

Objective 2 of the review is "to analyse demand for specialist inpatient congenital heart disease care"  
Therefore, we need to estimate current and future activity for surgical and catheterisation procedures  
The procedures we are considering with their OPCS and EPCC codes are listed below:

## Procedures

These procedures are in scope of the activity analysis:

OPCS Code	Procedure description						EPCC codes
K04.1	K04.1 Repair of tetralogy of fallot using valved right ventricular outflow conduit	12.28.01					
K04.2	K04.2 Repair of tetralogy of fallot using right ventricular outflow conduit NEC						
K04.3	K04.3 Repair of tetralogy of fallot using transannular patch	12.26.13					
K04.4	K04.4 Revision of repair of tetralogy of fallot						
K04.5	K04.5 Repair of tetralogy of fallot with absent pulmonary valve	12.26.21					
K04.6	K04.6 Repair of fallot-type pulmonary atresia with aortopulmonary collaterals	12.28.11					
K04.8	K04.8 Other specified repair of tetralogy of fallot	12.26.20					
K04.9	K04.9 Unspecified repair of tetralogy of fallot	12.26.01					
K05.1	K05.1 Reconstruction of atrium using atrial patch for transposition of great arteries	12.29.02					
K05.2	K05.2 Reconstruction of atrium using atrial wall for transposition of great arteries	12.29.01					
K06.1	K06.1 Repositioning of transposed great arteries	12.29.21					
K06.2	K06.2 Left ventricle to aorta tunnel with right ventricle to pulmonary trunk direct anastomosis	12.27.45					
K06.3	K06.3 Left ventricle to aorta tunnel with right ventricle to pulmonary artery valved conduit	12.29.11					
K06.4	K06.4 Atrial inversion and repositioning of transposed great artery	12.29.25					
K06.8	K06.8 Other specified other repair of transposition of great arteries	12.49.40					
K07.1	K07.1 Correction of total anomalous pulmonary venous connection to supracardiac vessel	12.00.00					
K07.2	K07.2 Correction of total anomalous pulmonary venous connection to coronary sinus	12.00.00					
K07.3	K07.3 Correction of total anomalous pulmonary venous connection to infradiaphragmatic vessel	12.00.00					
K07.8	K07.8 Other specified correction of total anomalous pulmonary venous connection	12.00.00					
K07.9	K07.9 Unspecified correction of total anomalous pulmonary venous connection	12.00.00					
K08.1	K08.1 Repair of double outlet right ventricle with intraventricular tunnel	12.27.02					
K08.2	K08.2 Repair of fallot-type double outlet right ventricle	12.27.01					
K08.3	K08.3 Repair of double outlet right ventricle	12.29.20					
K08.8	K08.8 Other specified repair of double outlet ventricle	12.29.20					
K09.1	K09.1 Repair of defect of atrioventricular septum using dual prosthetic patches	12.05.01					
K09.2	K09.2 Repair of defect of atrioventricular septum using prosthetic patch NEC	12.05.01					
K09.3	K09.3 Repair of defect of atrioventricular septum using tissue graft	12.05.01					
K09.4	K09.4 Repair of persistent ostium primum	12.04.01	12.04.09				
K09.5	K09.5 Primary repair of defect of atrioventricular septum NEC	12.05.01					
K09.6	K09.6 Revision of repair of defect of atrioventricular septum	12.05.01					
K09.8	K09.8 Other specified repair of defect of atrioventricular septum	12.05.01	12.05.10				
K09.9	K09.9 Unspecified repair of defect of atrioventricular septum	12.04.00	12.05.11				
K10.1	K10.1 Repair of defect of interatrial septum using prosthetic patch	12.01.03					
K10.2	K10.2 Repair of defect of interatrial septum using pericardial patch	12.01.03					
K10.3	K10.3 Repair of defect of interatrial septum using tissue graft NEC	12.01.03					
K10.4	K10.4 Primary repair of defect of interatrial septum NEC	12.01.02	12.01.53				
K10.5	K10.5 Revision of repair of defect of interatrial septum						
K10.8	K10.8 Other specified repair of defect of interatrial septum	12.01.03	12.01.08	12.30.41			
K10.9	K10.9 Unspecified repair of defect of interatrial septum	12.01.00	12.01.01				
K13.3	K13.3 Percutaneous transluminal repair of defect of interatrial septum using prosthesis	12.01.06	12.01.98				
K13.4	K13.4 Percutaneous transluminal repair of defect of interatrial septum NEC						
K14.2	K14.2 Open atrial septostomy	12.30.20					
K14.3	K14.3 Atrial septectomy	12.01.43					
K14.4	K14.4 Surgical atrial septation	12.01.22	12.01.57				
K14.8	K14.8 Other specified other open operations on septum of heart						
K15.2	K15.2 Closed atrial septostomy	12.01.42					
K15.8	K15.8 Other specified closed operations on septum of heart						
K16.1	K16.1 Percutaneous transluminal balloon atrial septostomy	12.01.41					
K16.2	K16.2 Percutaneous transluminal atrial septostomy NEC	12.01.44					
K16.3	K16.3 Percutaneous transluminal atrial septum fenestration closure with prosthesis	12.30.21					
K17.1	K17.1 Total cavopulmonary connection with extracardiac inferior caval vein to pulmonary artery conduit	12.30.05	12.30.50	12.30.54			
K17.2	K17.2 Total cavopulmonary connection with lateral atrial tunnel	12.30.06	12.30.51				
K17.3	K17.3 Radical aortopulmonary reconstruction with systemic-to-pulmonary arterial shunt	12.10.00					
K17.4	K17.4 Radical aortopulmonary reconstruction with right ventricle to pulmonary arterial valveless conduit	12.06.43					
K17.6	K17.6 Takedown of total cavopulmonary connection	12.30.31	12.30.56				
K17.7	K17.7 Conversion of atrial pulmonary anastomosis to total pulmonary connection	12.30.34					
K17.8	K17.8 Other specified repair of univentricular heart	12.30.37					
K17.9	K17.9 Unspecified repair of univentricular heart						
K18.1	K18.1 Creation of valved conduit between atrium and ventricle of heart						
K18.2	K18.2 Creation of valved conduit between right atrium and pulmonary artery						
K18.3	K18.3 Creation of valved conduit between right ventricle of heart and pulmonary artery	12.36.01					
K18.4	K18.4 Creation of valved conduit between left ventricle of heart and aorta						
K18.8	K18.8 Other specified creation of valved cardiac conduit						
K19.2	K19.2 Creation of conduit between right atrium and pulmonary artery NEC	12.30.01	12.30.28	12.30.32			
K19.3	K19.3 Creation of conduit between right ventricle of heart and pulmonary artery NEC						
K19.4	K19.4 Creation of conduit between right ventricle of heart and vena cava						
K19.5	K19.5 Creation of conduit between left ventricle of heart and aorta NEC						
K19.6	K19.6 Revision of cardiac conduit NEC	12.30.27	12.36.40				
K19.8	K19.8 Other specified creation of other cardiac conduit	12.36.35					
K19.9	K19.9 Unspecified creation of other cardiac conduit	12.36.00					
K20.1	K20.1 Correction of persistent sinus venosus	12.01.10					
K20.2	K20.2 Correction of partial anomalous pulmonary venous drainage	12.00.02	12.00.17	12.00.78			
K20.3	K20.3 Repair of cor triatriatum	12.01.31					
K24.1	K24.1 Relief of right ventricular outflow tract obstruction	12.06.05	12.06.18	12.06.19	12.06.41		
K24.2	K24.2 Repair of double chambered right ventricle	12.06.35					
K29.6	K29.6 Truncal valve repair	12.11.34					
K29.7	K29.7 Replacement of truncal valve	12.11.41	12.11.43				
K30.5	K30.5 Revision of plastic repair of truncal valve						
K33.6	K33.6 Aortoventriculoplasty with pulmonary valve autograft						
K34.5	K34.5 Closure of tricuspid valve	12.02.70					
K34.6	K34.6 Closure of pulmonary valve	12.13.15					
K35.4	K35.4 Percutaneous transluminal pulmonary valvotomy	12.13.05					
K35.6	K35.6 Percutaneous transluminal pulmonary valve perforation and dilation	12.13.09					
K35.7	K35.7 Percutaneous transluminal pulmonary valve replacement	12.13.51					

K36.2	K36.2 Pulmonary valvectomy	12.13.12								
K37.1	K37.1 Infundibulectomy of heart using patch									
K37.2	K37.2 Infundibulectomy of heart NEC									
K37.3	K37.3 Repair of subaortic stenosis	12.07.01	12.08.22							
K37.4	K37.4 Repair of supraaortic stenosis	12.16.40								
K37.5	K37.5 Excision of supramitral ring	12.01.32								
K37.6	K37.6 Aortoventriculoplasty	12.07.12								
K48.2	K48.2 Transposition of coronary artery NEC	12.23.00	12.23.80							
K57.7	K57.7 Percutaneous transluminal ablation for congenital heart malformation									
K76.1	K76.1 Percutaneous transluminal balloon dilation of cardiac conduit	12.36.14								
K76.8	K76.8 Other specified transluminal operations on cardiac conduit	12.36.23								
K76.9	K76.9 Unspecified transluminal operations on cardiac conduit									
L01.1	Correction of persistent truncus arteriosus	12.11.00								
L01.3	Repair of anomalous pulmonary artery origin from ascending aorta	12.14.30								
L01.4	L01.4 Closure of aortopulmonary window	12.12.01	12.12.08							
L02.3	L02.3 Closure of patent ductus arteriosus NEC	12.24.10	12.24.20							
L03.1	L03.1 Percutaneous transluminal prosthetic occlusion of patent ductus arteriosus	12.24.04	12.24.21	12.24.22						
L03.2	L03.2 Percutaneous transluminal stent implantation into arterial duct	12.10.14								
L05.9	Central systemic-to-pulmonary arterial interposition shunt,	12.31.06								
L06.2	L06.2 Creation of anastomosis to main pulmonary artery from ascending aorta NEC	12.09.03								
L06.3	L06.3 Creation of anastomosis to right pulmonary artery from ascending aorta NEC	12.31.05								
L06.9	Systemic-to-pulmonary arterial shunt procedure,	12.31.30								
L07.1	L07.1 Creation of shunt to right pulmonary artery from right subclavian artery using interposition tube prosthesis	12.31.03								
L07.2	L07.2 Creation of shunt to left pulmonary artery from left subclavian artery using interposition tube prosthesis	12.31.04								
L07.3	L07.3 Closure of prosthetic shunt to pulmonary artery from subclavian artery	12.31.31								
L07.4	Balloon dilation of systemic-to-pulmonary arterial shunt,	12.31.19								
L07.5	Occlusion of systemic-to-pulmonary arterial shunt by transluminal device-embolus,	12.31.34								
L07.9	Modified Blalock interposition shunt,	12.31.46								
L09.1	L09.1 Creation of anastomosis to pulmonary artery from vena cava	12.20.22	12.20.23	12.31.11	12.31.15	12.31.44	12.31.45	12.31.72		
L09.2	L09.2 Removal of anastomosis between pulmonary artery and vena cava	12.31.42								
L10.4	L10.4 Repair of pulmonary arterial sling	12.17.32								
L12.1	L12.1 Application of band to pulmonary artery	12.10.04	12.14.02	12.14.19	12.20.20	12.20.21				
L12.3	L12.3 Removal of band from pulmonary artery	12.14.03								
L23.1	L23.1 Plastic repair of aorta and end to end anastomosis of aorta	12.18.01	12.18.10							
L23.2	L23.2 Plastic repair of aorta using subclavian flap	12.18.03								
L23.3	L23.3 Plastic repair of aorta using patch graft	12.18.02								
L23.4	L23.4 Release of vascular ring of aorta	12.17.11								
L23.7	L23.7 Repair of interrupted aortic arch	12.21.00								
L69.1	L69.1 Major systemic to pulmonary collateral artery occlusion	12.25.18								
L69.2	L69.2 Pulmonary unifocalisation	12.25.00								
L69.3	L69.3 Percutaneous transluminal embolisation of major systemic to pulmonary collateral artery	12.25.65								
L69.4	L69.4 Percutaneous transluminal balloon angioplasty of major systemic to pulmonary collateral artery	12.25.72								
L69.5	Stent placement in systemic-to-pulmonary collateral artery (MAPCA(s)),	12.25.62								
L69.8	L69.8 Other specified operations on major systemic to pulmonary collateral arteries	12.25.19								
L75.1	L75.1 Excision of congenital arteriovenous malformation	12.25.07								
L75.3	L75.3 Embolisation of arteriovenous abnormality NEC	12.25.02								
K38.5	K38.5 Closure of aortic sinus of valsalva fistula	12.16.81								
K38.6	K38.6 Repair of aortic sinus of valsalva aneurysm	12.16.85								
K05.8	Other specified atrial inversion operations for transposition of great arteries	12.29.79								
K05.9	Unspecified atrial inversion operations for transposition of great arteries	12.29.26								
K06.9	Unspecified other repair of transposition of great arteries	12.27.78	12.29.40							
K08.4	Repair of double outlet left ventricle	12.27.50								
K14.5	Open enlargement of defect of interventricular septum	12.08.06	12.08.35							
K17.5	Biventricular repair of hypoplastic left heart syndrome	12.10.05								
K18.6	Creation of valved conduit between left ventricle of heart and pulmonary artery	12.36.02								
K36.1	Tricuspid valvectomy	12.02.22								
K24.5	K24.5 Relief of left ventricular outflow tract obstruction	12.07.07	12.07.13							
K27.1	K27.1 Allograft replacement of tricuspid valve									
K27.2	K27.2 Xenograft replacement of tricuspid valve									
K27.3	K27.3 Prosthetic replacement of tricuspid valve									
K27.4	K27.4 Replacement of tricuspid valve NEC	12.02.11	12.02.83							
K27.6	K27.6 Tricuspid valve repair NEC	12.02.02	12.02.09							
K27.8	K27.8 Other specified plastic repair of tricuspid valve									
K27.9	K27.9 Unspecified plastic repair of tricuspid valve	12.02.00								
K28.1	K28.1 Allograft replacement of pulmonary valve	12.13.22								
K28.2	K28.2 Xenograft replacement of pulmonary valve									
K28.3	K28.3 Prosthetic replacement of pulmonary valve									
K28.4	K28.4 Replacement of pulmonary valve NEC	12.13.21	12.13.55							
K28.5	K28.5 Pulmonary valve repair NEC									
K11.1	K11.1 Repair of defect of interventricular septum using prosthetic patch	12.09.01								
K11.2	K11.2 Repair of defect of interventricular septum using pericardial patch	12.08.03								
K11.3	K11.3 Repair of defect of interventricular septum using tissue graft NEC	12.08.03								
K11.4	K11.4 Primary repair of defect of interventricular septum NEC	12.08.02								
K11.5	K11.5 Revision of repair of defect of interventricular septum	12.08.19	12.08.20							
K11.6	K11.6 Repair of multiple interventricular septal defects	12.08.16								
K11.7	K11.7 Repair of interventricular septal defect using intraoperative transluminal prosthesis	12.08.28								
K11.8	K11.8 Other specified repair of defect of interventricular septum	12.08.03								
K11.9	K11.9 Unspecified repair of defect of interventricular septum	12.08.01								
K12.1	K12.1 Repair of defect of septum of heart using prosthetic patch NEC									
K12.2	K12.2 Repair of defect of septum of heart using pericardial patch NEC									
K12.4	K12.4 Primary repair of defect of septum of heart NEC									
K12.5	K12.5 Revision of repair of septum of heart NEC									
K12.8	K12.8 Other specified repair of defect of unspecified septum of heart									
K13.1	K13.1 Percutaneous transluminal repair of defect of interventricular septum using prosthesis	12.08.07								
K13.2	K13.2 Percutaneous transluminal repair of defect of interventricular septum NEC									
K13.5	K13.5 Percutaneous transluminal repair of defect of unspecified septum using prosthesis									
K13.8	K13.8 Other specified transluminal repair of defect of septum									
K13.9	K13.9 Unspecified transluminal repair of defect of septum									
K02.4	Piggyback transplantation of heart	12.37.03								
K06.5	Congenitally corrected transposition of great arteries repair	12.27.46								
K16.5	K16.5 Percutaneous transluminal closure of patent oval foramen with prosthesis	12.01.07								
X50.1	X50.1 Direct current cardioversion	12.32.14								
X58.1	X58.1 Extracorporeal membrane oxygenation	12.87.25	12.87.26	12.87.27	12.87.28	12.87.36	12.87.37			
X58.8	X58.8 Other specified artificial support for body system	12.87.45								

These procedures are in scope of the activity analysis where the patient is under 16, or over 16 with a congenital heart defect diagnosis\*:

OPCS Code	Procedure description	EPCC codes					
K16.4	K16.4 Percutaneous transluminal atrial septum fenestration	12.01.47	12.30.74				
K47.2	K47.2 Repair of arteriovenous fistula of coronary artery	12.23.07	12.23.11	12.23.13			
L02.9	Arterial duct-ligament procedure.	12.24.00					
K16.8	K16.8 Other specified other therapeutic transluminal operations on septum of heart	12.08.65					
K16.9	K16.9 Unspecified other therapeutic transluminal operations on septum of heart						
K20.8	K20.8 Other specified refashioning of atrium	12.00.29					
K24.3	K24.3 Repair of right ventricular aneurysm	12.06.38					
K24.4	K24.4 Repair of left ventricular aneurysm	12.07.37					
K38.1	K38.1 Operations on papillary muscle						
K38.8	K38.8 Other specified other operations on structure adjacent to valve of heart						
K45.3	K45.3 Anastomosis of mammary artery to left anterior descending coronary artery						
K45.4	K45.4 Anastomosis of mammary artery to coronary artery NEC						
K47.3	K47.3 Repair of aneurysm of coronary artery						
K47.5	K47.5 Repair of arteriovenous malformation of coronary artery						
K47.8	K47.8 Other specified repair of coronary artery						
K52.4	K52.4 Open division of accessory pathway within heart						
K52.5	K52.5 Open division of conducting system of heart NEC	12.35.53	12.35.72	12.35.80	12.35.81		
K52.6	K52.6 Incision of tissue in atria						
K52.8	K52.8 Other specified open operations on conducting system of heart	12.38.50					
K52.9	K52.9 Unspecified open operations on conducting system of heart	12.35.40					
K54.1	K54.1 Open implantation of ventricular assist device	12.87.21	12.87.22	12.87.23	12.87.24		
K54.2	K54.2 Open removal of ventricular assist device	12.87.41					
K54.8	K54.8 Other specified open heart assist operations						
K57.1	K57.1 Percutaneous transluminal ablation of atrioventricular node						
K57.2	K57.2 Percutaneous transluminal ablation of conducting system of heart NEC	12.35.46	12.35.48	12.35.57	12.38.40		
K57.3	K57.3 Percutaneous transluminal removal of foreign body from heart	12.45.04					
K57.4	K57.4 Percutaneous transluminal ablation of accessory pathway						
K57.5	K57.5 Percutaneous transluminal ablation of atrial wall NEC	12.35.82					
K57.6	K57.6 Percutaneous transluminal ablation of ventricular wall	12.35.83					
K57.8	K57.8 Other specified other therapeutic transluminal operations on heart	12.38.25	12.45.13	12.45.14			
K58.1	K58.1 Percutaneous transluminal mapping of conducting system of heart NEC						
K58.2	K58.2 Percutaneous transluminal electrophysiological studies on conducting system of heart	13.05.12					
K58.6	K58.6 Percutaneous transluminal three dimensional electroanatomic mapping of conducting system of heart	13.05.17					
K59.1	K59.1 Implantation of cardioverter defibrillator using one electrode lead						
K59.2	K59.2 Implantation of cardioverter defibrillator using two electrode leads						
K59.3	K59.3 Resiting of lead of cardioverter defibrillator						
K59.4	K59.4 Renewal of cardioverter defibrillator	12.42.39					
K59.5	K59.5 Removal of cardioverter defibrillator	12.42.34	12.42.35				
K59.6	K59.6 Implantation of cardioverter defibrillator using three electrode leads						
K59.8	K59.8 Other specified cardioverter defibrillator introduced through the vein						
K59.9	K59.9 Unspecified cardioverter defibrillator introduced through the vein	12.42.31	12.42.33	12.42.61	12.42.64	12.42.65	
K60.1	K60.1 Implantation of intravenous cardiac pacemaker system	12.34.64					
K60.2	K60.2 Resiting of lead of intravenous cardiac pacemaker system						
K60.3	K60.3 Renewal of intravenous cardiac pacemaker system						
K60.4	K60.4 Removal of intravenous cardiac pacemaker system						
K60.5	K60.5 Implantation of intravenous single chamber cardiac pacemaker system						
K60.6	K60.6 Implantation of intravenous dual chamber cardiac pacemaker system						
K60.7	K60.7 Implantation of intravenous biventricular cardiac pacemaker system						
K60.8	K60.8 Other specified cardiac pacemaker system introduced through vein						
K60.9	K60.9 Unspecified cardiac pacemaker system introduced through vein						
K61.1	K61.1 Implantation of cardiac pacemaker system NEC	12.34.60	12.34.63	12.34.67	12.34.85		
K61.2	K61.2 Resiting of lead of cardiac pacemaker system NEC	12.34.70	12.34.84				
K61.3	K61.3 Renewal of cardiac pacemaker system NEC	12.35.13					
K61.4	K61.4 Removal of cardiac pacemaker system NEC	12.35.14	12.44.75				
K61.5	K61.5 Implantation of single chamber cardiac pacemaker system	12.34.50					
K61.6	K61.6 Implantation of dual chamber cardiac pacemaker system	12.34.51					
K61.7	K61.7 Implantation of biventricular cardiac pacemaker system	12.34.52	12.34.73				
K61.8	K61.8 Other specified other cardiac pacemaker system						
K61.9	K61.9 Unspecified other cardiac pacemaker system	12.34.68					
K52.1	K52.1 Open ablation of atrioventricular node						
K56.1	K56.1 Transluminal insertion of pulsation balloon into aorta	12.87.02	12.87.04	12.87.10			
K58.5	K58.5 Transluminal intracardiac echocardiography	13.01.23					
K62.2	K62.2 Percutaneous transluminal ablation of atrial wall for atrial flutter						
K62.3	K62.3 Percutaneous transluminal ablation of conducting system of heart for atrial flutter NEC						
K62.4	K62.4 Percutaneous transluminal internal cardioversion NEC						
K64.1	K64.1 Percutaneous radiofrequency ablation of epicardium	12.38.69					
K14.1	Open enlargement of defect of atrial septum	12.01.90					
K19.1	Creation of conduit between atrium and ventricle of heart NEC	12.30.13					

These procedures are in scope of the activity analysis if patients are male aged under 31, or female aged under 41:

OPCS Code	Procedure description	EPCC codes						
K33.0								
K25.1	K25.1 Allograft replacement of mitral valve							
K25.2	K25.2 Xenograft replacement of mitral valve							
K25.3	K25.3 Prosthetic replacement of mitral valve							
K25.4	K25.4 Replacement of mitral valve NEC	12.03.11	12.03.84					
K25.5	K25.5 Mitral valve repair NEC	12.03.03						
K25.8	K25.8 Other specified plastic repair of mitral valve							
K25.9	K25.9 Unspecified plastic repair of mitral valve	12.03.00						
K26.1	K26.1 Allograft replacement of aortic valve	12.16.22						
K26.2	K26.2 Xenograft replacement of aortic valve	12.13.84	12.16.28					
K26.3	K26.3 Prosthetic replacement of aortic valve	12.16.29						
K26.4	K26.4 Replacement of aortic valve NEC	12.16.21	12.16.33	12.16.97				
K26.5	K26.5 Aortic valve repair NEC	12.16.61						
K26.8	K26.8 Other specified plastic repair of aortic valve							
K26.9	K26.9 Unspecified plastic repair of aortic valve	12.16.00	12.16.11					
K29.2	K29.2 Xenograft replacement of valve of heart NEC							
K29.3	K29.3 Prosthetic replacement of valve of heart NEC							
K29.4	K29.4 Replacement of valve of heart NEC	12.04.18	12.04.33	12.04.45				
K30.1	K30.1 Revision of plastic repair of mitral valve							
K30.2	K30.2 Revision of plastic repair of aortic valve							
K30.3	K30.3 Revision of plastic repair of tricuspid valve							
K30.4	K30.4 Revision of plastic repair of pulmonary valve							
K30.8	K30.8 Other specified revision of plastic repair of valve of heart							
K31.1	K31.1 Open mitral valvotomy	12.03.01						
K31.2	K31.2 Open aortic valvotomy	12.16.02						
K31.4	K31.4 Open pulmonary valvotomy	12.13.02						
K32.1	K32.1 Closed mitral valvotomy							
K32.2	K32.2 Closed aortic valvotomy	12.16.04						
K33.3	K33.3 Aortic root replacement using homograft	12.16.63						
K33.4	K33.4 Aortic root replacement using mechanical prosthesis	12.16.64						
K33.5	K33.5 Aortic root replacement NEC	12.16.50	12.17.90	12.17.91				
K33.8	K33.8 Other specified operations on aortic root							
K34.1	K34.1 Annuloplasty of mitral valve	12.03.04						
K34.2	K34.2 Annuloplasty of tricuspid valve	12.02.04						
K34.3	K34.3 Annuloplasty of valve of heart NEC	12.16.14						
K34.8	K34.8 Other specified other open operations on valve of heart							
K35.1	K35.1 Percutaneous transluminal mitral valvotomy	12.03.10						
K35.2	K35.2 Percutaneous transluminal aortic valvotomy	12.16.05	12.16.25					
K35.3	K35.3 Percutaneous transluminal tricuspid valvotomy							
K35.5	K35.5 Percutaneous transluminal valvuloplasty							
K35.8	K35.8 Other specified therapeutic transluminal operations on valve of heart	12.03.97	12.13.81	12.45.19				
K35.9	K35.9 Unspecified therapeutic transluminal operations on valve of heart	12.45.15	12.45.21	12.45.58				
K33.1	K33.1 Aortic root replacement using pulmonary valve autograft with right ventricle to pulmonary artery valved conduit	12.16.30						
K33.2	K33.2 Aortic root replacement using pulmonary valve autograft with right ventricle to pulmonary artery valved conduit and aortovericuloplasty	12.16.62						

These procedures are in scope of the activity analysis if patients have a congenital heart defect diagnosis\* or are under 16 with another relevant:diagnosis\*\*:

OPCS Code	Procedure description	EPCC codes						
K18.5	K18.5 Revision of valved cardiac conduit							
K18.7	K18.7 Replacement of valved cardiac conduit	12.36.10						
K20.4	K20.4 Repair of coronary sinus abnormality	12.00.50	12.00.55					
K37.8	K37.8 Other specified removal of obstruction from structure adjacent to valve of heart	12.08.21						
K63.1	K63.1 Angiocardiography of combination of right and left side of heart							
K63.2	K63.2 Angiocardiography of right side of heart NEC							
K63.3	K63.3 Angiocardiography of left side of heart NEC							
K65.1	K65.1 Catheterisation of combination of right and left side of heart NEC							
K65.2	K65.2 Catheterisation of right side of heart NEC							
K65.3	K65.3 Catheterisation of left side of heart NEC							
L10.8	L10.8 Other specified repair of pulmonary artery	12.14.01	12.14.20	12.14.21	12.14.22	12.15.24		
L12.6	L12.6 Pulmonary artery ligation	12.14.31						
L12.9	Procedure involving pulmonary artery,	12.15.11						
L13.4	L13.4 Percutaneous transluminal cutting balloon angioplasty of pulmonary artery	12.15.53						
L13.5	L13.5 Percutaneous transluminal balloon angioplasty of pulmonary artery NEC	12.14.05	12.15.03	12.15.04				
L13.6	L13.6 Percutaneous transluminal insertion of stent into pulmonary artery	12.15.13	12.15.14	12.15.50				
L13.8	L13.8 Other specified transluminal operations on pulmonary artery	12.15.25						
L21.1	L21.1 Bypass of segment of ascending aorta by anastomosis of aorta to aorta NEC	12.16.35	12.16.65					
L23.6	L23.6 Plastic repair of aorta and insertion of tube graft	12.18.15						
L23.8	L23.8 Other specified plastic repair of aorta	12.18.00						
L23.9	L23.9 Unspecified plastic repair of aorta	12.18.30						
L25.8	L25.8 Other specified other open operations on aorta	12.16.59	12.17.31					
L26.1	L26.1 Percutaneous transluminal balloon angioplasty of aorta	12.18.04	12.18.08					
L26.2	L26.2 Percutaneous transluminal angioplasty of aorta NEC	12.18.27						
L26.5	L26.5 Percutaneous transluminal insertion of stent into aorta	12.18.17	12.18.22	12.18.48				
L28.3	L28.3 Endovascular stenting for thoracic aortic aneurysm	12.18.70						
L70.9	L70.9 Unspecified other open operations on other artery	12.22.00						
L79.9	L79.9 Unspecified other operations on vena cava	12.00.39	12.00.42					
L80.1	L80.1 Repair of pulmonary vein stenosis	12.00.03						
L80.2	L80.2 Percutaneous transluminal balloon angioplasty of pulmonary vein	12.00.21	12.00.24					
L80.3	L80.3 Percutaneous transluminal cutting balloon angioplasty of pulmonary vein	12.00.23						
L80.4	L80.4 Percutaneous transluminal insertion of stent into pulmonary vein	12.00.22	12.00.25					
L80.9	Pulmonary vein procedure,	12.00.20	12.29.52					
L93.8	L93.8 Other specified other open operations on vein	12.00.81	12.00.83					
L93.9	Systemic vein procedure,	12.00.30						
L94.1	L94.1 Percutaneous transluminal embolisation of vein	12.70.08						
L94.5	L94.5 Percutaneous transluminal insertion of stent into vein NEC	12.00.36	12.00.44	12.30.60				
L94.7	L94.7 Percutaneous transluminal balloon angioplasty of vein NEC	12.00.43						
L97.9	L97.9 Unspecified other operations on blood vessel	12.33.51						
K01.1	K01.1 Allotransplantation of heart and lung	12.32.13						
K01.9	K01.9 Unspecified transplantation of heart and lung							
K02.1	K02.1 Allotransplantation of heart NEC	12.37.02	12.37.06					
K02.3	K02.3 Implantation of prosthetic heart	12.37.04						
K02.6	K02.6 Revision of transplantation of heart NEC							
K02.8	K02.8 Other specified other transplantation of heart							
K02.9	K02.9 Unspecified other transplantation of heart	12.37.01						
K16.6	K16.6 Percutaneous transluminal chemical mediated septal ablation	12.07.19	12.23.42					
K22.2	K22.2 Repair of atrium NEC							
K22.8	K22.8 Other specified other operations on wall of atrium							
K22.9	K22.9 Unspecified other operations on wall of atrium	12.01.30	12.01.60					
K23.3	K23.3 Repair of wall of heart NEC							
K23.8	K23.8 Other specified other operations of wall of heart							
K24.6	K24.6 Myectomy of left ventricular outflow tract	12.07.11						
K24.8	K24.8 Other specified other operations on ventricles of heart	12.06.00	12.07.00					
K53.2	K53.2 Exploration of heart NEC							
K53.9	K53.9 Unspecified other incision of heart							
K55.2	K55.2 Open chest massage of heart							
K55.8	K55.8 Other specified other open operations on heart	12.32.21	12.33.60					
K56.2	K56.2 Transluminal insertion of heart assist system NEC							
K56.3	K56.3 Transluminal maintenance of heart assist system							
K56.4	K56.4 Transluminal removal of heart assist system							
K56.8	K56.8 Other specified transluminal heart assist operations							
K56.9	K56.9 Unspecified transluminal heart assist operations							
K57.9	K57.9 Unspecified other therapeutic transluminal operations on heart	12.45.28	12.45.59					
K58.3	K58.3 Percutaneous transluminal right ventricular biopsy	12.06.25						
K58.4	K58.4 Percutaneous transluminal left ventricular biopsy							
K58.8	K58.8 Other specified diagnostic transluminal operations on heart							
K58.9	K58.9 Unspecified diagnostic transluminal operations on heart	12.45.07	13.05.01	13.05.05	13.05.06	13.05.07	13.05.08	13.05.13
K62.8	K62.8 Other specified therapeutic transluminal operations on heart							
K62.9	K62.9 Unspecified therapeutic transluminal operations on heart							
K63.6	K63.6 Coronary arteriography NEC							
K63.8	K63.8 Other specified contrast radiology of heart							
K63.9	K63.9 Unspecified contrast radiology of heart							
K65.4	K65.4 Catheterisation of left side of heart via atrial transeptal puncture	12.45.01						
K65.8	K65.8 Other specified catheterisation of heart							
K65.9	K65.9 Unspecified catheterisation of heart	12.45.00	12.45.06	12.45.30	13.05.14	13.05.15	13.05.16	
K66.8	K66.8 Other specified other operations on heart							
K66.9	K66.9 Unspecified other operations on heart							
K67.8	K67.8 Other specified excision of pericardium	12.32.09						
K67.9	K67.9 Unspecified excision of pericardium							
K68.1	K68.1 Decompression of cardiac tamponade							
K68.2	K68.2 Pericardiocentesis NEC	12.32.40	12.32.41					
K68.8	K68.8 Other specified drainage of pericardium							
K68.9	K68.9 Unspecified drainage of pericardium							
K69.1	K69.1 Freeing of adhesions of pericardium							
K69.2	K69.2 Fenestration of pericardium	12.32.46						
K69.8	K69.8 Other specified incision of pericardium							
K69.9	K69.9 Unspecified incision of pericardium							
K71.1	K71.1 Biopsy of lesion of pericardium	12.32.53						

K71.2	K71.2 Repair of pericardium								
K71.4	K71.4 Exploration of pericardium								
K71.8	K71.8 Other specified other operations on pericardium	12.32.59							
K77.1	K77.1 Percutaneous transluminal pericardiocentesis	12.32.43							
K77.8	K77.8 Other specified transluminal drainage of pericardium								
K77.9	K77.9 Unspecified transluminal drainage of pericardium								
K45.5	K45.5 Anastomosis of thoracic artery to coronary artery NEC								
K45.6	K45.6 Revision of connection of thoracic artery to coronary artery								
K45.8	K45.8 Other specified connection of thoracic artery to coronary artery								
K45.9	K45.9 Unspecified connection of thoracic artery to coronary artery								
K46.1	K46.1 Double implantation of mammary arteries into heart								
K46.3	K46.3 Implantation of mammary artery into heart NEC								
K46.5	K46.5 Revision of implantation of thoracic artery into heart								
K46.8	K46.8 Other specified other bypass of coronary artery								
K46.9	K46.9 Unspecified other bypass of coronary artery								
K47.4	K47.4 Repair of rupture of coronary artery								
K63.4	K63.4 Coronary arteriography using two catheters								
K63.5	K63.5 Coronary arteriography using single catheter								
K64.8	K64.8 Other specified								
K64.9	K64.9 Unspecified								
K24.9	Unspecified other operations on ventricles of heart	12.06.26	12.07.26						
K28.9	Unspecified plastic repair of pulmonary valve	12.13.00							
K29.5	Repair of valve of heart NEC	12.04.20	12.04.40	12.48.01	12.48.02	12.90.01			
K34.9	Unspecified other open operations on valve of heart	12.46.00							
K38.3	Operations on mitral subvalvar apparatus	12.03.19							
K38.4	Unspecified other operations on structure adjacent to valve of heart	12.16.90							
K38.9	Unspecified other operations on structure adjacent to valve of heart	12.16.80							
K48.9	Unspecified other open operations on coronary artery	12.23.09							

These procedures are in scope of the analysis if they relate to any of the above:

OPCS Code	Procedure description	EPCC codes							
T03.2	T03.2 Reopening of chest and reexploration of intrathoracic operation site and surgical arrest of postoperative bleeding	12.32.18							
T05.1	T05.1 Suture of chest wall	12.65.60							
T05.8	T05.8 Other specified other operations on chest wall	12.65.56							
T16.2	T16.2 Plication of diaphragm	12.32.70							
T89.3	T89.3 Ligation of lymphatic duct	12.32.28							

## Diagnoses

\* The following diagnoses are considered congenital heart defect diagnoses:

ICD-10 Code	Diagnosis description
Q20.0	Q20.0 Common arterial trunk
Q20.1	Q20.1 Double outlet right ventricle
Q20.2	Q20.2 Double outlet left ventricle
Q20.3	Q20.3 Discordant ventriculoarterial connection
Q20.4	Q20.4 Double inlet ventricle
Q20.5	Q20.5 Discordant atrioventricular connection
Q20.6	Q20.6 Isomerism of atrial appendages
Q20.8	Q20.8 Other congenital malformations of cardiac chambers and connections
Q20.9	Q20.9 Congenital malformation of cardiac chambers and connections, unspecified
Q21.0	Q21.0 Ventricular septal defect
Q21.1	Q21.1 Atrial septal defect
Q21.2	Q21.2 Atrioventricular septal defect
Q21.3	Q21.3 Tetralogy of Fallot
Q21.4	Q21.4 Aortopulmonary septal defect
Q21.8	Q21.8 Other congenital malformations of cardiac septa
Q21.9	Q21.9 Congenital malformation of cardiac septum, unspecified
Q22.0	Q22.0 Pulmonary valve atresia
Q22.1	Q22.1 Congenital pulmonary valve stenosis
Q22.2	Q22.2 Congenital pulmonary valve insufficiency
Q22.3	Q22.3 Other congenital malformations of pulmonary valve
Q22.4	Q22.4 Congenital tricuspid stenosis
Q22.5	Q22.5 Ebstein anomaly
Q22.6	Q22.6 Hypoplastic right heart syndrome
Q22.8	Q22.8 Other congenital malformations of tricuspid valve
Q22.9	Q22.9 Congenital malformation of tricuspid valve, unspecified
Q23.0	Q23.0 Congenital stenosis of aortic valve
Q23.1	Q23.1 Congenital insufficiency of aortic valve
Q23.2	Q23.2 Congenital mitral stenosis
Q23.3	Q23.3 Congenital mitral insufficiency
Q23.4	Q23.4 Hypoplastic left heart syndrome
Q23.8	Q23.8 Other congenital malformations of aortic and mitral valves
Q23.9	Q23.9 Congenital malformation of aortic and mitral valves, unspecified
Q24.0	Q24.0 Dextrocardia
Q24.1	Q24.1 Laevocardia
Q24.2	Q24.2 Cor triatriatum
Q24.3	Q24.3 Pulmonary infundibular stenosis
Q24.4	Q24.4 Congenital subaortic stenosis
Q24.5	Q24.5 Malformation of coronary vessels
Q24.6	Q24.6 Congenital heart block
Q24.8	Q24.8 Other specified congenital malformations of heart
Q24.9	Q24.9 Congenital malformation of heart, unspecified
Q25.0	Q25.0 Patent ductus arteriosus
Q25.1	Q25.1 Coarctation of aorta
Q25.2	Q25.2 Atresia of aorta
Q25.3	Q25.3 Stenosis of aorta
Q25.4	Q25.4 Other congenital malformations of aorta
Q25.5	Q25.5 Atresia of pulmonary artery
Q25.6	Q25.6 Stenosis of pulmonary artery
Q25.7	Q25.7 Other congenital malformations of pulmonary artery
Q25.8	Q25.8 Other congenital malformations of great arteries
Q25.9	Q25.9 Congenital malformation of great arteries, unspecified
Q26.0	Q26.0 Congenital stenosis of vena cava
Q26.1	Q26.1 Persistent left superior vena cava
Q26.2	Q26.2 Total anomalous pulmonary venous connection
Q26.3	Q26.3 Partial anomalous pulmonary venous connection
Q26.4	Q26.4 Anomalous pulmonary venous connection, unspecified
Q26.8	Q26.8 Other congenital malformations of great veins
Q26.9	Q26.9 Congenital malformation of great vein, unspecified
Q89.3	Q89.3 Situs inversus
Q27.8	Q27.8 Other specified congenital malformations of peripheral vascular system
Q27.9	Q27.9 Congenital malformation of peripheral vascular system, unspecified
Q28.8	Q28.8 Other specified congenital malformations of circulatory system
Q28.9	Q28.9 Congenital malformation of circulatory system, unspecified
Z87.7	Z87.7 Personal history of congenital malformations, deformations and chromosomal abnormalities

\*\* the following diagnoses are considered relevant for some procedures where the patient is aged under 16:

ICD-10 Code	Diagnosis description
I27.8	I27.8 Other specified pulmonary heart diseases
I72.9	I72.9 Aneurysm of unspecified site
I00	I00 Acute rheumatic fever,
I01	I01 Rheumatic fever with cardiac involvement,
I09.1	I09.1 Rheumatic diseases of endocardium, valve unspecified
I05.9	I05.9 Mitral valve disease, unspecified
I06.9	I06.9 Rheumatic aortic valve disease, unspecified
I33.0	I33.0 Acute and subacute infective endocarditis
I51.8	I51.8 Other ill-defined heart diseases
I40.0	I40.0 Infective myocarditis
B57.2	B57.2 Chagas' disease (chronic) with heart involvement
I30.1	I30.1 Infective pericarditis
I87.9	I87.9 Disorder of vein, unspecified
I87.1	I87.1 Compression of vein
I28.9	I28.9 Disease of pulmonary vessels, unspecified
I28.8	I28.8 Other specified diseases of pulmonary vessels
I97.8	I97.8 Other postprocedural disorders of circulatory system NEC
I38	I38 Heart valvar abnormality: acquired,
I36.9	I36.9 Nonrheumatic tricuspid valve disorder, unspecified
I34.9	I34.9 Nonrheumatic mitral valve disorder, unspecified

I34.2	I34.2 Nonrheumatic mitral (valve) stenosis
I34.0	I34.0 Mitral (valve) insufficiency
I77.8	I77.8 Other specified disorders of arteries and arterioles
I37.9	I37.9 Pulmonary valve disorder, unspecified
I37.0	I37.0 Pulmonary valve stenosis
I37.1	I37.1 Pulmonary valve insufficiency
I37.8	I37.8 Other pulmonary valve disorders
I35.9	I35.9 Aortic valve disorder, unspecified
I35.0	I35.0 Aortic (valve) stenosis
I35.1	I35.1 Aortic (valve) insufficiency
I50.1	I50.1 Left ventricular failure
I50.0	I50.0 Congestive heart failure
I51.0	I51.0 Cardiac septal defect, acquired
I23.2	I23.2 Ventric sep defect as curr comp fol acut myocardial infarc
I51.4	I51.4 Myocarditis, unspecified
I50.9	I50.9 Heart failure, unspecified
I42.9	I42.9 Cardiomyopathy, unspecified
I42.8	I42.8 Other cardiomyopathies
I42.2	I42.2 Other hypertrophic cardiomyopathy
I42.0	I42.0 Dilated cardiomyopathy
I42.4	I42.4 Endocardial fibroelastosis
I42.5	I42.5 Other restrictive cardiomyopathy
I42.7	I42.7 Cardiomyopathy due to drugs and other external agents
E63.9	E63.9 Nutritional deficiency, unspecified
M35.9	M35.9 Systemic involvement of connective tissue, unspecified
I27.0	I27.0 Primary pulmonary hypertension
I27.8	I27.8 Other specified pulmonary heart diseases
I26.9	I26.9 Pulmonary embolism without mention of acute cor pulmonale
I77.1	I77.1 Stricture of artery
I71.9	I71.9 Aortic aneurysm of unspec site, without mention of rupture
I71.0	I71.0 Dissection of aorta [any part]
I71.2	I71.2 Thoracic aortic aneurysm, without mention of rupture
I71.4	I71.4 Abdominal aortic aneurysm, without mention of rupture
I71.1	I71.1 Thoracic aortic aneurysm, ruptured
I71.5	I71.5 Thoracoabdominal aortic aneurysm, ruptured
I77.6	I77.6 Arteritis, unspecified
I25.9	I25.9 Chronic ischaemic heart disease, unspecified
I21.9	I21.9 Acute myocardial infarction, unspecified
I10	Systemic hypertension,
I15.9	I15.9 Secondary hypertension, unspecified
I15.8	I15.8 Other secondary hypertension
I31.9	I31.9 Disease of pericardium, unspecified
I30.9	I30.9 Acute pericarditis, unspecified
I31.1	I31.1 Chronic constrictive pericarditis
I31.3	I31.3 Pericardial effusion (noninflammatory)
I97.9	I97.9 Postprocedural disorder of circulatory system, unspecified
I25.1	I25.1 Atherosclerotic heart disease
I49.9	I49.9 Cardiac arrhythmia, unspecified
I46.9	I46.9 Cardiac arrest, unspecified
I49.8	I49.8 Other specified cardiac arrhythmias
I47.1	I47.1 Supraventricular tachycardia
I46.1	I46.1 Sudden cardiac death, so described
I49.1	I49.1 Atrial premature depolarization
I48	Atrial flutter,
I45.6	I45.6 Pre-excitation syndrome
I45.8	I45.8 Other specified conduction disorders
I47.2	I47.2 Ventricular tachycardia
I49.0	I49.0 Ventricular fibrillation and flutter
I49.3	I49.3 Ventricular premature depolarization
I45.9	I45.9 Conduction disorder, unspecified
I45.5	I45.5 Other specified heart block
I49.5	I49.5 Sick sinus syndrome
I44.0	I44.0 Atrioventricular block, first degree
I44.1	I44.1 Atrioventricular block, second degree
I44.2	I44.2 Atrioventricular block, complete
I45.1	I45.1 Other and unspecified right bundle-branch block
I44.7	I44.7 Left bundle-branch block, unspecified
M30.3	M30.3 Mucocutaneous lymph node syndrome [Kawasaki]
T82.9	T82.9 Unsp comps cardiac & vasc prosthet devs implants & grafts
T82.5	T82.5 Mech compl of other cardiac & vascular devices and implants
T82.8	T82.8 Oth comps of cardiac & vasc prosthet devs implants & grafts
T81.8	T81.8 Other complications of procedures, not elsewhere classified
D48.7	D48.7 Neoplasm uncert or unknown behaviour of oth spec sites
S26	Traumatic injury of heart,
T86.2	T86.2 Heart transplant failure and rejection
T86.3	T86.3 Heart-lung transplant failure and rejection
C88.9	C88.9 Malignant immunoproliferative disease, unspecified
T82.1	T82.1 Mechanical complication of cardiac electronic device
I34.1	I34.1 Mitral (valve) prolapse
I99	I99 Other and unspecified disorders of circulatory system
J81	J81 Pulmonary oedema
Q32.4	Other congenital malformations of bronchus
Q33.2	Q33.2 Sequestration of lung
Q89.9	Q89.9 Congenital malformation, unspecified
R01.0	R01.0 Cardiac murmur, unspecified
R94.3	R94.3 Abnormal results of cardiovascular function studies
T82.0	T82.0 Mechanical complication of heart valve prosthesis



The above procedures include all operations and interventions on the European Paediatric Cardiac Code (EPCC) list with the following exceptions:

These procedures are never considered procedures for congenital heart defects:

OPCS Code	Procedure description	EPCC Codes						
K23.5	Partial left ventriculectomy	12.07.38						
L12.4	L12.4 Open embolectomy of pulmonary artery	12.15.48	12.15.80	12.15.81				
L25.4	L25.4 Operations on aneurysm of aorta NEC	12.16.42	12.16.66	12.16.67	12.16.68			
K44.9	K44.9 Unspecified other replacement of coronary artery	12.23.08						
K50.2	K50.2 Percutaneous transluminal coronary thrombolysis using streptokinase	12.23.30						
K49.9	K49.9 Unspecified transluminal balloon angioplasty of coronary artery	12.23.31						
K75.8	K75.8 Other specified percutaneous transluminal balloon angioplasty and stenting of coronary artery	12.23.38						
K55.5	K55.5 Resection of heart tumour	12.32.10						
K55.4	K55.4 Open removal of cardiac vegetations NEC	12.32.20						
K55.3	K55.3 Open removal of cardiac thrombus	12.32.22						
K55.6	K55.6 Repair of traumatic injury of heart	12.33.10						
K54.9	Unspecified open heart assist operations	12.87.01						
K23.6	Cardiomyoplasty	12.87.31						
L13.1	L13.1 Percutaneous transluminal embolectomy of pulmonary artery	12.15.49						
K62.1	K62.1 Percutaneous transluminal ablation of pulmonary vein to left atrium conducting system	12.35.84						

These codes are subsidiary classifications of methods of operation, rather than distinct procedures:

OPCS Code	Procedure description	EPCC Codes						
Y73.1	Y73 Facilitating operations NOC	12.00.90	12.00.92					
Y71.3	Y71 Late operations NOC	12.43.00	12.43.06					
Y74.4	Y74 Minimal access to thoracic cavity	12.40.06						
Y74.9	Y74 Minimal access to thoracic cavity	12.40.13						
Y74.3	Y74 Minimal access to thoracic cavity	12.40.15						
Y49.1	Y49 Approach through thoracic cavity	12.40.29	12.40.30					
Y49.3	Y49 Approach through thoracic cavity	12.40.00	12.40.16					
Y30.8	Y30 Incision of organ NOC	12.40.99						
Y69.8	Y69 Harvest of other tissue	12.37.70						
Y71.9	Y71 Late operations NOC	12.32.00						
Y15.6	Y15 Attention to stent in organ NOC	12.45.10						
Y14.8	Y14 Placement of stent in organ NOC	12.45.11						
Y40.3	Y40 Dilation of organ NOC	12.45.12						

These procedure are non-cardiac procedures:

OPCS Code	Procedure description	EPCC Codes						
E53.9	E53.9 Unspecified transplantation of lung	12.37.60						
E53.2	E53.2 Single lung transplant	12.37.13						
E53.1	E53.1 Double lung transplant	12.37.20						
X40.1	X40.1 Renal dialysis	12.32.90						