

Pediatric Heart Surgery Mortality Rate

Pediatric Quality Indicators #6

Technical Specifications

Provider-Level Indicator

Procedure Mortality Indicator

AHRQ Quality Indicators, Version 4.3, August 2011

Version 4.3a is a maintenance release of Version 4.3. The differences between the two versions are:

- Version 4.3a includes Version 29 of the Limited License edition of the 3M™ APR-DRG Grouper. This grouper corrects an issue found in Version 28 of the Limited License edition of the 3M™ APR-DRG Grouper. The grouper is only used with the Inpatient Quality Indicator (IQI) mortality measures. Version 4.3 includes Version 28 of the Limited License edition of the 3M™ APR-DRG Grouper, which was incorrectly assigning a Risk of Mortality (ROM) subclass for cases dated on or after 10/1/10.
- Version 4.3a allows users to calculate area-level indicators for years 2010 and 2011, correcting an issue previously identified in Version 4.3.

All other aspects of the software, including measure specifications, remain the same. Thus this document (related to Version 4.3) remains unchanged.

Numerator

Number of deaths (DISP=20) among cases meeting the inclusion and exclusion rules for the denominator with a code of pediatric heart surgery with ICD-9-CM diagnosis of congenital heart disease in any field.

Denominator

Discharges under age 18 with ICD-9-CM procedure codes for congenital heart disease (1P) or non-specific heart surgery (2P) with ICD-9-CM diagnosis of congenital heart disease (2D) in any field.

ICD-9-CM Congenital heart disease procedure codes (1P):

3500	CLOSED VALVOTOMY NOS	3522	REPLACE AORTIC VALVE NEC
3501	CLOSED AORTIC VALVOTOMY	3523	REPLACE MITR VALV-TISSUE
3502	CLOSED MITRAL VALVOTOMY	3524	REPLACE MITRAL VALVE NEC
3503	CLOSED PULMON VALVOTOMY	3525	REPLACE PULM VALV-TISSUE
3504	CLOSED TRICUSP VALVOTOMY	3526	REPLACE PULMON VALVE NEC
3510	OPEN VALVULOPLASTY NOS	3527	REPLACE TRIC VALV-TISSUE
3511	OPN AORTIC VALVULOPLASTY	3528	REPLACE TRICUSP VALV NEC
3512	OPN MITRAL VALVULOPLASTY	3531	PAPILLARY MUSCLE OPS
3513	OPN PULMON VALVULOPLASTY	3532	CHORDAE TENDINEAE OPS
3514	OPN TRICUS VALVULOPLASTY	3533	ANNULOPLASTY
3520	REPLACE HEART VALVE NOS	3534	INFUNDIBULECTOMY
3521	REPLACE AORT VALV-TISSUE	3535	TRABECUL CARNEAE CORD OP

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3539	TISS ADJ TO VALV OPS NEC	3591	INTERAT VEN RETRN TRANSP
3541	ENLARGE EXISTING SEP DEF	3592	CONDUIT RT VENT-PUL ART
3542	CREATE SEPTAL DEFECT	3593	CONDUIT LEFT VENTR-AORTA
3550	PROSTH REP HRT SEPTA NOS	3594	CONDUIT ARTIUM-PULM ART
3551	PROS REP ATRIAL DEF-OPN	3595	HEART REPAIR REVISION
3552	PROS REPAIR ATRIA DEF-CL	3598	OTHER HEART SEPTA OPS
3553	PROST REPAIR VENTRIC DEF	3599	OTHER OP ON HRT VALVES
3554	PROS REP ENDOCAR CUSHION	3699	OTHER OPERATIONS ON VESSEL OF HEART
3560	GRFT REPAIR HRT SEPT NOS	3733	EXCISION OR DESTRUCTION OF OTHER LESION OR TISSUE OF HEART
3561	GRAFT REPAIR ATRIAL DEF	3736	EXCISION OR DESTRUCTION OF LEFT ATRIAL APPENDAGE (LAA) (OCT08)
3562	GRAFT REPAIR VENTRIC DEF	375	HEART TRANSPLANTATION (invalid as of OCT03)
3563	GRFT REP ENDOCAR CUSHION	3751	HEART TRANSPLANTATION (OCT03)
3570	HEART SEPTA REPAIR NOS	3752	IMPLANT TOT REP HRT SYS (OCT03)
3571	ATRIA SEPTA DEF REP NEC	390	SYSTEMIC-PULM ART SHUNT
3572	VENTR SEPTA DEF REP NEC	3921	CAVAL-PULMON ART ANASTOM
3573	ENDOCAR CUSHION REP NEC		
3581	TOT REPAIR TETRAL FALLOT		
3582	TOTAL REPAIR OF TAPVC		
3583	TOT REP TRUNCUS ARTERIOS		
3584	TOT COR TRANSPOS GRT VES		

ICD-9-CM Non-specific cardiac procedure codes (2P):

3834	RESECTION OF ABDOMINAL AORTA WITH ANASTOMOSIS	3949	OTHER REVISION OF VASCULAR PROCEDURE
3835	THOR VESSEL RESECT/ANAST	3956	REPAIR OF BLOOD VESSEL WITH TISSUE PATCH GRAFT
3844	RESECTION OF ABDOMINAL AORTA WITH REPLACEMENT	3957	REPAIR OF BLOOD VESSEL WITH SYNTHETIC PATCH GRAFT
3845	RESECT THORAC VES W REPL	3958	REPAIR OF BLOOD VESSEL WITH UNSPECIFIED TYPE OF PATCH GRAFT
3864	OTHER EXCISION OF ABDOMINAL AORTA	3959	REPAIR OF VESSEL NEC
3865	OTHER EXCISION OF THORACIC VESSEL		
3884	OTHER SURGICAL OCCLUSION OF ABDOMINAL AORTA		
3885	OCCLUDE THORACIC VES NEC		

ICD-9-CM Congenital heart disease diagnosis codes (2D):

7450	COMMON TRUNCUS	74609	PULMONARY VALVE ANOM NEC
74510	COMPL TRANSPOS GREAT VES	7461	CONG TRICUSP ATRES/STEN
74511	DOUBLE OUTLET RT VENTRIC	7462	EBSTEIN'S ANOMALY
74512	CORRECT TRANSPOS GRT VES	7463	CONG AORTA VALV STENOSIS
74519	TRANSPOS GREAT VESS NEC	7464	CONG AORTA VALV INSUFFIC
7452	TETRALOGY OF FALLOT	7465	CONGEN MITRAL STENOSIS
7453	COMMON VENTRICLE	7466	CONG MITRAL INSUFFICIENC
7454	VENTRICULAR SEPT DEFECT	7467	HYOPLAS LEFT HEART SYND
7455	SECUNDUM ATRIAL SEPT DEF	74681	CONG SUBAORTIC STENOSIS
74560	ENDOCARD CUSHION DEF NOS	74682	COR TRIARIATUM
74561	OSTIUM PRIMUM DEFECT	74683	INFUNDIB PULMON STENOSIS
74569	ENDOCARD CUSHION DEF NEC	74684	OBSTRUCT HEART ANOM NEC
7457	COR BILOCULARE	74685	CORONARY ARTERY ANOMALY
7458	SEPTAL CLOSURE ANOM NEC	74687	MALPOSITION OF HEART
7459	SEPTAL CLOSURE ANOM NOS	74689	CONG HEART ANOMALY NEC
74600	PULMONARY VALVE ANOM NOS	7469	CONG HEART ANOMALY NOS
74601	CONG PULMON VALV ATRESIA	7470	PATENT DUCTUS ARTERIOSUS
74602	CONG PULMON VALVE STENOS	74710	COARCTATION OF AORTA

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74711	INTERRUPT OF AORTIC ARCH	7473	PULMONARY ARTERY ANOM
74720	CONG ANOM OF AORTA NOS	74740	GREAT VEIN ANOMALY NOS
74721	ANOMALIES OF AORTIC ARCH	74741	TOT ANOM PULM VEN CONN
74722	AORTIC ATRESIA/STENOSIS	74742	PART ANOM PULM VEN CONN
74729	CONG ANOM OF AORTA NEC	74749	GREAT VEIN ANOMALY NEC

Exclude cases:

- MDC 14 (pregnancy, childbirth and puerperium)
- with transcatheter interventions (either 3AP, 3BP, 3CP, 3DP, 3EP with 3D, or 3FP) as single cardiac procedures, performed without bypass (5P) but with catheterization (6P)
- with septal defects (4P) as single cardiac procedures without bypass (5P)
- with diagnosis of ASD or VSD (5D) with PDA as the only cardiac procedure
- heart transplant (7P)
- premature infants (4D) with PDA closure (3D and 3EP) as only cardiac procedure
- age less than or equal to 30 days with PDA closure as only cardiac procedure
- with missing discharge gender (SEX=missing), age (AGE=missing), quarter (DQTR=missing), year (YEAR=missing) or principal diagnosis (DX1=missing)
- transferring to another short-term hospital (DISP=2)
- neonates with birth weight less than 500 grams (Birth Weight Category 1)

See *Pediatric Quality Indicators Appendices*:

- Appendix I – Definitions of Neonate, Newborn, Normal Newborn, and Outborn
- Appendix L- Low Birth Weight Categories

ICD-9-CM Closed heart valvotomy codes (3AP):

3500	CLOSED HEART VALVOTOMY, UNSPECIFIED VALUE	3503	CLOSED HEART VALVOTOMY, PULMONARY VALUE
3501	CLOSED HEART VALVOTOMY, AORTIC VALUE	3504	CLOSED HEART VALVOTOMY, TRICUSPID VALUE
3502	CLOSED HEART VALVOTOMY, MITRAL VALUE		

ICD-9-CM Atrial septal enlargement codes (3BP):

3541	ENLARGEMENT OF EXISTING ATRIAL SEPTAL DEFECT	3542	CREATION OF SEPTAL DEFECT IN HEART
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ICD-9-CM Atrial septal defect repair codes (3CP):

3551	REPAIR OF ATRIAL SEPTAL DEFECT WITH PROSTHESIS, OPEN TECHNIQUE	3571	OTHER AND UNSPECIFIED REPAIR OF ATRIAL SEPTAL DEFECT
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ICD-9-CM Ventricular septal defect repair codes (3DP):

3553	REPAIR OF VENTRICULAR SEPTAL DEFECT WITH PROSTHESIS	3572	OTHER AND UNSPECIFIED REPAIR OF VENTRICULAR SEPTAL DEFECT
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ICD-9-CM Occlusion of thoracic vessel codes (3EP):

3885	OCCLUDE THORACIC VES NEC
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ICD-9-CM PDA closure diagnosis code code (3D):

7470	PATENT DUCTUS ARTERIOSUS
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ICD-9-CM Other surgical occlusion codes (3FP):

3884	OTHER SURGICAL OCCLUSION OF AORTA, ABDOMINAL	3959	OTHER REPAIR OF VESSEL
3885	OTHER SURGICAL OCCLUSION OF THORACIC VESSEL		

ICD-9-CM Atrial septal defect repair and enlargement codes (4P):

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3541 ENLARGE EXISTING SEP DEF 3552 PROS REPAIR ATRIA DEF-CL

ICD-9-CM Extracorporeal circulation code (5P):

3961 EXTRACORPOREAL CIRCULAT

ICD-9-CM Atrial septal defect or ventricular septal defect diagnosis codes (5D):

7454 VENTRICULAR SEPT DEFECT 7455 SECUNDUM ATRIAL SEPT DEF

ICD-9-CM Catheterization procedure codes (6P):

3721	RT HEART CARDIAC CATH	8853	ANGIOCADIOGRAPHY OF LEFT HEART STRUCTURES
3722	LEFT HEART CARDIAC CATH	8854	COMBINED RIGHT AND LEFT HEART ANGIOCARDIOGRAPHY
3723	RT/LEFT HEART CARD CATH	8855	CORONARY ARTERIOGRAPHY USING A SINGLE CATHETER
8842	CONTRAST AORTOGRAM	8856	CORONARY ARTERIOGRAPHY USING TWO CATHETERS
8843	CONTR PULMON ARTERIOGRAM	8857	OTHER AND UNSPECIFIED CORONARY ARTERIOGRAPHY
8844	ARTERIOGRAPHY OF OTHER INTRATHORACIC VESSELS	8858	NEGATIVE-CONTRAST CARDIAC ROENTGENOGRAPHY
8850	ANGIOCADIOGRAPHY, NOT OTHERWISE SPECIFIED		
8851	ANGIOCADIOGRAPHY OF VENAE CAVAE		
8852	ANGIOCADIOGRAPHY OF RIGHT HEART STRUCTURES		

ICD-9-CM Heart transplant procedure codes (7P):

375	HEART TRANSPLANTATION (invalid as of OCT03)	3751	HEART TRANSPLANTATION (OCT03)
		3752	IMPLANT TOT REP HRT SYS (OCT03)

ICD-9-CM Premature infants procedure codes (4D):

76500	EXTREME IMMATUR WTNOS	76510	PRETERM INFANT NEC WTNOS
76501	EXTREME IMMATUR <500G	76511	PRETERM NEC <500G
76502	EXTREME IMMATUR 500-749G	76512	PRETERM NEC 500-749G
76503	EXTREME IMMATUR 750-999G	76513	PRETERM NEC 750-999G
76504	EXTREME IMMAT 1000-1249G	76514	PRETERM NEC 1000-1249G
76505	EXTREME IMMAT 1250-1499G	76515	PRETERM NEC 1250-1499G
76506	EXTREME IMMAT 1500-1749G	76516	PRETERM NEC 1500-1749G
76507	EXTREME IMMAT 1750-1999G	76517	PRETERM NEC 1750-1999G
76508	EXTREME IMMAT 2000-2499G	76518	PRETERM NEC 2000-2499G
76509	EXTREME IMMAT 2500+G	76519	PRETERM NEC 2500+G