Major Birth Defects Data from Population-based Birth Defects Surveillance Programs in the United States, 2007-2011

The introduction, data collection procedure, and birth defects codes for the state-specific birth defects data are available in the article, "Birth Defects Data from Population-based Birth Defects Surveillance Programs in the United States, 2007-2011: Highlighting Orofacial Clefts".

Additional information and program contacts on population-based birth defects surveillance programs are available on pages S116-S170.

The state-specific birth defects tables were prepared by the National Center on Birth Defects and Developmental Disabilities, Centers for Disease Control and Prevention and approved by the state programs in August 2014.

The 39 population-based birth defects programs contributing data include: Arizona Birth Defects Monitoring Program; Arkansas Reproductive Health Monitoring System; California Birth Defects Monitoring Program; Colorado Responds To Children With Special Needs; Delaware Birth Defects Surveillance Project; Florida Birth Defects Registry; Metropolitan Atlanta Congenital Defects Program (Georgia); Illinois Adverse Pregnancy Outcomes Reporting System; Iowa Registry For Congenital and Inherited Disorders; Kansas Birth Defects Information System; Kentucky Birth Surveillance Registry; Louisiana Birth Defects Monitoring Network; Maine Birth Defects Program; Maryland Birth Defects Reporting and Information System; Massachusetts Center For Birth Defects Research And Prevention; Michigan Birth Defects Registry; Minnesota Birth Defects Information System; Mississippi Birth Defects Registry; Nebraska Birth Defects Registry; Nevada Birth Outcomes Monitoring System; New Hampshire Birth Conditions Program; New Jersey Special Child Health Services Registry; New Mexico Birth Defects Prevention and Surveillance System; New York State Congenital Malformations Registry; North Carolina Birth Defects Monitoring Program; North Dakota Birth Defects Monitoring System; Ohio Connections For Children With Special Needs; Oklahoma Birth Defects Registry; Puerto Rico Birth Defects Surveillance and Prevention System; Rhode Island Birth Defects Program; South Carolina Birth Defects Program; Tennessee Birth Defects Registry; Texas Birth Defects Epidemiology and Surveillance Branch; Utah Birth Defect Network; Vermont Birth Information Network; Virginia Congenital Anomalies Reporting And Education System; West Virginia Congenital Abnormalities Registry, Education and Surveillance System; Wisconsin Birth Defects Registry; and the United States Department of Defense Birth and Infant Health Registry.

Arizona

Birth Defects Counts and Prevalence 2007 - 2011 (Prevalence per 10,000 Live Births)

	Maternal Race/Ethnicity						
Defect	**White, Non-Hispanic**	**Black, Non-Hispanic**	**Hispanic**	**Asian or Pacific Islander, Non-Hispanic**	**American Indian or Alaska Native, Non-Hispanic**	**Total****	**Notes**
Anencephalus	18	3	41	1	3	66	
	0.9	***1.5***	***2.1***	***0.6***	***1.0***	***1.4***	
Anophthalmia/microphthalmia	15	1	23	2	1	43	
	0.8	***0.5***	***1.2***	***1.3***	***0.3***	***0.9***	
Anotia/microtia	15	0	28	3	4	50	
	0.8	***0.0***	***1.4***	***1.9***	***1.3***	***1.1***	
Aortic valve stenosis	36	3	43	1	7	90	
	1.8	***1.5***	***2.2***	***0.6***	***2.3***	***1.9***	
Biliary atresia	5	2	7	2	3	20	
	0.3	***1.0***	***0.4***	***1.3***	***1.0***	***0.4***	
Bladder exstrophy	4	0	4	0	0	8	
	0.2	***0.0***	***0.2***	***0.0***	***0.0***	***0.2***	
Choanal atresia	20	3	15	1	1	43	
	1.0	***1.5***	***0.8***	***0.6***	***0.3***	***0.9***	
Cleft lip alone	72	4	49	1	17	144	
	3.6	***2.0***	***2.5***	***0.6***	***5.7***	***3.1***	
Cleft lip with cleft palate	105	9	153	11	39	325	
	5.3	***4.6***	***7.9***	***6.9***	***13.0***	***7.0***	
Cleft palate alone	100	6	95	12	14	233	
	5.0	***3.0***	***4.9***	***7.5***	***4.7***	***5.0***	
Coarctation of the aorta	103	9	86	5	14	217	
	5.2	***4.6***	***4.4***	***3.1***	***4.7***	***4.7***	
Common truncus (truncus arteriosus)	7	0	9	1	2	19	
	0.4	***0.0***	***0.5***	***0.6***	***0.7***	***0.4***	
Congenital cataract	6	0	15	0	1	24	
	0.3	***0.0***	***0.8***	***0.0***	***0.3***	***0.5***	
Craniosynostosis	1	0	0	0	0	1	
	0.3	***0.0***	***0.0***	***0.0***	***0.0***	***0.1***	
Diaphragmatic hernia	39	2	49	2	8	104	
	2.0	***1.0***	***2.5***	***1.3***	***2.7***	***2.2***	
Ebstein anomaly	15	0	14	2	4	36	
	0.8	***0.0***	***0.7***	***1.3***	***1.3***	***0.8***	
Encephalocele	10	1	18	2	5	36	
	0.5	***0.5***	***0.9***	***1.3***	***1.7***	***0.8***	
Esophageal atresia/tracheoesophageal fistula	50	5	40	1	3	99	
	2.5	***2.5***	***2.1***	***0.6***	***1.0***	***2.1***	
Gastroschisis	93	10	132	2	19	268	
	4.7	***5.1***	***6.8***	***1.3***	***6.3***	***5.7***	
Hypoplastic left heart syndrome	67	9	41	4	13	134	
	3.4	***4.6***	***2.1***	***2.5***	***4.3***	***2.9***	
Limb deficiencies (reduction defects)	39	10	60	2	8	123	
	2.0	***5.1***	***3.1***	***1.3***	***2.7***	***2.6***	
Omphalocele	43	3	33	7	4	91	
	2.2	***1.5***	***1.7***	***4.4***	***1.3***	***2.0***	
Pulmonary valve atresia and stenosis	81	8	87	7	16	204	
	4.1	***4.1***	***4.5***	***4.4***	***5.3***	***4.4***	
Pulmonary valve atresia	45	4	43	5	8	108	
	2.3	***2.0***	***2.2***	***3.1***	***2.7***	***2.3***	
Single ventricle	11	1	15	1	0	28	
	0.6	***0.5***	***0.8***	***0.6***	***0.0***	***0.6***	
Spina bifida without anencephalus	64	4	75	3	16	168	
	3.2	***2.0***	***3.9***	***1.9***	***5.3***	***3.6***	
Tetralogy of Fallot	86	6	79	7	15	198	
	4.3	***3.0***	***4.1***	***4.4***	***5.0***	***4.2***	
Total anomalous pulmonary venous connection	10	1	10	0	3	25	1
	1.3	***1.3***	***1.5***	***0.0***	***2.6***	***1.5***	
Transposition of the great arteries (TGA)	79	12	84	5	8	192	
	4.0	***6.1***	***4.3***	***3.1***	***2.7***	***4.1***	
Dextro-transposition of great arteries (d-TGA)	51	5	48	2	4	113	
	2.6	***2.5***	***2.5***	***1.3***	***1.3***	***2.4***	

Arizona

Birth Defects Counts and Prevalence 2007 - 2011 (Prevalence per 10,000 Live Births)

	Maternal Race/Ethnicity						
Defect	**White, Non-Hispanic**	**Black, Non-Hispanic**	**Hispanic**	**Asian or Pacific Islander, Non-Hispanic**	**American Indian or Alaska Native, Non-Hispanic**	**Total****	**Notes**
Tricuspid valve atresia and stenosis	4	0	6	0	0	10	2
	0.5	***0.0***	***0.9***	***0.0***	***0.0***	***0.6***	
Tricuspid valve atresia	4	0	6	0	0	10	
	0.5	***0.0***	***0.9***	***0.0***	***0.0***	***0.6***	
Trisomy 13	16	4	19	7	0	46	
	0.8	***2.0***	***1.0***	***4.4***	***0.0***	***1.0***	
Trisomy 18	36	4	32	5	8	85	
	1.8	***2.0***	***1.6***	***3.1***	***2.7***	***1.8***	
Trisomy 21 (Down syndrome)	233	19	257	16	36	570	
	11.7	***9.7***	***13.2***	***10.0***	***12.0***	***12.2***	
Total live births	**198888**	**19686**	**194791**	**15951**	**29929**	**466158**	

*Hypospadias prevalence per 10,000 male live births
**Total includes unknown and other maternal race/ethnicity

Arizona

Trisomy Counts and Prevalence by Maternal Age 2007 - 2011 (Prevalence per 10,000 Live Births)

	Maternal Age (years)			
Defect	**Less than 35**	**35+**	**Total**	**Notes**
Trisomy 13	29	17	46	
	0.7	***2.7***	***1.0***	
Trisomy 18	53	31	85	
	1.3	***5.0***	***1.8***	
Trisomy 21 (Down syndrome)	308	262	570	
	7.6	***42.4***	***12.2***	
Total live births	**404205**	**61830**	**466162**	

**Total includes unknown maternal age

Notes
1.Total anomalous pulmonary venous return was added to the Arizona Birth Defects Monitoring Program in 2010.
2.Tricuspid valve atresia and stenosis was added to the Arizona Birth Defects Monitoring Program in 2010.

General comments
-Arizona Birth Defects Monitoring Program data include only confirmed cases with 'most likely,' 'compatible with,' 'probable,' or 'precise' diagnosis. 'Possible' diagnoses are not included.
-Arizona Birth Defects Monitoring Program provides data on 30 categories of birth defects through 2009, 32 categories in 2010, and 33 categories in 2011.
-Atrioventricular septal defect was added to the Arizona Birth Defects Monitoring Program in 2011.
-Fetal deaths are included in this report if there is an Arizona fetal death certificate, regardless of fetal weight or gestational age.
-In this data submission, Arizona Birth Defects Monitoring Program adheres to the requested race/Hispanic categories. These counts and rates may differ from in-state reports where Arizona Birth Defects Monitoring Program categorizes Whites as Hispanic or non-Hispanic, and other races (i.e., Black, Asian, and American Indian) retain the single race code regardless of Hispanic designation.
-Registration of liveborn cases by Arizona Birth Defects Monitoring Program requires an Arizona live birth certificate.
-Terminations are not included in Arizona Birth Defects Monitoring Program data reports.
-Through 2011 Arizona Birth Defects Monitoring Program included double outlet right ventricle codes as part of the transposition of great arteries category.

Arkansas

Birth Defects Counts and Prevalence 2007 - 2011 (Prevalence per 10,000 Live Births)

	Maternal Race/Ethnicity						
Defect	**White, Non-Hispanic**	**Black, Non-Hispanic**	**Hispanic**	**Asian or Pacific Islander, Non-Hispanic**	**American Indian or Alaska Native, Non-Hispanic**	**Total****	**Notes**
Anencephalus	46	8	9	0	1	64	
	3.5	***2.1***	***4.3***	***0.0***	***9.7***	***3.2***	
Anophthalmia/microphthalmia	22	8	4	1	0	35	
	1.7	***2.1***	***1.9***	***3.0***	***0.0***	***1.8***	
Anotia/microtia	20	2	20	1	0	43	
	1.5	***0.5***	***9.6***	***3.0***	***0.0***	***2.2***	
Aortic valve stenosis	60	4	7	0	0	71	
	4.5	***1.1***	***3.4***	***0.0***	***0.0***	***3.6***	
Atrial septal defect	469	126	69	26	4	694	
	35.3	***33.1***	***33.0***	***77.6***	***38.6***	***35.2***	
Atrioventricular septal defect (Endocardial cushion defect)	99	25	12	4	0	140	
	7.5	***6.6***	***5.7***	***11.9***	***0.0***	***7.1***	
Biliary atresia	5	2	2	1	0	10	
	0.4	***0.5***	***1.0***	***3.0***	***0.0***	***0.5***	
Bladder exstrophy	3	1	1	0	0	5	
	0.2	***0.3***	***0.5***	***0.0***	***0.0***	***0.3***	
Choanal atresia	8	3	0	1	0	12	
	0.6	***0.8***	***0.0***	***3.0***	***0.0***	***0.6***	
Cleft lip alone	70	8	5	1	0	84	
	5.3	***2.1***	***2.4***	***3.0***	***0.0***	***4.3***	
Cleft lip with cleft palate	85	14	16	1	0	116	
	6.4	***3.7***	***7.7***	***3.0***	***0.0***	***5.9***	
Cleft palate alone	101	19	10	0	1	131	
	7.6	***5.0***	***4.8***	***0.0***	***9.7***	***6.6***	
Cloacal exstrophy	1	4	1	0	0	6	
	0.1	***1.1***	***0.5***	***0.0***	***0.0***	***0.3***	
Clubfoot	246	52	31	3	1	333	
	18.5	***13.7***	***14.8***	***8.9***	***9.7***	***16.9***	
Coarctation of the aorta	114	17	13	0	0	144	
	8.6	***4.5***	***6.2***	***0.0***	***0.0***	***7.3***	
Common truncus (truncus arteriosus)	10	2	3	0	0	15	
	0.8	***0.5***	***1.4***	***0.0***	***0.0***	***0.8***	
Congenital cataract	55	14	6	3	0	78	
	4.1	***3.7***	***2.9***	***8.9***	***0.0***	***4.0***	
Congenital posterior urethral valves	17	9	1	1	0	28	
	1.3	***2.4***	***0.5***	***3.0***	***0.0***	***1.4***	
Craniosynostosis	88	8	13	2	0	111	
	6.6	***2.1***	***6.2***	***6.0***	***0.0***	***5.6***	
Deletion 22q11.2	9	1	2	0	1	14	
	0.7	***0.3***	***1.0***	***0.0***	***9.7***	***0.7***	
Diaphragmatic hernia	53	10	4	0	0	67	
	4.0	***2.6***	***1.9***	***0.0***	***0.0***	***3.4***	
Double outlet right ventricle	31	13	3	1	0	48	
	2.3	***3.4***	***1.4***	***3.0***	***0.0***	***2.4***	
Ebstein anomaly	13	0	5	1	0	19	
	1.0	***0.0***	***2.4***	***3.0***	***0.0***	***1.0***	
Encephalocele	13	12	3	0	0	28	
	1.0	***3.2***	***1.4***	***0.0***	***0.0***	***1.4***	
Esophageal atresia/tracheoesophageal fistula	43	9	3	1	0	56	
	3.2	***2.4***	***1.4***	***3.0***	***0.0***	***2.8***	
Gastroschisis	98	19	11	4	0	132	
	7.4	***5.0***	***5.3***	***11.9***	***0.0***	***6.7***	
Holoprosencephaly	22	8	4	2	0	36	
	1.7	***2.1***	***1.9***	***6.0***	***0.0***	***1.8***	
Hypoplastic left heart syndrome	55	13	2	2	0	72	
	4.1	***3.4***	***1.0***	***6.0***	***0.0***	***3.6***	
Hypospadias*	639	144	27	15	3	828	
	93.6	***74.4***	***25.5***	***88.1***	***56.2***	***81.9***	
Interrupted aortic arch	9	2	0	1	0	13	
	0.7	***0.5***	***0.0***	***3.0***	***0.0***	***0.7***	

Arkansas

Birth Defects Counts and Prevalence 2007 - 2011 (Prevalence per 10,000 Live Births)

	Maternal Race/Ethnicity						
Defect	**White, Non-Hispanic**	**Black, Non-Hispanic**	**Hispanic**	**Asian or Pacific Islander, Non-Hispanic**	**American Indian or Alaska Native, Non-Hispanic**	**Total****	**Notes**
Limb deficiencies (reduction defects)	89	25	11	4	0	129	
	6.7	***6.6***	***5.3***	***11.9***	***0.0***	***6.5***	
Omphalocele	33	13	5	0	0	51	
	2.5	***3.4***	***2.4***	***0.0***	***0.0***	***2.6***	
Pulmonary valve atresia and stenosis	199	60	29	11	2	301	
	15.0	***15.8***	***13.9***	***32.8***	***19.3***	***15.2***	
Pulmonary valve atresia	8	4	3	1	0	16	
	0.6	***1.1***	***1.4***	***3.0***	***0.0***	***0.8***	
Rectal and large intestinal atresia/stenosis	56	13	6	2	0	77	
	4.2	***3.4***	***2.9***	***6.0***	***0.0***	***3.9***	
Renal agenesis/hypoplasia	31	10	9	0	0	50	
	2.3	***2.6***	***4.3***	***0.0***	***0.0***	***2.5***	
Single ventricle	7	4	2	0	0	13	
	0.5	***1.1***	***1.0***	***0.0***	***0.0***	***0.7***	
Small intestinal atresia/stenosis	41	12	9	1	1	64	
	3.1	***3.2***	***4.3***	***3.0***	***9.7***	***3.2***	
Spina bifida without anencephalus	67	9	12	2	0	90	
	5.0	***2.4***	***5.7***	***6.0***	***0.0***	***4.6***	
Tetralogy of Fallot	61	16	6	2	1	86	
	4.6	***4.2***	***2.9***	***6.0***	***9.7***	***4.4***	
Total anomalous pulmonary venous connection	12	4	2	2	2	22	
	0.9	***1.1***	***1.0***	***6.0***	***19.3***	***1.1***	
Transposition of the great arteries (TGA)	65	9	6	3	0	83	
	4.9	***2.4***	***2.9***	***8.9***	***0.0***	***4.2***	
Dextro-transposition of great arteries (d-TGA)	58	8	5	3	0	74	
	4.4	***2.1***	***2.4***	***8.9***	***0.0***	***3.7***	
Tricuspid valve atresia	8	3	4	1	0	16	
	0.6	***0.8***	***1.9***	***3.0***	***0.0***	***0.8***	
Trisomy 13	11	5	4	0	0	20	
	0.8	***1.3***	***1.9***	***0.0***	***0.0***	***1.0***	
Trisomy 18	45	12	7	0	0	64	
	3.4	***3.2***	***3.4***	***0.0***	***0.0***	***3.2***	
Trisomy 21 (Down syndrome)	168	29	32	3	0	232	
	12.7	***7.6***	***15.3***	***8.9***	***0.0***	***11.8***	
Turner syndrome	18	2	3	0	0	23	
	1.4	***0.5***	***1.4***	***0.0***	***0.0***	***1.2***	
Ventricular septal defect	871	167	174	36	2	1251	
	65.6	***43.9***	***83.3***	***107.4***	***19.3***	***63.4***	
Total live births	**132776**	**38012**	**20888**	**3352**	**1036**	**197395**	
Male live births	**68276**	**19362**	**10602**	**1702**	**534**	**101146**	

*Hypospadias prevalence per 10,000 male live births
**Total includes unknown and other maternal race/ethnicity

Arkansas

Trisomy Counts and Prevalence by Maternal Age 2007 - 2011 (Prevalence per 10,000 Live Births)

	Maternal Age (years)			
Defect	**Less than 35**	**35+**	**Total**	**Notes**
Trisomy 13	18	2	20	
	1.0	***1.4***	***1.0***	
Trisomy 18	32	32	64	
	1.8	***22.5***	***3.2***	
Trisomy 21 (Down syndrome)	140	92	232	
	7.7	***64.8***	***11.8***	
Total live births	**181738**	**14207**	**197395**	

**Total includes unknown maternal age

California

Birth Defects Counts and Prevalence 2007 - 2011 (Prevalence per 10,000 Live Births)

	Maternal Race/Ethnicity						
Defect	**White, Non-Hispanic**	**Black, Non-Hispanic**	**Hispanic**	**Asian or Pacific Islander, Non-Hispanic**	**American Indian or Alaska Native, Non-Hispanic**	**Total****	**Notes**
Anencephalus	11	<5	60	<5	0	97	
	1.3	***.***	***2.5***	***.***	***0.0***	***2.9***	
Anophthalmia/microphthalmia	8	0	17	<5	0	28	
	0.9	***0.0***	***0.7***	***.***	***0.0***	***0.8***	
Anotia/microtia	6	<5	88	10	0	108	
	0.7	***.***	***3.7***	***3.9***	***0.0***	***3.2***	
Aortic valve stenosis	15	<5	19	<5	<5	40	
	1.7	***.***	***0.8***	***.***	***.***	***1.2***	
Atrial septal defect	113	30	284	31	<5	467	1
	13.0	***18.9***	***12.1***	***12.0***	***.***	***13.7***	
Atrioventricular septal defect (Endocardial cushion defect)	40	14	87	10	<5	156	
	4.6	***8.8***	***3.7***	***3.9***	***.***	***4.6***	
Biliary atresia	7	<5	11	<5	<5	23	
	0.8	***.***	***0.5***	***.***	***.***	***0.7***	
Bladder exstrophy	<5	<5	<5	<5	0	6	
	.	***.***	***.***	***.***	***0.0***	***0.2***	
Choanal atresia	<5	0	5	0	0	8	
	.	***0.0***	***0.2***	***0.0***	***0.0***	***0.2***	
Cleft lip alone	25	<5	52	12	<5	94	
	2.9	***.***	***2.2***	***4.7***	***.***	***2.8***	
Cleft lip with cleft palate	44	<5	138	15	<5	209	
	5.0	***.***	***5.9***	***5.8***	***.***	***6.2***	
Cleft palate alone	32	<5	85	10	<5	136	2
	3.7	***.***	***3.6***	***3.9***	***.***	***4.0***	
Cloacal exstrophy	<5	0	<5	0	0	<5	
	.	***0.0***	***.***	***0.0***	***0.0***	***.***	
Coarctation of the aorta	52	10	86	10	<5	165	
	6.0	***6.3***	***3.7***	***3.9***	***.***	***4.9***	
Common truncus (truncus arteriosus)	<5	0	5	0	0	8	
	.	***0.0***	***0.2***	***0.0***	***0.0***	***0.2***	
Congenital cataract	10	<5	17	6	0	34	
	1.1	***.***	***0.7***	***2.3***	***0.0***	***1.0***	
Craniosynostosis	33	0	68	<5	0	105	
	3.8	***0.0***	***2.9***	***.***	***0.0***	***3.1***	
Diaphragmatic hernia	25	<5	49	7	0	86	
	2.9	***.***	***2.1***	***2.7***	***0.0***	***2.5***	
Double outlet right ventricle	15	<5	47	8	<5	76	
	1.7	***.***	***2.0***	***3.1***	***.***	***2.2***	
Ebstein anomaly	8	0	11	<5	0	21	
	0.9	***0.0***	***0.5***	***.***	***0.0***	***0.6***	
Encephalocele	6	<5	19	<5	<5	32	
	0.7	***.***	***0.8***	***.***	***.***	***0.9***	
Esophageal atresia/tracheoesophageal fistula	21	0	26	<5	<5	52	3
	2.4	***0.0***	***1.1***	***.***	***.***	***1.5***	
Gastroschisis	46	6	109	14	<5	189	
	5.3	***3.8***	***4.6***	***5.4***	***.***	***5.6***	
Holoprosencephaly	6	<5	26	<5	0	38	
	0.7	***.***	***1.1***	***.***	***0.0***	***1.1***	
Hypoplastic left heart syndrome	23	5	35	7	0	73	
	2.6	***3.2***	***1.5***	***2.7***	***0.0***	***2.1***	
Hypospadias*	74	10	77	14	<5	179	4
	16.5	***12.5***	***7.4***	***10.6***	***.***	***10.3***	
Interrupted aortic arch	<5	<5	8	0	0	13	
	.	***.***	***0.3***	***0.0***	***0.0***	***0.4***	
Limb deficiencies (reduction defects)	29	5	63	6	<5	109	
	3.3	***3.2***	***2.7***	***2.3***	***.***	***3.2***	
Omphalocele	7	<5	26	<5	0	44	
	0.8	***.***	***1.1***	***.***	***0.0***	***1.3***	
Pulmonary valve atresia and stenosis	46	10	123	22	<5	206	
	5.3	***6.3***	***5.2***	***8.5***	***.***	***6.1***	

California

Birth Defects Counts and Prevalence 2007 - 2011 (Prevalence per 10,000 Live Births)

	Maternal Race/Ethnicity						
Defect	**White, Non-Hispanic**	**Black, Non-Hispanic**	**Hispanic**	**Asian or Pacific Islander, Non-Hispanic**	**American Indian or Alaska Native, Non-Hispanic**	**Total****	**Notes**
Pulmonary valve atresia	8	<5	37	<5	<5	51	
	0.9	**.**	***1.6***	**.**	**.**	***1.5***	
Rectal and large intestinal atresia/stenosis	22	<5	70	15	<5	117	5
	2.5	**.**	***3.0***	***5.8***	**.**	***3.4***	
Renal agenesis/hypoplasia	6	0	14	<5	0	21	6
	0.7	***0.0***	***0.6***	**.**	***0.0***	***0.6***	
Single ventricle	7	<5	26	<5	0	36	
	0.8	**.**	***1.1***	**.**	***0.0***	***1.1***	
Small intestinal atresia/stenosis	21	7	90	8	<5	132	
	2.4	***4.4***	***3.8***	***3.1***	**.**	***3.9***	
Spina bifida without anencephalus	31	<5	82	<5	<5	135	
	3.6	**.**	***3.5***	**.**	**.**	***4.0***	
Tetralogy of Fallot	31	<5	65	5	0	105	
	3.6	**.**	***2.8***	***1.9***	***0.0***	***3.1***	
Total anomalous pulmonary venous connection	11	<5	44	<5	<5	64	
	1.3	**.**	***1.9***	**.**	**.**	***1.9***	
Transposition of the great arteries (TGA)	12	<5	33	5	0	52	
	1.4	**.**	***1.4***	***1.9***	***0.0***	***1.5***	
Dextro-transposition of great arteries (d-TGA)	12	<5	33	5	0	52	
	1.4	**.**	***1.4***	***1.9***	***0.0***	***1.5***	
Tricuspid valve atresia	7	0	14	<5	<5	22	
	0.8	***0.0***	***0.6***	**.**	**.**	***0.6***	
Trisomy 13	8	<5	20	<5	0	46	
	0.9	**.**	***0.8***	**.**	***0.0***	***1.4***	
Trisomy 18	20	<5	55	8	0	113	
	2.3	**.**	***2.3***	***3.1***	***0.0***	***3.3***	
Trisomy 21 (Down syndrome)	97	21	314	35	<5	489	
	11.1	***13.3***	***13.3***	***13.6***	**.**	***14.4***	
Total live births	**87196**	**15846**	**235353**	**25779**	**2117**	**339759**	
Male live births	**44929**	**8010**	**104163**	**13194**	**1086**	**173117**	

*Hypospadias prevalence per 10,000 male live births
**Total includes unknown and other maternal race/ethnicity

California

Trisomy Counts and Prevalence by Maternal Age 2007 - 2011 (Prevalence per 10,000 Live Births)

	Maternal Age (years)			
Defect	**Less than 35**	**35+**	**Total**	**Notes**
Trisomy 13	24	10	46	
	0.8	***2.6***	***1.4***	
Trisomy 18	44	44	113	
	1.5	***11.4***	***3.3***	
Trisomy 21 (Down syndrome)	241	234	489	
	8.0	***60.5***	***14.4***	
Total live births	**301055**	**38650**	**339759**	

**Total includes unknown maternal age

Notes

1.For atrial septal defect (ASD), only cases confirmed by physician review or echo or cath or surgery or autopsy are included; if the ASD is a component of another major heart malformation, it is not counted.
2.Submucous cleft and bifid uvula are not included in this report.
3.Isolated tracheoesophageal fistula is not included in this report.
4.Hypospadias case counts include only 2nd and 3rd degree.
5.Anal stenosis is not included in this report.
6.Unilateral renal agenesis/hypoplasia is not included in this report.

General comments

-<5 indicates cell size suppressed to protect confidentiality or to indicate case count <5.
-California includes stillbirths of all gestational ages.
-Cases with chromosomal defects other than trisomy 13, 18 and 21 are not included in this report.
-Cases with single gene disorders are not included in this report.

Colorado

Birth Defects Counts and Prevalence 2007 - 2011 (Prevalence per 10,000 Live Births)

	Maternal Race/Ethnicity						
Defect	White, Non-Hispanic	Black, Non-Hispanic	Hispanic	Asian or Pacific Islander, Non-Hispanic	American Indian or Alaska Native, Non-Hispanic	Total**	Notes
Anencephalus	25	3	22	2	1	58	1
	1.2	*1.9*	*2.1*	*1.7*	*4.1*	*1.7*	
Anophthalmia/microphthalmia	29	2	26	0	0	61	
	1.4	*1.3*	*2.5*	*0.0*	*0.0*	*1.8*	
Anotia/microtia	45	5	43	2	1	100	
	2.2	*3.2*	*4.2*	*1.7*	*4.1*	*2.9*	
Aortic valve stenosis	78	2	30	1	0	114	
	3.8	*1.3*	*2.9*	*0.9*	*0.0*	*3.3*	
Atrial septal defect	2180	243	1174	149	23	3845	
	106.8	*156.4*	*113.6*	*126.8*	*94.8*	*112.8*	
Atrioventricular septal defect (Endocardial cushion defect)	84	10	36	3	2	139	2
	4.1	*6.4*	*3.5*	*2.6*	*8.2*	*4.1*	
Biliary atresia	24	1	12	0	0	39	
	1.2	*0.6*	*1.2*	*0.0*	*0.0*	*1.1*	
Bladder exstrophy	7	0	3	0	1	12	
	0.3	*0.0*	*0.3*	*0.0*	*4.1*	*0.4*	
Choanal atresia	40	6	24	1	1	77	
	2.0	*3.9*	*2.3*	*0.9*	*4.1*	*2.3*	
Cleft lip alone	94	3	49	3	1	154	
	4.6	*1.9*	*4.7*	*2.6*	*4.1*	*4.5*	
Cleft lip with cleft palate	133	5	108	5	3	263	
	6.5	*3.2*	*10.5*	*4.3*	*12.4*	*7.7*	
Cleft palate alone	182	10	98	4	2	301	
	8.9	*6.4*	*9.5*	*3.4*	*8.2*	*8.8*	
Cloacal exstrophy	132	7	71	7	2	227	
	6.5	*4.5*	*6.9*	*6.0*	*8.2*	*6.7*	
Clubfoot	384	18	178	11	5	616	
	18.8	*11.6*	*17.2*	*9.4*	*20.6*	*18.1*	
Coarctation of the aorta	190	16	95	5	0	312	
	9.3	*10.3*	*9.2*	*4.3*	*0.0*	*9.2*	
Common truncus (truncus arteriosus)	14	1	11	0	1	28	
	0.7	*0.6*	*1.1*	*0.0*	*4.1*	*0.8*	
Congenital cataract	39	2	20	1	1	64	
	1.9	*1.3*	*1.9*	*0.9*	*4.1*	*1.9*	
Congenital posterior urethral valves	37	10	20	2	0	92	
	1.8	*6.4*	*1.9*	*1.7*	*0.0*	*2.7*	
Deletion 22q11.2	28	5	17	1	0	54	
	1.4	*3.2*	*1.6*	*0.9*	*0.0*	*1.6*	
Diaphragmatic hernia	63	5	26	2	0	107	
	3.1	*3.2*	*2.5*	*1.7*	*0.0*	*3.1*	
Double outlet right ventricle	14	2	18	2	0	42	
	0.7	*1.3*	*1.7*	*1.7*	*0.0*	*1.2*	
Ebstein anomaly	25	0	7	3	0	35	
	1.2	*0.0*	*0.7*	*2.6*	*0.0*	*1.0*	
Encephalocele	14	4	12	1	0	34	
	0.7	*2.6*	*1.2*	*0.9*	*0.0*	*1.0*	
Esophageal atresia/tracheoesophageal fistula	87	4	35	3	1	133	
	4.3	*2.6*	*3.4*	*2.6*	*4.1*	*3.9*	
Gastroschisis	65	7	62	1	2	144	3
	3.2	*4.5*	*6.0*	*0.9*	*8.2*	*4.2*	
Holoprosencephaly	8	0	17	0	1	36	
	0.4	*0.0*	*1.6*	*0.0*	*4.1*	*1.1*	
Hypoplastic left heart syndrome	56	2	28	0	0	89	
	2.7	*1.3*	*2.7*	*0.0*	*0.0*	*2.6*	
Hypospadias*	1444	100	379	46	15	2011	
	137.4	*126.5*	*71.3*	*78.3*	*122.9*	*114.9*	
Interrupted aortic arch	22	4	6	0	0	34	
	1.1	*2.6*	*0.6*	*0.0*	*0.0*	*1.0*	
Limb deficiencies (reduction defects)	76	2	39	2	2	139	
	3.7	*1.3*	*3.8*	*1.7*	*8.2*	*4.1*	

Colorado

Birth Defects Counts and Prevalence 2007 - 2011 (Prevalence per 10,000 Live Births)

	Maternal Race/Ethnicity						
Defect	**White, Non-Hispanic**	**Black, Non-Hispanic**	**Hispanic**	**Asian or Pacific Islander, Non-Hispanic**	**American Indian or Alaska Native, Non-Hispanic**	**Total****	**Notes**
Omphalocele	41	4	21	1	0	81	3
	2.0	***2.6***	***2.0***	***0.9***	***0.0***	***2.4***	
Pulmonary valve atresia and stenosis	126	10	73	10	2	225	
	6.2	***6.4***	***7.1***	***8.5***	***8.2***	***6.6***	
Pulmonary valve atresia	33	5	27	3	0	70	
	1.6	***3.2***	***2.6***	***2.6***	***0.0***	***2.1***	
Rectal and large intestinal atresia/stenosis	95	8	71	8	4	201	
	4.7	***5.1***	***6.9***	***6.8***	***16.5***	***5.9***	
Renal agenesis/hypoplasia	94	11	53	4	1	186	
	4.6	***7.1***	***5.1***	***3.4***	***4.1***	***5.5***	
Single ventricle	17	2	12	0	1	32	
	0.8	***1.3***	***1.2***	***0.0***	***4.1***	***0.9***	
Small intestinal atresia/stenosis	99	5	71	4	3	190	
	4.8	***3.2***	***6.9***	***3.4***	***12.4***	***5.6***	
Spina bifida without anencephalus	65	3	51	2	2	130	1
	3.2	***1.9***	***4.9***	***1.7***	***8.2***	***3.8***	
Tetralogy of Fallot	75	6	38	6	0	125	
	3.7	***3.9***	***3.7***	***5.1***	***0.0***	***3.7***	
Total anomalous pulmonary venous connection	13	0	21	0	0	36	
	0.6	***0.0***	***2.0***	***0.0***	***0.0***	***1.1***	
Transposition of the great arteries (TGA)	66	4	34	5	0	113	
	3.2	***2.6***	***3.3***	***4.3***	***0.0***	***3.3***	
Dextro-transposition of great arteries (d-TGA)	44	4	25	4	0	81	
	2.2	***2.6***	***2.4***	***3.4***	***0.0***	***2.4***	
Tricuspid valve atresia and stenosis	17	4	7	1	0	30	4
	0.8	***2.6***	***0.7***	***0.9***	***0.0***	***0.9***	
Trisomy 13	15	2	15	0	0	77	
	0.7	***1.3***	***1.5***	***0.0***	***0.0***	***2.3***	
Trisomy 18	33	4	33	5	1	173	
	1.6	***2.6***	***3.2***	***4.3***	***4.1***	***5.1***	
Trisomy 21 (Down syndrome)	277	30	169	13	2	719	
	13.6	***19.3***	***16.4***	***11.1***	***8.2***	***21.1***	
Turner syndrome	23	2	22	4	0	66	
	1.1	***1.3***	***2.1***	***3.4***	***0.0***	***1.9***	
Ventricular septal defect	888	83	545	51	11	1615	5
	43.5	***53.4***	***52.7***	***43.4***	***45.3***	***47.4***	
Total live births	**204204**	**15542**	**103340**	**11750**	**2426**	**340832**	
Male live births	**105087**	**7908**	**53121**	**5876**	**1221**	**175036**	

*Hypospadias prevalence per 10,000 male live births
**Total includes unknown and other maternal race/ethnicity

Colorado

Trisomy Counts and Prevalence by Maternal Age 2007 - 2011 (Prevalence per 10,000 Live Births)

	Maternal Age (years)			
Defect	**Less than 35**	**35+**	**Total**	**Notes**
Trisomy 13	36	41	77	
	1.3	***7.5***	***2.3***	
Trisomy 18	73	100	173	
	2.6	***18.2***	***5.1***	
Trisomy 21 (Down syndrome)	288	430	719	
	10.1	***78.3***	***21.1***	
Total live births	**285856**	**54936**	**340832**	

**Total includes unknown maternal age

Notes
1.Live births and fetal deaths any gestational age.
2.Cannot include Inlet Ventricular Septal Defect (VSD).
3.Medical record review.
4.Tricuspid stenosis and hypoplasia included.
5.Includes probable cases.

General comments
-Contact Program for specific details.
-Criticial congenital heart reports have been confirmed/invalidated.
-Fetal Deaths are any events that are not live birth.
-For specific conditions, inclusion criteria has changed from previous years.
-Medicaid added as a data source starting with the 2009 data year.
-State only reports live births and fetal deaths at any gestational age.

Delaware

Birth Defects Counts and Prevalence 2007 - 2010 (Prevalence per 10,000 Live Births)

	Maternal Race/Ethnicity						
Defect	**White, Non-Hispanic**	**Black, Non-Hispanic**	**Hispanic**	**Asian or Pacific Islander, Non-Hispanic**	**American Indian or Alaska Native, Non-Hispanic**	**Total****	**Notes**
Anencephalus	4	1	3	0	0	9	
	1.6	***0.8***	***4.4***	***0.0***	***0.0***	***1.9***	
Anophthalmia/microphthalmia	4	0	1	1	0	6	
	1.6	***0.0***	***1.5***	***4.8***	***0.0***	***1.3***	
Anotia/microtia	10	2	8	0	0	20	
	3.9	***1.6***	***11.7***	***0.0***	***0.0***	***4.2***	
Aortic valve stenosis	8	1	0	1	0	10	
	3.1	***0.8***	***0.0***	***4.8***	***0.0***	***2.1***	
Atrial septal defect	68	25	20	1	0	114	1
	26.7	***19.7***	***29.3***	***4.8***	***0.0***	***24.2***	
Atrioventricular septal defect (Endocardial cushion defect)	19	6	3	0	0	28	
	7.5	***4.7***	***4.4***	***0.0***	***0.0***	***5.9***	
Biliary atresia	1	2	0	0	0	3	
	0.4	***1.6***	***0.0***	***0.0***	***0.0***	***0.6***	
Choanal atresia	3	1	1	0	0	5	
	1.2	***0.8***	***1.5***	***0.0***	***0.0***	***1.1***	
Cleft lip alone	5	1	1	1	0	8	
	2.0	***0.8***	***1.5***	***4.8***	***0.0***	***1.7***	
Cleft lip with cleft palate	15	3	4	1	0	24	
	5.9	***2.4***	***5.9***	***4.8***	***0.0***	***5.1***	
Cleft palate alone	18	5	4	2	0	29	2
	7.1	***3.9***	***5.9***	***9.6***	***0.0***	***6.1***	
Clubfoot	29	13	8	2	0	52	
	11.4	***10.3***	***11.7***	***9.6***	***0.0***	***11.0***	
Coarctation of the aorta	9	3	3	0	0	15	3
	3.5	***2.4***	***4.4***	***0.0***	***0.0***	***3.2***	
Common truncus (truncus arteriosus)	1	0	0	0	0	1	
	0.4	***0.0***	***0.0***	***0.0***	***0.0***	***0.2***	
Congenital cataract	9	2	5	1	0	17	
	3.5	***1.6***	***7.3***	***4.8***	***0.0***	***3.6***	
Congenital posterior urethral valves	3	4	0	0	0	7	4
	1.2	***3.2***	***0.0***	***0.0***	***0.0***	***1.5***	
Craniosynostosis	16	4	7	0	0	27	
	6.3	***3.2***	***10.3***	***0.0***	***0.0***	***5.7***	
Deletion 22q11.2	1	1	0	0	0	2	
	0.4	***0.8***	***0.0***	***0.0***	***0.0***	***0.4***	
Diaphragmatic hernia	6	0	2	1	0	9	
	2.4	***0.0***	***2.9***	***4.8***	***0.0***	***1.9***	
Double outlet right ventricle	5	2	4	0	0	11	
	2.0	***1.6***	***5.9***	***0.0***	***0.0***	***2.3***	
Ebstein anomaly	3	1	0	0	0	4	
	1.2	***0.8***	***0.0***	***0.0***	***0.0***	***0.8***	
Encephalocele	3	2	1	0	0	6	
	1.2	***1.6***	***1.5***	***0.0***	***0.0***	***1.3***	
Esophageal atresia/tracheoesophageal fistula	4	1	3	0	0	8	
	1.6	***0.8***	***4.4***	***0.0***	***0.0***	***1.7***	
Gastroschisis	19	7	5	0	0	31	5
	7.5	***5.5***	***7.3***	***0.0***	***0.0***	***6.6***	
Holoprosencephaly	1	3	0	0	0	4	
	0.4	***2.4***	***0.0***	***0.0***	***0.0***	***0.8***	
Hypoplastic left heart syndrome	8	7	7	0	1	23	
	3.1	***5.5***	***10.3***	***0.0***	***158.7***	***4.9***	
Hypospadias*	118	52	13	9	1	196	
	90.5	***80.8***	***37.9***	***83.3***	***344.8***	***81.5***	
Limb deficiencies (reduction defects)	7	7	2	0	0	16	6
	2.7	***5.5***	***2.9***	***0.0***	***0.0***	***3.4***	
Omphalocele	2	4	0	0	0	6	5
	0.8	***3.2***	***0.0***	***0.0***	***0.0***	***1.3***	
Pulmonary valve atresia and stenosis	40	22	6	1	0	69	7
	15.7	***17.4***	***8.8***	***4.8***	***0.0***	***14.6***	

Delaware

Birth Defects Counts and Prevalence 2007 - 2010 (Prevalence per 10,000 Live Births)

	Maternal Race/Ethnicity						
Defect	**White, Non-Hispanic**	**Black, Non-Hispanic**	**Hispanic**	**Asian or Pacific Islander, Non-Hispanic**	**American Indian or Alaska Native, Non-Hispanic**	**Total****	**Notes**
Pulmonary valve atresia	8	3	2	0	0	13	
	3.1	***2.4***	***2.9***	***0.0***	***0.0***	***2.8***	
Rectal and large intestinal atresia/stenosis	17	2	2	0	0	22	
	6.7	***1.6***	***2.9***	***0.0***	***0.0***	***4.7***	
Renal agenesis/hypoplasia	20	8	6	1	0	35	
	7.9	***6.3***	***8.8***	***4.8***	***0.0***	***7.4***	
Single ventricle	5	0	0	0	0	5	
	2.0	***0.0***	***0.0***	***0.0***	***0.0***	***1.1***	
Small intestinal atresia/stenosis	7	4	2	0	0	13	
	2.7	***3.2***	***2.9***	***0.0***	***0.0***	***2.8***	
Spina bifida without anencephalus	6	4	1	0	0	12	8
	2.4	***3.2***	***1.5***	***0.0***	***0.0***	***2.5***	
Tetralogy of Fallot	13	3	3	4	0	23	9
	5.1	***2.4***	***4.4***	***19.1***	***0.0***	***4.9***	
Total anomalous pulmonary venous connection	4	1	0	0	0	5	
	1.6	***0.8***	***0.0***	***0.0***	***0.0***	***1.1***	
Transposition of the great arteries (TGA)	9	3	5	1	0	18	
	3.5	***2.4***	***7.3***	***4.8***	***0.0***	***3.8***	
Dextro-transposition of great arteries (d-TGA)	8	3	5	1	0	17	
	3.1	***2.4***	***7.3***	***4.8***	***0.0***	***3.6***	
Tricuspid valve atresia and stenosis	4	6	0	0	0	10	
	1.6	***4.7***	***0.0***	***0.0***	***0.0***	***2.1***	
Tricuspid valve atresia	0	1	0	0	0	1	
	0.0	***0.8***	***0.0***	***0.0***	***0.0***	***0.2***	
Trisomy 13	1	0	1	0	0	2	
	0.4	***0.0***	***1.5***	***0.0***	***0.0***	***0.4***	
Trisomy 18	6	4	2	1	0	13	
	2.4	***3.2***	***2.9***	***4.8***	***0.0***	***2.8***	
Trisomy 21 (Down syndrome)	39	12	5	4	0	60	
	15.3	***9.5***	***7.3***	***19.1***	***0.0***	***12.7***	
Turner syndrome	5	0	2	0	0	7	
	2.0	***0.0***	***2.9***	***0.0***	***0.0***	***1.5***	
Ventricular septal defect	212	82	64	14	1	375	10
	83.2	***64.7***	***93.8***	***67.0***	***158.7***	***79.5***	
Total live births	**25476**	**12670**	**6823**	**2091**	**63**	**47183**	
Male live births	**13043**	**6438**	**3430**	**1080**	**29**	**24053**	

*Hypospadias prevalence per 10,000 male live births
**Total includes unknown and other maternal race/ethnicity

Delaware

Trisomy Counts and Prevalence by Maternal Age 2007 - 2010 (Prevalence per 10,000 Live Births)

	Maternal Age (years)			
Defect	**Less than 35**	**35+**	**Total**	**Notes**
Trisomy 13	1	1	2	
	0.2	***1.5***	***0.4***	
Trisomy 18	7	6	13	
	1.7	***9.2***	***2.8***	
Trisomy 21 (Down syndrome)	30	29	60	
	7.4	***44.5***	***12.7***	
Total live births	**40660**	**6523**	**47183**	

**Total includes unknown maternal age

Notes

1.Atrial septal fenestrations are reported as an atrial septal defect (ASD). ASDs that self-close (not present after a month) are considered Patent Foramen Ovales (PFO). PFOs are not counted.
2.Pierre Robin anomalies with cleft palate are included as a cleft palate.
3.Interrupted aortic arch is not reported as a separate defect but is included in coarctation of aorta.
4.Only cases involving surgical intervention are reported.
5.Distinction between gastroschisis and omphalocele is confirmed by review of clinical or surgical documentation.
6.Complex hand anomalies, adactyly, and syndactyly are reported as Reduction Defects.
7.Peripheral, branch, trivial, or limited are not included.
8.Spina bifida occulta is not included.
9.A ventricular septal defect with an overriding aorta is counted as Tetralogy of Fallot.
10.All sizes and types of ventricular septal defects are included and all resolved VSDs are included. Probable cases are only included if the defect was found prenatally and the fetus died without a confirmatory autopsy.

General comments

-2007 Maternal Fetal Medicine (MFM) cases were derived from cytogenetic lists and fetal therapy lists. 2008 Maternal Fetal Medicine cases were derived from all possible defect cases handled by MFM. 2009 Maternal and Fetal Medicine cases were derived from cytogenetic lists only.
-All chromosomal defects require a cytogenetics report.
-All defects found prenatally must be confirmed postnatally or through cytogenetic testing.
-All heart defects require an echocardiogram report.
-Coding System used was CDC/BPA.
-Delaware did not perform CCHD screening in 2007, 2008, 2009, and 2010.
-Fetal deaths (including terminations) are included if the fetus weighed 350 grams or higher; in the absence of weight at least 20 weeks gestation or greater.
-Registry data from 2011 is currently being vetted.
-Registry does not distinguish spontaneous terminations from elective terminations. Stillbirths, miscarriages, and terminations are all currently reported together.

Florida

Birth Defects Counts and Prevalence 2007 - 2011 (Prevalence per 10,000 Live Births)

	Maternal Race/Ethnicity						
Defect	**White, Non-Hispanic**	**Black, Non-Hispanic**	**Hispanic**	**Asian or Pacific Islander, Non-Hispanic**	**American Indian or Alaska Native, Non-Hispanic**	**Total****	**Notes**
Anencephalus	31	21	14	0	0	69	
	0.6	***0.9***	***0.4***	***0.0***	***0.0***	***0.6***	
Anophthalmia/microphthalmia	45	21	25	0	0	92	
	0.9	***0.9***	***0.8***	***0.0***	***0.0***	***0.8***	
Anotia/microtia	37	7	39	4	1	90	
	0.8	***0.3***	***1.2***	***1.3***	***5.0***	***0.8***	
Aortic valve stenosis	89	19	33	4	1	147	
	1.8	***0.8***	***1.0***	***1.3***	***5.0***	***1.3***	
Atrioventricular septal defect (Endocardial cushion defect)	215	114	103	16	0	459	
	4.4	***4.7***	***3.3***	***5.0***	***0.0***	***4.1***	
Biliary atresia	40	34	23	4	1	106	
	0.8	***1.4***	***0.7***	***1.3***	***5.0***	***1.0***	
Bladder exstrophy	12	10	6	0	0	28	
	0.2	***0.4***	***0.2***	***0.0***	***0.0***	***0.3***	
Choanal atresia	90	29	45	5	1	173	
	1.8	***1.2***	***1.4***	***1.6***	***5.0***	***1.6***	
Cleft lip alone	150	41	50	7	0	254	
	3.0	***1.7***	***1.6***	***2.2***	***0.0***	***2.3***	
Cleft lip with cleft palate	296	82	146	20	1	549	
	6.0	***3.4***	***4.6***	***6.3***	***5.0***	***4.9***	
Cleft palate alone	311	116	153	18	0	608	
	6.3	***4.7***	***4.8***	***5.6***	***0.0***	***5.5***	
Cloacal exstrophy	306	171	193	17	3	707	
	6.2	***7.0***	***6.1***	***5.3***	***15.1***	***6.4***	
Clubfoot	747	258	361	34	2	1429	
	15.1	***10.6***	***11.4***	***10.7***	***10.1***	***12.9***	
Coarctation of the aorta	398	140	181	15	2	757	
	8.1	***5.7***	***5.7***	***4.7***	***10.1***	***6.8***	
Common truncus (truncus arteriosus)	47	15	18	2	0	84	
	1.0	***0.6***	***0.6***	***0.6***	***0.0***	***0.8***	
Congenital cataract	78	34	30	2	0	146	
	1.6	***1.4***	***0.9***	***0.6***	***0.0***	***1.3***	
Congenital posterior urethral valves	69	61	24	5	0	162	
	1.4	***2.5***	***0.8***	***1.6***	***0.0***	***1.5***	
Deletion 22q11.2	15	5	3	0	0	23	
	0.3	***0.2***	***0.1***	***0.0***	***0.0***	***0.2***	
Diaphragmatic hernia	168	82	76	10	0	348	
	3.4	***3.4***	***2.4***	***3.1***	***0.0***	***3.1***	
Double outlet right ventricle	107	69	79	8	0	270	
	2.2	***2.8***	***2.5***	***2.5***	***0.0***	***2.4***	
Ebstein anomaly	40	12	15	3	1	73	
	0.8	***0.5***	***0.5***	***0.9***	***5.0***	***0.7***	
Encephalocele	36	33	26	1	0	97	
	0.7	***1.3***	***0.8***	***0.3***	***0.0***	***0.9***	
Esophageal atresia/tracheoesophageal fistula	122	56	58	4	0	245	
	2.5	***2.3***	***1.8***	***1.3***	***0.0***	***2.2***	
Gastroschisis	296	69	119	6	0	497	1
	6.0	***2.8***	***3.8***	***1.9***	***0.0***	***4.5***	
Holoprosencephaly	200	128	123	15	1	476	
	4.1	***5.2***	***3.9***	***4.7***	***5.0***	***4.3***	
Hypoplastic left heart syndrome	169	84	76	7	0	341	
	3.4	***3.4***	***2.4***	***2.2***	***0.0***	***3.1***	
Hypospadias*	2177	835	809	81	3	3996	
	86.0	***67.0***	***50.0***	***49.0***	***29.1***	***70.2***	
Interrupted aortic arch	32	16	25	2	0	77	
	0.6	***0.7***	***0.8***	***0.6***	***0.0***	***0.7***	
Limb deficiencies (reduction defects)	183	98	100	12	0	397	
	3.7	***4.0***	***3.2***	***3.8***	***0.0***	***3.6***	
Omphalocele	45	27	19	2	0	95	2
	2.4	***2.8***	***1.6***	***1.6***	***0.0***	***2.2***	

Florida

Birth Defects Counts and Prevalence 2007 - 2011 (Prevalence per 10,000 Live Births)

	Maternal Race/Ethnicity						
Defect	**White, Non-Hispanic**	**Black, Non-Hispanic**	**Hispanic**	**Asian or Pacific Islander, Non-Hispanic**	**American Indian or Alaska Native, Non-Hispanic**	**Total****	**Notes**
Pulmonary valve atresia and stenosis	436	309	296	22	3	1086	
	8.8	***12.6***	***9.4***	***6.9***	***15.1***	***9.8***	
Pulmonary valve atresia	69	47	45	5	0	171	
	1.4	***1.9***	***1.4***	***1.6***	***0.0***	***1.5***	
Rectal and large intestinal atresia/stenosis	199	119	116	12	1	459	
	4.0	***4.9***	***3.7***	***3.8***	***5.0***	***4.1***	
Renal agenesis/hypoplasia	255	117	132	11	1	526	
	5.2	***4.8***	***4.2***	***3.4***	***5.0***	***4.7***	
Single ventricle	53	47	37	5	0	148	
	1.1	***1.9***	***1.2***	***1.6***	***0.0***	***1.3***	
Small intestinal atresia/stenosis	265	149	137	16	0	577	
	5.4	***6.1***	***4.3***	***5.0***	***0.0***	***5.2***	
Spina bifida without anencephalus	162	60	87	8	0	321	
	3.3	***2.5***	***2.8***	***2.5***	***0.0***	***2.9***	
Tetralogy of Fallot	256	122	114	18	2	527	
	5.2	***5.0***	***3.6***	***5.6***	***10.1***	***4.7***	
Total anomalous pulmonary venous connection	43	35	34	5	0	118	
	0.9	***1.4***	***1.1***	***1.6***	***0.0***	***1.1***	
Transposition of the great arteries (TGA)	167	47	77	1	0	300	
	3.4	***1.9***	***2.4***	***0.3***	***0.0***	***2.7***	
Dextro-transposition of great arteries (d-TGA)	142	36	64	0	0	250	
	2.9	***1.5***	***2.0***	***0.0***	***0.0***	***2.2***	
Tricuspid valve atresia and stenosis	53	32	29	2	0	120	
	1.1	***1.3***	***0.9***	***0.6***	***0.0***	***1.1***	
Trisomy 13	42	30	24	0	0	98	
	0.9	***1.2***	***0.8***	***0.0***	***0.0***	***0.9***	
Trisomy 18	84	59	64	7	0	220	
	1.7	***2.4***	***2.0***	***2.2***	***0.0***	***2.0***	
Trisomy 21 (Down syndrome)	658	312	426	44	3	1478	
	13.3	***12.8***	***13.5***	***13.8***	***15.1***	***13.3***	
Turner syndrome	30	18	28	0	0	78	
	0.6	***0.7***	***0.9***	***0.0***	***0.0***	***0.7***	
Ventricular septal defect	2891	1312	2040	159	5	6532	
	58.6	***53.7***	***64.5***	***49.8***	***25.2***	***58.7***	
Total live births	**493102**	**244455**	**316075**	**31917**	**1982**	**1111955**	
Male live births	**253017**	**124539**	**161861**	**16539**	**1030**	**569537**	

*Hypospadias prevalence per 10,000 male live births
**Total includes unknown and other maternal race/ethnicity

Florida

Trisomy Counts and Prevalence by Maternal Age 2007 - 2011 (Prevalence per 10,000 Live Births)

	Maternal Age (years)			
Defect	**Less than 35**	**35+**	**Total**	**Notes**
Trisomy 13	65	33	98	
	0.7	***2.0***	***0.9***	
Trisomy 18	122	98	220	
	1.3	***6.0***	***2.0***	
Trisomy 21 (Down syndrome)	759	719	1478	
	8.0	***43.8***	***13.3***	
Total live births	**947733**	**164189**	**1111955**	

**Total includes unknown maternal age

Notes
1.Cases of Gastroschisis were differentiated from Omphalocele by using 54.71 procedure code in 2007-2009 and the 756.73 ICD-9-CM code in 2010-2011.
2.Reported for 2010-2011 only using the ICD-9-CM code 756.72.

General comments
-Atrial septal defect, Tricuspid valve atresia, and Craniosynostosis are not reported.
-Atrioventricular septal defect, Ventricular septal defect, and Tricuspid valve atresia and stenosis include probable cases.

Georgia (Metropolitan Atlanta Congenital Defects Program)

Birth Defects Counts and Prevalence 2007 - 2011 (Prevalence per 10,000 Live Births)

	Maternal Race/Ethnicity						
Defect	**White, Non-Hispanic**	**Black, Non-Hispanic**	**Hispanic**	**Asian or Pacific Islander, Non-Hispanic**	**American Indian or Alaska Native, Non-Hispanic**	**Total****	**Notes**
Anencephalus	14	32	21	1	0	77	
	1.9	***3.2***	***3.5***	***0.6***	***0.0***	***3.0***	
Anophthalmia/microphthalmia	7	12	9	2	0	34	
	1.0	***1.2***	***1.5***	***1.2***	***0.0***	***1.3***	
Anotia/microtia	9	14	21	1	0	47	
	1.2	***1.4***	***3.5***	***0.6***	***0.0***	***1.8***	
Aortic valve stenosis	15	9	7	1	0	35	
	2.1	***0.9***	***1.2***	***0.6***	***0.0***	***1.3***	
Atrial septal defect	115	148	70	11	0	378	
	15.9	***14.7***	***11.7***	***6.8***	***0.0***	***14.5***	
Atrioventricular septal defect (Endocardial cushion defect)	44	89	27	2	1	182	
	6.1	***8.8***	***4.5***	***1.2***	***47.4***	***7.0***	
Biliary atresia	4	13	2	0	1	24	
	0.6	***1.3***	***0.3***	***0.0***	***47.4***	***0.9***	
Bladder exstrophy	3	1	0	0	0	5	
	0.4	***0.1***	***0.0***	***0.0***	***0.0***	***0.2***	
Choanal atresia	9	11	3	1	0	25	
	1.2	***1.1***	***0.5***	***0.6***	***0.0***	***1.0***	
Cleft lip alone	21	32	17	8	0	85	
	2.9	***3.2***	***2.8***	***4.9***	***0.0***	***3.3***	
Cleft lip with cleft palate	44	51	43	9	0	154	
	6.1	***5.1***	***7.2***	***5.6***	***0.0***	***5.9***	
Cleft palate alone	35	48	34	6	0	131	
	4.8	***4.8***	***5.7***	***3.7***	***0.0***	***5.0***	
Cloacal exstrophy	1	0	0	0	0	1	
	0.1	***0.0***	***0.0***	***0.0***	***0.0***	***0.0***	
Clubfoot	118	150	79	11	1	390	
	16.3	***14.9***	***13.2***	***6.8***	***47.4***	***15.0***	
Coarctation of the aorta	51	46	24	4	0	139	
	7.0	***4.6***	***4.0***	***2.5***	***0.0***	***5.3***	
Common truncus (truncus arteriosus)	9	12	4	2	0	29	
	1.2	***1.2***	***0.7***	***1.2***	***0.0***	***1.1***	
Congenital cataract	14	18	9	3	0	45	
	1.9	***1.8***	***1.5***	***1.9***	***0.0***	***1.7***	
Congenital posterior urethral valves	26	39	17	1	0	99	
	3.6	***3.9***	***2.8***	***0.6***	***0.0***	***3.8***	
Craniosynostosis	49	33	19	3	1	123	
	6.8	***3.3***	***3.2***	***1.9***	***47.4***	***4.7***	
Deletion 22q11.2	8	12	2	0	0	28	
	1.1	***1.2***	***0.3***	***0.0***	***0.0***	***1.1***	
Diaphragmatic hernia	20	22	20	1	3	77	
	2.8	***2.2***	***3.3***	***0.6***	***142.2***	***3.0***	
Double outlet right ventricle	15	29	10	1	0	57	
	2.1	***2.9***	***1.7***	***0.6***	***0.0***	***2.2***	
Ebstein anomaly	3	3	6	2	0	15	
	0.4	***0.3***	***1.0***	***1.2***	***0.0***	***0.6***	
Encephalocele	2	16	6	6	1	37	
	0.3	***1.6***	***1.0***	***3.7***	***47.4***	***1.4***	
Esophageal atresia/tracheoesophageal fistula	23	24	8	0	0	60	
	3.2	***2.4***	***1.3***	***0.0***	***0.0***	***2.3***	
Gastroschisis	30	48	28	5	0	119	
	4.1	***4.8***	***4.7***	***3.1***	***0.0***	***4.6***	
Holoprosencephaly	16	25	12	5	0	62	
	2.2	***2.5***	***2.0***	***3.1***	***0.0***	***2.4***	
Hypoplastic left heart syndrome	17	19	8	8	0	59	
	2.3	***1.9***	***1.3***	***4.9***	***0.0***	***2.3***	
Hypospadias*	325	362	73	27	2	837	
	87.3	***70.4***	***23.9***	***32.5***	***180.2***	***62.7***	
Interrupted aortic arch	5	6	0	0	0	12	
	0.7	***0.6***	***0.0***	***0.0***	***0.0***	***0.5***	

Georgia (Metropolitan Atlanta Congenital Defects Program)

Birth Defects Counts and Prevalence 2007 - 2011 (Prevalence per 10,000 Live Births)

	Maternal Race/Ethnicity						
Defect	**White, Non-Hispanic**	**Black, Non-Hispanic**	**Hispanic**	**Asian or Pacific Islander, Non-Hispanic**	**American Indian or Alaska Native, Non-Hispanic**	**Total****	**Notes**
Limb deficiencies (reduction defects)	29	59	24	2	0	124	
	4.0	***5.8***	***4.0***	***1.2***	***0.0***	***4.8***	
Omphalocele	21	38	14	3	1	90	
	2.9	***3.8***	***2.3***	***1.9***	***47.4***	***3.5***	
Pulmonary valve atresia and stenosis	46	70	37	7	1	178	
	6.4	***6.9***	***6.2***	***4.3***	***47.4***	***6.8***	
Pulmonary valve atresia	11	20	15	0	0	56	
	1.5	***2.0***	***2.5***	***0.0***	***0.0***	***2.1***	
Rectal and large intestinal atresia/stenosis	27	40	33	8	0	118	
	3.7	***4.0***	***5.5***	***4.9***	***0.0***	***4.5***	
Renal agenesis/hypoplasia	61	63	21	8	1	168	
	8.4	***6.2***	***3.5***	***4.9***	***47.4***	***6.4***	
Single ventricle	4	12	11	2	0	34	
	0.6	***1.2***	***1.8***	***1.2***	***0.0***	***1.3***	
Small intestinal atresia/stenosis	26	45	20	7	0	107	
	3.6	***4.5***	***3.3***	***4.3***	***0.0***	***4.1***	
Spina bifida without anencephalus	34	37	29	4	0	111	
	4.7	***3.7***	***4.8***	***2.5***	***0.0***	***4.3***	
Tetralogy of Fallot	45	52	10	6	0	124	
	6.2	***5.2***	***1.7***	***3.7***	***0.0***	***4.8***	
Total anomalous pulmonary venous connection	5	8	9	3	0	27	
	0.7	***0.8***	***1.5***	***1.9***	***0.0***	***1.0***	
Transposition of the great arteries (TGA)	29	26	16	1	0	77	
	4.0	***2.6***	***2.7***	***0.6***	***0.0***	***3.0***	
Dextro-transposition of great arteries (d-TGA)	26	19	8	1	0	58	
	3.6	***1.9***	***1.3***	***0.6***	***0.0***	***2.2***	
Tricuspid valve atresia and stenosis	10	17	7	2	0	45	
	1.4	***1.7***	***1.2***	***1.2***	***0.0***	***1.7***	
Tricuspid valve atresia	5	8	2	1	0	18	
	0.7	***0.8***	***0.3***	***0.6***	***0.0***	***0.7***	
Trisomy 13	12	26	5	1	0	50	
	1.7	***2.6***	***0.8***	***0.6***	***0.0***	***1.9***	
Trisomy 18	50	41	14	11	1	142	
	6.9	***4.1***	***2.3***	***6.8***	***47.4***	***5.4***	
Trisomy 21 (Down syndrome)	184	166	121	28	2	559	
	25.4	***16.5***	***20.2***	***17.3***	***94.8***	***21.4***	
Turner syndrome	19	25	6	5	0	64	
	2.6	***2.5***	***1.0***	***3.1***	***0.0***	***2.5***	
Ventricular septal defect	495	436	322	46	6	1396	
	68.4	***43.2***	***53.8***	***28.4***	***284.4***	***53.5***	
Total live births	**72389**	**100899**	**59807**	**16187**	**211**	**260850**	
Male live births	**37233**	**51428**	**30560**	**8312**	**111**	**133459**	

*Hypospadias prevalence per 10,000 male live births
**Total includes unknown and other maternal race/ethnicity

Georgia (Metropolitan Atlanta Congenital Defects Program)

Trisomy Counts and Prevalence by Maternal Age 2007 - 2011 (Prevalence per 10,000 Live Births)

	Maternal Age (years)			
Defect	**Less than 35**	**35+**	**Total**	**Notes**
Trisomy 13	28	22	50	
	1.3	***4.3***	***1.9***	
Trisomy 18	41	99	142	
	2.0	***19.2***	***5.4***	
Trisomy 21 (Down syndrome)	257	280	559	
	12.3	***54.4***	***21.4***	
Total live births	**209359**	**51486**	**260850**	

**Total includes unknown maternal age

General comments
-Elective terminations include all gestational ages.
-Georgia uses CDC/BPA codes to determine defects.
-Live births include gestational ages greater than or equal to 20 weeks.
-Stillbirths include gestational ages greater than or equal to 20 weeks.
-Unknown category includes cases of any gestational age with a prenatal diagnosis for which the outcome could not be documented in data sources and no birth or fetal death certificate was found. Most are probably elective terminations, but don<t have the actual record to confirm. Cases for which the date of delivery was unknown are included in the year of their last known prenatal test.

Illinois

Birth Defects Counts and Prevalence 2007 - 2011 (Prevalence per 10,000 Live Births)

	Maternal Race/Ethnicity						
Defect	White, Non-Hispanic	Black, Non-Hispanic	Hispanic	Asian or Pacific Islander, Non-Hispanic	American Indian or Alaska Native, Non-Hispanic	Total**	Notes
Anencephalus	27	29	37	5	0	98	
	0.6	***2.0***	***1.8***	***1.1***	***0.0***	***1.2***	
Anophthalmia/microphthalmia	44	14	26	8	0	92	
	1.0	***1.0***	***1.3***	***1.7***	***0.0***	***1.1***	
Anotia/microtia	46	7	63	12	0	129	
	1.0	***0.5***	***3.1***	***2.5***	***0.0***	***1.5***	
Aortic valve stenosis	64	8	21	4	0	97	
	1.4	***0.5***	***1.0***	***0.8***	***0.0***	***1.1***	
Atrial septal defect	1056	407	453	82	2	2007	
	23.6	***27.9***	***22.6***	***17.3***	***21.3***	***23.7***	
Atrioventricular septal defect (Endocardial cushion defect)	207	80	75	12	0	374	1
	4.6	***5.5***	***3.7***	***2.5***	***0.0***	***4.4***	
Biliary atresia	3	1	3	1	0	8	
	0.1	***0.1***	***0.1***	***0.2***	***0.0***	***0.1***	
Bladder exstrophy	15	4	4	0	0	23	
	0.3	***0.3***	***0.2***	***0.0***	***0.0***	***0.3***	
Choanal atresia	44	14	17	4	0	79	
	1.0	***1.0***	***0.8***	***0.8***	***0.0***	***0.9***	
Cleft lip alone	154	38	43	13	2	251	
	3.4	***2.6***	***2.1***	***2.7***	***21.3***	***3.0***	
Cleft lip with cleft palate	198	59	152	30	0	444	
	4.4	***4.0***	***7.6***	***6.3***	***0.0***	***5.2***	
Cleft palate alone	225	44	92	21	0	384	
	5.0	***3.0***	***4.6***	***4.4***	***0.0***	***4.5***	
Cloacal exstrophy	4	2	1	0	0	7	
	0.1	***0.1***	***0.0***	***0.0***	***0.0***	***0.1***	
Clubfoot	153	43	63	6	0	271	
	3.4	***2.9***	***3.1***	***1.3***	***0.0***	***3.2***	
Coarctation of the aorta	142	29	69	9	0	251	
	3.2	***2.0***	***3.4***	***1.9***	***0.0***	***3.0***	
Common truncus (truncus arteriosus)	21	7	12	1	0	42	
	0.5	***0.5***	***0.6***	***0.2***	***0.0***	***0.5***	
Congenital cataract	30	22	10	2	0	64	
	0.7	***1.5***	***0.5***	***0.4***	***0.0***	***0.8***	
Congenital posterior urethral valves	26	17	8	2	0	53	
	0.6	***1.2***	***0.4***	***0.4***	***0.0***	***0.6***	
Craniosynostosis	18	4	6	1	0	29	
	0.4	***0.3***	***0.3***	***0.2***	***0.0***	***0.3***	
Diaphragmatic hernia	113	44	44	11	1	214	
	2.5	***3.0***	***2.2***	***2.3***	***10.6***	***2.5***	
Double outlet right ventricle	52	20	33	11	0	117	
	1.2	***1.4***	***1.6***	***2.3***	***0.0***	***1.4***	
Ebstein anomaly	25	2	12	1	0	40	
	0.6	***0.1***	***0.6***	***0.2***	***0.0***	***0.5***	
Encephalocele	20	13	26	3	0	62	
	0.4	***0.9***	***1.3***	***0.6***	***0.0***	***0.7***	
Esophageal atresia/tracheoesophageal fistula	98	21	39	9	0	168	
	2.2	***1.4***	***1.9***	***1.9***	***0.0***	***2.0***	
Gastroschisis	148	53	109	4	0	314	
	3.3	***3.6***	***5.4***	***0.8***	***0.0***	***3.7***	
Holoprosencephaly	19	4	27	0	0	50	
	0.4	***0.3***	***1.3***	***0.0***	***0.0***	***0.6***	
Hypoplastic left heart syndrome	81	26	40	6	0	153	
	1.8	***1.8***	***2.0***	***1.3***	***0.0***	***1.8***	
Hypospadias*	1437	362	271	97	1	2171	
	62.7	***48.8***	***26.7***	***39.8***	***20.2***	***50.1***	
Interrupted aortic arch	12	4	2	1	0	19	
	0.3	***0.3***	***0.1***	***0.2***	***0.0***	***0.2***	
Limb deficiencies (reduction defects)	167	64	61	13	0	315	
	3.7	***4.4***	***3.0***	***2.7***	***0.0***	***3.7***	

Illinois

Birth Defects Counts and Prevalence 2007 - 2011 (Prevalence per 10,000 Live Births)

	Maternal Race/Ethnicity						
Defect	**White, Non-Hispanic**	**Black, Non-Hispanic**	**Hispanic**	**Asian or Pacific Islander, Non-Hispanic**	**American Indian or Alaska Native, Non-Hispanic**	**Total****	**Notes**
Omphalocele	81	33	49	3	0	166	
	1.8	***2.3***	***2.4***	***0.6***	***0.0***	***2.0***	
Pulmonary valve atresia and stenosis	115	46	51	8	0	220	
	2.6	***3.2***	***2.5***	***1.7***	***0.0***	***2.6***	
Pulmonary valve atresia	21	10	13	2	0	46	
	0.5	***0.7***	***0.6***	***0.4***	***0.0***	***0.5***	
Rectal and large intestinal atresia/stenosis	139	58	74	19	0	291	
	3.1	***4.0***	***3.7***	***4.0***	***0.0***	***3.4***	
Renal agenesis/hypoplasia	211	67	98	20	0	396	
	4.7	***4.6***	***4.9***	***4.2***	***0.0***	***4.7***	
Single ventricle	20	5	5	1	0	31	
	0.4	***0.3***	***0.2***	***0.2***	***0.0***	***0.4***	
Small intestinal atresia/stenosis	62	19	44	9	0	134	
	1.4	***1.3***	***2.2***	***1.9***	***0.0***	***1.6***	
Spina bifida without anencephalus	123	24	65	13	0	227	
	2.8	***1.6***	***3.2***	***2.7***	***0.0***	***2.7***	
Tetralogy of Fallot	135	50	59	17	0	262	
	3.0	***3.4***	***2.9***	***3.6***	***0.0***	***3.1***	
Total anomalous pulmonary venous connection	26	11	28	3	0	68	
	0.6	***0.8***	***1.4***	***0.6***	***0.0***	***0.8***	
Transposition of the great arteries (TGA)	114	24	45	10	0	193	
	2.6	***1.6***	***2.2***	***2.1***	***0.0***	***2.3***	
Dextro-transposition of great arteries (d-TGA)	95	22	35	10	0	162	
	2.1	***1.5***	***1.7***	***2.1***	***0.0***	***1.9***	
Tricuspid valve atresia and stenosis	73	29	37	6	1	146	2
	1.6	***2.0***	***1.8***	***1.3***	***10.6***	***1.7***	
Tricuspid valve atresia	66	24	27	6	1	124	3
	1.5	***1.6***	***1.3***	***1.3***	***10.6***	***1.5***	
Trisomy 13	70	21	31	4	0	132	
	1.6	***1.4***	***1.5***	***0.8***	***0.0***	***1.6***	
Trisomy 18	75	29	46	7	0	173	
	1.7	***2.0***	***2.3***	***1.5***	***0.0***	***2.0***	
Trisomy 21 (Down syndrome)	585	128	314	42	1	1073	
	13.1	***8.8***	***15.7***	***8.9***	***10.6***	***12.7***	
Turner syndrome	26	3	20	1	0	50	
	0.6	***0.2***	***1.0***	***0.2***	***0.0***	***0.6***	
Ventricular septal defect	1820	471	817	146	2	3269	4
	40.7	***32.3***	***40.8***	***30.8***	***21.3***	***38.6***	
Total live births	**446701**	**146003**	**200024**	**47388**	**941**	**847854**	
Male live births	**229296**	**74208**	**101678**	**24358**	**494**	**433523**	

*Hypospadias prevalence per 10,000 male live births
**Total includes unknown and other maternal race/ethnicity

Illinois

Trisomy Counts and Prevalence by Maternal Age 2007 - 2011 (Prevalence per 10,000 Live Births)

	Maternal Age (years)			
Defect	**Less than 35**	**35+**	**Total**	**Notes**
Trisomy 13	75	57	132	
	1.0	***4.3***	***1.6***	
Trisomy 18	63	110	173	
	0.9	***8.3***	***2.0***	
Trisomy 21 (Down syndrome)	491	582	1073	
	6.9	***43.7***	***12.7***	
Total live births	**714601**	**133201**	**847854**	

**Total includes unknown maternal age

Notes
1.Includes inlet ventricular septal defects (VSD) including common atrioventricular canal type VSD.
2.Includes cases with tricuspid stenosis or hypoplasia.
3.Does not include cases with tricuspid stenosis or hypoplasia.
4.Includes probable cases and excludes inlet ventricular septal defects (VSD) including common atrioventricular canal type VSD.

General comments
-2010 and 2011 birth (denominator) data are provisional.
-Data for conditions include live births from birth to age 2 years and fetal deaths.
-Fetal deaths include stillbirths of 20 weeks gestation or more and miscarriages where the families chose to hold funerals.
-NCHS bridged race data were not available. Multiple-race individuals are included in the other/unknown category.
-State only reports live births and fetal deaths.

Iowa
Birth Defects Counts and Prevalence 2007 - 2011 (Prevalence per 10,000 Live Births)

	Maternal Race/Ethnicity						
Defect	**White, Non-Hispanic**	**Black, Non-Hispanic**	**Hispanic**	**Asian or Pacific Islander, Non-Hispanic**	**American Indian or Alaska Native, Non-Hispanic**	**Total****	**Notes**
Anencephalus	48	4	8	1	0	63	
	2.9	***4.7***	***4.9***	***2.0***	***0.0***	***3.2***	
Anophthalmia/microphthalmia	32	2	5	4	1	44	
	1.9	***2.4***	***3.1***	***7.9***	***10.4***	***2.2***	
Anotia/microtia	33	1	11	0	0	47	
	2.0	***1.2***	***6.8***	***0.0***	***0.0***	***2.4***	
Aortic valve stenosis	52	1	2	3	1	59	
	3.2	***1.2***	***1.2***	***6.0***	***10.4***	***3.0***	
Atrial septal defect	505	40	49	9	5	610	
	30.6	***47.3***	***30.1***	***17.9***	***52.2***	***30.9***	
Atrioventricular septal defect (Endocardial cushion defect)	101	7	14	2	0	124	
	6.1	***8.3***	***8.6***	***4.0***	***0.0***	***6.3***	
Biliary atresia	7	1	1	0	0	9	
	0.4	***1.2***	***0.6***	***0.0***	***0.0***	***0.5***	
Bladder exstrophy	3	0	0	0	0	3	
	0.2	***0.0***	***0.0***	***0.0***	***0.0***	***0.2***	
Choanal atresia	29	1	0	1	0	31	
	1.8	***1.2***	***0.0***	***2.0***	***0.0***	***1.6***	
Cleft lip alone	73	4	4	2	1	84	
	4.4	***4.7***	***2.5***	***4.0***	***10.4***	***4.3***	
Cleft lip with cleft palate	90	7	12	6	1	116	
	5.5	***8.3***	***7.4***	***11.9***	***10.4***	***5.9***	
Cleft palate alone	117	3	8	4	1	133	
	7.1	***3.5***	***4.9***	***7.9***	***10.4***	***6.7***	
Cloacal exstrophy	3	0	1	0	0	4	
	0.2	***0.0***	***0.6***	***0.0***	***0.0***	***0.2***	
Clubfoot	265	22	27	9	2	329	
	16.1	***26.0***	***16.6***	***17.9***	***20.9***	***16.7***	
Coarctation of the aorta	99	3	11	1	1	115	
	6.0	***3.5***	***6.8***	***2.0***	***10.4***	***5.8***	
Common truncus (truncus arteriosus)	6	0	0	1	0	7	
	0.4	***0.0***	***0.0***	***2.0***	***0.0***	***0.4***	
Congenital cataract	42	2	5	3	1	54	
	2.5	***2.4***	***3.1***	***6.0***	***10.4***	***2.7***	
Congenital posterior urethral valves	18	2	1	2	1	24	
	1.1	***2.4***	***0.6***	***4.0***	***10.4***	***1.2***	
Craniosynostosis	130	4	9	4	0	148	
	7.9	***4.7***	***5.5***	***7.9***	***0.0***	***7.5***	
Deletion 22q11.2	20	2	0	0	0	22	
	1.2	***2.4***	***0.0***	***0.0***	***0.0***	***1.1***	
Diaphragmatic hernia	42	5	6	2	0	55	
	2.5	***5.9***	***3.7***	***4.0***	***0.0***	***2.8***	
Double outlet right ventricle	26	3	4	0	0	34	
	1.6	***3.5***	***2.5***	***0.0***	***0.0***	***1.7***	
Ebstein anomaly	19	0	1	1	0	21	
	1.2	***0.0***	***0.6***	***2.0***	***0.0***	***1.1***	
Encephalocele	17	1	1	0	0	20	
	1.0	***1.2***	***0.6***	***0.0***	***0.0***	***1.0***	
Esophageal atresia/tracheoesophageal fistula	47	0	3	1	0	51	
	2.8	***0.0***	***1.8***	***2.0***	***0.0***	***2.6***	
Gastroschisis	88	9	17	3	4	121	
	5.3	***10.6***	***10.5***	***6.0***	***41.8***	***6.1***	
Holoprosencephaly	24	4	5	0	0	33	
	1.5	***4.7***	***3.1***	***0.0***	***0.0***	***1.7***	
Hypoplastic left heart syndrome	46	3	5	1	0	55	
	2.8	***3.5***	***3.1***	***2.0***	***0.0***	***2.8***	
Hypospadias*	513	19	26	6	0	565	
	60.8	***43.5***	***31.7***	***23.6***	***0.0***	***56.0***	
Interrupted aortic arch	7	1	0	0	0	8	
	0.4	***1.2***	***0.0***	***0.0***	***0.0***	***0.4***	

Iowa
Birth Defects Counts and Prevalence 2007 - 2011 (Prevalence per 10,000 Live Births)

	Maternal Race/Ethnicity						
Defect	**White, Non-Hispanic**	**Black, Non-Hispanic**	**Hispanic**	**Asian or Pacific Islander, Non-Hispanic**	**American Indian or Alaska Native, Non-Hispanic**	**Total****	**Notes**
Limb deficiencies (reduction defects)	90	13	14	5	0	122	
	5.5	***15.4***	***8.6***	***9.9***	***0.0***	***6.2***	
Omphalocele	42	2	3	1	0	49	
	2.5	***2.4***	***1.8***	***2.0***	***0.0***	***2.5***	
Pulmonary valve atresia and stenosis	210	12	16	9	1	249	
	12.7	***14.2***	***9.8***	***17.9***	***10.4***	***12.6***	
Pulmonary valve atresia	21	1	2	0	0	24	
	1.3	***1.2***	***1.2***	***0.0***	***0.0***	***1.2***	
Rectal and large intestinal atresia/stenosis	77	4	13	2	0	96	
	4.7	***4.7***	***8.0***	***4.0***	***0.0***	***4.9***	
Renal agenesis/hypoplasia	103	3	9	5	0	121	
	6.2	***3.5***	***5.5***	***9.9***	***0.0***	***6.1***	
Single ventricle	11	3	0	0	0	14	
	0.7	***3.5***	***0.0***	***0.0***	***0.0***	***0.7***	
Small intestinal atresia/stenosis	53	2	12	1	0	69	
	3.2	***2.4***	***7.4***	***2.0***	***0.0***	***3.5***	
Spina bifida without anencephalus	61	6	14	1	1	84	
	3.7	***7.1***	***8.6***	***2.0***	***10.4***	***4.3***	
Tetralogy of Fallot	63	4	5	1	1	75	
	3.8	***4.7***	***3.1***	***2.0***	***10.4***	***3.8***	
Total anomalous pulmonary venous connection	16	0	3	0	0	19	
	1.0	***0.0***	***1.8***	***0.0***	***0.0***	***1.0***	
Transposition of the great arteries (TGA)	58	2	7	3	0	71	1
	3.5	***2.4***	***4.3***	***6.0***	***0.0***	***3.6***	
Dextro-transposition of great arteries (d-TGA)	52	1	6	3	0	62	
	3.2	***1.2***	***3.7***	***6.0***	***0.0***	***3.1***	
Tricuspid valve atresia and stenosis	48	2	6	0	1	57	
	2.9	***2.4***	***3.7***	***0.0***	***10.4***	***2.9***	
Tricuspid valve atresia	10	0	3	0	0	13	
	0.6	***0.0***	***1.8***	***0.0***	***0.0***	***0.7***	
Trisomy 13	25	0	4	1	0	33	
	1.5	***0.0***	***2.5***	***2.0***	***0.0***	***1.7***	
Trisomy 18	52	6	6	3	0	67	
	3.2	***7.1***	***3.7***	***6.0***	***0.0***	***3.4***	
Trisomy 21 (Down syndrome)	201	12	37	7	0	263	
	12.2	***14.2***	***22.8***	***13.9***	***0.0***	***13.3***	
Turner syndrome	39	5	4	1	0	50	
	2.4	***5.9***	***2.5***	***2.0***	***0.0***	***2.5***	
Ventricular septal defect	944	40	93	23	8	1110	2
	57.2	***47.3***	***57.2***	***45.7***	***83.6***	***56.2***	
Total live births	**164960**	**8454**	**16253**	**5033**	**957**	**197436**	
Male live births	**84396**	**4365**	**8199**	**2539**	**480**	**100860**	

*Hypospadias prevalence per 10,000 male live births
**Total includes unknown and other maternal race/ethnicity

Iowa

Trisomy Counts and Prevalence by Maternal Age 2007 - 2011 (Prevalence per 10,000 Live Births)

	Maternal Age (years)			
Defect	**Less than 35**	**35+**	**Total**	**Notes**
Trisomy 13	23	10	33	
	1.3	***4.8***	***1.7***	
Trisomy 18	43	24	67	
	2.4	***11.4***	***3.4***	
Trisomy 21 (Down syndrome)	139	123	263	
	7.9	***58.5***	***13.3***	
Total live births	**176418**	**21010**	**197436**	

**Total includes unknown maternal age

Notes
1.Excluded codes 745.185, 745.186, 745.188, 745.189, as they are used for DORV (per IRCID code manual).
2.Probable cases are excluded as well as code 745.487.

General comments
-Iowa includes all gestational ages for terminations.
-Iowa uses CDC/BPA codes that are provided for the NBPDS study.
-Iowa uses modified coding for choanal atresia, cloacal exstrophy, craniosynostosis, deletion 22 q11, diaphragmatic hernia, double outlet right ventricle, and limb deficiencies (reduction defects). Please contact Iowa Registry for Congenital Inherited Diseases (IRCID) for further information.
-Stillbirths are defined as greater than or equal to 20 weeks gestation and/or greater than or equal to 350 gram birthweight.
-The unspecified non-livebirth category includes spontaneous abortions.

Kansas

Birth Defects Counts and Prevalence 2007 - 2011 (Prevalence per 10,000 Live Births)

	Maternal Race/Ethnicity						
Defect	White, Non-Hispanic	Black, Non-Hispanic	Hispanic	Asian or Pacific Islander, Non-Hispanic	American Indian or Alaska Native, Non-Hispanic	Total**	Notes
Anencephalus	33	<5	16	<5	<5	53	
	2.3	***.***	***4.9***	***.***	***.***	***2.7***	
Anotia/microtia	<5	0	6	0	0	7	
	.	***0.0***	***1.8***	***0.0***	***0.0***	***0.4***	
Aortic valve stenosis	<5	0	<5	0	0	<5	
	.	***0.0***	***.***	***0.0***	***0.0***	***.***	
Atrial septal defect	144	22	70	<5	<5	445	
	10.2	***15.9***	***21.5***	***.***	***.***	***22.4***	
Atrioventricular septal defect (Endocardial cushion defect)	12	<5	<5	0	0	18	
	0.9	***.***	***.***	***0.0***	***0.0***	***0.9***	
Choanal atresia	6	0	<5	0	0	12	
	0.4	***0.0***	***.***	***0.0***	***0.0***	***0.6***	
Cleft lip alone	11	0	<5	0	0	22	
	0.8	***0.0***	***.***	***0.0***	***0.0***	***1.1***	
Cleft lip with cleft palate	30	<5	8	0	0	49	
	2.1	***.***	***2.5***	***0.0***	***0.0***	***2.5***	
Cleft palate alone	49	<5	25	<5	<5	90	
	3.5	***.***	***7.7***	***.***	***.***	***4.5***	
Cloacal exstrophy	12	<5	<5	<5	0	21	
	0.9	***.***	***.***	***.***	***0.0***	***1.1***	
Clubfoot	96	9	22	<5	0	152	
	6.8	***6.5***	***6.8***	***.***	***0.0***	***7.7***	
Coarctation of the aorta	6	0	<5	0	0	21	
	0.4	***0.0***	***.***	***0.0***	***0.0***	***1.1***	
Common truncus (truncus arteriosus)	<5	0	0	0	0	<5	
	.	***0.0***	***0.0***	***0.0***	***0.0***	***.***	
Congenital cataract	<5	0	<5	0	0	<5	
	.	***0.0***	***.***	***0.0***	***0.0***	***.***	
Congenital posterior urethral valves	6	0	<5	0	0	7	
	0.4	***0.0***	***.***	***0.0***	***0.0***	***0.4***	
Diaphragmatic hernia	14	<5	8	<5	0	28	
	1.0	***.***	***2.5***	***.***	***0.0***	***1.4***	
Double outlet right ventricle	<5	<5	<5	0	0	8	
	.	***.***	***.***	***0.0***	***0.0***	***0.4***	
Encephalocele	6	0	<5	0	0	8	
	0.4	***0.0***	***.***	***0.0***	***0.0***	***0.4***	
Esophageal atresia/tracheoesophageal fistula	9	0	<5	0	0	17	
	0.6	***0.0***	***.***	***0.0***	***0.0***	***0.9***	
Gastroschisis	64	<5	11	0	0	88	
	4.5	***.***	***3.4***	***0.0***	***0.0***	***4.4***	
Holoprosencephaly	23	<5	9	<5	0	46	
	1.6	***.***	***2.8***	***.***	***0.0***	***2.3***	
Hypoplastic left heart syndrome	9	0	5	<5	0	23	
	0.6	***0.0***	***1.5***	***.***	***0.0***	***1.2***	
Hypospadias*	145	14	20	<5	<5	229	
	20.1	***20.0***	***12.0***	***.***	***.***	***22.6***	
Interrupted aortic arch	0	<5	<5	0	0	<5	
	0.0	***.***	***.***	***0.0***	***0.0***	***.***	
Limb deficiencies (reduction defects)	46	<5	14	<5	0	78	
	3.3	***.***	***4.3***	***.***	***0.0***	***3.9***	
Omphalocele	28	<5	5	<5	0	42	
	2.0	***.***	***1.5***	***.***	***0.0***	***2.1***	
Pulmonary valve atresia and stenosis	17	<5	5	0	0	38	
	1.2	***.***	***1.5***	***0.0***	***0.0***	***1.9***	
Rectal and large intestinal atresia/stenosis	11	<5	12	<5	0	37	
	0.8	***.***	***3.7***	***.***	***0.0***	***1.9***	
Renal agenesis/hypoplasia	14	<5	6	0	0	28	
	1.0	***.***	***1.8***	***0.0***	***0.0***	***1.4***	
Small intestinal atresia/stenosis	16	0	<5	<5	0	28	
	1.1	***0.0***	***.***	***.***	***0.0***	***1.4***	

Kansas

Birth Defects Counts and Prevalence 2007 - 2011 (Prevalence per 10,000 Live Births)

	Maternal Race/Ethnicity						
Defect	**White, Non-Hispanic**	**Black, Non-Hispanic**	**Hispanic**	**Asian or Pacific Islander, Non-Hispanic**	**American Indian or Alaska Native, Non-Hispanic**	**Total****	**Notes**
Spina bifida without anencephalus	31	<5	13	<5	0	61	
	2.2	**.**	***4.0***	**.**	***0.0***	***3.1***	
Tetralogy of Fallot	9	0	<5	0	0	17	
	0.6	***0.0***	**.**	***0.0***	***0.0***	***0.9***	
Total anomalous pulmonary venous connection	<5	0	0	0	0	<5	
	.	***0.0***	***0.0***	***0.0***	***0.0***	**.**	
Transposition of the great arteries (TGA)	14	<5	<5	<5	0	21	
	1.0	**.**	**.**	**.**	***0.0***	***1.1***	
Tricuspid valve atresia and stenosis	<5	<5	<5	0	0	5	
	.	**.**	**.**	***0.0***	***0.0***	***0.3***	
Trisomy 13	<5	<5	<5	<5	0	12	
	.	**.**	**.**	**.**	***0.0***	***0.6***	
Trisomy 18	17	<5	7	0	0	26	
	1.2	**.**	***2.2***	***0.0***	***0.0***	***1.3***	
Trisomy 21 (Down syndrome)	133	5	46	8	<5	219	
	9.4	***3.6***	***14.1***	***14.1***	**.**	***11.0***	
Turner syndrome	9	<5	<5	0	0	13	
	0.6	**.**	**.**	***0.0***	***0.0***	***0.7***	
Ventricular septal defect	106	9	61	<5	<5	270	
	7.5	***6.5***	***18.7***	**.**	**.**	***13.6***	
Total live births	**141135**	**13800**	**32549**	**5678**	**1119**	**198340**	
Male live births	**72282**	**6989**	**16602**	**2957**	**548**	**101454**	

*Hypospadias prevalence per 10,000 male live births
**Total includes unknown and other maternal race/ethnicity

Kansas

Trisomy Counts and Prevalence by Maternal Age 2007 - 2011 (Prevalence per 10,000 Live Births)

	Maternal Age (years)			
Defect	**Less than 35**	**35+**	**Total**	**Notes**
Trisomy 13	7	<5	12	
	0.4	***.***	***0.6***	
Trisomy 18	15	11	26	
	0.8	***5.3***	***1.3***	
Trisomy 21 (Down syndrome)	121	89	219	
	6.8	***42.9***	***11.0***	
Total live births	**177595**	**20729**	**198340**	

**Total includes unknown maternal age

General comments

-Abortions (induced terminations of pregnancy) are defined as the purposeful interruption of pregnancy with the intention other than to produce a live-born infant or to remove a dead fetus and which does not result in a live birth. Kansas collects information on birth defects only for live births and fetal deaths/stillbirths.

-Kansas does not formally provide Critical Congenital Heart Defect (CCHD) screening. No data is available for Dextro-transposition of great arteries (d-TGA), Pulmonary valve atresia, or Tricuspid valve atresia.

-Passive case-finding (without case confirmation); all are probable cases; include In-state resident births only.

-Stillbirth means any complete expulsion or extraction from its mother of a human child the gestational age of which is not less than 20 completed weeks, resulting in other than a live birth, as defined in this section, and which is not an induced termination of pregnancy.

-Unspecified non live births definition: not applicable

Kentucky

Birth Defects Counts and Prevalence 2007 - 2011 (Prevalence per 10,000 Live Births)

	Maternal Race/Ethnicity						
Defect	**White, Non-Hispanic**	**Black, Non-Hispanic**	**Hispanic**	**Asian or Pacific Islander, Non-Hispanic**	**American Indian or Alaska Native, Non-Hispanic**	**Total****	**Notes**
Anencephalus	30	3	2	0	0	42	
	1.3	***1.2***	***1.4***	***0.0***	***0.0***	***1.5***	
Anophthalmia/microphthalmia	9	0	0	0	0	11	
	0.4	***0.0***	***0.0***	***0.0***	***0.0***	***0.4***	
Anotia/microtia	4	1	0	0	0	8	
	0.2	***0.4***	***0.0***	***0.0***	***0.0***	***0.3***	
Aortic valve stenosis	17	3	1	0	0	24	
	0.7	***1.2***	***0.7***	***0.0***	***0.0***	***0.9***	
Atrial septal defect	3356	741	191	48	3	5220	
	144.9	***291.7***	***132.8***	***163.4***	***92.3***	***187.0***	
Atrioventricular septal defect (Endocardial cushion defect)	28	3	0	0	0	35	
	1.2	***1.2***	***0.0***	***0.0***	***0.0***	***1.3***	
Biliary atresia	8	0	1	0	0	9	
	0.3	***0.0***	***0.7***	***0.0***	***0.0***	***0.3***	
Bladder exstrophy	2	0	0	0	0	5	
	0.1	***0.0***	***0.0***	***0.0***	***0.0***	***0.2***	
Choanal atresia	13	0	0	1	0	17	
	0.6	***0.0***	***0.0***	***3.4***	***0.0***	***0.6***	
Cleft lip alone	30	9	2	1	0	54	
	1.3	***3.5***	***1.4***	***3.4***	***0.0***	***1.9***	
Cleft lip with cleft palate	113	12	5	0	1	157	
	4.9	***4.7***	***3.5***	***0.0***	***30.8***	***5.6***	
Cleft palate alone	81	9	1	3	0	123	
	3.5	***3.5***	***0.7***	***10.2***	***0.0***	***4.4***	
Cloacal exstrophy	54	11	1	2	0	72	
	2.3	***4.3***	***0.7***	***6.8***	***0.0***	***2.6***	
Clubfoot	222	35	13	3	0	289	
	9.6	***13.8***	***9.0***	***10.2***	***0.0***	***10.4***	
Coarctation of the aorta	73	5	2	0	0	93	
	3.2	***2.0***	***1.4***	***0.0***	***0.0***	***3.3***	
Common truncus (truncus arteriosus)	4	0	0	0	0	4	
	0.2	***0.0***	***0.0***	***0.0***	***0.0***	***0.1***	
Congenital cataract	11	3	1	0	0	16	
	0.5	***1.2***	***0.7***	***0.0***	***0.0***	***0.6***	
Congenital posterior urethral valves	14	0	0	0	0	20	
	0.6	***0.0***	***0.0***	***0.0***	***0.0***	***0.7***	
Deletion 22q11.2	5	0	0	0	0	6	
	0.2	***0.0***	***0.0***	***0.0***	***0.0***	***0.2***	
Diaphragmatic hernia	37	5	2	1	0	50	
	1.6	***2.0***	***1.4***	***3.4***	***0.0***	***1.8***	
Double outlet right ventricle	15	3	0	0	0	23	
	0.6	***1.2***	***0.0***	***0.0***	***0.0***	***0.8***	
Ebstein anomaly	8	0	0	0	0	8	
	0.3	***0.0***	***0.0***	***0.0***	***0.0***	***0.3***	
Encephalocele	11	3	0	0	0	18	
	0.5	***1.2***	***0.0***	***0.0***	***0.0***	***0.6***	
Esophageal atresia/tracheoesophageal fistula	23	2	3	0	0	35	
	1.0	***0.8***	***2.1***	***0.0***	***0.0***	***1.3***	
Gastroschisis	18	1	3	0	0	38	1
	2.0	***1.1***	***5.4***	***0.0***	***0.0***	***3.5***	
Holoprosencephaly	45	6	2	3	0	60	
	1.9	***2.4***	***1.4***	***10.2***	***0.0***	***2.1***	
Hypoplastic left heart syndrome	27	3	1	0	0	46	
	1.2	***1.2***	***0.7***	***0.0***	***0.0***	***1.6***	
Hypospadias*	822	101	28	4	1	1112	
	69.2	***78.4***	***38.5***	***26.8***	***63.3***	***77.8***	
Interrupted aortic arch	0	1	0	0	0	2	
	0.0	***0.4***	***0.0***	***0.0***	***0.0***	***0.1***	
Limb deficiencies (reduction defects)	50	8	2	1	1	81	
	2.2	***3.1***	***1.4***	***3.4***	***30.8***	***2.9***	

Kentucky

Birth Defects Counts and Prevalence 2007 - 2011 (Prevalence per 10,000 Live Births)

	Maternal Race/Ethnicity						
Defect	**White, Non-Hispanic**	**Black, Non-Hispanic**	**Hispanic**	**Asian or Pacific Islander, Non-Hispanic**	**American Indian or Alaska Native, Non-Hispanic**	**Total****	**Notes**
Omphalocele	5	0	0	0	0	12	1
	0.6	***0.0***	***0.0***	***0.0***	***0.0***	***1.1***	
Pulmonary valve atresia and stenosis	78	14	6	0	0	123	
	3.4	***5.5***	***4.2***	***0.0***	***0.0***	***4.4***	
Pulmonary valve atresia	8	1	0	0	0	13	
	0.3	***0.4***	***0.0***	***0.0***	***0.0***	***0.5***	
Rectal and large intestinal atresia/stenosis	62	7	5	2	0	85	
	2.7	***2.8***	***3.5***	***6.8***	***0.0***	***3.0***	
Renal agenesis/hypoplasia	76	8	2	5	0	107	
	3.3	***3.1***	***1.4***	***17.0***	***0.0***	***3.8***	
Single ventricle	7	1	0	0	0	8	
	0.3	***0.4***	***0.0***	***0.0***	***0.0***	***0.3***	
Small intestinal atresia/stenosis	36	7	4	0	0	55	
	1.6	***2.8***	***2.8***	***0.0***	***0.0***	***2.0***	
Spina bifida without anencephalus	71	9	6	0	0	105	
	3.1	***3.5***	***4.2***	***0.0***	***0.0***	***3.8***	
Tetralogy of Fallot	41	10	1	0	0	63	
	1.8	***3.9***	***0.7***	***0.0***	***0.0***	***2.3***	
Total anomalous pulmonary venous connection	4	1	0	0	0	6	
	0.2	***0.4***	***0.0***	***0.0***	***0.0***	***0.2***	
Transposition of the great arteries (TGA)	22	1	0	0	0	30	
	0.9	***0.4***	***0.0***	***0.0***	***0.0***	***1.1***	
Dextro-transposition of great arteries (d-TGA)	14	1	0	0	0	19	
	0.6	***0.4***	***0.0***	***0.0***	***0.0***	***0.7***	
Tricuspid valve atresia and stenosis	14	1	1	0	0	19	
	0.6	***0.4***	***0.7***	***0.0***	***0.0***	***0.7***	
Tricuspid valve atresia	14	1	1	0	0	19	
	0.6	***0.4***	***0.7***	***0.0***	***0.0***	***0.7***	
Trisomy 13	7	1	0	0	0	9	
	0.3	***0.4***	***0.0***	***0.0***	***0.0***	***0.3***	
Trisomy 18	11	3	2	0	0	22	
	0.5	***1.2***	***1.4***	***0.0***	***0.0***	***0.8***	
Trisomy 21 (Down syndrome)	183	27	17	0	1	248	
	7.9	***10.6***	***11.8***	***0.0***	***30.8***	***8.9***	
Turner syndrome	12	3	0	0	0	17	
	0.5	***1.2***	***0.0***	***0.0***	***0.0***	***0.6***	
Ventricular septal defect	479	61	40	7	1	700	
	20.7	***24.0***	***27.8***	***23.8***	***30.8***	***25.1***	
Total live births	**231650**	**25399**	**14379**	**2937**	**325**	**279188**	
Male live births	**118822**	**12885**	**7282**	**1494**	**158**	**142968**	

*Hypospadias prevalence per 10,000 male live births
**Total includes unknown and other maternal race/ethnicity

Kentucky

Trisomy Counts and Prevalence by Maternal Age 2007 - 2011 (Prevalence per 10,000 Live Births)

	Maternal Age (years)			
Defect	**Less than 35**	**35+**	**Total**	**Notes**
Trisomy 13	7	1	9	
	0.3	***0.4***	***0.3***	
Trisomy 18	13	5	24	
	0.5	***1.9***	***0.9***	
Trisomy 21 (Down syndrome)	137	92	248	
	5.4	***35.7***	***8.9***	
Total live births	**251606**	**25770**	**279188**	

**Total includes unknown maternal age

Notes
1.Cannot distinguish between Gastroschisis and Omphalocele prior to 2009, therefore cases are only reported for the years 2010-2011.

General comments
-For total livebirths and total male live births if ethnicity was unknown then race was considered unknown

Louisiana

Birth Defects Counts and Prevalence 2007 - 2010 (Prevalence per 10,000 Live Births)

	Maternal Race/Ethnicity						
Defect	White, Non-Hispanic	Black, Non-Hispanic	Hispanic	Asian or Pacific Islander, Non-Hispanic	American Indian or Alaska Native, Non-Hispanic	Total**	Notes
Anencephalus	8	5	0	0	0	13	
	1.0	***0.9***	***0.0***	***0.0***	***0.0***	***0.9***	
Anophthalmia/microphthalmia	8	<5	0	0	0	12	
	1.0	***.***	***0.0***	***0.0***	***0.0***	***0.8***	
Anotia/microtia	5	0	<5	0	0	8	
	0.7	***0.0***	***.***	***0.0***	***0.0***	***0.6***	
Aortic valve stenosis	11	10	0	<5	0	22	
	1.4	***1.8***	***0.0***	***.***	***0.0***	***1.5***	
Atrial septal defect	428	341	33	15	<5	823	
	56.2	***60.2***	***45.6***	***59.9***	***.***	***57.3***	
Atrioventricular septal defect (Endocardial cushion defect)	41	18	<5	<5	0	66	
	5.4	***3.2***	***.***	***.***	***0.0***	***4.6***	
Biliary atresia	11	7	<5	<5	0	20	
	1.4	***1.2***	***.***	***.***	***0.0***	***1.4***	
Bladder exstrophy	5	<5	0	0	<5	7	
	0.7	***.***	***0.0***	***0.0***	***.***	***0.5***	
Choanal atresia	14	<5	<5	0	0	19	
	2.0	***.***	***.***	***0.0***	***0.0***	***1.5***	
Cleft lip alone	28	10	<5	<5	0	40	
	3.7	***1.8***	***.***	***.***	***0.0***	***2.8***	
Cleft lip with cleft palate	44	21	8	<5	<5	75	
	5.8	***3.7***	***11.1***	***.***	***.***	***5.2***	
Cleft palate alone	42	35	<5	<5	0	81	
	5.5	***6.2***	***.***	***.***	***0.0***	***5.6***	
Clubfoot	<5	<5	0	0	0	<5	
	.	***.***	***0.0***	***0.0***	***0.0***	***.***	
Coarctation of the aorta	31	21	<5	<5	0	55	
	4.1	***3.7***	***.***	***.***	***0.0***	***3.8***	
Common truncus (truncus arteriosus)	10	<5	0	<5	0	15	
	1.4	***.***	***0.0***	***.***	***0.0***	***1.1***	
Congenital cataract	9	8	<5	0	0	18	
	1.2	***1.4***	***.***	***0.0***	***0.0***	***1.3***	
Congenital posterior urethral valves	20	13	<5	0	0	34	
	2.6	***2.3***	***.***	***0.0***	***0.0***	***2.4***	
Deletion 22q11.2	<5	<5	0	<5	0	5	
	.	***.***	***0.0***	***.***	***0.0***	***0.4***	
Diaphragmatic hernia	19	10	5	0	0	34	
	2.5	***1.8***	***6.9***	***0.0***	***0.0***	***2.4***	
Ebstein anomaly	7	<5	<5	0	0	12	
	1.0	***.***	***.***	***0.0***	***0.0***	***0.9***	
Encephalocele	5	8	<5	0	0	14	
	0.7	***1.5***	***.***	***0.0***	***0.0***	***1.1***	
Esophageal atresia/tracheoesophageal fistula	16	10	<5	<5	0	29	
	2.1	***1.8***	***.***	***.***	***0.0***	***2.0***	
Gastroschisis	36	17	0	0	0	53	
	4.7	***3.0***	***0.0***	***0.0***	***0.0***	***3.7***	
Holoprosencephaly	<5	<5	<5	0	0	<5	
	.	***.***	***.***	***0.0***	***0.0***	***.***	
Hypoplastic left heart syndrome	10	10	<5	0	<5	22	
	1.4	***1.9***	***.***	***0.0***	***.***	***1.7***	
Hypospadias*	352	175	15	<5	<5	549	
	90.3	***60.6***	***40.9***	***.***	***.***	***74.9***	
Interrupted aortic arch	<5	<5	0	0	0	<5	
	.	***.***	***0.0***	***0.0***	***0.0***	***.***	
Limb deficiencies (reduction defects)	20	25	<5	0	0	46	
	2.6	***4.4***	***.***	***0.0***	***0.0***	***3.2***	
Omphalocele	12	13	<5	0	<5	28	
	1.7	***2.5***	***.***	***0.0***	***.***	***2.1***	
Pulmonary valve atresia and stenosis	46	45	<5	<5	<5	98	
	6.0	***7.9***	***.***	***.***	***.***	***6.8***	

Louisiana

Birth Defects Counts and Prevalence 2007 - 2010 (Prevalence per 10,000 Live Births)

	Maternal Race/Ethnicity						
Defect	**White, Non-Hispanic**	**Black, Non-Hispanic**	**Hispanic**	**Asian or Pacific Islander, Non-Hispanic**	**American Indian or Alaska Native, Non-Hispanic**	**Total****	**Notes**
Pulmonary valve atresia	7	6	0	0	0	13	
	0.9	***1.1***	***0.0***	***0.0***	***0.0***	***0.9***	
Rectal and large intestinal atresia/stenosis	37	21	<5	<5	<5	64	
	4.9	***3.7***	**.**	**.**	**.**	***4.5***	
Renal agenesis/hypoplasia	39	26	<5	0	<5	67	
	5.1	***4.6***	**.**	***0.0***	**.**	***4.7***	
Small intestinal atresia/stenosis	<5	<5	0	0	0	<5	
	.	**.**	***0.0***	***0.0***	***0.0***	**.**	
Spina bifida without anencephalus	23	11	<5	0	0	36	
	3.0	***1.9***	**.**	***0.0***	***0.0***	***2.5***	
Tetralogy of Fallot	26	31	<5	0	0	59	
	3.4	***5.5***	**.**	***0.0***	***0.0***	***4.1***	
Transposition of the great arteries (TGA)	26	11	<5	<5	<5	41	
	3.4	***1.9***	**.**	**.**	**.**	***2.9***	
Dextro-transposition of great arteries (d-TGA)	22	8	<5	<5	<5	34	
	2.9	***1.4***	**.**	**.**	**.**	***2.4***	
Tricuspid valve atresia and stenosis	<5	<5	<5	<5	<5	8	
	.	**.**	**.**	**.**	**.**	***0.6***	
Tricuspid valve atresia	<5	<5	<5	<5	<5	6	
	.	**.**	**.**	**.**	**.**	***0.4***	
Trisomy 13	6	<5	<5	0	0	10	
	0.8	**.**	**.**	***0.0***	***0.0***	***0.7***	
Trisomy 18	14	9	<5	<5	0	28	
	1.8	***1.6***	**.**	**.**	***0.0***	***1.9***	
Trisomy 21 (Down syndrome)	104	45	10	8	<5	168	
	13.6	***7.9***	***13.8***	***31.9***	**.**	***11.7***	
Turner syndrome	7	<5	0	0	0	8	
	1.4	**.**	***0.0***	***0.0***	***0.0***	***0.9***	
Ventricular septal defect	430	244	30	11	5	721	
	56.4	***43.1***	***41.5***	***43.9***	***73.1***	***50.2***	
Total live births	**76204**	**56622**	**7234**	**2505**	**684**	**143645**	
Male live births	**38980**	**28867**	**3665**	**1307**	**327**	**73343**	

*Hypospadias prevalence per 10,000 male live births
**Total includes unknown and other maternal race/ethnicity

Louisiana

Trisomy Counts and Prevalence by Maternal Age 2007 - 2010 (Prevalence per 10,000 Live Births)

	Maternal Age (years)			
Defect	**Less than 35**	**35+**	**Total**	**Notes**
Trisomy 13	9	<5	10	
	0.7	***.***	***0.7***	
Trisomy 18	19	9	28	
	1.5	***6.8***	***1.9***	
Trisomy 21 (Down syndrome)	95	73	168	
	7.3	***55.4***	***11.7***	
Total live births	**130452**	**13187**	**143645**	

**Total includes unknown maternal age

General comments

-2007 birth defects data include only live births to Louisiana residents at birth that occurred in 6 of 9 regions: Greater New Orleans, Baton Rouge, Lafayette, Lake Charles, Mandeville, and Shreveport.
-2008 birth defects data are provisional and include only live births to Louisiana residents that occurred in 6 of 9 regions: Greater New Orleans, Baton Rouge, Lafayette, Lake Charles, Mandeville, and.
-2009 birth defects data are provisional and include only live births to Louisiana residents that occurred in 4 of 9 regions Baton Rouge, Lake Charles, Mandeville, and Shreveport.
-2010 birth defects data are provisional and include only live births to Louisiana residents that occurred in 2 of 9 regions: Mandeville and Shreveport.
-All probable cases are included.
-CDC/BPA codes are used to define the birth defects.
-Louisiana is an active surveillance state that began identifying births in 2005. Birth defects surveillance has not been conducted among terminations and still births yet.
-The 2011 cohort will not be complete until 12/31/2014 because the LA case definition includes children up to their third birthday.

Maine

Birth Defects Counts and Prevalence 2007 - 2011 (Prevalence per 10,000 Live Births)

	Maternal Race/Ethnicity						
Defect	**White, Non-Hispanic**	**Black, Non-Hispanic**	**Hispanic**	**Asian or Pacific Islander, Non-Hispanic**	**American Indian or Alaska Native, Non-Hispanic**	**Total****	**Notes**
Anencephalus	5	1	0	0	0	10	1
	0.8	***5.5***	***0.0***	***0.0***	***0.0***	***1.5***	
Choanal atresia	1	0	0	0	0	1	2
	0.4	***0.0***	***0.0***	***0.0***	***0.0***	***0.4***	
Cleft lip alone	19	0	0	0	0	19	
	3.1	***0.0***	***0.0***	***0.0***	***0.0***	***2.9***	
Cleft lip with cleft palate	22	1	0	1	1	26	
	3.6	***5.5***	***0.0***	***9.3***	***17.2***	***4.0***	
Cleft palate alone	40	0	0	0	2	42	
	6.6	***0.0***	***0.0***	***0.0***	***34.3***	***6.4***	
Coarctation of the aorta	31	0	0	0	0	31	
	5.1	***0.0***	***0.0***	***0.0***	***0.0***	***4.8***	
Common truncus (truncus arteriosus)	7	0	0	0	0	7	3
	1.2	***0.0***	***0.0***	***0.0***	***0.0***	***1.1***	
Encephalocele	2	0	1	0	0	3	
	0.3	***0.0***	***9.9***	***0.0***	***0.0***	***0.5***	
Gastroschisis	43	0	0	2	0	45	4
	7.1	***0.0***	***0.0***	***18.6***	***0.0***	***6.9***	
Hypoplastic left heart syndrome	18	1	1	0	0	22	
	3.0	***5.5***	***9.9***	***0.0***	***0.0***	***3.4***	
Hypospadias*	146	6	3	2	2	159	5
	59.9	***74.5***	***71.9***	***45.4***	***84.7***	***60.3***	
Interrupted aortic arch	7	1	0	0	0	8	6
	1.4	***7.0***	***0.0***	***0.0***	***0.0***	***1.5***	
Limb deficiencies (reduction defects)	8	0	0	0	1	12	5
	1.7	***0.0***	***0.0***	***0.0***	***21.8***	***2.3***	
Omphalocele	13	0	0	0	0	13	7
	2.1	***0.0***	***0.0***	***0.0***	***0.0***	***2.0***	
Pulmonary valve atresia and stenosis	9	0	0	0	0	9	8
	1.5	***0.0***	***0.0***	***0.0***	***0.0***	***1.4***	
Pulmonary valve atresia	4	0	0	0	0	4	
	0.7	***0.0***	***0.0***	***0.0***	***0.0***	***0.6***	
Single ventricle	1	0	0	0	0	1	6
	0.2	***0.0***	***0.0***	***0.0***	***0.0***	***0.2***	
Spina bifida without anencephalus	27	1	0	0	0	29	9
	4.5	***5.5***	***0.0***	***0.0***	***0.0***	***4.4***	
Tetralogy of Fallot	22	0	0	0	0	22	10
	3.6	***0.0***	***0.0***	***0.0***	***0.0***	***3.4***	
Transposition of the great arteries (TGA)	33	0	0	0	0	34	
	5.5	***0.0***	***0.0***	***0.0***	***0.0***	***5.2***	
Dextro-transposition of great arteries (d-TGA)	24	0	0	0	0	25	
	4.0	***0.0***	***0.0***	***0.0***	***0.0***	***3.8***	
Tricuspid valve atresia and stenosis	6	0	0	0	0	6	
	1.0	***0.0***	***0.0***	***0.0***	***0.0***	***0.9***	
Trisomy 21 (Down syndrome)	79	1	3	0	0	89	9
	13.1	***5.5***	***29.6***	***0.0***	***0.0***	***13.7***	
Total live births	**60496**	**1824**	**1013**	**1075**	**583**	**65191**	
Male live births (2008-2011)	**24371**	**805**	**417**	**441**	**236**	**26364**	

*Hypospadias prevalence per 10,000 male live births
**Total includes unknown and other maternal race/ethnicity

Maine

Trisomy Counts and Prevalence by Maternal Age 2007 - 2011 (Prevalence per 10,000 Live Births)

	Maternal Age (years)			
Defect	**Less than 35**	**35+**	**Total**	**Notes**
Trisomy 21 (Down syndrome)	55	34	89	9
	9.8	***38.4***	***13.7***	
Total live births	**56340**	**8851**	**65191**	

**Total includes unknown maternal age

Notes
1.Includes probable cases. Includes live births and fetal deaths 20 weeks and over.
2.Surveillance for this condition began with 2010 births.
3.Truncus arteriosus.
4.Gastroschisis coded 756.73.Cases also abstracted to determine diagnosis.
5.Surveillance for this condition began with 2008 births.
6.Surveillance for this condition ended with 2010 births.
7.Omphalocele coded 756.72.Cases also abstracted to determine diagnosis.
8.Atresia since 2003,surveillance for Stenosis began with 2010 births.
9.Includes live births and fetal deaths 20 weeks and over.
10.Includes pulmonary atresia with septal defect.

General comments
-Casefinding is limited to babies born in Maine to Maine residents.
-Casefinding is limited to birth defects identified within the first year of life.
-Data not collected for unspecified non live births.
-Fetal deaths are defined as those that occur at any gestational age.
-Termination data not available.

Maryland

Birth Defects Counts and Prevalence 2007 - 2011 (Prevalence per 10,000 Live Births)

	Maternal Race/Ethnicity						
Defect	**White, Non-Hispanic**	**Black, Non-Hispanic**	**Hispanic**	**Asian or Pacific Islander, Non-Hispanic**	**American Indian or Alaska Native, Non-Hispanic**	**Total****	**Notes**
Anencephalus	45	16	8	1	0	75	
	2.6	***1.3***	***1.6***	***0.4***	***0.0***	***2.0***	
Anophthalmia/microphthalmia	2	6	1	0	0	9	
	0.1	***0.5***	***0.2***	***0.0***	***0.0***	***0.2***	
Anotia/microtia	6	4	9	2	0	21	
	0.3	***0.3***	***1.8***	***0.7***	***0.0***	***0.6***	
Aortic valve stenosis	3	0	0	0	0	3	
	0.2	***0.0***	***0.0***	***0.0***	***0.0***	***0.1***	
Atrial septal defect	23	20	6	0	0	49	
	1.3	***1.6***	***1.2***	***0.0***	***0.0***	***1.3***	
Atrioventricular septal defect (Endocardial cushion defect)	15	15	3	0	0	33	
	0.9	***1.2***	***0.6***	***0.0***	***0.0***	***0.9***	
Biliary atresia	0	1	0	0	0	1	
	0.0	***0.1***	***0.0***	***0.0***	***0.0***	***0.0***	
Bladder exstrophy	7	2	1	0	0	11	
	0.4	***0.2***	***0.2***	***0.0***	***0.0***	***0.3***	
Choanal atresia	3	4	2	0	0	10	
	0.2	***0.3***	***0.4***	***0.0***	***0.0***	***0.3***	
Cleft lip alone	53	22	10	8	0	97	
	3.1	***1.7***	***2.0***	***3.0***	***0.0***	***2.6***	
Cleft lip with cleft palate	85	32	38	8	0	165	
	4.9	***2.5***	***7.4***	***3.0***	***0.0***	***4.4***	
Cleft palate alone	77	21	10	5	0	118	
	4.5	***1.7***	***2.0***	***1.9***	***0.0***	***3.1***	
Cloacal exstrophy	3	1	0	0	0	4	
	0.2	***0.1***	***0.0***	***0.0***	***0.0***	***0.1***	
Clubfoot	150	80	28	7	1	275	
	8.7	***6.3***	***5.5***	***2.6***	***12.2***	***7.3***	
Coarctation of the aorta	10	5	0	1	0	16	
	0.6	***0.4***	***0.0***	***0.4***	***0.0***	***0.4***	
Common truncus (truncus arteriosus)	1	1	0	0	0	2	
	0.1	***0.1***	***0.0***	***0.0***	***0.0***	***0.1***	
Congenital cataract	2	0	0	0	0	2	
	0.1	***0.0***	***0.0***	***0.0***	***0.0***	***0.1***	
Congenital posterior urethral valves	6	2	0	1	0	9	
	0.3	***0.2***	***0.0***	***0.4***	***0.0***	***0.2***	
Craniosynostosis	16	4	4	1	0	25	
	0.9	***0.3***	***0.8***	***0.4***	***0.0***	***0.7***	
Diaphragmatic hernia	25	11	4	1	0	41	
	1.4	***0.9***	***0.8***	***0.4***	***0.0***	***1.1***	
Double outlet right ventricle	6	8	1	2	0	17	
	0.3	***0.6***	***0.2***	***0.7***	***0.0***	***0.5***	
Ebstein anomaly	5	0	0	0	0	5	
	0.3	***0.0***	***0.0***	***0.0***	***0.0***	***0.1***	
Encephalocele	7	7	1	1	0	17	
	0.4	***0.6***	***0.2***	***0.4***	***0.0***	***0.5***	
Esophageal atresia/tracheoesophageal fistula	25	16	6	2	0	51	
	1.4	***1.3***	***1.2***	***0.7***	***0.0***	***1.4***	
Gastroschisis	4	2	1	0	0	7	1
	0.2	***0.2***	***0.2***	***0.0***	***0.0***	***0.2***	
Holoprosencephaly	26	18	9	3	0	57	
	1.5	***1.4***	***1.8***	***1.1***	***0.0***	***1.5***	
Hypoplastic left heart syndrome	12	6	0	2	0	20	
	0.7	***0.5***	***0.0***	***0.7***	***0.0***	***0.5***	
Hypospadias*	393	255	52	31	0	750	2
	44.5	***40.0***	***19.9***	***22.4***	***.***	***39.0***	
Interrupted aortic arch	1	0	0	0	0	1	
	0.1	***0.0***	***0.0***	***0.0***	***0.0***	***0.0***	
Limb deficiencies (reduction defects)	29	36	17	3	0	88	
	1.7	***2.9***	***3.3***	***1.1***	***0.0***	***2.3***	

Maryland

Birth Defects Counts and Prevalence 2007 - 2011 (Prevalence per 10,000 Live Births)

	Maternal Race/Ethnicity						
Defect	**White, Non-Hispanic**	**Black, Non-Hispanic**	**Hispanic**	**Asian or Pacific Islander, Non-Hispanic**	**American Indian or Alaska Native, Non-Hispanic**	**Total****	**Notes**
Omphalocele	1	0	0	0	0	1	3
	0.1	***0.0***	***0.0***	***0.0***	***0.0***	***0.1***	
Pulmonary valve atresia and stenosis	4	3	0	0	0	7	
	0.2	***0.2***	***0.0***	***0.0***	***0.0***	***0.2***	
Pulmonary valve atresia	2	1	0	0	0	3	
	0.1	***0.1***	***0.0***	***0.0***	***0.0***	***0.1***	
Rectal and large intestinal atresia/stenosis	26	19	7	4	0	57	
	1.5	***1.5***	***1.4***	***1.5***	***0.0***	***1.5***	
Renal agenesis/hypoplasia	44	32	3	3	0	86	
	2.6	***2.5***	***0.6***	***1.1***	***0.0***	***2.3***	
Single ventricle	0	2	1	0	0	3	
	0.0	***0.2***	***0.2***	***0.0***	***0.0***	***0.1***	
Small intestinal atresia/stenosis	20	7	1	2	0	32	
	1.2	***0.6***	***0.2***	***0.7***	***0.0***	***0.8***	
Spina bifida without anencephalus	54	21	9	4	0	90	
	3.1	***1.7***	***1.8***	***1.5***	***0.0***	***2.4***	
Tetralogy of Fallot	17	11	2	4	0	34	
	1.0	***0.9***	***0.4***	***1.5***	***0.0***	***0.9***	
Total anomalous pulmonary venous connection	0	0	0	0	0	1	
	0.0	***0.0***	***0.0***	***0.0***	***0.0***	***0.0***	
Transposition of the great arteries (TGA)	12	9	3	4	0	29	
	0.7	***0.7***	***0.6***	***1.5***	***0.0***	***0.8***	
Dextro-transposition of great arteries (d-TGA)	12	9	3	4	0	29	
	0.7	***0.7***	***0.6***	***1.5***	***0.0***	***0.8***	
Tricuspid valve atresia and stenosis	3	2	0	1	0	6	
	0.2	***0.2***	***0.0***	***0.4***	***0.0***	***0.2***	
Tricuspid valve atresia	3	1	0	1	0	5	
	0.2	***0.1***	***0.0***	***0.4***	***0.0***	***0.1***	
Trisomy 13	19	10	2	1	0	32	
	1.1	***0.8***	***0.4***	***0.4***	***0.0***	***0.8***	
Trisomy 18	38	14	13	5	0	77	
	2.2	***1.1***	***2.5***	***1.9***	***0.0***	***2.0***	
Trisomy 21 (Down syndrome)	167	106	45	23	1	361	
	9.7	***8.4***	***8.8***	***8.6***	***12.2***	***9.6***	
Turner syndrome	9	5	2	2	0	20	
	0.5	***0.4***	***0.4***	***0.7***	***0.0***	***0.5***	
Ventricular septal defect	37	28	5	6	0	76	4
	2.1	***2.2***	***1.0***	***2.2***	***0.0***	***2.0***	
Total live births	**172514**	**125995**	**51215**	**26714**	**822**	**377355**	
Male live births	**88380**	**63771**	**26195**	**13863**	**.**	**192209**	

*Hypospadias prevalence per 10,000 male live births
**Total includes unknown and other maternal race/ethnicity

Maryland

Trisomy Counts and Prevalence by Maternal Age 2007 - 2011 (Prevalence per 10,000 Live Births)

	Maternal Age (years)			
Defect	**Less than 35**	**35+**	**Total**	**Notes**
Trisomy 13	15	17	32	
	0.5	***2.5***	***0.8***	
Trisomy 18	36	40	77	
	1.2	***5.8***	***2.0***	
Trisomy 21 (Down syndrome)	167	192	361	
	5.4	***27.9***	***9.6***	
Total live births	**308214**	**68911**	**377159**	

**Total includes unknown maternal age

Notes

1.The data reported is for ICD 9 code 756.79 (Abdominal Wall Defect). We also added a separate line for 756.7,756.70,756.71 (Anomalies of Abdominal Wall).
2.Male births for American Indian or Alaska Native are not available separately.
3.Omphalocele case reporting was combined with gastroschisis through 2010. In 2011, Maryland began differentiating gastroschisis and omphalocele with separate codes.
4.Ventricular septal defect case reporting includes probable cases.

General comments

-All data is based on hospital reporting through a passive collection system. Data obtained from Vital Statistics does not provide specific diagnosis for validation.
-Any change in numbers from previous reports is due to correction of counts or late data entry.
-Critical Congenital Heart Defect data is based on hospital reporting and can not be validated through Vital Statistics as there is no requirement to specify the cardiac defect on the birth certificate.
-Fetal deaths are those with gestational age less than 20 weeks.
-Infants may be counted more than once, as our database up until May 2013 counts diagnoses, not individuals.
-Maryland Vital Statistics do not have a separate race category for Other/Unknown and because Hispanic category Includes all births to mothers of Hispanic origin of any race, this leads to totals not adding up to the total number of births.
-Terminations are those with gestational age greater than or equal to 20 weeks.
-The total number of births data was received from Vital Statistics. Hispanic category Includes all births to mothers of Hispanic origin of any race.

Massachusetts
Birth Defects Counts and Prevalence 2007 - 2011 (Prevalence per 10,000 Live Births)

	Maternal Race/Ethnicity						
Defect	**White, Non-Hispanic**	**Black, Non-Hispanic**	**Hispanic**	**Asian or Pacific Islander, Non-Hispanic**	**American Indian or Alaska Native, Non-Hispanic**	**Total****	**Notes**
Anencephalus	16	4	9	1	0	34	
	0.6	***1.2***	***1.6***	***0.3***	***0.0***	***0.9***	
Anophthalmia/microphthalmia	27	5	14	3	0	49	
	1.1	***1.5***	***2.5***	***1.0***	***0.0***	***1.3***	
Anotia/microtia	42	2	15	11	0	71	
	1.7	***0.6***	***2.7***	***3.7***	***0.0***	***1.9***	
Aortic valve stenosis	40	7	6	0	0	54	
	1.6	***2.1***	***1.1***	***0.0***	***0.0***	***1.4***	
Atrial septal defect	495	90	113	59	1	771	
	19.9	***26.6***	***20.1***	***20.0***	***11.2***	***20.5***	
Atrioventricular septal defect (Endocardial cushion defect)	127	27	31	10	0	201	
	5.1	***8.0***	***5.5***	***3.4***	***0.0***	***5.3***	
Biliary atresia	14	3	6	4	0	27	
	0.6	***0.9***	***1.1***	***1.4***	***0.0***	***0.7***	
Bladder exstrophy	4	0	1	0	0	5	
	0.2	***0.0***	***0.2***	***0.0***	***0.0***	***0.1***	
Choanal atresia	23	1	4	0	0	29	
	0.9	***0.3***	***0.7***	***0.0***	***0.0***	***0.8***	
Cleft lip alone	85	10	14	14	0	125	
	3.4	***3.0***	***2.5***	***4.7***	***0.0***	***3.3***	
Cleft lip with cleft palate	128	10	36	12	0	194	
	5.1	***3.0***	***6.4***	***4.1***	***0.0***	***5.2***	
Cleft palate alone	148	10	31	13	0	209	1
	6.0	***3.0***	***5.5***	***4.4***	***0.0***	***5.6***	
Cloacal exstrophy	6	1	1	0	0	8	
	0.2	***0.3***	***0.2***	***0.0***	***0.0***	***0.2***	
Clubfoot	315	34	65	18	3	451	
	12.7	***10.0***	***11.6***	***6.1***	***33.5***	***12.0***	
Coarctation of the aorta	114	11	24	3	0	155	
	4.6	***3.2***	***4.3***	***1.0***	***0.0***	***4.1***	
Common truncus (truncus arteriosus)	6	0	0	1	1	8	
	0.2	***0.0***	***0.0***	***0.3***	***11.2***	***0.2***	
Congenital cataract	53	10	25	3	0	93	
	2.1	***3.0***	***4.5***	***1.0***	***0.0***	***2.5***	
Congenital posterior urethral valves	20	11	10	5	0	47	
	0.8	***3.2***	***1.8***	***1.7***	***0.0***	***1.3***	
Craniosynostosis	149	5	18	4	0	179	
	6.0	***1.5***	***3.2***	***1.4***	***0.0***	***4.8***	
Deletion 22q11.2	25	4	6	5	0	40	
	1.0	***1.2***	***1.1***	***1.7***	***0.0***	***1.1***	
Diaphragmatic hernia	71	8	13	6	1	107	
	2.9	***2.4***	***2.3***	***2.0***	***11.2***	***2.8***	
Double outlet right ventricle	31	5	5	4	0	47	
	1.2	***1.5***	***0.9***	***1.4***	***0.0***	***1.3***	
Ebstein anomaly	11	1	4	0	0	16	
	0.4	***0.3***	***0.7***	***0.0***	***0.0***	***0.4***	
Encephalocele	9	0	4	0	0	14	
	0.4	***0.0***	***0.7***	***0.0***	***0.0***	***0.4***	
Esophageal atresia/tracheoesophageal fistula	76	7	14	2	0	100	
	3.1	***2.1***	***2.5***	***0.7***	***0.0***	***2.7***	
Gastroschisis	66	16	32	7	0	128	
	2.7	***4.7***	***5.7***	***2.4***	***0.0***	***3.4***	
Holoprosencephaly	17	2	8	1	0	30	
	0.7	***0.6***	***1.4***	***0.3***	***0.0***	***0.8***	
Hypoplastic left heart syndrome	39	5	11	1	0	60	
	1.6	***1.5***	***2.0***	***0.3***	***0.0***	***1.6***	
Hypospadias*	369	48	41	25	0	495	2
	28.9	***27.6***	***14.3***	***16.4***	***0.0***	***25.7***	
Interrupted aortic arch	9	2	2	0	0	14	
	0.4	***0.6***	***0.4***	***0.0***	***0.0***	***0.4***	

Massachusetts
Birth Defects Counts and Prevalence 2007 - 2011 (Prevalence per 10,000 Live Births)

	Maternal Race/Ethnicity						
Defect	**White, Non-Hispanic**	**Black, Non-Hispanic**	**Hispanic**	**Asian or Pacific Islander, Non-Hispanic**	**American Indian or Alaska Native, Non-Hispanic**	**Total****	**Notes**
Limb deficiencies (reduction defects)	87	9	33	6	0	139	
	3.5	***2.7***	***5.9***	***2.0***	***0.0***	***3.7***	
Omphalocele	40	9	6	2	0	59	
	1.6	***2.7***	***1.1***	***0.7***	***0.0***	***1.6***	
Pulmonary valve atresia and stenosis	178	45	43	15	1	289	
	7.2	***13.3***	***7.7***	***5.1***	***11.2***	***7.7***	
Pulmonary valve atresia	14	2	3	0	0	21	
	0.6	***0.6***	***0.5***	***0.0***	***0.0***	***0.6***	
Rectal and large intestinal atresia/stenosis	87	9	18	7	0	127	
	3.5	***2.7***	***3.2***	***2.4***	***0.0***	***3.4***	
Renal agenesis/hypoplasia	10	4	3	0	0	19	3
	0.4	***1.2***	***0.5***	***0.0***	***0.0***	***0.5***	
Single ventricle	8	3	1	2	0	14	
	0.3	***0.9***	***0.2***	***0.7***	***0.0***	***0.4***	
Small intestinal atresia/stenosis	77	9	15	11	1	117	
	3.1	***2.7***	***2.7***	***3.7***	***11.2***	***3.1***	
Spina bifida without anencephalus	60	8	13	3	0	91	
	2.4	***2.4***	***2.3***	***1.0***	***0.0***	***2.4***	
Tetralogy of Fallot	81	20	32	10	0	148	
	3.3	***5.9***	***5.7***	***3.4***	***0.0***	***3.9***	
Total anomalous pulmonary venous connection	19	1	8	9	0	37	
	0.8	***0.3***	***1.4***	***3.1***	***0.0***	***1.0***	
Transposition of the great arteries (TGA)	69	13	14	4	0	103	
	2.8	***3.8***	***2.5***	***1.4***	***0.0***	***2.7***	
Dextro-transposition of great arteries (d-TGA)	58	11	14	4	0	90	
	2.3	***3.2***	***2.5***	***1.4***	***0.0***	***2.4***	
Tricuspid valve atresia and stenosis	17	4	4	1	0	27	
	0.7	***1.2***	***0.7***	***0.3***	***0.0***	***0.7***	
Tricuspid valve atresia	15	2	3	1	0	22	
	0.6	***0.6***	***0.5***	***0.3***	***0.0***	***0.6***	
Trisomy 13	25	4	5	0	0	37	
	1.0	***1.2***	***0.9***	***0.0***	***0.0***	***1.0***	
Trisomy 18	47	10	18	6	0	96	
	1.9	***3.0***	***3.2***	***2.0***	***0.0***	***2.6***	
Trisomy 21 (Down syndrome)	347	57	94	36	2	558	
	14.0	***16.8***	***16.8***	***12.2***	***22.3***	***14.8***	
Turner syndrome	28	2	9	0	1	51	
	1.1	***0.6***	***1.6***	***0.0***	***11.2***	***1.4***	
Ventricular septal defect	511	70	127	70	0	795	4
	20.6	***20.7***	***22.6***	***23.7***	***0.0***	***21.1***	
Total live births	**248596**	**33855**	**56115**	**29495**	**895**	**375905**	
Male live births	**127466**	**17367**	**28752**	**15225**	**453**	**192806**	

*Hypospadias prevalence per 10,000 male live births
**Total includes unknown and other maternal race/ethnicity

Massachusetts

Trisomy Counts and Prevalence by Maternal Age 2007 - 2011 (Prevalence per 10,000 Live Births)

	Maternal Age (years)			
Defect	**Less than 35**	**35+**	**Total**	**Notes**
Trisomy 13	17	20	37	
	0.6	***2.4***	***1.0***	
Trisomy 18	48	48	96	
	1.6	***5.7***	***2.6***	
Trisomy 21 (Down syndrome)	252	306	558	
	8.7	***36.1***	***14.8***	
Total live births	**291052**	**84839**	**375905**	

**Total includes unknown maternal age

Notes
1.Excludes isolated submucous cleft palate.
2.Excludes 1st degree and not otherwise specified (NOS).
3.Excludes isolated unilateral renal agenesis/hypoplasia.
4.Excludes isolated muscular Ventricular Septal Defects (VSDs).

General comments
-2011 data are provisional.
-Coding system is CDC/BPA.
-Differences in numbers from previous publications are the result of updated files.
-Possible/probable cases are excluded.
-Pregnancy outcomes reported are live births and unspecified non-live births. From 2007 to 2010 unspecified non-live birth category includes only stillbirths. In 2011, it includes stillbirths and other pregnancy losses (defined as spontaneous and elective losses).
-Source of race/Hispanic ethnicity variable for live births is from the vital records live birth file. Beginning in 2011, live birth certificates allowed the reporting of more than one race, necessitating multiple races to be bridged to one race for purposes of this report. For unspecified non-livebirths the source of race/Hispanic ethnicity is vital records or medical record abstraction.

Michigan

Birth Defects Counts and Prevalence 2007 - 2011 (Prevalence per 10,000 Live Births)

	Maternal Race/Ethnicity						
Defect	**White, Non-Hispanic**	**Black, Non-Hispanic**	**Hispanic**	**Asian or Pacific Islander, Non-Hispanic**	**American Indian or Alaska Native, Non-Hispanic**	**Total****	**Notes**
Anencephalus	67	15	9	3	1	98	
	1.6	***1.4***	***2.1***	***1.4***	***3.8***	***1.7***	
Anophthalmia/microphthalmia	60	14	5	3	0	82	
	1.4	***1.3***	***1.2***	***1.4***	***0.0***	***1.4***	
Anotia/microtia	45	14	9	5	0	73	
	1.1	***1.3***	***2.1***	***2.4***	***0.0***	***1.2***	
Aortic valve stenosis	97	11	9	4	0	123	
	2.3	***1.0***	***2.1***	***1.9***	***0.0***	***2.1***	
Atrial septal defect	3362	1250	285	174	30	5123	
	81.1	***114.8***	***65.6***	***83.6***	***112.7***	***86.4***	
Atrioventricular septal defect (Endocardial cushion defect)	225	52	19	11	0	308	
	5.4	***4.8***	***4.4***	***5.3***	***0.0***	***5.2***	
Biliary atresia	40	16	7	5	0	68	
	1.0	***1.5***	***1.6***	***2.4***	***0.0***	***1.1***	
Bladder exstrophy	9	0	0	0	1	10	
	0.2	***0.0***	***0.0***	***0.0***	***3.8***	***0.2***	
Choanal atresia	64	17	2	5	0	88	
	1.5	***1.6***	***0.5***	***2.4***	***0.0***	***1.5***	
Cleft lip alone	236	18	13	8	0	295	
	5.7	***1.7***	***3.0***	***3.8***	***0.0***	***5.0***	
Cleft lip with cleft palate	203	36	19	9	1	303	
	4.9	***3.3***	***4.4***	***4.3***	***3.8***	***5.1***	
Cleft palate alone	271	35	31	13	3	374	
	6.5	***3.2***	***7.1***	***6.2***	***11.3***	***6.3***	
Cloacal exstrophy	203	63	11	5	1	283	
	4.9	***5.8***	***2.5***	***2.4***	***3.8***	***4.8***	
Clubfoot	611	128	30	37	4	811	
	14.7	***11.8***	***6.9***	***17.8***	***15.0***	***13.7***	
Coarctation of the aorta	1031	447	119	57	9	1668	
	24.9	***41.1***	***27.4***	***27.4***	***33.8***	***28.1***	
Common truncus (truncus arteriosus)	53	22	2	5	1	83	
	1.3	***2.0***	***0.5***	***2.4***	***3.8***	***1.4***	
Congenital cataract	91	18	5	4	0	119	
	2.2	***1.7***	***1.2***	***1.9***	***0.0***	***2.0***	
Congenital posterior urethral valves	56	19	1	2	0	78	
	1.4	***1.7***	***0.2***	***1.0***	***0.0***	***1.3***	
Deletion 22q11.2	21	6	2	1	0	30	
	0.5	***0.6***	***0.5***	***0.5***	***0.0***	***0.5***	
Diaphragmatic hernia	513	56	28	23	3	626	
	12.4	***5.1***	***6.4***	***11.1***	***11.3***	***10.6***	
Double outlet right ventricle	97	29	5	11	2	145	
	2.3	***2.7***	***1.2***	***5.3***	***7.5***	***2.4***	
Ebstein anomaly	29	8	2	3	0	42	
	0.7	***0.7***	***0.5***	***1.4***	***0.0***	***0.7***	
Encephalocele	32	10	3	0	0	45	
	0.8	***0.9***	***0.7***	***0.0***	***0.0***	***0.8***	
Esophageal atresia/tracheoesophageal fistula	104	16	6	7	0	134	
	2.5	***1.5***	***1.4***	***3.4***	***0.0***	***2.3***	
Gastroschisis	25	11	1	0	0	37	
	1.6	***2.5***	***0.6***	***0.0***	***0.0***	***1.6***	
Holoprosencephaly	222	74	18	7	2	325	
	5.4	***6.8***	***4.1***	***3.4***	***7.5***	***5.5***	
Hypoplastic left heart syndrome	129	45	10	3	0	187	
	3.9	***5.2***	***2.9***	***1.9***	***0.0***	***4.0***	
Hypospadias*	1387	263	68	62	8	1811	
	65.2	***47.4***	***30.5***	***57.7***	***57.8***	***59.6***	
Interrupted aortic arch	33	6	4	3	0	46	
	0.8	***0.6***	***0.9***	***1.4***	***0.0***	***0.8***	
Limb deficiencies (reduction defects)	173	48	14	10	3	251	
	4.2	***4.4***	***3.2***	***4.8***	***11.3***	***4.2***	

Michigan
Birth Defects Counts and Prevalence 2007 - 2011 (Prevalence per 10,000 Live Births)

	Maternal Race/Ethnicity						
Defect	**White, Non-Hispanic**	**Black, Non-Hispanic**	**Hispanic**	**Asian or Pacific Islander, Non-Hispanic**	**American Indian or Alaska Native, Non-Hispanic**	**Total****	**Notes**
Omphalocele	72	25	4	1	0	106	
	4.5	***5.8***	***2.4***	***1.5***	***0.0***	***4.6***	
Pulmonary valve atresia and stenosis	368	151	30	25	1	579	
	8.9	***13.9***	***6.9***	***12.0***	***3.8***	***9.8***	
Pulmonary valve atresia	83	40	7	7	1	140	
	2.0	***3.7***	***1.6***	***3.4***	***3.8***	***2.4***	
Rectal and large intestinal atresia/stenosis	188	45	18	9	2	263	
	4.5	***4.1***	***4.1***	***4.3***	***7.5***	***4.4***	
Renal agenesis/hypoplasia	208	64	20	14	2	309	
	5.0	***5.9***	***4.6***	***6.7***	***7.5***	***5.2***	
Single ventricle	57	26	5	3	0	92	
	1.4	***2.4***	***1.2***	***1.4***	***0.0***	***1.6***	
Small intestinal atresia/stenosis	151	51	16	6	0	225	
	3.6	***4.7***	***3.7***	***2.9***	***0.0***	***3.8***	
Spina bifida without anencephalus	206	26	18	11	0	264	
	5.0	***2.4***	***4.1***	***5.3***	***0.0***	***4.5***	
Tetralogy of Fallot	226	72	17	14	1	333	
	5.5	***6.6***	***3.9***	***6.7***	***3.8***	***5.6***	
Total anomalous pulmonary venous connection	20	8	5	4	2	39	
	0.8	***1.2***	***1.9***	***3.1***	***11.9***	***1.1***	
Transposition of the great arteries (TGA)	214	56	10	20	4	307	
	5.2	***5.1***	***2.3***	***9.6***	***15.0***	***5.2***	
Dextro-transposition of great arteries (d-TGA)	146	35	6	10	2	201	
	3.5	***3.2***	***1.4***	***4.8***	***7.5***	***3.4***	
Tricuspid valve atresia and stenosis	57	18	6	3	1	85	
	1.4	***1.7***	***1.4***	***1.4***	***3.8***	***1.4***	
Tricuspid valve atresia	57	18	6	3	1	85	
	1.4	***1.7***	***1.4***	***1.4***	***3.8***	***1.4***	
Trisomy 13	25	13	3	3	0	44	
	0.6	***1.2***	***0.7***	***1.4***	***0.0***	***0.7***	
Trisomy 18	91	31	8	4	0	139	
	2.2	***2.8***	***1.8***	***1.9***	***0.0***	***2.3***	
Trisomy 21 (Down syndrome)	547	134	43	34	2	774	
	13.2	***12.3***	***9.9***	***16.3***	***7.5***	***13.1***	
Turner syndrome	35	7	7	3	0	52	
	0.8	***0.6***	***1.6***	***1.4***	***0.0***	***0.9***	
Ventricular septal defect	1641	420	133	96	12	2313	1
	39.6	***38.6***	***30.6***	***46.1***	***45.1***	***39.0***	
Total live births	**414344**	**108854**	**43444**	**20814**	**2661**	**592894**	
Male live births	**212571**	**55534**	**22304**	**10746**	**1384**	**303989**	

*Hypospadias prevalence per 10,000 male live births
**Total includes unknown and other maternal race/ethnicity

Michigan

Trisomy Counts and Prevalence by Maternal Age 2007 - 2011 (Prevalence per 10,000 Live Births)

	Maternal Age (years)			
Defect	**Less than 35**	**35+**	**Total**	**Notes**
Trisomy 13	33	11	44	
	0.6	***1.4***	***0.7***	
Trisomy 18	79	60	139	
	1.5	***7.8***	***2.3***	
Trisomy 21 (Down syndrome)	443	330	774	
	8.6	***42.7***	***13.1***	
Total live births	**515538**	**77312**	**592894**	

**Total includes unknown maternal age

Notes
1.Ventricular septal defect includes probable cases.

General comments
-Fetal deaths are included for gestational age greater than 20 weeks or birth weight over 400 grams.

Minnesota

Birth Defects Counts and Prevalence 2007 - 2011 (Prevalence per 10,000 Live Births)

	Maternal Race/Ethnicity						
Defect	**White, Non-Hispanic**	**Black, Non-Hispanic**	**Hispanic**	**Asian or Pacific Islander, Non-Hispanic**	**American Indian or Alaska Native, Non-Hispanic**	**Total****	**Notes**
Anencephalus	2	3	3	4	0	14	
	0.3	***1.3***	***2.3***	***2.5***	***0.0***	***1.2***	
Anophthalmia/microphthalmia	3	2	3	1	0	11	
	0.5	***0.9***	***2.3***	***0.6***	***0.0***	***0.9***	
Anotia/microtia	5	2	4	3	1	16	
	0.8	***0.9***	***3.0***	***1.9***	***6.8***	***1.3***	
Aortic valve stenosis	9	3	1	1	0	14	
	1.4	***1.3***	***0.8***	***0.6***	***0.0***	***1.2***	
Atrial septal defect	85	48	20	26	1	200	
	13.5	***21.4***	***15.2***	***16.5***	***6.8***	***16.8***	
Atrioventricular septal defect (Endocardial cushion defect)	29	16	7	8	1	68	
	4.6	***7.1***	***5.3***	***5.1***	***6.8***	***5.7***	
Biliary atresia	5	0	1	1	0	8	
	0.8	***0.0***	***0.8***	***0.6***	***0.0***	***0.7***	
Bladder exstrophy	1	0	0	0	0	2	
	0.2	***0.0***	***0.0***	***0.0***	***0.0***	***0.2***	
Choanal atresia	7	3	3	0	0	15	
	1.1	***1.3***	***2.3***	***0.0***	***0.0***	***1.3***	
Cleft lip alone	18	5	4	9	0	41	
	2.9	***2.2***	***3.0***	***5.7***	***0.0***	***3.4***	
Cleft lip with cleft palate	38	10	8	8	4	71	
	6.0	***4.5***	***6.1***	***5.1***	***27.2***	***6.0***	
Cleft palate alone	43	6	8	4	0	66	
	6.8	***2.7***	***6.1***	***2.5***	***0.0***	***5.6***	
Coarctation of the aorta	34	9	6	6	0	61	
	5.4	***4.0***	***4.6***	***3.8***	***0.0***	***5.1***	
Common truncus (truncus arteriosus)	2	1	0	0	0	5	
	0.3	***0.4***	***0.0***	***0.0***	***0.0***	***0.4***	
Congenital cataract	11	1	0	1	0	14	
	1.7	***0.4***	***0.0***	***0.6***	***0.0***	***1.2***	
Congenital posterior urethral valves	12	8	0	1	1	23	
	1.9	***3.6***	***0.0***	***0.6***	***6.8***	***1.9***	
Diaphragmatic hernia	25	3	6	5	0	40	
	4.0	***1.3***	***4.6***	***3.2***	***0.0***	***3.4***	
Double outlet right ventricle	9	1	5	1	1	18	
	1.4	***0.4***	***3.8***	***0.6***	***6.8***	***1.5***	
Ebstein anomaly	2	2	1	1	0	6	
	0.3	***0.9***	***0.8***	***0.6***	***0.0***	***0.5***	
Encephalocele	2	1	0	1	0	4	
	0.3	***0.4***	***0.0***	***0.6***	***0.0***	***0.3***	
Esophageal atresia/tracheoesophageal fistula	18	6	2	3	0	31	
	2.9	***2.7***	***1.5***	***1.9***	***0.0***	***2.6***	
Gastroschisis	22	6	8	9	1	49	
	3.5	***2.7***	***6.1***	***5.7***	***6.8***	***4.1***	
Hypoplastic left heart syndrome	15	3	5	1	0	25	
	2.4	***1.3***	***3.8***	***0.6***	***0.0***	***2.1***	
Hypospadias*	201	71	18	12	3	332	
	62.2	***62.2***	***27.0***	***14.7***	***41.2***	***54.6***	
Limb deficiencies (reduction defects)	13	9	2	2	0	28	
	2.1	***4.0***	***1.5***	***1.3***	***0.0***	***2.4***	
Omphalocele	10	3	2	0	0	18	
	1.6	***1.3***	***1.5***	***0.0***	***0.0***	***1.5***	
Pulmonary valve atresia and stenosis	43	15	13	14	3	93	
	6.8	***6.7***	***9.9***	***8.9***	***20.4***	***7.8***	
Pulmonary valve atresia	7	4	1	4	1	17	
	1.1	***1.8***	***0.8***	***2.5***	***6.8***	***1.4***	
Rectal and large intestinal atresia/stenosis	20	8	4	6	0	43	
	3.2	***3.6***	***3.0***	***3.8***	***0.0***	***3.6***	
Renal agenesis/hypoplasia	25	8	7	4	0	48	
	4.0	***3.6***	***5.3***	***2.5***	***0.0***	***4.0***	

Minnesota
Birth Defects Counts and Prevalence 2007 - 2011 (Prevalence per 10,000 Live Births)

	Maternal Race/Ethnicity						
Defect	**White, Non-Hispanic**	**Black, Non-Hispanic**	**Hispanic**	**Asian or Pacific Islander, Non-Hispanic**	**American Indian or Alaska Native, Non-Hispanic**	**Total****	**Notes**
Single ventricle	9	4	3	1	1	20	
	1.4	***1.8***	***2.3***	***0.6***	***6.8***	***1.7***	
Spina bifida without anencephalus	20	3	5	2	1	35	
	3.2	***1.3***	***3.8***	***1.3***	***6.8***	***2.9***	
Tetralogy of Fallot	30	6	2	9	0	52	
	4.8	***2.7***	***1.5***	***5.7***	***0.0***	***4.4***	
Transposition of the great arteries (TGA)	17	5	4	5	1	35	
	2.7	***2.2***	***3.0***	***3.2***	***6.8***	***2.9***	
Dextro-transposition of great arteries (d-TGA)	17	4	4	4	1	33	
	2.7	***1.8***	***3.0***	***2.5***	***6.8***	***2.8***	
Tricuspid valve atresia and stenosis	4	2	0	1	0	7	
	0.6	***0.9***	***0.0***	***0.6***	***0.0***	***0.6***	
Tricuspid valve atresia	4	2	0	1	0	7	
	0.6	***0.9***	***0.0***	***0.6***	***0.0***	***0.6***	
Trisomy 13	2	6	5	0	0	14	
	0.3	***2.7***	***3.8***	***0.0***	***0.0***	***1.2***	
Trisomy 18	10	11	1	4	0	28	
	1.6	***4.9***	***0.8***	***2.5***	***0.0***	***2.4***	
Trisomy 21 (Down syndrome)	98	46	25	15	3	196	
	15.6	***20.5***	***19.0***	***9.5***	***20.4***	***16.5***	
Ventricular septal defect	225	101	64	38	7	462	
	35.7	***45.0***	***48.7***	***24.1***	***47.6***	***38.9***	
Total live births	**63019**	**22450**	**13135**	**15740**	**1471**	**118860**	
Male live births	**32294**	**11408**	**6666**	**8155**	**729**	**60781**	

*Hypospadias prevalence per 10,000 male live births
**Total includes unknown and other maternal race/ethnicity

Minnesota

Trisomy Counts and Prevalence by Maternal Age 2007 - 2011 (Prevalence per 10,000 Live Births)

	Maternal Age (years)			
Defect	**Less than 35**	**35+**	**Total**	**Notes**
Trisomy 13	9	5	14	
	0.9	***2.4***	***1.2***	
Trisomy 18	13	15	28	
	1.3	***7.1***	***2.4***	
Trisomy 21 (Down syndrome)	88	108	196	
	9.0	***51.3***	***16.5***	
Total live births	**97802**	**21050**	**118860**	

**Total includes unknown maternal age

Mississippi

Birth Defects Counts and Prevalence 2007 - 2011 (Prevalence per 10,000 Live Births)

	Maternal Race/Ethnicity						
Defect	**White, Non-Hispanic**	**Black, Non-Hispanic**	**Hispanic**	**Asian or Pacific Islander, Non-Hispanic**	**American Indian or Alaska Native, Non-Hispanic**	**Total****	**Notes**
Anencephalus	3	6	0	0	0	9	
	0.3	***0.6***	***0.0***	***0.0***	***0.0***	***0.4***	
Anophthalmia/microphthalmia	4	7	0	0	0	11	
	0.4	***0.7***	***0.0***	***0.0***	***0.0***	***0.5***	
Anotia/microtia	13	16	2	1	1	36	
	1.2	***1.7***	***2.7***	***4.2***	***6.7***	***1.7***	
Aortic valve stenosis	17	10	1	0	0	29	
	1.6	***1.1***	***1.4***	***0.0***	***0.0***	***1.4***	
Atrial septal defect	1020	1153	34	17	41	2336	
	94.3	***122.0***	***46.5***	***72.0***	***275.5***	***109.2***	
Atrioventricular septal defect (Endocardial cushion defect)	36	50	4	3	0	96	
	3.3	***5.3***	***5.5***	***12.7***	***0.0***	***4.5***	
Biliary atresia	4	9	1	0	0	15	
	0.4	***1.0***	***1.4***	***0.0***	***0.0***	***0.7***	
Bladder exstrophy	2	1	0	0	0	4	
	0.2	***0.1***	***0.0***	***0.0***	***0.0***	***0.2***	
Choanal atresia	0	0	0	0	1	1	
	0.0	***0.0***	***0.0***	***0.0***	***6.7***	***0.0***	
Cleft lip alone	27	15	2	0	1	45	
	2.5	***1.6***	***2.7***	***0.0***	***6.7***	***2.1***	
Cleft lip with cleft palate	57	45	2	4	1	115	
	5.3	***4.8***	***2.7***	***16.9***	***6.7***	***5.4***	
Cleft palate alone	52	38	3	4	0	97	
	4.8	***4.0***	***4.1***	***16.9***	***0.0***	***4.5***	
Cloacal exstrophy	3	11	1	1	0	16	
	0.3	***1.2***	***1.4***	***4.2***	***0.0***	***0.7***	
Clubfoot	5	1	0	0	0	7	
	0.5	***0.1***	***0.0***	***0.0***	***0.0***	***0.3***	
Coarctation of the aorta	39	28	2	0	0	69	
	3.6	***3.0***	***2.7***	***0.0***	***0.0***	***3.2***	
Common truncus (truncus arteriosus)	4	4	0	0	0	8	
	0.4	***0.4***	***0.0***	***0.0***	***0.0***	***0.4***	
Congenital cataract	0	6	0	0	0	8	
	0.0	***0.6***	***0.0***	***0.0***	***0.0***	***0.4***	
Congenital posterior urethral valves	14	21	1	0	0	38	
	1.3	***2.2***	***1.4***	***0.0***	***0.0***	***1.8***	
Diaphragmatic hernia	20	23	2	1	0	50	
	1.8	***2.4***	***2.7***	***4.2***	***0.0***	***2.3***	
Double outlet right ventricle	21	28	3	2	0	54	
	1.9	***3.0***	***4.1***	***8.5***	***0.0***	***2.5***	
Ebstein anomaly	8	5	0	0	0	13	
	0.7	***0.5***	***0.0***	***0.0***	***0.0***	***0.6***	
Encephalocele	5	4	1	0	0	10	
	0.5	***0.4***	***1.4***	***0.0***	***0.0***	***0.5***	
Esophageal atresia/tracheoesophageal fistula	30	17	1	0	2	51	
	2.8	***1.8***	***1.4***	***0.0***	***13.4***	***2.4***	
Gastroschisis	19	18	0	1	0	39	1
	1.8	***1.9***	***0.0***	***4.2***	***0.0***	***1.8***	
Holoprosencephaly	4	12	0	0	0	16	
	0.4	***1.3***	***0.0***	***0.0***	***0.0***	***0.7***	
Hypoplastic left heart syndrome	39	31	0	0	0	70	
	3.6	***3.3***	***0.0***	***0.0***	***0.0***	***3.3***	
Hypospadias*	274	363	6	4	2	678	
	49.3	***76.0***	***16.3***	***33.3***	***27.0***	***62.2***	
Interrupted aortic arch	1	1	0	0	0	2	
	0.1	***0.1***	***0.0***	***0.0***	***0.0***	***0.1***	
Limb deficiencies (reduction defects)	34	35	1	2	0	78	
	3.1	***3.7***	***1.4***	***8.5***	***0.0***	***3.6***	
Pulmonary valve atresia and stenosis	122	139	3	3	1	275	
	11.3	***14.7***	***4.1***	***12.7***	***6.7***	***12.9***	

Mississippi

Birth Defects Counts and Prevalence 2007 - 2011 (Prevalence per 10,000 Live Births)

	Maternal Race/Ethnicity						
Defect	**White, Non-Hispanic**	**Black, Non-Hispanic**	**Hispanic**	**Asian or Pacific Islander, Non-Hispanic**	**American Indian or Alaska Native, Non-Hispanic**	**Total****	**Notes**
Rectal and large intestinal atresia/stenosis	23	37	3	3	1	69	
	2.1	***3.9***	***4.1***	***12.7***	***6.7***	***3.2***	
Renal agenesis/hypoplasia	21	20	1	1	0	43	
	1.9	***2.1***	***1.4***	***4.2***	***0.0***	***2.0***	
Single ventricle	3	7	1	0	0	11	
	0.3	***0.7***	***1.4***	***0.0***	***0.0***	***0.5***	
Small intestinal atresia/stenosis	8	14	0	0	0	22	
	0.9	***1.8***	***0.0***	***0.0***	***0.0***	***1.3***	
Spina bifida without anencephalus	31	22	1	2	0	60	
	2.9	***2.3***	***1.4***	***8.5***	***0.0***	***2.8***	
Tetralogy of Fallot	71	56	2	2	1	133	
	6.6	***5.9***	***2.7***	***8.5***	***6.7***	***6.2***	
Total anomalous pulmonary venous connection	4	3	1	1	0	9	
	0.4	***0.3***	***1.4***	***4.2***	***0.0***	***0.4***	
Transposition of the great arteries (TGA)	30	22	0	3	1	57	
	2.8	***2.3***	***0.0***	***12.7***	***6.7***	***2.7***	
Tricuspid valve atresia and stenosis	11	22	1	3	0	38	
	1.0	***2.3***	***1.4***	***12.7***	***0.0***	***1.8***	
Trisomy 13	6	8	0	1	0	15	
	0.6	***0.8***	***0.0***	***4.2***	***0.0***	***0.7***	
Trisomy 18	15	12	2	0	0	30	
	1.4	***1.3***	***2.7***	***0.0***	***0.0***	***1.4***	
Trisomy 21 (Down syndrome)	98	84	8	1	3	203	
	9.1	***8.9***	***10.9***	***4.2***	***20.2***	***9.5***	
Turner syndrome	1	0	1	0	0	2	
	0.1	***0.0***	***1.4***	***0.0***	***0.0***	***0.1***	
Ventricular septal defect	515	479	33	7	11	1092	2
	47.6	***50.7***	***45.2***	***29.7***	***73.9***	***51.0***	
Total live births	**108120**	**94527**	**7307**	**2360**	**1488**	**213977**	
Male live births	**55565**	**47787**	**3681**	**1200**	**741**	**109058**	

*Hypospadias prevalence per 10,000 male live births
**Total includes unknown and other maternal race/ethnicity

Mississippi

Trisomy Counts and Prevalence by Maternal Age 2007 - 2011 (Prevalence per 10,000 Live Births)

	Maternal Age (years)			
Defect	**Less than 35**	**35+**	**Total**	**Notes**
Trisomy 13	14	1	15	
	0.7	***0.6***	***0.7***	
Trisomy 18	20	10	30	
	1.0	***6.2***	***1.4***	
Trisomy 21 (Down syndrome)	130	73	203	
	6.6	***45.1***	***9.5***	
Total live births	**197788**	**16172**	**213977**	

**Total includes unknown maternal age

Notes
1.Mississippi uses ICD-9 Codes to distinguish between gastroschisis and omphalocele and does not have another method to distinguish the condition.
2.Mississippi does not include probable cases.

General comments
-Mississippi uses ICD-9 Codes.

Nebraska

Birth Defects Counts and Prevalence 2007 - 2011 (Prevalence per 10,000 Live Births)

	Maternal Race/Ethnicity						
Defect	White, Non-Hispanic	Black, Non-Hispanic	Hispanic	Asian or Pacific Islander, Non-Hispanic	American Indian or Alaska Native, Non-Hispanic	Total**	Notes
Anencephalus	27	1	8	0	0	36	
	2.8	***1.1***	***4.0***	***0.0***	***0.0***	***2.7***	
Anophthalmia/microphthalmia	12	0	0	1	1	15	
	1.2	***0.0***	***0.0***	***3.1***	***4.9***	***1.1***	
Anotia/microtia	19	0	13	1	0	33	
	1.9	***0.0***	***6.5***	***3.1***	***0.0***	***2.5***	
Aortic valve stenosis	28	0	3	0	0	32	
	2.9	***0.0***	***1.5***	***0.0***	***0.0***	***2.4***	
Atrial septal defect	255	22	53	10	3	352	
	26.0	***25.3***	***26.4***	***31.1***	***14.8***	***26.6***	
Atrioventricular septal defect (Endocardial cushion defect)	22	1	1	3	0	28	
	2.2	***1.1***	***0.5***	***9.3***	***0.0***	***2.1***	
Biliary atresia	7	4	1	0	0	12	
	0.7	***4.6***	***0.5***	***0.0***	***0.0***	***0.9***	
Bladder exstrophy	8	0	0	0	0	8	
	0.8	***0.0***	***0.0***	***0.0***	***0.0***	***0.6***	
Choanal atresia	21	2	3	0	0	26	
	2.1	***2.3***	***1.5***	***0.0***	***0.0***	***2.0***	
Cleft lip alone	35	2	7	4	1	51	
	3.6	***2.3***	***3.5***	***12.5***	***4.9***	***3.8***	
Cleft lip with cleft palate	75	4	17	3	3	105	
	7.7	***4.6***	***8.5***	***9.3***	***14.8***	***7.9***	
Cleft palate alone	62	4	10	0	1	83	
	6.3	***4.6***	***5.0***	***0.0***	***4.9***	***6.3***	
Clubfoot	141	15	26	3	1	190	
	14.4	***17.2***	***13.0***	***9.3***	***4.9***	***14.3***	
Coarctation of the aorta	66	2	15	2	0	88	
	6.7	***2.3***	***7.5***	***6.2***	***0.0***	***6.6***	
Common truncus (truncus arteriosus)	5	0	1	0	0	6	
	0.5	***0.0***	***0.5***	***0.0***	***0.0***	***0.5***	
Congenital cataract	27	0	4	2	0	35	
	2.8	***0.0***	***2.0***	***6.2***	***0.0***	***2.6***	
Congenital posterior urethral valves	21	2	3	0	0	28	
	2.1	***2.3***	***1.5***	***0.0***	***0.0***	***2.1***	
Craniosynostosis	37	1	6	0	0	45	
	3.8	***1.1***	***3.0***	***0.0***	***0.0***	***3.4***	
Deletion 22q11.2	6	1	0	0	0	8	
	0.6	***1.1***	***0.0***	***0.0***	***0.0***	***0.6***	
Diaphragmatic hernia	22	3	6	1	2	35	
	2.2	***3.4***	***3.0***	***3.1***	***9.8***	***2.6***	
Double outlet right ventricle	5	1	0	1	0	7	
	1.3	***2.9***	***0.0***	***7.5***	***0.0***	***1.4***	
Ebstein anomaly	9	0	2	0	0	11	
	0.9	***0.0***	***1.0***	***0.0***	***0.0***	***0.8***	
Encephalocele	6	1	1	1	0	10	
	0.6	***1.1***	***0.5***	***3.1***	***0.0***	***0.8***	
Esophageal atresia/tracheoesophageal fistula	16	0	5	0	0	21	
	1.6	***0.0***	***2.5***	***0.0***	***0.0***	***1.6***	
Gastroschisis	58	3	12	1	4	80	
	5.9	***3.4***	***6.0***	***3.1***	***19.7***	***6.0***	
Holoprosencephaly	8	0	2	0	0	10	
	0.8	***0.0***	***1.0***	***0.0***	***0.0***	***0.8***	
Hypoplastic left heart syndrome	36	7	4	0	0	48	
	3.7	***8.0***	***2.0***	***0.0***	***0.0***	***3.6***	
Hypospadias*	454	34	46	8	3	560	
	90.6	***76.1***	***44.9***	***48.9***	***28.4***	***82.6***	
Interrupted aortic arch	7	0	1	0	0	8	
	0.9	***0.0***	***0.6***	***0.0***	***0.0***	***0.7***	
Limb deficiencies (reduction defects)	68	5	10	2	0	88	
	6.9	***5.7***	***5.0***	***6.2***	***0.0***	***6.6***	

Nebraska
Birth Defects Counts and Prevalence 2007 - 2011 (Prevalence per 10,000 Live Births)

	Maternal Race/Ethnicity						
Defect	**White, Non-Hispanic**	**Black, Non-Hispanic**	**Hispanic**	**Asian or Pacific Islander, Non-Hispanic**	**American Indian or Alaska Native, Non-Hispanic**	**Total****	**Notes**
Omphalocele	28	1	3	1	0	34	
	2.9	***1.1***	***1.5***	***3.1***	***0.0***	***2.6***	
Pulmonary valve atresia and stenosis	72	8	7	2	1	91	
	7.3	***9.2***	***3.5***	***6.2***	***4.9***	***6.9***	
Pulmonary valve atresia	14	1	5	0	1	21	
	1.4	***1.1***	***2.5***	***0.0***	***4.9***	***1.6***	
Rectal and large intestinal atresia/stenosis	55	4	10	3	0	73	
	5.6	***4.6***	***5.0***	***9.3***	***0.0***	***5.5***	
Renal agenesis/hypoplasia	54	3	12	1	2	77	
	5.5	***3.4***	***6.0***	***3.1***	***9.8***	***5.8***	
Single ventricle	15	3	2	0	0	20	
	1.5	***3.4***	***1.0***	***0.0***	***0.0***	***1.5***	
Small intestinal atresia/stenosis	29	3	6	2	1	41	
	3.0	***3.4***	***3.0***	***6.2***	***4.9***	***3.1***	
Spina bifida without anencephalus	66	7	10	2	1	86	
	6.7	***8.0***	***5.0***	***6.2***	***4.9***	***6.5***	
Tetralogy of Fallot	33	0	3	0	1	38	
	3.4	***0.0***	***1.5***	***0.0***	***4.9***	***2.9***	
Total anomalous pulmonary venous connection	12	0	4	0	0	16	
	1.2	***0.0***	***2.0***	***0.0***	***0.0***	***1.2***	
Transposition of the great arteries (TGA)	43	3	9	0	1	58	
	4.4	***3.4***	***4.5***	***0.0***	***4.9***	***4.4***	
Dextro-transposition of great arteries (d-TGA)	42	3	9	0	1	57	
	4.3	***3.4***	***4.5***	***0.0***	***4.9***	***4.3***	
Tricuspid valve atresia and stenosis	9	2	1	0	1	13	
	0.9	***2.3***	***0.5***	***0.0***	***4.9***	***1.0***	
Trisomy 13	14	1	4	0	0	20	
	1.4	***1.1***	***2.0***	***0.0***	***0.0***	***1.5***	
Trisomy 18	35	7	8	0	1	52	
	3.6	***8.0***	***4.0***	***0.0***	***4.9***	***3.9***	
Trisomy 21 (Down syndrome)	189	10	41	4	2	254	
	19.3	***11.5***	***20.5***	***12.5***	***9.8***	***19.2***	
Turner syndrome	16	2	3	0	0	21	
	1.6	***2.3***	***1.5***	***0.0***	***0.0***	***1.6***	
Ventricular septal defect	419	29	97	8	4	576	
	42.8	***33.3***	***48.4***	***24.9***	***19.7***	***43.5***	
Total live births	**97972**	**8702**	**20047**	**3212**	**2031**	**132496**	
Male live births	**50115**	**4468**	**10244**	**1636**	**1055**	**67770**	

*Hypospadias prevalence per 10,000 male live births
**Total includes unknown and other maternal race/ethnicity

Nebraska

Trisomy Counts and Prevalence by Maternal Age 2007 - 2011 (Prevalence per 10,000 Live Births)

	Maternal Age (years)			
Defect	**Less than 35**	**35+**	**Total**	**Notes**
Trisomy 13	18	2	20	
	1.5	***1.3***	***1.5***	
Trisomy 18	30	22	52	
	2.6	***14.5***	***3.9***	
Trisomy 21 (Down syndrome)	167	87	254	
	14.2	***57.4***	***19.2***	
Total live births	**117337**	**15155**	**132496**	

**Total includes unknown maternal age

General comments

-Fetal deaths are a death prior to the complete expulsion or extraction of a product of conception from its mother, irrespective of the duration of pregnancy. Until the pregnancy has reached 20 weeks duration, it is not required that such a death be reported. It has to be at least 500 grams before it is included in the birth defect registry.
-Induced terminations are not a source for birth defects for Nebraska.
-Nebraska does not use the unspecified non-live birth category.
-Probable birth defects were not included.

Nevada

Birth Defects Counts and Prevalence 2007 - 2011 (Prevalence per 10,000 Live Births)

	Maternal Race/Ethnicity						
Defect	**White, Non-Hispanic**	**Black, Non-Hispanic**	**Hispanic**	**Asian or Pacific Islander, Non-Hispanic**	**American Indian or Alaska Native, Non-Hispanic**	**Total****	**Notes**
Anencephalus	2	1	5	0	0	8	
	0.3	***0.7***	***0.9***	***0.0***	***0.0***	***0.5***	
Anophthalmia/microphthalmia	7	3	11	0	0	21	
	0.9	***1.7***	***1.5***	***0.0***	***0.0***	***1.1***	
Anotia/microtia	6	0	3	1	0	10	
	0.8	***0.0***	***0.4***	***0.7***	***0.0***	***0.5***	
Aortic valve stenosis	12	2	8	2	0	24	
	1.5	***1.1***	***1.1***	***1.3***	***0.0***	***1.3***	
Atrial septal defect	825	298	776	177	21	2179	
	103.8	***166.8***	***107.8***	***117.7***	***100.8***	***115.2***	
Atrioventricular septal defect (Endocardial cushion defect)	18	3	19	2	0	47	
	2.3	***1.7***	***2.6***	***1.3***	***0.0***	***2.5***	
Biliary atresia	2	2	3	2	0	9	
	0.3	***1.1***	***0.4***	***1.3***	***0.0***	***0.5***	
Bladder exstrophy	3	0	2	0	0	5	
	0.4	***0.0***	***0.3***	***0.0***	***0.0***	***0.3***	
Choanal atresia	13	1	6	0	0	21	
	1.6	***0.6***	***0.8***	***0.0***	***0.0***	***1.1***	
Cleft lip alone	33	10	79	4	2	131	
	4.2	***5.6***	***11.0***	***2.7***	***9.6***	***6.9***	
Cleft lip with cleft palate	25	3	16	2	0	46	
	3.1	***1.7***	***2.2***	***1.3***	***0.0***	***2.4***	
Cleft palate alone	31	7	28	3	0	71	
	3.9	***3.9***	***3.9***	***2.0***	***0.0***	***3.8***	
Cloacal exstrophy	101	10	97	5	1	224	
	12.7	***5.6***	***13.5***	***3.3***	***4.8***	***11.8***	
Clubfoot	75	19	49	16	3	169	
	9.4	***10.6***	***6.8***	***10.6***	***14.4***	***8.9***	
Coarctation of the aorta	47	8	54	10	1	126	
	5.9	***4.5***	***7.5***	***6.7***	***4.8***	***6.7***	
Common truncus (truncus arteriosus)	2	1	7	1	0	11	
	0.3	***0.6***	***1.0***	***0.7***	***0.0***	***0.6***	
Congenital cataract	4	2	7	3	0	16	
	0.6	***1.4***	***1.2***	***2.5***	***0.0***	***1.1***	
Congenital posterior urethral valves	1	0	0	1	0	2	
	0.2	***0.0***	***0.0***	***0.8***	***0.0***	***0.1***	
Craniosynostosis	60	8	37	3	0	117	
	7.5	***4.5***	***5.1***	***2.0***	***0.0***	***6.2***	
Deletion 22q11.2	2	0	0	0	0	2	
	0.3	***0.0***	***0.0***	***0.0***	***0.0***	***0.1***	
Diaphragmatic hernia	25	7	23	2	0	57	
	3.1	***3.9***	***3.2***	***1.3***	***0.0***	***3.0***	
Double outlet right ventricle	10	3	12	1	0	28	
	1.6	***2.1***	***2.0***	***0.8***	***0.0***	***1.8***	
Ebstein anomaly	8	0	8	0	0	16	
	1.0	***0.0***	***1.1***	***0.0***	***0.0***	***0.8***	
Encephalocele	5	3	3	1	0	13	
	0.6	***1.7***	***0.4***	***0.7***	***0.0***	***0.7***	
Esophageal atresia/tracheoesophageal fistula	19	3	13	5	0	42	
	2.4	***1.7***	***1.8***	***3.3***	***0.0***	***2.2***	
Holoprosencephaly	34	10	27	8	2	83	
	4.3	***5.6***	***3.8***	***5.3***	***9.6***	***4.4***	
Hypoplastic left heart syndrome	13	4	15	1	0	38	
	1.6	***2.2***	***2.1***	***0.7***	***0.0***	***2.0***	
Hypospadias*	167	33	77	15	3	319	
	40.9	***35.9***	***21.0***	***19.2***	***29.4***	***32.9***	
Interrupted aortic arch	9	2	7	2	0	20	
	1.1	***1.1***	***1.0***	***1.3***	***0.0***	***1.1***	
Limb deficiencies (reduction defects)	26	6	35	8	1	80	
	3.3	***3.4***	***4.9***	***5.3***	***4.8***	***4.2***	

Nevada

Birth Defects Counts and Prevalence 2007 - 2011 (Prevalence per 10,000 Live Births)

	Maternal Race/Ethnicity						
Defect	**White, Non-Hispanic**	**Black, Non-Hispanic**	**Hispanic**	**Asian or Pacific Islander, Non-Hispanic**	**American Indian or Alaska Native, Non-Hispanic**	**Total****	**Notes**
Pulmonary valve atresia and stenosis	66	32	66	8	3	183	
	8.3	***17.9***	***9.2***	***5.3***	***14.4***	***9.7***	
Rectal and large intestinal atresia/stenosis	25	3	26	6	0	63	
	3.1	***1.7***	***3.6***	***4.0***	***0.0***	***3.3***	
Renal agenesis/hypoplasia	36	10	23	8	1	84	
	4.5	***5.6***	***3.2***	***5.3***	***4.8***	***4.4***	
Single ventricle	4	3	7	0	0	15	
	0.6	***2.1***	***1.2***	***0.0***	***0.0***	***1.0***	
Small intestinal atresia/stenosis	24	8	21	3	1	58	
	3.8	***5.6***	***3.7***	***2.5***	***6.3***	***3.9***	
Spina bifida without anencephalus	13	9	16	3	0	41	
	1.6	***5.0***	***2.2***	***2.0***	***0.0***	***2.2***	
Tetralogy of Fallot	39	8	31	4	2	88	
	4.9	***4.5***	***4.3***	***2.7***	***9.6***	***4.7***	
Total anomalous pulmonary venous connection	4	0	4	2	0	11	
	0.5	***0.0***	***0.6***	***1.3***	***0.0***	***0.6***	
Transposition of the great arteries (TGA)	8	6	14	0	0	34	
	1.0	***3.4***	***1.9***	***0.0***	***0.0***	***1.8***	
Tricuspid valve atresia and stenosis	6	4	4	1	1	18	
	0.9	***2.8***	***0.7***	***0.8***	***5.8***	***1.2***	
Tricuspid valve atresia	0	1	1	0	0	2	
	0.0	***2.9***	***0.7***	***0.0***	***0.0***	***0.6***	
Trisomy 13	8	0	8	0	0	16	
	1.0	***0.0***	***1.1***	***0.0***	***0.0***	***0.8***	
Trisomy 18	7	2	19	1	0	32	
	0.9	***1.1***	***2.6***	***0.7***	***0.0***	***1.7***	
Trisomy 21 (Down syndrome)	86	24	103	13	2	243	
	10.8	***13.4***	***14.3***	***8.6***	***9.6***	***12.9***	
Turner syndrome	4	0	2	0	0	6	
	0.5	***0.0***	***0.3***	***0.0***	***0.0***	***0.3***	
Ventricular septal defect	358	74	342	44	8	879	
	45.0	***41.4***	***47.5***	***29.3***	***38.4***	***46.5***	
Total live births	**79488**	**17871**	**71982**	**15034**	**2083**	**189088**	
Male live births	**40870**	**9202**	**36595**	**7826**	**1021**	**96849**	

*Hypospadias prevalence per 10,000 male live births
**Total includes unknown and other maternal race/ethnicity

Nevada

Trisomy Counts and Prevalence by Maternal Age 2007 - 2011 (Prevalence per 10,000 Live Births)

	Maternal Age (years)			
Defect	**Less than 35**	**35+**	**Total**	**Notes**
Trisomy 13	11	4	16	
	0.7	***1.5***	***0.8***	
Trisomy 18	17	10	32	
	1.0	***3.8***	***1.7***	
Trisomy 21 (Down syndrome)	116	90	243	
	7.1	***34.0***	***12.9***	
Total live births	**162550**	**26459**	**189088**	

**Total includes unknown maternal age

New Hampshire

Birth Defects Counts and Prevalence 2007 - 2011 (Prevalence per 10,000 Live Births)

	Maternal Race/Ethnicity						
Defect	**White, Non-Hispanic**	**Black, Non-Hispanic**	**Hispanic**	**Asian or Pacific Islander, Non-Hispanic**	**American Indian or Alaska Native, Non-Hispanic**	**Total****	**Notes**
Anencephalus	2	0	0	1	0	3	
	0.3	***0.0***	***0.0***	***4.1***	***0.0***	***0.4***	
Anophthalmia/microphthalmia	3	1	0	0	0	4	
	0.5	***8.7***	***0.0***	***0.0***	***0.0***	***0.6***	
Anotia/microtia	10	0	0	1	0	12	
	1.7	***0.0***	***0.0***	***4.1***	***0.0***	***1.8***	
Aortic valve stenosis	7	1	0	0	0	10	
	1.2	***8.7***	***0.0***	***0.0***	***0.0***	***1.5***	
Atrial septal defect	66	3	0	4	0	80	
	10.9	***26.0***	***0.0***	***16.4***	***0.0***	***11.9***	
Atrioventricular septal defect (Endocardial cushion defect)	11	1	0	1	0	19	
	1.8	***8.7***	***0.0***	***4.1***	***0.0***	***2.8***	
Biliary atresia	2	0	0	0	0	2	
	0.3	***0.0***	***0.0***	***0.0***	***0.0***	***0.3***	
Bladder exstrophy	0	0	1	0	0	1	
	0.0	***0.0***	***8.7***	***0.0***	***0.0***	***0.1***	
Choanal atresia	3	0	0	0	0	3	
	0.5	***0.0***	***0.0***	***0.0***	***0.0***	***0.4***	
Cleft palate alone	32	1	0	1	1	38	
	5.3	***8.7***	***0.0***	***4.1***	***51.3***	***5.6***	
Coarctation of the aorta	19	0	0	0	0	24	
	3.1	***0.0***	***0.0***	***0.0***	***0.0***	***3.6***	
Common truncus (truncus arteriosus)	3	0	0	0	0	4	
	0.5	***0.0***	***0.0***	***0.0***	***0.0***	***0.6***	
Congenital cataract	7	1	0	0	0	9	
	1.2	***8.7***	***0.0***	***0.0***	***0.0***	***1.3***	
Diaphragmatic hernia	10	1	0	4	0	15	
	1.7	***8.7***	***0.0***	***16.4***	***0.0***	***2.2***	
Ebstein anomaly	1	0	0	0	0	2	
	0.2	***0.0***	***0.0***	***0.0***	***0.0***	***0.3***	
Encephalocele	2	0	0	0	0	4	
	0.3	***0.0***	***0.0***	***0.0***	***0.0***	***0.6***	
Esophageal atresia/tracheoesophageal fistula	12	0	0	0	0	14	
	2.0	***0.0***	***0.0***	***0.0***	***0.0***	***2.1***	
Gastroschisis	13	0	1	0	0	14	1
	2.2	***0.0***	***8.7***	***0.0***	***0.0***	***2.1***	
Hypoplastic left heart syndrome	3	1	1	0	1	9	
	0.5	***8.7***	***8.7***	***0.0***	***51.3***	***1.3***	
Hypospadias*	241	5	5	4	0	265	
	77.9	***82.6***	***88.2***	***32.1***	***0.0***	***76.9***	
Limb deficiencies (reduction defects)	9	0	1	0	0	12	
	3.6	***0.0***	***30.7***	***0.0***	***0.0***	***4.3***	
Omphalocele	9	2	0	0	0	11	1
	1.5	***17.3***	***0.0***	***0.0***	***0.0***	***1.6***	
Pulmonary valve atresia and stenosis	35	4	1	1	0	45	
	5.8	***34.6***	***8.7***	***4.1***	***0.0***	***6.7***	
Rectal and large intestinal atresia/stenosis	22	2	0	0	0	25	
	3.6	***17.3***	***0.0***	***0.0***	***0.0***	***3.7***	
Renal agenesis/hypoplasia	41	2	4	1	0	53	
	6.8	***17.3***	***34.8***	***4.1***	***0.0***	***7.9***	
Spina bifida without anencephalus	10	0	1	0	0	14	
	1.7	***0.0***	***8.7***	***0.0***	***0.0***	***2.1***	
Tetralogy of Fallot	13	1	3	1	0	24	
	2.2	***8.7***	***26.1***	***4.1***	***0.0***	***3.6***	
Total anomalous pulmonary venous connection	2	0	0	0	0	2	
	0.4	***0.0***	***0.0***	***0.0***	***0.0***	***0.4***	
Transposition of the great arteries (TGA)	16	2	1	0	0	25	
	2.7	***17.3***	***8.7***	***0.0***	***0.0***	***3.7***	
Trisomy 13	2	1	0	0	0	3	
	0.3	***8.7***	***0.0***	***0.0***	***0.0***	***0.4***	

New Hampshire

Birth Defects Counts and Prevalence 2007 - 2011 (Prevalence per 10,000 Live Births)

	Maternal Race/Ethnicity						
Defect	**White, Non-Hispanic**	**Black, Non-Hispanic**	**Hispanic**	**Asian or Pacific Islander, Non-Hispanic**	**American Indian or Alaska Native, Non-Hispanic**	**Total****	**Notes**
Trisomy 18	7	1	0	0	0	13	
	1.2	***8.7***	***0.0***	***0.0***	***0.0***	***1.9***	
Trisomy 21 (Down syndrome)	53	2	0	2	1	67	
	8.8	***17.3***	***0.0***	***8.2***	***51.3***	***10.0***	
Ventricular septal defect	90	3	2	3	0	113	2
	14.9	***26.0***	***17.4***	***12.3***	***0.0***	***16.8***	
Total live births	**60364**	**1155**	**1151**	**2436**	**195**	**67291**	
Male live births	**30946**	**605**	**567**	**1247**	**90**	**34479**	

*Hypospadias prevalence per 10,000 male live births
**Total includes unknown and other maternal race/ethnicity

New Hampshire

Trisomy Counts and Prevalence by Maternal Age 2007 - 2011 (Prevalence per 10,000 Live Births)

	Maternal Age (years)			
Defect	**Less than 35**	**35+**	**Total**	**Notes**
Trisomy 13	1	2	3	
	0.2	***1.8***	***0.4***	
Trisomy 18	6	7	13	
	1.1	***6.2***	***1.9***	
Trisomy 21 (Down syndrome)	41	25	67	
	7.4	***22.0***	***10.0***	
Total live births	**55754**	**11361**	**67291**	

**Total includes unknown maternal age

Notes
1.For gastroschisis and omphalocele, cases are distinguished using active medical chart review.
2.Probable cases not included.

General comments
-Counts of cleft lip without cleft palate and cleft lip with cleft palate cannot be determined from data at present.
-Data for all birth conditions includes data ascertained during calendar years 2007 through 2011 for New Hampshire resident mothers.
-Data for live births was obtained from the New Hampshire Department of State, Division of Vital Records Administration, Web Query Tool. Data may vary from year to year due to the process of continuing acquisition of birth certificate information, particularly from New Hampshire residents that give birth out of state.
-Data includes live births from birth to age 2 years, stillbirths and terminations.
-Data is for confirmed cases only, following medical chart review and use of the NBDPN (National Birth Defect Prevention Network) Guidelines.
-Holoprosencephaly, single ventricle, small intestinal atresia/stenosis, congenital posterior urethral valves, cloacal exstrophy, craniosynostosis, clubfoot, Turner syndrome, and deletion 22 q11 are not collected at present.
-In New Hampshire, fetal deaths are defined as those where the fetus was stillborn with a gestational age greater than or equal to 20 weeks.
-New Hampshire has no gestational age cut off for terminations.
-Started collecting dextro-transposition of the great arteries, pulmonary valve atresia, tricuspid valve atresia, TAPVR (total anomalous pulmonary venous return), interrupted aortic arch (IAA), double outlet right ventricle (DORV) in 2013.

New Jersey
Birth Defects Counts and Prevalence 2007 - 2011 (Prevalence per 10,000 Live Births)

	Maternal Race/Ethnicity						
Defect	White, Non-Hispanic	Black, Non-Hispanic	Hispanic	Asian or Pacific Islander, Non-Hispanic	American Indian or Alaska Native, Non-Hispanic	Total**	Notes
Anencephalus	6	1	7	1	0	15	
	0.2	***0.1***	***0.5***	***0.2***	***0.0***	***0.3***	
Anophthalmia/microphthalmia	18	8	20	4	1	53	
	0.7	***1.0***	***1.4***	***0.7***	***17.4***	***1.0***	
Anotia/microtia	40	14	58	11	0	127	
	1.6	***1.7***	***4.1***	***2.0***	***0.0***	***2.4***	
Aortic valve stenosis	29	6	14	2	0	57	
	1.2	***0.7***	***1.0***	***0.4***	***0.0***	***1.1***	
Atrial septal defect	545	419	500	133	7	1650	1
	22.2	***51.5***	***35.3***	***24.5***	***121.5***	***30.7***	
Atrioventricular septal defect (Endocardial cushion defect)	71	28	33	9	0	148	
	2.9	***3.4***	***2.3***	***1.7***	***0.0***	***2.8***	
Biliary atresia	9	7	17	4	0	38	
	0.4	***0.9***	***1.2***	***0.7***	***0.0***	***0.7***	
Bladder exstrophy	1	1	3	0	0	7	
	0.0	***0.1***	***0.2***	***0.0***	***0.0***	***0.1***	
Choanal atresia	34	15	27	1	0	79	
	1.4	***1.8***	***1.9***	***0.2***	***0.0***	***1.5***	
Cleft lip alone	85	11	52	19	0	176	
	3.5	***1.4***	***3.7***	***3.5***	***0.0***	***3.3***	
Cleft lip with cleft palate	104	30	77	31	1	245	
	4.2	***3.7***	***5.4***	***5.7***	***17.4***	***4.6***	
Cleft palate alone	142	36	91	48	0	328	
	5.8	***4.4***	***6.4***	***8.8***	***0.0***	***6.1***	
Clubfoot	279	117	173	46	1	626	
	11.4	***14.4***	***12.2***	***8.5***	***17.4***	***11.6***	
Coarctation of the aorta	99	24	53	13	1	198	
	4.0	***2.9***	***3.7***	***2.4***	***17.4***	***3.7***	
Common truncus (truncus arteriosus)	7	3	9	2	0	21	
	0.3	***0.4***	***0.6***	***0.4***	***0.0***	***0.4***	
Congenital cataract	39	17	32	4	1	95	
	1.6	***2.1***	***2.3***	***0.7***	***17.4***	***1.8***	
Congenital posterior urethral valves	21	7	7	2	0	40	
	0.9	***0.9***	***0.5***	***0.4***	***0.0***	***0.7***	
Deletion 22q11.2	4	1	1	1	0	7	
	0.2	***0.1***	***0.1***	***0.2***	***0.0***	***0.1***	
Diaphragmatic hernia	35	5	27	7	0	75	
	1.4	***0.6***	***1.9***	***1.3***	***0.0***	***1.4***	
Double outlet right ventricle	17	13	18	7	0	56	
	0.7	***1.6***	***1.3***	***1.3***	***0.0***	***1.0***	
Ebstein anomaly	17	3	16	1	1	38	
	0.7	***0.4***	***1.1***	***0.2***	***17.4***	***0.7***	
Encephalocele	15	3	8	5	0	32	
	0.6	***0.4***	***0.6***	***0.9***	***0.0***	***0.6***	
Esophageal atresia/tracheoesophageal fistula	71	11	34	11	0	130	
	2.9	***1.4***	***2.4***	***2.0***	***0.0***	***2.4***	
Gastroschisis	54	26	43	4	1	130	2
	2.2	***3.2***	***3.0***	***0.7***	***17.4***	***2.4***	
Holoprosencephaly	91	50	84	13	0	244	
	3.7	***6.1***	***5.9***	***2.4***	***0.0***	***4.5***	
Hypoplastic left heart syndrome	24	13	27	2	0	74	
	1.0	***1.6***	***1.9***	***0.4***	***0.0***	***1.4***	
Hypospadias*	1294	308	396	166	4	2228	
	102.9	***74.2***	***54.9***	***59.6***	***126.2***	***81.0***	
Interrupted aortic arch	3	9	9	1	0	23	
	0.1	***1.1***	***0.6***	***0.2***	***0.0***	***0.4***	
Limb deficiencies (reduction defects)	108	62	83	21	0	286	
	4.4	***7.6***	***5.9***	***3.9***	***0.0***	***5.3***	
Omphalocele	18	18	14	4	0	57	2
	0.7	***2.2***	***1.0***	***0.7***	***0.0***	***1.1***	

New Jersey
Birth Defects Counts and Prevalence 2007 - 2011 (Prevalence per 10,000 Live Births)

	Maternal Race/Ethnicity						
Defect	**White, Non-Hispanic**	**Black, Non-Hispanic**	**Hispanic**	**Asian or Pacific Islander, Non-Hispanic**	**American Indian or Alaska Native, Non-Hispanic**	**Total****	**Notes**
Pulmonary valve atresia and stenosis	216	110	131	33	0	503	
	8.8	***13.5***	***9.2***	***6.1***	***0.0***	***9.3***	
Pulmonary valve atresia	15	11	14	2	0	45	
	0.6	***1.4***	***1.0***	***0.4***	***0.0***	***0.8***	
Rectal and large intestinal atresia/stenosis	76	23	51	20	1	178	
	3.1	***2.8***	***3.6***	***3.7***	***17.4***	***3.3***	
Renal agenesis/hypoplasia	143	33	73	17	1	277	
	5.8	***4.1***	***5.2***	***3.1***	***17.4***	***5.1***	
Single ventricle	7	7	6	2	0	23	
	0.3	***0.9***	***0.4***	***0.4***	***0.0***	***0.4***	
Small intestinal atresia/stenosis	69	34	46	11	0	163	
	2.8	***4.2***	***3.2***	***2.0***	***0.0***	***3.0***	
Spina bifida without anencephalus	58	24	60	9	0	158	
	2.4	***2.9***	***4.2***	***1.7***	***0.0***	***2.9***	
Tetralogy of Fallot	73	46	48	20	0	202	
	3.0	***5.7***	***3.4***	***3.7***	***0.0***	***3.8***	
Total anomalous pulmonary venous connection	11	10	16	1	0	39	
	0.4	***1.2***	***1.1***	***0.2***	***0.0***	***0.7***	
Transposition of the great arteries (TGA)	40	22	27	8	0	102	
	1.6	***2.7***	***1.9***	***1.5***	***0.0***	***1.9***	
Dextro-transposition of great arteries (d-TGA)	35	17	20	6	0	82	
	1.4	***2.1***	***1.4***	***1.1***	***0.0***	***1.5***	
Tricuspid valve atresia and stenosis	168	72	128	18	0	387	3
	6.8	***8.8***	***9.0***	***3.3***	***0.0***	***7.2***	
Tricuspid valve atresia	168	72	128	18	0	387	
	6.8	***8.8***	***9.0***	***3.3***	***0.0***	***7.2***	
Trisomy 13	5	5	9	0	0	21	
	0.2	***0.6***	***0.6***	***0.0***	***0.0***	***0.4***	
Trisomy 18	23	12	14	5	0	54	
	0.9	***1.5***	***1.0***	***0.9***	***0.0***	***1.0***	
Trisomy 21 (Down syndrome)	306	89	206	41	3	672	
	12.5	***10.9***	***14.5***	***7.6***	***52.1***	***12.5***	
Turner syndrome	16	1	8	1	0	27	
	0.7	***0.1***	***0.6***	***0.2***	***0.0***	***0.5***	
Ventricular septal defect	1489	471	905	277	4	3208	4
	60.6	***57.9***	***63.9***	***51.0***	***69.4***	***59.6***	
Total live births	**245655**	**81395**	**141629**	**54285**	**576**	**538066**	
Male live births	**125748**	**41496**	**72160**	**27873**	**317**	**275103**	

*Hypospadias prevalence per 10,000 male live births
**Total includes unknown and other maternal race/ethnicity

New Jersey

Trisomy Counts and Prevalence by Maternal Age 2007 - 2011 (Prevalence per 10,000 Live Births)

	Maternal Age (years)			
Defect	**Less than 35**	**35+**	**Total**	**Notes**
Trisomy 13	13	8	21	
	0.3	***0.7***	***0.4***	
Trisomy 18	26	26	54	
	0.6	***2.3***	***1.0***	
Trisomy 21 (Down syndrome)	275	348	672	
	6.5	***30.7***	***12.5***	
Total live births	**424758**	**113224**	**538066**	

**Total includes unknown maternal age

Notes
1.Atrial Septal Defect (ASD) only, Patent Foramen Ovale (PFO) coded separately.
2.Gastroschisis coded 756.79, Omphalocele coded 756.78.
3.ICD9-CM coding update - now includes tricuspid valve regurgitation/insufficiency.
4.Only confirmed cases included.

General comments
-Hybrid system; Passive with audit, uses ICD9-CM; 2011 live birth file is not final and is missing about 3000 out-of-state births;New web-based system implemented July 1, 2009 with reduced reporting of prematurity-related and minor diagnoses.
-State only reports live births.

New Mexico

Birth Defects Counts and Prevalence 2007 - 2011 (Prevalence per 10,000 Live Births)

	Maternal Race/Ethnicity						
Defect	**White, Non-Hispanic**	**Black, Non-Hispanic**	**Hispanic**	**Asian or Pacific Islander, Non-Hispanic**	**American Indian or Alaska Native, Non-Hispanic**	**Total****	**Notes**
Anencephalus	11	1	13	0	2	29	
	2.9	***4.2***	***1.7***	***0.0***	***1.1***	***2.1***	
Cleft lip alone	15	1	35	1	13	67	
	3.9	***4.2***	***4.6***	***4.0***	***7.5***	***4.9***	
Cleft lip with cleft palate	22	1	43	0	12	79	
	7.2	***5.2***	***7.2***	***0.0***	***8.7***	***7.2***	
Cleft palate alone	23	2	41	2	14	82	
	6.0	***8.4***	***5.4***	***7.9***	***8.0***	***5.9***	
Common truncus (truncus arteriosus)	0	0	2	0	0	2	
	0.0	***0.0***	***0.4***	***0.0***	***0.0***	***0.2***	
Gastroschisis	12	5	50	2	11	83	1
	3.1	***21.0***	***6.6***	***7.9***	***6.3***	***6.0***	
Hypoplastic left heart syndrome	4	0	3	0	1	9	2
	1.7	***0.0***	***0.7***	***0.0***	***1.0***	***1.1***	
Hypospadias*	120	10	101	4	15	254	
	60.6	***82.3***	***26.2***	***31.3***	***17.1***	***36.2***	
Limb deficiencies (reduction defects)	15	1	27	1	1	46	
	4.9	***5.2***	***4.5***	***5.0***	***0.7***	***4.2***	
Renal agenesis/hypoplasia	5	1	23	1	3	34	
	1.3	***4.2***	***3.0***	***4.0***	***1.7***	***2.5***	
Spina bifida without anencephalus	18	2	36	2	9	67	
	4.7	***8.4***	***4.7***	***7.9***	***5.2***	***4.9***	
Tetralogy of Fallot	4	1	20	3	5	33	2
	1.0	***4.2***	***2.6***	***11.9***	***2.9***	***2.4***	
Transposition of the great arteries (TGA)	2	2	9	0	4	17	2
	0.6	***10.4***	***1.5***	***0.0***	***2.8***	***1.5***	
Trisomy 13	5	2	9	1	2	29	
	1.3	***8.4***	***1.2***	***4.0***	***1.1***	***2.1***	
Trisomy 18	5	3	9	1	2	40	
	1.3	***12.6***	***1.2***	***4.0***	***1.1***	***2.9***	
Trisomy 21 (Down syndrome)	44	3	85	2	21	165	
	11.4	***12.6***	***11.2***	***7.9***	***12.0***	***12.0***	
Total live births	**38475**	**2377**	**76093**	**2516**	**17429**	**137944**	
Male live births	**19814**	**1215**	**38577**	**1280**	**8797**	**70210**	

*Hypospadias prevalence per 10,000 male live births
**Total includes unknown and other maternal race/ethnicity

New Mexico

Trisomy Counts and Prevalence by Maternal Age 2007 - 2011 (Prevalence per 10,000 Live Births)

	Maternal Age (years)			
Defect	**Less than 35**	**35+**	**Total**	**Notes**
Trisomy 13	11	8	29	
	0.9	***5.5***	***2.1***	
Trisomy 18	12	8	40	
	1.0	***5.5***	***2.9***	
Trisomy 21 (Down syndrome)	96	59	165	
	7.8	***40.9***	***12.0***	
Total live births	**123512**	**14428**	**137944**	

**Total includes unknown maternal age

Notes
1.Medical records are reviewed to confirm this diagnosis
2.Medical records are reviewed to confirm this diagnosis for Environmental Public Health Tracking; NBDPN codes may identify diagnoses that have not been confirmed by medical record.

General comments
-Active case ascertainment for transposition of great arteries, hypoplastic left heart syndrome, tetralogy, gastroschisis. For Environmental Public Health Tracking (EPHT), medical records are used to confirm diagnoses. The National Birth Defects Prevention Network (NBDPN) codes for heart conditions are slightly different than the EPHT codes; therefore, some of the heart conditions identified through NPBDN codes have not received medical record confirmation.
-Unspecified non-livebirths include terminations plus spontaneous abortions (not separated)

New York
Birth Defects Counts and Prevalence 2007 - 2011 (Prevalence per 10,000 Live Births)

	Maternal Race/Ethnicity						
Defect	**White, Non-Hispanic**	**Black, Non-Hispanic**	**Hispanic**	**Asian or Pacific Islander, Non-Hispanic**	**American Indian or Alaska Native, Non-Hispanic**	**Total****	**Notes**
Anencephalus	16	5	12	3	0	37	
	0.3	***0.3***	***0.5***	***0.2***	***0.0***	***0.3***	
Anophthalmia/microphthalmia	45	23	40	13	0	121	
	0.8	***1.2***	***1.5***	***0.9***	***0.0***	***1.0***	
Anotia/microtia	60	11	61	18	1	154	
	1.0	***0.6***	***2.3***	***1.3***	***4.4***	***1.3***	
Aortic valve stenosis	130	17	51	14	0	215	
	2.2	***0.9***	***1.9***	***1.0***	***0.0***	***1.8***	
Atrial septal defect	2089	1516	1431	666	9	5826	
	35.5	***77.5***	***54.0***	***48.4***	***39.4***	***47.9***	
Atrioventricular septal defect (Endocardial cushion defect)	259	132	115	52	1	572	
	4.4	***6.7***	***4.3***	***3.8***	***4.4***	***4.7***	
Biliary atresia	45	39	33	20	1	140	
	0.8	***2.0***	***1.2***	***1.5***	***4.4***	***1.2***	
Bladder exstrophy	15	2	1	1	0	19	
	0.3	***0.1***	***0.0***	***0.1***	***0.0***	***0.2***	
Choanal atresia	140	35	47	9	0	232	
	2.4	***1.8***	***1.8***	***0.7***	***0.0***	***1.9***	
Cleft lip alone	162	23	41	28	1	261	
	2.8	***1.2***	***1.5***	***2.0***	***4.4***	***2.1***	
Cleft lip with cleft palate	306	62	155	52	3	590	
	5.2	***3.2***	***5.8***	***3.8***	***13.1***	***4.9***	
Cleft palate alone	353	89	132	79	1	670	
	6.0	***4.5***	***5.0***	***5.7***	***4.4***	***5.5***	
Cloacal exstrophy	98	23	41	15	0	184	
	1.7	***1.2***	***1.5***	***1.1***	***0.0***	***1.5***	
Clubfoot	897	284	378	134	7	1729	
	15.2	***14.5***	***14.3***	***9.7***	***30.6***	***14.2***	
Coarctation of the aorta	323	98	147	56	1	639	
	5.5	***5.0***	***5.5***	***4.1***	***4.4***	***5.3***	
Common truncus (truncus arteriosus)	33	13	11	7	0	65	
	0.6	***0.7***	***0.4***	***0.5***	***0.0***	***0.5***	
Congenital cataract	99	47	53	21	0	224	
	1.7	***2.4***	***2.0***	***1.5***	***0.0***	***1.8***	
Congenital posterior urethral valves	55	49	26	11	0	143	
	0.9	***2.5***	***1.0***	***0.8***	***0.0***	***1.2***	
Craniosynostosis	354	51	132	33	1	580	
	6.0	***2.6***	***5.0***	***2.4***	***4.4***	***4.8***	
Deletion 22q11.2	24	4	6	1	0	37	
	0.4	***0.2***	***0.2***	***0.1***	***0.0***	***0.3***	
Diaphragmatic hernia	147	39	50	25	1	267	
	2.5	***2.0***	***1.9***	***1.8***	***4.4***	***2.2***	
Double outlet right ventricle	85	46	63	37	0	240	
	1.4	***2.4***	***2.4***	***2.7***	***0.0***	***2.0***	
Ebstein anomaly	31	13	22	7	0	76	
	0.5	***0.7***	***0.8***	***0.5***	***0.0***	***0.6***	
Encephalocele	44	18	17	12	0	93	
	0.7	***0.9***	***0.6***	***0.9***	***0.0***	***0.8***	
Esophageal atresia/tracheoesophageal fistula	158	39	55	25	0	288	
	2.7	***2.0***	***2.1***	***1.8***	***0.0***	***2.4***	
Gastroschisis	150	42	70	9	3	279	
	2.5	***2.1***	***2.6***	***0.7***	***13.1***	***2.3***	
Holoprosencephaly	36	9	17	2	0	66	
	0.6	***0.5***	***0.6***	***0.1***	***0.0***	***0.5***	
Hypoplastic left heart syndrome	150	49	68	23	1	298	
	2.5	***2.5***	***2.6***	***1.7***	***4.4***	***2.5***	
Hypospadias*	2844	673	678	301	5	4588	
	94.0	***67.6***	***50.2***	***42.4***	***43.7***	***73.7***	
Interrupted aortic arch	49	13	21	9	0	94	
	0.8	***0.7***	***0.8***	***0.7***	***0.0***	***0.8***	

New York
Birth Defects Counts and Prevalence 2007 - 2011 (Prevalence per 10,000 Live Births)

	Maternal Race/Ethnicity						
Defect	**White, Non-Hispanic**	**Black, Non-Hispanic**	**Hispanic**	**Asian or Pacific Islander, Non-Hispanic**	**American Indian or Alaska Native, Non-Hispanic**	**Total****	**Notes**
Limb deficiencies (reduction defects)	190	73	81	15	1	371	
	3.2	***3.7***	***3.1***	***1.1***	***4.4***	***3.1***	
Omphalocele	64	29	30	11	3	138	
	1.1	***1.5***	***1.1***	***0.8***	***13.1***	***1.1***	
Pulmonary valve atresia and stenosis	442	217	219	103	1	1005	
	7.5	***11.1***	***8.3***	***7.5***	***4.4***	***8.3***	
Pulmonary valve atresia	53	21	27	15	0	119	
	0.9	***1.1***	***1.0***	***1.1***	***0.0***	***1.0***	
Rectal and large intestinal atresia/stenosis	234	63	125	55	1	491	
	4.0	***3.2***	***4.7***	***4.0***	***4.4***	***4.0***	
Renal agenesis/hypoplasia	309	79	114	42	3	565	
	5.2	***4.0***	***4.3***	***3.1***	***13.1***	***4.6***	
Single ventricle	56	22	26	12	0	116	
	1.0	***1.1***	***1.0***	***0.9***	***0.0***	***1.0***	
Small intestinal atresia/stenosis	250	106	108	54	1	530	
	4.2	***5.4***	***4.1***	***3.9***	***4.4***	***4.4***	
Spina bifida without anencephalus	140	39	67	23	0	274	
	2.4	***2.0***	***2.5***	***1.7***	***0.0***	***2.3***	
Tetralogy of Fallot	282	99	105	75	1	580	
	4.8	***5.1***	***4.0***	***5.5***	***4.4***	***4.8***	
Total anomalous pulmonary venous connection	55	32	46	17	0	152	
	0.9	***1.6***	***1.7***	***1.2***	***0.0***	***1.3***	
Transposition of the great arteries (TGA)	162	35	60	37	0	302	
	2.8	***1.8***	***2.3***	***2.7***	***0.0***	***2.5***	
Dextro-transposition of great arteries (d-TGA)	154	35	60	35	0	292	
	2.6	***1.8***	***2.3***	***2.5***	***0.0***	***2.4***	
Tricuspid valve atresia and stenosis	54	39	36	20	0	155	
	0.9	***2.0***	***1.4***	***1.5***	***0.0***	***1.3***	
Tricuspid valve atresia	26	14	15	13	0	69	
	0.4	***0.7***	***0.6***	***0.9***	***0.0***	***0.6***	
Trisomy 13	34	19	18	6	0	79	
	0.6	***1.0***	***0.7***	***0.4***	***0.0***	***0.6***	
Trisomy 18	57	40	41	10	0	151	
	1.0	***2.0***	***1.5***	***0.7***	***0.0***	***1.2***	
Trisomy 21 (Down syndrome)	719	261	358	118	1	1489	
	12.2	***13.3***	***13.5***	***8.6***	***4.4***	***12.3***	
Turner syndrome	51	12	24	9	0	100	
	0.9	***0.6***	***0.9***	***0.7***	***0.0***	***0.8***	
Ventricular septal defect	2840	828	1267	561	10	5625	
	48.3	***42.3***	***47.8***	***40.8***	***43.7***	***46.3***	
Total live births	**588599**	**195619**	**265201**	**137501**	**2287**	**1215430**	
Male live births	**302444**	**99566**	**134978**	**70942**	**1143**	**622414**	

*Hypospadias prevalence per 10,000 male live births
**Total includes unknown and other maternal race/ethnicity

New York

Trisomy Counts and Prevalence by Maternal Age 2007 - 2011 (Prevalence per 10,000 Live Births)

	Maternal Age (years)			
Defect	**Less than 35**	**35+**	**Total**	**Notes**
Trisomy 13	55	24	79	
	0.6	***1.0***	***0.6***	
Trisomy 18	69	82	151	
	0.7	***3.4***	***1.2***	
Trisomy 21 (Down syndrome)	715	774	1489	
	7.3	***32.3***	***12.3***	
Total live births	**975958**	**239296**	**1215430**	

**Total includes unknown maternal age

North Carolina

Birth Defects Counts and Prevalence 2007 - 2011 (Prevalence per 10,000 Live Births)

	Maternal Race/Ethnicity						
Defect	White, Non-Hispanic	Black, Non-Hispanic	Hispanic	Asian or Pacific Islander, Non-Hispanic	American Indian or Alaska Native, Non-Hispanic	Total**	Notes
Anencephalus	93	27	37	5	4	184	
	2.7	***1.8***	***3.7***	***2.5***	***4.6***	***2.9***	
Anophthalmia/microphthalmia	57	31	20	5	1	114	
	1.6	***2.1***	***2.0***	***2.5***	***1.2***	***1.8***	
Anotia/microtia	45	13	39	5	6	109	
	1.3	***0.9***	***3.9***	***2.5***	***6.9***	***1.7***	
Aortic valve stenosis	96	31	19	2	2	150	
	2.7	***2.1***	***1.9***	***1.0***	***2.3***	***2.4***	
Atrial septal defect	1699	914	497	76	68	3263	
	48.4	***61.2***	***49.3***	***37.4***	***78.3***	***51.7***	
Atrioventricular septal defect (Endocardial cushion defect)	231	103	65	9	8	422	
	6.6	***6.9***	***6.4***	***4.4***	***9.2***	***6.7***	
Biliary atresia	21	15	9	1	1	47	
	0.6	***1.0***	***0.9***	***0.5***	***1.2***	***0.7***	
Bladder exstrophy	9	10	3	0	0	22	
	0.3	***0.7***	***0.3***	***0.0***	***0.0***	***0.3***	
Choanal atresia	50	19	22	3	1	95	
	1.4	***1.3***	***2.2***	***1.5***	***1.2***	***1.5***	
Cleft lip alone	132	45	23	5	6	213	
	3.8	***3.0***	***2.3***	***2.5***	***6.9***	***3.4***	
Cleft lip with cleft palate	216	62	64	14	9	365	
	6.2	***4.2***	***6.3***	***6.9***	***10.4***	***5.8***	
Cleft palate alone	268	57	51	15	5	398	
	7.6	***3.8***	***5.1***	***7.4***	***5.8***	***6.3***	
Cloacal exstrophy	12	3	5	0	0	20	
	0.3	***0.2***	***0.5***	***0.0***	***0.0***	***0.3***	
Clubfoot	747	275	196	30	11	1265	
	21.3	***18.4***	***19.4***	***14.8***	***12.7***	***20.0***	
Coarctation of the aorta	206	61	42	11	3	324	
	5.9	***4.1***	***4.2***	***5.4***	***3.5***	***5.1***	
Common truncus (truncus arteriosus)	28	11	8	2	0	50	
	0.8	***0.7***	***0.8***	***1.0***	***0.0***	***0.8***	
Congenital cataract	34	28	8	3	1	74	
	1.0	***1.9***	***0.8***	***1.5***	***1.2***	***1.2***	
Congenital posterior urethral valves	99	67	17	3	3	190	
	2.8	***4.5***	***1.7***	***1.5***	***3.5***	***3.0***	
Craniosynostosis	275	50	47	4	4	381	
	7.8	***3.3***	***4.7***	***2.0***	***4.6***	***6.0***	
Diaphragmatic hernia	109	25	28	7	3	175	
	3.1	***1.7***	***2.8***	***3.4***	***3.5***	***2.8***	
Double outlet right ventricle	72	20	17	0	2	111	
	2.1	***1.3***	***1.7***	***0.0***	***2.3***	***1.8***	
Ebstein anomaly	27	11	10	4	1	53	
	0.8	***0.7***	***1.0***	***2.0***	***1.2***	***0.8***	
Encephalocele	36	21	16	2	1	78	
	1.0	***1.4***	***1.6***	***1.0***	***1.2***	***1.2***	
Esophageal atresia/tracheoesophageal fistula	97	29	17	2	2	147	
	2.8	***1.9***	***1.7***	***1.0***	***2.3***	***2.3***	
Gastroschisis	162	62	44	5	8	284	
	4.6	***4.2***	***4.4***	***2.5***	***9.2***	***4.5***	
Holoprosencephaly	35	27	16	2	4	86	
	1.0	***1.8***	***1.6***	***1.0***	***4.6***	***1.4***	
Hypoplastic left heart syndrome	90	36	27	5	0	160	
	2.6	***2.4***	***2.7***	***2.5***	***0.0***	***2.5***	
Hypospadias*	1193	393	128	57	31	1805	
	66.2	***51.7***	***24.8***	***54.0***	***70.6***	***55.9***	
Interrupted aortic arch	21	13	9	0	1	44	
	0.6	***0.9***	***0.9***	***0.0***	***1.2***	***0.7***	
Limb deficiencies (reduction defects)	176	88	48	9	11	333	
	5.0	***5.9***	***4.8***	***4.4***	***12.7***	***5.3***	

North Carolina

Birth Defects Counts and Prevalence 2007 - 2011 (Prevalence per 10,000 Live Births)

	Maternal Race/Ethnicity						
Defect	**White, Non-Hispanic**	**Black, Non-Hispanic**	**Hispanic**	**Asian or Pacific Islander, Non-Hispanic**	**American Indian or Alaska Native, Non-Hispanic**	**Total****	**Notes**
Omphalocele	77	40	24	6	1	150	
	2.2	***2.7***	***2.4***	***3.0***	***1.2***	***2.4***	
Pulmonary valve atresia and stenosis	273	135	79	16	8	513	
	7.8	***9.0***	***7.8***	***7.9***	***9.2***	***8.1***	
Pulmonary valve atresia	51	31	12	7	2	103	
	1.5	***2.1***	***1.2***	***3.4***	***2.3***	***1.6***	
Rectal and large intestinal atresia/stenosis	135	55	58	4	4	258	
	3.8	***3.7***	***5.8***	***2.0***	***4.6***	***4.1***	
Renal agenesis/hypoplasia	247	104	65	9	8	436	
	7.0	***7.0***	***6.4***	***4.4***	***9.2***	***6.9***	
Single ventricle	25	15	17	1	0	58	
	0.7	***1.0***	***1.7***	***0.5***	***0.0***	***0.9***	
Small intestinal atresia/stenosis	126	50	39	6	1	222	
	3.6	***3.3***	***3.9***	***3.0***	***1.2***	***3.5***	
Spina bifida without anencephalus	147	45	50	7	2	255	
	4.2	***3.0***	***5.0***	***3.4***	***2.3***	***4.0***	
Tetralogy of Fallot	140	76	32	13	9	272	
	4.0	***5.1***	***3.2***	***6.4***	***10.4***	***4.3***	
Total anomalous pulmonary venous connection	39	12	16	4	2	73	
	1.1	***0.8***	***1.6***	***2.0***	***2.3***	***1.2***	
Transposition of the great arteries (TGA)	121	45	25	8	3	203	
	3.5	***3.0***	***2.5***	***3.9***	***3.5***	***3.2***	
Dextro-transposition of great arteries (d-TGA)	87	27	14	6	3	137	
	2.5	***1.8***	***1.4***	***3.0***	***3.5***	***2.2***	
Tricuspid valve atresia and stenosis	70	36	21	2	7	136	
	2.0	***2.4***	***2.1***	***1.0***	***8.1***	***2.2***	
Tricuspid valve atresia	55	33	18	2	6	114	
	1.6	***2.2***	***1.8***	***1.0***	***6.9***	***1.8***	
Trisomy 13	39	31	12	1	0	85	
	1.1	***2.1***	***1.2***	***0.5***	***0.0***	***1.3***	
Trisomy 18	100	40	32	8	2	190	
	2.9	***2.7***	***3.2***	***3.9***	***2.3***	***3.0***	
Trisomy 21 (Down syndrome)	451	143	139	21	19	792	
	12.9	***9.6***	***13.8***	***10.3***	***21.9***	***12.5***	
Turner syndrome	53	10	12	0	0	78	
	1.5	***0.7***	***1.2***	***0.0***	***0.0***	***1.2***	
Ventricular septal defect	1539	626	566	67	40	2847	
	43.9	***41.9***	***56.1***	***32.9***	***46.1***	***45.1***	
Total live births	**350686**	**149337**	**100827**	**20334**	**8683**	**631134**	
Male live births	**180097**	**75953**	**51511**	**10556**	**4391**	**323148**	

*Hypospadias prevalence per 10,000 male live births
**Total includes unknown and other maternal race/ethnicity

North Carolina

Trisomy Counts and Prevalence by Maternal Age 2007 - 2011 (Prevalence per 10,000 Live Births)

	Maternal Age (years)			
Defect	**Less than 35**	**35+**	**Total**	**Notes**
Trisomy 13	57	28	85	
	1.0	***3.4***	***1.3***	
Trisomy 18	105	83	190	
	1.9	***10.2***	***3.0***	
Trisomy 21 (Down syndrome)	423	365	792	
	7.7	***44.7***	***12.5***	
Total live births	**549499**	**81596**	**631134**	

**Total includes unknown maternal age

General comments
-Fetal deaths are those greater than 20 weeks gestational age.
-There is no gestational age cut-off for terminations.

North Dakota

Birth Defects Counts and Prevalence 2007 - 2011 (Prevalence per 10,000 Live Births)

	Maternal Race/Ethnicity						
Defect	**White, Non-Hispanic**	**Black, Non-Hispanic**	**Hispanic**	**Asian or Pacific Islander, Non-Hispanic**	**American Indian or Alaska Native, Non-Hispanic**	**Total****	**Notes**
Anencephalus	19	1	0	0	2	22	
	5.2	***12.2***	***0.0***	***0.0***	***4.1***	***4.9***	
Anophthalmia/microphthalmia	1	0	0	0	0	1	
	0.3	***0.0***	***0.0***	***0.0***	***0.0***	***0.2***	
Anotia/microtia	1	0	0	0	2	3	
	0.3	***0.0***	***0.0***	***0.0***	***4.1***	***0.7***	
Aortic valve stenosis	9	0	0	0	1	10	
	2.5	***0.0***	***0.0***	***0.0***	***2.1***	***2.2***	
Atrial septal defect	262	10	4	4	97	379	
	72.3	***122.2***	***23.6***	***63.5***	***199.3***	***84.1***	
Atrioventricular septal defect (Endocardial cushion defect)	8	0	3	0	1	13	
	2.2	***0.0***	***17.7***	***0.0***	***2.1***	***2.9***	
Biliary atresia	2	0	0	0	1	3	
	0.6	***0.0***	***0.0***	***0.0***	***2.1***	***0.7***	
Bladder exstrophy	1	0	0	0	0	1	
	0.3	***0.0***	***0.0***	***0.0***	***0.0***	***0.2***	
Choanal atresia	3	0	0	0	0	3	
	0.8	***0.0***	***0.0***	***0.0***	***0.0***	***0.7***	
Cleft lip alone	45	0	1	2	8	58	
	12.4	***0.0***	***5.9***	***31.7***	***16.4***	***12.9***	
Cleft lip with cleft palate	23	0	0	2	11	36	
	6.3	***0.0***	***0.0***	***31.7***	***22.6***	***8.0***	
Cleft palate alone	50	0	0	3	9	62	
	13.8	***0.0***	***0.0***	***47.6***	***18.5***	***13.8***	
Coarctation of the aorta	12	0	0	0	1	13	
	3.3	***0.0***	***0.0***	***0.0***	***2.1***	***2.9***	
Congenital cataract	7	1	0	0	1	9	
	1.9	***12.2***	***0.0***	***0.0***	***2.1***	***2.0***	
Diaphragmatic hernia	13	0	0	0	5	18	
	3.6	***0.0***	***0.0***	***0.0***	***10.3***	***4.0***	
Double outlet right ventricle	5	0	0	0	0	5	
	1.4	***0.0***	***0.0***	***0.0***	***0.0***	***1.1***	
Ebstein anomaly	2	1	0	0	1	4	
	0.6	***12.2***	***0.0***	***0.0***	***2.1***	***0.9***	
Encephalocele	1	0	0	0	0	1	
	0.3	***0.0***	***0.0***	***0.0***	***0.0***	***0.2***	
Esophageal atresia/tracheoesophageal fistula	9	1	0	0	1	11	
	2.5	***12.2***	***0.0***	***0.0***	***2.1***	***2.4***	
Gastroschisis	18	2	0	1	15	36	1
	5.0	***24.4***	***0.0***	***15.9***	***30.8***	***8.0***	
Hypoplastic left heart syndrome	9	0	0	0	0	9	
	2.5	***0.0***	***0.0***	***0.0***	***0.0***	***2.0***	
Hypospadias*	61	2	1	1	5	70	
	32.9	***42.6***	***12.1***	***31.3***	***20.0***	***30.4***	
Limb deficiencies (reduction defects)	7	0	0	0	3	10	
	1.9	***0.0***	***0.0***	***0.0***	***6.2***	***2.2***	
Omphalocele	4	0	0	0	1	5	2
	1.1	***0.0***	***0.0***	***0.0***	***2.1***	***1.1***	
Pulmonary valve atresia and stenosis	47	1	1	1	13	63	
	13.0	***12.2***	***5.9***	***15.9***	***26.7***	***14.0***	
Pulmonary valve atresia	3	0	0	0	1	4	
	0.8	***0.0***	***0.0***	***0.0***	***2.1***	***0.9***	
Rectal and large intestinal atresia/stenosis	12	1	0	0	1	14	
	3.3	***12.2***	***0.0***	***0.0***	***2.1***	***3.1***	
Renal agenesis/hypoplasia	5	0	0	0	4	9	
	1.4	***0.0***	***0.0***	***0.0***	***8.2***	***2.0***	
Single ventricle	1	0	0	0	0	1	
	0.3	***0.0***	***0.0***	***0.0***	***0.0***	***0.2***	
Spina bifida without anencephalus	12	0	0	0	3	15	
	3.3	***0.0***	***0.0***	***0.0***	***6.2***	***3.3***	

North Dakota
Birth Defects Counts and Prevalence 2007 - 2011 (Prevalence per 10,000 Live Births)

	Maternal Race/Ethnicity						
Defect	**White, Non-Hispanic**	**Black, Non-Hispanic**	**Hispanic**	**Asian or Pacific Islander, Non-Hispanic**	**American Indian or Alaska Native, Non-Hispanic**	**Total****	**Notes**
Tetralogy of Fallot	20	0	0	0	7	27	
	5.5	***0.0***	***0.0***	***0.0***	***14.4***	***6.0***	
Total anomalous pulmonary venous connection	0	0	0	0	1	1	
	0.0	***0.0***	***0.0***	***0.0***	***2.1***	***0.2***	
Transposition of the great arteries (TGA)	16	0	0	0	2	18	
	4.4	***0.0***	***0.0***	***0.0***	***4.1***	***4.0***	
Tricuspid valve atresia and stenosis	3	0	0	0	1	4	
	0.8	***0.0***	***0.0***	***0.0***	***2.1***	***0.9***	
Tricuspid valve atresia	3	0	0	0	1	4	
	0.8	***0.0***	***0.0***	***0.0***	***2.1***	***0.9***	
Trisomy 18	5	1	0	0	0	6	
	1.4	***12.2***	***0.0***	***0.0***	***0.0***	***1.3***	
Trisomy 21 (Down syndrome)	37	1	3	2	1	45	
	10.2	***12.2***	***17.7***	***31.7***	***2.1***	***10.0***	
Ventricular septal defect	129	3	6	2	40	182	3
	35.6	***36.7***	***35.4***	***31.7***	***82.2***	***40.4***	
Total live births	**36237**	**818**	**1697**	**630**	**4867**	**45045**	
Male live births	**18527**	**470**	**828**	**319**	**2506**	**23045**	

*Hypospadias prevalence per 10,000 male live births
**Total includes unknown and other maternal race/ethnicity

North Dakota

Trisomy Counts and Prevalence by Maternal Age 2007 - 2011 (Prevalence per 10,000 Live Births)

	Maternal Age (years)			
Defect	**Less than 35**	**35+**	**Total**	**Notes**
Trisomy 18	5	1	6	
	1.2	***2.2***	***1.3***	
Trisomy 21 (Down syndrome)	27	17	45	
	6.7	***37.5***	***10.0***	
Total live births	**40514**	**4531**	**45045**	

**Total includes unknown maternal age

Notes

1.North Dakota uses ICD-9 codes and cannot distinguish between gastroschisis and omphalocele unless reported. From 2008 onwards there have been few cases of omphalocele reported with ICD-9-CM codes.
2.North Dakota Vital Statistics has started collecting data using ICD-10 codes for Omphalocele from 2008 onwards in the birth certificates.
3.North Dakota uses ICD-9 code 745.4 for confirmed diagnosis of ventricular septal defect; cannot distinguish 745.487 and 745.498 CDC/BPA codes.

General comments

-During the reporting period 2014, data from the Division of Medical Genetics at the University of North Dakota School of Medicine and Health Sciences were linked to the registry to enhance the reporting in the North Dakota Birth Defects Monitoring System and includes data for births with defects for infants born in the calendar year 2011 from the Division of Medical Genetics program.
-North Dakota Vital Statistics collects data using ICD-10 codes.
-North Dakota Vital Statistics implemented electronic registration of births from 2006 onwards.
-Statistical records of induced termination and spontaneous termination are filed. Defects are not recorded.
-The North Dakota Birth Defects Monitoring System master registry is translated to ICD-9 using ICD-10 codes from fetal death, death and birth certificates.
-There were no major methodological changes in the registry for the year 2014.
-Trisomy 13 and Trisomy 18 were collected in the birth certificates up to the year 2005; these conditions are not being collected in the new electronic birth certificates from the year 2006 onwards.

Ohio

Birth Defects Counts and Prevalence 2008 (Prevalence per 10,000 Live Births)

	Maternal Race/Ethnicity						
Defect	**White, Non-Hispanic**	**Black, Non-Hispanic**	**Hispanic**	**Asian or Pacific Islander, Non-Hispanic**	**American Indian or Alaska Native, Non-Hispanic**	**Total****	**Notes**
Cleft lip alone	41	7	2	2	0	52	1
	3.6	***2.8***	***2.9***	***6.4***	***0.0***	***3.5***	
Cleft lip with cleft palate	77	7	3	1	0	88	1
	6.8	***2.8***	***4.4***	***3.2***	***0.0***	***5.9***	
Cleft palate alone	94	19	3	2	0	118	1
	8.3	***7.7***	***4.4***	***6.4***	***0.0***	***7.9***	
Spina bifida without anencephalus	40	3	3	0	0	46	2
	3.5	***1.2***	***4.4***	***0.0***	***0.0***	***3.1***	
Trisomy 13	10	2	0	0	0	12	3
	0.9	***0.8***	***0.0***	***0.0***	***0.0***	***0.8***	
Trisomy 18	15	8	0	0	0	23	3
	1.3	***3.2***	***0.0***	***0.0***	***0.0***	***1.5***	
Trisomy 21 (Down syndrome)	127	28	8	3	1	167	3
	11.2	***11.3***	***11.6***	***9.6***	***46.3***	***11.2***	
Total live births	**113542**	**24818**	**6887**	**3129**	**216**	**148592**	

*Hypospadias prevalence per 10,000 male live births
**Total includes unknown and other maternal race/ethnicity

Ohio

Trisomy Counts and Prevalence by Maternal Age 2008 (Prevalence per 10,000 Live Births)

	Maternal Age (years)			
Defect	**Less than 35**	**35+**	**Total**	**Notes**
Trisomy 13	9	3	12	3
	0.7	***1.7***	***0.8***	
Trisomy 18	7	16	23	3
	0.5	***9.2***	***1.5***	
Trisomy 21 (Down syndrome)	97	70	167	3
	7.4	***40.2***	***11.2***	
Total live births	**131185**	**17407**	**148592**	

**Total includes unknown maternal age

Notes
1.Data pulled on July 14, 2011.
2.Data pulled on July 5, 2011.
3.Data pulled on August 23, 2011.

General comments
-Caution: Ohio considers rates based on numerators of less than 20 unstable.
-State only reports live births.
-Trisomy 13, 18 and 21 counts include probable cases.

Oklahoma

Birth Defects Counts and Prevalence 2007 - 2011 (Prevalence per 10,000 Live Births)

	Maternal Race/Ethnicity						
Defect	White, Non-Hispanic	Black, Non-Hispanic	Hispanic	Asian or Pacific Islander, Non-Hispanic	American Indian or Alaska Native, Non-Hispanic	Total**	Notes
Anencephalus	43	5	5	1	8	62	
	2.5	***2.0***	***1.3***	***1.6***	***2.7***	***2.3***	
Anophthalmia/microphthalmia	21	0	6	0	6	33	
	1.2	***0.0***	***1.6***	***0.0***	***2.0***	***1.2***	
Anotia/microtia	31	2	14	5	4	56	
	1.8	***0.8***	***3.7***	***7.8***	***1.3***	***2.1***	
Aortic valve stenosis	64	6	13	0	5	88	
	3.8	***2.4***	***3.5***	***0.0***	***1.7***	***3.3***	
Atrial septal defect	1227	201	172	18	250	1882	
	71.9	***82.0***	***45.7***	***28.0***	***82.9***	***69.8***	
Atrioventricular septal defect (Endocardial cushion defect)	100	16	13	1	14	145	
	5.9	***6.5***	***3.5***	***1.6***	***4.6***	***5.4***	
Biliary atresia	11	1	2	0	3	17	
	0.6	***0.4***	***0.5***	***0.0***	***1.0***	***0.6***	
Bladder exstrophy	8	1	0	0	2	11	
	0.5	***0.4***	***0.0***	***0.0***	***0.7***	***0.4***	
Choanal atresia	27	1	3	0	4	35	
	1.6	***0.4***	***0.8***	***0.0***	***1.3***	***1.3***	
Cleft lip alone	79	5	9	2	11	106	
	4.6	***2.0***	***2.4***	***3.1***	***3.6***	***3.9***	
Cleft lip with cleft palate	154	11	23	3	30	224	
	9.0	***4.5***	***6.1***	***4.7***	***9.9***	***8.3***	
Cleft palate alone	142	19	19	5	29	217	
	8.3	***7.7***	***5.0***	***7.8***	***9.6***	***8.0***	
Clubfoot	346	28	56	5	50	495	
	20.3	***11.4***	***14.9***	***7.8***	***16.6***	***18.4***	
Coarctation of the aorta	95	13	19	2	19	148	
	5.6	***5.3***	***5.0***	***3.1***	***6.3***	***5.5***	
Common truncus (truncus arteriosus)	16	2	2	0	3	26	
	0.9	***0.8***	***0.5***	***0.0***	***1.0***	***1.0***	
Congenital cataract	30	5	3	0	3	42	
	1.8	***2.0***	***0.8***	***0.0***	***1.0***	***1.6***	
Congenital posterior urethral valves	20	3	1	0	2	27	
	1.2	***1.2***	***0.3***	***0.0***	***0.7***	***1.0***	
Craniosynostosis	67	5	7	0	10	91	
	3.9	***2.0***	***1.9***	***0.0***	***3.3***	***3.4***	
Deletion 22q11.2	18	2	2	0	5	27	
	1.1	***0.8***	***0.5***	***0.0***	***1.7***	***1.0***	
Diaphragmatic hernia	79	5	15	1	7	108	
	4.6	***2.0***	***4.0***	***1.6***	***2.3***	***4.0***	
Double outlet right ventricle	40	7	3	0	8	58	
	2.3	***2.9***	***0.8***	***0.0***	***2.7***	***2.2***	
Ebstein anomaly	11	0	4	1	2	19	
	0.6	***0.0***	***1.1***	***1.6***	***0.7***	***0.7***	
Encephalocele	15	5	2	1	2	25	
	0.9	***2.0***	***0.5***	***1.6***	***0.7***	***0.9***	
Esophageal atresia/tracheoesophageal fistula	42	4	8	0	9	63	
	2.5	***1.6***	***2.1***	***0.0***	***3.0***	***2.3***	
Gastroschisis	111	7	21	4	30	173	
	6.5	***2.9***	***5.6***	***6.2***	***9.9***	***6.4***	
Holoprosencephaly	21	4	6	0	5	36	
	1.2	***1.6***	***1.6***	***0.0***	***1.7***	***1.3***	
Hypoplastic left heart syndrome	34	2	8	0	9	54	
	2.0	***0.8***	***2.1***	***0.0***	***3.0***	***2.0***	
Hypospadias*	397	44	17	8	43	513	
	45.5	***35.3***	***8.9***	***24.4***	***28.0***	***37.2***	
Interrupted aortic arch	12	1	2	0	4	19	
	0.7	***0.4***	***0.5***	***0.0***	***1.3***	***0.7***	
Limb deficiencies (reduction defects)	71	10	10	1	20	114	
	4.2	***4.1***	***2.7***	***1.6***	***6.6***	***4.2***	

Oklahoma

Birth Defects Counts and Prevalence 2007 - 2011 (Prevalence per 10,000 Live Births)

	Maternal Race/Ethnicity						
Defect	**White, Non-Hispanic**	**Black, Non-Hispanic**	**Hispanic**	**Asian or Pacific Islander, Non-Hispanic**	**American Indian or Alaska Native, Non-Hispanic**	**Total****	**Notes**
Omphalocele	43	7	8	0	4	62	
	2.5	***2.9***	***2.1***	***0.0***	***1.3***	***2.3***	
Pulmonary valve atresia and stenosis	61	6	9	0	11	91	
	3.6	***2.4***	***2.4***	***0.0***	***3.6***	***3.4***	
Pulmonary valve atresia	57	6	7	0	11	83	
	3.3	***2.4***	***1.9***	***0.0***	***3.6***	***3.1***	
Rectal and large intestinal atresia/stenosis	108	12	24	4	15	165	
	6.3	***4.9***	***6.4***	***6.2***	***5.0***	***6.1***	
Renal agenesis/hypoplasia	99	8	17	1	16	144	
	5.8	***3.3***	***4.5***	***1.6***	***5.3***	***5.3***	
Single ventricle	13	1	3	0	3	22	
	0.8	***0.4***	***0.8***	***0.0***	***1.0***	***0.8***	
Small intestinal atresia/stenosis	68	12	12	3	13	109	
	4.0	***4.9***	***3.2***	***4.7***	***4.3***	***4.0***	
Spina bifida without anencephalus	70	7	14	0	10	103	
	4.1	***2.9***	***3.7***	***0.0***	***3.3***	***3.8***	
Tetralogy of Fallot	82	16	15	2	14	130	
	4.8	***6.5***	***4.0***	***3.1***	***4.6***	***4.8***	
Total anomalous pulmonary venous connection	23	2	6	1	9	41	
	1.3	***0.8***	***1.6***	***1.6***	***3.0***	***1.5***	
Transposition of the great arteries (TGA)	65	5	12	0	8	94	
	3.8	***2.0***	***3.2***	***0.0***	***2.7***	***3.5***	
Dextro-transposition of great arteries (d-TGA)	52	4	4	0	7	69	
	3.0	***1.6***	***1.1***	***0.0***	***2.3***	***2.6***	
Tricuspid valve atresia and stenosis	22	4	6	0	2	35	
	1.3	***1.6***	***1.6***	***0.0***	***0.7***	***1.3***	
Tricuspid valve atresia	22	4	6	0	2	35	
	1.3	***1.6***	***1.6***	***0.0***	***0.7***	***1.3***	
Trisomy 13	20	2	3	0	3	28	
	1.2	***0.8***	***0.8***	***0.0***	***1.0***	***1.0***	
Trisomy 18	37	7	4	1	8	57	
	2.2	***2.9***	***1.1***	***1.6***	***2.7***	***2.1***	
Trisomy 21 (Down syndrome)	221	26	67	7	30	354	
	13.0	***10.6***	***17.8***	***10.9***	***9.9***	***13.1***	
Turner syndrome	20	1	4	0	2	27	
	1.2	***0.4***	***1.1***	***0.0***	***0.7***	***1.0***	
Ventricular septal defect	960	138	183	21	150	1469	
	56.3	***56.3***	***48.6***	***32.7***	***49.7***	***54.5***	
Total live births	**170598**	**24526**	**37651**	**6418**	**30156**	**269685**	
Male live births	**87326**	**12450**	**19174**	**3275**	**15337**	**137727**	

*Hypospadias prevalence per 10,000 male live births
**Total includes unknown and other maternal race/ethnicity

Oklahoma

Trisomy Counts and Prevalence by Maternal Age 2007 - 2011 (Prevalence per 10,000 Live Births)

	Maternal Age (years)			
Defect	**Less than 35**	**35+**	**Total**	**Notes**
Trisomy 13	21	7	28	
	0.9	***3.1***	***1.0***	
Trisomy 18	37	20	57	
	1.5	***8.8***	***2.1***	
Trisomy 21 (Down syndrome)	203	148	354	
	8.2	***64.9***	***13.1***	
Total live births	**246829**	**22809**	**269685**	

**Total includes unknown maternal age

General comments

-Currently do not collect cloacal exstrophy.
-Fetal deaths are defined as baby born dead (without a heart rate), at or after 20th gestational week. Includes babies that died during labor.
-Oklahoma does not use the unspecified non-live birth category.
-Terminations are defined as fetus terminated by parental choice prior to 37 weeks. When labor is induced to deliver a fetus who is dead prior to the onset of labor it is not considered an elective termination.

Puerto Rico

Birth Defects Counts and Prevalence 2007 - 2011 (Prevalence per 10,000 Live Births)

	Maternal Race/Ethnicity		
Defect	**Hispanic**	**Total****	**Notes**
Anencephalus	96 ***4.4***	96 ***4.4***	
Anophthalmia/microphthalmia	25 ***1.4***	25 ***1.4***	1
Anotia/microtia	48 ***2.8***	48 ***2.8***	2
Aortic valve stenosis	35 ***1.6***	35 ***1.6***	
Atrial septal defect	509 ***23.1***	509 ***23.1***	
Atrioventricular septal defect (Endocardial cushion defect)	113 ***5.1***	113 ***5.1***	3
Bladder exstrophy	3 ***0.2***	3 ***0.2***	2
Cleft lip alone	66 ***3.0***	66 ***3.0***	
Cleft lip with cleft palate	132 ***6.0***	132 ***6.0***	
Cleft palate alone	143 ***6.5***	143 ***6.5***	
Clubfoot	392 ***17.8***	392 ***17.8***	
Coarctation of the aorta	81 ***3.7***	81 ***3.7***	
Common truncus (truncus arteriosus)	15 ***0.7***	15 ***0.7***	
Double outlet right ventricle	42 ***2.4***	42 ***2.4***	
Ebstein anomaly	19 ***0.9***	19 ***0.9***	
Encephalocele	24 ***1.1***	24 ***1.1***	
Gastroschisis	108 ***4.9***	108 ***4.9***	4
Hypoplastic left heart syndrome	43 ***1.9***	43 ***1.9***	
Hypospadias*	386 ***34.1***	386 ***34.1***	
Limb deficiencies (reduction defects)	129 ***5.8***	129 ***5.8***	
Omphalocele	55 ***2.5***	55 ***2.5***	4
Pulmonary valve atresia and stenosis	212 ***9.6***	212 ***9.6***	
Pulmonary valve atresia	25 ***1.1***	25 ***1.1***	
Spina bifida without anencephalus	113 ***5.1***	113 ***5.1***	
Tetralogy of Fallot	89 ***4.0***	89 ***4.0***	
Total anomalous pulmonary venous connection	14 ***0.6***	14 ***0.6***	
Transposition of the great arteries (TGA)	54 ***2.4***	54 ***2.4***	
Dextro-transposition of great arteries (d-TGA)	54 ***2.4***	54 ***2.4***	
Tricuspid valve atresia and stenosis	25 ***1.1***	25 ***1.1***	5
Tricuspid valve atresia	23 ***1.3***	23 ***1.3***	
Trisomy 13	34 ***1.5***	34 ***1.5***	
Trisomy 18	87 ***3.9***	87 ***3.9***	

Puerto Rico

Birth Defects Counts and Prevalence 2007 - 2011 (Prevalence per 10,000 Live Births)

	Maternal Race/Ethnicity		
Defect	**Hispanic**	**Total****	**Notes**
Trisomy 21 (Down syndrome)	324	324	
	14.7	***14.7***	
Ventricular septal defect	558	558	6
	25.3	***25.3***	
Total live births	**220639**	**220639**	
Male live births	**113226**	**113226**	

*Hypospadias prevalence per 10,000 male live births
**Total includes unknown and other maternal race/ethnicity

Puerto Rico

Trisomy Counts and Prevalence by Maternal Age 2007 - 2011 (Prevalence per 10,000 Live Births)

	Maternal Age (years)			
Defect	**Less than 35**	**35+**	**Total**	**Notes**
Trisomy 13	24	10	34	
	1.2	***5.4***	***1.5***	
Trisomy 18	50	37	87	
	2.5	***20.0***	***3.9***	
Trisomy 21 (Down syndrome)	202	122	324	
	10.0	***65.9***	***14.7***	
Total live births	**202068**	**18512**	**220639**	

**Total includes unknown maternal age

Notes
1.The Birth Defects Surveillance and Prevention System (BDSPS) began monitoring this birth defect in 2008.
2.The BDSPS began monitoring this birth defect in 2008.
3.Atrioventricular septal defect only includes AV Canal.
4.Puerto Rico uses clinical diagnosis to distinguish between gastroschisis and omphalocele.
5.Tricuspid atresia excludes tricuspid stenosis and hypoplasia.
6.Ventricular septal defect (VSD) excludes probable diagnosis and we exclude inlet/posterior type VSD in the presence of Atrioventricular (AV) Canal.

General comments
-Fetal deaths include spontaneous abortions and stillbirths.
-Puerto Rico does not use the unspecified non-livebirth category.
-Puerto Rico has no gestational age cut off for terminations.
-The coding system used was ICD 9 CM.

Rhode Island

Birth Defects Counts and Prevalence 2007 - 2011 (Prevalence per 10,000 Live Births)

	Maternal Race/Ethnicity						
Defect	White, Non-Hispanic	Black, Non-Hispanic	Hispanic	Asian or Pacific Islander, Non-Hispanic	American Indian or Alaska Native, Non-Hispanic	Total**	Notes
Anencephalus	5	0	1	0	0	6	
	1.4	***0.0***	***0.8***	***0.0***	***0.0***	***1.1***	
Anophthalmia/microphthalmia	3	1	1	0	0	5	
	0.9	***2.1***	***0.8***	***0.0***	***0.0***	***0.9***	
Anotia/microtia	1	0	3	0	1	5	
	0.3	***0.0***	***2.5***	***0.0***	***21.6***	***0.9***	
Aortic valve stenosis	6	1	0	0	0	7	
	1.7	***2.1***	***0.0***	***0.0***	***0.0***	***1.2***	
Atrial septal defect	125	29	43	4	3	209	
	35.9	***61.8***	***36.3***	***18.5***	***64.9***	***37.2***	
Atrioventricular septal defect (Endocardial cushion defect)	9	0	1	0	0	10	
	2.6	***0.0***	***0.8***	***0.0***	***0.0***	***1.8***	
Biliary atresia	1	1	1	0	0	4	
	0.3	***2.1***	***0.8***	***0.0***	***0.0***	***0.7***	
Bladder exstrophy	0	0	0	0	0	1	
	0.0	***0.0***	***0.0***	***0.0***	***0.0***	***0.2***	
Choanal atresia	3	0	0	0	0	3	
	0.9	***0.0***	***0.0***	***0.0***	***0.0***	***0.5***	
Cleft lip alone	8	1	3	0	0	12	
	2.3	***2.1***	***2.5***	***0.0***	***0.0***	***2.1***	
Cleft lip with cleft palate	20	0	6	1	0	28	
	5.7	***0.0***	***5.1***	***4.6***	***0.0***	***5.0***	
Cleft palate alone	23	2	5	2	1	34	
	6.6	***4.3***	***4.2***	***9.2***	***21.6***	***6.1***	
Clubfoot	54	11	17	2	0	91	
	15.5	***23.4***	***14.3***	***9.2***	***0.0***	***16.2***	
Coarctation of the aorta	3	2	3	1	0	9	
	0.9	***4.3***	***2.5***	***4.6***	***0.0***	***1.6***	
Common truncus (truncus arteriosus)	1	1	0	0	0	2	
	0.3	***2.1***	***0.0***	***0.0***	***0.0***	***0.4***	
Congenital cataract	2	1	2	0	0	5	
	0.6	***2.1***	***1.7***	***0.0***	***0.0***	***0.9***	
Congenital posterior urethral valves	0	1	0	0	0	1	
	0.0	***2.1***	***0.0***	***0.0***	***0.0***	***0.2***	
Diaphragmatic hernia	8	1	3	1	0	14	
	2.3	***2.1***	***2.5***	***4.6***	***0.0***	***2.5***	
Double outlet right ventricle	4	0	1	0	0	7	
	1.1	***0.0***	***0.8***	***0.0***	***0.0***	***1.2***	
Ebstein anomaly	3	0	0	0	0	3	
	0.9	***0.0***	***0.0***	***0.0***	***0.0***	***0.5***	
Encephalocele	3	0	0	0	0	4	
	0.9	***0.0***	***0.0***	***0.0***	***0.0***	***0.7***	
Esophageal atresia/tracheoesophageal fistula	11	1	3	0	0	17	
	3.2	***2.1***	***2.5***	***0.0***	***0.0***	***3.0***	
Gastroschisis	10	4	9	0	0	23	
	2.9	***8.5***	***7.6***	***0.0***	***0.0***	***4.1***	
Hypoplastic left heart syndrome	7	2	1	3	0	14	
	2.0	***4.3***	***0.8***	***13.9***	***0.0***	***2.5***	
Hypospadias*	151	22	43	4	0	225	
	84.2	***92.4***	***70.8***	***38.3***	***0.0***	***78.2***	
Interrupted aortic arch	1	1	0	0	0	2	
	0.3	***2.1***	***0.0***	***0.0***	***0.0***	***0.4***	
Limb deficiencies (reduction defects)	14	4	5	0	0	23	
	4.0	***8.5***	***4.2***	***0.0***	***0.0***	***4.1***	
Omphalocele	8	2	4	0	0	14	
	2.3	***4.3***	***3.4***	***0.0***	***0.0***	***2.5***	
Pulmonary valve atresia and stenosis	15	3	8	1	1	31	
	4.3	***6.4***	***6.8***	***4.6***	***21.6***	***5.5***	
Pulmonary valve atresia	6	1	1	0	1	10	
	1.7	***2.1***	***0.8***	***0.0***	***21.6***	***1.8***	

Rhode Island

Birth Defects Counts and Prevalence 2007 - 2011 (Prevalence per 10,000 Live Births)

	Maternal Race/Ethnicity						
Defect	**White, Non-Hispanic**	**Black, Non-Hispanic**	**Hispanic**	**Asian or Pacific Islander, Non-Hispanic**	**American Indian or Alaska Native, Non-Hispanic**	**Total****	**Notes**
Rectal and large intestinal atresia/stenosis	10	3	8	1	0	22	
	2.9	***6.4***	***6.8***	***4.6***	***0.0***	***3.9***	
Renal agenesis/hypoplasia	5	2	2	0	0	10	
	1.4	***4.3***	***1.7***	***0.0***	***0.0***	***1.8***	
Single ventricle	0	0	0	0	0	0	
	0.0	***0.0***	***0.0***	***0.0***	***0.0***	***0.0***	
Small intestinal atresia/stenosis	15	3	10	1	0	29	
	4.3	***6.4***	***8.4***	***4.6***	***0.0***	***5.2***	
Spina bifida without anencephalus	13	3	6	0	0	24	
	3.7	***6.4***	***5.1***	***0.0***	***0.0***	***4.3***	
Tetralogy of Fallot	11	2	4	0	0	19	
	3.2	***4.3***	***3.4***	***0.0***	***0.0***	***3.4***	
Total anomalous pulmonary venous connection	1	0	2	0	0	3	
	0.3	***0.0***	***1.7***	***0.0***	***0.0***	***0.5***	
Transposition of the great arteries (TGA)	8	0	5	0	0	16	
	2.3	***0.0***	***4.2***	***0.0***	***0.0***	***2.8***	
Dextro-transposition of great arteries (d-TGA)	3	0	4	0	0	9	
	0.9	***0.0***	***3.4***	***0.0***	***0.0***	***1.6***	
Tricuspid valve atresia and stenosis	0	0	1	0	1	2	
	0.0	***0.0***	***0.8***	***0.0***	***21.6***	***0.4***	
Tricuspid valve atresia	0	0	1	0	1	2	
	0.0	***0.0***	***0.8***	***0.0***	***21.6***	***0.4***	
Trisomy 13	4	2	3	0	0	11	
	1.1	***4.3***	***2.5***	***0.0***	***0.0***	***2.0***	
Trisomy 18	12	2	2	0	0	20	
	3.4	***4.3***	***1.7***	***0.0***	***0.0***	***3.6***	
Trisomy 21 (Down syndrome)	52	7	15	2	0	89	
	14.9	***14.9***	***12.7***	***9.2***	***0.0***	***15.8***	
Ventricular septal defect	150	23	47	11	1	236	1
	43.1	***49.0***	***39.7***	***50.9***	***21.6***	***42.0***	
Total live births	**34837**	**4695**	**11850**	**2163**	**462**	**56195**	
Male live births	**17940**	**2380**	**6073**	**1044**	**246**	**28759**	

*Hypospadias prevalence per 10,000 male live births
**Total includes unknown and other maternal race/ethnicity

Rhode Island

Trisomy Counts and Prevalence by Maternal Age 2007 - 2011 (Prevalence per 10,000 Live Births)

	Maternal Age (years)			
Defect	**Less than 35**	**35+**	**Total**	**Notes**
Trisomy 13	6	4	11	
	1.3	***4.2***	***2.0***	
Trisomy 18	7	11	20	
	1.5	***11.5***	***3.6***	
Trisomy 21 (Down syndrome)	38	42	89	
	8.1	***44.0***	***15.8***	
Total live births	**46640**	**9552**	**56199**	

**Total includes unknown maternal age

Notes
1.Probable cases included.

General comments
-Counts for holoprosencephaly, cloacal exstrophy, craniosynostosis, Turner syndrome, and deletion 22 q11 are unavailable.
-Maternal race/ethnicity and age numbers for 2009 prenatally ascertained cases are not available.
-Prenatally-ascertained and post-newborn inpatient discharge cases were collected beginning in 2009.
-Stillbirths are fetal deaths that begin at 20 weeks of gestation.
-Terminations are induced fetal deaths that begin at 20 weeks of gestation.

South Carolina
Birth Defects Counts and Prevalence 2007 - 2011 (Prevalence per 10,000 Live Births)

	Maternal Race/Ethnicity						
Defect	White, Non-Hispanic	Black, Non-Hispanic	Hispanic	Asian or Pacific Islander, Non-Hispanic	American Indian or Alaska Native, Non-Hispanic	Total**	Notes
Anencephalus	41	22	15	0	0	80	
	2.4	***2.2***	***5.3***	***0.0***	***0.0***	***2.6***	
Anophthalmia/microphthalmia	7	8	2	0	0	17	
	0.4	***0.8***	***0.7***	***0.0***	***0.0***	***0.6***	
Anotia/microtia	8	7	1	1	0	17	
	0.5	***0.7***	***0.4***	***2.0***	***0.0***	***0.6***	
Aortic valve stenosis	14	6	5	1	0	27	
	0.8	***0.6***	***1.8***	***2.0***	***0.0***	***0.9***	
Atrial septal defect	145	80	40	4	0	275	1
	8.5	***8.1***	***14.3***	***7.8***	***0.0***	***9.0***	
Atrioventricular septal defect (Endocardial cushion defect)	94	66	13	1	0	176	
	5.5	***6.7***	***4.6***	***2.0***	***0.0***	***5.8***	
Biliary atresia	7	9	0	0	0	16	
	0.4	***0.9***	***0.0***	***0.0***	***0.0***	***0.5***	
Bladder exstrophy	3	2	0	0	0	5	
	0.2	***0.2***	***0.0***	***0.0***	***0.0***	***0.2***	
Choanal atresia	16	7	3	0	0	28	
	0.9	***0.7***	***1.1***	***0.0***	***0.0***	***0.9***	
Cleft palate alone	91	46	15	3	0	157	
	5.3	***4.6***	***5.3***	***5.9***	***0.0***	***5.1***	
Coarctation of the aorta	118	39	9	3	0	171	
	6.9	***3.9***	***3.2***	***5.9***	***0.0***	***5.6***	
Common truncus (truncus arteriosus)	15	3	1	0	1	20	
	0.9	***0.3***	***0.4***	***0.0***	***7.8***	***0.7***	
Congenital cataract	13	6	3	0	0	22	
	0.8	***0.6***	***1.1***	***0.0***	***0.0***	***0.7***	
Diaphragmatic hernia	46	22	13	0	0	83	
	2.7	***2.2***	***4.6***	***0.0***	***0.0***	***2.7***	
Double outlet right ventricle	39	28	5	0	0	73	
	2.3	***2.8***	***1.8***	***0.0***	***0.0***	***2.4***	
Ebstein anomaly	11	5	1	2	0	19	
	0.6	***0.5***	***0.4***	***3.9***	***0.0***	***0.6***	
Encephalocele	21	12	8	2	0	43	
	1.2	***1.2***	***2.9***	***3.9***	***0.0***	***1.4***	
Esophageal atresia/tracheoesophageal fistula	18	7	2	0	0	28	
	1.1	***0.7***	***0.7***	***0.0***	***0.0***	***0.9***	
Gastroschisis	46	10	6	1	0	64	
	2.7	***1.0***	***2.1***	***2.0***	***0.0***	***2.1***	
Hypoplastic left heart syndrome	56	40	7	2	0	105	
	3.3	***4.0***	***2.5***	***3.9***	***0.0***	***3.4***	
Limb deficiencies (reduction defects)	109	61	18	3	1	193	
	6.4	***6.2***	***6.4***	***5.9***	***7.8***	***6.3***	
Omphalocele	21	11	2	0	1	36	
	1.2	***1.1***	***0.7***	***0.0***	***7.8***	***1.2***	
Pulmonary valve atresia and stenosis	112	83	19	2	1	222	
	6.5	***8.4***	***6.8***	***3.9***	***7.8***	***7.3***	
Pulmonary valve atresia	31	21	4	0	0	57	
	1.8	***2.1***	***1.4***	***0.0***	***0.0***	***1.9***	
Rectal and large intestinal atresia/stenosis	66	22	3	4	1	97	
	3.9	***2.2***	***1.1***	***7.8***	***7.8***	***3.2***	
Renal agenesis/hypoplasia	72	40	13	2	0	127	
	4.2	***4.0***	***4.6***	***3.9***	***0.0***	***4.2***	
Spina bifida without anencephalus	77	21	7	3	0	110	
	4.5	***2.1***	***2.5***	***5.9***	***0.0***	***3.6***	
Tetralogy of Fallot	78	58	13	1	0	152	
	4.6	***5.9***	***4.6***	***2.0***	***0.0***	***5.0***	
Transposition of the great arteries (TGA)	57	18	6	1	1	86	
	3.3	***1.8***	***2.1***	***2.0***	***7.8***	***2.8***	
Dextro-transposition of great arteries (d-TGA)	52	17	5	0	1	78	
	3.0	***1.7***	***1.8***	***0.0***	***7.8***	***2.6***	

South Carolina

Birth Defects Counts and Prevalence 2007 - 2011 (Prevalence per 10,000 Live Births)

	Maternal Race/Ethnicity						
Defect	**White, Non-Hispanic**	**Black, Non-Hispanic**	**Hispanic**	**Asian or Pacific Islander, Non-Hispanic**	**American Indian or Alaska Native, Non-Hispanic**	**Total****	**Notes**
Tricuspid valve atresia and stenosis	14	13	4	1	0	33	
	0.8	***1.3***	***1.4***	***2.0***	***0.0***	***1.1***	
Trisomy 13	12	12	3	1	0	29	2
	0.7	***1.2***	***1.1***	***2.0***	***0.0***	***1.0***	
Trisomy 18	32	18	6	0	0	56	3
	1.9	***1.8***	***2.1***	***0.0***	***0.0***	***1.8***	
Trisomy 21 (Down syndrome)	149	64	29	6	0	253	4
	8.7	***6.5***	***10.3***	***11.7***	***0.0***	***8.3***	
Ventricular septal defect	603	333	146	16	2	1111	5
	35.2	***33.7***	***52.0***	***31.2***	***15.6***	***36.4***	
Total live births	**171172**	**98949**	**28058**	**5128**	**1283**	**305245**	

*Hypospadias prevalence per 10,000 male live births
**Total includes unknown and other maternal race/ethnicity

South Carolina

Trisomy Counts and Prevalence by Maternal Age 2007 - 2011 (Prevalence per 10,000 Live Births)

	Maternal Age (years)			
Defect	**Less than 35**	**35+**	**Total**	**Notes**
Trisomy 13	9	3	12	3
	0.7	***1.7***	***0.8***	
Trisomy 18	7	16	23	3
	0.5	***9.2***	***1.5***	
Trisomy 21 (Down syndrome)	97	70	167	3
	7.4	***40.2***	***11.2***	
Total live births	**272243**	**32981**	**305245**	

**Total includes unknown maternal age

Notes
1.Atrial Septal Defect was dropped beginning in 2009.
2.Trisomy 13 was collected beginning in 2008.
3.Trisomy 18 was collected beginning in 2008.
4.Down Syndrome was collected beginning in 2008.
5.South Carolina only includes confirmed cases.

General comments
-Abortions in South Carolina are not usually performed after 24 weeks gestation.
-South Carolina Fetal Deaths must be at least 20 weeks gestation or 350 grams or more.
-Total anomalous pulmonary venous connection (TAPVC) not collected in South Carolina until 2013.
-Turner syndrome, Deletion 22a11.2, Craniosynostosis, Clubfoot, Congenital posterior urethral valves, Cloacal exstrophy, and Small intestinal atresia/stenosis not collected in South Carolina.

Tennessee

Birth Defects Counts and Prevalence 2007 - 2011 (Prevalence per 10,000 Live Births)

	Maternal Race/Ethnicity						
Defect	**White, Non-Hispanic**	**Black, Non-Hispanic**	**Hispanic**	**Asian or Pacific Islander, Non-Hispanic**	**American Indian or Alaska Native, Non-Hispanic**	**Total****	**Notes**
Anencephalus	36	11	8	1	0	57	
	1.3	***1.3***	***2.1***	***1.2***	***0.0***	***1.4***	
Anophthalmia/microphthalmia	29	18	2	1	0	51	
	1.0	***2.1***	***0.5***	***1.2***	***0.0***	***1.2***	
Anotia/microtia	20	4	7	2	0	33	
	0.7	***0.5***	***1.8***	***2.4***	***0.0***	***0.8***	
Aortic valve stenosis	69	6	8	0	0	84	
	2.5	***0.7***	***2.1***	***0.0***	***0.0***	***2.0***	
Atrial septal defect	3161	1596	381	64	1	5219	
	114.0	***185.7***	***100.6***	***77.0***	***16.2***	***126.4***	
Atrioventricular septal defect (Endocardial cushion defect)	119	39	12	4	0	174	1
	4.3	***4.5***	***3.2***	***4.8***	***0.0***	***4.2***	
Biliary atresia	25	8	5	3	0	41	
	0.9	***0.9***	***1.3***	***3.6***	***0.0***	***1.0***	
Bladder exstrophy	18	1	1	0	0	20	
	0.6	***0.1***	***0.3***	***0.0***	***0.0***	***0.5***	
Choanal atresia	63	9	4	0	1	77	
	2.3	***1.0***	***1.1***	***0.0***	***16.2***	***1.9***	
Cleft lip alone	105	20	8	0	.	134	
	3.8	***2.3***	***2.1***	***0.0***	***.***	***3.3***	
Cleft lip with cleft palate	222	37	27	3	.	292	
	8.0	***4.3***	***7.1***	***3.6***	***.***	***7.1***	
Cleft palate alone	261	51	25	5	1	343	
	9.4	***5.9***	***6.6***	***6.0***	***16.2***	***8.3***	
Coarctation of the aorta	204	51	33	2	0	292	
	7.4	***5.9***	***8.7***	***2.4***	***0.0***	***7.1***	
Common truncus (truncus arteriosus)	28	6	2	1	0	37	
	1.0	***0.7***	***0.5***	***1.2***	***0.0***	***0.9***	
Congenital cataract	63	22	3	5	0	93	
	2.3	***2.6***	***0.8***	***6.0***	***0.0***	***2.3***	
Diaphragmatic hernia	121	41	16	2	0	180	
	4.4	***4.8***	***4.2***	***2.4***	***0.0***	***4.4***	
Ebstein anomaly	32	10	5	3	0	50	
	1.2	***1.2***	***1.3***	***3.6***	***0.0***	***1.2***	
Encephalocele	37	12	11	0	0	60	
	1.3	***1.4***	***2.9***	***0.0***	***0.0***	***1.5***	
Esophageal atresia/tracheoesophageal fistula	78	16	12	0	0	106	
	2.8	***1.9***	***3.2***	***0.0***	***0.0***	***2.6***	
Gastroschisis	191	24	19	2	0	236	2
	6.9	***2.8***	***5.0***	***2.4***	***0.0***	***5.7***	
Hypoplastic left heart syndrome	105	33	14	1	0	154	
	3.8	***3.8***	***3.7***	***1.2***	***0.0***	***3.7***	
Hypospadias*	1677	473	65	27	2	2255	
	118.2	***107.9***	***33.6***	***63.4***	***67.8***	***106.8***	
Omphalocele	75	25	9	0	0	109	3
	2.7	***2.9***	***2.4***	***0.0***	***0.0***	***2.6***	
Pulmonary valve atresia and stenosis	255	86	28	7	1	378	
	9.2	***10.0***	***7.4***	***8.4***	***16.2***	***9.2***	
Pulmonary valve atresia	46	21	6	2	0	76	
	1.7	***2.4***	***1.6***	***2.4***	***0.0***	***1.8***	
Rectal and large intestinal atresia/stenosis	184	47	22	2	1	258	
	6.6	***5.5***	***5.8***	***2.4***	***16.2***	***6.2***	
Renal agenesis/hypoplasia	139	50	23	3	0	215	
	5.0	***5.8***	***6.1***	***3.6***	***0.0***	***5.2***	
Spina bifida without anencephalus	101	21	21	3	0	146	
	3.6	***2.4***	***5.5***	***3.6***	***0.0***	***3.5***	
Tetralogy of Fallot	172	53	20	3	0	248	
	6.2	***6.2***	***5.3***	***3.6***	***0.0***	***6.0***	
Transposition of the great arteries (TGA)	153	47	21	5	0	228	
	5.5	***5.5***	***5.5***	***6.0***	***0.0***	***5.5***	

Tennessee

Birth Defects Counts and Prevalence 2007 - 2011 (Prevalence per 10,000 Live Births)

	Maternal Race/Ethnicity						
Defect	**White, Non-Hispanic**	**Black, Non-Hispanic**	**Hispanic**	**Asian or Pacific Islander, Non-Hispanic**	**American Indian or Alaska Native, Non-Hispanic**	**Total****	**Notes**
Dextro-transposition of great arteries (d-TGA)	81 ***2.9***	19 ***2.2***	9 ***2.4***	3 ***3.6***	0 ***0.0***	112 ***2.7***	
Tricuspid valve atresia and stenosis	44 ***1.6***	12 ***1.4***	2 ***0.5***	0 ***0.0***	0 ***0.0***	59 ***1.4***	4
Trisomy 13	13 ***0.5***	12 ***1.4***	2 ***0.5***	1 ***1.2***	0 ***0.0***	30 ***0.7***	
Trisomy 18	50 ***1.8***	13 ***1.5***	9 ***2.4***	1 ***1.2***	0 ***0.0***	73 ***1.8***	
Trisomy 21 (Down syndrome)	390 ***14.1***	116 ***13.5***	66 ***17.4***	14 ***16.9***	0 ***0.0***	588 ***14.2***	
Ventricular septal defect	1327 ***47.9***	411 ***47.8***	201 ***53.1***	32 ***38.5***	2 ***32.3***	1982 ***48.0***	5
Total live births	**277192**	**85941**	**37857**	**8307**	**619**	**413057**	
Male live births	**141895**	**43839**	**19368**	**4262**	**295**	**211216**	

*Hypospadias prevalence per 10,000 male live births
**Total includes unknown and other maternal race/ethnicity

Tennessee

Trisomy Counts and Prevalence by Maternal Age 2007 - 2011 (Prevalence per 10,000 Live Births)

	Maternal Age (years)			
Defect	**Less than 35**	**35+**	**Total**	**Notes**
Trisomy 13	21	9	30	
	0.6	***2.1***	***0.7***	
Trisomy 18	48	25	73	
	1.3	***5.9***	***1.8***	
Trisomy 21 (Down syndrome)	355	233	588	
	9.6	***54.7***	***14.2***	
Total live births	**370321**	**42589**	**413057**	

**Total includes unknown maternal age

Notes
1.Not use CDC/BPA codes. Cannot distinguish 745.487 from other VSD.
2.ICD-9 Procedure Code = 54.71
3.ICD-9 Procedure Code not equal to 54.71
4.Not use CDC/BPA codes. Cases with 746.106 are included in this category.
5.Not use CDC/BPA codes. Information includes the entire range.

General comments
-For data before 07/01/2010, Fetal deaths are defined as 500 grams or more, or 22 weeks gestation or more.
-For data on or after 07/01/2010, Fetal deaths are defined as 350 grams or more, or 20 weeks gestation or more.
-Terminations are not available.

Texas

Birth Defects Counts and Prevalence 2007 - 2009 (Prevalence per 10,000 Live Births)

	Maternal Race/Ethnicity						
Defect	**White, Non-Hispanic**	**Black, Non-Hispanic**	**Hispanic**	**Asian or Pacific Islander, Non-Hispanic**	**American Indian or Alaska Native, Non-Hispanic**	**Total****	**Notes**
Anencephalus	85	26	200	6	0	326	
	2.1	***1.9***	***3.3***	***1.3***	***0.0***	***2.7***	
Anophthalmia/microphthalmia	123	43	208	9	2	386	
	3.0	***3.1***	***3.4***	***2.0***	***9.2***	***3.2***	
Anotia/microtia	72	22	308	20	2	425	
	1.7	***1.6***	***5.1***	***4.4***	***9.2***	***3.5***	
Aortic valve stenosis	101	27	151	8	0	292	
	2.4	***2.0***	***2.5***	***1.7***	***0.0***	***2.4***	
Atrial septal defect	2670	986	4013	232	14	7968	
	64.6	***71.7***	***66.0***	***50.7***	***64.4***	***65.6***	
Atrioventricular septal defect (Endocardial cushion defect)	212	72	240	12	1	539	
	5.1	***5.2***	***3.9***	***2.6***	***4.6***	***4.4***	
Biliary atresia	21	8	50	7	2	89	
	0.5	***0.6***	***0.8***	***1.5***	***9.2***	***0.7***	
Bladder exstrophy	13	2	4	1	0	20	
	0.3	***0.1***	***0.1***	***0.2***	***0.0***	***0.2***	
Choanal atresia	69	15	61	7	0	153	
	1.7	***1.1***	***1.0***	***1.5***	***0.0***	***1.3***	
Cleft lip alone	135	34	177	17	0	366	
	3.3	***2.5***	***2.9***	***3.7***	***0.0***	***3.0***	
Cleft lip with cleft palate	296	57	502	24	3	887	
	7.2	***4.1***	***8.3***	***5.2***	***13.8***	***7.3***	
Cleft palate alone	273	73	373	28	0	753	
	6.6	***5.3***	***6.1***	***6.1***	***0.0***	***6.2***	
Coarctation of the aorta	225	50	313	16	1	610	
	5.4	***3.6***	***5.1***	***3.5***	***4.6***	***5.0***	
Common truncus (truncus arteriosus)	37	10	52	4	0	103	
	0.9	***0.7***	***0.9***	***0.9***	***0.0***	***0.8***	
Congenital cataract	86	34	113	3	0	239	
	2.1	***2.5***	***1.9***	***0.7***	***0.0***	***2.0***	
Diaphragmatic hernia	130	31	176	9	1	350	
	3.1	***2.3***	***2.9***	***2.0***	***4.6***	***2.9***	
Ebstein anomaly	28	2	41	5	0	76	
	0.7	***0.1***	***0.7***	***1.1***	***0.0***	***0.6***	
Encephalocele	27	15	74	3	0	124	
	0.7	***1.1***	***1.2***	***0.7***	***0.0***	***1.0***	
Esophageal atresia/tracheoesophageal fistula	99	16	130	8	1	257	
	2.4	***1.2***	***2.1***	***1.7***	***4.6***	***2.1***	
Gastroschisis	260	67	406	12	1	749	
	6.3	***4.9***	***6.7***	***2.6***	***4.6***	***6.2***	
Hypoplastic left heart syndrome	99	36	113	5	1	255	
	2.4	***2.6***	***1.9***	***1.1***	***4.6***	***2.1***	
Hypospadias*	1781	467	1227	129	7	3629	
	84.0	***66.7***	***39.6***	***54.9***	***62.5***	***58.5***	
Limb deficiencies (reduction defects)	245	84	331	15	4	682	
	5.9	***6.1***	***5.4***	***3.3***	***18.4***	***5.6***	
Omphalocele	78	32	124	8	1	249	
	1.9	***2.3***	***2.0***	***1.7***	***4.6***	***2.1***	
Pulmonary valve atresia and stenosis	377	162	714	26	4	1288	
	9.1	***11.8***	***11.7***	***5.7***	***18.4***	***10.6***	
Pulmonary valve atresia	62	21	105	2	0	191	
	1.5	***1.5***	***1.7***	***0.4***	***0.0***	***1.6***	
Rectal and large intestinal atresia/stenosis	220	52	350	22	3	654	
	5.3	***3.8***	***5.8***	***4.8***	***13.8***	***5.4***	
Renal agenesis/hypoplasia	252	85	382	19	3	747	
	6.1	***6.2***	***6.3***	***4.1***	***13.8***	***6.2***	
Spina bifida without anencephalus	148	34	258	5	1	449	
	3.6	***2.5***	***4.2***	***1.1***	***4.6***	***3.7***	
Tetralogy of Fallot	172	58	214	26	2	481	
	4.2	***4.2***	***3.5***	***5.7***	***9.2***	***4.0***	

Texas
Birth Defects Counts and Prevalence 2007 - 2009 (Prevalence per 10,000 Live Births)

	Maternal Race/Ethnicity						
Defect	**White, Non-Hispanic**	**Black, Non-Hispanic**	**Hispanic**	**Asian or Pacific Islander, Non-Hispanic**	**American Indian or Alaska Native, Non-Hispanic**	**Total****	**Notes**
Total anomalous pulmonary venous connection	55 ***1.3***	15 ***1.1***	131 ***2.2***	7 ***1.5***	1 ***4.6***	211 ***1.7***	
Transposition of the great arteries (TGA)	178 ***4.3***	38 ***2.8***	214 ***3.5***	15 ***3.3***	1 ***4.6***	447 ***3.7***	1
Dextro-transposition of great arteries (d-TGA)	162 ***3.9***	39 ***2.8***	202 ***3.3***	15 ***3.3***	1 ***4.6***	421 ***3.5***	
Tricuspid valve atresia and stenosis	73 ***1.8***	33 ***2.4***	112 ***1.8***	7 ***1.5***	0 ***0.0***	228 ***1.9***	
Tricuspid valve atresia	31 ***0.8***	15 ***1.1***	44 ***0.7***	3 ***0.7***	0 ***0.0***	94 ***0.8***	
Trisomy 13	53 ***1.3***	17 ***1.2***	71 ***1.2***	7 ***1.5***	0 ***0.0***	149 ***1.2***	
Trisomy 18	105 ***2.5***	35 ***2.5***	175 ***2.9***	18 ***3.9***	0 ***0.0***	338 ***2.8***	
Trisomy 21 (Down syndrome)	527 ***12.8***	135 ***9.8***	909 ***14.9***	58 ***12.7***	3 ***13.8***	1650 ***13.6***	
Ventricular septal defect	2418 ***58.5***	663 ***48.2***	4457 ***73.3***	218 ***47.6***	11 ***50.6***	7807 ***64.3***	2
Total live births	**413073**	**137525**	**608343**	**45799**	**2174**	**1214294**	
Male live births	**212117**	**70030**	**310052**	**23517**	**1120**	**620606**	

*Hypospadias prevalence per 10,000 male live births
**Total includes unknown and other maternal race/ethnicity

Texas

Trisomy Counts and Prevalence by Maternal Age 2007 - 2009 (Prevalence per 10,000 Live Births)

	Maternal Age (years)			
Defect	**Less than 35**	**35+**	**Total**	**Notes**
Trisomy 13	108	41	149	
	1.0	***2.9***	***1.2***	
Trisomy 18	183	155	338	
	1.7	***10.9***	***2.8***	
Trisomy 21 (Down syndrome)	927	723	1650	
	8.6	***50.8***	***13.6***	
Total live births	**1071760**	**142460**	**1214294**	

**Total includes unknown maternal age

Notes

1.Transposition of the great arteries: As Texas does not use the new CDC BPA codes and the exclusion criteria has 745.180, those defects of double outlet right ventricle which we have coded into 745.180 will not be counted in this defect.
2.Ventricular Septal Defect (VSD): We are unable to distinguish inlet VSD from other types of VSD.

General comments

-Due to migration to Oracle data base, Texas cannot access 2010 or later data at this time.
-In Texas, stillborn is defined as the spontaneous death of a product of conception prior to the complete expulsion or extraction from its mother, regardless of the length of gestation. The onset of labor may be natural or induced. The key is that the death of the fetus was spontaneous and not a result of an intended procedure.
-Our case definition includes livebirths, stillbirths, and terminations at any length of gestation and any birth weight.
-Texas only reports confirmed and definite diagnoses for any defect reported. Possible/probable cases are not given.
-Texas uses the CDC/BPA coding system, but does not use the new CDC/BPA codes.

Utah

Birth Defects Counts and Prevalence 2007 - 2011 (Prevalence per 10,000 Live Births)

	Maternal Race/Ethnicity						
Defect	**White, Non-Hispanic**	**Black, Non-Hispanic**	**Hispanic**	**Asian or Pacific Islander, Non-Hispanic**	**American Indian or Alaska Native, Non-Hispanic**	**Total****	**Notes**
Anencephalus	55	1	13	2	1	73	
	2.7	***3.8***	***3.0***	***2.1***	***2.9***	***2.7***	
Anophthalmia/microphthalmia	9	1	4	0	0	14	
	0.4	***3.8***	***0.9***	***0.0***	***0.0***	***0.5***	
Anotia/microtia	64	2	34	5	1	107	
	3.1	***7.5***	***7.9***	***5.3***	***2.9***	***4.0***	
Aortic valve stenosis	91	0	21	6	1	119	
	4.4	***0.0***	***4.9***	***6.4***	***2.9***	***4.4***	
Atrial septal defect	871	11	200	52	15	1155	
	42.3	***41.3***	***46.5***	***55.4***	***43.7***	***43.1***	
Atrioventricular septal defect (Endocardial cushion defect)	141	2	26	9	3	181	
	6.9	***7.5***	***6.0***	***9.6***	***8.7***	***6.8***	
Biliary atresia	16	1	2	1	0	20	
	0.8	***3.8***	***0.5***	***1.1***	***0.0***	***0.7***	
Bladder exstrophy	6	0	0	1	0	7	
	0.4	***0.0***	***0.0***	***1.4***	***0.0***	***0.3***	
Choanal atresia	36	0	5	0	0	42	
	1.8	***0.0***	***1.2***	***0.0***	***0.0***	***1.6***	
Cleft lip alone	117	2	15	2	1	139	
	5.7	***7.5***	***3.5***	***2.1***	***2.9***	***5.2***	
Cleft lip with cleft palate	188	3	32	2	3	230	
	9.1	***11.3***	***7.4***	***2.1***	***8.7***	***8.6***	
Cleft palate alone	118	0	19	8	6	152	
	5.7	***0.0***	***4.4***	***8.5***	***17.5***	***5.7***	
Cloacal exstrophy	8	1	0	1	0	10	
	0.4	***3.8***	***0.0***	***1.1***	***0.0***	***0.4***	
Coarctation of the aorta	219	3	40	5	1	269	
	10.6	***11.3***	***9.3***	***5.3***	***2.9***	***10.0***	
Common truncus (truncus arteriosus)	13	1	1	0	0	15	
	0.6	***3.8***	***0.2***	***0.0***	***0.0***	***0.6***	
Congenital cataract	57	1	7	3	1	69	
	2.8	***3.8***	***1.6***	***3.2***	***2.9***	***2.6***	
Congenital posterior urethral valves	35	0	5	2	0	43	
	1.7	***0.0***	***1.2***	***2.1***	***0.0***	***1.6***	
Craniosynostosis	246	3	47	4	3	304	
	12.0	***11.3***	***10.9***	***4.3***	***8.7***	***11.4***	
Deletion 22q11.2	19	0	2	3	3	27	
	0.9	***0.0***	***0.5***	***3.2***	***8.7***	***1.0***	
Diaphragmatic hernia	35	0	5	1	4	45	
	1.7	***0.0***	***1.2***	***1.1***	***11.7***	***1.7***	
Double outlet right ventricle	33	1	11	2	1	48	
	1.6	***3.8***	***2.6***	***2.1***	***2.9***	***1.8***	
Ebstein anomaly	31	0	2	1	1	36	
	1.5	***0.0***	***0.5***	***1.1***	***2.9***	***1.3***	
Encephalocele	16	0	5	0	0	22	
	0.8	***0.0***	***1.2***	***0.0***	***0.0***	***0.8***	
Esophageal atresia/tracheoesophageal fistula	50	0	18	4	1	74	
	2.4	***0.0***	***4.2***	***4.3***	***2.9***	***2.8***	
Gastroschisis	91	3	20	9	3	126	
	4.4	***11.3***	***4.6***	***9.6***	***8.7***	***4.7***	
Holoprosencephaly	36	2	10	0	0	48	
	1.8	***7.5***	***2.3***	***0.0***	***0.0***	***1.8***	
Hypoplastic left heart syndrome	76	2	12	2	0	92	
	3.7	***7.5***	***2.8***	***2.1***	***0.0***	***3.4***	
Hypospadias*	812	12	41	19	3	893	
	76.8	***86.1***	***18.8***	***38.8***	***17.0***	***65.0***	
Interrupted aortic arch	8	0	3	0	0	11	
	0.5	***0.0***	***0.8***	***0.0***	***0.0***	***0.5***	
Limb deficiencies (reduction defects)	136	2	32	6	1	179	
	6.6	***7.5***	***7.4***	***6.4***	***2.9***	***6.7***	

Utah

Birth Defects Counts and Prevalence 2007 - 2011 (Prevalence per 10,000 Live Births)

	Maternal Race/Ethnicity						
Defect	**White, Non-Hispanic**	**Black, Non-Hispanic**	**Hispanic**	**Asian or Pacific Islander, Non-Hispanic**	**American Indian or Alaska Native, Non-Hispanic**	**Total****	**Notes**
Omphalocele	61	2	14	2	0	80	
	3.0	***7.5***	***3.3***	***2.1***	***0.0***	***3.0***	
Pulmonary valve atresia and stenosis	292	2	53	19	7	375	
	14.2	***7.5***	***12.3***	***20.3***	***20.4***	***14.0***	
Pulmonary valve atresia	21	0	4	4	0	30	
	1.0	***0.0***	***0.9***	***4.3***	***0.0***	***1.1***	
Rectal and large intestinal atresia/stenosis	73	1	16	8	1	100	
	3.5	***3.8***	***3.7***	***8.5***	***2.9***	***3.7***	
Renal agenesis/hypoplasia	67	1	16	6	1	92	
	3.3	***3.8***	***3.7***	***6.4***	***2.9***	***3.4***	
Single ventricle	9	0	3	0	0	12	
	0.4	***0.0***	***0.7***	***0.0***	***0.0***	***0.4***	
Small intestinal atresia/stenosis	32	1	4	3	0	40	
	1.6	***3.8***	***0.9***	***3.2***	***0.0***	***1.5***	
Spina bifida without anencephalus	75	2	14	2	2	95	
	3.6	***7.5***	***3.3***	***2.1***	***5.8***	***3.5***	
Tetralogy of Fallot	54	1	17	8	3	84	
	2.6	***3.8***	***3.9***	***8.5***	***8.7***	***3.1***	
Total anomalous pulmonary venous connection	23	0	11	2	3	39	
	1.1	***0.0***	***2.6***	***2.1***	***8.7***	***1.5***	
Transposition of the great arteries (TGA)	94	1	19	4	1	120	
	4.6	***3.8***	***4.4***	***4.3***	***2.9***	***4.5***	
Dextro-transposition of great arteries (d-TGA)	48	0	7	2	0	57	
	2.3	***0.0***	***1.6***	***2.1***	***0.0***	***2.1***	
Tricuspid valve atresia and stenosis	25	1	7	3	0	36	
	1.2	***3.8***	***1.6***	***3.2***	***0.0***	***1.3***	
Tricuspid valve atresia	25	1	7	3	0	36	
	1.2	***3.8***	***1.6***	***3.2***	***0.0***	***1.3***	
Trisomy 13	28	1	16	2	0	47	
	1.4	***3.8***	***3.7***	***2.1***	***0.0***	***1.8***	
Trisomy 18	71	3	16	1	2	95	
	3.5	***11.3***	***3.7***	***1.1***	***5.8***	***3.5***	
Trisomy 21 (Down syndrome)	288	4	86	18	5	412	
	14.0	***15.0***	***20.0***	***19.2***	***14.6***	***15.4***	
Turner syndrome	49	0	10	0	2	63	
	2.4	***0.0***	***2.3***	***0.0***	***5.8***	***2.4***	
Ventricular septal defect	483	12	136	18	7	658	
	23.5	***45.1***	***31.6***	***19.2***	***20.4***	***24.6***	
Total live births	**205711**	**2662**	**43056**	**9381**	**3433**	**267825**	
Male live births	**105744**	**1393**	**21818**	**4896**	**1762**	**137473**	

*Hypospadias prevalence per 10,000 male live births
**Total includes unknown and other maternal race/ethnicity

Utah

Trisomy Counts and Prevalence by Maternal Age 2007 - 2011 (Prevalence per 10,000 Live Births)

	Maternal Age (years)			
Defect	**Less than 35**	**35+**	**Total**	**Notes**
Trisomy 13	30	17	47	
	1.2	***6.4***	***1.8***	
Trisomy 18	59	36	95	
	2.4	***13.5***	***3.5***	
Trisomy 21 (Down syndrome)	226	186	412	
	9.4	***69.6***	***15.4***	
Total live births	**241088**	**26721**	**267825**	

**Total includes unknown maternal age

General comments
-All pregnancy terminations include terminations at any number of weeks gestation.
-All stillbirths are based on greater than or equal to 20 weeks gestation.
-Utah does not use the unspecified non-live birth category.

Vermont

Birth Defects Counts and Prevalence 2007 - 2011 (Prevalence per 10,000 Live Births)

	Maternal Race/Ethnicity						
Defect	**White, Non-Hispanic**	**Black, Non-Hispanic**	**Hispanic**	**Asian or Pacific Islander, Non-Hispanic**	**American Indian or Alaska Native, Non-Hispanic**	**Total****	**Notes**
Anencephalus	3	0	0	0	0	3	
	1.0	***0.0***	***0.0***	***0.0***	***0.0***	***1.0***	
Anotia/microtia	4	0	0	0	0	5	
	1.4	***0.0***	***0.0***	***0.0***	***0.0***	***1.6***	
Aortic valve stenosis	17	0	0	0	0	17	
	5.8	***0.0***	***0.0***	***0.0***	***0.0***	***5.4***	
Atrial septal defect	157	3	4	1	1	170	
	53.3	***79.2***	***105.8***	***18.8***	***277.8***	***54.4***	
Atrioventricular septal defect (Endocardial cushion defect)	15	1	0	0	0	17	
	5.1	***26.4***	***0.0***	***0.0***	***0.0***	***5.4***	
Bladder exstrophy	1	0	0	1	0	2	
	0.3	***0.0***	***0.0***	***18.8***	***0.0***	***0.6***	
Cleft lip alone	18	0	0	0	0	18	
	6.1	***0.0***	***0.0***	***0.0***	***0.0***	***5.8***	
Cleft lip with cleft palate	14	0	0	0	0	15	
	4.8	***0.0***	***0.0***	***0.0***	***0.0***	***4.8***	
Cleft palate alone	23	0	0	0	0	23	
	7.8	***0.0***	***0.0***	***0.0***	***0.0***	***7.4***	
Coarctation of the aorta	25	0	0	0	0	25	
	8.5	***0.0***	***0.0***	***0.0***	***0.0***	***8.0***	
Common truncus (truncus arteriosus)	0	0	1	0	0	1	
	0.0	***0.0***	***26.5***	***0.0***	***0.0***	***0.3***	
Diaphragmatic hernia	10	0	0	0	0	10	
	3.4	***0.0***	***0.0***	***0.0***	***0.0***	***3.2***	
Double outlet right ventricle	5	0	0	0	0	5	
	1.7	***0.0***	***0.0***	***0.0***	***0.0***	***1.6***	
Ebstein anomaly	1	0	0	0	0	1	
	0.3	***0.0***	***0.0***	***0.0***	***0.0***	***0.3***	
Encephalocele	2	0	0	0	0	2	
	0.7	***0.0***	***0.0***	***0.0***	***0.0***	***0.6***	
Esophageal atresia/tracheoesophageal fistula	8	0	0	0	0	8	
	2.7	***0.0***	***0.0***	***0.0***	***0.0***	***2.6***	
Gastroschisis	8	0	0	0	0	11	1
	2.7	***0.0***	***0.0***	***0.0***	***0.0***	***3.5***	
Hypoplastic left heart syndrome	10	0	0	0	0	10	
	3.4	***0.0***	***0.0***	***0.0***	***0.0***	***3.2***	
Hypospadias*	107	1	0	1	0	110	
	70.3	***51.5***	***0.0***	***35.8***	***0.0***	***68.2***	
Omphalocele	2	1	0	0	0	3	
	0.7	***26.4***	***0.0***	***0.0***	***0.0***	***1.0***	
Pulmonary valve atresia and stenosis	36	0	0	0	0	37	
	12.2	***0.0***	***0.0***	***0.0***	***0.0***	***11.8***	
Rectal and large intestinal atresia/stenosis	13	0	0	0	0	13	
	4.4	***0.0***	***0.0***	***0.0***	***0.0***	***4.2***	
Renal agenesis/hypoplasia	17	0	0	0	0	17	
	5.8	***0.0***	***0.0***	***0.0***	***0.0***	***5.4***	
Small intestinal atresia/stenosis	13	0	0	1	0	14	2
	4.4	***0.0***	***0.0***	***18.8***	***0.0***	***4.5***	
Spina bifida without anencephalus	9	0	0	0	0	9	
	3.1	***0.0***	***0.0***	***0.0***	***0.0***	***2.9***	
Tetralogy of Fallot	14	2	0	1	0	17	
	4.8	***52.8***	***0.0***	***18.8***	***0.0***	***5.4***	
Transposition of the great arteries (TGA)	13	0	0	0	0	13	
	4.4	***0.0***	***0.0***	***0.0***	***0.0***	***4.2***	
Dextro-transposition of great arteries (d-TGA)	8	0	0	0	0	8	
	2.7	***0.0***	***0.0***	***0.0***	***0.0***	***2.6***	
Tricuspid valve atresia and stenosis	1	0	0	0	0	1	
	0.3	***0.0***	***0.0***	***0.0***	***0.0***	***0.3***	
Trisomy 13	1	0	0	0	0	1	
	0.3	***0.0***	***0.0***	***0.0***	***0.0***	***0.3***	

Vermont

Birth Defects Counts and Prevalence 2007 - 2011 (Prevalence per 10,000 Live Births)

	Maternal Race/Ethnicity						
Defect	**White, Non-Hispanic**	**Black, Non-Hispanic**	**Hispanic**	**Asian or Pacific Islander, Non-Hispanic**	**American Indian or Alaska Native, Non-Hispanic**	**Total****	**Notes**
Trisomy 18	4	0	0	0	0	4	
	1.4	***0.0***	***0.0***	***0.0***	***0.0***	***1.3***	
Trisomy 21 (Down syndrome)	39	1	0	1	0	42	
	13.2	***26.4***	***0.0***	***18.8***	***0.0***	***13.4***	
Ventricular septal defect	187	3	3	2	0	197	3
	63.5	***79.2***	***79.4***	***37.6***	***0.0***	***63.0***	
Total live births	**29437**	**379**	**378**	**532**	**36**	**31267**	
Male live births	**15210**	**194**	**185**	**279**	**21**	**16136**	

*Hypospadias prevalence per 10,000 male live births
**Total includes unknown and other maternal race/ethnicity

Vermont

Trisomy Counts and Prevalence by Maternal Age 2007 - 2011 (Prevalence per 10,000 Live Births)

	Maternal Age (years)			
Defect	**Less than 35**	**35+**	**Total**	**Notes**
Trisomy 13	1	0	1	
	0.4	***0.0***	***0.3***	
Trisomy 18	3	1	4	
	1.1	***2.0***	***1.3***	
Trisomy 21 (Down syndrome)	20	22	42	
	7.6	***43.9***	***13.4***	
Total live births	**26248**	**5016**	**31267**	

**Total includes unknown maternal age

Notes
1.Vermont actively reviews hospital records and repair procedures to differentiate between Gastroschisis and Omphalocele.
2.Vermont's program only collects information on small intestinal atresia at this time.
3.Vermont uses ICD-9 codes, but does not include probable cases.

General comments
-Vermont birth data represents births to Vermont residents, regardless of which state the birth occurred in. Non-resident births occurring in Vermont are excluded.
-Vermont's program only collects data on live births and predominately uses the ICD-9-CM coding system.

Virginia

Birth Defects Counts and Prevalence 2007 - 2011 (Prevalence per 10,000 Live Births)

	Maternal Race/Ethnicity						
Defect	**White, Non-Hispanic**	**Black, Non-Hispanic**	**Hispanic**	**Asian or Pacific Islander, Non-Hispanic**	**American Indian or Alaska Native, Non-Hispanic**	**Total****	**Notes**
Anencephalus	31	10	10	5	0	58	1
	1.0	***0.9***	***1.5***	***1.3***	***0.0***	***1.1***	
Anophthalmia/microphthalmia	16	11	5	2	1	35	
	0.5	***1.0***	***0.7***	***0.5***	***13.4***	***0.7***	
Anotia/microtia	20	14	14	1	0	49	
	0.7	***1.2***	***2.1***	***0.3***	***0.0***	***0.9***	
Aortic valve stenosis	53	9	7	2	0	71	
	1.8	***0.8***	***1.0***	***0.5***	***0.0***	***1.4***	
Atrial septal defect	2880	1373	1100	548	7	5959	
	95.6	***121.1***	***162.2***	***147.5***	***93.5***	***113.4***	
Atrioventricular septal defect (Endocardial cushion defect)	97	54	16	6	0	174	
	3.2	***4.8***	***2.4***	***1.6***	***0.0***	***3.3***	
Biliary atresia	19	6	1	2	0	28	
	0.6	***0.5***	***0.1***	***0.5***	***0.0***	***0.5***	
Bladder exstrophy	5	2	0	0	0	7	
	0.2	***0.2***	***0.0***	***0.0***	***0.0***	***0.1***	
Choanal atresia	45	13	9	1	0	68	
	1.5	***1.1***	***1.3***	***0.3***	***0.0***	***1.3***	
Cleft lip alone	98	20	18	4	0	141	
	3.3	***1.8***	***2.7***	***1.1***	***0.0***	***2.7***	
Cleft lip with cleft palate	149	38	49	17	0	254	
	4.9	***3.4***	***7.2***	***4.6***	***0.0***	***4.8***	
Cleft palate alone	209	40	32	22	0	304	
	6.9	***3.5***	***4.7***	***5.9***	***0.0***	***5.8***	
Cloacal exstrophy	178	79	38	17	1	314	
	5.9	***7.0***	***5.6***	***4.6***	***13.4***	***6.0***	
Clubfoot	306	93	60	21	0	488	
	10.2	***8.2***	***8.8***	***5.7***	***0.0***	***9.3***	
Coarctation of the aorta	158	51	29	18	0	256	
	5.2	***4.5***	***4.3***	***4.8***	***0.0***	***4.9***	
Common truncus (truncus arteriosus)	19	13	4	2	0	38	
	0.6	***1.1***	***0.6***	***0.5***	***0.0***	***0.7***	
Congenital cataract	23	20	7	4	0	54	
	0.8	***1.8***	***1.0***	***1.1***	***0.0***	***1.0***	
Congenital posterior urethral valves	32	25	9	6	0	73	
	1.1	***2.2***	***1.3***	***1.6***	***0.0***	***1.4***	
Deletion 22q11.2	3	3	0	0	0	6	
	0.1	***0.3***	***0.0***	***0.0***	***0.0***	***0.1***	
Diaphragmatic hernia	73	37	27	1	0	138	
	2.4	***3.3***	***4.0***	***0.3***	***0.0***	***2.6***	
Double outlet right ventricle	53	27	10	9	0	99	
	1.8	***2.4***	***1.5***	***2.4***	***0.0***	***1.9***	
Ebstein anomaly	22	11	13	5	0	51	
	0.7	***1.0***	***1.9***	***1.3***	***0.0***	***1.0***	
Encephalocele	16	7	8	1	0	33	
	0.5	***0.6***	***1.2***	***0.3***	***0.0***	***0.6***	
Esophageal atresia/tracheoesophageal fistula	74	32	13	3	0	123	
	2.5	***2.8***	***1.9***	***0.8***	***0.0***	***2.3***	
Gastroschisis	59	23	18	3	0	103	2
	2.0	***2.0***	***2.7***	***0.8***	***0.0***	***2.0***	
Holoprosencephaly	113	57	23	13	0	207	
	3.8	***5.0***	***3.4***	***3.5***	***0.0***	***3.9***	
Hypoplastic left heart syndrome	68	27	13	6	0	114	
	2.3	***2.4***	***1.9***	***1.6***	***0.0***	***2.2***	
Hypospadias*	1001	287	101	91	1	1489	
	64.7	***50.1***	***29.1***	***47.7***	***27.0***	***55.4***	
Interrupted aortic arch	14	11	4	0	0	29	
	0.5	***1.0***	***0.6***	***0.0***	***0.0***	***0.6***	
Limb deficiencies (reduction defects)	97	33	12	5	0	148	
	3.2	***2.9***	***1.8***	***1.3***	***0.0***	***2.8***	

Virginia

Birth Defects Counts and Prevalence 2007 - 2011 (Prevalence per 10,000 Live Births)

	Maternal Race/Ethnicity						
Defect	**White, Non-Hispanic**	**Black, Non-Hispanic**	**Hispanic**	**Asian or Pacific Islander, Non-Hispanic**	**American Indian or Alaska Native, Non-Hispanic**	**Total****	**Notes**
Omphalocele	17	11	3	3	0	34	2
	0.6	***1.0***	***0.4***	***0.8***	***0.0***	***0.6***	
Pulmonary valve atresia and stenosis	283	152	98	64	0	600	
	9.4	***13.4***	***14.4***	***17.2***	***0.0***	***11.4***	
Pulmonary valve atresia	30	16	7	6	0	59	
	1.0	***1.4***	***1.0***	***1.6***	***0.0***	***1.1***	
Rectal and large intestinal atresia/stenosis	119	40	36	10	1	208	
	3.9	***3.5***	***5.3***	***2.7***	***13.4***	***4.0***	
Renal agenesis/hypoplasia	99	48	20	7	0	177	
	3.3	***4.2***	***2.9***	***1.9***	***0.0***	***3.4***	
Single ventricle	37	15	4	1	0	57	
	1.2	***1.3***	***0.6***	***0.3***	***0.0***	***1.1***	
Small intestinal atresia/stenosis	111	49	29	14	0	206	
	3.7	***4.3***	***4.3***	***3.8***	***0.0***	***3.9***	
Spina bifida without anencephalus	76	33	29	5	1	145	
	2.5	***2.9***	***4.3***	***1.3***	***13.4***	***2.8***	
Tetralogy of Fallot	124	72	28	21	1	248	
	4.1	***6.4***	***4.1***	***5.7***	***13.4***	***4.7***	
Total anomalous pulmonary venous connection	31	6	7	7	0	51	
	1.0	***0.5***	***1.0***	***1.9***	***0.0***	***1.0***	
Transposition of the great arteries (TGA)	76	27	13	10	0	127	
	2.5	***2.4***	***1.9***	***2.7***	***0.0***	***2.4***	
Dextro-transposition of great arteries (d-TGA)	58	21	11	8	0	99	
	1.9	***1.9***	***1.6***	***2.2***	***0.0***	***1.9***	
Tricuspid valve atresia and stenosis	22	13	9	6	0	50	3
	0.7	***1.1***	***1.3***	***1.6***	***0.0***	***1.0***	
Trisomy 13	15	10	11	2	1	39	
	0.5	***0.9***	***1.6***	***0.5***	***13.4***	***0.7***	
Trisomy 18	33	18	15	6	0	72	
	1.1	***1.6***	***2.2***	***1.6***	***0.0***	***1.4***	
Trisomy 21 (Down syndrome)	359	149	124	43	0	679	
	11.9	***13.1***	***18.3***	***11.6***	***0.0***	***12.9***	
Turner syndrome	22	7	11	2	0	42	
	0.7	***0.6***	***1.6***	***0.5***	***0.0***	***0.8***	
Ventricular septal defect	1399	468	440	189	5	2518	4
	46.4	***41.3***	***64.9***	***50.9***	***66.8***	***47.9***	
Total live births	**301322**	**113377**	**67824**	**37147**	**749**	**525433**	
Male live births	**154786**	**57274**	**34658**	**19090**	**371**	**268746**	

*Hypospadias prevalence per 10,000 male live births
**Total includes unknown and other maternal race/ethnicity

Virginia

Trisomy Counts and Prevalence by Maternal Age 2007 - 2011 (Prevalence per 10,000 Live Births)

	Maternal Age (years)			
Defect	**Less than 35**	**35+**	**Total**	**Notes**
Trisomy 13	23	16	39	
	0.5	***1.9***	***0.7***	
Trisomy 18	31	41	72	
	0.7	***4.8***	***1.4***	
Trisomy 21 (Down syndrome)	365	312	679	
	8.3	***36.3***	***12.9***	
Total live births	**439110**	**85852**	**525433**	

**Total includes unknown maternal age

Notes
1.Includes probable cases.
2.Based on ICD-9 code, used only in diagnoses after 10/1/09.
3.Includes cases of tricuspid stenosis.
4.Includes probable cases, cannot exclude Inlet VSD.

West Virginia

Birth Defects Counts and Prevalence 2007 - 2011 (Prevalence per 10,000 Live Births)

	Maternal Race/Ethnicity						
Defect	**White, Non-Hispanic**	**Black, Non-Hispanic**	**Hispanic**	**Asian or Pacific Islander, Non-Hispanic**	**American Indian or Alaska Native, Non-Hispanic**	**Total****	**Notes**
Anencephalus	40	0	1	0	0	42	
	4.1	***0.0***	***7.9***	***0.0***	***0.0***	***4.0***	
Anophthalmia/microphthalmia	2	0	0	0	0	2	
	0.2	***0.0***	***0.0***	***0.0***	***0.0***	***0.2***	
Anotia/microtia	7	0	0	0	0	8	
	0.7	***0.0***	***0.0***	***0.0***	***0.0***	***0.8***	
Aortic valve stenosis	11	0	0	0	0	14	
	1.1	***0.0***	***0.0***	***0.0***	***0.0***	***1.3***	
Atrial septal defect	949	24	5	3	0	1238	
	98.3	***65.0***	***39.5***	***19.6***	***0.0***	***119.1***	
Atrioventricular septal defect (Endocardial cushion defect)	25	0	0	0	0	27	
	2.6	***0.0***	***0.0***	***0.0***	***0.0***	***2.6***	
Biliary atresia	3	0	0	0	0	4	
	0.3	***0.0***	***0.0***	***0.0***	***0.0***	***0.4***	
Bladder exstrophy	1	0	0	0	0	2	
	0.1	***0.0***	***0.0***	***0.0***	***0.0***	***0.2***	
Choanal atresia	3	0	0	0	0	6	
	0.3	***0.0***	***0.0***	***0.0***	***0.0***	***0.6***	
Cleft lip alone	3	0	0	0	0	3	
	0.3	***0.0***	***0.0***	***0.0***	***0.0***	***0.3***	
Cleft lip with cleft palate	34	1	0	0	0	68	
	3.5	***2.7***	***0.0***	***0.0***	***0.0***	***6.5***	
Cleft palate alone	63	1	0	1	0	69	
	6.5	***2.7***	***0.0***	***6.5***	***0.0***	***6.6***	
Cloacal exstrophy	19	0	0	0	0	35	
	2.0	***0.0***	***0.0***	***0.0***	***0.0***	***3.4***	
Clubfoot	118	7	2	0	0	164	
	12.2	***18.9***	***15.8***	***0.0***	***0.0***	***15.8***	
Coarctation of the aorta	33	1	0	0	0	37	
	3.4	***2.7***	***0.0***	***0.0***	***0.0***	***3.6***	
Common truncus (truncus arteriosus)	60	3	0	0	0	64	
	6.2	***8.1***	***0.0***	***0.0***	***0.0***	***6.2***	
Congenital cataract	4	0	0	0	0	4	
	0.4	***0.0***	***0.0***	***0.0***	***0.0***	***0.4***	
Congenital posterior urethral valves	0	1	0	0	0	2	
	0.0	***2.7***	***0.0***	***0.0***	***0.0***	***0.2***	
Deletion 22q11.2	1	0	0	0	0	1	
	0.1	***0.0***	***0.0***	***0.0***	***0.0***	***0.1***	
Diaphragmatic hernia	18	2	0	0	0	21	
	1.9	***5.4***	***0.0***	***0.0***	***0.0***	***2.0***	
Double outlet right ventricle	14	0	0	0	0	20	
	1.4	***0.0***	***0.0***	***0.0***	***0.0***	***1.9***	
Ebstein anomaly	9	0	0	0	0	9	
	0.9	***0.0***	***0.0***	***0.0***	***0.0***	***0.9***	
Encephalocele	2	0	0	0	0	4	
	0.2	***0.0***	***0.0***	***0.0***	***0.0***	***0.4***	
Esophageal atresia/tracheoesophageal fistula	11	0	0	0	0	16	
	1.1	***0.0***	***0.0***	***0.0***	***0.0***	***1.5***	
Holoprosencephaly	25	1	0	0	0	50	
	2.6	***2.7***	***0.0***	***0.0***	***0.0***	***4.8***	
Hypoplastic left heart syndrome	17	1	0	0	0	23	
	1.8	***2.7***	***0.0***	***0.0***	***0.0***	***2.2***	
Hypospadias*	176	4	0	0	0	220	
	38.5	***21.9***	***0.0***	***0.0***	***0.0***	***44.6***	
Interrupted aortic arch	5	0	0	0	0	8	
	0.5	***0.0***	***0.0***	***0.0***	***0.0***	***0.8***	
Limb deficiencies (reduction defects)	27	1	0	0	0	39	
	2.8	***2.7***	***0.0***	***0.0***	***0.0***	***3.8***	
Pulmonary valve atresia and stenosis	40	0	0	0	0	50	
	4.1	***0.0***	***0.0***	***0.0***	***0.0***	***4.8***	

West Virginia

Birth Defects Counts and Prevalence 2007 - 2011 (Prevalence per 10,000 Live Births)

	Maternal Race/Ethnicity						
Defect	**White, Non-Hispanic**	**Black, Non-Hispanic**	**Hispanic**	**Asian or Pacific Islander, Non-Hispanic**	**American Indian or Alaska Native, Non-Hispanic**	**Total****	**Notes**
Pulmonary valve atresia	5	0	0	0	0	8	
	0.5	***0.0***	***0.0***	***0.0***	***0.0***	***0.8***	
Rectal and large intestinal atresia/stenosis	23	1	1	0	0	30	
	2.4	***2.7***	***7.9***	***0.0***	***0.0***	***2.9***	
Renal agenesis/hypoplasia	30	0	0	0	0	38	
	3.1	***0.0***	***0.0***	***0.0***	***0.0***	***3.7***	
Single ventricle	3	0	0	0	0	4	
	0.3	***0.0***	***0.0***	***0.0***	***0.0***	***0.4***	
Small intestinal atresia/stenosis	18	0	0	0	0	31	
	1.9	***0.0***	***0.0***	***0.0***	***0.0***	***3.0***	
Spina bifida without anencephalus	34	0	0	0	0	34	
	3.5	***0.0***	***0.0***	***0.0***	***0.0***	***3.3***	
Tetralogy of Fallot	29	1	0	0	0	39	
	3.0	***2.7***	***0.0***	***0.0***	***0.0***	***3.8***	
Total anomalous pulmonary venous connection	2	0	0	0	0	3	
	0.2	***0.0***	***0.0***	***0.0***	***0.0***	***0.3***	
Transposition of the great arteries (TGA)	20	0	0	0	0	29	
	2.1	***0.0***	***0.0***	***0.0***	***0.0***	***2.8***	
Dextro-transposition of great arteries (d-TGA)	14	0	0	0	0	17	
	1.4	***0.0***	***0.0***	***0.0***	***0.0***	***1.6***	
Tricuspid valve atresia and stenosis	8	0	0	0	0	10	
	0.8	***0.0***	***0.0***	***0.0***	***0.0***	***1.0***	
Tricuspid valve atresia	8	0	0	0	0	10	
	0.8	***0.0***	***0.0***	***0.0***	***0.0***	***1.0***	
Trisomy 13	4	0	0	0	0	7	
	0.4	***0.0***	***0.0***	***0.0***	***0.0***	***0.7***	
Trisomy 18	8	1	0	0	0	10	
	0.8	***2.7***	***0.0***	***0.0***	***0.0***	***1.0***	
Trisomy 21 (Down syndrome)	50	2	0	0	0	75	
	5.2	***5.4***	***0.0***	***0.0***	***0.0***	***7.2***	
Turner syndrome	0	0	0	0	0	4	
	0.0	***0.0***	***0.0***	***0.0***	***0.0***	***0.4***	
Ventricular septal defect	248	4	0	0	0	306	
	25.7	***10.8***	***0.0***	***0.0***	***0.0***	***29.4***	
Total live births	**96576**	**3695**	**1267**	**1527**	**122**	**103974**	
Male live births	**45742**	**1825**	**596**	**449**	**59**	**49307**	

*Hypospadias prevalence per 10,000 male live births
**Total includes unknown and other maternal race/ethnicity

West Virginia

Trisomy Counts and Prevalence by Maternal Age 2007 - 2011 (Prevalence per 10,000 Live Births)

	Maternal Age (years)			
Defect	**Less than 35**	**35+**	**Total**	**Notes**
Trisomy 13	3	1	7	
	0.3	***1.2***	***0.7***	
Trisomy 18	6	3	10	
	0.6	***3.5***	***1.0***	
Trisomy 21 (Down syndrome)	32	17	75	
	3.4	***19.6***	***7.3***	
Total live births	**94232**	**8664**	**103374**	

**Total includes unknown maternal age

General comments
-Birth defects defined by ICD-9 coding.
-No methodological changes during this period.
-Probable cases are included.
-Stillbirths and terminations per birth defect are not collected.

Wisconsin

Birth Defects Counts and Prevalence 2007 - 2011 (Prevalence per 10,000 Live Births)

	Maternal Race/Ethnicity						
Defect	**White, Non-Hispanic**	**Black, Non-Hispanic**	**Hispanic**	**Asian or Pacific Islander, Non-Hispanic**	**American Indian or Alaska Native, Non-Hispanic**	**Total****	**Notes**
Anencephalus	27	3	7	4	0	45	
	1.1	***0.9***	***2.1***	***2.8***	***0.0***	***1.4***	
Anophthalmia/microphthalmia	12	2	1	1	0	16	
	0.5	***0.6***	***0.3***	***0.7***	***0.0***	***0.5***	
Anotia/microtia	16	2	13	0	0	31	
	0.7	***0.6***	***3.9***	***0.0***	***0.0***	***0.9***	
Aortic valve stenosis	16	1	0	0	1	18	
	0.7	***0.3***	***0.0***	***0.0***	***2.0***	***0.5***	
Atrial septal defect	1055	128	135	43	46	1413	
	43.3	***37.6***	***40.7***	***29.9***	***90.9***	***42.6***	
Atrioventricular septal defect (Endocardial cushion defect)	50	5	4	1	0	61	
	2.1	***1.5***	***1.2***	***0.7***	***0.0***	***1.8***	
Biliary atresia	2	0	0	0	0	2	
	0.1	***0.0***	***0.0***	***0.0***	***0.0***	***0.1***	
Bladder exstrophy	6	0	0	0	0	7	
	0.2	***0.0***	***0.0***	***0.0***	***0.0***	***0.2***	
Choanal atresia	31	1	4	2	0	38	
	1.3	***0.3***	***1.2***	***1.4***	***0.0***	***1.1***	
Cleft lip alone	73	7	6	4	0	90	
	3.0	***2.1***	***1.8***	***2.8***	***0.0***	***2.7***	
Cleft lip with cleft palate	54	8	8	3	2	75	
	2.2	***2.3***	***2.4***	***2.1***	***4.0***	***2.3***	
Cleft palate alone	148	15	13	7	3	187	
	6.1	***4.4***	***3.9***	***4.9***	***5.9***	***5.6***	
Cloacal exstrophy	91	11	10	8	0	120	
	3.7	***3.2***	***3.0***	***5.6***	***0.0***	***3.6***	
Clubfoot	364	35	36	14	3	455	
	14.9	***10.3***	***10.9***	***9.7***	***5.9***	***13.7***	
Coarctation of the aorta	55	6	7	0	1	69	
	2.3	***1.8***	***2.1***	***0.0***	***2.0***	***2.1***	
Common truncus (truncus arteriosus)	13	1	4	0	0	18	
	0.5	***0.3***	***1.2***	***0.0***	***0.0***	***0.5***	
Congenital cataract	19	3	4	0	0	27	
	0.8	***0.9***	***1.2***	***0.0***	***0.0***	***0.8***	
Congenital posterior urethral valves	17	2	1	2	2	24	
	0.7	***0.6***	***0.3***	***1.4***	***4.0***	***0.7***	
Deletion 22q11.2	2	0	0	0	1	3	
	0.1	***0.0***	***0.0***	***0.0***	***2.0***	***0.1***	
Diaphragmatic hernia	49	6	8	1	1	65	
	2.0	***1.8***	***2.4***	***0.7***	***2.0***	***2.0***	
Double outlet right ventricle	20	3	6	0	0	29	
	0.8	***0.9***	***1.8***	***0.0***	***0.0***	***0.9***	
Ebstein anomaly	7	0	2	1	1	11	
	0.3	***0.0***	***0.6***	***0.7***	***2.0***	***0.3***	
Encephalocele	9	0	1	1	0	12	
	0.4	***0.0***	***0.3***	***0.7***	***0.0***	***0.4***	
Esophageal atresia/tracheoesophageal fistula	45	3	4	1	0	53	
	1.8	***0.9***	***1.2***	***0.7***	***0.0***	***1.6***	
Holoprosencephaly	52	8	9	2	0	73	
	2.1	***2.3***	***2.7***	***1.4***	***0.0***	***2.2***	
Hypoplastic left heart syndrome	44	12	4	0	1	61	
	1.8	***3.5***	***1.2***	***0.0***	***2.0***	***1.8***	
Hypospadias*	929	125	63	14	10	1143	
	74.3	***72.8***	***37.4***	***19.1***	***38.7***	***67.4***	
Interrupted aortic arch	8	1	0	2	0	11	
	0.3	***0.3***	***0.0***	***1.4***	***0.0***	***0.3***	
Limb deficiencies (reduction defects)	81	9	12	4	2	108	
	3.3	***2.6***	***3.6***	***2.8***	***4.0***	***3.3***	
Omphalocele	15	2	2	2	0	21	
	0.6	***0.6***	***0.6***	***1.4***	***0.0***	***0.6***	

Wisconsin

Birth Defects Counts and Prevalence 2007 - 2011 (Prevalence per 10,000 Live Births)

	Maternal Race/Ethnicity						
Defect	**White, Non-Hispanic**	**Black, Non-Hispanic**	**Hispanic**	**Asian or Pacific Islander, Non-Hispanic**	**American Indian or Alaska Native, Non-Hispanic**	**Total****	**Notes**
Pulmonary valve atresia and stenosis	75	17	14	6	4	116	
	3.1	***5.0***	***4.2***	***4.2***	***7.9***	***3.5***	
Pulmonary valve atresia	6	0	2	2	0	10	
	0.2	***0.0***	***0.6***	***1.4***	***0.0***	***0.3***	
Rectal and large intestinal atresia/stenosis	76	4	12	4	0	98	
	3.1	***1.2***	***3.6***	***2.8***	***0.0***	***3.0***	
Renal agenesis/hypoplasia	102	6	10	3	0	122	
	4.2	***1.8***	***3.0***	***2.1***	***0.0***	***3.7***	
Single ventricle	2	0	0	0	0	2	
	0.1	***0.0***	***0.0***	***0.0***	***0.0***	***0.1***	
Small intestinal atresia/stenosis	66	11	12	3	5	97	
	2.7	***3.2***	***3.6***	***2.1***	***9.9***	***2.9***	
Spina bifida without anencephalus	72	11	10	2	2	99	
	3.0	***3.2***	***3.0***	***1.4***	***4.0***	***3.0***	
Tetralogy of Fallot	60	16	12	5	1	94	
	2.5	***4.7***	***3.6***	***3.5***	***2.0***	***2.8***	
Total anomalous pulmonary venous connection	5	1	1	0	0	7	
	0.2	***0.3***	***0.3***	***0.0***	***0.0***	***0.2***	
Transposition of the great arteries (TGA)	52	4	10	0	2	70	
	2.1	***1.2***	***3.0***	***0.0***	***4.0***	***2.1***	
Dextro-transposition of great arteries (d-TGA)	32	2	4	0	2	42	
	1.3	***0.6***	***1.2***	***0.0***	***4.0***	***1.3***	
Tricuspid valve atresia and stenosis	14	0	2	2	0	18	
	0.6	***0.0***	***0.6***	***1.4***	***0.0***	***0.5***	
Tricuspid valve atresia	14	0	2	2	0	18	
	0.6	***0.0***	***0.6***	***1.4***	***0.0***	***0.5***	
Trisomy 13	17	3	3	1	0	24	
	0.7	***0.9***	***0.9***	***0.7***	***0.0***	***0.7***	
Trisomy 18	43	6	5	2	0	65	
	1.8	***1.8***	***1.5***	***1.4***	***0.0***	***2.0***	
Trisomy 21 (Down syndrome)	290	27	61	28	3	410	
	11.9	***7.9***	***18.4***	***19.5***	***5.9***	***12.4***	
Turner syndrome	8	4	2	0	0	14	
	0.3	***1.2***	***0.6***	***0.0***	***0.0***	***0.4***	
Ventricular septal defect	608	65	112	33	17	837	1
	25.0	***19.1***	***33.8***	***22.9***	***33.6***	***25.2***	
Total live births	**243565**	**34062**	**33143**	**14387**	**5063**	**331659**	
Male live births	**124976**	**17170**	**16867**	**7319**	**2586**	**169640**	

*Hypospadias prevalence per 10,000 male live births
**Total includes unknown and other maternal race/ethnicity

Wisconsin

Trisomy Counts and Prevalence by Maternal Age 2007 - 2011 (Prevalence per 10,000 Live Births)

	Maternal Age (years)			
Defect	**Less than 35**	**35+**	**Total**	**Notes**
Trisomy 13	14	10	24	
	0.5	***2.4***	***0.7***	
Trisomy 18	36	29	65	
	1.2	***6.9***	***2.0***	
Trisomy 21 (Down syndrome)	219	191	410	
	7.6	***45.4***	***12.4***	
Total live births	**289614**	**42045**	**331659**	

**Total includes unknown maternal age

Notes
1.No data on whether probable cases included or not.

General comments
-Cannot distinguish between gastroschisis and omphalocele.
-Fetal Deaths are those that are greater than or equal to 20 weeks.
-No data available for terminations.
-Other/Unknown total live births and total male live births include multi-racial.

Department of Defense
Birth Defects Counts and Prevalence 2007 - 2011 (Prevalence per 10,000 Live Births)

	Maternal Race/Ethnicity						
Defect	White, Non-Hispanic	Black, Non-Hispanic	Hispanic	Asian or Pacific Islander, Non-Hispanic	American Indian or Alaska Native, Non-Hispanic	Total**	Notes
Anencephalus	26	5	3	2	0	36	1
	0.7	***0.6***	***0.5***	***0.8***	***0.0***	***0.6***	
Anophthalmia/microphthalmia	54	20	13	7	2	98	
	1.4	***2.5***	***2.0***	***2.6***	***1.9***	***1.7***	
Anotia/microtia	75	11	20	11	4	121	
	1.9	***1.3***	***3.0***	***4.2***	***3.8***	***2.1***	
Aortic valve stenosis	141	21	16	6	6	192	
	3.6	***2.6***	***2.4***	***2.3***	***5.7***	***3.3***	
Atrial septal defect	3567	803	606	200	82	5367	2
	91.3	***98.5***	***92.1***	***75.7***	***77.9***	***91.2***	
Atrioventricular septal defect (Endocardial cushion defect)	239	66	38	10	4	363	3
	6.1	***8.1***	***5.8***	***3.8***	***3.8***	***6.2***	
Biliary atresia	37	9	9	2	1	58	
	0.9	***1.1***	***1.4***	***0.8***	***0.9***	***1.0***	
Bladder exstrophy	22	2	1	1	0	27	
	0.6	***0.2***	***0.2***	***0.4***	***0.0***	***0.5***	
Choanal atresia	98	18	15	4	2	140	
	2.5	***2.2***	***2.3***	***1.5***	***1.9***	***2.4***	
Cleft lip alone	318	30	36	24	8	420	
	8.1	***3.7***	***5.5***	***9.1***	***7.6***	***7.1***	
Cleft lip with cleft palate	340	46	45	22	8	472	
	8.7	***5.6***	***6.8***	***8.3***	***7.6***	***8.0***	
Cleft palate alone	473	67	64	27	7	653	
	12.1	***8.2***	***9.7***	***10.2***	***6.6***	***11.1***	
Cloacal exstrophy	314	73	47	20	10	479	
	8.0	***9.0***	***7.1***	***7.6***	***9.5***	***8.1***	
Clubfoot	876	157	138	32	24	1257	
	22.4	***19.2***	***21.0***	***12.1***	***22.8***	***21.4***	
Coarctation of the aorta	353	75	42	15	12	509	
	9.0	***9.2***	***6.4***	***5.7***	***11.4***	***8.7***	
Common truncus (truncus arteriosus)	96	15	10	6	2	130	
	2.5	***1.8***	***1.5***	***2.3***	***1.9***	***2.2***	
Congenital cataract	118	35	34	6	2	198	
	3.0	***4.3***	***5.2***	***2.3***	***1.9***	***3.4***	
Congenital posterior urethral valves	73	15	9	5	3	107	
	1.9	***1.8***	***1.4***	***1.9***	***2.8***	***1.8***	
Deletion 22q11.2	28	9	6	2	1	46	
	0.7	***1.1***	***0.9***	***0.8***	***0.9***	***0.8***	
Diaphragmatic hernia	162	25	25	8	3	226	
	4.1	***3.1***	***3.8***	***3.0***	***2.8***	***3.8***	
Double outlet right ventricle	131	25	27	11	3	202	
	3.4	***3.1***	***4.1***	***4.2***	***2.8***	***3.4***	
Ebstein anomaly	46	7	8	3	3	69	
	1.2	***0.9***	***1.2***	***1.1***	***2.8***	***1.2***	
Encephalocele	38	13	10	3	3	68	
	1.0	***1.6***	***1.5***	***1.1***	***2.8***	***1.2***	
Esophageal atresia/tracheoesophageal fistula	121	23	13	6	2	167	
	3.1	***2.8***	***2.0***	***2.3***	***1.9***	***2.8***	
Holoprosencephaly	264	55	41	14	8	388	
	6.8	***6.7***	***6.2***	***5.3***	***7.6***	***6.6***	
Hypoplastic left heart syndrome	169	41	24	8	6	257	
	4.3	***5.0***	***3.6***	***3.0***	***5.7***	***4.4***	
Hypospadias*	2202	382	266	126	52	3096	
	109.3	***92.2***	***79.4***	***92.2***	***96.6***	***102.4***	
Interrupted aortic arch	39	12	2	5	1	62	
	1.0	***1.5***	***0.3***	***1.9***	***0.9***	***1.1***	
Limb deficiencies (reduction defects)	221	50	39	10	6	332	
	5.7	***6.1***	***5.9***	***3.8***	***5.7***	***5.6***	
Pulmonary valve atresia and stenosis	718	208	133	44	17	1144	
	18.4	***25.5***	***20.2***	***16.6***	***16.1***	***19.4***	

Department of Defense
Birth Defects Counts and Prevalence 2007 - 2011 (Prevalence per 10,000 Live Births)

	Maternal Race/Ethnicity						
Defect	**White, Non-Hispanic**	**Black, Non-Hispanic**	**Hispanic**	**Asian or Pacific Islander, Non-Hispanic**	**American Indian or Alaska Native, Non-Hispanic**	**Total****	**Notes**
Pulmonary valve atresia	102	29	18	10	2	164	
	2.6	***3.6***	***2.7***	***3.8***	***1.9***	***2.8***	
Rectal and large intestinal atresia/stenosis	259	36	29	29	4	365	
	6.6	***4.4***	***4.4***	***11.0***	***3.8***	***6.2***	
Renal agenesis/hypoplasia	248	38	43	13	5	354	
	6.3	***4.7***	***6.5***	***4.9***	***4.7***	***6.0***	
Single ventricle	105	33	18	3	5	169	
	2.7	***4.0***	***2.7***	***1.1***	***4.7***	***2.9***	
Small intestinal atresia/stenosis	226	67	42	16	4	363	
	5.8	***8.2***	***6.4***	***6.1***	***3.8***	***6.2***	
Spina bifida without anencephalus	198	29	31	9	10	284	1
	5.1	***3.6***	***4.7***	***3.4***	***9.5***	***4.8***	
Tetralogy of Fallot	236	57	43	30	5	378	
	6.0	***7.0***	***6.5***	***11.4***	***4.7***	***6.4***	
Total anomalous pulmonary venous connection	53	17	15	4	0	93	
	1.4	***2.1***	***2.3***	***1.5***	***0.0***	***1.6***	
Transposition of the great arteries (TGA)	225	37	36	15	3	324	
	5.8	***4.5***	***5.5***	***5.7***	***2.8***	***5.5***	
Dextro-transposition of great arteries (d-TGA)	148	21	19	11	1	204	
	3.8	***2.6***	***2.9***	***4.2***	***0.9***	***3.5***	
Tricuspid valve atresia and stenosis	60	19	5	5	1	93	
	1.5	***2.3***	***0.8***	***1.9***	***0.9***	***1.6***	
Tricuspid valve atresia	60	19	5	5	1	93	
	1.5	***2.3***	***0.8***	***1.9***	***0.9***	***1.6***	
Trisomy 13	40	20	11	2	0	74	1
	1.0	***2.5***	***1.7***	***0.8***	***0.0***	***1.3***	
Trisomy 18	65	10	19	3	0	99	1
	1.7	***1.2***	***2.9***	***1.1***	***0.0***	***1.7***	
Trisomy 21 (Down syndrome)	574	112	100	32	10	846	1
	14.7	***13.7***	***15.2***	***12.1***	***9.5***	***14.4***	
Turner syndrome	62	6	10	2	1	81	
	1.6	***0.7***	***1.5***	***0.8***	***0.9***	***1.4***	
Ventricular septal defect	2908	525	471	158	73	4216	4
	74.4	***64.4***	***71.6***	***59.8***	***69.3***	***71.7***	
Total live births	**390621**	**81563**	**65818**	**26431**	**10528**	**588403**	
Male live births	**201529**	**41417**	**33517**	**13671**	**5385**	**302437**	

*Hypospadias prevalence per 10,000 male live births
**Total includes unknown and other maternal race/ethnicity

Department of Defense

Trisomy Counts and Prevalence by Maternal Age 2007 - 2011 (Prevalence per 10,000 Live Births)

	Maternal Age (years)			
Defect	**Less than 35**	**35+**	**Total**	**Notes**
Trisomy 13	56	16	74	1
	1.1	***3.0***	***1.3***	
Trisomy 18	60	34	99	1
	1.2	***6.5***	***1.7***	
Trisomy 21 (Down syndrome)	525	294	846	1
	10.2	***55.8***	***14.4***	
Total live births	**514312**	**52675**	**588403**	

**Total includes unknown maternal age

Notes

1.Department of Defense (DoD) Registry only captures livebirths.
2.DoD Registry relies on ICD-9-CM codes and cannot differentiate Patent Foramen Ovale (PFO).
3.DoD Registry relies on ICD-9-CM codes and cannot distinguish 745.487.
4.All ICD-9-CM coded cases that meet DoD Registry case criteria are included. DoD Registry relies on ICD-9-CM codes and cannot distinguish 745.487.

General comments

-Criteria for a case: One diagnosis from institutional records, or 2 diagnoses from professional encounter records.
-Infants that appear as multiples of same gender are excluded from analysis.
-Race/Ethnicity for the DoD Birth and Infant Health Registry is based on the military parent through whom the infant receives military health care benefits. This may be the infants' mother or father.

STATE BIRTH DEFECTS SURVEILLANCE PROGRAM DIRECTORY

Updated August 2014

Prepared by the National Center on Birth Defects and Developmental Disabilities, Centers for Disease Control and Prevention

Acknowledgement: State birth defects program directors provided the information for the directory. Their names can be found under the 'contact' section of each state profile.

Alabama

Program status: No surveillance program

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Alaska

Alaska Birth Defects Registry (ABDR)

Purpose: Surveillance, Research
Partner: Local Health Departments, Hospitals, Environmental Agencies/Organizations, Advocacy Groups, Universities, Community Nursing Services, Early Childhood Prevention Programs
Program status: Currently collecting data
Start Year: 1996
Earliest year of available data: 1996
Organizational location: Department of Health (Epidemiology/Environment, Maternal and Child Health)
Population covered annually: 11,000
Statewide: Yes
Current legislation or rule: 7 AAC 27.012
Legislation year enacted: 1996

Case Definition

Outcomes covered: 237.7-237.72 243 255.2 270.0-270.9 271.0-271.1 277.0-277.9 279.0-279.9 282.0-282.9 284 331.3-331.9 334.0-334.9 335.0-335.9 343.0-343.9 359.0-359.9 362.74 389.0-389.9 740.0-740.2 741.0-741.9 742.0-742.9 743.0-743.9 744.0-744.9 745.0-745.9 746.0-746.9 747.0-747.9 748.0-748.9 749.0-749.25 750.0-750.9 751.0-751.9 752.0-752.9 753.0-753.9 754.0-754.89 755.0-755.9 756.0-756.9 757.0-757.9 758.0-758.9 759.0-759.9 760.0-760.9 760.71
Pregnancy outcome: Livebirths (All gestational ages and birth weights)
Age: Birth to sixth birthday
Residence: In and out of state births to Alaska residents

Surveillance Methods

Case ascertainment: Passive case-finding with case confirmation
Vital Records: Birth certificates
Other state based registries: Programs for children with special needs, Newborn hearing screening program, Newborn metabolic screening program, Genetics clinics, specialty clinics (heart, cleft lip/palate, neurodevelopmental), MIMR (FIMR), public health nursing
Delivery Hospitals: Reports are generated by the health information management departments, within hospitals and health care facilities, for any child encountered with a reportable ICD-9 code.
Pediatric & tertiary care hospitals: Reports are generated by the health information management departments, within hospitals and health care facilities, for any child encountered with a reportable ICD-9 code.
Third party payers: Medicaid databases, Indian health services
Other specialty facilities: Genetic counseling/clinic genetic facilities
Other sources: Physician reports

Case Ascertainment

Conditions warranting chart review in the newborn period: Any chart with selected defects or medical conditions (i.e. abnormal facies, congenital heart disease), Anencephaly (ANC) - 740.0 only Spina Bifida Aperta (SBA)- 741-741.93 Encephalocele (ENC) - 742.0 only Cleft Lip (CL) - 749.1-749.14 Cleft Palate (CP) - 749.0-749.04 Cleft Palate and Lip (CPL) 749.20-749.25 Hirschsprung's disease (HSP) - 751.3 Hypospadias (HYP) - 752.61 Epispadias (EPI) - 752.62 Obstructive Genitourinary Defect (OGU) - 753.2-753.6 Spina Bifida Occulta (SBO) 756.17 Omphalocele (OMP) - 756.70, 756.72 Gastroschisis (GAS) - 756.710, 756.73, 756.79 Trisomy 21 (Down syndrome DWN) 758.0 Trisomy 13 (Patau Syndrome PAT) - 758.1 Trisomy 18 (Edwards syndrome EDW) - 758.2 Fetal Alcohol Syndrome (FAS) - 760.71
Coding: ICD-9-CM, ICD-10-CM

Data Collected

Infant/fetus: Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Birth defect diagnostic information
Mother: Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.)
Father: Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.)

Data Collection Methods and Storage

Data Collection: Printed abstract/report filled out by staff, Printed abstract/report submitted by other agnecies (hospitals, etc.), Electronic file/report filled out by staff at facility (laptop, web-based, etc.), Electronic file/report submitted by other agencies (hospitals, etc.)
Database collection and storage: Access

Data Analysis

Data analysis software: SAS, Access, R
Quality assurance: Validity checks, Re-abstraction of cases, Double-checking of assigned codes, Comparison/verification between multiple data sources, Timeliness
Data use and analysis: Routine statistical monitoring, Public health program evaluation, Baseline rates, Rates by demographic and other variables, Monitoring outbreaks and cluster investigations, Time trends, Epidemiologic studies (using only program data), Needs assessment, Service delivery, Grant proposals, Education/public awareness, Prevention projects

System integration

System links: Link case finding data to final birth file
System integration: No

Funding

Funding source: 20% General state funds, 80% MCH funds

Other

Web site:http://dhss.alaska.gov/dph/wcfh/Pages/mchepi/abdr/default.aspx
Surveillance reports on file:
Http://dhss.alaska.gov/dph/wcfh/Pages/mchepi/mchdatabook/default.aspx

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Arizona

Arizona Birth Defects Monitoring Program (ABDMP)

Purpose: Surveillance, Referral to Services, Referral to Prevention/Intervention Services
Partner: Local Health Departments, Hospitals, Advocacy Groups, Universities, Community Nursing Services, Early Childhood Prevention Programs
Program status: Currently collecting data
Start Year: 1986
Earliest year of available data: 1986
Organizational location: Department of Health (Public Health Statistics)
Population covered annually: 85,132
Statewide: Yes
Current legislation or rule: Legislation enacted 1988; Rule effective 1991 Statute: 36-133; Rule: Arizona Administrative Code R9-4-Article 5
Legislation year enacted: 1988

Case Definition

Pregnancy outcome: Livebirths (All gestational ages and birth weights), Fetal deaths - stillbirths, spontaneous abortions, etc. (Any gestational age or weight if a fetal death certificate was issued)
Age: Up to one year after delivery. If the nature of a defect diagnosed in the first year of life is more precisely diagnosed later in the child's life, and this information is contained in the chart at the time of our review, then the more precise diagnosis
Residence: Arizona birth to an Arizona resident mother

Surveillance Methods

Case ascertainment: Active Case Finding
Vital Records: Birth certificates, Fetal death certificates, Hospital Discharge Database
Delivery Hospitals: Disease index or discharge index
Other sources: Midwifery facilities

Case Ascertainment

Conditions warranting chart review in the newborn period: Any chart with an ICD-9-CM code 740-759, Any chart with a selected list of ICD-9-CM codes outside 740-759, Any chart with selected defects or medical conditions (i.e. abnormal facies, congenital heart disease), Any birth certificate with a birth defect box checked, All stillborn infants, All neonatal deaths, All prenatal diagnosed or suspected cases
Conditions warranting chart review beyond the newborn period: Any infant with a codable defect
Coding: CDC coding system based on BPA

Data Collected

Infant/fetus: Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Birth measurements (weight, gestation, Apgars, etc.), Tests and procedures, Birth defect diagnostic information
Mother: Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Gravidity/parity, Illnesses/conditions, Prenatal diagnostic information, Pregnancy/delivery complications, Family history
Father: Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.)

Data Collection Methods and Storage

Data Collection: Printed abstract/report filled out by staff
Database collection and storage: Access, Oracle

Data Analysis

Data analysis software: SAS, Access
Quality assurance: Validity checks, Re-abstraction of cases, Double-checking of assigned codes, Comparison/verification between multiple data sources, Timeliness
Data use and analysis: Routine statistical monitoring, Public health program evaluation, Baseline rates, Rates by demographic and other variables, Monitoring outbreaks and cluster investigations, Time trends, Epidemiologic studies (using only program data), Identification of potential cases for other epidemiologic studies, Needs assessment, Service delivery, Referral, Grant proposals, Education/public awareness, Prevention projects

System integration

System links: Link to other state registries/databases, Link case finding data to final birth file

Funding

Funding source: 14.3% General state funds, 14.7% MCH funds, 71% CDC grant
Web site: http://azdhs.gov/phs/phstats/bdr/index.htm
Surveillance reports on file: Annual Reports
Additional information on file: Fact Sheets; Resources

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Arkansas

Arkansas Reproductive Health Monitoring System (ARHMS)

Purpose: Surveillance, Research, Prevention actvities
Partner: Local Health Departments, Hospitals, Advocacy Groups, Universities, Legislators
Program status: Currently collecting data
Start Year: 1980
Earliest year of available data: 1980
Organizational location: University, Pediatric hospital
Population covered annually: 40,000
Statewide: Yes
Current legislation or rule: Senate Bill Act 214, 1985
Legislation year enacted: 1985

Case Definition
Outcomes covered: Full range of structural malformations, syndromes, genetic diseases, other pregnancy outcomes
Pregnancy outcome: Livebirths (All gestational ages and birth weights), Fetal deaths - stillbirths, spontaneous abortions, etc. (All gestational ages), Elective terminations (All gestational ages)
Age: 2 years old
Residence: In and out of state births to Arkansas residents

Surveillance Methods
Case ascertainment: Active Case Finding
Delivery Hospitals: Disease index or discharge index, Discharge summaries, Obstetrics logs (i.e., labor & delivery), ICU/NICU logs or charts, Surgery logs, Specialty outpatient clinics
Pediatric & tertiary care hospitals: Disease index or discharge index, Discharge summaries, ICU/NICU logs or charts, Surgery logs, Specialty outpatient clinics
Other specialty facilities: Prenatal diagnostic facilities (ultrasound, etc.), Genetic counseling/clinical genetic facilities

Case Ascertainment
Conditions warranting chart review in the newborn period: Any chart with an ICD-9-CM code 740-759, Any chart with a selected list of ICD-9-CM codes outside 740-759, Any chart with selected defects or medical conditions (i.e. abnormal facies, congenital heart disease), All stillborn infants, All prenatal diagnosed or suspected cases
Coding: CDC coding system based on BPA

Data Collected
Infant/fetus: Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Birth measurements (weight, gestation, Apgars, etc.), Tests and procedures, Infant complications, Birth defect diagnostic information
Mother: Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Gravidity/parity, Prenatal diagnostic information
Father: Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Family history

Data Collection Methods and Storage
Data Collection: Electronic file/report filled out by staff at facility (laptop, web-based, etc.)
Database collection and storage: Access

Data Analysis
Data analysis software: SAS, Access, Stata
Quality assurance: Validity checks, Comparison/verification between multiple data sources, Clinical review, Timeliness
Data use and analysis: Routine statistical monitoring, Public health program evaluation, Rates by demographic and other variables, Monitoring outbreaks and cluster investigations, Epidemiologic studies (using only program data), Identification of potential cases for other epidemiologic studies, Grant proposals, Education/public awareness, Prevention projects

System integration
System links: Link to other state registries/databases, Link case finding data to final birth file
System integration: No

Funding
Funding source: 100% General state funds
Web site: http://birthdefects.uams.edu/

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California

California Birth Defects Monitoring Program (CBDMP)

Purpose: Surveillance, Research
Partner: Local Health Departments, Hospitals, Universities
Program status: Currently collecting data
Start Year: 1983
Earliest year of available data: 1983
Organizational location: Department of Health (Maternal and Child Health)
Population covered annually: 70,000
Statewide: No, CBDMP currently monitors a sampling of California births that are demographically similar to the state as a whole and whose birth defects rates and trends have been reflective of those throughout California. Furthermore, CBDMP has statutory authority to conduct active surveillance anywhere in the state when warranted by environmental incidents or concerns.
Current legislation or rule: California Health and Safety Code, Division 102, Part 2, Chapter 1, Sections 103825-103855, effective 1982, recodified 1996
Legislation year enacted: 1982

Case Definition

Pregnancy outcome: Livebirths (All gestational ages and birth weights), Fetal deaths - stillbirths, spontaneous abortions, etc. (All gestational ages), Elective terminations (All gestational ages)
Age: One year
Residence: In-state births to residence of counties monitored by CBDMP

Surveillance Methods

Case ascertainment: Active Case Finding
Delivery Hospitals: Disease index or discharge index, Discharge summaries, Obstetrics logs (i.e., labor & delivery), Regular nursery logs, ICU/NICU logs or charts, Pediatric logs, Postmortem/pathology logs, Surgery logs, Cardiac catheterization laboratories, Specialty outpatient clinics
Pediatric & tertiary care hospitals: Disease index or discharge index, Discharge summaries, ICU/NICU logs or charts, Pediatric logs, Postmortem/pathology logs, Surgery logs, Laboratory logs, Cardiac catheterization laboratories
Other specialty facilities: Prenatal diagnostic facilities (ultrasound, etc.), Cytogenetic laboratories, Genetic counseling/clinical genetic facilities

Case Ascertainment

Conditions warranting chart review in the newborn period: Any chart with an ICD-9-CM code 740-759, Any chart with a selected list of ICD-9-CM codes outside 740-759, Any chart with selected procedure codes, Any chart with selected defects or medical conditions (i.e. abnormal facies, congenital heart disease), All stillborn infants, All neonatal deaths, All elective abortions, All prenatal diagnosed or suspected cases
Conditions warranting chart review beyond the newborn period: Facial dysmorphism or abnormal facies, Failure to thrive, GI condition (e.g. intestinal blockage), Cardiovascular condition, All infant deaths (excluding prematurity), Ocular conditions, Any infant with a codable defect
Coding: CDC BPA codes but modified for use in California

Data Collected

Infant/fetus: Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Birth measurements (weight, gestation, Apgars, etc.), Tests and procedures, Infant complications, Birth defect diagnostic information
Mother: Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Gravidity/parity, Illnesses/conditions
Father: Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Family history

Data Collection Methods and Storage

Data Collection: Electronic file/report filled out by staff at facility (laptop, web-based, etc.)
Database collection and storage: SQL server

Data Analysis

Data analysis software: SAS
Quality assurance: Validity checks, Re-abstraction of cases, Double-checking of assigned codes, Comparison/verification between multiple data sources, Clinical review, Validity checks are done on all abstracts
Data use and analysis: Routine statistical monitoring, Baseline rates, Rates by demographic and other variables, Monitoring outbreaks and cluster investigations, Time trends, Capture-recapture analyses, Observed vs. expected analyses, Epidemiologic studies (using only program data), Identification of potential cases for other epidemiologic studies, Needs assessment, Grant proposals, Education/public awareness

System integration

System links: Link case finding data to final birth file, Hospital discharge. CBDMP links case finding data to final vital statistics fetal death files

Funding

Funding source: 100% CBDMP Special Fund
Web site: www.cdph.ca.gov/programs/CBDMP
Surveillance reports on file: Birth defect fact sheets and California regional birth defect data available on the website.
Additional information on file: Please send inquiries to mchinet@cdph.ca.gov

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Colorado

Colorado Responds to Children with Special Needs Section (CRCSN)

Purpose: Surveillance, Research, Referral to Services, Referral to Prevention/Intervention Services
Partner: Local Health Departments, Hospitals, Environmental Agencies/Organizations, Advocacy Groups, Universities, Community Nursing Services, Early Childhood Prevention Programs, Legislators
Program status: Currently collecting data
Start Year: 1988
Earliest year of available data: 1989
Organizational location: Department of Health (Epidemiology/Environment)
Population covered annually: 65,004 (2013)
Statewide: Yes
Current legislation or rule: Colorado Revised Statutes (CRS) 25-1.5-101.25-1.5-105
Legislation year enacted: 1985

Case Definition

Outcomes covered: Structural birth defects, fetal alcohol syndrome, selected genetic and metabolic disorders; muscular dystrophy; selected developmental disabilities; very low birth weight (less than 1500 grams); others with medical risk factors for developmental delay.
Pregnancy outcome: Livebirths (All gestational ages and birth weights), Fetal deaths - stillbirths, spontaneous abortions, etc. (All gestational ages, 20 weeks gestation)
Age: Up to the 5th birthday (up to 10th birthday for fetal alcohol syndrome)
Residence: Events occurring in-state- or out-of-state Colorado residents

Surveillance Methods

Case ascertainment: Active Case Finding, Passive case-finding with case confirmation
Vital Records: Birth certificates, Death certificates, Fetal death certificates
Other state based registries: Newborn hearing screening program, Newborn metabolic screening program
Delivery Hospitals: Disease index or discharge index, Postmortem/pathology logs, Specialty outpatient clinics
Pediatric & tertiary care hospitals: Disease index or discharge index, Postmortem/pathology logs, Specialty outpatient clinics
Third party payers: Medicaid databases
Other specialty facilities: Cytogenetic laboratories, Genetic counseling/clinical genetic facilities
Other sources: Physician reports

Case Ascertainment

Conditions warranting chart review in the newborn period: Selected stillborn infants, Selected chart reviews for prenatal to age 3: for statistical trends monitoring (23 conditions-catagories); fetal alcohol syndrome (to age 10), active case ascertainment data sources
Coding: ICD-9-CM, Extended code utilized to describe syndromes, further detail of a condition and to specify status.

Data Collected

Infant/fetus: Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Birth measurements (weight, gestation, Apgars, etc.), Birth defect diagnostic information
Mother: Identification information (name, address, date-of-birth, etc.), Gravidity/parity, Pregnancy/delivery complications, Family history
Father: Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.)

Data Collection Methods and Storage

Data Collection: Printed abstract/report submitted by other agencies (hospitals, etc.), Electronic file/report filled out by staff at facility (laptop, web-based, etc.), Electronic file/report submitted by other agencies (hospitals, etc.), 99% of data are collected in electronic format

Data Analysis

Data analysis software: Epi-Info, SAS, Access, Arcview (GIS software); Maptitude, SaTScan, Centrus
Quality assurance: Re-abstraction of cases, Comparison/verification between multiple data sources, Clinical review, Timeliness, Records linkage and de-duplication
Data use and analysis: Routine statistical monitoring, Public health program evaluation, Baseline rates, Rates by demographic and other variables, Monitoring outbreaks and cluster investigations, Time trends, Time-space cluster analyses, Observed vs. expected analyses, Epidemiologic studies (using only program data), Identification of potential cases for other epidemiologic studies, Needs assessment, Referral, Grant proposals, Education/public awareness, Prevention projects, Environmental Studies

System integration

System links: Link to other state registries/databases, Link case finding data to final birth file, Link to environmental databases

Funding

Funding source: 26% General state funds, 30% Service fees, 43% CDC grant

Other

Web site: http://www.cdphe.state.co.us

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Connecticut

Connecticut Birth Defects Registry (CT BDR)

Purpose: Surveillance, Research, Referral to Services, Referral to Prevention/Intervention Services, Reporting for MCH Block Grant
Partner: Hospitals, Environmental Agencies/Organizations, Advocacy Groups, Early Childhood Prevention Programs
Program status: Currently collecting data
Start Year: 2002
Earliest year of available data: 2000
Organizational location: Department of Health (Maternal and Child Health)
Population covered annually: 37,000
Statewide: Yes
Current legislation or rule: Sec. 19a-53. (Formerly Sec. 19-21). Reports of physical defects of children. Sec. 19a-54. (Formerly Sec. 19-21a). Registration of physically handicapped children. Sec. 19a-56a birth defects data. (Formerly Sec. 10a-132b). Birth defects surveillance program.

Case Definition

Outcomes covered: All major structural birth defects; biochemical, genetic and hearing impairment through linkage with Newborn Screening System; any condition which places a child at risk for needing specialized medical care (i.e., complications of prematurity, cancer, trauma, etc.) ICD-9 codes 740 thru 759.9 and 760.71
Pregnancy outcome: Livebirths (All gestational ages and birth weights, PDA = to 2500 grams birth weight)
Age: Up to one year after delivery for birth defects, but reported up to age 5
Residence: In state births to state residents

Surveillance Methods

Case ascertainment: Passive case-finding without case confirmation
Vital Records: Birth certificates, Death certificates, Matched birth/death file, Fetal death certificates, inpatient hospitalizations and emergency room visits
Other state based registries: Programs for children with special needs, Newborn hearing screening program, Newborn metabolic screening program, Developmental Disabilities Surveillance
Delivery Hospitals: Disease index or discharge index, Discharge summaries, Reports from health care professionals in newborn nurseries and NICUs
Pediatric & tertiary care hospitals: Disease index or discharge index, Discharge summaries, Reports from health care professionals in pediatric inpatient and outpatient services planned for future
Other sources: Midwifery facilities, Physician reports, Mandatory reporting by health care providers and facilities; CYSHCN Programs; Newborn Screening System (for genetic disorders and hearing impairment).

Case Ascertainment

Coding: ICD-9-CM

Data Collected

Infant/fetus: Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Birth measurements (weight, gestation, Apgars, etc.), Infant complications, Birth defect diagnostic information
Mother: Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Gravidity/parity, Prenatal care, Pregnancy/delivery complications, Family history
Father: Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.)

Data Collection Methods and Storage

Data Collection: Printed abstract/report filled out by staff, Printed abstract/report submitted by other agnecies (hospitals, etc.), Electronic file/report filled out by staff at facility (laptop, web-based, etc.), Electronic file/report submitted by other agencies (hospitals, etc.)
Database collection and storage: Access, Oracle

Data Analysis

Data analysis software: SAS, Access, Arc GIS
Quality assurance: Validity checks, Comparison/verification between multiple data sources, Timeliness
Data use and analysis: Routine statistical monitoring, Public health program evaluation, Baseline rates, Rates by demographic and other variables, Monitoring outbreaks and cluster investigations, Time trends, Time-space cluster analyses, Epidemiologic studies (using only program data), Needs assessment, Referral, Grant proposals, Education/public awareness, Prevention projects, Provider education

System integration

System links: Link to other state registries/databases, Link case finding data to final birth file

Funding

Funding source: 100% General state funds

Other

Web site: http://www.ct.gov/dph/birthdefectsregistry
Surveillance reports on file: NBDPN annual reports, state profiles

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Delaware

Delaware Birth Defects Registry (DBDR)

Purpose: Surveillance
Partner: Local Health Departments, Hospitals, Early Childhood Prevention Programs, Birthing Centers
Program status: Currently collecting data
Start Year: 2007
Earliest year of available data: 2007
Organizational location: Department of Health (Maternal and Child Health)
Population covered annually: 12,000
Statewide: Yes
Current legislation or rule: House Bill No. 197, an act to amend Title 16 of the Delaware Code relating to Birth Defects
Legislation year enacted: 1997

Case Definition
Outcomes covered: Selected major birth defects, selected metabolic defects, genetic diseases, and infant morality.
Pregnancy outcome: Livebirths (All gestational ages and birth weights), Fetal deaths - stillbirths, spontaneous abortions, etc. (20 weeks gestation and greater, or greater than 350 grams.)
Age: Birth to 5 years
Residence: In-state and out-of-state birth to state resident, and in-state birth to state non-resident

Surveillance Methods
Case ascertainment: Combination of active and passive case ascertainment, Population based
Vital Records: Birth certificates, Death certificates, Matched birth/death file
Other state based registries: Programs for children with special needs, Newborn hearing screening program, Newborn metabolic screening program, Developmental Disabilities Surveillance, Cancer registry, AIDS/HIV registry
Delivery Hospitals: Disease index or discharge index, Discharge summaries, Postmortem/pathology logs, Specialty outpatient clinics, High risk pregnancy logs
Pediatric & tertiary care hospitals: Disease index or discharge index, Discharge summaries, Postmortem/pathology logs, Specialty outpatient clinics
Other specialty facilities: Prenatal diagnostic facilities (ultrasound, etc.), Genetic counseling/clinical genetic facilities
Other sources: Midwifery facilities, Physician reports

Case Ascertainment
Conditions warranting chart review in the newborn period: Any chart with an ICD-9-CM code 740-759, Any chart with a selected list of ICD-9-CM codes outside 740-759, Any chart with selected defects or medical conditions (i.e. abnormal facies, congenital heart disease), All stillborn infants, All prenatal diagnosed or suspected cases
Conditions warranting chart review beyond the newborn period: Facial dysmorphism or abnormal facies, GI condition (e.g. intestinal blockage), Cardiovascular condition, All infant deaths (excluding prematurity), Ocular conditions, Auditory/hearing conditions, Any infant with a codable defect
Coding: CDC coding system based on BPA, ICD-9-CM

Data Collected
Infant/fetus: Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Birth measurements (weight, gestation, Apgars, etc.), Tests and procedures, Infant complications, Birth defect diagnostic information
Mother: Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Gravidity/parity, Illnesses/conditions, Prenatal care, Prenatal diagnostic information, Pregnancy/delivery complications, Family history
Father: Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.)

Data Collection Methods and Storage
Data Collection: Printed abstract/report filled out by staff, Printed abstract/report submitted by other agnecies (hospitals, etc.), Electronic file/report submitted by other agencies (hospitals, etc.)
Database collection and storage: Access, Natus Medical, Inc.

Data Analysis
Quality assurance: Validity checks, Double-checking of assigned codes, Comparison/verification between multiple data sources, Clinical review
Data use and analysis: Routine statistical monitoring, Baseline rates, Rates by demographic and other variables, Time trends, Capture-recapture analyses, Epidemiologic studies (using only program data), Education/public awareness

System integration
System links: Link to other state registries/databases, Link to Newborn Bloodspot and Hearing Screening.
System integration: Initial check into Newborn Bloodspot Screening records with a link which pulls info to Birth Defects Registry from Newborn Bloodspot Screening case management system.

Funding
Funding source: 40% General state funds, 60% MCH funds
Other
Web site: http://dhss.delaware.gov/dhss/dph/chca/dphbdr1.html
Surveillance reports on file: Analysis of the 2007 Delaware Birth Defects Registry
http://dhss.delaware.gov/dhss/dph/chca/files/birthdefectsregistryreport2007.pdf

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District of Columbia

District Of Columbia Birth Defects Surveillance And Prevention Program (DC BDSPP)

Program status: Interested in developing a surveillance program

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Florida

Florida Birth Defects Registry (FBDR)

Purpose: Surveillance, Research, Referral to Prevention/Intervention Services, Educate health care professionals, women of childbearing age and general public about birth defects.
Partner: Local Health Departments, Hospitals, Environmental Agencies/Organizations, Advocacy Groups, Universities, Early Childhood Prevention Programs, Legislators, Federal and state agencies
Program status: Currently collecting data
Start Year: 1998
Earliest year of available data: 1998
Organizational location: Department of Health (Epidemiology), University
Population covered annually: 211,228 in 2012
Statewide: Yes
Current legislation or rule: Section 381.0031(1,2) F.S., allows for development of a list of reportable conditions. Birth defects were added to the list in July 1999.
Legislation year enacted: 1999

Case Definition

Outcomes covered: Major structural malformations and genetic disorders
Pregnancy outcome: Livebirths (All gestational ages and birth weights)
Age: Until age 1
Residence: Florida

Surveillance Methods

Case ascertainment: Passive case-ascertainment, population based, FL has two CDC funded cooperative agreements which use active case ascertainment which is linked to the passive surveillance program.
Vital Records: Birth certificates, Death certificates, Matched birth/death file
Other state based registries: Programs for children with special needs
Delivery Hospitals: Disease index or discharge index
Pediatric & tertiary care hospitals: Disease index or discharge index

Case Ascertainment

Conditions warranting chart review in the newborn period: Any chart with selected defects or medical conditions (i.e. abnormal facies, congenital heart disease)
Coding: ICD-9-CM

Data Collected

Infant/fetus: Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Birth measurements (weight, gestation, Apgars, etc.), Tests and procedures, Infant complications, Birth defect diagnostic information
Mother: Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Gravidity/parity, Illnesses/conditions, Prenatal care, Pregnancy/delivery complications
Father: Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc)

Data Collection Methods and Storage

Data Collection: Electronic file/report submitted by other agencies (hospitals, etc.)
Database collection and storage: Access, Dedicated server for birth defects data.

Data Analysis

Data analysis software: SAS, Access, SQL, dBASE
Quality assurance: Validity checks, Comparison/verification between multiple data sources
Data use and analysis: Routine statistical monitoring, Public health program evaluation, Baseline rates, Rates by demographic and other variables, Monitoring outbreaks and cluster investigations, Time trends, Capture-recapture analyses, Observed vs. expected analyses, Epidemiologic studies (using only program data), Identification of potential cases for other epidemiologic studies, Grant proposals, Education/public awareness, Prevention projects

System integration

System links: Link to other state registries/databases, Link case finding data to final birth file, Link to environmental databases, Maternal linked file.
System integration: The department has created a maternally linked file beginning with 1998. The birth defects data has been included in this linked file. Birth defects data are displayed on the department's Environmental Public Health Tracking Program site.

Funding

Funding source: 62% General state funds, 34% CDC grant, 4% Private Foundation
Web site: www.fbdr.org
Surveillance reports on file: Publications, procedure manauals, electronic case ascertaintment dababase and educational materials
Comments: CDC/NCBDDD Cooperative Agreement for enhanced surveillance of selected birth defects, referral for services and prevention activities. CDC/NCEH Cooperative Agreement for Environmental Public Health Tracking for active surveillance of selected birth defects and analysis of environmental data and birth defects.

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Georgia

Georgia Birth Defects Reporting And Information System (GBDRIS)

Purpose: Surveillance, Research, Referral to Services, Referral to Prevention/Intervention Services
Partner: Local Health Departments, Hospitals, Environmental Agencies/Organizations, Advocacy Groups, Universities, Early Childhood Prevention Programs, Legislators
Program status: Currently collecting data
Start Year: 2003
Earliest year of available data: 2005
Organizational location: Department of Health (Maternal and Child Health)
Population covered annually: 138,000
Statewide: Yes
Current legislation or rule: Birth defects are reportable under State Laws Official Code of Georgia Annotated (OCGA) 31-12-2 and 31-1-3.2 which mandate the reporting of notifiable diseases and newborn hearing screening, and Chapters 290-5-3-.02 and 290-5-24 of the Rules of Department of Human Resources, which regulate the reporting of notifiable diseases and metabolic disorders.
Legislation year enacted: updated in 2003

Case Definition

Outcomes covered: Major birth defects, genetic diseases, FAS and CP
Pregnancy outcome: Livebirths (All gestational ages and birth weights), Fetal deaths - stillbirths, spontaneous abortions, etc. (All gestational ages), Elective terminations (All gestational ages)
Age: Up to 18 years of age
Residence: In and out of state births to state residents

Surveillance Methods

Other state based registries: Programs for children with special needs, Newborn hearing screening program, Newborn metabolic screening program
Delivery Hospitals: Disease index or discharge index, Discharge summaries
Pediatric & tertiary care hospitals: Disease index or discharge index, Discharge summaries
Other specialty facilities: Genetic counseling/clinic genetic facilities
Other sources: Physician reports

Case Ascertainment

Conditions warranting chart review in the newborn period: Any chart with an ICD-9-CM code 740-759, Any chart with selected defects or medical conditions (i.e. abnormal facies, congenital heart disease)
Coding: ICD-9-CM

Data Collected

Infant/fetus: Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Birth measurements (weight, gestation, Apgars, etc.), Birth defect diagnostic information
Mother: Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.)

Data Collection Methods and Storage

Data Collection: Printed abstract/report submitted by other agnecies (hospitals, etc.), Electronic file/report submitted by other agencies (hospitals, etc.)
Database collection and storage: Access

Data Analysis

Data analysis software: SAS, Access
Quality assurance: Validity checks, Double-checking of assigned codes, Comparison/verification between multiple data sources
Data use and analysis: Public health program evaluation, Service delivery

System integration

System integration: We are working to integrate it with our child health data system that contains birth, genetics and intervention referrals.

Funding

Funding source: 100% MCH funds

Other

Web site: http://health.state.ga.us/epi/mch/birthdefects/gbdris/index.asp
Additional information on file: In Georgia, please note that other surveillance is performed by MACDP and that is where the numbers for your report come from.

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Georgia

Metropolitan Atlanta Congenital Defects Program (MACDP)

Purpose: Surveillance, Research
Partner: Local Health Departments, Hospitals, Advocacy Groups, Universities, Laboratories, Prenatal Diagnostic Providers
Program status: Currently collecting data
Start Year: 1967
Earliest year of available data: 1968
Organizational location: CDC, National Center on Birth Defects and Developmental Disabilities
Population covered annually: 35,000
Statewide: No, births to mothers residing within one of three central counties in the metropolitan Atlanta area of the state of Georgia

Case Definition
Outcomes covered: All major structural and genetic birth defects
Pregnancy outcome: Livebirths (≥20 weeks), Fetal deaths - stillbirths, spontaneous abortions, etc. (20 weeks gestation and greater), Elective terminations (All gestational ages)
Age: Before 6 years of age
Residence: Births to mothers residing in one of three central metropolitan Atlanta counties

Surveillance Methods
Case ascertainment: Active Case Finding
Vital Records: Birth certificates
Delivery Hospitals: Disease index or discharge index, Discharge summaries, Obstetrics logs (i.e., labor & delivery), Regular nursery logs, ICU/NICU logs or charts, Pediatric logs, Postmortem/pathology logs, Induction logs and miscarriage logs
Pediatric & tertiary care hospitals: Disease index or discharge index, Discharge summaries, Specialty outpatient clinics
Other specialty facilities: Prenatal diagnostic facilities (ultrasound, etc.), Cytogenetic laboratories, Genetic counseling/clinical genetic facilities

Case Ascertainment
Conditions warranting chart review in the newborn period: Any chart with an ICD-9-CM code 740-759, Any chart with a selected list of ICD-9-CM codes outside 740-759, Any chart with a CDC/BPA code, Any chart with selected defects or medical conditions (i.e. abnormal facies, congenital heart disease), Any birth certificate with a birth defect box checked, Infants with low birth weight or low gestation (Birth weight < 2500 grams and/or 20-36 weeks gestation), All stillborn infants, All neonatal deaths, All elective abortions, All infants with low APGAR scores, All infants in NICU or special care nursery, All prenatal diagnosed or suspected cases
Conditions warranting chart review beyond the newborn period: Facial dysmorphism or abnormal facies, Failure to thrive, CNS condition (e.g. seizure), GI condition (e.g. intestinal blockage), Cardiovascular condition, All infant deaths (excluding prematurity), Any infant with a codable defect
Coding: CDC coding system based on BPA

Data Collected
Infant/fetus: Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Birth measurements (weight, gestation, Apgars, etc.), Tests and procedures, Infant complications, Birth defect diagnostic information
Mother: Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Gravidity/parity, Illnesses/conditions, Prenatal care, Prenatal diagnostic information, Pregnancy/delivery complications, Family history
Father: Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Family history

Data Collection Methods and Storage
Data Collection: Electronic file/report filled out by staff at facility (laptop, web-based, etc.)
Database collection and storage: Access, SQL Server, SAS

Data Analysis
Data analysis software: SPSS, SAS, Access
Quality assurance: Validity checks, Double-checking of assigned codes, Comparison/verification between multiple data sources, Clinical review, Timeliness
Data use and analysis: Routine statistical monitoring, Public health program evaluation, Baseline rates, Rates by demographic and other variables, Monitoring outbreaks and cluster investigations, Time trends, Time-space cluster analyses, Observed vs. expected analyses, Epidemiologic studies (using only program data), Identification of potential cases for other epidemiologic studies, Education/public awareness, Prevention projects, Survival analysis

System integration
System links: Link case finding data to final birth file, National Death Index; Death and Fetal Death Records; Laboratory Records

Funding
Funding source: 100% Intramural CDC funding
Web site: http://www.cdc.gov/ncbddd/bd/macdp.htm
Surveillance reports on file: MACDP 40th Anniversary Surveillance Report
Additional information on file: CDC/BPA Defect Code; Including prenatal diagnoses in BD monitoring

Comments: The 40th Anniversary Surveillance Report was published: Correa A, Cragan JD, Kucik JE, et al. Reporting birth defects surveillance data 1968-2003. Birth Defects Research Part A. 2007;79(2):65-186.

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Hawaii

Hawaii Birth Defects Program (HBDP)

Purpose: Surveillance
Partner: Hospitals, Iowa Registry for Congenital and Inherited Disorders
Program status: Currently collecting data
Start Year: 1988
Earliest year of available data: 1986
Organizational location: Department of Health (Children with Special Health Needs Branch)
Population covered annually: 19,000
Statewide: Yes
Current legislation or rule: Hawaii Revised Statutes - sec. 321-421 through 426 Hawaii Revised Statutes - sec. 324-41 through 44
Legislation year enacted: 2002

Case Definition
Pregnancy outcome: Livebirths (All gestational ages and birth weights), Fetal deaths - stillbirths, spontaneous abortions, etc. (All gestational ages), Elective terminations (All gestational ages)
Age: Up to one year after delivery
Residence: All in-state births

Surveillance Methods
Case ascertainment: Active Case Finding
Delivery Hospitals: Disease index or discharge index, Discharge summaries, Obstetrics logs (i.e., labor & delivery), Regular nursery logs, ICU/NICU logs or charts, Pediatric logs, Postmortem/pathology logs, Surgery logs, Specialty outpatient clinics
Other specialty facilities: Prenatal diagnostic facilities (ultrasound, etc.), Cytogenetic laboratories, Genetic counseling/clinical genetic facilities

Case Ascertainment
Conditions warranting chart review in the newborn period: Any chart with a selected list of ICD-9-CM codes outside 740-759, Any chart with selected defects or medical conditions (i.e. abnormal facies, congenital heart disease), All prenatal diagnosed or suspected cases
Conditions warranting chart review beyond the newborn period: Facial dysmorphism or abnormal facies, CNS condition (e.g. seizure), GI condition (e.g. intestinal blockage), GU condition (e.g. recurrent infections), Cardiovascular condition, Ocular conditions, Auditory/hearing conditions, Any infant with a codable defect
Coding: CDC coding system based on BPA

Data Collected
Infant/fetus: Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Birth measurements (weight, gestation, Apgars, etc.), Tests and procedures, Infant complications, Birth defect diagnostic information
Mother: Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Gravidity/parity, Illnesses/conditions, Prenatal care, Prenatal diagnostic information, Pregnancy/delivery complications, Family history
Father: Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Family history

Data Collection Methods and Storage
Data Collection: Electronic file/report filled out by staff at facility (laptop, web-based, etc.)
Database collection and storage: Access

Data Analysis
Data analysis software: SAS
Quality assurance: Re-abstraction of cases, Double-checking of assigned codes, Clinical review

Funding
Funding source: 100% State of Hawaii Birth Defects Special Fund
Web site: http://health.hawaii.gov/genetics/programs/hbdhome/

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Idaho

Program status: No surveillance program

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Illinois

Adverse Pregnancy Outcomes Reporting System (APORS)

Purpose: Surveillance, Referral to Services, Referral to Prevention/Intervention Services
Partner: Local Health Departments, Hospitals, Community Nursing Services, Early Childhood Prevention Programs, Genetic Clinics, Drug-testing laboratories, Illinois Department of Human Services, Illinois Department of Health and Family Services, Illinois Department of Children and Family Services, Illinois Newborn Metabolic Screening Program
Program status: Currently collecting data
Start Year: 1986
Earliest year of available data: 1989
Organizational location: Department of Health (Epidemiology/Environment)
Statewide: Yes
Current legislation or rule: Illinois Health and Hazardous Substances Registry Act (410 ILCS 525/) 77 Illinois Administrative Code 840
Legislation year enacted: 1984; last amended 2008

Case Definition

Pregnancy outcome: Livebirths (All gestational ages and birth weights), Fetal deaths - stillbirths, spontaneous abortions, etc. (20 weeks gestation and greater, or the family chose to hold a funeral)
Age: 2 years
Residence: In and out of state births to state residents

Surveillance Methods

Case ascertainment: Passive case-finding with case confirmation, Passive case-finding without case confirmation
Vital Records: Birth certificates, Death certificates, Matched birth/death file, Fetal death certificates
Other state based registries: Newborn hearing screening program, Newborn metabolic screening program
Delivery Hospitals: Discharge summaries, Reporting from all hospital nurseries
Pediatric & tertiary care hospitals: Reporting from all hospital nurseries
Other specialty facilities: Genetic counseling/clinic genetic facilities

Case Ascertainment

Conditions warranting chart review in the newborn period: Any chart with a selected list of ICD-9-CM codes outside 740-759, Any chart with selected defects or medical conditions (i.e. abnormal facies, congenital heart disease), All prenatal diagnosed or suspected cases, APORS collects and refers cases of neonatal deaths, infants with gestational age less than 31 weeks, infants with prenatal drug exposure (excluding marijuana), serious congenital infections, endocrine, metabolic and immune disorders, hemoglobinopathies, coagulation defects, leukemia, intrauterine growth restriction, seizures, conditions leading to more than 72 hours on a ventilator, and selected other conditions. Only charts with reported selected birth defects are reviewed.
Conditions warranting chart review beyond the newborn period: Any infant with a codable defect
Coding: CDC coding system based on BPA, ICD-10-CM

Data Collected

Infant/fetus: Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Birth measurements (weight, gestation, Apgars, etc.), Infant complications, Birth defect diagnostic information
Mother: Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Gravidity/parity, Prenatal care
Father: Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.)

Data Collection Methods and Storage

Data Collection: Printed abstract/report filled out by staff, Printed abstract/report submitted by other agnecies (hospitals, etc.), Electronic file/report filled out by staff at facility (laptop, web-based, etc.), Electronic file/report submitted by other agencies (hospitals, etc.)
Database collection and storage: Access, Purpose-built system linked with Vital Record System

Data Analysis

Data analysis software: SAS, Access
Quality assurance: Validity checks, Re-abstraction of cases, Double-checking of assigned codes, Comparison/verification between multiple data sources, Data/hospital audits, Timeliness
Data use and analysis: Routine statistical monitoring, Public health program evaluation, Baseline rates, Rates by demographic and other variables, Time trends, Epidemiologic studies (using only program data), Needs assessment, Service delivery, Referral, Education/public awareness

System integration

System links: Link to other state registries/databases, Link case finding data to final birth file
System integration: Cases are collected in a database that is a module of the Vital Record reporting system. Cases may be initiated from the birth certificate, by hospital staff or by APORS staff. Local community health agencies have access to cases in their jurisdiction for provision of case-management services. APORS cases are also included in the Illinois Healthcare and Family Services Enterprise Data Warehouse where they are available to Illinois' Department of Human Services, Department of Children and Family Services, and Department of Healthcare and Family Services staffs.

Funding

Funding source: 66% General state funds, 29% CDC grant, 5% Other federal funding (non-CDC grants)
Web site: http://www.idph.state.il.us/about/epi/apors.htm
Surveillance reports on file: Birth Defects and Other Adverse Pregnancy Outcomes in Illinois 2005-2009 Trends in the Prevalence of Birth Defects in Illinois and Chicago 1989-2009
Additional information on file: QC reports, fact sheets

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Indiana

Indiana Birth Defects & Problems Registry (IBDPR)

Purpose: Surveillance, Research, Referral to Services
Partner: Hospitals, Advocacy Groups, Universities, Early Childhood Prevention Programs, Legislators
Program status: Currently collecting data
Start Year: 2002
Organizational location: Department of Health (Epidemiology/Environment, Maternal and Child Health, State Health Data Center)
Population covered annually: 85,000
Statewide: Yes
Current legislation or rule: IC 16-38-4-7 Rule 410 IAC 21-3
Legislation year enacted: 2001

Case Definition

Outcomes covered: ICD-9-CM Codes 740-759.9, Fetal Alcohol Spectrum Disorder (760.71), Pervasive Developmental Disorder (299.0), fetal deaths, metabolic disorders & hearing loss from newborn screening, selected neoplasms, congenital blood disorders, and certain eye disorders.
Pregnancy outcome: Livebirths (All gestational ages and birth weights)
Age: Up to 5 years (FAS); all individuals with Autism Spectrum Disorders; up to 3 years for all other birth defects
Residence: In- and out-of-state (as reported to IBDPR) births to state residents

Surveillance Methods

Vital Records: Birth certificates, Death certificates, Matched birth/death file
Other state based registries: Newborn hearing screening program, Newborn metabolic screening program
Delivery Hospitals: Disease index or discharge index, Chart audits of 45 targeted birth defects
Pediatric & tertiary care hospitals: Disease index or discharge index, Chart audits of 45 targeted birth defects
Other specialty facilities: Genetic counseling/clinic genetic facilities
Other sources: Physician reports

Case Ascertainment

Conditions warranting chart review in the newborn period: Any chart with an ICD-9-CM code 740-759, Any chart with a selected list of ICD-9-CM codes outside 740-759
Conditions warranting chart review beyond the newborn period: Any infant with a codable defect
Coding: ICD-9-CM and BPA

Data Collected

Infant/fetus: Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Birth measurements (weight, gestation, Apgars, etc.), Tests and procedures, Infant complications, Birth defect diagnostic information
Mother: Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Gravidity/parity, Illnesses/conditions, Prenatal care, Prenatal diagnostic information, Pregnancy/delivery complications, Family history
Father: Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Family history

Data Collection Methods and Storage

Data Collection: Electronic file/report filled out by staff at facility (laptop, web-based, etc.), Electronic file/report submitted by other agencies (hospitals, etc.), ISDH Chart Auditors submit hospital chart audit information electronically through use of a laptop and a web-based portal to the Indiana State Department of Health Repository, which stores and integrates the data.
Database collection and storage: Oracle

Data Analysis

Data analysis software: SAS, Oracle and ArcView GIS
Quality assurance: Validity checks, Re-abstraction of cases, Double-checking of assigned codes, Comparison/verification between multiple data sources, Data/hospital audits, Clinical review, Timeliness
Data use and analysis: Routine statistical monitoring, Baseline rates, Rates by demographic and other variables, Needs assessment

System integration

System links: Link to other state registries/databases, Link case finding data to final birth file
System integration: The database is linked with birth, death, newborn hearing screening, and newborn metabolic and pulse oximetry screening data.

Other

Web site: www.birthdefects.in.gov

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Iowa

Iowa Registry for Congenital and Inherited Disorders (IRCID)

Purpose: Surveillance, Research, Referral to Services, Referral to Prevention/Intervention Services, Prevention education programs
Partner: Local Health Departments, Hospitals, Environmental Agencies/Organizations, Advocacy Groups, Universities, Legislators
Program status: Currently collecting data
Start Year: 1983
Earliest year of available data: 1983
Organizational location: University
Population covered annually: 39,487 average live births per year (2007-2011)
Statewide: Yes
Current legislation or rule: Iowa Code 136A, Iowa Administrative Code 641-4.7
Legislation year enacted: 1986; Revised 2001, 2003, 2004, 2009, 2013

Case Definition

Outcomes covered: Major birth defects, muscular dystrophy, fetal deaths with and without birth defects, newborn screening disorders
Pregnancy outcome: Livebirths (All gestational ages and birth weights), Fetal deaths - stillbirths, spontaneous abortions, etc. (All gestational ages), Elective terminations (All gestational ages)
Age: 2 years
Residence: Maternal residence in Iowa at time of delivery

Surveillance Methods

Case ascertainment: Active case-finding
Vital Records: Birth certificates, Death certificates, Fetal death certificates, Fetal Death Evaluation Protocol
Other state based registries: Programs for children with special needs, Developmental Disabilities Surveillance, Cancer registry, AIDS/HIV registry, Iowa Perinatal Care Program
Delivery Hospitals: Disease index or discharge index, Discharge summaries, ICU/NICU logs or charts, Cardiac catheterization laboratories, Specialty outpatient clinics, Collect verbatim summaries of surgical reports, diagnostic test results, consultation reports, and autopsy/surgical pathology reports
Pediatric & tertiary care hospitals: Disease index or discharge index, Discharge summaries, ICU/NICU logs or charts, Cardiac catheterization laboratories, Specialty outpatient clinics, Collect verbatim summaries of surgical reports, diagnostic test results, consultation reports, and autopsy/surgical pathology reports
Other specialty facilities: Prenatal diagnostic facilities (ultrasound, etc.), Cytogenetic laboratories, Genetic counseling/clinical genetic facilities, Maternal serum screening facilities
Other sources: Physician reports, Outpatient surgery facilities; IHA Discharge Data

Case Ascertainment

Conditions warranting chart review in the newborn period: Any chart with an ICD-9-CM code 740-759, Any chart with a selected list of ICD-9-CM codes outside 740-759, Any chart with a CDC/BPA code, Any chart with selected procedure codes, Any chart with selected defects or medical conditions (i.e. abnormal facies, congenital heart disease), Any birth certificate with a birth defect box checked, All stillborn infants, All neonatal deaths, All elective abortions, All prenatal diagnosed or suspected cases
Conditions warranting chart review beyond the newborn period: Facial dysmorphism or abnormal facies, Failure to thrive, Developmental delay, CNS condition (e.g. seizure), GI condition (e.g. intestinal blockage), GU condition (e.g. recurrent infections), Cardiovascular condition, All infant deaths (excluding prematurity), Ocular conditions, Auditory/hearing conditions, Any infant with a codable defect
Coding: CDC coding system based on BPA, ICD-9-CM

Data Collected

Infant/fetus: Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Birth measurements (weight, gestation, Apgars, etc.), Tests and procedures, Infant complications, Birth defect diagnostic information
Mother: Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Gravidity/parity, Illnesses/conditions, Prenatal care, Prenatal diagnostic information, Pregnancy/delivery complications, Family history
Father: Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Family history

Data Collection Methods and Storage

Data Collection: Electronic file/report filled out by staff at facility (laptop, web-based, etc.)
Database collection and storage: Access, Oracle, PC Server

Data Analysis

Data analysis software: SPSS, SAS, Access, Oracle
Quality assurance: Validity checks, Re-abstraction of cases, Double-checking of assigned codes, Comparison/verification between multiple data sources, Clinical review, Timeliness
Data use and analysis: Routine statistical monitoring, Public health program evaluation, Baseline rates, Rates by demographic and other variables, Monitoring outbreaks and cluster investigations, Time trends, Capture-recapture analyses, Observed vs. expected analyses, Epidemiologic studies (using only program data), Identification of potential cases for other epidemiologic studies, Needs assessment, Service delivery, Referral, Grant proposals, Education/public awareness, Prevention projects

System integration

System links: Link case finding data to final birth file, Link to environmental databases
System integration: For specific studies, data may be linked with environmental databases or other state databases.

Funding

Funding source: 69% General state funds, 31% CDC grant

Other

Web site: http://www.public-health.uiowa.edu/ircid/

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Kansas

Kansas Birth Defects Information System (BDIS)

Purpose: Surveillance
Partner: Hospitals, Environmental Agencies/Organizations, Universities
Program status: Interested in developing a surveillance program
Start Year: 1985
Earliest year of available data: 1985
Organizational location: Department of Health (Epidemiology/Environment, Maternal and Child Health, Vital Statistics)
Population covered annually: 40,304
Statewide: Yes
Current legislation or rule: K.S.A. 65-1,241 through 65-1,246
Legislation year enacted: 2004

Case Definition
Outcomes covered: The outcome data below are available from Office of Vital Statistics. Live births and stillbirths (fetal deaths) information are used as part of the Birth Defects Information System (BDIS). Thirteen anomalies (and "other" congenital anomalies) are listed on the birth certificate and are reported, however, these are not linked to ICD-9 codes. In addition to major birth defects, low birth weight (<=1,200 grams), low Apgar scores (<=5 at five minutes), seizure or serious neurologic dysfunction, and significant birth injury [skeletal fracture(s), peripheral nerve injury, and/or soft tissue/solid organ hemorrhage which requires intervention] are also reported to BDIS.
Pregnancy outcome: Livebirths (All gestational ages and birth weights), Fetal deaths - stillbirths, spontaneous abortions, etc. (gestational age – not less than 20 completed weeks)
Age: Under five years of age with a primary diagnosis of a congenital anomaly or abnormal condition
Residence: In state and out of state births to Kansas residents and in-state births to out of state residents

Surveillance Methods
Case ascertainment: Passive case-finding without case confirmation
Vital Records: Birth certificates, Fetal death certificates
Other state based registries: Programs for children with special needs, Newborn hearing screening program, Newborn metabolic screening program
Delivery Hospitals: Reports
Pediatric & tertiary care hospitals: Reports
Other sources: Physician reports

Case Ascertainment
Coding: ICD-9-CM

Data Collected
Infant/fetus: Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Birth measurements (weight, gestation, Apgars, etc.), Infant complications, Birth defect diagnostic information
Mother: Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Gravidity/parity, Family history
Father: Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.)

Data Collection Methods and Storage
Data Collection: Printed abstract/report submitted by other agencies (hospitals, etc.), Electronic file/report submitted by other agencies (hospitals, etc.), In Kansas, birth defects (congenital anomalies) are collected through three data sources: live birth certificates, stillbirth (fetal death) certificates, and the congenital malformations and fetal alcohol syndrome reporting form. The live birth and stillbirth (fetal death) certificates data (congenital anomalies and abnormal conditions) contained within the Vital Statistics Integrated Information System are extracted, downloaded and transferred to BDIS. Any additional reports of congenital anomalies from physicians, hospitals and freestanding birthing centers are entered manually into BDIS.
Database collection and storage: Access, SQL Server

Data Analysis
Data analysis software: SAS
Quality assurance: Office of Vital Statistics conducts verification on live birth and stillbirth (fetal death) certificate data.
Data use and analysis: Baseline rates, Rates by demographic and other variables, Time trends, Grant proposals, Ad-hoc upon request (e.g. cluster investigations)

System integration
System links: Link to other state registries/databases
System integration: Our program has a link with vital statistics records. BDIS uses the same data system (WebBFH) and shares information with Children and Youth with Special Health Care Needs and Newborn metabolic screening program.

Funding
Funding source: 100% MCH funds

Other
Web site: http://www.kdheks.gov/bfh/birth_defects.htm

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Kentucky

Kentucky Birth Surveillance Registry (KBSR)

Purpose: Surveillance, Research, Referral to Services, Referral to Prevention/Intervention Services
Partner: Local Health Departments, Hospitals, Advocacy Groups, Universities, Community Nursing Services, Early Childhood Prevention Programs, Genetic Clinics, Laboratories
Program status: Currently collecting data
Start Year: 1998
Earliest year of available data: 1998
Organizational location: Department of Health (Maternal and Child Health)
Population covered annually: 54,000
Statewide: Yes
Current legislation or rule: Kentucky Revised Statute 211.660 Kentucky birth surveillance registry - Department's authority to promulgate administrative regulations. Effective July 15, 2002
Legislation year enacted: 2002

Case Definition

Pregnancy outcome: Livebirths (All gestational ages and birth weights)
Age: Up to 5 years of age
Residence: In and out of state births to state residents

Surveillance Methods

Case ascertainment: Active Case Finding, Passive case-finding with case confirmation
Vital Records: Birth certificates, Death certificates, Matched birth/death file, Fetal death certificates
Other state based registries: Newborn CCHD Screening
Delivery Hospitals: Discharge summaries, Obstetrics logs (i.e., labor & delivery), ICU/NICU logs or charts
Pediatric & tertiary care hospitals: Discharge summaries
Other specialty facilities: Cytogenetic laboratories, Genetic counseling/clinical genetic facilities

Case Ascertainment

Conditions warranting chart review in the newborn period: Any chart with an ICD-9-CM code 740-759, Any chart with a selected list of ICD-9-CM codes outside 740-759, Any chart with selected defects or medical conditions (i.e. abnormal facies, congenital heart disease), Any birth certificate with a birth defect box checked, All prenatal diagnosed or suspected cases
Coding: ICD-9-CM

Data Collected

Infant/fetus: Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Birth measurements (weight, gestation, Apgars, etc.), Tests and procedures, Infant complications, Birth defect diagnostic information
Mother: Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Gravidity/parity, Illnesses/conditions, Prenatal care, Prenatal diagnostic information, Pregnancy/delivery complications, Family history
Father: Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.)

Data Collection Methods and Storage

Data Collection: Electronic file/report filled out by staff at facility (laptop, web-based, etc.)
Database collection and storage: Access

Data Analysis

Data analysis software: SAS
Quality assurance: Validity checks, Re-abstraction of cases, Double-checking of assigned codes, Comparison/verification between multiple data sources, Timeliness
Data use and analysis: Routine statistical monitoring, Public health program evaluation, Baseline rates, Rates by demographic and other variables, Monitoring outbreaks and cluster investigations, Time trends, Epidemiologic studies (using only program data), Service delivery, Grant proposals, Education/public awareness, Prevention projects

System integration

System links: Link case finding data to final birth file
System integration: Birth records from vitals statistics are linked with all cases in the KBSR database.
Web site: http://chfs.ky.gov/dph/mch/ecd/kbsr.htm
Surveillance reports on file: Birth Defect Specific Fact Sheets; Contact of Partners

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Louisiana

LA Birth Defects Monitoring Network (LBDMN)

Purpose: Surveillance, Research, Referral to Services, Referral to Prevention/Intervention Services
Partner: Local Health Departments, Hospitals, Environmental Agencies/Organizations, Advocacy Groups, Universities, Early Childhood Prevention Programs, Legislators
Program status: Currently collecting data
Start Year: 2005
Earliest year of available data: 2005
Organizational location: Department of Health (DHH/OPH/CPH/Title V CYSHCN Programs)
Population covered annually: 62,000
Statewide: Yes
Current legislation or rule: Law: LA R.S. 40:31.41 - 40:31.48, 2001. DHH Rule: LAC 48:V. Chapters 161 and 163
Legislation year enacted: 2001

Case Definition

Outcomes covered: Major structural birth defects and selected genetic conditions
Pregnancy outcome: Livebirths (greater than or equal to 20 weeks gestation or greater than or equal to 350 grams)
Age: Up to three years old
Residence: In and out of state births to state residents

Surveillance Methods

Case ascertainment: Active Case Finding, Combination of active and passive case ascertainment, population based
Vital Records: Birth certificates, Death certificates, Matched birth/death file
Delivery Hospitals: Disease index or discharge index, Discharge summaries, ICU/NICU logs or charts
Pediatric & tertiary care hospitals: Disease index or discharge index, Discharge summaries, ICU/NICU logs or charts, Specialty outpatient clinics
Third party payers: Medicaid databases

Case Ascertainment

Conditions warranting chart review in the newborn period: Any chart with an ICD-9-CM code 740-759, Any chart with a selected list of ICD-9-CM codes outside 740-759
Conditions warranting chart review beyond the newborn period: Any infant with a codable defect
Coding: CDC coding system based on BPA, ICD-9-CM

Data Collected

Infant/fetus: Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Birth measurements (weight, gestation, Apgars, etc.), Tests and procedures, Infant complications, Birth defect diagnostic information
Mother: Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Gravidity/parity, Illnesses/conditions, Prenatal care, Prenatal diagnostic information, Pregnancy/delivery complications, Family history
Father: Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.)

Data Collection Methods and Storage

Data Collection: Electronic file/report filled out by staff at facility (laptop, web-based, etc.)
Database collection and storage: Access, InfoPath/SharePoint stored in SQL

Data Analysis

Data analysis software: SAS, Access, GIS
Quality assurance: Validity checks, Re-abstraction of cases, Double-checking of assigned codes, Comparison/verification between multiple data sources, Data/hospital audits, Clinical review, Timeliness
Data use and analysis: Routine statistical monitoring, Public health program evaluation, Baseline rates, Rates by demographic and other variables, Monitoring outbreaks and cluster investigations, Time trends, Time-space cluster analyses, Observed vs. expected analyses, Epidemiologic studies (using only program data), Identification of potential cases for other epidemiologic studies, Needs assessment, Referral, Grant proposals, Education/public awareness, Prevention projects

System integration

System links: Link case finding data to final birth file, Link case finding data to final death file
System integration: Integration with Louisiana Electronic Event Registration System (LEERS) birth and death records will be completed in 2014.

Funding

Funding source: 24% General state funds, 47% MCH funds, 25% CDC grant, 4% Inter Agency Transfer
Web site: www.dhh.la.gov/lbdmn
Surveillance reports on file: Louisiana Morbidity Report, May-June 2009, Vol 20, No 3; Results from 2006-2008 Birth Defects Surveillance System; 2013 Annual NBDPN Data Report; Presentations of analysis using 2006-2008 data concerning ASD Reporting; Cleft Lip/Palate and Hearing Loss; and Age and Racial Disparities
Additional information on file: Advisory Board Documentation http://wwwprd.doa.louisiana.gov/boardsandcommissions/viewBoard.cfm?board=192

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Maine

Maine CDC Birth Defects Program (MBDP)

Purpose: Surveillance, Research, Referral to Services, Referral to Prevention/Intervention Services, Education
Partner: Hospitals, Environmental Agencies/Organizations, Advocacy Groups, Universities, Community Nursing Services, Early Childhood Prevention Programs, March of Dimes, other New England birth defects programs
Program status: Currently collecting data
Start Year: 1999
Earliest year of available data: 2003
Organizational location: Department of Health (Division of Population Health/Maternal and Child Health Unit/CSHN)
Population covered annually: 12,593
Statewide: Yes
Current legislation or rule: 22 MRSA c. 1687
Legislation year enacted: 1999

Case Definition
Outcomes covered: Selected major birth defects: NTD, clefts, gastroschisis, omphalocele, trisomy 21, reduction deformities of upper and lower limb, hypospadias and major heart defects
Pregnancy outcome: Livebirths (All gestational ages and birth weights), Fetal deaths - stillbirths, spontaneous abortions, etc. (20 weeks gestation and greater, Prenatally diagnosed at any gestation), Elective terminations (Prenatally diagnosed at any gestation)
Age: Through age one
Residence: All in-state births to Maine residents

Surveillance Methods
Case ascertainment: Passive case ascertainment with active case confirmation
Vital Records: Birth certificates, Death certificates, Matched birth/death file, Fetal death certificates
Other state based registries: Programs for children with special needs, Newborn hearing screening program, Newborn metabolic screening program
Delivery Hospitals: Disease index or discharge index, Discharge summaries, Obstetrics logs (i.e., labor & delivery), Regular nursery logs, ICU/NICU logs or charts, Pediatric logs, Postmortem/pathology logs, Surgery logs, Specialty outpatient clinics
Pediatric & tertiary care hospitals: Disease index or discharge index, Discharge summaries, ICU/NICU logs or charts, Pediatric logs, Postmortem/pathology logs, Surgery logs, Laboratory logs, Specialty outpatient clinics
Other specialty facilities: Prenatal diagnostic facilities (ultrasound, etc.), Cytogenetic laboratories, Genetic counseling/clinical genetic facilities, Maternal serum screening facilities
Other sources: Midwifery facilities, Physician reports, Children with Special Health Needs

Case Ascertainment
Conditions warranting chart review in the newborn period: Any chart with selected defects or medical conditions (i.e. abnormal facies, congenital heart disease), Any birth certificate with a birth defect box checked, All stillborn infants, All neonatal deaths, All infants in NICU or special care nursery, All prenatal diagnosed or suspected cases
Conditions warranting chart review beyond the newborn period: Cardiovascular condition, All infant deaths (excluding prematurity), Any infant with a codable defect
Coding: ICD-9-CM

Data Collected
Infant/fetus: Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Birth measurements (weight, gestation, Apgars, etc.), Tests and procedures, Birth defect diagnostic information
Mother: Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Gravidity/parity, Illnesses/conditions, Prenatal care, Prenatal diagnostic information, Pregnancy/delivery complications, Family history

Data Collection Methods and Storage
Data Collection: Printed abstract/report filled out by staff, Printed abstract/report submitted by other agnecies (hospitals, etc.), Electronic file/report filled out by staff at facility (laptop, web-based, etc.), Electronic file/report submitted by other agencies (hospitals, etc.), Electronic scanning of printed records
Database collection and storage: Oracle, Microsoft SQL Server

Data Analysis
Data analysis software: SAS, Stat-exact
Quality assurance: Validity checks, Re-abstraction of cases, Double-checking of assigned codes, Comparison/verification between multiple data sources, Data/hospital audits, Clinical review, Timeliness
Data use and analysis: Routine statistical monitoring, Public health program evaluation, Baseline rates, Rates by demographic and other variables, Epidemiologic studies (using only program data), Identification of potential cases for other epidemiologic studies, Needs assessment, Service delivery, Referral, Grant proposals, Education/public awareness, Prevention projects

System integration
System links: Link to other state registries/databases, Link case finding data to final birth file
System integration: Newborn Hearing/ Newborn Bloodspot Screening Programs

Funding
Funding source: 100% MCH funds

Other
Web site: http://www.maine.gov/dhhs/boh/cshn/birth_defects/index.html

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Maryland

Maryland Birth Defects Reporting and Information System (BDRIS)

Purpose: Surveillance, Referral to Services
Partner: Local Health Departments, Hospitals, Environmental Agencies/Organizations, Advocacy Groups, Universities, Early Childhood Prevention Programs, Legislators
Program status: Currently collecting data
Start Year: 1983
Earliest year of available data: 1984
Organizational location: Department of Health (Epidemiology/Environment), Department of Health (Prevention and Health Promotion Administration)
Population covered annually: 75,000
Statewide: Yes
Current legislation or rule: Health-General Article, Section 18-206; Annotated Code of Maryland
Legislation year enacted: 1982

Case Definition
Outcomes covered: Selected birth defects - anencephaly, spina bifida, hydrocephaly, cleft lip, cleft palate, esophageal atresia/stenosis, rectal/anal atresia, hypospadias, reduction deformity - upper or lower limb, congenital hip dislocation, and Down syndrome until 2009, then all significant birth defects
Pregnancy outcome: Livebirths(All gestational ages and birth weights,, Fetal deaths - stillbirths, spontaneous abortions, etc. (20 weeks gestation and greater, or ≥500 grams weight; reports accepted on fetal deaths <500 grams or <20 weeks gestation if sent to us.), Elective terminations (Reports accepted on terminations <500 grams or <20 weeks gestation if sent to us.BDRIS has no specific legal authority to collect information on terminations. Maryland does not require that any certificate be filed with Vital Records for a termination)
Age: Newborn
Residence: All in-state births

Surveillance Methods
Vital Records: Birth certificates, Death certificates, Matched birth/death file, Fetal death certificates
Other state based registries: Programs for children with special needs, Newborn hearing screening program, Newborn metabolic screening program, Sickle Cell Disease, Critical Congenital Heart Defect follow Up Program
Delivery Hospitals: Primary source: sentinel birth defects hospital report form; electronic reporting began 5/1/13
Other sources: Midwifery facilities

Case Ascertainment
Conditions warranting chart review in the newborn period: All fetal death certificates
Coding: ICD-9-CM

Data Collected
Infant/fetus: Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Birth measurements (weight, gestation, Apgars, etc.), Tests and procedures, Birth defect diagnostic information

Data Collection Methods and Storage
Data Collection: Printed abstract/report filled out by staff, Printed abstract/report submitted by other agnecies (hospitals, etc.)
Database collection and storage: Access, Mainframe, Visual dBASE, SAS, ASCII files; as of 5/1/13 data stored on vendor server

Data Analysis
Data analysis software: SAS, Access
Quality assurance: Validity checks, Double-checking of assigned codes, Comparison/verification between multiple data sources
Data use and analysis: Routine statistical monitoring, Public health program evaluation, Baseline rates, Rates by demographic and other variables, Service delivery, Referral, Grant proposals, Education/public awareness

System integration
System integration: As of 5/1/13, the birth defects data collection is integrated into the same electronic system in which we collect hearing and CCHD screening data.

Funding
Funding source: 100% General state funds
Web site: http://phpa.dhmh.maryland.gov/genetics/SitePages/bdris.aspx
Surveillance reports on file: All reports submitted to CDC

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Massachusetts

Massachusetts Birth Defects Monitoring Program (MBDMP)

Purpose: Surveillance, Research, Public health program evaluation, assist community health assessments
Partner: Hospitals, Environmental Agencies/Organizations, Advocacy Groups, Universities, Early Childhood Prevention Programs
Program status: Currently collecting data
Start Year: 1997
Earliest year of available data: 1999
Organizational location: Department of Health (Maternal and Child Health)
Population covered annually: 73,000
Statewide: Yes
Current legislation or rule: Massachusetts General Laws, Chapter 111, Section 67E in 1963. In 2002 Massachusetts Legislature amended this statute, expanding the birth defects monitoring program. In 2009 regulations for a Congenital Anomalies Registry, 105 CMR 302.000, were promulgated.
Legislation year enacted: 1963 (amended 2002, regulations 2009)

Case Definition

Pregnancy outcome: Livebirths (All gestational ages and birth weights), Fetal deaths - stillbirths, spontaneous abortions, etc. (≥20 wks gestation or ≥350 grams), Other pregnancy losses (elective or spontaneous, all gestational ages and weights)
Age: 1 year
Residence: In- and out-of-state births to state residents

Surveillance Methods

Case ascertainment: Active Case Finding
Vital Records: Birth certificates, Death certificates, Matched birth/death file, Fetal death certificates
Delivery Hospitals: Disease index or discharge index, Obstetrics logs (i.e., labor & delivery), Regular nursery logs, ICU/NICU logs or charts, Postmortem/pathology logs, Specialty outpatient clinics
Pediatric & tertiary care hospitals: Disease index or discharge index, ICU/NICU logs or charts, Postmortem/pathology logs, Specialty outpatient clinics
Other specialty facilities: Prenatal diagnostic facilities (ultrasound, etc.), Cytogenetic laboratories, Genetic counseling/clinical genetic facilities

Case Ascertainment

Conditions warranting chart review in the newborn period: Any chart with an ICD-9-CM code 740-759, Any chart with a selected list of ICD-9-CM codes outside 740-759, Any chart with selected defects or medical conditions (i.e. abnormal facies, congenital heart disease), Any birth certificate with a birth defect box checked, All stillborn infants, All infants in NICU or special care nursery, All prenatal diagnosed or suspected cases
Conditions warranting chart review beyond the newborn period: All infant deaths (excluding prematurity), Any infant with a codable defect
Coding: CDC coding system based on BPA, ICD-9-CM

Data Collected

Infant/fetus: Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Birth measurements (weight, gestation, Apgars, etc.), Tests and procedures, Infant complications, Birth defect diagnostic information
Mother: Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Gravidity/parity, Illnesses/conditions, Prenatal care, Prenatal diagnostic information, Pregnancy/delivery complications, Family history
Father: Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Family history

Data Collection Methods and Storage

Data Collection: Printed abstract/report filled out by staff, Electronic file/report filled out by staff at facility (laptop, web-based, etc.)
Database collection and storage: Access

Data Analysis

Data analysis software: SAS
Quality assurance: Validity checks, Double-checking of assigned codes, Comparison/verification between multiple data sources, Clinical review, Timeliness
Data use and analysis: Routine statistical monitoring, Public health program evaluation, Baseline rates, Rates by demographic and other variables, Monitoring outbreaks and cluster investigations, Observed vs. expected analyses, Epidemiologic studies (using only program data), Identification of potential cases for other epidemiologic studies, Grant proposals, Education/public awareness

System integration

System links: Link case finding data to final birth file, Link case finding data to open and closed birth file, open and closed fetal file, and Pregnancy to Early Life Longitudinal (PELL) data system

Funding

Funding source: 25% General state funds, 75% MCH funds
Web site: www.mass.gov/dph/birthdefects
Surveillance reports on file: Annual or bi-annual reports, 1999 through 2010

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Michigan

Michigan Birth Defects Registry (MBDR)

Purpose: Surveillance, Research, Referral to Services, Referral to Prevention/Intervention Services, Prevalence and mortality statistics
Partner: Local Health Departments, Hospitals, Advocacy Groups, Universities, Early Childhood Prevention Programs, Legislators
Program status: Currently collecting data
Start Year: 1992
Earliest year of available data: 1992
Organizational location: Department of Health (Vital Statistics)
Population covered annually: 112,000
Statewide: Yes
Current legislation or rule: Public Act 236 of 1988
Legislation year enacted: 1988

Case Definition

Outcomes covered: Congenital anomalies, certain infectious diseases, conditions caused by maternal exposures and other diseases of major organ systems
Pregnancy outcome: Livebirths (All gestational ages and birth weights), Fetal deaths - stillbirths, spontaneous abortions, etc. (20 weeks or >400 grams)
Age: Up to two years after delivery except that reporting to age 12 for FASD beginning in 2013
Residence: Michigan births regardless of residence, out of state births diagnosed or treated in Michigan regardless of residence

Surveillance Methods

Case ascertainment: Passive case-finding without case confirmation
Vital Records: Birth certificates, Death certificates, Matched birth/death file, Fetal death certificates, Fetal deaths since 2004 only
Other state based registries: Programs for children with special needs, Newborn hearing screening program, Newborn metabolic screening program, Cancer registry
Delivery Hospitals: Disease index or discharge index
Pediatric & tertiary care hospitals: Disease index or discharge index, Specialty outpatient clinics
Third party payers: Medicaid databases
Other specialty facilities: Cytogenetic laboratories, Genetic counseling/clinical genetic facilities

Case Ascertainment

Conditions warranting chart review in the newborn period: Any chart with an ICD-9-CM code 740-759, Any chart with a selected list of ICD-9-CM codes outside 740-759, Any chart with selected defects or medical conditions (i.e. abnormal facies, congenital heart disease), Any birth certificate with a birth defect box checked
Conditions warranting chart review beyond the newborn period: Facial dysmorphism or abnormal facies, Failure to thrive, CNS condition (e.g. seizure), GI condition (e.g. intestinal blockage), GU condition (e.g. recurrent infections), Cardiovascular condition, All infant deaths (excluding prematurity), Childhood deaths between 1 and 6, Ocular conditions, Auditory/hearing conditions, Any infant with a codable defect
Coding: ICD-9-CM

Data Collected

Infant/fetus: Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Birth measurements (weight, gestation, Apgars, etc.), Tests and procedures, Infant complications, Birth defect diagnostic information
Mother: Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Gravidity/parity, Illnesses/conditions, Prenatal care, Prenatal diagnostic information, Pregnancy/delivery complications
Father: Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.)

Data Collection Methods and Storage

Data Collection: Printed abstract/report filled out by staff, Printed abstract/report submitted by other agnecies (hospitals, etc.), Electronic file/report filled out by staff at facility (laptop, web-based, etc.), Electronic file/report submitted by other agencies (hospitals, etc.)
Database collection and storage: FoxPro

Data Analysis

Data analysis software: SPSS, SAS, Access, Fox-pro, Excel
Quality assurance: Validity checks, Re-abstraction of cases, Double-checking of assigned codes, Comparison/verification between multiple data sources, Data/hospital audits, Timeliness
Data use and analysis: Routine statistical monitoring, Public health program evaluation, Baseline rates, Rates by demographic and other variables, Monitoring outbreaks and cluster investigations, Time trends, Observed vs. expected analyses, Epidemiologic studies (using only program data), Identification of potential cases for other epidemiologic studies, Needs assessment, Service delivery, Referral, Grant proposals, Education/public awareness

System integration

System links: Link to other state registries/databases, Link case finding data to final birth file, CSHCS, WIC
System integration: No, data from vital records and other sources are extracted and loaded into registry as opposed to truly integrated database structures.

Funding

Funding source: 10% CDC grant, 90% Vital Records fees
Web site: http://www.michigan.gov/mdch/0,1607,7-132-2944_4670---,00.html
Additional information on file:
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Minnesota

Minnesota Birth Defects Information System (BDIS)

Purpose: Surveillance, Research, Referral to Services, Targeted prevention to higher risk populations.
Partner: Local Health Departments, Hospitals, Environmental Agencies/Organizations, Advocacy Groups, Universities, Early Childhood Prevention Programs
Program status: Currently collecting data
Start Year: 2005
Earliest year of available data: 2006
Organizational location: Department of Health (Maternal and Child Health)
Population covered annually: 70,000
Statewide: No, currently covering about 85% of live births in MN. Statewide surveillance is expected to be completed by the end of 2014. Coverage is complete for smaller regions of the state. Prevalence estimates from 2006-2010 are available for the two largest counties in Minnesota, Hennepin and Ramsey counties, which account for just over 40% of MN births. For 2011 births, coverage expanded to complete in the 7-county metro area.
Current legislation or rule: MS 144.2215-2219
Legislation year enacted: 2004

Case Definition

Outcomes covered: Major structural and genetic defects diagnosed up to 1 year of age identified by CDC and NBDPN.
Pregnancy outcome: Livebirths (All gestational ages and birth weights)
Age: Up to 1 year after delivery
Residence: In-state and out of state births to state residents

Surveillance Methods

Case ascertainment: Active Case Finding
Vital Records: Birth certificates, Death certificates, Matched birth/death file
Other state based registries: Newborn hearing screening program, Newborn metabolic screening program
Delivery Hospitals: Disease index or discharge index, Discharge summaries, Specialty outpatient clinics
Pediatric & tertiary care hospitals: Disease index or discharge index, Discharge summaries, Specialty outpatient clinics
Third party payers: Medicaid databases, In 2014, All-Payer Claims Database will become available.
Other sources: Statewide de-identified hospital discharge dataset

Case Ascertainment

Conditions warranting chart review in the newborn period: Any chart with an ICD-9-CM code 740-759, Any birth certificate with a birth defect box checked, All deaths prior to age 2 with a birth defect indicated as cause of death on death certificates, starting with 2009 births
Coding: CDC coding system based on BPA

Data Collected

Infant/fetus: Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Birth measurements (weight, gestation, Apgars, etc.), Tests and procedures, Infant complications, Birth defect diagnostic information
Mother: Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Gravidity/parity, Illnesses/conditions, Prenatal care, Prenatal diagnostic information, Pregnancy/delivery complications, Family history
Father: Identification information (name, address, date-of-birth, etc.), Family history

Data Collection Methods and Storage

Data Collection: Electronic file/report filled out by staff at facility (laptop, web-based, etc.), Electronic file/report submitted by other agencies (hospitals, etc.), Remote access to medical records in two hospitals
Database collection and storage: Web-based department-wide integrated disease surveillance database. Maven platform by Consilience Software.

Data Analysis

Data analysis software: SAS
Quality assurance: Validity checks, Re-abstraction of cases, Double-checking of assigned codes, Comparison/verification between multiple data sources, Data/hospital audits, Clinical review, Timeliness
Data use and analysis: Routine statistical monitoring, Public health program evaluation, Baseline rates, Rates by demographic and other variables, Identification of potential cases for other epidemiologic studies, Needs assessment, Referral, Education/public awareness, Prevention projects, Collaboration with Environmental Public Health Tracking Program

System integration

System links: Link to other state registries/databases, Link case finding data to final birth file, Sharing of confirmed cases with key contacts at local public health agencies for service referral. LPH staff can log on to our the birth defects database to view relevant case information. In 2012, LPH began entering follow up and service/program updates
System integration: The Birth Defects Information System (BDIS) is integrated with Newborn Hearing program and Heritable Conditions. The databases share a model on the same platform, but they are managed separately. (This platform, Maven by Consilience Software, is also used by many infectious disease surveillance systems in MN and access is limited by disease/user role.) Additional integration with the Newborn Screening program will take place in 2014 as universal newborn CCHD screening is implemented.

Funding

Funding source: 90% General state funds, 10% CDC grant

Other

Web site:
http://www.health.state.mn.us/divs/cfh/program/cyshn/bdmaintro.cfm

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Mississippi

Mississippi Birth Defects Surveillance Registry

Purpose: Surveillance
Partner: Local Health Departments, Hospitals, Title V Children with Special Healthcare Needs
Program status: Currently collecting data
Start Year: 2000
Earliest year of available data: 2000
Organizational location: Department of Health (Maternal and Child Health, Genetic Services Bureau)
Population covered annually: 40,000
Statewide: Yes
Current legislation or rule: Section 41-21-205 of the Mississippi Code of 1972
Legislation year enacted: 1997

Case Definition
Outcomes covered: The infant/fetus must have a reportable structural defect, newborn screening disorder, functional or metabolic disorder, genetically determined or a defect resulting from an environmental influence during embryonic or fetal life.
Pregnancy outcome: Fetal deaths - stillbirths, spontaneous abortions, etc. (20 weeks gestation and greater)
Age: Birth to 21 years
Residence: In and out of state births to state residents

Surveillance Methods
Case ascertainment: Passive case-finding without case confirmation
Vital Records: Birth certificates, Death certificates, Fetal death certificates
Other state based registries: Programs for children with special needs, Newborn hearing screening program, Newborn metabolic screening program
Delivery Hospitals: Disease index or discharge index, Discharge summaries
Pediatric & tertiary care hospitals: Disease index or discharge index, Discharge summaries, Specialty outpatient clinics
Other specialty facilities: Genetic counseling/clinic genetic facilities
Other sources: Physician reports

Case Ascertainment
Coding: ICD-9-CM

Data Collected
Infant/fetus: Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Birth measurements (weight, gestation, Apgars, etc.), Birth defect diagnostic information
Mother: Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.)

Data Collection Methods and Storage
Data Collection: Printed abstract/report filled out by staff, Printed abstract/report submitted by other agnecies (hospitals, etc.), Electronic file/report submitted by other agencies (hospitals, etc.)
Database collection and storage: Access, New web based program

Data Analysis
Data analysis software: SPSS, SAS, Access
Quality assurance: Validity checks, Double-checking of assigned codes, Timeliness
Data use and analysis: Routine statistical monitoring, Public health program evaluation, Baseline rates, Rates by demographic and other variables

System integration
System links: Newborn Screening Program Newborn screening program database and Early Hearing program database

Funding
Funding source: 100% Genetic screening revenues

Other
Web site: www.HealthyMS.com

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Missouri

Missouri Birth Defects Surveillance System

Purpose: Surveillance, Research
Partner: Environmental Agencies/Organizations, Legislators
Program status: Currently collecting data
Start Year: 1985
Earliest year of available data: 1980
Organizational location: Department of Health (Vital Statistics)
Population covered annually: 79,000
Statewide: Yes

Case Definition
Outcomes covered: ICD-9 codes 740-759, plus genetic, metabolic, and other disorders
Pregnancy outcome: Livebirths (All gestational ages and birth weights), Fetal deaths - stillbirths, spontaneous abortions, etc. (20 weeks gestation and greater, Fetal death certificates are only source of data)
Age: Up to one year after delivery
Residence: In- and out-of-state births to state residents

Surveillance Methods
Case ascertainment: Population-based
Vital Records: Birth certificates, Death certificates, Matched birth/death file, Fetal death certificates
Delivery Hospitals: Discharge summaries
Pediatric & tertiary care hospitals: Discharge summaries, Specialty outpatient clinics

Case Ascertainment
Coding: ICD-9-CM, ICD-10

Data Collected
Infant/fetus: Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Birth measurements (weight, gestation, Apgars, etc.), Tests and procedures, Infant complications, Birth defect diagnostic information
Mother: Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Gravidity/parity, Prenatal care, Pregnancy/delivery complications, Family history
Father: Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.)

Data Collection Methods and Storage
Data Collection: Electronic file/report filled out by staff at facility (laptop, web-based, etc.), Electronic file/report submitted by other agencies (hospitals, etc.)
Database collection and storage: SAS

Data Analysis
Data analysis software: SAS
Quality assurance: Validity checks, Double-checking of assigned codes, Comparison/verification between multiple data sources
Data use and analysis: Routine statistical monitoring, Baseline rates, Rates by demographic and other variables, Time trends, Education/public awareness

System integration
System links: Link case finding data to final birth file

Funding
Funding source: 100% MCH funds
Web site: http://health.mo.gov/data/birthdefectsregistry/index.php
Surveillance reports on file: MO Birth Defects Report 1996-2000

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Montana

Montana Birth Outcomes Monitoring System (MBOMS)

Purpose: Surveillance, Referral to Prevention/Intervention Services
Partner: Private practice physicians
Program status: No surveillance program
Start Year: 1999
Earliest year of available data: 2000
Organizational location: Department of Health (Maternal and Child Health)
Population covered annually: 12,000
Statewide: Yes
Current legislation or rule: None

Case Definition

Outcomes covered: Major structural birth defects, chromosomal anomalies specified in the CDC 45 reportables for births occurring in calendar years 200 through 2004. Registry suspended beginning with calendar year 2005 births due to loss of CDC funding.
Pregnancy outcome: All gestational ages

Comments: Due to lack of funding, Montana is no longer performing active surveillance. Informal active/passive surveillance continues and linkages between ascertainment and services are in place and supported. Data and program linkages exist between newborn hearing screening, birth certificates, and newborn screening.

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Nebraska

Nebraska Birth Defect Registry

Purpose: Surveillance, Research
Partner: Hospitals, Universities, Early Childhood Prevention Programs, Vital Statistics, Maternal Child Health
Program status: Currently collecting data
Start Year: 1972
Earliest year of available data: 1973
Organizational location: Department of Health (Office of Epidemiology and Informatics)
Population covered annually: 26000
Statewide: Yes
Current legislation or rule: Laws 1972, LB 1203, §1, §2, §3, §4 (alternate citation: Public Health & Welfare [Codes] §71-645, §71-646, §71-647, §71-648, §71-649)
Legislation year enacted: 1972

Case Definition
Pregnancy outcome: Livebirths (≥20 weeks, ≥500 grams), Fetal deaths - stillbirths, spontaneous abortions, etc. (≥20 weeks, ≥500 grams)
Age: Up to one year after delivery
Residence: In state birth to state resident, out of state births to state residents when Out State Jurisdiction allows use of data

Surveillance Methods
Case ascertainment: Passive case-finding without case confirmation
Vital Records: Birth certificates, Death certificates, Fetal death certificates
Delivery Hospitals: Disease index or discharge index, Discharge summaries, Obstetrics logs (i.e., labor & delivery), Regular nursery logs, ICU/NICU logs or charts, Pediatric logs
Pediatric & tertiary care hospitals: Disease index or discharge index, Discharge summaries, ICU/NICU logs or charts, Specialty outpatient clinics
Other specialty facilities: Genetic counseling/clinic genetic facilities
Other sources: Midwifery facilities, Physician reports

Case Ascertainment
Conditions warranting chart review in the newborn period: Any chart with an ICD-9-CM code 740-759, Any birth certificate with a birth defect box checked
Coding: CDC coding system based on BPA

Data Collected
Infant/fetus: Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Birth measurements (weight, gestation, Apgars, etc.), Birth defect diagnostic information
Mother: Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Gravidity/parity
Father: Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.)

Data Collection Methods and Storage
Data Collection: Electronic file/report filled out by staff at facility (laptop, web-based, etc.), Electronic file/report submitted by other agencies (hospitals, etc.)
Database collection and storage: SQL

Data Analysis
Data analysis software: SAS, Reports from Netsmart
Quality assurance: Validity checks, Double-checking of assigned codes, Comparison/verification between multiple data sources, Timeliness
Data use and analysis: Routine statistical monitoring, Baseline rates, Rates by demographic and other variables, Time trends, Grant proposals

System integration
System links: Link to other state registries/databases
System integration: Births, deaths, and fetal deaths

Funding
Funding source: 100% MCH funds

Other
Web site:
http://dhhs.ne.gov/publichealth/Pages/vitalrecords_partners.aspx
Surveillance reports on file:
Http://dhhs.ne.gov/publichealth/Pages/ced_vs.aspx

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Nevada

Nevada Birth Outcomes Monitoring System (NBOMS)

Purpose: Surveillance, Research, Referral to Services, Referral to Prevention/Intervention Services
Partner: Hospitals, Early Childhood Prevention Programs, Legislators, Bureau of Child, Family, & Community Wellness
Program status: Currently collecting data
Start Year: 2000
Earliest year of available data: 2005
Organizational location: Department of Health (Maternal and Child Health), State Health Division, Office of Health Statistics and Surveillance, Bureau of Health Statistics, Planning, Epidemiology and Response
Population covered annually: 35,000
Statewide: Yes
Current legislation or rule: NRS 442.300 - 442.330 - Birth Defects Registry Legislation *** Regulation = NAC 442
Legislation year enacted: 1999

Case Definition

Outcomes covered: Major birth defects and genetic diseases
Pregnancy outcome: Livebirths (20 weeks of gestation and greater with all birth weights), Fetal deaths - stillbirths, spontaneous abortions, etc. (20 weeks gestation and greater), Elective terminations (20 weeks gestation and greater)
Age: Birth to 7 years of age
Residence: In-state births

Surveillance Methods

Case ascertainment: Combination of active & passive, Population-based, Hospital-based
Vital Records: Birth certificates, Death certificates, Matched birth/death file, Fetal death certificates, hospital medical records, diagnostic/laboratory reports
Other state based registries: Newborn hearing screening program, Newborn metabolic screening program, Cancer registry, AIDS/HIV registry
Delivery Hospitals: Disease index or discharge index, Discharge summaries, Obstetrics logs (i.e., labor & delivery), Pediatric logs, Postmortem/pathology logs, Surgery logs, Cardiac catheterization laboratories, Specialty outpatient clinics
Pediatric & tertiary care hospitals: Disease index or discharge index, Discharge summaries
Other specialty facilities: Genetic counseling/clinic genetic facilities
Other sources: Physician reports

Case Ascertainment

Conditions warranting chart review in the newborn period: Any chart with an ICD-9-CM code 740-759, Any chart with a selected list of ICD-9-CM codes outside 740-759, Any birth certificate with a birth defect box checked
Conditions warranting chart review beyond the newborn period:Facial dysmorphism or abnormal facies, Failure to thrive, Developmental delay, CNS condition (e.g. seizure), GI condition (e.g. intestinal blockage), GU condition (e.g. recurrent infections), Cardiovascular condition, Any infant with a codable defect
Coding: ICD-9-CM

Data Collected

Infant/fetus: Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Birth measurements (weight, gestation, Apgars, etc.), Tests and procedures, Infant complications, Birth defect diagnostic information
Mother: Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Illnesses/conditions, Prenatal care, Prenatal diagnostic information, Pregnancy/delivery complications, Family history
Father: Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Illnesses/conditions, Family history

Data Collection Methods and Storage

Data Collection: Printed abstract/report filled out by staff
Database collection and storage: Access

Data Analysis

Data analysis software: Access
Quality assurance: Double-checking of assigned codes, Comparison/verification between multiple data sources, Data/hospital audits, Timeliness
Data use and analysis: Routine statistical monitoring, Public health program evaluation, Baseline rates, Rates by demographic and other variables, Monitoring outbreaks and cluster investigations, Time trends, Epidemiologic studies (using only program data), Identification of potential cases for other epidemiologic studies, Needs assessment, Service delivery, Referral, Grant proposals, Education/public awareness, Prevention projects

System integration

System links: Link to other state registries/databases, Birth registry data is manually linked to birth defect data, but the actual databases are not linked.
System integration: No

Other

Surveillance reports on file:
Http://health.nv.gov/PUBLICATIONS/OHSS/2009_NBOMS_Annual_Report.pdf

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New Hampshire

New Hampshire Birth Conditions Program (NHBCP)

Purpose: Surveillance, Research, Referral to Prevention/Intervention Services
Partner: Local Health Departments, Hospitals, Environmental Agencies/Organizations, Advocacy Groups, Universities, Early Childhood Prevention Programs
Program status: Currently collecting data
Start Year: 2003
Earliest year of available data: 2003
Organizational location: University, Department of Health (Geisel School of Medicine at Dartmouth, Bureau of Special Medical Services, Bureau of Nutrition and Health Promotion, Department of Environmental Services Bureau of Environmental Health)
Population covered annually: 12,500
Statewide: Yes
Current legislation or rule: RSA 141:J, NH Administrative Rules He-P 3012
Legislation year enacted: 2008

Case Definition
Outcomes covered: All major birth defects and genetic diseases recommended by the CDC/NBDPN
Pregnancy outcome: Livebirths (All gestational ages and birth weights), Fetal deaths - stillbirths, spontaneous abortions, etc. (All gestational ages), Elective terminations (All gestational ages)
Age: Currently collecting birth to age 2
Residence: All New Hampshire residents, those born in-state as well as out of state

Surveillance Methods
Case ascertainment: Active Case Finding, population based
Vital Records: Birth certificates, Fetal death certificates
Other state based registries: Programs for children with special needs, Newborn hearing screening program
Delivery Hospitals: Discharge summaries, Postmortem/pathology logs
Pediatric & tertiary care hospitals: Discharge summaries, Postmortem/pathology logs, Specialty outpatient clinics

Case Ascertainment
Conditions warranting chart review in the newborn period: Any chart with an ICD-9-CM code 740-759, Any chart with a selected list of ICD-9-CM codes outside 740-759, Any chart with a CDC/BPA code, Any chart with selected procedure codes, Any chart with selected defects or medical conditions (i.e. abnormal facies, congenital heart disease), All stillborn infants, Elective terminations that have confirmed birth conditions by autopsy or confirmed by clinical assessment
Conditions warranting chart review beyond the newborn period: Any infant with a codable defect
Coding: CDC coding system based on BPA, ICD-9-CM

Data Collected
Infant/fetus: Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Birth measurements (weight, gestation, Apgars, etc.), Birth defect diagnostic information
Mother: Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Gravidity/parity, Illnesses/conditions, Prenatal care, Prenatal diagnostic information, Pregnancy/delivery complications, Family history
Father: Identification information (name, address, date-of-birth, etc.)

Data Collection Methods and Storage
Data Collection: Printed abstract/report filled out by staff, Electronic file/report filled out by staff at facility (laptop, web-based, etc.)
Database collection and storage: Oracle, AURIS, a web-based reporting system currently utilized by the NH DHHS Newborn Hearing Screening Program, has added a module to the currently operating system to meet the birth defects tracking requirements.

Data Analysis
Data analysis software: SPSS, Excel
Quality assurance: Validity checks, Re-abstraction of cases, Double-checking of assigned codes, Comparison/verification between multiple data sources, Clinical review
Data use and analysis: Routine statistical monitoring, Public health program evaluation, Baseline rates, Rates by demographic and other variables, Observed vs. expected analyses, Epidemiologic studies (using only program data), Service delivery, Grant proposals, Education/public awareness, Prevention projects

System integration
System links: Link to other state registries/databases
System integration: Integrated into the NH DHHS Newborn Hearing Screening Program registry, a state-wide universal hearing program for all NH infants. This system also receives weekly uploads from the State's Vital Records system that is then linked with the birth conditions and newborn screening data. In addition, in 2011 the NH Birth Conditions Program database was linked with the Title V program database with data on children receiving Special Medical Services in NH

Funding
Funding source: 100% CDC grant
Web site: www.nhbcp.org
Surveillance reports on file: State and county data reports

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New Jersey

Special Child Health Services Registry (SCHS Registry)

Purpose: Surveillance, Research, Referral to Services, Referral to Prevention/Intervention Services
Partner: Local Health Departments, Hospitals, Environmental Agencies/Organizations, Advocacy Groups, Universities, Community Nursing Services, Early Childhood Prevention Programs, Legislators, Neurodevelopmental Centers; Federally Qualified Health Care Centers; State Parent Advocacy Network
Program status: Currently collecting data
Start Year: 1928
Earliest year of available data: 1985
Organizational location: Department of Health (Special Child Health and Early Intervention Services)
Population covered annually: 105,000
Statewide: Yes
Current legislation or rule: NJSA 26:8-40.2 et seq., NJAC 8:20 - Ammended: 1990, 1991, 1992, 2005, Readopted: 2010, Rule Amendments Adopted: 2009; Readopted: 2010
Legislation year enacted: 1983

Case Definition
Outcomes covered: All birth defects (structural, genetic, and biochemical), all Autism Spectrum Disorders, and severe hyperbillirubinemia, are required to be reported; all special needs and any condition which places a child at risk (prematurity, asthma, developmental delay) are also reported, but not required.
Pregnancy outcome: Livebirths (All gestational ages and birth weights)
Age: Mandated reporting of birth defects diagnosed through age 5, voluntary reporting of birth defects diagnosed > age 6 and all children diagnosed with Special Needs conditions who are ≤22 years
Residence: All NJ residents, in and out of state

Surveillance Methods
Case ascertainment: combination of active & passive, Population-based
Vital Records: Birth certificates, Death certificates, Matched birth/death file
Other state based registries: Programs for children with special needs, Newborn hearing screening program, Newborn metabolic screening program, Autism Registry
Delivery Hospitals: Disease index or discharge index, Discharge summaries, Obstetrics logs (i.e., labor & delivery), Regular nursery logs, ICU/NICU logs or charts, Pediatric logs, Postmortem/pathology logs, Specialty outpatient clinics, Quality assurance chart reviews for 3 month period
Pediatric & tertiary care hospitals: Disease index or discharge index, Discharge summaries, ICU/NICU logs or charts, Pediatric logs, Postmortem/pathology logs, Laboratory logs, Specialty outpatient clinics, Quality assurance visit consisting of chart review of 3 month period
Third party payers: Universal billing database for quality assurance
Other specialty facilities: Cytogenetic laboratories, Genetic counseling/clinical genetic facilities
Other sources: Midwifery facilities, Physician reports, Special Child Health Services county-based Case Management Units, parents, medical examiners, Autism diagnosticians and treatment centers

Case Ascertainment
Conditions warranting chart review in the newborn period: Any chart with an ICD-9-CM code 740-759, Any chart with a selected list of ICD-9-CM codes outside 740-759, All neonatal deaths, All death certificates for < 3 years of age
Conditions warranting chart review beyond the newborn period: Facial dysmorphism or abnormal facies, GI condition (e.g. intestinal blockage), GU condition (e.g. recurrent infections), Cardiovascular condition, All infant deaths (excluding prematurity), Ocular conditions, Any infant with a codable defect
Coding: ICD-9-CM

Data Collected
Infant/fetus: Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Birth measurements (weight, gestation, Apgars, etc.), Birth defect diagnostic information
Mother: Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.)
Father: Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.)

Data Collection Methods and Storage
Data Collection: Printed abstract/report filled out by staff, Printed abstract/report submitted by other agnecies (hospitals, etc.), Electronic file/report filled out by staff at facility (laptop, web-based, etc.), Electronic file/report submitted by other agencies (hospitals, etc.)
Database collection and storage: Mainframe, SAS; SQL

Data Analysis
Data analysis software: SAS, Access
Quality assurance: Validity checks, Double-checking of assigned codes, Comparison/verification between multiple data sources, Data/hospital audits, Clinical review, Timeliness, Merge with birth/death certificates
Data use and analysis: Routine statistical monitoring, Public health program evaluation, Baseline rates, Rates by demographic and other variables, Monitoring outbreaks and cluster investigations, Epidemiologic studies (using only program data), Identification of potential cases for other epidemiologic studies, Needs assessment, Service delivery, Referral, Grant proposals, Education/public awareness, Prevention projects

System integration
System links: Link to other state registries/databases, Link case finding data to final birth file, link to hearing screening registry
System integration: Autism Registry is fully integrated. Newborns having failed Pulse Oximetry Screening are integrated with Registry. Newborn hearing screening registry provides direct report to the SCHS Registry. Metabolic screening program provides direct report to SCHS Registry. Autism Registry is included in the Registry. Special Child Health Services county-based Case Management Referral System is included in the Registry.

Funding
Funding source: 90% MCH funds, 10% CDC grant

Other
Web site: http://www.state.nj.us/health/fhs/sch/schr.shtml

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New Mexico

New Mexico Birth Defects Prevention and Surveillance System (NM BDPASS)

Purpose: Surveillance, Research, Referral to Services, Referral to Prevention/Intervention Services
Partner: Hospitals, Environmental Agencies/Organizations, Universities, Legislators, Private providers
Program status: Currently collecting data
Start Year: 1995
Earliest year of available data: 1995
Organizational location: Department of Health (Epidemiology/Environment)
Population covered annually: 28,000
Statewide: Yes
Current legislation or rule: In January 2000, birth defects became a reportable condition. These conditions must be reported to the New Mexico Department of Health's Epidemiology and Response Division. Specifically, the conditions must be reported to the Environmental Health Epidemiology Bureau.
Legislation year enacted: 2000

Case Definition

Outcomes covered: 740.0-760.01, with emphasis on 12 birth defects that are nationally consistent data and measures for the Environmental Public Health Tracking Program.
Pregnancy outcome: Livebirths (All gestational ages and birth weights), Fetal deaths - stillbirths, spontaneous abortions, etc. (All gestational ages), Elective terminations (All gestational ages)
Age: Birth through age 4
Residence: Births to New Mexico residents occurring in New Mexico.

Surveillance Methods

Case ascertainment: Passive case-finding with case confirmation
Vital Records: Birth certificates, Death certificates, Fetal death certificates
Other state based registries: Programs for children with special needs, Newborn hearing screening program, Newborn metabolic screening program
Delivery Hospitals: Disease index or discharge index
Pediatric & tertiary care hospitals: Specialty outpatient clinics, including neurosurgery, plastic surgery, pediatric surgical specialists, prenatal diagnostic providers
Third party payers: Medicaid databases, Health Maintenance organizations (HMOs), Indian health services, Children's Medical Services
Other specialty facilities: Prenatal diagnostic facilities (ultrasound, etc.), Cytogenetic laboratories
Other sources: Physician reports

Case Ascertainment

Conditions warranting chart review in the newborn period: Any chart with selected defects or medical conditions (i.e. abnormal facies, congenital heart disease)
Conditions warranting chart review beyond the newborn period: Cardiovascular condition
Coding: CDC coding system based on BPA, ICD-9-CM, ICD-10 for deaths

Data Collected

Infant/fetus: Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Birth defect diagnostic information
Mother: Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Gravidity/parity
Father: Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.)

Data Collection Methods and Storage

Data Collection: Printed abstract/report filled out by staff, Electronic file/report submitted by other agencies (hospitals, etc.)
Database collection and storage: Stata, version 12.1

Data Analysis

Data analysis software: Stata version 12.1
Quality assurance: Validity checks, Double-checking of assigned codes, Comparison/verification between multiple data sources
Data use and analysis: Routine statistical monitoring, Public health program evaluation, Rates by demographic and other variables, Grant proposals, Education/public awareness, Prevention projects

System integration

System links: Link case finding data to final birth file

Funding

Funding source: 100% CDC grant

Other

Web site:
https://nmtracking.org/en/health_effects/birthdefects/about_birthdefects/

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New York

New York State Congenital Malformations Registry (CMR)

Purpose: Surveillance, Research, Referral to Services, Referral to Prevention/Intervention Services, Community outreach and education
Partner: Hospitals, Advocacy Groups, Universities, Early Childhood Prevention Programs
Program status: Currently collecting data
Start Year: 1982
Earliest year of available data: 1983
Organizational location: Department of Health (Epidemiology/Environment)
Population covered annually: 250,000
Statewide: Yes
Current legislation or rule: Public Health Law Article 2, Title II, Section 225(5)(t) and Article 2, Title I, Section 206(1)(j): Codes, Rules and Regulations, Chapter 1, State Sanitary Code, Part 22.3
Legislation year enacted: 1982

Case Definition

Outcomes covered: Any major structural, functional or biochemical abnormality determined genetically or induced during gestation. A detailed list is available upon request.
Pregnancy outcome: Livebirths (All gestational ages and birth weights), Fetal deaths - stillbirths, spontaneous abortions, etc. (20 weeks gestation and greater)
Age: 2 years
Residence: In-state and out-of-state births to state residents; in-state births to non-residents; all children born in or residing in New York, up to age 2

Surveillance Methods

Case ascertainment: Combination of active and passive case ascertainment; population-based
Other state based registries: NYS Dept. of Health statewide hospital discharge database
Delivery Hospitals: Disease index or discharge index, Discharge summaries, Obstetrics logs (i.e., labor & delivery), Regular nursery logs, ICU/NICU logs or charts, Pediatric logs, Postmortem/pathology logs, Surgery logs, Cardiac catheterization laboratories, Specialty outpatient clinics, In regions where active surveillance is conducted.
Pediatric & tertiary care hospitals: Disease index or discharge index, Discharge summaries, ICU/NICU logs or charts, Pediatric logs, Postmortem/pathology logs, Surgery logs, Laboratory logs, Cardiac catheterization laboratories, Specialty outpatient clinics in regions where active surveillance is conducted.
Other specialty facilities: Prenatal diagnostic facilities (ultrasound, etc.), Cytogenetic laboratories
Other sources: Physician reports

Case Ascertainment

Conditions warranting chart review in the newborn period: Any chart with an ICD-9-CM code 740-759, Any chart with a selected list of ICD-9-CM codes outside 740-759, All stillborn infants
Conditions warranting chart review beyond the newborn period: Any infant with a codable defect
Coding: CDC coding system based on BPA, ICD-9-CM prior to 1992

Data Collected

Infant/fetus: Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Birth measurements (weight, gestation, Apgars, etc.), Tests and procedures, Birth defect diagnostic information
Mother: Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.)
Father: Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.)

Data Collection Methods and Storage

Data Collection: Electronic file/report submitted by other agencies (hospitals, etc.)
Database collection and storage: Access, Oracle, Sybase

Data Analysis

Data analysis software: SAS, Access, JAVA
Quality assurance: Validity checks, Double-checking of assigned codes, Comparison/verification between multiple data sources, Data/hospital audits, Timeliness
Data use and analysis: Routine statistical monitoring, Baseline rates, Rates by demographic and other variables, Monitoring outbreaks and cluster investigations, Time trends, Time-space cluster analyses, Capture-recapture analyses, Observed vs. expected analyses, Epidemiologic studies (using only program data), Identification of potential cases for other epidemiologic studies, Needs assessment, Service delivery, Referral, Grant proposals, Education/public awareness, Prevention projects

System integration

System links: Link to other state registries/databases, Link case finding data to final birth file, Link to environmental databases

Funding

Funding source: 13.6% General state funds, 10.2% MCH funds, 3.4% Genetic screening revenues, 50.2% CDC grant, 13.3% Other federal funding (non-CDC grants), 10% State Superfund

Other

Web site:
http://www.health.ny.gov/birthdefects
Surveillance reports on file: Reports for 1983 - 2008 births

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North Carolina

N.C. Birth Defects Monitoring Program (NCBDMP)

Purpose: Surveillance, Research, Referral to Services
Partner: Local Health Departments, Hospitals, Environmental Agencies/Organizations, Advocacy Groups, Universities, Early Childhood Prevention Programs
Program status: Currently collecting data
Start Year: 1987
Earliest year of available data: 1989
Organizational location: Department of Health (State Center for Health Statistics)
Population covered annually: 120,000
Statewide: Yes
Current legislation or rule: NCGS 130A-131
Legislation year enacted: 1995

Case Definition

Pregnancy outcome: Livebirths (All gestational ages and birth weights), Fetal deaths - stillbirths, spontaneous abortions, etc. (20 weeks gestation and greater), Elective terminations (All gestational ages)
Age: 1 year
Residence: NC resident births, including out of state deliveries

Surveillance Methods

Case ascertainment: Active Case Finding
Vital Records: Birth certificates, Death certificates, Fetal death certificates
Delivery Hospitals: Disease index or discharge index, Discharge summaries, Obstetrics logs (i.e., labor & delivery), ICU/NICU logs or charts, Postmortem/pathology logs, Surgery logs, Specialty outpatient clinics
Pediatric & tertiary care hospitals: Disease index or discharge index, Discharge summaries, ICU/NICU logs or charts, Pediatric logs, Postmortem/pathology logs, Surgery logs, Specialty outpatient clinics
Other specialty facilities: Prenatal diagnostic facilities (ultrasound, etc.), Genetic counseling/clinical genetic facilities

Case Ascertainment

Conditions warranting chart review in the newborn period: Any chart with an ICD-9-CM code 740-759, Any chart with a selected list of ICD-9-CM codes outside 740-759, Any chart with selected procedure codes, Any birth certificate with a birth defect box checked, All stillborn infants, All prenatal diagnosed or suspected cases
Conditions warranting chart review beyond the newborn period: Any infant with a codable defect
Coding: CDC coding system based on BPA

Data Collected

Infant/fetus: Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Birth measurements (weight, gestation, Apgars, etc.), Tests and procedures, Infant complications, Birth defect diagnostic information
Mother: Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Gravidity/parity, Illnesses/conditions, Prenatal care, Prenatal diagnostic information, Pregnancy/delivery complications, Family history
Father: Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.)

Data Collection Methods and Storage

Data Collection: Printed abstract/report submitted by other agnecies (hospitals, etc.), Electronic file/report filled out by staff at facility (laptop, web-based, etc.), Electronic file/report submitted by other agencies (hospitals, etc.)
Database collection and storage: Access

Data Analysis

Data analysis software: SAS, Access
Quality assurance: Validity checks, Re-abstraction of cases, Double-checking of assigned codes, Clinical review, Timeliness
Data use and analysis: Routine statistical monitoring, Public health program evaluation, Baseline rates, Rates by demographic and other variables, Monitoring outbreaks and cluster investigations, Time trends, Time-space cluster analyses, Capture-recapture analyses, Epidemiologic studies (using only program data), Identification of potential cases for other epidemiologic studies, Needs assessment, Grant proposals, Education/public awareness, Prevention projects

System integration

System links: Link case finding data to final birth file, Link to environmental databases, Early Intervention Program

Funding

Funding source: 90% General state funds, 10% MCH funds
Web site: http://www.schs.state.nc.us/units/bdmp/

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North Dakota

North Dakota Birth Defects Monitoring System (NDBDMS)

Purpose: Surveillance
Partner: Advocacy Groups, Universities, The North Dakota Department of Human Services
Program status: Currently collecting data
Start Year: 2002
Earliest year of available data: 1994
Organizational location: Department of Health (Maternal and Child Health, Vital Statistics, Division of Children's Special Health Services)
Population covered annually: 10,591
Statewide: Yes
Current legislation or rule: North Dakota Century Code: 1. 23-41-04. Birth report of child with special health care needs made to department. Within three days after the birth in this state of a child born with a visible congenital deformity, the licensed maternity hospital or home in which the child was born, or the legally qualified physician or other person in attendance at the birth of the child outside of a maternity hospital, shall furnish the department a report concerning the child with the information required by the department. 2. 23-41-05. Birth report of child with special health care needs - Use - Confidential. The information contained in the report furnished to the department under section 23-39-04 concerning a child with a visible congenital deformity may be used by the department for the care and treatment of the child pursuant to this chapter. The report is confidential and is solely for the use of the department in the performance of its duties. The report is not open to public inspection nor considered a public record.
Legislation year enacted: 1941

Case Definition
Pregnancy outcome: Fetal deaths - stillbirths, spontaneous abortions, etc. (20 weeks gestation and greater)
Age: 12 months or within the year of birth.
Residence: In-state birth/s to state resident.

Surveillance Methods
Case ascertainment: Passive case-finding without case confirmation
Vital Records: Birth certificates, Death certificates, Matched birth/death file, Fetal death certificates
Other state based registries: Programs for children with special needs
Pediatric & tertiary care hospitals: Specialty outpatient clinics
Third party payers: Medicaid databases
Other specialty facilities: Genetic counseling/clinic genetic facilities
Other sources: Physician reports

Case Ascertainment
Conditions warranting chart review in the newborn period: Any chart with an ICD-9-CM code 740-759, Any chart with selected defects or medical conditions (i.e. abnormal facies, congenital heart disease), Any birth certificate with a birth defect box checked
Coding: ICD-9-CM, ICD-10-CM

Data Collected
Infant/fetus: Demographic information (race/ethnicity, sex, etc.), Birth measurements (weight, gestation, Apgars, etc.), Tests and procedures, Birth defect diagnostic information
Mother: Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Gravidity/parity, Illnesses/conditions, Prenatal care, Prenatal diagnostic information, Pregnancy/delivery complications, Family history
Father: Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.)

Data Collection Methods and Storage
Data Collection: Electronic file/report filled out by staff at facility (laptop, web-based, etc.), Electronic file/report submitted by other agencies (hospitals, etc.)
Database collection and storage: Access, Mainframe, Excel and SPSS

Data Analysis
Data analysis software: SPSS, Access
Quality assurance: Validity checks, Double-checking of assigned codes, Comparison/verification between multiple data sources, Clinical review
Data use and analysis: Routine statistical monitoring, Baseline rates, Rates by demographic and other variables, Monitoring outbreaks and cluster investigations, Time trends, Time-space cluster analyses, Epidemiologic studies (using only program data), Needs assessment, Service delivery, Referral, Grant proposals, Education/public awareness

System integration
System integration: No

Funding
Funding source: 100% State System Development Initiative (SSDI)

Other
Web site: http://www.ndhealth.gov/cshs/
Surveillance reports on file: North Dakota Birth Defects Monitoring System Summary Report 2001-2005 North Dakota Birth Defects Monitoring System Summary Report 1995-1999

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Ohio

Ohio Connections for Children with Special Needs (OCCSN)

Purpose: Surveillance, Research, Referral to Services, Referral to Prevention/Intervention Services
Partner: Local Health Departments, Hospitals, Environmental Agencies/Organizations, Advocacy Groups, Universities, Early Childhood Prevention Programs, State Child Fatality Review Program; Ohio Collaborative to Prevent Infant Mortality
Program status: Currently collecting data
Start Year: 2006
Earliest year of available data: 2008
Organizational location: Department of Health (Maternal and Child Health)
Population covered annually: 140,000
Statewide: Yes
Current legislation or rule: Ohio Revised Code (ORC) 3705.30-3705.36 authorizes the department to implement a statewide birth defects information system and mandates hospital reporting (2000). Ohio Administrative Code (OAC) 3701-57-01 to 3701-57-04 specifies conditions to be reported and methods for reporting (2010).
Legislation year enacted: 2000

Case Definition

Outcomes covered: Major birth defects recommended by NBDPN, disorders on the state newborn bloodspot screening panel, disorders related to infant hearing loss
Pregnancy outcome: Livebirths (All gestational ages and birth weights), Fetal deaths - stillbirths, spontaneous abortions, etc. (20 weeks gestation and greater)
Age: Up to 5 years of age
Residence: Ohio resident children up to 5 years of age

Surveillance Methods

Case ascertainment: Passive case-finding with case confirmation, Passive case-finding without case confirmation, Passive case-finding with case confirmation for certain disorders
Vital Records: Birth certificates, Death certificates, Matched birth/death file
Other state based registries: Programs for children with special needs, Newborn metabolic screening program, Genetics data system
Delivery Hospitals: Hospital medical records and billing records
Pediatric & tertiary care hospitals: Hospital medical records and billing records
Other sources: Genetics Clinic Data within some hospitals

Case Ascertainment

Conditions warranting chart review in the newborn period: Any birth certificate with a birth defect box checked, ICD-9 and ICD-10 (death certificates) or named congenital anomaly
Coding: ICD-9-CM

Data Collected

Infant/fetus: Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Birth defect diagnostic information
Mother: Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.)
Father: Identification information (name, address, date-of-birth, etc.)

Data Collection Methods and Storage

Data Collection: Electronic file/report submitted by other agencies (hospitals, etc.), Hospital reporters upload CSV flat file to secure website for integration. Small volume hospitals can manually key data into user interface on secure internet site
Database collection and storage: SQL server. External system data methods and storage: ODBC connection with SAS. SAS import of other data sets and merge export of cohort line lists to MS Excel for follow-up.

Data Analysis

Data analysis software: SAS, MS Excel, FRIL
Quality assurance: Validity checks, Comparison/verification between multiple data sources, Clinical review, Timeliness
Data use and analysis: Routine statistical monitoring, Public health program evaluation, Observed vs. expected analyses, Referral, Grant proposals, Education/public awareness

System integration

System links: Link to other state registries/databases, OCCSN data system shares common demographic file with Vital Statistics and Genetics Program data systems.

Funding

Funding source: 100% CDC grant

Other

Web site:
http://www.odh.ohio.gov/odhprograms/cmh/bdefects/birthdefects1.aspx
Surveillance reports on file: 2012 Annual Report

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Oklahoma

Oklahoma Birth Defect Registry (OBDR)

Purpose: Surveillance, Research, Referral to Services, Referral to Prevention/Intervention Services, Data used to educate public in the Oklahoma initiative to reduce Infant Mortality
Partner: Local Health Departments, Hospitals, Advocacy Groups, Universities, Community Nursing Services, Early Childhood Prevention Programs, Legislators
Program status: Currently collecting data
Start Year: 1992
Organizational location: Department of Health (Screening and Special Services)
Population covered annually: 52,000
Statewide: Yes
Current legislation or rule: 63 - 1-550.2
Legislation year enacted: 1992

Case Definition

Pregnancy outcome: Livebirths (All gestational ages and birth weights), Fetal deaths - stillbirths, spontaneous abortions, etc. (All gestational ages), Elective terminations (All gestational ages)
Age: 3 years after delivery
Residence: Oklahoma

Surveillance Methods

Case ascertainment: Active Case Finding
Vital Records: Medical Examiner's autopsy reports
Other state based registries: Newborn hearing screening program, Newborn metabolic screening program
Delivery Hospitals: Discharge summaries, Obstetrics logs (i.e., labor & delivery), Specialty outpatient clinics
Pediatric & tertiary care hospitals: Discharge summaries, Specialty outpatient clinics
Other specialty facilities: Prenatal diagnostic facilities (ultrasound, etc.)
Other sources: MFM/Neonatology Case Conference

Case Ascertainment

Conditions warranting chart review in the newborn period: Any chart with an ICD-9-CM code 740-759, Any chart with a CDC/BPA code, Any chart with selected defects or medical conditions (i.e. abnormal facies, congenital heart disease), All stillborn infants, All neonatal deaths, All elective abortions, All prenatal diagnosed or suspected cases
Conditions warranting chart review beyond the newborn period: Any infant with a codable defect
Coding: CDC coding system based on BPA

Data Collected

Infant/fetus: Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Birth measurements (weight, gestation, Apgars, etc.), Tests and procedures, Birth defect diagnostic information
Mother: Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Gravidity/parity, Illnesses/conditions, Prenatal care, Prenatal diagnostic information, Pregnancy/delivery complications, Family history
Father: Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.)

Data Collection Methods and Storage

Data Collection: Printed abstract/report filled out by staff
Database collection and storage: Access

Data Analysis

Data analysis software: SPSS, SAS, Access
Quality assurance: Validity checks, Re-abstraction of cases, Double-checking of assigned codes, Comparison/verification between multiple data sources, Clinical review, Timeliness
Data use and analysis: Routine statistical monitoring, Public health program evaluation, Baseline rates, Needs assessment, Service delivery, Referral, Education/public awareness, Prevention projects

Funding

Funding source: 64% MCH funds, 36% CDC grant

Other

Web site:
http://www.ok.gov/health/Child_and_Family_Health/Screening,_and_Special_Services/Oklahoma_Birth_Defects_Registry_/
Surveillance reports on file: Yes

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Oregon

Oregon Birth Anomalies Registry (BAR)

Purpose: Surveillance
Partner: Hospitals, Environmental Agencies/Organizations, Advocacy Groups, Universities
Program status: Currently collecting data
Start Year: 2013
Earliest year of available data: 2008
Organizational location: Department of Health (Maternal and Child Health)
Population covered annually: 45,000
Statewide: Yes
Current legislation or rule: None

Case Definition
Outcomes covered: EPHT-12
Pregnancy outcome: Livebirths (All gestational ages and birth weights)
Age: 5 years
Residence: In-state birth to state resident

Surveillance Methods
Case ascertainment: Link birth certificate to full hospital discharge dataset and to Medicaid claims
Vital Records: Birth certificates
Third party payers: Medicaid databases
Other sources: Full hospital discharge database

Case Ascertainment
Coding: ICD-9-CM

Data Collected
Infant/fetus: Identification information (name, date-of-birth), Demographic information (race/ethnicity, sex, etc.), Birth defect diagnostic information
Mother: Demographic information (race/ethnicity, sex, etc.)

Data Collection Methods and Storage
Data Collection: Case data entirely from linkage of existing records.
Database collection and storage: Access, SQL server, SPSS, Mainframe

Data Analysis
Data analysis software: SPSS
Quality assurance: Validity checks, Comparison/verification between multiple data sources
Data use and analysis: Baseline rates

Funding
Funding source: 95% MCH funds, 5% CDC grant

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Pennsylvania

Pennsylvania Birth Defects Surveillance Database (BDSS)

Program status: No surveillance program

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Puerto Rico

Puerto Rico Birth Defects Surveillance and Prevention System (PRBDSS)

Purpose: Surveillance, Referral to Services, Referral to Prevention/Intervention Services
Partner: Local Health Departments, Hospitals, Advocacy Groups, Universities, Community Nursing Services, Early Childhood Prevention Programs
Program status: Currently collecting data
Start Year: 1995
Earliest year of available data: 1995
Organizational location: Department of Health (Services for Children with Special Medical Needs Division)
Population covered annually: 40,000
Statewide: Yes
Current legislation or rule: Law #351
Legislation year enacted: September 16, 2004

Case Definition
Outcomes covered: Selected birth defects covered: Neural Tube defects, cleft lip and/or cleft palate, anotia, microtia, anophthalmia, microphthalmia, limb defects, talipes equinovarus, gastrochisis, omphalocele, Trisomy 13, 18 and 21, Truner's syndrome, 22q11.2 deletion syndrome, Albinism, Jarcho-Levin syndrome, major congenital heart defects, ambiguous genitalia, Hypospadias , and bladder extrophy.
Pregnancy outcome: Livebirths (All gestational ages and birth weights), Fetal deaths - stillbirths, spontaneous abortions, etc. (20 weeks gestation and greater), Elective terminations (All gestational ages)
Age: Up to 6 years after delivery
Residence: In-state births to state residents

Surveillance Methods
Case ascertainment: Active Case Finding
Vital Records: Birth certificates, Death certificates
Other state based registries: Programs for children with special needs, Newborn hearing screening program, Newborn metabolic screening program
Delivery Hospitals: Discharge summaries, Obstetrics logs (i.e., labor & delivery), Regular nursery logs, ICU/NICU logs or charts, Pediatric logs, Postmortem/pathology logs, Specialty outpatient clinics
Pediatric & tertiary care hospitals: Discharge summaries, ICU/NICU logs or charts, Pediatric logs, Postmortem/pathology logs
Third party payers: Medicaid databases, Health Maintenance organizations (HMOs)
Other specialty facilities: Prenatal diagnostic facilities (ultrasound, etc.), Cytogenetic laboratories
Other sources: Physician reports

Case Ascertainment
Conditions warranting chart review in the newborn period: Any chart with an ICD-9-CM code 740-759, Any chart with selected defects or medical conditions (i.e. abnormal facies, congenital heart disease), Any birth certificate with a birth defect box checked, All prenatal diagnosed or suspected cases
Conditions warranting chart review beyond the newborn period: Facial dysmorphism or abnormal facies, Cardiovascular condition
Coding: ICD-9-CM

Data Collected
Infant/fetus: Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Birth measurements (weight, gestation, Apgars, etc.), Tests and procedures, Birth defect diagnostic information
Mother: Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Gravidity/parity, Prenatal care, Prenatal diagnostic information
Father: Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.)

Data Collection Methods and Storage
Data Collection: Printed abstract/report filled out by staff, Printed abstract/report submitted by other agnecies (hospitals, etc.)
Database collection and storage: Access

Data Analysis
Data analysis software: SPSS, Access
Quality assurance: Validity checks, Re-abstraction of cases, Double-checking of assigned codes, Comparison/verification between multiple data sources, Clinical review, Timeliness
Data use and analysis: Routine statistical monitoring, Baseline rates, Rates by demographic and other variables, Monitoring outbreaks and cluster investigations, Time trends, Service delivery, Referral, Grant proposals, Education/public awareness, Prevention projects

Funding
Funding source: 68% MCH funds, 32% CDC grant

Other
Web site:
http://www.salud.gov.pr/Programas/CampanaAcidoFolico/Pages/default.aspx
Surveillance reports on file: Puerto Rico Birth Defects Annual Report 2012 and 2010

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Rhode Island

Rhode Island Birth Defects Surveillance Program

Purpose: Surveillance, Referral to Services, Referral to Prevention/Intervention Services
Partner: Hospitals, Environmental Agencies/Organizations, Advocacy Groups, Universities, Community Nursing Services, Early Childhood Prevention Programs, Families
Program status: Currently collecting data
Start Year: 2000
Earliest year of available data: 2002
Organizational location: Department of Health (Center for Health Data and Analysis)
Population covered annually: 11,000
Statewide: Yes
Current legislation or rule: Title 23, Chapter 13.3 of Rhode Island General Laws requires the development of a birth defects surveillance, reporting, and information system that will a) describe the occurrence of birth defects in children up to age five; b) detect trends of morbidity and mortality; and c) identify newborns and children with birth defects to intervene on a timely basis for treatment.
Legislation year enacted: 2003

Case Definition

Outcomes covered: All birth defects and genetic diseases
Pregnancy outcome: Livebirths (All gestational ages and birth weights), Fetal DeathsFetal deaths - stillbirths, spontaneous abortions, etc. (20 weeks gestation and greater), Elective terminations (20 weeks gestation and greater)
Age: 4 years
Residence: RI maternal residence

Surveillance Methods

Case ascertainment: Combination of active and passive case ascertainment
Vital Records: Birth certificates, Death certificates, Matched birth/death file, Fetal birth certificate
Other state based registries: Programs for children with special needs, Newborn hearing screening program, Newborn metabolic screening program, RI has an integrated child health information system called KIDSNET, which links data from 9 programs including: Newborn Developmental Risk Screening, Universal Newborn Hearing, Early Intervention, WIC, and home visiting
Delivery Hospitals: Discharge summaries
Pediatric & tertiary care hospitals: Discharge summaries, Specialty outpatient clinics
Other specialty facilities: Prenatal diagnostic facilities (ultrasound, etc.), Cytogenetic laboratories, Genetic counseling/clinical genetic facilities, Maternal serum screening facilities
Other sources: Physician Reports

Case Ascertainment

Conditions warranting chart review in the newborn period: Any chart with an ICD-9-CM code 740-759, Any chart with a selected list of ICD-9-CM codes outside 740-759, All stillborn infants, All elective abortions, All prenatal diagnosed or suspected cases, Chart reviews are conducted for infants born at the regional perinatal center and the 6 other maternity hospitals who were identified with an ICD-9-CM code 740-759 and 760.71, and other sentinel conditions
Conditions warranting chart review beyond the newborn period: Any infant with a codable defect
Coding: ICD-9-CM

Data Collected

Infant/fetus: Identification information (name, address, date-of-birth, etc.), Birth measurements (weight, gestation, Apgars, etc.), Tests and procedures, Infant complications, Birth defect diagnostic information
Mother: Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Gravidity/parity, Illnesses/conditions, Prenatal care, Prenatal diagnostic information, Pregnancy/delivery complications, Family history

Data Collection Methods and Storage

Data Collection: Printed abstract/report submitted by other agnecies (hospitals, etc.), Electronic file/report filled out by staff at facility (laptop, web-based, etc.)
Database collection and storage: Access, Oracle

Data Analysis

Data analysis software: SAS, Access
Quality assurance: Validity checks, Re-abstraction of cases, Double-checking of assigned codes, Comparison/verification between multiple data sources, Data/hospital audits, Timeliness
Data use and analysis: Routine statistical monitoring, Public health program evaluation, Baseline rates, Rates by demographic and other variables, Monitoring outbreaks and cluster investigations, Time trends, Epidemiologic studies (using only program data), Needs assessment, Service delivery, Referral, Grant proposals, Education/public awareness, Prevention projects

System integration

System links: Link to other state registries/databases, KIDSNET, hospital discharge data
System integration: Integrated into KIDSNET for web-based provider reporting

Funding

Funding source: 5% General state funds, 10% MCH funds, 85% CDC grant

Other

Web site: www.health.ri.gov/programs/birthdefects
Surveillance reports on file: 2012 Rhode Island Birth Defects Data Book

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South Carolina

South Carolina Birth Defects Program (SCBDP)

Purpose: Surveillance, Research, Referral to Prevention/Intervention Services
Partner: Local Health Departments, Hospitals, Environmental Agencies/Organizations, Advocacy Groups, Universities, Greenwood Genetics Center (GGC)
Program status: Currently collecting data
Organizational location: Department of Health (Maternal and Child Health)
Population covered annually: 57,100
Statewide: Yes
Current legislation or rule: A281, R308, H4115
Legislation year enacted: 2004

Case Definition
Outcomes covered: Central nervous system defects, eye and ear defects, cardiovascular defects, orofacial defectcts, gastrointestinal defects, genitourinary defects, musculoskeletal defects, and chromosomal defects
Pregnancy outcome: Livebirths (All gestational ages and birth weights), Fetal deaths - stillbirths, spontaneous abortions, etc. (All gestational ages), Elective terminations (All gestational ages)
Age: Up to two years of age
Residence: In-state births to state residents

Surveillance Methods
Case ascertainment: Active Case Finding
Vital Records: Birth certificates, Death certificates, Matched birth/death file, Fetal birth certificate, Elective termination certificates
Other state based registries: Programs for children with special needs, Newborn hearing screening program, Newborn metabolic screening program
Delivery Hospitals: Disease index or discharge index, Discharge summaries, Postmortem/pathology logs
Pediatric & tertiary care hospitals: Disease index or discharge index, Discharge summaries
Other specialty facilities: Prenatal diagnostic facilities (ultrasound, etc.), Genetic counseling/clinical genetic facilities
Other sources: Physician reports

Case Ascertainment
Conditions warranting chart review in the newborn period: Any chart with an ICD-9-CM code 740-759, Any chart with a selected list of ICD-9-CM codes outside 740-759, Any chart with selected defects or medical conditions (i.e. abnormal facies, congenital heart disease), Any birth certificate with a birth defect box checked, All prenatal diagnosed or suspected cases
Conditions warranting chart review beyond the newborn period: Any infant with a codable defect
Coding: ICD-9-CM

Data Collected
Infant/fetus: Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Birth measurements (weight, gestation, Apgars, etc.), Tests and procedures, Infant complications, Birth defect diagnostic information
Mother: Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Gravidity/parity, Illnesses/conditions, Prenatal care, Prenatal diagnostic information, Pregnancy/delivery complications

Data Collection Methods and Storage
Data Collection: Printed abstract/report filled out by staff, Electronic file/report filled out by staff at facility (laptop, web-based, etc.)
Database collection and storage: Access, SQL Server

Data Analysis
Data analysis software: SAS, Access, Arc-GIS
Quality assurance: Validity checks, Re-abstraction of cases, Double-checking of assigned codes, Comparison/verification between multiple data sources, Clinical review
Data use and analysis: Routine statistical monitoring, Baseline rates, Rates by demographic and other variables, Time trends, Time-space cluster analyses, Needs assessment, Referral, Grant proposals, Education/public awareness, Prevention projects

System integration
System links: Link case finding data to final birth file
System integration: SCBDP data is integrated with SC Vital Records.

Funding
Funding source: 100% General state funds

Other
Web site:
http://www.scdhec.gov/Health/FamilyPlanning/DataStaticsonPregnancyBabyHealth/BirthDefects/

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South Dakota

Program status: No surveillance program

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Tennessee

Tennessee Birth Defects Registry (TBDR)

Purpose: Surveillance, Research, Referral to Services, Referral to Prevention/Intervention Services
Partner: Local Health Departments, Hospitals, Universities, Early Childhood Prevention Programs, Legislators
Program status: Currently collecting data
Start Year: 2000
Earliest year of available data: 1999
Population covered annually: 85,000
Statewide: Yes
Current legislation or rule: TCA 68-5-506
Legislation year enacted: 2000

Case Definition

Outcomes covered: 45 major structural birth defects
Pregnancy outcome: Livebirths (All gestational ages and birth weights), Fetal deaths - stillbirths, spontaneous abortions, etc. (Prior to July 1st 2010: ≥500 grams, or in the absence of weight, ≥22 completed weeks of gestation; July 1st 2010 and later: ≥350 grams, or in the absence of weight, ≥20 completed weeks of gestation)
Age: Up to one year after delivery
Residence: In and out of state births to state residents

Surveillance Methods

Case ascertainment: population-based
Vital Records: Birth certificates, Death certificates, Matched birth/death file, Fetal birth certificate
Other state based registries: Newborn metabolic screening program, Hospital Discharge Data System
Delivery Hospitals: Disease index or discharge index, Discharge summaries, Obstetrics logs (i.e., labor & delivery), Regular nursery logs, ICU/NICU logs or charts, Pediatric logs, Postmortem/pathology logs, Surgery logs, Cardiac catheterization laboratories, Specialty outpatient clinics
Pediatric & tertiary care hospitals: Disease index or discharge index, Discharge summaries, ICU/NICU logs or charts, Pediatric logs, Surgery logs, Laboratory logs, Cardiac catheterization laboratories, Specialty outpatient clinics
Other sources: Midwifery facilities

Case Ascertainment

Conditions warranting chart review in the newborn period: Any chart with an ICD-9-CM code 740-759, Any chart with selected procedure codes, Any chart with selected defects or medical conditions (i.e. abnormal facies, congenital heart disease), All stillborn infants, ICD-9-CM code 760.71
Conditions warranting chart review beyond the newborn period: Any infant with a codable defect
Coding: ICD-9-CM

Data Collected

Infant/fetus: Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Birth measurements (weight, gestation, Apgars, etc.), Tests and procedures, Infant complications, Birth defect diagnostic information
Mother: Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Gravidity/parity, Illnesses/conditions, Prenatal care, Prenatal diagnostic information, Pregnancy/delivery complications, Family history
Father: Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.)

Data Collection Methods and Storage

Data Collection: Electronic file/report filled out by staff at facility (laptop, web-based, etc.), Electronic file/report submitted by other agencies (hospitals, etc.)
Database collection and storage: Access, SQL and SAS

Data Analysis

Data analysis software: SAS, Arc-GIS
Quality assurance: Validity checks, Re-abstraction of cases, Double-checking of assigned codes, Comparison/verification between multiple data sources, Data/hospital audits
Data use and analysis: Routine statistical monitoring, Baseline rates, Rates by demographic and other variables, Time trends, Epidemiologic studies (using only program data), Identification of potential cases for other epidemiologic studies, Needs assessment, Education/public awareness

System integration

System links: Link to other state registries/databases, Link case finding data to final birth file

Funding

Funding source: 100% General state funds
Web site: http://hit.state.tn.us/Reports.aspx
Surveillance reports on file: Tennessee Birth Defects Registry 2006-2010

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Texas

Texas Birth Defects Epidemiology and Surveillance Branch (TBDES)

Purpose: Surveillance, Research, Referral to Services, Referral to Prevention/Intervention Services
Partner: Hospitals, Environmental Agencies/Organizations, Advocacy Groups, Universities, Legislators, Researchers (NBDPN, NBDPS, ICBDSR)
Program status: Currently collecting data
Start Year: 1994
Earliest year of available data: 1996
Organizational location: Department of Health (Epidemiology/Environment)
Population covered annually: 377,274 in 2011
Statewide: Yes
Current legislation or rule: Health and Safety Code, Title 2, Subtitle D, Section1, Chapter 87
Legislation year enacted: 1993

Case Definition
Outcomes covered: All major structural birth defects and fetal alcohol syndrome
Pregnancy outcome: Livebirths (All gestational ages and birth weights), Fetal deaths - stillbirths, spontaneous abortions, etc. (All gestational ages), Elective terminations (All gestational ages)
Age: Up to one year after delivery and up to 6 years for FAS, special studies and childhood genetic disorders diagnosed after infancy.
Residence: In and out of state births to state residents

Surveillance Methods
Case ascertainment: Active Case-finding, Population-based
Vital Records: Fetal death certificates for delivery year 2009 to present
Delivery Hospitals: Disease index or discharge index, Discharge summaries, Obstetrics logs (i.e., labor & delivery), Regular nursery logs, ICU/NICU logs or charts, Pediatric logs, Postmortem/pathology logs, Surgery logs, Cardiac catheterization laboratories, Specialty outpatient clinics, Genetics, stillbirths and radiology logs
Pediatric & tertiary care hospitals: Disease index or discharge index, Discharge summaries, ICU/NICU logs or charts, Pediatric logs, Postmortem/pathology logs, Surgery logs, Laboratory logs, Cardiac catheterization laboratories, Specialty outpatient clinics, Genetics, stillbirths and radiology logs
Other sources: Midwifery facilities, Licensed birthing centers

Case Ascertainment
Conditions warranting chart review in the newborn period: Any chart with an ICD-9-CM code 740-759, Any chart with a selected list of ICD-9-CM codes outside 740-759, Any chart with selected defects or medical conditions (i.e. abnormal facies, congenital heart disease), Infants with low birth weight or low gestation (<34 weeks GA), All stillborn infants
Conditions warranting chart review beyond the newborn period: CNS condition (e.g. seizure), GI condition (e.g. intestinal blockage), GU condition (e.g. recurrent infections), Cardiovascular condition, Any infant with a codable defect
Coding: CDC coding system based on BPA

Data Collected
Infant/fetus: Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Birth measurements (weight, gestation, Apgars, etc.), Tests and procedures, Infant complications, Birth defect diagnostic information
Mother: Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Gravidity/parity, Illnesses/conditions, Prenatal care, Prenatal diagnostic information, Pregnancy/delivery complications, Family history
Father: Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Family history

Data Collection Methods and Storage
Data Collection: Printed abstract/report filled out by staff, Electronic file/report filled out by staff at facility (laptop, web-based, etc.)
Database collection and storage: Oracle

Data Analysis
Data analysis software: SAS, Access
Quality assurance: Validity checks, Re-abstraction of cases, Double-checking of assigned codes, Clinical review, Timeliness, Re-casefinding, re-review of medical records
Data use and analysis: Routine statistical monitoring, Public health program evaluation, Baseline rates, Rates by demographic and other variables, Monitoring outbreaks and cluster investigations, Time trends, Time-space cluster analyses, Observed vs. expected analyses, Epidemiologic studies (using only program data), Identification of potential cases for other epidemiologic studies, Referral, Grant proposals, Education/public awareness, Prevention projects

System integration
System links: Link to other state registries/databases, Link to environmental databases, link registry to vital records for demographic data, special projects linking to other files (Texas Health Data for geocodes, Newborn Screening data).

Funding
Funding source: 48% General state funds, 52% MCH funds

Other
Web site: www.dshs.state.tx.us/birthdefects/
Surveillance reports on file: See website for publication and surveillance reports

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Utah

Utah Birth Defect Network (UBDN)

Purpose: Surveillance, Research, Referral to Services, Referral to Prevention/Intervention Services, Education
Partner: Local Health Departments, Hospitals, Environmental Agencies/Organizations, Advocacy Groups, Universities
Program status: Currently collecting data
Start Year: 1994
Earliest year of available data: 1994
Organizational location: Department of Health (CSHCN)
Population covered annually: 55,000
Statewide: Yes
Current legislation or rule: Birth Defect Rule (R398-5)
Legislation year enacted: 1999

Case Definition

Outcomes covered: Major structural and selected genetic disorders
Pregnancy outcome: Livebirths (All gestational ages and birth weights), Fetal deaths - stillbirths, spontaneous abortions, etc. (All gestational ages), Elective terminations (All gestational ages)
Age: 2 years based on mandatory reporting
Residence: Maternal residence in Utah at time of delivery

Surveillance Methods

Case ascertainment: Combination of active and passive case ascertainment; population-based
Vital Records: Birth certificates, Death certificates, Fetal death certificates
Other state based registries: Newborn metabolic screening program
Delivery Hospitals: Disease index or discharge index, Discharge summaries, Obstetrics logs (i.e., labor & delivery), Regular nursery logs, ICU/NICU logs or charts, Postmortem/pathology logs, Specialty outpatient clinics, Champions report live births delivered at their respective hospitals
Pediatric & tertiary care hospitals: Disease index or discharge index, Discharge summaries, ICU/NICU logs or charts, Postmortem/pathology logs, Surgery logs, Cardiac catheterization laboratories, Specialty outpatient clinics
Other specialty facilities: Prenatal diagnostic facilities (ultrasound, etc.), Cytogenetic laboratories, Genetic counseling/clinical genetic facilities
Other sources: Midwifery facilities, Physician reports, Lay midwives

Case Ascertainment

Conditions warranting chart review in the newborn period: Any chart with an ICD-9-CM code 740-759, Any chart with a selected list of ICD-9-CM codes outside 740-759, Any chart with a CDC/BPA code, Any chart with selected defects or medical conditions (i.e. abnormal facies, congenital heart disease), Any birth, death or fetal death certificate with a birth defect box checked, All stillborn infants, All neonatal deaths, All infants in NICU or special care nursery, All prenatal diagnosed or suspected cases, All fetal death certificates, NICU reports, infant deaths are reviewed
Conditions warranting chart review beyond the newborn period: Facial dysmorphism or abnormal facies, Failure to thrive, Cardiovascular condition, All infant deaths (excluding prematurity), Childhood deaths between 1 and 6, Any infant with a codable defect
Coding: CDC coding system based on BPA

Data Collected

Infant/fetus: Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Birth measurements (weight, gestation, Apgars, etc.), Tests and procedures, Infant complications, Birth defect diagnostic information
Mother: Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Gravidity/parity, Illnesses/conditions, Prenatal care, Prenatal diagnostic information, Pregnancy/delivery complications, Family history
Father: Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Illnesses/conditions, Family history

Data Collection Methods and Storage

Data Collection: Printed abstract/report filled out by staff, Printed abstract/report submitted by other agnecies (hospitals, etc.), Electronic file/report filled out by staff at facility (laptop, web-based, etc.), Electronic file/report submitted by other agencies (hospitals, etc.)
Database collection and storage: Access

Data Analysis

Data analysis software: SAS, Access
Quality assurance: Validity checks, Double-checking of assigned codes, Comparison/verification between multiple data sources, Clinical review, Timeliness, Logical checks, duplicate check in tracking and surveillance module, case record form checked for completeness, timeliness through system, manual review of subset of surveillance module case data compared to case record form
Data use and analysis: Routine statistical monitoring, Public health program evaluation, Baseline rates, Rates by demographic and other variables, Time trends, Epidemiologic studies (using only program data), Identification of potential cases for other epidemiologic studies, Referral, Grant proposals, Education/public awareness, Prevention projects, Oral Facial Cleft Case-Control Study, UT Center for Birth Defects Research and Prevention, International Clearinghouse for Birth Defects, Local studies

System integration

System links: Link to environmental databases, link to Utah genealogic population database

Funding

Funding source: 100% MCH funds

Other

Web site: http://www.health.utah.gov/birthdefect
Surveillance reports on file: Http://ibis.health.utah.gov
Additional information on file: Scientific Collaboration Protocol

Comments: IBIS indicators for specific birth defects are online.

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Vermont

Birth Information Network (BIN)

Purpose: Surveillance, Referral to Services
Partner: Hospitals, Environmental Agencies/Organizations, Advocacy Groups, Universities, Early Childhood Prevention Programs, Hospital Association
Program status: Currently collecting data
Start Year: 2006
Earliest year of available data: 2006
Organizational location: Department of Health (Division of Health Surveillance / Statistics)
Population covered annually: 6,200
Statewide: Yes
Current legislation or rule: Act 32 (TITLE 18 VSA §5087)
Legislation year enacted: 2003

Case Definition

Pregnancy outcome: Livebirths (All gestational ages and birth weights)
Age: Up to one year after delivery
Residence: In and out of state births to state residents

Surveillance Methods

Case ascertainment: Passive case-finding with case confirmation
Vital Records: Birth certificates, Death certificates, Matched birth/death file
Other state based registries: Programs for children with special needs, Newborn hearing screening program, Newborn metabolic screening program
Delivery Hospitals: Discharge summaries, Specialty outpatient clinics
Pediatric & tertiary care hospitals: Discharge summaries, Specialty outpatient clinics
Third party payers: Medicaid databases, Multi-payer claims database
Other specialty facilities: Cytogenetic laboratories
Other sources: Physician reports, Autopsy reports

Case Ascertainment

Conditions warranting chart review in the newborn period: Any chart with selected procedure codes, Any chart with selected defects or medical conditions (i.e. abnormal facies, congenital heart disease), Any birth certificate with a birth defect box checked
Conditions warranting chart review beyond the newborn period: Any infant with a codable defect
Coding: ICD-9-CM

Data Collected

Infant/fetus: Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Birth measurements (weight, gestation, Apgars, etc.), Tests and procedures, Infant complications, Birth defect diagnostic information
Mother: Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Gravidity/parity, Illnesses/conditions, Prenatal care, Pregnancy/delivery complications, Family history
Father: Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.)

Data Collection Methods and Storage

Data Collection: Printed abstract/report submitted by other agnecies (hospitals, etc.), Electronic file/report submitted by other agencies (hospitals, etc.)
Database collection and storage: Access

Data Analysis

Data analysis software: SPSS, Access, Excel
Quality assurance: Comparison/verification between multiple data sources, Data/hospital audits, Clinical review, Timeliness
Data use and analysis: Routine statistical monitoring, Public health program evaluation, Baseline rates, Rates by demographic and other variables, Monitoring outbreaks and cluster investigations, Observed vs. expected analyses, Referral, Grant proposals, Education/public awareness

System integration

System links: Link to other state registries/databases, Link case finding data to final birth file, Link to environmental databases

Funding

Funding source: 5% General state funds, 95% CDC grant

Other

Web site: http://healthvermont.gov/tracking/health_birthdefects.aspx

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Virginia

Virginia Congenital Anomalies and Reporting Education System (VaCARES)

Purpose: Surveillance, Research, Referral to Services, Referral to Prevention/Intervention Services
Partner: Local Health Departments
Program status: Currently collecting data
Start Year: 1985
Earliest year of available data: 2004
Organizational location: Department of Health (Family Health Services)
Population covered annually: 101,000
Statewide: Yes
Current legislation or rule: Code of Virginia, § 32.1-69.1
Legislation year enacted: 1985

Case Definition
Outcomes covered: Major and non-major birth defects
Pregnancy outcome: Livebirths (All gestational ages and birth weights)
Age: Up to 2 years of age
Residence: Any diagnoses occurring in-state

Surveillance Methods
Case ascertainment: Passive case-finding without case confirmation
Other state based registries: Newborn hearing screening program, Newborn metabolic screening program
Delivery Hospitals: Discharge summaries
Pediatric & tertiary care hospitals: Discharge summaries
Other specialty facilities: Genetic counseling/clinic genetic facilities

Case Ascertainment
Conditions warranting chart review in the newborn period: Any chart with selected defects or medical conditions (i.e. congenital heart disease)
Coding: ICD-9-CM

Data Collected
Infant/fetus: Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Birth measurements (weight, gestation, Apgars, etc.), Infant complications, Birth defect diagnostic information
Mother: Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Gravidity/parity, Illnesses/conditions, Prenatal care, Pregnancy/delivery complications
Father: Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.)

Data Collection Methods and Storage
Data Collection: Printed abstract/report submitted by other agnecies (hospitals, etc.), Electronic file/report filled out by staff at facility (laptop, web-based, etc.)
Database collection and storage: Oracle, Web-based reporting system is linked to electronic birth certificate and populates Oracle data tables

Data Analysis
Data analysis software: SAS
Quality assurance: Validity checks
Data use and analysis: Public health program evaluation, Rates by demographic and other variables, Monitoring outbreaks and cluster investigations, Time trends, Needs assessment, Referral, Grant proposals, Education/public awareness

System integration
System links: Link to other state registries/databases, Link case finding data to final birth file
System integration: VaCARES is part of the Virginia Vital Events Screening and Tracking System, which also houses electronic birth certificate reporting and the Virginia Early Hearing Detection and Intervention tracking.

Funding
Funding source: 70% MCH funds, 30% Genetic screening revenues
Web site:
http://www.vdh.virginia.gov/ofhs/childandfamily/childhealth/gns/vacares.htm

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Washington

Washington State Birth Defects Surveillance System (BDSS)

Purpose: Surveillance
Partner: Local Health Departments, Hospitals, Environmental Agencies/Organizations, Universities
Program status: Currently collecting data
Earliest year of available data: 1987
Organizational location: Department of Health (Office of Healthy Communities)
Population covered annually: 86,000
Statewide: Yes
Current legislation or rule: Notifiable Conditions: WAC 246-01
Legislation year enacted: 2000

Case Definition
Pregnancy outcome: Livebirths (All gestational ages and birth weights), Fetal deaths - stillbirths, spontaneous abortions, etc. (20 weeks gestation and greater)
Age: We ascertain cases through 1 year of age for structural defects and to age 10 for FAS/FAE, Cerebral Palsy and Autism
Residence: Resident births; children born, diagnosed, or treated in-state

Surveillance Methods
Vital Records: Birth certificates, Fetal death certificates
Other state based registries: Programs for children with special needs
Delivery Hospitals: Disease index or discharge index
Pediatric & tertiary care hospitals: Disease index or discharge index
Other sources: University-based FAS/FAE and Autism specialty centers
Case Ascertainment
Coding: ICD-9-CM, FAS/FAE coding scheme will be utilized in data collection and case description for FAS/FAE cases

Data Collected
Infant/fetus: Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Tests and procedures, Birth defect diagnostic information
Mother: Identification information (name, address, date-of-birth, etc.)
Father: Identification information (name, address, date-of-birth, etc.)

Data Collection Methods and Storage
Data Collection: Printed abstract/report submitted by other agnecies (hospitals, etc.), Electronic file/report submitted by other agencies (hospitals, etc.), Case-finding Log listing of all data elements required for each case are completed by Medical Records staff, sometimes in conjunction with hospital Information Systems staff. Several facilities submit print-outs from data query of internal system of discharge data. Minimal use of diskette or other forms of electronic data transfer. A web-based reporting system is currently in development.
Database collection and storage: Web-based SQL server

Data Analysis
Data analysis software: SAS, Stata
Quality assurance: Validity checks, Comparison/verification between multiple data sources
Data use and analysis: Routine statistical monitoring, Baseline rates, Monitoring outbreaks and cluster investigations, Time trends, Observed vs. expected analyses, Education/public awareness

System integration
System links: Link case finding data to final birth file, CSHCN program participant file

Funding
Funding source: 30% General state funds, 70% MCH funds

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West Virginia

West Virginia Birth Defects Surveillance System

Purpose: Surveillance, Research, Referral to Services, Referral to Prevention/Intervention Services
Partner: Hospitals, Universities, Early Childhood Prevention Programs
Program status: Currently collecting data
Start Year: 1989
Earliest year of available data: 1989
Organizational location: Department of Health (Maternal and Child Health)
Population covered annually: 21,000
Statewide: Yes
Current legislation or rule: WV State Code 16-5-12a
Legislation year enacted: 1991; updated 2002

Case Definition
Outcomes covered: ICD-9-CM codes 740-759, 760, 764, 765, 766
Pregnancy outcome: Livebirths (All gestational ages and birth weights), Fetal deaths - stillbirths, spontaneous abortions, etc. (20 weeks gestation and greater), Elective terminations (20 weeks gestation and greater)
Age: 0-6 years
Residence: In and out of state births to state residents

Surveillance Methods
Case ascertainment: Passive case-finding without case confirmation
Vital Records: Birth certificates, Death certificates, Matched birth/death file, Fetal death certificates, Elective termination certificates
Other state based registries: Programs for children with special needs, Newborn hearing screening program, Newborn metabolic screening program, Infant Mortality Review Team
Delivery Hospitals: Discharge summaries
Pediatric & tertiary care hospitals: Discharge summaries
Other sources: Pediatric referrals of children not identified on birth certificate

Case Ascertainment
Conditions warranting chart review in the newborn period: Any chart with an ICD-9-CM code 740-759, Any chart with a selected list of ICD-9-CM codes outside 740-759, Any chart with selected defects or medical conditions (i.e. abnormal facies, congenital heart disease), Any birth certificate with a birth defect box checked, Infants with low birth weight or low gestation (<2500 grams or <37 weeks), All stillborn infants, All neonatal deaths, All elective abortions, All infants in NICU or special care nursery
Conditions warranting chart review beyond the newborn period: Facial dysmorphism or abnormal facies, Failure to thrive, Developmental delay, CNS condition (e.g. seizure), GI condition (e.g. intestinal blockage), GU condition (e.g. recurrent infections), Cardiovascular condition, All infant deaths (excluding prematurity), Childhood deaths between 1 and 6, Ocular conditions, Auditory/hearing conditions, Any infant with a codable defectcodable defect
Coding: ICD-9-CM

Data Collected
Infant/fetus: Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Birth measurements (weight, gestation, Apgars, etc.), Birth defect diagnostic information
Mother: Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Gravidity/parity, Prenatal care, Prenatal diagnostic information, Family history
Father: Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Family history

Data Collection Methods and Storage
Data Collection: Printed abstract/report submitted by other agnecies (hospitals, etc.), Electronic file/report submitted by other agencies (hospitals, etc.)
Database collection and storage: Access

Data Analysis
Data analysis software: Access
Quality assurance: Comparison/verification between multiple data sources, Timeliness
Data use and analysis: Routine statistical monitoring, Baseline rates, Rates by demographic and other variables, Time trends, Epidemiologic studies (using only program data), Needs assessment, Service delivery, Referral, Grant proposals, Education/public awareness, Prevention projects

System integration
System links: Link to other state registries/databases, Link case finding data to final birth file

Funding
Funding source: 100% MCH funds

Other
Web site: http://wvdhhr.org/omcfh

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Wisconsin

Wisconsin Birth Defect Prevention and Surveillance System (WBDPSS)

Purpose: Surveillance, Research, Referral to Services
Partner: Partners: Local Health Departments, Hospitals, Environmental Agencies/Organizations, Advocacy Groups, Universities, Early Childhood Prevention Programs
Program status: Currently collecting data
Start Year: 2004
Earliest year of available data: 2005
Organizational location: Division of Public Health Services
Statewide: Yes
Current legislation or rule: State statute 253.12 Birth defect prevention and surveillance system. Enacted December 2000. Department of Health Services rules, Chapter DHS 116 Wisconsin Birth Defect Prevention and Surveillance System. Enacted April 2003.
Legislation year enacted: 2000

Case Definition

Outcomes covered: A list of 87 specific birth defects are collected. The list may be viewed on our website at http://www.dhs.wisconsin.gov/health/children/birthdefects/index.htm. It is an appendix to the reporting form DPH 40054. The list was developed by the Scientific Committee of the Council on Birth Defect Prevention and Surveillance and is included as an appendix in the rules.
Pregnancy outcome: Livebirths (All gestational ages and birth weights), Fetal deaths - stillbirths, spontaneous abortions, etc. (20 weeks gestation and greater)
Age: Up to 2 years after delivery
Residence: All children born in and/or receiving services in the state

Surveillance Methods

Case ascertainment: Passive case-finding without case confirmation, Work with reporters who report batches from EMRs to assure reporting quality
Vital Records: Matched birth/death file, compare registry reports to vital records periodically for selected birth defects

Case Ascertainment

Coding: ICD-9-CM, State assigned codes assigned to all conditions collected. Reporters combine ICD-9-CM or ICD-10 with text searches to derive defects that share an ICD code.

Data Collected

Infant/fetus: Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Birth measurements (weight, gestation, Apgars, etc.), Birth defect diagnostic information
Mother: Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.)
Father: Identification information (name, address, date-of-birth, etc.)

Data Collection Methods and Storage

Data Collection: Printed abstract/report submitted by other agnecies (hospitals, etc.), Electronic file/report filled out by staff at facility (laptop, web-based, etc.), Electronic file/report submitted by other agencies (hospitals, etc.), Can submit one report on the website or upload multiple reports. A paper form is also available that is entered by state birth defects staff.
Database collection and storage: Oracle

Data Analysis

Data analysis software: SAS
Quality assurance: Validity checks, Comparison/verification between multiple data sources
Data use and analysis: Routine statistical monitoring, Referral, Grant proposals, Prevention projects

Funding

Funding source: 70% Service fees, 30% Other federal funding (non-CDC grants)
Web site:
http://www.dhs.wisconsin.gov/health/children/birthdefects/index.htm
Surveillance reports on file: Posted on the website

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Wyoming

Program status: Interested in developing a surveillance program
***Comments*:** Wyoming plans to use SSDI funds to compile a Birth Defects Surveillance plan

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Department of Defense

United States Department of Defense (DoD) Birth and Infant Health Registry

Purpose: Surveillance, Research
Partner: Hospitals, Universities, Other DoD Programs
Program status: Currently collecting data
Start Year: 1998
Earliest year of available data: 1998
Organizational location: Deployment Health Research Department, Naval Health Research Center
Population covered annually: Approximately 100,000 per year
Statewide: No, National/Worldwide; includes all DoD beneficiaries
Current legislation or rule: Assistant Secretary of Defense, Health Affairs Policy Memorandum
Legislation year enacted: 1998

Case Definition

Outcomes covered: Outcomes include those birth defects listed in the case definition of the National Birth Defects Prevention Network. For a birth defect to be represented, the diagnosis must appear at least once in an inpatient record, or at least twice on two separate dates for outpatient encounters. Same sex multiples are excluded from analysis.
Pregnancy outcome: Livebirths (All gestational ages and birth weights)
Age: Birth up to one year after delivery
Residence: Worldwide; any birth to a US military beneficiary

Surveillance Methods

Case ascertainment: Active Case Finding, Passive case-finding with case confirmation, Passive case-finding without case confirmation, Electronic diagnostic codes from all inpatient and outpatient healthcare encounters of US military beneficiaries
Delivery Hospitals: Disease index or discharge index, Discharge summaries, Specialty outpatient clinics, All inpatient and outpatient encounters are captured in standardized DoD data
Pediatric & tertiary care hospitals: Disease index or discharge index, Discharge summaries, Specialty outpatient clinics, All inpatient and outpatient encounters are captured in standardized DoD data
Third party payers: All inpatient and outpatient encounters are captured in standardized DoD data
Other sources: Validation of standardized electronic data performed by active case ascertainment and chart review of a random sample of births from military facilities

Case Ascertainment

Conditions warranting chart review in the newborn period: Any chart with an ICD-9-CM code 740-759, Any chart with a selected list of ICD-9-CM codes outside 740-759, Validation of standardized electronic data performed by active case ascertainment and chart review of a random sample of births from military healthcare facilities
Conditions warranting chart review beyond the newborn period: Any infant with a codable defect
Coding: ICD-9-CM

Data Collected

Infant/fetus: Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Birth measurements (weight, gestation, Apgars, etc.), Tests and procedures, Infant complications, Birth defect diagnostic information
Mother: Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Illnesses/conditions, Prenatal care, Prenatal diagnostic information, Pregnancy/delivery complications
Father: Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Illnesses/conditions

Data Collection Methods and Storage

Data Collection: Electronic file/report submitted by other agencies (hospitals, etc.)
Database collection and storage: Access, SAS

Data Analysis

Data analysis software: SAS
Quality assurance: Validity checks, Re-abstraction of cases, Double-checking of assigned codes, Comparison/verification between multiple data sources, Clinical review
Data use and analysis: Routine statistical monitoring, Baseline rates, Rates by demographic and other variables, Monitoring outbreaks and cluster investigations, Time trends, Observed vs. expected analyses, Epidemiologic studies (using only program data), Identification of potential cases for other epidemiologic studies, Grant proposals, Prevention projects, Monitor birth defect outcomes following specific parental or gestational exposures of concern

System integration

System links: DoD databases
System integration: DoD databases

Funding

Funding source: 100% Other federal funding (non-CDC grants)

Other

Web site: http://www.med.navy.mil/sites/nhrc
Surveillance reports on file: DoD/Health Affairs policy memorandum; annual reports

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