

Supplementary Online Content

Hayward RM, Foster E, Tseng ZH. Maternal and fetal outcomes of admission for delivery in women with congenital heart disease. *JAMA Cardiol*. Published online April 12, 2017. doi:10.1001/jamacardio.2017.0283

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This supplementary material has been provided by the authors to give readers additional information about their work.

eTable 1. Inclusion and Exclusion Criteria

Inclusion Criteria	ICD-9 Codes	ICD-9 Procedure Codes	DRG Codes
Delivery Admission*	V27, 650	72[0-1], 7221, 7229, 7231, 7239, 724, 72[5-9], 7322, 7359, 736, 740, 741, 742, 744, 7499	370, 371, 372, 373, 374, 375
Cesarean Section	669.71	74.0X, 74.1X, 74.2X, 74.4X	
Exclusion Criteria			
Ectopic and Molar Pregnancy	63X		
Dilation and Curettage or Intra-amniotic injection for abortion		69.01, 69.51, 74.91, 75.0	

X is any number 0-9.

*From Kuklina EV et al. An enhanced method for identifying obstetric deliveries: implications for estimating maternal morbidity. *Matern Child Health J.* 2008.

eTable 2. CHD Diagnoses With Corresponding ICD-9 Codes

Complex Congenital Heart Defects	ICD-9 Codes
Endocardial Cushion Defects	745.6
Hypoplastic Left Heart Syndrome	746.7
Tetralogy of Fallot	745.2
Transposition of the Great Arteries	745.1
Truncus Arteriosus	745
Univentricular Heart	745.3
Non-Complex Congenital Heart Defects	
Atrial Septal Defect	745.5
Ventricular Septal Defect	745.4
Patent Ductus Arteriosus	747
Aortic Coarctation	747.1
Ebstein's Anomaly	746.2
Unspecified Defect of Septal Closure	745.9
Anomalies of the Pulmonary Artery	747.3
Anomalies of the Pulmonary Valve	746
Anomalies of the Tricuspid Valve	746.1
Congenital Aortic Stenosis	746.3
Congenital Aortic Insufficiency	746.4
Congenital Mitral Stenosis	746.5
Congenital Mitral Insufficiency	746.6
Anomalies of the Great Veins	747.4
Other Specified Anomalies of the Heart*	746.8

* Includes subaortic stenosis, cor triatriatum, infundibular pulmonic stenosis, Shone's syndrome, Uhl anomaly, coronary anomalies, congenital heart block, dextrocardia, and other.

eTable 3. Outcomes

	ICD-9 Codes
Preeclampsia or Eclampsia	624.4, 624.5, 624.6, 624.7
Preterm Labor	644.0, 644.2
Anemia Complicating Pregnancy	648.2, 280-5
Placental Abnormalities (previa, abruptio, accreta)	641.0-2, 667
Infection During Labor	658.2, 658.4, 659.2, 659.3
Fetal Growth Restriction	656.5
Fetal Distress	656.3, 656.8, 659.7
Fetal Death	656.4
AF, AFL or SVT	427.0, 427.31, 427.32
Incident VT, VF or SCA	427.1, 427.4, 427.41, 427.42, 427.5, V12.53, 674.90, 674.92, 674.94
Congestive Heart Failure	402.01, 402.11, 402.91, 404.91, 404.93, 428, 425, 674.5

From Bansil P, Kuklina EV, Meikle SF, et al. Maternal and fetal outcomes among women with depression. *J Womens Health (Larchmt)* 2010;19:329-34.

eTable 4. Medical Comorbidities

Comorbidity	ICD-9 Codes
Coronary Artery Disease	36.0X, 36.1X, 410.X, 411.0, 411.1, 411.8, 411.89, 412, 413.X, 414.X, V45.81-82
Congestive Heart Failure	402.01, 402.11, 402.91, 404.91, 404.93, 425.X, 428.X
Cerebrovascular Disease	430, 431, 432.X, 433.X, 434.X, 435.X, 438.X
Chronic Kidney Disease	585.X, V42.0, V45.1X, V56.X
Pulmonary Disease	491.2X, 491.8, 491.9, 492.X, 493.X, 494.X, 496
Hypertension	401.X, 402.X, 403.X, 404.X, 405.X, 437.2
Diabetes Mellitus	249.X, 250.X, 791.5, V45.85, V53.91, V65.46
Cardiac Valvular Disease	394.X, 395.X, 396.X, 397.0, 397.1, 424.0, 424.1, 424.2, 424.3, V42.2, V43.3
Depression	296.2, 296.3, 298.0, 300.4, 309.0, 309.1, 311
Alcohol or Substance Abuse	291, 292, 303, 304, 205, 648.3, 655.5, 965.0, V65.42

* X designates all diagnosis codes under the listed category, e.g., 398.X includes 398, 398.0, 398.9, 398.91, and 398.99

eTable 5. Type of CHD

Type of CHD	No. of Patients ^a		
	Vaginal Delivery	Cesarean Delivery	Total
Complex	141	121	262
Tetralogy of Fallot	46	56	102
Transposition complex	57	43	100
Endocardial cushion defect	11	<10 ^b	<20
Univentricular heart	<10 ^b	<10 ^b	<10 ^b
Truncus arteriosus	18	<10 ^b	<10 ^b
Hypoplastic left heart syndrome	<10 ^b	<10 ^b	<10 ^b
Noncomplex	1953	1236	3189
Atrial septal defect	672	390	1062
Ventricular septal defect	365	222	587
Patent ductus arteriosus	92	60	152
Aortic coarctation	71	48	119
Ebstein anomaly	37	22	59
Unspecified defect of septal closure	16	10	26
Anomalies of the pulmonary artery	110	68	178
Anomalies of the pulmonary valve	172	112	284
Congenital tricuspid valve disease	13	12	25
Congenital aortic stenosis	46	30	76
Congenital aortic insufficiency	219	135	354
Congenital mitral stenosis	<10 ^b	<10 ^b	<10 ^b
Congenital mitral insufficiency	32	13	45
Anomalies of great veins	31	24	55
Other specified cardiac anomalies	386	271	657

Abbreviation: CHD, congenital heart disease.

^aSome patients have multiple CHD defects classified.

^bHealth Care Cost and Utilization Project policy prohibits reporting cell frequencies of less than 10.