712-Y717)

** Other cardiac procedures are from a list of 285 procedures. See Appendix A for commonly used procedures

Finding the Root HRG Cardiac Valve Surgery



*Revisions use either the specific cardiac valve revision codes (K301-K309) or are followed by a general revision code (Y712-Y717)

**CABG uses codes in the range K401-K488

*** Other cardiac procedures are from a list of 219 procedures. See Appendix B for commonly used procedures

Finding the Final HRG by CC Score

Four digit Root HRGs are subdivided into five digit final HRGs based on the complication and comorbidity (CC) score of the patient.

This is explained further on the next page

Root HRG	HRG Description	Final HRG applicable at CC value of:											
		0	1	2	3	4	5	6	7	8	9	10	11+
TAVI													
EY20	Transcatheter Aortic Valve Implantation (TAVI) using Other Approach	EY20B						EY20A					
EY21	Transcatheter Aortic Valve Implantation (TAVI) using Transfemoral Approach	EY21B						EY21A					
Aortic Root Repair													
ED12	Complex Repair of Aortic Root	ED12B					ED12A						
ED13	Standard Repair of Aortic Root	ED13B					ED13A						
Cardiac Valve Surgery													
ED20	Complex, Repair or Replacement, of Multiple Heart Valves	ED20B						ED20A					
ED21	Standard, Repair or Replacement, of Multiple Heart Valves	ED21B						ED21A					
ED22	Complex, Coronary Artery Bypass Graft with Single Heart Valve Replacement or Repair	ED22C				ED22B				ED22A			
ED23	Standard, Coronary Artery Bypass Graft with Single Heart Valve Replacement or Repair	ED23C				ED23B				ED23A			
ED24	Complex, Single Heart Valve Replacement or Repair	ED24C				ED24B				ED24A			
ED25	Standard, Single Heart Valve Replacement or Repair	ED25C				ED25B				ED25A			

Complications and Co-Morbidity (CC) Scores

In 2017/18 there are variations in the Tariff based on the patient's complications and co-morbidities. These are recorded as secondary diagnosis codes using the ICD-10 system. There are 1,680 individual complications and co-morbidities listed for cardiac valve procedures: 450 are assigned a value of two and 1,230 have a value of one.

A patient's CC score is the total of the value of all CCs recorded during the admission. The patient's primary diagnosis does not contribute to the CC Score.

The most commonly recorded diagnoses are in Appendix C

ICD-10 Codes	Description	Number of Codes in CC List				Example 2 Point Code	Example 1 Point Code
		Codes with a Value of 1	Codes with a Value of 2	Total Codes			
A00-B99	Certain infectious and parasitic diseases	24	1	25		A047: Enterocolitis due to Clostridium difficile	-
C00-D48	Neoplasms	9	7	16		C920: Acute myeloblastic leukaemia	C61X: Malignant neoplasm of prostate
D50-D89	Diseases of the blood and blood-forming organs and certain disorders involving the immune mechanism	84	9	93		D509: Iron deficiency anaemia	D860: Sarcoidosis of lung
E00-E90	Endocrine, nutritional and metabolic diseases	14	68	82		E115: Type 2 diabetes mellitus: With peripheral circulatory complications	E119: Type 2 diabetes mellitus: Without complications
F00-F99	Mental and behavioural disorders	26	33	59		F206: Simple schizophrenia	F319: Bipolar affective disorder
G00-G99	Diseases of the nervous system	13	10	23		G309: Alzheimer's disease	G459: Transient cerebral ischaemic attack
H00-H59	Diseases of the eye and adnexa	0	2	2		-	H540: Blindness, binocular
I00-I99	Diseases of the circulatory system	61	86	148		I959: Hypotension	I489: Atrial fibrillation and atrial flutter
J00-J99	Diseases of the respiratory system	77	29	106		J189: Pneumonia	J209: Acute bronchitis
K00-K93	Diseases of the digestive system	53	32	85		K701: Alcoholic hepatitis	K509: Crohn's disease
L00-L99	Diseases of the skin and subcutaneous tissue	23	3	26		L309: Dermatitis	-
M00-M99	Diseases of the musculoskeletal system and connective tissue*	6	836	842		M1097: Gout, Ankle and foot	M0690: Rheumatoid arthritis, Multiple sites
N00-N99	Diseases of the genitourinary system	13	11	24		N184: Chronic kidney disease, stage 4	N183: Chronic kidney disease, stage 3
P00-P96	Certain conditions originating in the perinatal period	0	8	8		-	P051: Small for gestational age
R00-R99	Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified	25	39	64		R634: Abnormal weight loss	R509: Fever, unspecified
S00-T98	Injury, poisoning and certain other consequences of external causes	14	7	21		S720: Fracture of neck of femur	T820: Mechanical complication of heart valve prosthesis
Z00-Z99	Factors influencing health status and contact with health services	8	49	57		Z952: Presence of prosthetic heart valve	Z515: Palliative care
Total Codes		450	1,230	1,680			

*The large number of musculoskeletal codes is due to assigning a separate code to each main body part affected

Cardiac Valve Procedures and Aortic Root Repairs, 2017/18 Elective and Non-elective Tariff Prices and Trimpoints

Final HRG code	Final HRG Name	Elective Admissions		Non-elective Admissions	
		Tariff (£) †	Trimpoint (Days)	Tariff (£) †	Trimpoint (Days)
TAVI					
EY20A	Transcatheter Aortic Valve Implantation (TAVI) using Other Approach, with CC Score 8+	12,765*	41	20,037*	77
EY20B	Transcatheter Aortic Valve Implantation (TAVI) using Other Approach, with CC Score 0-7	10,212*	15	16,030*	47
EY21A	Transcatheter Aortic Valve Implantation (TAVI) using Transfemoral Approach, with CC Score 8+	10,060*	25	17,332*	62
EY21B	Transcatheter Aortic Valve Implantation (TAVI) using Transfemoral Approach, with CC Score 0-7	8,048*	12	13,866*	44
Aortic Root Replacement					
ED12A	Complex Repair of Aortic Root with CC score 7+	16,232	46	19,478	73
ED12B	Complex Repair of Aortic Root with CC score 0-6	11,101	17	13,321	32
ED13A	Standard Repair of Aortic Root with CC score 7+	12,550	30	15,059	69
ED13B	Standard Repair of Aortic Root with CC score 0-6	10,090	17	12,108	37
Cardiac Valve Surgery					
ED20A	Complex, Repair or Replacement, of Multiple Heart Valves, with CC score 8+	15,108	51	17,931	83
ED20B	Complex, Repair or Replacement, of Multiple Heart Valves, with CC score 0-7	11,172	24	13,375	41
ED21A	Standard, Repair or Replacement, of Multiple Heart Valves, with CC score 8+	14,440	49	16,684	72
ED21B	Standard, Repair or Replacement, of Multiple Heart Valves, with CC score 0-7	10,516	20	12,873	47
ED22A	Complex, Coronary Artery Bypass Graft with Single Heart Valve Replacement or repair, with CC score 11+	16,483	65	18,146	85
ED22B	Complex, Coronary Artery Bypass Graft with Single Heart Valve Replacement or repair, with CC score 6-10	11,381	31	13,100	52
ED22C	Complex, Coronary Artery Bypass Graft with Single Heart Valve Replacement or repair, with CC score 0-5	9,884	20	11,186	47
ED23A	Standard, Coronary Artery Bypass Graft with Single Heart Valve Replacement or repair, with CC score 11+	16,431	62	16,431	62
ED23B	Standard, Coronary Artery Bypass Graft with Single Heart Valve Replacement or repair, with CC score 6-10	10,153	26	11,913	42
ED23C	Standard, Coronary Artery Bypass Graft with Single Heart Valve Replacement or repair, with CC score 0-5	8,767	15	10,157	32
ED24A	Complex, Single Heart Valve Replacement or Repair, with CC score 11+	14,460	51	17,091	88
ED24B	Complex, Single Heart Valve Replacement or Repair, with CC score 6-10	11,347	28	13,103	46
ED24C	Complex, Single Heart Valve Replacement or Repair, with CC score 0-5	9,049	17	10,470	37
ED25A	Standard, Single Heart Valve Replacement or Repair, with CC score 11+	13,654	50	14,224	75
ED25B	Standard, Single Heart Valve Replacement or Repair, with CC score 6-10	9,360	22	10,846	49
ED25C	Standard, Single Heart Valve Replacement or Repair, with CC score 0-5	7,942	14	8,377	33

*TAVI device cost is reimbursed separately as listed in the High Cost Device Exclusion List † Tariff prices are for admissions with a length of stay within the "Trimpoint" for the HRG

The tariff for stays in excess of the Trimpoint is £229 per day. All tariff prices are before the Specialised Services Top-up and the Market Forces Factor applicable to individual NHS Trusts are applied

Appendix A: Other Cardiac procedures with Aortic Root Repair

The 20 most common “Other Cardiac Procedures” associated with aortic root repair are:

Procedure Code	Code Description	Occurrence Rate*
K453	Anastomosis of mammary artery to left anterior descending coronary artery	8.6%
K401	Saphenous vein graft replacement of one coronary artery	8.4%
K265	Aortic valve repair NEC	6.5%
K488	Other specified other open operations on coronary artery	5.0%
K255	Mitral valve repair NEC	3.6%
K341	Annuloplasty of mitral valve	3.4%
K402	Saphenous vein graft replacement of two coronary arteries	3.4%
X512	Active cooling	2.9%
K253	Prosthetic replacement of mitral valve	2.6%
K335	Aortic root replacement NEC	2.6%
K223	Exclusion of left atrial appendage NEC	2.4%
K334	Aortic root replacement using mechanical prosthesis	2.2%
K252	Xenograft replacement of mitral valve	1.9%
K342	Annuloplasty of tricuspid valve	1.9%
K403	Saphenous vein graft replacement of three coronary arteries	1.7%
K222	Repair of atrium NEC	1.4%
K276	Tricuspid valve repair NEC	1.4%
K681	Decompression of cardiac tamponade	1.4%
L236	Plastic repair of aorta and insertion of tube graft	1.4%
L238	Other specified plastic repair of aorta	1.4%

* Occurrence rate is % of all aortic repair admissions (Root HRGs ED12 & ED13) where code used

Source: Hospital Episode Statistics, Admissions with discharge date in year ended 31 March 2016

The full list of 285 “Other Cardiac Procedures” that promote an admission from ED13 “Standard Repair of Arterial Root” to ED12 “Complex Repair of Arterial Root” is available at:
www.edwards.com/gb/aboutus/reimbursement

Appendix B: Other Cardiac procedures with Cardiac Valve Surgery

The 20 most common “Other Cardiac Procedures” associated with cardiac valve surgery are:

Procedure Code	Code Description	Occurrence Rate*
K611	Implantation of cardiac pacemaker system NEC	16.4%
K223	Exclusion of left atrial appendage NEC	6.3%
K616	Implantation of dual chamber cardiac pacemaker system	5.9%
K606	Implantation of intravenous dual chamber cardiac pacemaker system	3.1%
K561	Transluminal insertion of pulsation balloon into aorta	2.8%
K528	Other specified open operations on conducting system of heart	2.3%
K382	Operations on chordae tendineae	2.2%
K618	Other specified other cardiac pacemaker system	2.0%
K228	Other specified other operations on wall of atrium	1.4%
K526	Incision of tissue in atria	1.2%
K525	Open division of conducting system of heart NEC	1.1%
K601	Implantation of intravenous cardiac pacemaker system NEC	0.9%
K221	Excision of lesion of atrium	0.9%
K605	Implantation of intravenous single chamber cardiac pacemaker system	0.9%
K521	Open ablation of atrioventricular node	0.7%
K564	Transluminal removal of heart assist system	0.5%
K615	Implantation of single chamber cardiac pacemaker system	0.5%
K246	Myectomy of left ventricular outflow tract	0.4%
K552	Open chest massage of heart	0.4%
K681	Decompression of cardiac tamponade	0.3%

* Occurrence rate is % of all cardiac valve surgery admissions (Root HRGs ED20 – ED25) where code used

Source: Hospital Episode Statistics, Admissions with discharge date in year ended 31 March 2016

The full list of 219 “Other Cardiac Procedures” that promote an admission from “Standard” Root HRGs (ED21, ED23 or ED25) to “Complex” Root HRGs (ED20, ED22, ED24) is available at:
www.edwards.com/gb/aboutus/reimbursement

Appendix c: Most Common Complications and Co-Morbidity (CC) Diagnoses

The 20 most common diagnoses that contribute to the CC score of TAVI, aortic root repair and cardiac valve surgery are:

Diagnosis Code	Code Description	CC Value	Occurrence Rate*
I489	Atrial fibrillation and atrial flutter, unspecified	1	49.7%
J90X	Pleural effusion, not elsewhere classified	1	20.4%
I251	Atherosclerotic heart disease	1	19.2%
E119	Type 2 diabetes mellitus: Without complications	1	17.1%
I501	Left ventricular failure	2	11.0%
N179	Acute renal failure, unspecified	2	10.5%
I252	Old myocardial infarction	1	9.6%
J981	Pulmonary collapse	1	9.5%
I259	Chronic ischaemic heart disease, unspecified	1	7.7%
E669	Obesity, unspecified	1	7.6%
T810	Haemorrhage and haematoma complicating a procedure, not elsewhere classified	1	7.3%
J449	Chronic obstructive pulmonary disease, unspecified	1	7.2%
J459	Asthma, unspecified	1	6.9%
D649	Anaemia, unspecified	2	6.8%
I959	Hypotension, unspecified	2	6.6%
E039	Hypothyroidism, unspecified	1	6.4%
I500	Congestive heart failure	2	6.2%
I313	Pericardial effusion (noninflammatory)	1	6.2%
I272	Other secondary pulmonary hypertension	2	5.9%
F171	Mental and behavioural disorders due to use of tobacco: Harmful use	1	5.9%

* Occurrence rate is % of all TAVI, aortic root repair and cardiac valve surgery admissions (Root HRGs ED12 & ED13, ED20-ED25, EY20 & EY21) where code used

Source: Hospital Episode Statistics, Admissions with discharge date in year ended 31 March 2016

The full list of 1,680 diagnoses that contribute to the CC score of admissions for non-congenital cardiac procedures is available at: www.edwards.com/gb/aboutus/reimbursement

Up-to-date data can be obtained using the App available from the Apple App Store as “NHS Reference” or from <http://data.gov.uk/apps/nhs-reference>

If you have any questions please contact
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Sources:

- (1) 2017/18 National Tariff Payment System published by NHS Improvement www.improvement.nhs.uk
- (2) 2016/17 Payment Grouper published by NHS Digital www.digital.nhs.uk

Date of Preparation: February 2017

Data in Appendices A-C are derived from the HES database. The HES database is Copyright © 2017, re-used with the permission of NHS Digital. All rights reserved

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