**Specific procedures algorithm v6.03**

Last amended 2018-02-27 John Stickley

In a more detailed fashion the algorithm should follow these steps once you have been allocated to a group you are then excluded from subsequent criteria testing – each report group is mutually exclusive.

Note:

1. General data processing – data is pre-processed using the process originally created by David Cunningham. This now needs to be updated to ensure no valid codes are excluded/removed.
2. Data is restructured for ease of manipulation.
3. Main code groups are defined (see R code for detail).

Note:

1. The complete list of codes is in a spreadsheet called ‘nchda\_and\_fetal\_codes\_v6.0.xlsx’, this has the complete list of IPCC short codes and whether they should be submitted or not and also the minor\_and\_excluded (for the AA and SP algorithm)
2. The activity allocation algorithm (AA) will no longer have additional fixes made to poor coding this means that:
   1. Procedure types must be correct (‘8. Other’ is ignored completely) any cases misallocated may be incorrectly categorised or unallocated.
   2. Procedures coded incorrectly for procedure (a diagnosis code used instead of a procedure) will not be correctly categorised.

**Preliminary code checks:**

1. Keep only codes that are valid short list procedural codes.
2. Drop any codes excluded because not part of the NCHDA dataset
3. Drop any codes in the minor\_and\_excluded\_algorithm group (Note: this is not the same list as used in the PRAiS score or previous SP analyses)
4. This defines the list used for diagnostic catheters (code\_list\_diagnostic)
5. Drop any diagnostic catheter codes (code\_list)

Each data record is sequentially tested for matching criteria – when a match is found then the ‘sp\_algorithm\_group’ is set to the code position:description. Subsequent tests are not evaluated this is to ensure that the SP hierarchy is enforced and to improve speed (currently takes about 10 minutes to process 49,000 records).

The data is then exported to a CSV file for further use.

**step:00 no\_qualifying\_codes**

1. empty code\_list

then set report\_group = ’00: no\_qualifying\_codes’

**step:01 norwood**

include 1:

121000. Norwood type procedure:

exclude:

122020. Hypoplastic left heart syndrome hybrid approach (transcatheter and surgery) Stage 1

122021. Hypoplastic left heart syndrome hybrid approach (transcatheter & surgery)

1. report\_group = ‘’
2. procedure\_type IN (1)
3. must have one or more codes in ‘include 1’
4. must not have any codes in ‘exclude’

then set report\_group = ’01:norwood’

**step:02 heart\_transplant**

include 1:

123701. Heart transplant

123702. Transplantation of heart - orthotopic allotransplant

123703. Transplantation of heart - heterotopic (piggy back) allotransplant

123704. Prosthetic heart (total artificial heart) implantation

123706. Transplantation of heart: ABO incompatible donor

1. report\_group = ‘’
2. procedure\_type IN (1)
3. must have one or more codes in ‘include 1’

Then set report\_group = ’02:heart\_transplant’

**step:03 lung\_transplant**

include 1:

123213. Transplantation of heart and lungs

123713. Single lung transplant

123720. Double lung transplant

123760. Lung(s) transplant

1. report\_group = ‘’
2. procedure\_type IN (1,2,4)
3. must have one or more codes in ‘include 1’

Then set report\_group = ’03:lung\_transplant’

**step:04 common\_arterial\_trunk\_aorta\_repair**

include 1:

121100. Common arterial trunk (truncus) repair

include 2:

121800. Coarctation / hypoplasia of aorta repair

121801. Aortic coarct/hypoplasia repair: resection & end/end anast

121802. Aortic coarct/hypoplasia repair: patch aortoplasty

121803. Aortic coarct/hypoplasia repair: subclavian flap aortoplasty

121810. Aortic coarct/hypoplasia repair: extended resection & end/end anast

121815. Aortic coarct/hypoplasia repair: resection + insertion tube graft

121830. Aortic arch repair

122100. Interrupted aortic arch repair

1. report\_group = ‘’
2. procedure\_type IN (1)
3. must have one or more codes in ‘include 1’
4. must have one or more codes in ‘include 2’

Then set report\_group = ’04: common\_arterial\_trunk\_aorta\_repair’

**step:05 common\_arterial\_trunk\_repair**

include 1:

121100. Common arterial trunk (truncus) repair

include 2:

1. report\_group = ‘’
2. procedure\_type IN (1)
3. must have one or more codes in ‘include 1’

Then set report\_group = ’05:common\_arterial\_trunk’

**step:06 cctga\_repair\_a**

include 1

122925. Arterial switch & atrial inversion procedures ('double switch')

122926. Atrial inversion and Rastelli procedures

1. report\_group = ‘’
2. procedure\_type IN (1)
3. must have one or more codes in ‘include 1’

Then set report\_group = ’06:cctga\_repair\_a’

**step:07 cctga\_repair\_b**

include 1:

122901. Senning procedure (atrial inversion)

122902. Mustard procedure (atrial inversion)

include 2:

122745. REV procedure: LV to Ao via VSD & direct RV-PA anast (Lecompte)

122911. Rastelli procedure: LV to Ao via VSD & RV to pulm trunk conduit

122921. Arterial switch procedure

1. report\_group = ‘’
2. procedure\_type IN (1)
3. must have one or more codes in ‘include 1’
4. must have one or more codes in ‘include 2’

Then set report\_group = ’07:cctga\_repair\_b’

**step:08 atrial\_switch**

include 1:

122901. Senning procedure (atrial inversion)

122902. Mustard procedure (atrial inversion)

exclude:

122911. Rastelli procedure: LV to Ao via VSD & RV to pulm trunk conduit

122921. Arterial switch procedure

1. report\_group = ‘’
2. procedure\_type IN (1)
3. must have one or more codes in ‘include 1’
4. must not have any codes in ‘exclude’

Then set report\_group = ’08:atrial\_switch’

**step:09 rastelli\_rev**

include 1:

122745. REV procedure: LV to Ao via VSD & direct RV-PA anast (Lecompte)

122911. Rastelli procedure: LV to Ao via VSD & RV to pulm trunk conduit

exclude

122901. Senning procedure (atrial inversion)

122902. Mustard procedure (atrial inversion)

122921. Arterial switch procedure

1. report\_group = ‘’
2. procedure\_type IN (1)
3. must have one or more codes in ‘include 1’
4. must not have any codes in ‘exclude’

Then set report\_group = ’09:rastelli\_rev’

**step:10 transposition\_complex**

include 1

122702. Double outlet right ventricle repair with intraventricular tunnel

122778. Aortic root translocation to over left ventricle (including Nikaidoh)

122940. Complex transposition of great arteries repair

1. report\_group = ‘’
2. procedure\_type IN (1)
3. must have one or more codes in ‘include 1’

Then set report\_group = ’10:transposition\_complex’

**step:11 transposition\_arch**

include 1

122921. Arterial switch procedure

include 2

121800. Coarctation / hypoplasia of aorta repair

121801. Aortic coarct/hypoplasia repair: resection & end/end anast

121802. Aortic coarct/hypoplasia repair: patch aortoplasty

121803. Aortic coarct/hypoplasia repair: subclavian flap aortoplasty

121810. Aortic coarct/hypoplasia repair: extended resection & end/end anast

121815. Aortic coarct/hypoplasia repair: resection + insertion tube graft

121830. Aortic arch repair

122100. Interrupted aortic arch repair

1. report\_group = ‘’
2. procedure\_type IN (1)
3. must have one or more codes in ‘include 1’
4. must have one or more codes in ‘include 2’

Then set report\_group = ’11:transposition\_arch’

**step:12 transposition\_vsd**

include 1:

122921. Arterial switch procedure

include 2:

120801. Ventricular septal defect (VSD) closure

120802. VSD closure by direct suture

120803. VSD closure using patch

120816. Closure of multiple VSDs"

exclude:

121800. Coarctation / hypoplasia of aorta repair

121801. Aortic coarct/hypoplasia repair: resection & end/end anast

121802. Aortic coarct/hypoplasia repair: patch aortoplasty

121803. Aortic coarct/hypoplasia repair: subclavian flap aortoplasty

121810. Aortic coarct/hypoplasia repair: extended resection & end/end anast

121815. Aortic coarct/hypoplasia repair: resection + insertion tube graft

121830. Aortic arch repair

122100. Interrupted aortic arch repair

122901. Senning procedure (atrial inversion)

122902. Mustard procedure (atrial inversion)

1. report\_group = ‘’
2. procedure\_type IN (1)
3. must have one or more codes in ‘include 1’
4. must have one or more codes in ‘include 2’
5. must not have any codes in ‘exclude’

Then set report\_group = ’12:transposition\_vsd’

**step:13 transposition**

include 1:

122921. Arterial switch procedure

exclude:

120801. VSD closure

120802. VSD closure by direct suture

120803. VSD closure using patch

120816. Closure of multiple VSDs

120828. VSD closure with prosthesis - intraoperatively

121800. Coarctation / hypoplasia of aorta repair

121801. Aortic coarct/hypoplasia repair: resection & end/end anast

121802. Aortic coarct/hypoplasia repair: patch aortoplasty

121803. Aortic coarct/hypoplasia repair: subclavian flap aortoplasty

121810. Aortic coarct/hypoplasia repair: extended resection & end/end anast

121815. Aortic coarct/hypoplasia repair: resection + insertion tube graft

121830. Aortic arch repair

122100. Interrupted aortic arch repair

122601. Tetralogy of Fallot repair

122901. Senning procedure (atrial inversion)

122902. Mustard procedure (atrial inversion)

122920. Double outlet RV repair

1. report\_group = ‘’
2. procedure\_type IN (1)
3. must have one or more codes in ‘include 1’
4. must not have any codes in ‘exclude’

Then set report\_group = ’13:transposition’

**step:14 tapvc\_shunt**

include 1:

120000. TAPVC repair

include 2:

123103. Modified R Blalock interposition shunt

123104. Modified L Blalock interposition shunt

123105. Waterston (ascending Ao-RPA) anastomosis

123106. Central systemic-PA interposition shunt

123130. Systemic-to-pulmonary arterial shunt procedure

123146. Modified Blalock interposition shunt

123601. Right ventricle to pulmonary arterial tree conduit construction

1. report\_group = ‘’
2. procedure\_type IN (1)
3. must have one or more codes in ‘include 1’
4. must have one or more codes in ‘include 2’

Then set report\_group = ’14:tapvc\_shunt’

**step:15 tapvc**

include 1:

120000. TAPVC repair

exclude:

122601. Tetralogy of Fallot repair

122613. Tetralogy of Fallot repair with transannular patch

122620. Tetralogy of Fallot repair without transannular patch

122701. Double outlet RV (Fallot-type) repair

122702. Double outlet RV repair with intraventricular tunnel

123001. Fontan type procedure

123005. Total cavopulmonary connection (TCPC) using extracardiac inferior caval vein (IVC)-pulmonary artery conduit with fenestration

123006. Total cavopulmonary connection (TCPC) with fenestrated lateral atrial tunnel

123032. Fontan procedure with direct atrio-pulmonary anastomosis

123050. Total cavopulmonary connection (TCPC)

123051. Total cavopulmonary conn (TCPC) with lateral atrial tunnel

123054. Total cavopulmonary conn (TCPC) using extracardiac IVC-PA conduit

123103. Modified R Blalock interposition shunt

123104. Modified L Blalock interposition shunt

123105. Waterston (ascending Ao-RPA) anastomosis

123106. Central systemic-PA interposition shunt

123111. Bidirectional superior cavopulmonary (Glenn) anastomosis

123115. Hemi-Fontan procedure

123130. Systemic-to-pulmonary arterial shunt procedure

123144. Bilateral bidirectional superior cavopulmonary (Glenn) anastomoses

123146. Modified Blalock interposition shunt

123172. Superior caval vein to pulmonary artery anastomosis

1. report\_group = ‘’
2. procedure\_type IN (1)
3. must have one or more codes in ‘include 1’
4. must not have any codes in ‘exclude’

Then set report\_group = ’15:tapvc’

**step:16 fontan**

include 1:

123001. Fontan type procedure

123005. Total cavopulmonary connection (TCPC) using extracardiac inferior caval vein (IVC) pulmonary artery conduit with fenestration

123006. Total cavopulmonary connection (TCPC) with fenestrated lateral atrial tunnel

123013. Fontan procedure with atrio-ventricular connection

123028. Fontan-type connection without fenestration

123032. Fontan procedure with direct atrio-pulmonary anastomosis

123050. Total cavopulmonary connection (TCPC)

123051. Total cavopulmonary conn (TCPC) with lateral atrial tunnel

123054. Total cavopulmonary conn (TCPC) using extracardiac IVC-PA conduit

exclude:

123034. Conversion of Fontan repair to total cavopulmonary connection

123037. Fontan type procedure revision or conversion

1. report\_group = ‘’
2. procedure\_type IN (1,2)
3. must have one or more codes in ‘include 1’
4. must not have any codes in ‘exclude’

Then set report\_group = ’16:fontan’

**step:17 glenn**

include 1:

123111. Bidirectional superior cavopulmonary (Glenn) anastomosis

123115. Hemi-Fontan procedure

123144. Bilateral bidirectional superior cavopulmonary (Glenn) anastomoses

123172. Superior caval vein to pulmonary artery anastomosis

exclude:

120000. TAPVC repair

121630. Ross procedure (Ao root replacement with pulm autograft)

122100. Interrupted aortic arch repair

122911. Rastelli procedure: LV to Ao via VSD & RV to pulm trunk conduit

1. report\_group = ‘’
2. procedure\_type IN (1,2)
3. must have one or more codes in ‘include 1’
4. must not have any codes in ‘exclude’

Then set report\_group = ’17:glenn’

**step:18 avsd\_fallot\_a**

include 1

120511. AVSD & Tetralogy of Fallot repair

1. report\_group = ‘’
2. procedure\_type IN (1)
3. must have one or more codes in ‘include 1’
4. must not have any codes in ‘exclude’

Then set report\_group = ’18:avsd\_fallot\_a’

**step:19 avsd\_fallot\_b**

include 1:

120501. AVSD: complete (common valve orifice) repair

120510. AVSD: 'intermediate' repair

include 2:

122601. Tetralogy of Fallot repair

122613. Tetralogy of Fallot repair with transannular patch

122620. Tetralogy of Fallot repair without transannular patch

1. report\_group = ‘’
2. procedure\_type IN (1)
3. must have one or more codes in ‘include 1’
4. must have one or more codes in ‘include 2’

Then set report\_group = ’19:avsd\_fallot\_b’

**step:20 avsd\_complete**

include 1

120501. AVSD: complete (common valve orifice) repair

120510. AVSD: 'intermediate' repair

exclude:

120401. AVSD: partial (primum ASD) repair

121800. Coarctation / hypoplasia of aorta repair

121801. Aortic coarct/hypoplasia repair: resection & end/end anast

121802. Aortic coarct/hypoplasia repair: patch aortoplasty

121803. Aortic coarct/hypoplasia repair: subclavian flap aortoplasty

121810. Aortic coarct/hypoplasia repair: extended resection & end/end anast

121815. Aortic coarct/hypoplasia repair: resection + insertion tube graft

121830. Aortic arch repair

122601. Tetralogy of Fallot repair

122613. Tetralogy of Fallot repair with transannular patch

122620. Tetralogy of Fallot repair without transannular patch

122701. Double outlet RV (Fallot-type) repair

122801. Pulmonary atresia & VSD (including Fallot-type) repair

1. report\_group = ‘’
2. procedure\_type IN (1)
3. must have one or more codes in ‘include 1’
4. must not have any codes in ‘exclude’

Then set report\_group = ’20:avsd\_complete’

**step:21 avsd\_partial**

include 1

120401. AVSD: partial (primum ASD) repair

exclude:

120501. AVSD: complete (common valve orifice) repair

120510. AVSD: 'intermediate' repair

120641. RV outflow tract obstruction relief

120713. LV outflow tract obstruction relief

121800. Coarctation / hypoplasia of aorta repair

121801. Aortic coarct/hypoplasia repair: resection & end/end anast

121802. Aortic coarct/hypoplasia repair: patch aortoplasty

121803. Aortic coarct/hypoplasia repair: subclavian flap aortoplasty

121810. Aortic coarct/hypoplasia repair: extended resection & end/end anast

121815. Aortic coarct/hypoplasia repair: resection + insertion tube graft

121830. Aortic arch repair

122601. Tetralogy of Fallot repair

122613. Tetralogy of Fallot repair with transannular patch

122620. Tetralogy of Fallot repair without transannular patch

122701. Double outlet RV (Fallot-type) repair

122801. Pulmonary atresia & VSD (including Fallot-type) repair

123601. RV to pulmonary artery conduit construction

1. report\_group = ‘’
2. procedure\_type IN (1)
3. must have one or more codes in ‘include 1’
4. must not have any codes in ‘exclude’

Then set report\_group = ’21:avsd\_partial’

**step:22 mitral\_valve\_replacement**

include 1

120311. Mitral valvar replacement

120384. Mitral valve repair converted to mitral valvar replacement

120445. AVSD: L AV valvar replacement

120489. Mitral valve replacement with stented bovine jugular vein conduit

exclude:

120211. Tricuspid valvar replacement

120283. Tricuspid valve repair converted to tricuspid valvar replacement

120511. AVSD & Tetralogy of Fallot repair

121321. Pulmonary valvar replacement (not conduit)

121322. Pulmonary valvar replacement using homograft

121355. Pulmonary valve repair converted to pulmonary valvar replacement

121621. Aortic valvar replacement

121622. Aortic valvar replacement using homograft

121628. Aortic valvar replacement using heterograft bioprosthesis

121629. Aortic valvar replacement using mechanical prosthesis

121630. Ross procedure (Ao root replacement with pulm autograft)

121633. Aortic valvar & asc aorta replacement + coronary arterial inclusion (Bentall)

121650. Aortic root replacement (not Ross)

121663. Aortic root replacement using homograft

121664. Aortic root replacement using mechanical prosthesis

121697. Aortic valve repair converted to aortic valvar replacement

121790. Aortic root replacement using bioprosthesis

121791. Aortic root replacement: valve sparing technique

121799. Aortic root replacement of implanted pulmonary autograft & pulmonary valve re-replacement

123601. RV to pulmonary artery conduit construction

1. report\_group = ‘’
2. procedure\_type IN (1)
3. must have one or more codes in ‘include 1’
4. must not have any codes in ‘exclude’

Then set report\_group = ’22:mitral\_valve\_replacement’

**step:23 ross\_konno\_a**

include 1:

121662. Ross-Konno procedure

1. report\_group = ‘’
2. procedure\_type IN (1)
3. must have one or more codes in ‘include 1’
4. must not have any codes in ‘exclude’

Then set report\_group = ’23:ross\_konno\_a’

**step:24 ross\_konno\_b**

include 1:

121630. Ross procedure: aortic valve or root replacement with pulmonary autograft & pulmonary valvar replacement

include 2:

120701. Subaortic fibromuscular shelf resection

120711. Left ventricular outflow tract myectomy-myotomy

120712. Left ventricular outflow tract obstruction relief: complex (Konno etc)

120713. Left ventricular outflow tract obstruction relief

120822. Subaortic obstruction relief

exclude:

120311. Mitral valvar replacement

120384. Mitral valve repair converted to mitral valvar replacement

120445. AVSD: L AV valvar replacement

120712. LV outflow tract obstruction relief - complex (Konno etc)

121633. Aortic valvar & asc aorta replacement + coronary arterial inclusion (Bentall)

121650. Aortic root replacement (not Ross)

121662. Ross-Konno procedure

121663. Aortic root replacement using homograft

121664. Aortic root replacement using mechanical prosthesis

121790. Aortic root replacement using bioprosthesis

121791. Aortic root replacement: valve sparing technique

121799. Aortic root replacement of implanted pulmonary autograft & pulmonary valve re-replacement

123111. Bidirectional superior cavopulmonary (Glenn) anastomosis

123115. Hemi-Fontan procedure

123144. Bilateral bidirectional superior cavopulmonary (Glenn) anastomoses

123172. Superior caval vein to pulmonary artery anastomosis

1. report\_group = ‘’
2. procedure\_type IN (1)
3. must have one or more codes in ‘include 1’
4. must have one or more codes in ‘include 2’
5. must not have any codes in ‘exclude’

Then set report\_group = ’24:ross\_konno\_b’

**step:25 ross**

include 1:

121630. Ross procedure: aortic valve or root replacement with pulmonary autograft & pulmonary valvar replacement

exclude:

120311. Mitral valvar replacement

120384. Mitral valve repair converted to mitral valvar replacement

120445. AVSD: L AV valvar replacement

120712. LV outflow tract obstruction relief - complex (Konno etc)

121633. Aortic valvar & asc aorta replacement + coronary arterial inclusion (Bentall)

121650. Aortic root replacement (not Ross)

121662. Ross-Konno procedure

121663. Aortic root replacement using homograft

121664. Aortic root replacement using mechanical prosthesis

121790. Aortic root replacement using bioprosthesis

121791. Aortic root replacement: valve sparing technique

121799. Aortic root replacement of implanted pulmonary autograft & pulmonary valve re-replacement

123111. Bidirectional superior cavopulmonary (Glenn) anastomosis

123115. Hemi-Fontan procedure

123144. Bilateral bidirectional superior cavopulmonary (Glenn) anastomoses

123172. Superior caval vein to pulmonary artery anastomosis

1. report\_group = ‘’
2. procedure\_type IN (1)
3. must have one or more codes in ‘include 1’
4. must not have any codes in ‘exclude’

Then set report\_group = ’25:ross’

**step:26 aortic\_root\_replacement**

include 1:

121633. Aortic valvar & asc aorta replacement + coronary arterial inclusion (Bentall)

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

121791. Aortic root replacement: valve sparing technique

exclude:

120311. Mitral valvar replacement

120384. Mitral valve repair converted to mitral valvar replacement

120445. AVSD: L AV valvar replacement

120712. LV outflow tract obstruction relief - complex (Konno etc)

121799. Aortic root replacement of implanted pulmonary autograft & pulmonary valve re-replacement

1. report\_group = ‘’
2. procedure\_type IN (1)
3. must have one or more code in ‘include 1’
4. must not have any code in ‘exclude’

Then set report\_group = ’26:aortic\_root\_replacement’

**step:27 aortic\_valve\_replacement**

include 1:

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

exclude:

120211. Tricuspid valvar replacement

120283. Tricuspid valve repair converted to tricuspid valvar replacement

120311. Mitral valvar replacement

120384. Mitral valve repair converted to mitral valvar replacement

120445. AVSD: L AV valvar replacement

121321. Pulmonary valvar replacement (not conduit)

121355. Pulmonary valve repair converted to pulmonary valvar replacement

121322. Pulmonary valvar replacement using homograft

121630. Ross procedure (Ao root replacement with pulm autograft)

121633. Aortic valvar & asc aorta replacement + coronary arterial inclusion (Bentall)

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

121791. Aortic root replacement: valve sparing technique

121799. Aortic root replacement of implanted pulmonary autograft & pulmonary valve re-replacement

1. report\_group = ‘’
2. procedure\_type IN (1)
3. must have one or more codes in ‘include 1’
4. must not have any codes in ‘exclude’

Then set report\_group = ’27:aortic\_valve\_replacement’

**step:28 tricuspid\_valve\_replacement**

include 1:

120211. Tricuspid valvar replacement

120283. Tricuspid valve repair converted to tricuspid valvar replacement

exclude:

120311. Mitral valvar replacement

120384. Mitral valve repair converted to mitral valvar replacement

120445. AVSD: L AV valvar replacement

121321. Pulmonary valvar replacement (not conduit)

121355. Pulmonary valve repair converted to pulmonary valvar replacement

121322. Pulmonary valvar replacement using homograft

121621. Aortic valvar replacement

121622. Aortic valvar replacement using homograft

121628. Aortic valvar replacement using heterograft bioprosthesis

121629. Aortic valvar replacement using mechanical prosthesis

121630. Ross procedure (Ao root replacement with pulm autograft)

121633. Aortic valvar & asc aorta replacement + coronary arterial inclusion (Bentall)

121650. Aortic root replacement (not Ross)

121663. Aortic root replacement using homograft

121664. Aortic root replacement using mechanical prosthesis

121697. Aortic valve repair converted to aortic valvar replacement

121790. Aortic root replacement using bioprosthesis

121791. Aortic root replacement: valve sparing technique

121799. Aortic root replacement of implanted pulmonary autograft & pulmonary valve re-replacement

1. report\_group = ‘’
2. procedure\_type IN (1)
3. must have one or more codes in ‘include 1’
4. must not have any codes in ‘exclude’

Then set report\_group = ‘28:tricuspid\_valve\_replacement’

**step:29 pulmonary\_valve\_replacement**

include 1:

121321. Pulmonary valvar replacement (not conduit)

121322. Pulmonary valvar replacement using homograft

121355. Pulmonary valve repair converted to pulmonary valvar replacement

exclude:

120211. Tricuspid valvar replacement

120283. Tricuspid valve repair converted to tricuspid valvar replacement

120311. Mitral valvar replacement

120384. Mitral valve repair converted to mitral valvar replacement

120445. AVSD: L AV valvar replacement

121621. Aortic valvar replacement

121622. Aortic valvar replacement using homograft

121628. Aortic valvar replacement using heterograft bioprosthesis

121629. Aortic valvar replacement using mechanical prosthesis

121630. Ross procedure (Ao root replacement with pulm autograft)

121633. Aortic valvar & asc aorta replacement + coronary arterial inclusion (Bentall)

121650. Aortic root replacement (not Ross)

121663. Aortic root replacement using homograft

121664. Aortic root replacement using mechanical prosthesis

121697. Aortic valve repair converted to aortic valvar replacement

121790. Aortic root replacement using bioprosthesis

121791. Aortic root replacement: valve sparing technique

121799. Aortic root replacement of implanted pulmonary autograft & pulmonary valve re-replacement

1. report\_group = ‘’
2. procedure\_type IN (1)
3. must have one or more codes in ‘include 1’
4. must not have any codes in ‘exclude’

Then set report\_group = ’29:pulmonary\_valve\_replacement’

**step:30 mitral\_valve\_repair**

include 1:

120300. Mitral valvar procedure

120301. Mitral valvotomy

120303. Mitral leaflet (valvoplasty) procedure

120304. Mitral valvar annuloplasty

exclude:

120211. Tricuspid valvar replacement

120283. Tricuspid valve repair converted to tricuspid valvar replacement

120311. Mitral valvar replacement

120384. Mitral valve repair converted to mitral valvar replacement

120445. AVSD: L AV valvar replacement

120489. Mitral valve replacement with stented bovine jugular vein conduit

120801. VSD closure

120802. VSD closure by direct suture

120803. VSD closure using patch

121321. Pulmonary valvar replacement (not conduit)

121322. Pulmonary valvar replacement using homograft

121355. Pulmonary valve repair converted to pulmonary valvar replacement

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

121790. Aortic root replacement using bioprosthesis

121791. Aortic root replacement: valve sparing technique

121799. Aortic root replacement of implanted pulmonary autograft & pulmonary valve re-replacement

122300. Anomalous coronary artery

122380. Anomalous aortic origin of coronary artery repair

1. report\_group = ‘’
2. procedure\_type IN (1)
3. must have one or more codes in ‘include 1’
4. must not have any codes in ‘exclude’

Then set report\_group = ’30:mitral\_valve\_repair’

**step:31 aortic\_valve\_repair**

include 1:

121600. Aortic valvar procedure

121602. Aortic valvotomy - open

121604. Aortic valvotomy - closed

121611. Aortic valvoplasty

121614. Annuloplasty of aortic valve

exclude:

120211. Tricuspid valvar replacement

120283. Tricuspid valve repair converted to tricuspid valvar replacement

120311. Mitral valvar replacement

120384. Mitral valve repair converted to mitral valvar replacement

120445. AVSD: L AV valvar replacement

120489. Mitral valve replacement with stented bovine jugular vein conduit

120701. Subaortic fibromuscular shelf resection

120711. LV outflow tract myectomy / myotomy

120712. LV outflow tract obstruction relief - complex (Konno etc)

120713. LV outflow tract obstruction relief

120822. Subaortic obstruction relief

121321. Pulmonary valvar replacement (not conduit)

121322. Pulmonary valvar replacement using homograft

121355. Pulmonary valve repair converted to pulmonary valvar replacement

121621. Aortic valvar replacement

121622. Aortic valvar replacement using homograft

121628. Aortic valvar replacement using heterograft bioprosthesis

121629. Aortic valvar replacement using mechanical prosthesis

121630. Ross procedure (Ao root replacement with pulm autograft)

121640. Supravalvar aortic stenosis repair

121697. Aortic valve repair converted to aortic valvar replacement

121790. Aortic root replacement using bioprosthesis

121791. Aortic root replacement: valve sparing technique

121799. Aortic root replacement of implanted pulmonary autograft & pulmonary valve re-replacement

1. report\_group = ‘’
2. procedure\_type IN (1,2)
3. must have one or more codes in ‘include 1’
4. must not have any codes in ‘exclude’

Then set report\_group = ’31:aortic\_valve\_repair’

**step:32 tricuspid\_valve\_repair**

include 1:

120200. Tricuspid valvar procedure

120202. Tricuspid leaflet (valvoplasty) procedure

120204. Tricuspid valvar annuloplasty

120209. Ebsteins malformation of tricuspid valve repair

exclude:

120211. Tricuspid valvar replacement

120283. Tricuspid valve repair converted to tricuspid valvar replacement

120311. Mitral valvar replacement

120384. Mitral valve repair converted to mitral valvar replacement

120445. AVSD: L AV valvar replacement

120489. Mitral valve replacement with stented bovine jugular vein conduit

120801. VSD closure

120802. VSD closure by direct suture

120803. VSD closure using patch

121321. Pulmonary valvar replacement (not conduit)

121322. Pulmonary valvar replacement using homograft

121355. Pulmonary valve repair converted to pulmonary valvar replacement

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

121790. Aortic root replacement using bioprosthesis

121791. Aortic root replacement: valve sparing technique

121799. Aortic root replacement of implanted pulmonary autograft & pulmonary valve re-replacement

1. report\_group = ‘’
2. procedure\_type IN (1)
3. must have one or more codes in ‘include 1’
4. must not have any codes in ‘exclude’

Then set report\_group = ’32:tricuspid\_valve\_repair’

**step:33 pulmonary\_atresia\_vsd**

include 1:

122801. Pulmonary atresia & ventricular septal defect (VSD) (including Fallot-type) repair

122811. Pulmonary atresia, ventricular septal defect (VSD) & systemic-to-pulmonary collateral artery(ies) (MAPCA(s)) repair

exclude:

120401. AVSD: partial (primum ASD) repair

120501. AVSD: complete (common valve orifice) repair

120510. AVSD: 'intermediate' repair

1. report\_group = ‘’
2. procedure\_type IN (1)
3. must have one or more codes in ‘include 1’
4. must not have any codes in ‘exclude’

Then set report\_group = ’33:pulmonary\_atresia\_vsd’

**step:34 mapca\_unifocalisation**

include 1:

122500. Systemic-to-pulmonary collateral artery(ies) (MAPCA(s)) unifocalisation procedure

1. report\_group = ‘’
2. procedure\_type IN (1,2)
3. must have one or more codes in ‘include 1’

Then set report\_group = ’34:mapca\_unifocalisation’

**step:35 absent\_pulmonary\_valve\_syndrome**

include 1:

122621. Absent pulmonary valve syndrome (Fallot type) repair

exclude:

120401. AVSD: partial (primum ASD) repair

120501. AVSD: complete (common valve orifice) repair

120510. AVSD: 'intermediate' repair

1. report\_group = ‘’
2. procedure\_type IN (1)
3. must have one or more codes in ‘include 1’
4. must not have any codes in ‘exclude’

Then set report\_group = ’35:absent\_pulmonary\_valve\_syndrome’

**step:36 fallot**

include 1:

122601. Tetralogy of Fallot repair

122613. Tetralogy of Fallot repair with transannular patch

122620. Tetralogy of Fallot repair without transannular patch

122701. Double outlet right ventricle with subaortic or doubly committed ventricular septal defect (VSD) & pulmonary stenosis (Fallot-type) repair

exclude:

120000. TAPVC repair

120401. Atrioventricular septal defect (AVSD): partial (primum ASD) repair

120501. AVSD: complete (common valve orifice) repair

120510. AVSD: 'intermediate' repair

120619. 1.5 ventricle repair: RV outflow tract reconstruction + Glenn anastomosis

120903. Damus-Kaye-Stansel type procedure: pulm trunk to aorta end/side anastomosis

122921. Arterial switch procedure

123005. Total cavopulmonary connection (TCPC) using extracardiac inferior caval vein (IVC)-pulmonary artery conduit with fenestration

123050. Total cavopulmonary connection (TCPC)

123054. Total cavopulmonary conn (TCPC) using extracardiac IVC-PA conduit

1. report\_group = ‘’
2. procedure\_type IN (1)
3. must have one or more codes in ‘include 1’
4. must not have any codes in ‘exclude’

Then set report\_group = ’36:fallot’

**step:37 rv\_pa\_conduit**

include 1:

123601. Right ventricle to pulmonary artery conduit construction

exclude:

120801. VSD closure

120802. VSD closure by direct suture

120803. VSD closure using patch

123610. Replacement of cardiac conduit

1. report\_group = ‘’
2. procedure\_type IN (1)
3. must have one or more codes in ‘include 1’
4. must not have any codes in ‘exclude’

Then set report\_group = ’37:rv\_pa\_conduit’

**step:38 vsd\_rvoto**

include 1:

120801. VSD closure

120802. VSD closure by direct suture

120803. VSD closure using patch

include 2:

120641. Right ventricular outflow tract obstruction relief

120821. Subpulmonary obstruction relief

1. report\_group = ‘’
2. procedure\_type IN (1)
3. must have one or more codes in ‘include 1’
4. must have one or more codes in ‘include 2’

Then set report\_group = ’38:vsd\_rvoto’

**step:39 supra\_valvar\_aortic\_stenosis**

include 1:

121640. Supravalvar aortic stenosis repair

exclude:

120712. LV outflow tract obstruction relief - complex (Konno etc)

121401. Pulmonary trunk arterioplasty

121420. Pulmonary arterioplasty/ reconstruction

121421. Pulmonary arterioplasty/ reconstruction - central (proximal to hilar bifurcation)

121422. Pulmonary arterioplasty/ reconstruction - peripheral (at/beyond hilar bifurcation)

121430. Pulmonary artery origin from ascending aorta (hemitruncus) repair

121431. Pulmonary artery ligation

121662. Ross-Konno procedure

1. report\_group = ‘’
2. procedure\_type IN (1)
3. must have one or more codes in ‘include 1’
4. must not have any codes in ‘exclude’

Then set report\_group = ’39:supra\_valvar\_aortic\_stenosis’

**step:40 sub\_valvar\_aortic\_stenosis**

include 1:

120700. LV outflow tract procedure

120701. Subaortic fibromuscular shelf resection

120711. LV outflow tract myectomy / myotomy

120713. LV outflow tract obstruction relief

120822. Subaortic obstruction relief

exclude:

120712. LV outflow tract obstruction relief - complex (Konno etc)

121662. Ross-Konno procedure

1. report\_group = ‘’
2. procedure\_type IN (1)
3. must have one or more codes in ‘include 1’
4. must not have any codes in ‘exclude’

Then set report\_group = ’40:sub\_valvar\_aortic\_stenosis’

**step:41 ap\_window**

include 1:

121201. Aortopulmonary window closure

exclude:

121100. Common arterial trunk (truncus) repair

121800. Coarctation / hypoplasia of aorta repair

121801. Aortic coarct/hypoplasia repair: resection & end/end anast

121802. Aortic coarct/hypoplasia repair: patch aortoplasty

121803. Aortic coarct/hypoplasia repair: subclavian flap aortoplasty

121810. Aortic coarct/hypoplasia repair: extended resection & end/end anast

121815. Aortic coarct/hypoplasia repair: resection + insertion tube graft

121830. Aortic arch repair

122100. Interrupted aortic arch repair

1. report\_group = ‘’
2. procedure\_type IN (1,2)
3. must have one or more codes in ‘include 1’
4. must not have any codes in ‘exclude’

Then set report\_group = ’41:ap\_window’

**step:42 anomalous\_coronary**

include 1

122300. Anomalous coronary artery (eg ALCAPA) repair

122380. Anomalous aortic origin of coronary artery repair

1. report\_group = ‘’
2. procedure\_type IN (1)
3. must have one or more codes in ‘include 1’

Then set report\_group = ’42:anomalous\_coronary’

**step:43 cor\_triatriatum**

include 1:

120131. Cor triatriatum (divided LA) repair

exclude:

120000. TAPVC repair

121000. Norwood type procedure

1. report\_group = ‘’
2. procedure\_type IN (1)
3. must have one or more codes in ‘include 1’
4. must not have any codes in ‘exclude’

Then set report\_group = ’43:cor\_triatriatum’

**step:44 pa\_band**

include 1:

121402. Pulmonary trunk band (PA band)

exclude:

121419. Application of right & left pulmonary arterial bands

allow only:

120142. Atrial septectomy: closed (Blalock Hanlon)

120143. Atrial septectomy

120190. Interatrial communication creation-enlargement

122400. Arterial duct procedure

122410. Arterial duct (PDA) closure

122420. Patent arterial duct (PDA) closure - surgical

128725. Cardiac support using ECMO circuitry

1. report\_group = ‘’
2. procedure\_type IN (1,2)
3. must have one or more codes in ‘include 1’
4. all codes must be in ‘include 1’ or ‘allow only’
5. exclude is redundant

Then set report\_group = ’44:pa\_band’

**step:45 arterial\_shunt**

include 1:

123103. Modified R Blalock interposition shunt

123104. Modified L Blalock interposition shunt

123105. Waterston (ascending Ao-RPA) anastomosis

123106. Central systemic-PA interposition shunt

123130. Systemic-to-pulmonary arterial shunt procedure

123146. Modified Blalock interposition shunt

allow only:

120142. Atrial septectomy: closed (Blalock Hanlon)

120143. Atrial septectomy

120190. Interatrial communication creation-enlargement

122400. Arterial duct procedure

122410. Arterial duct (PDA) closure

122420. Patent arterial duct (PDA) closure - surgical

128725. Cardiac support using ECMO circuitry

1. report\_group = ‘’
2. procedure\_type IN (1,2)
3. must have one or more codes in ‘include 1’
4. all codes must be in ‘include 1’ or ‘allow only’

Then set report\_group = ’45:arterial\_shunt’

**step:46 iaa**

include 1:

122100. Interrupted aortic arch repair

exclude:

121100. Common arterial trunk (truncus) repair

122601. Tetralogy of Fallot repair

122613. Tetralogy of Fallot repair with transannular patch

122620. Tetralogy of Fallot repair without transannular patch

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

122701. Double outlet RV (Fallot-type) repair

122921. Arterial switch procedure

123111. Bidirectional superior cavopulmonary (Glenn) anastomosis

123115. Hemi-Fontan procedure

123144. Bilateral bidirectional superior cavopulmonary (Glenn) anastomoses

123172. Superior caval vein to pulmonary artery anastomosis

1. report\_group = ‘’
2. procedure\_type IN (1,2)
3. must have one or more codes in ‘include 1’
4. must not have any codes in ‘exclude’

Then set report\_group = ’46:iaa’

**step:47 coarctation\_hypoplasia**

include 1:

121800. Coarctation / hypoplasia of aorta repair

121801. Aortic coarct/hypoplasia repair: resection & end/end anast

121802. Aortic coarct/hypoplasia repair: patch aortoplasty

121803. Aortic coarct/hypoplasia repair: subclavian flap aortoplasty

121810. Aortic coarct/hypoplasia repair: extended resection & end/end anast

121815. Aortic coarct/hypoplasia repair: resection + insertion tube graft

121830. Aortic arch repair

allow only:

120055. Coronary sinus ASD repair

120101. ASD closure

120102. ASD closure with direct suture

120103. ASD closure with patch

120110. Sinus venosus ASD closure

120153. Patent foramen ovale (PFO) direct closure

121711. Vascular ring procedure

121731. Aortopexy

121732. Pulmonary arterial sling repair

122400. Arterial duct procedure

122410. Arterial duct (PDA) closure

122420. Patent arterial duct (PDA) closure - surgical

128725. Cardiac support using ECMO circuitry

1. report\_group = ‘’
2. procedure\_type IN (1,2)
3. must have one or more codes in ‘include 1’
4. all codes must be in ‘include 1’ or ‘allow only’

Then set report\_group = ’47:coarctation\_hypoplasia’

**step:48 pulmonary\_vein\_stenosis**

include 1:

120003. Pulmonary vein stenosis repair

120020. Pulmonary vein procedure

1. report\_group = ‘’
2. procedure\_type IN (1)
3. must have one or more codes in ‘include 1’

Then set report\_group = ’48:pulmonary\_vein\_stenosis’

**step:49 conduit\_replacement**

include 1:

123610. Replacement of cardiac conduit

1. report\_group = ‘’
2. procedure\_type IN (1)
3. must have one or more codes in ‘include 1’

Then set report\_group = ’49:conduit\_replacement’

**step:50 multiple\_vsd**

include 1:

120816. Closure of multiple VSDs

allow only:

120055. Coronary sinus ASD repair

120101. ASD closure

120102. ASD closure with direct suture

120103. ASD closure with patch

120110. Sinus venosus ASD closure

120153. Patent foramen ovale (PFO) direct closure

120801. VSD closure

120802. VSD closure by direct suture

120803. VSD closure using patch

121401. Pulmonary trunk arterioplasty

121403. Pulmonary trunk band removal (de-band)

121420. Pulmonary arterioplasty/ reconstruction

121421. Pulmonary arterioplasty/ reconstruction - central (proximal to hilar bifurcation)

121711. Vascular ring procedure

121732. Pulmonary arterial sling repair

121731. Aortopexy

122400. Arterial duct procedure

122410. Arterial duct (PDA) closure

122420. Patent arterial duct (PDA) closure - surgical

128725. Cardiac support using ECMO circuitry

1. report\_group = ‘’
2. procedure\_type IN (1)
3. must have one or more codes in ‘include 1’
4. all codes must be in ‘include 1’ or ‘allow only’

Then set report\_group = ’50:multiple\_vsd’

**step:51 vsd**

include 1:

120801. VSD closure

120802. VSD closure by direct suture

120803. VSD closure using patch

allow only:

120055. Coronary sinus ASD repair

120101. ASD closure

120102. ASD closure with direct suture

120103. ASD closure with patch

120110. Sinus venosus ASD closure

120153. Patent foramen ovale (PFO) direct closure

121403. Pulmonary trunk band removal (de-band)

121711. Vascular ring procedure

121731. Aortopexy

121732. Pulmonary arterial sling repair

122400. Arterial duct procedure

122410. Arterial duct (PDA) closure

122420. Patent arterial duct (PDA) closure - surgical

128725. Cardiac support using ECMO circuitry

1. report\_group = ‘’
2. procedure\_type IN (1)
3. must have one or more codes in ‘include 1’
4. all codes must be in ‘include 1’ or ‘allow only’

Then set report\_group = ’51:vsd’

**step:52 sinus\_venosus\_asd\_papvc**

include 1:

120002. Partially anomalous pulmonary venous connection repair

120078. Partially anomalous pulmonary venous connection repair: baffle redirection to left atrium & systemic vein translocated to right atrial appendage (Warden)

120110. Sinus venosus ASD closure

exclude:

120017. Scimitar syndrome (partially anomalous pulmonary venous connection) repair

1. report\_group = ‘’
2. procedure\_type IN (1)
3. must have one or more codes in ‘include 1’
4. must not have any codes in ‘exclude’

Then set report\_group = ’52:sinus\_venosus\_asd\_papvc’

**step:53 vascular\_ring**

include 1:

121711. Vascular ring procedure

121731. Aortopexy

121732. Pulmonary arterial sling repair

allow only:

120153. Patent foramen ovale (PFO) direct closure

121401. Pulmonary trunk arterioplasty

121402. Pulmonary trunk band (PA band)

121420. Pulmonary arterioplasty/ reconstruction

121421. Pulmonary arterioplasty/ reconstruction: central (proximal to hilar bifurcation)

122200. Systemic arterial procedure

122400. Arterial duct procedure

122410. Arterial duct (PDA) closure

122420. Patent arterial duct (PDA) closure - surgical

126420. Tracheal procedure

126440. Tracheobronchial reconstruction procedure

128725. Cardiac support using ECMO circuitry

1. report\_group = ‘’
2. procedure\_type IN (1,2)
3. must have one or more codes in ‘include 1’
4. all codes must be in ‘include 1’ or ‘allow only’

Then set report\_group = ’53:vascular\_ring’

**step:54 asd**

include 1:

120055. Coronary sinus ASD repair

120101. ASD closure

120102. ASD closure with direct suture

120103. ASD closure with patch

exclude:

120801. VSD closure

120802. VSD closure by direct suture

120803. VSD closure using patch

allow only:

120153. Patent foramen ovale (PFO) direct closure

121711. Vascular ring procedure

121731. Aortopexy

121732. Pulmonary arterial sling repair

122400. Arterial duct procedure

122410. Arterial duct (PDA) closure

122420. Patent arterial duct (PDA) closure - surgical

128725. Cardiac support using ECMO circuitry

1. report\_group = ‘’
2. procedure\_type IN (1)
3. must have one or more codes in ‘include 1’
4. all codes must be in ‘include 1’ or ‘allow only’
5. exclude is redundant

Then set report\_group = ’54:asd’

**step:55 pda\_ligation**

include 1:

122400. Arterial duct procedure

122410. Arterial duct (PDA) closure

122420. Patent arterial duct (PDA) closure - surgical

allow only:

128725. Cardiac support using ECMO circuitry

1. report\_group = ‘’
2. procedure\_type IN (1,2)
3. must have one or more codes in ‘include 1’
4. all codes must be in ‘include 1’ or ‘allow only’

Then set report\_group = ’55:pda\_ligation’

**step:56 arrhythmia\_surgical**

include 1:

123540. Arrhythmia surgical procedure

123550. Surgical localisation and mapping procedure for arrhythmia

123580. Surgical ablation procedure for atrial arrhythmia

123581. Surgical ablation procedure for ventricular arrhythmia

123869. Percutaneous radiofrequency epicardial ablation procedure for arrhythmia

123553. Maze operation

123572. Cox-Maze IV procedure

1. report\_group = ‘’
2. procedure\_type IN (1,2,11)
3. must have one or more codes in ‘include 1’

Then set report\_group = ’56:arrhythmia\_surgical’

**step:57 pacemaker\_epicardial**

include 1:

123463. Pacemaker system placement: permanent epicardial

exclude:

123473. Cardiac resynchronisation therapy (biventricular pacing)

124265. Implantable cardioverter & defibrillator (ICD) implantation: biventricular

1. report\_group = ‘’
2. procedure\_type IN (2,11)
3. must have one or more codes in ‘include 1’
4. must not have any codes in ‘exclude’

Then set report\_group = ’57:pacemaker\_epicardial’

**step:58 pda\_stent**

include 1:

121014. Stent placement in arterial duct (PDA)

allow only:

120141. Balloon atrial septostomy by pull back (Rashkind)

121004. Application of bilateral pulmonary arterial bands & transcatheter placement of stent in arterial duct

1. report\_group = ‘’
2. procedure\_type IN (3)
3. must have one or more codes in ‘include 1’
4. all codes must be in ‘include 1’ or ‘allow only’

Then set report\_group = ’58:pda\_stent’

**step:59 pulmonary\_valve\_replacement\_transluminal**

include 1:

121351. Transluminal pulmonary valvar insertion with stent mounted valve

121385. Transluminal pulmonary valvar insertion with stent mounted valve including prestenting

1. report\_group = ‘’
2. procedure\_type IN (3)
3. must have one or more codes in ‘include 1’

Then set report\_group = ’59:pulmonary\_valve\_replacement\_transluminal’

**step:60 rvot\_stent**

include 1:

120618. Stent placement in RV outflow tract

1. report\_group = ‘’
2. procedure\_type IN (3)
3. must have one or more codes in ‘include 1’

Then set report\_group = ’60:rvot\_stent’

**step:61 pulmonary\_valve\_radiofrequency**

include 1:

121309. Pulmonary valvar transluminal perforation & dilation

1. report\_group = ‘’
2. procedure\_type IN (3)
3. must have one or more codes in ‘include 1’

Then set report\_group = ’61:pulmonary\_valve\_radiofrequency’

**step:62 blade\_atrial\_septostomy**

include 1:

120144. Blade atrial septostomy

1. report\_group = ‘’
2. procedure\_type IN (3)
3. must have one or more codes in ‘include 1’

Then set report\_group = ’62:blade\_atrial\_septostomy’

**step:63 balloon\_atrial\_septostomy**

include 1:

120141. Balloon atrial septostomy by pull back (Rashkind)

1. report\_group = ‘’
2. procedure\_type IN (3)
3. must have one or more codes in ‘include 1’

Then set report\_group = ’63:balloon\_atrial\_septostomy’

**step:64 pulmonary\_vein\_intervention**

include 1:

120021. Balloon dilation of pulmonary vein

120022. Stent placement in pulmonary vein

120023. Balloon dilation of pulmonary vein using cutting balloon

120024. Balloon dilation of pulmonary vein or pathway

1. report\_group = ‘’
2. procedure\_type IN (1)
3. must have one or more codes in ‘include 1’

Then set report\_group = ’64:pulmonary\_vein\_intervention’

**step:65 coarctation\_stent**

include 1:

121817. Stent placement at site of aortic coarctation

121822. Stent placement at site of aortic recoarctation

121848. Stent placement at site of native aortic coarctation-hypoplasia

1. report\_group = ‘’
2. procedure\_type IN (3)
3. must have one or more codes in ‘include 1’
4. must not have any code in ‘exclude’

Then set report\_group = ’65:coarctation\_stent’

**step:66 coarctation\_balloon**

include 1:

121804. Balloon dilation of native aortic coarctation-hypoplasia

121827. Aortic coarctation transluminal obstruction relief

exclude:

121817. Stent placement at site of aortic coarctation

121822. Stent placement at site of aortic recoarctation

121848. Stent placement at site of native aortic coarctation-hypoplasia

1. report\_group = ‘’
2. procedure\_type IN (3)
3. must have one or more codes in ‘include 1’
4. must not have any codes in ‘exclude’

Then set report\_group = ’66:coarctation\_balloon’

**step:67 recoarctation\_balloon**

include 1:

121808. Balloon dilation of aortic re-coarctation

exclude:

121817. Stent placement at site of aortic coarctation

121822. Stent placement at site of aortic recoarctation

121848. Stent placement at site of native aortic coarctation-hypoplasia

1. report\_group = ‘’
2. procedure\_type IN (3)
3. must have one or more codes in ‘include 1’
4. must not have any codes in ‘exclude’

Then set report\_group = ’67:recoarctation\_balloon’

**step:68 balloon\_aortic\_valve**

include 1:

121605. Balloon dilation of aortic valve

121611. Aortic valvoplasty

exclude:

121625. Aortic valvar transluminal perforation & dilation

1. report\_group = ‘’
2. procedure\_type IN (3)
3. must have one or more codes in ‘include 1’
4. must not have any codes in ‘exclude’

Then set report\_group = ’68:balloon\_aortic\_valve’

**step:69 balloon\_pulmonary\_valve**

include 1:

121305.Balloon dilation of pulmonary valve

exclude:

121309. Pulmonary valvar transluminal perforation & dilation

1. report\_group = ‘’
2. procedure\_type IN (3)
3. must have one or more codes in ‘include 1’
4. must not have any codes in ‘exclude’

Then set report\_group = ’69:balloon\_pulmonary\_valve’

**step:70 vsd\_transluminal**

include 1

120801. VSD closure

120807. VSD closure with transluminal prosthesis

1. report\_group = ‘’
2. procedure\_type IN (3)
3. must have one or more codes in ‘include 1’

Then set report\_group = ’70:vsd\_transluminal’

**step:71 pfo\_transluminal**

include 1:

120107. PFO closure with transluminal prosthesis

1. report\_group = ‘’
2. procedure\_type IN (3)
3. must have one or more codes in ‘include 1’

Then set report\_group = ’71:pfo\_transluminal’

**step:72 asd\_transluminal**

include 1:

120101. ASD closure

120106. ASD closure with transluminal prosthesis

1. report\_group = ‘’
2. procedure\_type IN (3)
3. must have one or more codes in ‘include 1’

Then set report\_group = ’72:asd\_transluminal’

**step:73 pda\_transluminal**

include 1:

122404. Arterial duct (PDA) closure with transluminal prosthesis

122421. Arterial duct (PDA) closure with transluminal coil

122422. Arterial duct (PDA) closure with transluminal Amplatzer plug

1. report\_group = ‘’
2. procedure\_type IN (3)
3. must have one or more codes in ‘include 1’

Then set report\_group = ’73:pda\_transluminal’

**step:74 pa\_stent**

include 1:

121513. Stent placement in RPA

121514. Stent placement in LPA

121550. Stent placement in pulmonary tree

1. report\_group = ‘’
2. procedure\_type IN (3)
3. must have one or more codes in ‘include 1’

Then set report\_group = ’74:pa\_stent’

**step:75 pa\_ballooning**

include 1:

121503. Balloon dilation of right pulmonary artery

121504. Balloon dilation of left pulmonary artery

121405. Balloon dilation of pulmonary trunk

121553. Balloon dilation of pulmonary tree with cutting balloon

1. report\_group = ‘’
2. procedure\_type IN (3)
3. must have one or more code in ‘include 1’

Then set report\_group = ’75:pa\_ballooning’

**step:76 mapca\_transluminal**

include 1:

122518. Systemic-to-pulmonary collateral artery(ies) (MAPCA(s)) occlusion

122519. Transluminal procedure to systemic-to-pulmonary collateral artery (MAPCA(s))

122562. Stent placement in systemic-to-pulmonary collateral artery (MAPCA(s))

122565. Transluminal occlusion of systemic-to-pulmonary collateral artery(ies) (MAPCA(s)) with coil-device

122572. Balloon dilation of systemic-to-pulmonary collateral artery(ies) (MAPCA(s))

1. report\_group = ‘’
2. procedure\_type IN (3)
3. must have one or more codes in ‘include 1’

Then set report\_group = ’76:mapca\_transluminal’

**step:77 conduit\_balloon\_stent**

include 1:

123614. Balloon dilation of cardiac conduit

123623. Stent placement in cardiac conduit

exclude:

121386. Transluminal pulmonary valvar prestenting procedure in preparation for valve replacement

1. report\_group = ‘’
2. procedure\_type IN (1)
3. must have one or more codes in ‘include 1’
4. must not have any codes in ‘exclude’

Then set report\_group = ’77:conduit\_balloon\_stent’

**step:78 stent\_dilatation**

include 1:

124510. Stent redilation

1. report\_group = ‘’
2. procedure\_type IN (3)
3. must have one or more code in ‘include 1’

Then set report\_group = ’78:stent\_dilatation’

**step:79 ep\_ablation**

include 1:

123546. Transluminal cryoablation procedure for arrhythmia

123548. Transluminal radiofrequency procedure for arrhythmia

123557. Transluminal procedure for arrhythmia

123583. Transluminal procedure for ventricular arrhythmia

123584. Transluminal ablation procedure with pulmonary vein exclusion

123582. Transluminal procedure for atrial arrhythmia

123840. Transluminal ablation procedure for arrhythmia

1. report\_group = ‘’
2. procedure\_type IN (3,10)
3. must have one or more codes in ‘include 1’

Then set report\_group = ’79:ep\_ablation’

**step:80 icd\_catheter**

include 1

124231. Implantable cardioverter & defibrillator (ICD) implantation

124233. Implantable cardioverter & defibrillator (ICD) implantation: endocardial

124261. Implantable cardioverter & defibrillator (ICD) implantation: single chamber

124264. Implantable cardioverter & defibrillator (ICD) implantation: dual chamber

124265. Implantable cardioverter & defibrillator (ICD) implantation: biventricular

124279. Subcutaneous implantable cardioverter & defibrillator (ICD) implantation

exclude:

124265. Implantable cardioverter & defibrillator (ICD) implantation: biventricular

123473. Cardiac resynchronisation therapy (biventricular pacing)

1. report\_group = ‘’
2. procedure\_type IN (3,10)
3. must have one or more codes in ‘include 1’
4. must not have any codes in ‘exclude’

Then set report\_group = ‘80:icd\_catheter’

**step:81 pacemaker\_crt\_bv**

include 1:

124265. Implantable cardioverter & defibrillator (ICD) implantation: biventricular

123452. Pacemaker system placement: biventricular

123473. Cardiac resynchronisation therapy (biventricular pacing)

exclude:

124370. Pacemaker system placement: percutaneous leadless

1. report\_group = ‘’
2. procedure\_type IN (2,3,10,11)
3. must have one or more codes in ‘include 1’
4. must not have any codes in ‘exclude’

Then set report\_group = ’81:pacemaker\_crt\_bv’

**step:82 pacemaker\_endocardial**

include 1:

123450. Pacemaker system placement: single chamber

123451. Pacemaker system placement: dual chamber

123464. Pacemaker system placement: permanent endocardial

123467. Pacemaker system placement: permanent

123485. Pulse generator box placement

123513. Pulse generator box replacement

124370. Pacemaker system placement: percutaneous leadless

exclude:

124370. Pacemaker system placement: percutaneous leadless

123452. Pacemaker system placement: biventricular

123473. Cardiac resynchronisation therapy (biventricular pacing)

1. report\_group = ‘’
2. procedure\_type IN (3,10)
3. must have one or more codes in ‘include 1’
4. must not have any codes in ‘exclude’

Then set report\_group = ’82:pacemaker\_endocardial’

**step:83 pacemaker\_lead**

include 1:

123470. Pacemaker wire procedure

123484. Pacemaker wire revision procedure

124475. Removal of implanted pacemaker lead

1. report\_group = ‘’
2. procedure\_type IN (2,3,10,11)
3. must have one or more codes in ‘include 1’

Then set report\_group = ’83:pacemaker\_lead’

**step:84 ep\_miscellaneous**

include 1:

123460. Pacemaker system placement: temporary

123514. Removal of complete implanted cardiac pacemaker system

124234. Implantable cardioverter & defibrillator (ICD) transluminal removal

124239. Implantable cardioverter & defibrillator (ICD) procedure

128074. Endoscopic cervical sympathectomy: right sided

128075. Endoscopic cervical sympathectomy: left sided

1. report\_group = ‘’
2. procedure\_type IN (2,3,10,11)
3. must have one or more codes in ‘include 1’

Then set report\_group = ’84:ep\_miscellaneous’

**step:85 ep\_diagnostic**

include 1:

130512. Electrophysiological study (EPS)

130517. Electrophysiological study (EPS) with three dimensional mapping

1. report\_group = ‘’
2. procedure\_type IN (3,5,10)
3. must have one or more codes in ‘include 1’

Then set report\_group = ’85:ep\_diagnostic’

**step:86 catheter\_diagnostic**

include 1:

120625. Transluminal right ventricular biopsy

124507. Transluminal diagnostic test occlusion

130501. Diagnostic catheterisation procedure

130505. Diagnostic cardiovascular catheterisation procedure: angiographic data obtained

130506. Diagnostic cardiovascular catheterisation procedure: haemodynamic data obtained

130507. Diagnostic cardiovascular catheterisation procedure with haemodynamic alteration (challenge)

130508. Diagnostic cardiovascular catheterisation procedure with electrophysiological alteration (challenge)

130513. Catheterisation study for pulmonary hypertension evaluation

allow only:

122341. Transluminal intracoronary echocardiography (IVUS)

124559. Transluminal procedure using adjunctive therapy

130124. Transluminal intracardiac echocardiographic examination

1. report\_group = ‘’
2. procedure\_type IN (1)
3. must have one or more codes in ‘include 1’
4. all codes must be in ‘include 1’ or ‘allow only’

Then set report\_group = ’86:catheter\_diagnostic’

**step:99 unallocated**

1. report\_group = ‘’

Then set report\_group = ’99:unallocated’