**Inclusion/Exclusion criteria and pathway for Aortic Stenosis patients**

# Identify Aortic Stenosis group

This includes patients who have aortic valvar stenosis as the primary problem, and includes patients who have other multi level left heart obstruction which may occur in conjunction with aortic valvar stenosis.

## Step 1: Include patients who had evidence of Aortic Stenosis diagnosis

### Diagnostic code evidence of primary diagnosis Aortic Stenosis

#### Patients who have a diagnosis code for Aortic Stenosis

##### Table A Diagnosis codes Aortic Stenosis as listed for Top rank

|  |
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| **Diagnosis codes for Aortic Stenosis as listed for Top rank** |
| 091501. Aortic valvar stenosis: congenital |
| 091513. Aortic valvar stenosis |
| 091592. Aortic stenosis |
| 091517. Aortic 'annular' hypoplasia. |
| 091521.Unicuspid aortic valve. |

### Procedure evidence of primary diagnosis Aortic Stenosis

##### Table B Diagnosis codes for Aortic Stenosis as based on specific procedure

|  |
| --- |
| Specific procedure 25: Ross procedure (aortic valve-root replacement with pulmonary autograph) |
| Specific procedure 27: Aortic valve replacement (non-Ross) |
| Specific procedure 31: Aortic valve repair |
| Specific procedure 68: Balloon dilation of aortic valve |

## 

## Step 2: Exclude patients who had more complex CHD

Exclude patients if they had a code from Table C.

### Table C: Aortic Stenosis diagnosis Exclusion Codes (codes that are indicative of more complex CHD condition) either diagnosis or surgery codes

As this is a diagnosis-based analysis, we mainly use diagnostic exclusion codes with a small number of key procedure exclusion codes. This is because the procedures undertaken in these patients are variable and we aim to be inclusive to variations in management pathway.

Exclude patients who have a code listed in Table D, as well as those identified as having HLHS, FUH, TGA, Pulmonary atresia, AVSD or Fallot according to the CHANPION rules, which cannot be adequately captured by Table D alone.

|  |
| --- |
| **Diagnostic codes** |
| 010101. Tetralogy of Fallot |
| 010106. Pulmonary atresia + ventricular septal defect (VSD) (including Fallot type) |
| 010125. Pulmonary atresia + ventricular septal defect (VSD) + systemic-to-pulmonary collateral artery(ies) (MAPCA(s)) |
| 090525. Tetralogy of Fallot with absent pulmonary valve syndrome |
| 090726. Solitary arterial trunk (absent intrapericardial pulmonary arteries) |
| 010109. Hypoplastic left heart syndrome |
| 060101. Triscuspid atresia |
| 060201. Mitral atresia |
| 091503. Aortic atresia |
| 010114. Double inlet AV connection (double inlet ventricle) |
| 010122. Functionally univentricular heart |
| 010104. Double outlet right ventricle |
| 010124. Double outlet right ventricle: with intact ventricular septum |
| 010119. Double outlet right ventricle with non-committed ventricular septal defect |
| 010140. Double outlet right ventricle with subaortic or doubly committed ventricular septal defect without pulmonary stenosis, ventricular septal defect type |
| 010403. Double inlet RV |
| 010404. Double inlet LV |
| 020305. Solitary ventricle of indeterminate morphology |
| 070841. Ventricular imbalance: dominant left ventricle + hypoplastic right ventricle |
| 070842. Ventricular imbalance: dominant right ventricle + hypoplastic left ventricle |
| 090101. Common arterial trunk (truncus arteriosus) |
| 090200. Truncal valvar abnormality |
| 090203. Truncal valvar regurgitation |
| 092931. Interrupted aortic arch |
| 010103. Congenitally corrected transposition of great arteries (discordant AV & VA connections) |
| 010116. Partially anomalous pulmonary venous connections: Scimitar syndrome |
| 010503. Double outlet left ventricle |
| 050201. Cor triatriatum (divided left atrium) |
| 090401. Aortopulmonary window |
| 091600. Supravalvar aortic stenosis |
| 094101. Anomalous origin of coronary artery from pulmonary artery |
| 060134. Ebstein's malformation of tricuspid valve |
| 050601. Common atrium (virtual absence of atrial septum) |
| 060501. AVSD AV valvar abnormality |
| 060506. AVSD AV valvar regurgitation |
| 060600. Atrioventricular septal defect |
| 060601. AVSD: isolated atrial component (primum ASD)(partial) |
| 060608. AVSD: isolated ventricular component |
| 060609. AVSD: atrial & ventricular components with common AV orifice (complete) |
| 060610. AVSD: atrial & (restrictive) ventricular components + separate AV valves ('intermediate') |
| 010120. AV septal defect and Tetralogy of Fallot |
| 060726. AVSD with ventricular imbalance |
| 010117. Double outlet right ventricle: Fallot type (subaortic or doubly committed VSD & pulmonary stenosis) |
| 050202. Supravalvar mitral ring |
| 090801. Major systemic-to-pulmonary collateral artery(ies) (MAPCA(s)) |
| 092025. Systemic-to-pulmonary collateral arter(ies) (MAPCA(s)) stenosis(es) |
| 040891. Pulmonary vein stenosis |
| 040600. Totally anomalous pulmonary venous connection: supracardiac |
| 040805. Totally anomalous pulmonary venous connection |
| 040806. Obstructed pulmonary venous connection(s) |
| 040810. Totally anomalous pulmonary venous connection: intracardiac |
| 040820. Totally anomalous pulmonary venous connection: infracardiac |
| 040830. Totally anomalous pulmonary venous connection: mixed |
| 030104. Right isomerism ('asplenia') |
| 030105. Left isomerism ('polysplenia') |
| 010118. Double outlet right ventricle: transposition type (subpulmonary VSD) |
| 010501. Discordant VA connections (TGA) |
| 010102. Transposition of great arteries (concordant AV & discordant VA connections) & IVS |
| 070530. Subpulmonary stenosis |
| 090501. Pulmonary valvar stenosis |
| 090504. Pulmonary valvar stenosis: congenital |
| 090592. Pulmonary stenosis |
| 090511. Pulmonary atresia |
| 090512. Pulmonary atresia: imperforate valve |
| 010107. Pulmonary atresia with intact ventricular septum |
| 091701. Aortoventricular tunnel |
| 091702. Aorto - left ventricular tunnel |
| 010309 AV and or/VA connections abnormal |
| 070301. Double chambered right ventricle |
| 060100. Tricuspid valvar abnormality |
| 060103. Tricuspid valvar dysplasia |
| 060125. Tricuspid regurgitation: congenital |
| 060191. Tricuspid regurgitation |
| 060192. Tricuspid stenosis |
| 060225. Mitral regurgitation: congenital |
| 060236. True cleft of mitral leaflet (without AVSD) |
| 071000. VSD |
| 071001. Perimembranous VSD |
| 071012. VSD + malaligned outlet septum |
| 071101. Muscular VSD |
| 071200. Subarterial VSD |
| 071201. Doubly committed subarterial VSD |
| 071405. Inlet VSD |
| 071504. Multiple VSDs |
| 040701. Partially anomalous pulmonary venous connection(s) |
| 091506. Aortic valvar atresia. |
| 060202. Mitral atresia with imperforate mitral valve. |
| 060226. Mitral atresia with absent valvar annulus (connection-junction). |
| 010405.Double inlet to solitary ventricle of indeterminate morphology. |
| 020303.Crisscross heart (twisted atrioventricular connections). |
| 060311.Congenital anomaly of right-sided atrioventricular valve in double inlet ventricle. |
| 060411.Congenital anomaly of left-sided atrioventricular valve in double inlet ventricle. |
| 090111. Common arterial trunk (truncus arteriosus) with aortic dominance and one pulmonary artery absent from trunk. isolated pulmonary artery. |
| 090112. Common arterial trunk (truncus arteriosus) with pulmonary dominance and aortic arch obstruction. |
| 090114. Common arterial trunk (truncus arteriosus) with aortic dominance and both pulmonary arteries arising from trunk. |
| 090115. Common arterial trunk (truncus arteriosus) with aortic dominance (no aortic arch obstruction). |
| 090118. Common arterial trunk (truncus arteriosus) with pulmonary dominance and interrupted aortic arch. |
| 090119. Common arterial trunk (truncus arteriosus) with pulmonary dominance and aortic coarctation. |
| 090201.Dysplasia of truncal valve. |
| 090218.Congenital truncal valvar stenosis. |
| 090219.Congenital truncal valvar regurgitation. |
| 010110.Transposition of the great arteries with concordant atrioventricular connections and ventricular septal defect. |
| 092932. Interrupted aortic arch distal to subclavian artery. type A. |
| 092933. Interrupted aortic arch between subclavian & common carotid arteries. type B. |
| 092934. Interrupted aortic arch between carotid arteries. type C. |
| 090908. Pulmonary artery from ascending aorta (hemitruncus) |
| 091010. Discontinuous (non-confluent) pulmonary arteries |
| 010126.Tetralogy of Fallot with pulmonary atresia. |
| 010157.Tetralogy of Fallot with pulmonary atresia and systemic-to-pulmonary collateral artery(ies) (MAPCA(s)). |
| 090516.Congenital pulmonary atresia. |
| 090705. Absent or atretic pulmonary trunk (main pulmonary artery). |
| 090902.Right pulmonary artery from arterial duct. |
| 090903.Right pulmonary artery from ascending aorta. |
| 090904.Left pulmonary artery from arterial duct. |
| 090905.Left pulmonary artery from ascending aorta. |
| 090911. Pulmonary artery from arterial duct. |
| 091030.Congenitally discontinuous. non-confluent right and left pulmonary arteries. |
| 091075.Absent or atretic right pulmonary artery. |
| 091077.Absent or atretic left pulmonary artery. |
| 150503. Pulmonary vein obstruction |
| 020101.Extrathoracic heart (ectopia cordis). |
| 040802.Congenital atresia of pulmonary vein(s). |
| 040804.Congenital anomaly of pulmonary vein(s). |
| 040831.Congenital pulmonary venous stenosis and-or hypoplasia. |
| 090407.Congenital aortopulmonary window. |
| 091618. Congenital supravalvar aortic stenosis. |
| 093134.Vascular ring of left aortic arch and right arterial duct or ligament. |
| 093135.Vascular ring of right aortic arch and left arterial duct or ligament. |
| 094103. Anomalous origin of left coronary artery from pulmonary artery (ALCAPA). |
| 094221.Anomalous aortic origin of coronary artery with ventriculo-arterial concordance. |
| 060598. Deficient mural-lateral leaflet of left ventricular component of common atrioventricular valve (left atrioventricular vale) |
| 050603.Common atrium with common atrioventricular junction. |
| 060514.Atypical common atrioventricular valve. |
| 060525. Double orifice of left ventricular component of common atrioventricular valve (left atrioventricular valve). |
| 060560.Common atrioventricular valvar regurgitation. |
| 060571.Atypical right ventricular component of common atrioventricular valve (right atrioventricular valve). |
| 060572.Atypical left ventricular component of common atrioventricular valve (left atrioventricular valve). |
| 060705. Atrioventricular septal defect (AVSD) with ventricular imbalance with dominant right ventricle and hypoplastic left ventricle. |
| 060706. Atrioventricular septal defect (AVSD) with ventricular imbalance with dominant left ventricle and hypoplastic right ventricle. |
| 060727. Atrioventricular septal defect (AVSD) with balanced ventricles. |
| 060728.Common atrioventricular junction with spontaneous fibrous closure of atrioventricular septal defect (AVSD). |
| 060736. Common atrioventricular valve with unbalanced commitment of valve to ventricles. |
| 060737.Common atrioventricular valve with unbalanced commitment of valve to right ventricle. |
| 060738.Common atrioventricular valve with unbalanced commitment of valve to left ventricle. |
| 060104. Tricuspid annular hypoplasia. |
| 060105. Overriding tricuspid valve. |
| 060107. Congenital tricuspid valvar stenosis. |
| 060111. Congenital anomaly of tricuspid valve. |
| 060126. Tricuspid atresia with absent valvar annulus (connection-junction). |
| 040807. Anomalous pulmonary venous connection. |
| 090711. Pulmonary trunk hypoplasia |
| 090713. Supravalvar pulmonary trunk stenosis |
| 091001. Pulmonary arterial stenosis |
| 091006. Peripheral pulmonary arterial stenoses: at-beyond hilar bifurcation |
| 091007. Central pulmonary arterial stenosis: proximal to hilar bifurcation |
| 091025. Right pulmonary arterial stenosis |
| 091026. Left pulmonary arterial stenosis |
| 070520.Congenital right ventricular outflow tract obstruction. |
| 070532.Congenital subpulmonary stenosis. |
| 090505.Pulmonary 'annular' hypoplasia. |
| 090715.Congenital supravalvar pulmonary stenosis. |
| 090716.Congenital anomaly of pulmonary arterial tree. |
| 090719. Congenital pulmonary trunk (main pulmonary artery) anomaly. |
| 090720. Congenital pulmonary trunk hypoplasia. |
| 091027.Congenital pulmonary arterial branch stenosis. |
| 091028.Congenital right pulmonary arterial stenosis. |
| 091029. Congenital left pulmonary arterial stenosis. |
| 091037.Congenital central pulmonary arterial stenosis or hypoplasia proximal to hilar bifurcation. |
| 091038. Congenital peripheral pulmonary arterial stenoses or hypoplasia at or beyond hilar bifurcation. |
| 071002.Inlet perimembranous ventricular septal defect (VSD) without atrioventricular malalignment without a common atrioventricular junction. |
| 071004. Outlet perimembranous ventricular septal defect (VSD) with anteriorly malaligned of outlet septum. |
| 071017.Outlet ventricular septal defect (VSD) with anteriorly malaligned outlet septum. |
| 071018.Outlet ventricular septal defect (VSD) with posteriorly malaligned outlet septum. |
| 071019. Outlet perimembranous ventricular septal defect (VSD) with posteriorly malaligned outlet septum. |
| 071102.Inlet muscular ventricular septal defect (VSD). |
| 071103.Trabecular muscular ventricular septal defect (VSD) apical. |
| 071104.Trabecular muscular ventricular septal defect (VSD) midseptal. |
| 071105.Trabecular muscular ventricular septal defect (VSD)s multiple (Swiss cheese septum). |
| 071106. Outlet muscular ventricular septal defect (VSD) without malalignment. |
| 071107.Trabecular muscular ventricular septal defect (VSD) anterosuperior. |
| 071112.Trabecular muscular ventricular septal defect (VSD) postero-inferior. |
| 071115. Outlet muscular ventricular septal defect (VSD) with anteriorly malaligned outlet septum. |
| 071116. Outlet muscular ventricular septal defect (VSD) with posteriorly malaligned outlet septum. |
| 071202. Doubly committed juxta-arterial ventricular septal defect (VSD) without malalignment and with muscular postero-inferior rim. |
| 071203. Doubly committed juxta-arterial ventricular septal defect (VSD) without malalignment and with perimembranous extension. |
| 071205. Doubly committed juxta-arterial ventricular septal defect (VSD) with anteriorly malaligned fibrous outlet septum and perimembranous extension. |
| 071206. Doubly committed juxta-arterial ventricular septal defect (VSD) with posteriorly malaligned fibrous outlet septum and perimembranous extension. |
| 071207. Doubly committed juxta-arterial ventricular septal defect (VSD) with anteriorly malaligned fibrous outlet septum and muscular postero-inferior rim. |
| 071208. Doubly committed juxta-arterial ventricular septal defect (VSD) with posteriorly malaligned outlet septum and muscular postero-inferior rim. |
| 071209.Outlet ventricular septal defect (VSD) without malalignment. |
| 071212.Doubly committed juxta-arterial ventricular septal defect (VSD) with anteriorly malaligned fibrous outlet septum. |
| 071213.Doubly committed juxta-arterial ventricular septal defect (VSD) with posteriorly malaligned fibrous outlet septum. |
| 071406.Inlet perimembranous ventricular septal defect (VSD) with atrioventricular septal malalignment and without common atrioventricular junction. |
| **Exclusion codes (that have a special link to this diagnosis and therefore can lead to patients being misallocated)** |
| 121640 Supravalvar aortic stenosis repair, |
| 121405 Balloon dilation of pulmonary trunk, |
| 120803 Ventricular septal defect (VSD) closure using patch, |
| 120903 Damus-Kaye-Stansel type procedure: pulmonary trunk to aorta end/side anastomosis, |
| 121403 Pulmonary trunk band removal (de-band), |
| 122022 Hypoplastic left heart syndrome hybrid approach (transcatheter & surgery) 'stage 2': aortopulmonary amalgamation + superior cavopulmonary anastomosis(es) + debanding of pulmonary arteries, |
| 120801 Ventricular septal defect (VSD) closure, |
| 121402 Pulmonary trunk band (PA band), |
| 123103 Modified right Blalock interposition shunt, |
| 123111 Bidirectional superior cavopulmonary (Glenn) anastomosis, |
| 121661 Aortic valve closure-oversewing, |
| 123106 Central systemic-to-pulmonary arterial interposition shunt, |
| **Specific Procedure exclusion list (exclude patients if had the following allocated specific procedure in records, using specific procedure algorithm of NCHDA)** |
| 01:norwood |
| 04:common\_arterial\_trunk\_aorta\_repair |
| 05:common\_arterial\_trunk\_repair |
| 06:cctga\_repair\_a |
| 07:cctga\_repair\_b |
| 08:atrial\_switch |
| 09:rastelli\_rev |
| 10:transposition\_complex |
| 11:transposition\_arch |
| 12:transposition\_vsd |
| 13:transposition |
| 14:tapvc\_shunt |
| 15:tapvc |
| 16:fontan |
| 17:glenn |
| 18:avsd\_fallot\_a |
| 19:avsd\_fallot\_b |
| 20:avsd\_complete |
| 21:avsd\_partial |
| 28:tricuspid\_valve\_replacement |
| 29:pulmonary\_valve\_replacement |
| 33:pulmonary\_atresia\_vsd |
| 34:mapca\_unifocalisation |
| 35:absent\_pulmonary\_valve\_syndrome |
| 36:fallot |
| 38:vsd\_rvoto |
| 39:supra\_valvar\_aortic\_stenosis |
| 41:ap\_window |
| 42:anomalous\_coronary |
| 43:cor\_triatriatum |
| 45:arterial\_shunt |
| 46:iaa |
| 48:pulmonary\_vein\_stenosis |
| 59:pulmonary\_valve\_replacement\_transluminal |
| 60:rvot\_stent |
| 61:pulmonary\_valve\_radiofrequency |
| 64:pulmonary\_vein\_intervention |
| 69:balloon\_pulmonary\_valve |
| 76:mapca\_transluminal |

# Step 3 Identify Aortic Stenosis diagnosis - Pathway

Consider patients selected in [step 1](#_Step_1:_Diagnostic) and [step 2](#_Step_2:_Procedure) and then assign pathway type to each procedure.

The individual types of pathway procedure are ‘Stage one palliative procedures’ and ‘reparative procedures for Aortic Stenosis diagnosis’ all of these are biventricular procedures.

If multiple types of pathway procedure happened in the same record, then we mark the individual procedure as the most complex one, i.e., the hierarchy/complexity order is reparative procedure for Aortic Stenosis diagnosis then palliative procedures.

The first occurrence of a pathway procedure Identifies the occurrence of this type of pathway procedure. For any of the defined pathway procedures, palliative and reparative, only the first occurrence will be the pathway procedure of that type. Other subsequent occurrence of these individual procedures will be identified as re-do and off pathway. Patients can have up to 2 pathway procedures in whole history.  Of note, additional reparative or stage one procedure(s) after final expected reparative procedure will be identified as additional or off pathway.

Patients who have a procedure before the first pathway procedure are considered to have had a ‘pre-pathway procedure’. These will be described.

Patients who have no pathway procedures will be described.

Then patients who have a pathway procedure and then have additional post pathway / off pathway procedures which will be described divided by the stage at which they occur.

## Pathway applicable to Aortic Stenosis diagnosis

Assign pathway type to each procedure:

### Palliative or staging procedures applicable in CoA diagnosis

Look for staged palliative procedures, i.e., palliative first stage procedure

Table D Palliative procedures type B (excluding interrupted arch repair) and C applies

|  |
| --- |
| **Stage one Type B: Coarctation only** |
| 121800: Coarctation-hypoplasia of aorta repair |
| 121801: Aortic coarctation-hypoplasia repair by resection & end to end anastomosis |
| 121802: Aortic coarctation-hypoplasia repair by patch aortoplasty |
| 121803: Aortic coarctation-hypoplasia repair by subclavian flap aortoplasty |
| 121804: Balloon dilation of native aortic coarctation-hypoplasia |
| 121810: Aortic coarctation-hypoplasia repair by resection & extended end to end anastomosis |
| 121815: Aortic coarctation-hypoplasia repair by resection & insertion of tube graft |
| 121827: Aortic coarctation transluminal obstruction relief |
| 121830: Aortic arch repair |
| 121817 Stent placement at site of aortic coarctation, |
| **Stage one Type C: Hybrid** |
| 121004. Application of bilateral pulmonary arterial bands & transcatheter placement of stent in arterial duct, |
| 122020. Hypoplastic left heart syndrome hybrid approach (transcatheter & surgery): stage 1, |
| 122021. Hypoplastic left heart syndrome hybrid strategy (transcatheter & surgery) |

### Reparative procedure for Aortic Stenosis diagnosis

The pathway is determined by the first pathway procedure that occurs for the patient. Flag to centres if type B or C appeared as the first pathway.

Table E Reparative procedure codes for Aortic Stenosis (type A, B and C)

|  |
| --- |
| **Type A Reparative Relief of Aortic Stenosis** |
| 121602. Aortic valvotomy: open, |
| 121604. Aortic valvotomy: closed, |
| 121605. Balloon dilation of aortic valve, |
| 121611. Aortic cusp(s) repair (valvoplasty), |
| 121625 Aortic valvar transluminal perforation & dilation, |
| 121777.Aortic valvar replacement using autologous pericardium constructed valve leaflets (Ozaki). |
| **Type B Reparative procedures for Aortic Stenosis involving replacement procedures** |
| 121621. Aortic valvar replacement, |
| 121622. Aortic valvar replacement using homograft, |
| 121628. Aortic valvar replacement using heterograft bioprosthesis, |
| 121629. Aortic valvar replacement using mechanical prosthesis, |
| 121697. Aortic valve repair converted to aortic valvar replacement, |
| 121650. Aortic root replacement (not Ross) |
| 121663. Aortic root replacement using homograft |
| 121664. Aortic root replacement using mechanical prosthesis |
| 121790. Aortic root replacement using bioprosthesis |
| 121633. Aortic root replacement + coronary artery reimplantation (Bentall) |
| 121381. Transluminal aortic valvar insertion (TAVI) with stent mounted valve |
| **Type C Complex and other types of reparative procedure in Aortic Stenosis** |
| 121630. Ross procedure: aortic valve or root replacement with pulmonary autograft & pulmonary valvar replacement, |
| 121662. Ross-Konno procedure, |
| 121600. Aortic valvar procedure, |

# Step 4: Identify diagnostic subgroups

## Aortic stenosis with multi level left heart obstruction – presence of a code in Table F

#### Table F Codes for multi level LH Obstruction

|  |
| --- |
| **Diagnostic codes for multi level LH Obstruction** |
| 010133. Shone's syndrome: left heart obstruction at multiple sites, |
| 060292. Mitral stenosis |
| 060293. Mitral valve stenosis |
| 092901. Aortic coarctation |
| 092911. Aortic arch hypoplasia (tubular) |
| 060212. Mitral subvalvar apparatus abnormality |
| 060213. Mitral subvalvar stenosis |
| 070900. Subaortic stenosis |
| 070903. Subaortic stenosis due to fibromuscular shelf |
| 070950. Congenital subaortic stenosis |
| 070916. Subaortic stenosis due to fibromuscular tunnel |
| 060256. Parachute malformation of mitral valve |
| 060207. Congenital mitral valvar stenosis |
| 050202. Supravalvar or intravalvar mitral ring |
| **Procedure codes for multi level LH Obstruction** |
| 121800: Coarctation-hypoplasia of aorta repair |
| 121801: Aortic coarctation-hypoplasia repair by resection & end to end anastomosis |
| 121802: Aortic coarctation-hypoplasia repair by patch aortoplasty |
| 121803: Aortic coarctation-hypoplasia repair by subclavian flap aortoplasty |
| 121804: Balloon dilation of native aortic coarctation-hypoplasia |
| 121810: Aortic coarctation-hypoplasia repair by resection & extended end to end anastomosis |
| 121815: Aortic coarctation-hypoplasia repair by resection & insertion of tube graft |
| 121827: Aortic coarctation transluminal obstruction relief |
| 121830: Aortic arch repair |
| 120822 Subaortic obstruction relief, |
| 120701 Subaortic fibromuscular shelf resection, |
| 120711 Left ventricular outflow tract myectomy-myotomy, |
| 120713 Left ventricular outflow tract obstruction relief |
| 120301 Mitral valvotomy |
| 120319 Mitral subvalvar apparatus procedure, |
| 120303 Mitral leaflet (valvoplasty) procedure |
| 120300 Mitral valvar procedure |
| 120311 Mitral valvar replacement, |

## Isolated Aortic stenosis

All others

# Step 5: Remove patients according to the violation rules.

Exclude patients if

* had only non-contributory procedure records via activity algorithm.

# Step 6: Flagging rules to centre

Include these in the cohort. In future routine monitoring all such patients will be flagged with the treating centres for correction.

## Patients with suspected miscoded/missing data

These patients will be excluded from pathway analysis and reintervention monitoring.

None for this diagnosis.

## Patients with minor data errors/unusual records

Patients can be included in analysis.

### Generic flagging rule:

* Flag patients if there is a cardiopulmonary bypass surgery as a pre-pathway procedure - please check this patient’s diagnostic and procedure coding is correct

### Aortic Stenosis specific rule

* If type B or C reparative procedure as the first reparative pathway, flag to centres to check if there is anything missing (procedure miscoded or missing) early in life.