



PDI #6 Pediatric Heart Surgery Mortality

Provider-Level Indicator

Numerator

Number of deaths (DISP=20) among cases meeting the inclusion and exclusion rules for the denominator with a code of pediatric heart surgery in any procedure field 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) in any field or non-specific heart surgery (2P) in any field with ICD-9-CM diagnosis of congenital heart disease (2D) in any field.

Congenital heart disease procedures (1P)

3500	CLOSED VALVOTOMY NOS	3535	TRABECUL CARNEAE CORD OP
3501	CLOSED AORTIC VALVOTOMY	3539	TISS ADJ TO VALV OPS NEC
3502	CLOSED MITRAL VALVOTOMY	3541	ENLARGE EXISTING SEP DEF
3503	CLOSED PULMON VALVOTOMY	3542	CREATE SEPTAL DEFECT
3504	CLOSED TRICUSP VALVOTOMY	3550	PROSTH REP HRT SEPTA NOS
3510	OPEN VALVULOPLASTY NOS	3551	PROS REP ATRIAL DEF-OPN
3511	OPN AORTIC VALVULOPLASTY	3552	PROS REPAIR ATRIA DEF-CL
3512	OPN MITRAL VALVULOPLASTY	3553	PROST REPAIR VENTRIC DEF
3513	OPN PULMON VALVULOPLASTY	3554	PROS REP ENDOCAR CUSHION
3514	OPN TRICUS VALVULOPLASTY	3560	GRFT REPAIR HRT SEPT NOS
3520	REPLACE HEART VALVE NOS	3561	GRAFT REPAIR ATRIAL DEF
3521	REPLACE AORT VALV-TISSUE	3562	GRAFT REPAIR VENTRIC DEF
3522	REPLACE AORTIC VALVE NEC	3563	GRFT REP ENDOCAR CUSHION
3523	REPLACE MITR VALV-TISSUE	3570	HEART SEPTA REPAIR NOS
3524	REPLACE MITRAL VALVE NEC	3571	ATRIA SEPTA DEF REP NEC
3525	REPLACE PULM VALV-TISSUE	3572	VENTR SEPTA DEF REP NEC
3526	REPLACE PULMON VALVE NEC	3573	ENDOCAR CUSHION REP NEC
3527	REPLACE TRIC VALV-TISSUE	3581	TOT REPAIR TETRAL FALLOT
3528	REPLACE TRICUSP VALV NEC	3582	TOTAL REPAIR OF TAPVC
3531	PAPILLARY MUSCLE OPS	3583	TOT REP TRUNCUS ARTERIOS
3532	CHORDAE TENDINEAE OPS	3584	TOT COR TRANSPOS GRT VES
3533	ANNULOPLASTY	3591	INTERAT VEN RETRN TRANSP
3534	INFUNDIBULECTOMY	3592	CONDUIT RT VENT-PUL ART

3593	CONDUIT LEFT VENTR-AORTA	3736	EXCISION OR DESTRUCTION OF LEFT ATRIAL APPENDAGE (LAA) OCT08-
3594	CONDUIT ARTIUM-PULM ART	375	HEART TRANSPLANTATION (invalid as of OCT03)
3595	HEART REPAIR REVISION	3751	HEART TRANSPLANTATION OCT03-
3598	OTHER HEART SEPTA OPS	3752	IMPLANT TOT REP HRT SYS OCT03-
3599	OTHER OP ON HRT VALVES	390	SYSTEMIC-PULM ART SHUNT
3699	OTHER OPERATIONS ON VESSEL OF HEART	3921	CAVAL-PULMON ART ANASTOM
3733	EXCISION OR DESTRUCTION OF OTHER LESION OR TISSUE OF HEART		

Non-specific cardiac procedures (2P)

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

Congenital heart disease diagnoses (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 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
- missing discharge disposition (DISP=missing)
- transferring to another short-term hospital (DISP=2)
- neonates with birth weight less than 500 grams (Birth Weight Category 1)

Closed heart valvotomy (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		

Atrial septal enlargement (3BP)

3541	ENLARGEMENT OF EXISTING ATRIAL SEPTAL DEFECT	3542	CREATION OF SEPTAL DEFECT IN HEART
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Atrial septal defect repair (3CP)

3551	REPAIR OF ATRIAL SEPTAL DEFECT WITH PROSTHESIS, OPEN TECHNIQUE	3571	OTHER AND UNSPECIFIED REPAIR OF ATRIAL SEPTAL DEFECT
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Ventricular septal defect repair (3DP)

3553	REPAIR OF VENTRICULAR SEPTAL DEFECT WITH PROSTHESIS	3572	OTHER AND UNSPECIFIED REPAIR OF VENTRICULAR SEPTAL DEFECT
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Occlusion of thoracic vessel (3EP)

3885	OCCLUDE THORACIC VESSEL
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PDA closure diagnosis code (3D)

7470	PATENT DUCTUS ARTERIOSUS
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Other surgical occlusion (3FP)

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

Atrial septal defect repair and enlargement (4P)

3541	ENLARGE EXISTING SEPTAL DEFECT	3552	PROSTHESIS REPAIR ATRIAL DEFECT-CLOSURE
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Extracorporeal circulation (5P)

3961	EXTRACORPOREAL CIRCULATION
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Atrial Septal Defect or Ventricular Septal Defect diagnosis (5D)

7454 VENTRICULAR SEPT DEFECT 7455 SECUNDUM ATRIAL SEPT DEF

Catheterization (6P)

3721	RT HEART CARDIAC CATH	8853	ANGIOCARDIOGRAPHY 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	ANGIOCARDIOGRAPHY, NOT OTHERWISE SPECIFIED		
8851	ANGIOCARDIOGRAPHY OF VENAE CAVAE		
8852	ANGIOCARDIOGRAPHY OF RIGHT HEART STRUCTURES		

Heart Transplant (7P)

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

Premature infants (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

Low Birth Weight categories:

Less than 500 grams - Birth Weight Category 1	
76401	LIGHT-FOR-DATES <500G
76411	LT-FOR-DATE W/MAL <500G
76421	FETAL MALNUTRITION <500G
76491	FET GROWTH RETARD <500G
76501	EXTREME IMMATUR <500G
76511	PRETERM NEC <500G
V2131	LOW BIRTHWT STATUS <500G
500 to 999 grams - Birth Weight Category 2	
76402	LT-FOR-DATES 500-749G
76412	LT-DATE W/MAL 500-749G
76422	FETAL MALNUTR 500-749G
76492	FET GROWTH RET 500-749G
76502	EXTREME IMMATUR 500-749G
76512	PRETERM NEC 500-749G

76403	LT-FOR-DATES 750-999G
76413	LT-DATE W/MAL 750-999G
76423	FETAL MAL 750-999G
76493	FET GROWTH RET 750-999G
76503	EXTREME IMMATUR 750-999G
76513	PRETERM NEC 750-999G
V2132	LOW BIRTHWT 500-999G
1000 to 1499 grams - Birth Weight Category 3	
76404	LT-FOR-DATES 1000-1249G
76414	LT-DATE W/MAL 1000-1249G
76424	FETAL MAL 1000-1249G
76494	FET GRWTH RET 1000-1249G
76504	EXTREME IMMAT 1000-1249G
76514	PRETERM NEC 1000-1249G
76405	LT-FOR-DATES 1250-1499G

76415	LT-DATE W/MAL 1250-1499G
76425	FETAL MAL 1250-1499G
76495	FET GRWTH RET 1250-1499G
76505	EXTREME IMMAT 1250-1499G
76515	PRETERM NEC 1250-1499G
V2133	LOW BIRTHWT 1000-1499G
1500 to 1999 grams - Birth Weight Category 4	
76406	LT-FOR-DATES 1500-1749G
76416	LT-DATE W/MAL 1500-1749G
76426	FETAL MAL 1500-1749G
76496	FET GRWTH RET 1500-1749G
76506	EXTREME IMMAT 1500-1749G
76516	PRETERM NEC 1500-1749G
76407	LT-FOR-DATES 1750-1999G

76417	LT-DATE W/MAL 1750-1999G
76427	FETAL MALNUTR 1750-1999G
76497	FET GRWTH RET 1750-1999G
76507	EXTREME IMMAT 1750-1999G
76517	PRETERM NEC 1750-1999G
V2134	LOW BIRTHWT 1500-1999G
2000 to 2499 grams - Birth Weight Category 5	
76408	LT-FOR-DATES 2000-2499G
76418	LT-DATE W/MAL 2000-2499G
76428	FETAL MALNUTR 2000-2499G
76498	FET GRWTH RET 2000-2499G
76508	EXTREME IMMAT 2000-2499G
76518	PRETERM NEC 2000-2499G
V2135	LOW BIRTHWT 2000-2500G