

RACHS-1 Pediatric Heart Surgery Mortality Rate Technical Specifications

Pediatric Quality Indicators #6 (PDI #6)
AHRQ Quality Indicators™, Version 4.5, May 2013
Provider-Level Indicator
Type of Score: Rate

Description

In-hospital deaths per 1,000 pediatric heart surgery admissions among patients with congenital heart disease ages 17 years and younger. Excludes obstetric discharges; cases with transcatheter interventions as a single cardiac procedure, performed without bypass but with catheterization; cases with septal defect repairs as single cardiac procedures without bypass; cases with heart transplants; premature infants with patent ductus arteriosus (PDA) closure as the only cardiac procedure; age less than 30 days with PDA closure as only cardiac procedure; transfers to another hospital; cases with an unknown disposition; and neonates with birth weight less than 500 grams.

[NOTE: The software provides the rate per hospital discharge. However, common practice reports the measure as per 1,000 discharges. The user must multiply the rate obtained from the software by 1,000 to report in-hospital deaths per 1,000 hospital discharges.]

[NOTE: Windows QI Software Version 4.5 does not calculate a risk-adjusted rate for this indicator. Users must run SAS QI Software Version 4.5 to obtain a risk-adjusted rate for this indicator.]

Numerator

Number of deaths (DISP=20) among cases meeting the inclusion and exclusion rules for the denominator.

Denominator

Discharges, for patients ages 17 years and younger, with either

- any-listed ICD-9-CM procedure codes for congenital heart disease (1P); or
- any-listed ICD-9-CM procedure codes for non-specific heart surgery (2P) and any-listed ICD-9-CM diagnosis codes for congenital heart disease (2D).

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

3500 CLOSED VALVOTOMY NOS

3501 CLOSED AORTIC VALVOTOMY

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3502	CLOSED MITRAL VALVOTOMY	3552	PROS REPAIR ATRIA DEF-CL
3503	CLOSED PULMON VALVOTOMY	3553	PROS REP VENTRIC DEF-OPN
3504	CLOSED TRICUSP VALVOTOMY	3554	PROS REP ENDOCAR CUSHION
3505	ENDOVAS REPL AORTC VALVE	3560	GRFT REPAIR HRT SEPT NOS
3506	TRNSAPCL REP AORTC VALVE	3561	GRAFT REPAIR ATRIAL DEF
3507	ENDOVAS REPL PULM VALVE	3562	GRAFT REPAIR VENTRIC DEF
3508	TRNSAPCL REPL PULM VALVE	3563	GRFT REP ENDOCAR CUSHION
3510	OPEN VALVULOPLASTY NOS	3570	HEART SEPTA REPAIR NOS
3511	OPN AORTIC VALVULOPLASTY	3571	ATRIA SEPTA DEF REP NEC
3512	OPN MITRAL VALVULOPLASTY	3572	VENTR SEPTA DEF REP NEC
3513	OPN PULMON VALVULOPLASTY	3573	ENDOCAR CUSHION REP NEC
3514	OPN TRICUS VALVULOPLASTY	3581	TOT REPAIR TETRAL FALLOT
3520	OPN/OTH REP HRT VLV NOS	3582	TOTAL REPAIR OF TAPVC
3521	OPN/OTH REP AORT VLV-TIS	3583	TOT REP TRUNCUS ARTERIOS
3522	OPN/OTH REP AORTIC VALVE	3584	TOT COR TRANSPOS GRT VES
3523	OPN/OTH REP MTRL VLV-TIS	3591	INTERAT VEN RETRN TRANSP
3524	OPN/OTH REP MITRAL VALVE	3592	CONDUIT RT VENT-PUL ART
3525	OPN/OTH REP PULM VLV-TIS	3593	CONDUIT LEFT VENTR-AORTA
3526	OPN/OTH REPL PUL VALVE	3594	CONDUIT ARTIUM-PULM ART
3527	OPN/OTH REP TCSPD VLV-TS	3595	HEART REPAIR REVISION
3528	OPN/OTH REPL TCSPD VALVE	3598	OTHER HEART SEPTA OPS
3531	PAPILLARY MUSCLE OPS	3599	OTHER HEART VALVE OPS
3532	CHORDAE TENDINEAE OPS	3699	HEART VESSEL OP NEC
3533	ANNULOPLASTY	3733	EXC/DEST HRT LESION OPEN
3534	INFUNDIBULECTOMY	3736	EXC,DESTRCT,EXCLUS LAA
3535	TRABECUL CARNEAE CORD OP	375	<i>HEART TRANSPLANTATION</i>
3539	TISS ADJ TO VALV OPS NEC	3751	HEART TRANSPLANTATION
3541	ENLARGE EXISTING SEP DEF	3752	IMP TOT INT BI HT RP SYS
3542	CREATE SEPTAL DEFECT	390	SYSTEMIC-PULM ART SHUNT
3550	PROSTH REP HRT SEPTA NOS	3921	CAVAL-PULMON ART ANASTOM
3551	PROS REP ATRIAL DEF-OPN		

¹The procedure or diagnosis codes are continuously updated. The current list of ICD-9-CM codes is valid for October 2012 through September 2013. Italicized codes are not active in Fiscal Year 2013.

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

3834	AORTA RESECTION & ANAST	3885	OCCLUDE THORACIC VES NEC
3835	THOR VESSEL RESECT/ANAST	3949	VASC PROC REVISION NEC
3844	RESECT ABDM AORTA W REPL	3956	REPAIR VESS W TIS PATCH
3845	RESECT THORAC VES W REPL	3957	REP VESS W SYNTH PATCH
3864	EXCISION OF AORTA	3958	REPAIR VESS W PATCH NOS
3865	THORACIC VESSEL EXCISION	3959	REPAIR OF VESSEL NEC
3884	OCCLUDE AORTA NEC		

ICD-9-CM Congenital heart disease diagnosis codes (2D)¹:

7450	COMMON TRUNCUS	74560	ENDOCARD CUSHION DEF NOS
74510	COMPL TRANSPOS GREAT VES	74561	OSTIUM PRIMUM DEFECT
74511	DOUBLE OUTLET RT VENTRIC	74569	ENDOCARD CUSHION DEF NEC
74512	CORRECT TRANSPOS GRT VES	7457	COR BILOCULARE
74519	TRANSPOS GREAT VESS NEC	7458	SEPTAL CLOSURE ANOM NEC
7452	TETRALOGY OF FALLOT	7459	SEPTAL CLOSURE ANOM NOS
7453	COMMON VENTRICLE	74600	PULMONARY VALVE ANOM NOS
7454	VENTRICULAR SEPT DEFECT	74601	CONG PULMON VALV ATRESIA
7455	SECUNDUM ATRIAL SEPT DEF	74602	CONG PULMON VALVE STENOS

74609	PULMONARY VALVE ANOM NEC	7470	PATENT DUCTUS ARTERIOSUS
7461	CONG TRICUSP ATRES/STEN	74710	COARCTATION OF AORTA
7462	EBSTEIN'S ANOMALY	74711	INTERRUPT OF AORTIC ARCH
7463	CONG AORTA VALV STENOSIS	74720	CONG ANOM OF AORTA NOS
7464	CONG AORTA VALV INSUFFIC	74721	ANOMALIES OF AORTIC ARCH
7465	CONGEN MITRAL STENOSIS	74722	AORTIC ATRESIA/STENOSIS
7466	CONG MITRAL INSUFFICIENC	74729	CONG ANOM OF AORTA NEC
7467	HYPOPLAS LEFT HEART SYND	7473	<i>PULMONARY ARTERY ANOM</i>
74681	CONG SUBAORTIC STENOSIS	74731	PULMON ART COARCT/ATRES
74682	COR TRIARIATUM	74732	PULMONARY AV MALFORMATN
74683	INFUNDIB PULMON STENOSIS	74739	OTH ANOM PUL ARTERY/CIRC
74684	OBSTRUCT HEART ANOM NEC	74740	GREAT VEIN ANOMALY NOS
74685	CORONARY ARTERY ANOMALY	74741	TOT ANOM PULM VEN CONNec
74687	MALPOSITION OF HEART	74742	PART ANOM PULM VEN CONN
74689	CONG HEART ANOMALY NEC	74749	GREAT VEIN ANOMALY NEC
7469	CONG HEART ANOMALY NOS		

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Exclude cases:

- with any-listed ICD-9-CM procedure codes for closed heart valvotomy (3AP) as the only congenital heart disease procedure and any-listed ICD-9-CM procedure codes for catheterization (6P) without any-listed ICD-9-CM procedure codes for extracorporeal circulation (5P)
- with any-listed ICD-9-CM procedure codes for atrial septal enlargement (3BP) as the only congenital heart disease procedure and any-listed ICD-9-CM procedure codes for catheterization (6P) without any-listed ICD-9-CM procedure codes for extracorporeal circulation (5P)
- with any-listed ICD-9-CM procedure codes for atrial septal defect repair (3CP) as the only congenital heart disease procedure and any-listed ICD-9-CM procedure codes for catheterization (6P) without any-listed ICD-9-CM procedure codes for extracorporeal circulation (5P)
- with any-listed ICD-9-CM procedure codes for ventricular septal defect repair (3DP) as the only congenital heart disease procedure and any-listed ICD-9-CM procedure codes for catheterization (6P) without any-listed ICD-9-CM procedure codes for extracorporeal circulation (5P)
- with any-listed ICD-9-CM procedure codes for other surgical occlusion (3FP) as the only congenital heart disease procedure and any-listed ICD-9-CM procedure codes for catheterization (6P) without any-listed ICD-9-CM procedure codes for extracorporeal circulation (5P)
- with patent ductus arteriosus (PDA)[†] and any-listed ICD-9-CM procedure codes for catheterization (6P) without any-listed ICD-9-CM procedure codes for extracorporeal circulation (5P)

[†] PDA is defined as any-listed ICD-9-CM diagnosis code for PDA closure (3D) as the only congenital heart disease diagnosis code and any-listed ICD-9-CM procedure code for occlusion of thoracic vessel (3EP) as the only congenital heart disease procedure code.

- with any-listed ICD-9-CM procedure codes for atrial septal defect repair and enlargement (4P) as the only congenital heart disease procedure without any-listed ICD-9-CM procedure codes for extracorporeal circulation (5P)
- with any-listed ICD-9-CM procedure codes for heart transplant (7P)
- with any-listed ICD-9-CM diagnosis codes for premature infant (4D) and PDA[†]
- with any-listed ICD-9-CM diagnosis codes for atrial septal defect or ventricular septal defect (5D) and PDA[†]
- age less than or equal to 30 days with PDA[†]
- transferring to another short-term hospital (DISP=2)
- neonates with birth weight less than 500 grams (Birth Weight Category 1)
- MDC 14 (pregnancy, childbirth and puerperium)
- with missing discharge disposition (DISP=missing), gender (SEX=missing), age (AGE=missing), quarter (DQTR=missing), year (YEAR=missing) or principal diagnosis (DX1=missing)

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 procedure codes (3AP):

3500	CLOSED VALVOTOMY NOS	3503	CLOSED PULMON VALVOTOMY
3501	CLOSED AORTIC VALVOTOMY	3504	CLOSED TRICUSP VALVOTOMY
3502	CLOSED MITRAL VALVOTOMY		

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

3541	ENLARGE EXISTING SEP DEF	3542	CREATE SEPTAL DEFECT
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ICD-9-CM Atrial septal defect repair procedure codes (3CP):

3551	PROS REP ATRIAL DEF-OPN	3571	ATRIA SEPTA DEF REP NEC
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ICD-9-CM Ventricular septal defect repair procedure codes (3DP):

3553	PROS REP VENTRIC DEF-OPN	3572	VENTR SEPTA DEF REP NEC
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ICD-9-CM Occlusion of thoracic vessel procedure codes (3EP):

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

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

3884	OCCLUDE AORTA NEC	3959	REPAIR OF VESSEL NEC
3885	OCCLUDE THORACIC VES NEC		

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

3541	ENLARGE EXISTING SEP DEF	3552	PROS REPAIR ATRIA DEF-CL
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ICD-9-CM Extracorporeal circulation procedure 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	8851	VENA CAV ANGIOCARDIOGRAM
3722	LEFT HEART CARDIAC CATH	8852	RT HEART ANGIOCARDIOGRAM
3723	RT/LEFT HEART CARD CATH	8853	LT HEART ANGIOCARDIOGRAM
8842	CONTRAST AORTOGRAM	8854	RT & LT HEART ANGIOCARD
8843	CONTR PULMON ARTERIOGRAM	8855	CORONAR ARTERIOGR-1 CATH
8844	CONTR THOR ARTERIOGR NEC	8856	CORONAR ARTERIOGR-2 CATH
8850	ANGIOCARDIOGRAPHY NOS	8857	CORONARY ARTERIOGRAM NEC
		8858	NEGATVE-CONTR CARDIOGRAM

ICD-9-CM Heart transplant procedure codes (7P)¹:

375	<i>HEART TRANSPLANTATION</i>	3752	IMP TOT INT BI HT RP SYS
3751	HEART TRANSPLANTATION		

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ICD-9-CM Premature infant diagnosis 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