

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

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	3542	CREATE SEPTAL DEFECT
3501	CLOSED AORTIC VALVOTOMY	3550	PROSTH REP HRT SEPTA NOS
3502	CLOSED MITRAL VALVOTOMY	3551	PROS REP ATRIAL DEF-OPN
3503	CLOSED PULMON VALVOTOMY	3552	PROS REPAIR ATRIA DEF-CL
3504	CLOSED TRICUSP VALVOTOMY	3553	PROST REPAIR VENTRIC DEF
3510	OPEN VALVULOPLASTY NOS	3554	PROS REP ENDOCAR CUSHION
3511	OPN AORTIC VALVULOPLASTY	3560	GRFT REPAIR HRT SEPT NOS
3512	OPN MITRAL VALVULOPLASTY	3561	GRAFT REPAIR ATRIAL DEF
3513	OPN PULMON VALVULOPLASTY	3562	GRAFT REPAIR VENTRIC DEF
3514	OPN TRICUS VALVULOPLASTY	3563	GRFT REP ENDOCAR CUSHION
3520	REPLACE HEART VALVE NOS	3570	HEART SEPTA REPAIR NOS
3521	REPLACE AORT VALV-TISSUE	3571	ATRIA SEPTA DEF REP NEC
3522	REPLACE AORTIC VALVE NEC	3572	VENTR SEPTA DEF REP NEC
3523	REPLACE MITR VALV-TISSUE	3573	ENDOCAR CUSHION REP NEC
3524	REPLACE MITRAL VALVE NEC	3581	TOT REPAIR TETRAL FALLOT
3525	REPLACE PULM VALV-TISSUE	3582	TOTAL REPAIR OF TAPVC
3526	REPLACE PULMON VALVE NEC	3583	TOT REP TRUNCUS ARTERIOS
3527	REPLACE TRIC VALV-TISSUE	3584	TOT COR TRANSPOS GRT VES
3528	REPLACE TRICUSP VALV NEC	3591	INTERAT VEN RETRN TRANSP
3531	PAPILLARY MUSCLE OPS	3592	CONDUIT RT VENT-PUL ART
3532	CHORDAE TENDINEAE OPS	3593	CONDUIT LEFT VENTR-AORTA
3533	ANNULOPLASTY	3594	CONDUIT ARTIUM-PULM ART
3534	INFUNDIBULECTOMY	3595	HEART REPAIR REVISION
3535	TRABECUL CARNEAE CORD OP	3598	OTHER HEART SEPTA OPS
3539	TISS ADJ TO VALV OPS NEC	3599	OTHER OP ON HRT VALVES
3541	ENLARGE EXISTING SEP DEF		

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3699	OTHER OPERATIONS ON VESSEL OF HEART	375	HEART TRANSPLANTATION (invalid as of OCT03)
3733	EXCISION OR DESTRUCTION OF OTHER LESION OR TISSUE OF HEART	3751	HEART TRANSPLANTATION (OCT03)
3736	EXCISION OR DESTRUCTION OF LEFT ATRIAL APPENDAGE (LAA) (OCT08)	3752	IMPLANT TOT REP HRT SYS (OCT03)
		390	SYSTEMIC-PULM ART SHUNT
		3921	CAVAL-PULMON ART ANASTOM

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	7465	CONGEN MITRAL STENOSIS
74510	COMPL TRANSPOS GREAT VES	7466	CONG MITRAL INSUFFICIENC
74511	DOUBLE OUTLET RT VENTRIC	7467	HYOPLAS LEFT HEART SYND
74512	CORRECT TRANSPOS GRT VES	74681	CONG SUBAORTIC STENOSIS
74519	TRANSPOS GREAT VESS NEC	74682	COR TRIARIATUM
7452	TETRALOGY OF FALLOT	74683	INFUNDIB PULMON STENOSIS
7453	COMMON VENTRICLE	74684	OBSTRUCT HEART ANOM NEC
7454	VENTRICULAR SEPT DEFECT	74685	CORONARY ARTERY ANOMALY
7455	SECUNDUM ATRIAL SEPT DEF	74687	MALPOSITION OF HEART
74560	ENDOCARD CUSHION DEF NOS	74689	CONG HEART ANOMALY NEC
74561	OSTIUM PRIMUM DEFECT	7469	CONG HEART ANOMALY NOS
74569	ENDOCARD CUSHION DEF NEC	7470	PATENT DUCTUS ARTERIOSUS
7457	COR BILOCULARE	74710	COARCTATION OF AORTA
7458	SEPTAL CLOSURE ANOM NEC	74711	INTERRUPT OF AORTIC ARCH
7459	SEPTAL CLOSURE ANOM NOS	74720	CONG ANOM OF AORTA NOS
74600	PULMONARY VALVE ANOM NOS	74721	ANOMALIES OF AORTIC ARCH
74601	CONG PULMON VALV ATRESIA	74722	AORTIC ATRESIA/STENOSIS
74602	CONG PULMON VALVE STENOS	74729	CONG ANOM OF AORTA NEC
74609	PULMONARY VALVE ANOM NEC	7473	PULMONARY ARTERY ANOM
7461	CONG TRICUSP ATRES/STEN	74740	GREAT VEIN ANOMALY NOS
7462	EBSTEIN'S ANOMALY	74741	TOT ANOM PULM VEN CONN
7463	CONG AORTA VALV STENOSIS	74742	PART ANOM PULM VEN CONN
7464	CONG AORTA VALV INSUFFIC	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)

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- 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 ATIAL 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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ID-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):

3541	ENLARGE EXISTING SEP DEF	3552	PROS REPAIR ATRIA DEF-CL
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ICD-9-CM Extracorporeal circulation code (5P):

3961	EXTRACORPOREAL CIRCULAT
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ICD-9-CM Atrial septal defect or ventricular septal defect diagnosis codes (5D):

7454	VENTRICULAR SEPT DEFECT	7455	SECUNDUM ATRIAL SEPT DEF
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ICD-9-CM Catheterization procedure codes (6P):

3721	RT HEART CARDIAC CATH	8850	ANGIOCADIOGRAPHY, NOT OTHERWISE SPECIFIED
3722	LEFT HEART CARDIAC CATH	8851	ANGIOCADIOGRAPHY OF VENAE CAVAE
3723	RT/LEFT HEART CARD CATH	8852	ANGIOCADIOGRAPHY OF RIGHT HEART STRUCTURES
8842	CONTRAST AORTOGRAM	8853	ANGIOCADIOGRAPHY OF LEFT HEART STRUCTURES
8843	CONTR PULMON ARTERIOGRAM		
8844	ARTERIOGRAPHY OF OTHER INTRATHORACIC VESSELS		

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8854	COMBINED RIGHT AND LEFT HEART ANGIOCARDIOGRAPHY	8857	OTHER AND UNSPECIFIED CORONARY ARTERIOGRAPHY
8855	CORONARY ARTERIOGRAPHY USING A SINGLE CATHETER	8858	NEGATIVE-CONTRAST CARDIAC ROENTGENOGRAPHY
8856	CORONARY ARTERIOGRAPHY USING TWO CATHETERS		

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 IMMATUR 1000-1249G	76514	PRETERM NEC 1000-1249G
76505	EXTREME IMMATUR 1250-1499G	76515	PRETERM NEC 1250-1499G
76506	EXTREME IMMATUR 1500-1749G	76516	PRETERM NEC 1500-1749G
76507	EXTREME IMMATUR 1750-1999G	76517	PRETERM NEC 1750-1999G
76508	EXTREME IMMATUR 2000-2499G	76518	PRETERM NEC 2000-2499G
76509	EXTREME IMMATUR 2500+G	76519	PRETERM NEC 2500+G