

## **Major Birth Defects Data from Population-based Birth Defects Surveillance Programs in the United States, 2006-2010**

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

This report contains data from 41 population-based birth defects programs. These include: Alaska Birth Defects Registry; 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; Indiana Birth Defects & Problems Registry; 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 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; Washington State Birth Defects Surveillance 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.

Additional information and program contacts on population-based birth defects surveillance programs are available on page S122.

**Alaska****Birth Defects Counts and Prevalence 2006-2010 (Prevalence per 10,000 Live Births)**

Defect	Maternal Race/Ethnicity		Total**	Notes
	Non-Hispanic White	American Indian or Alaska Native		
Anencephalus	<6	<6	11	
	.	.	<b>2.0</b>	
Anophthalmia/micropthalmia	<6	<6	11	
	.	.	<b>2.0</b>	
Anotia/microtia	10	11	22	
	<b>2.9</b>	<b>7.9</b>	<b>3.9</b>	
Aortic valve stenosis	6	0	6	
	<b>1.8</b>	<b>0.0</b>	<b>1.1</b>	
Atrial septal defect	434	133	878	
	<b>127.8</b>	<b>95.1</b>	<b>157.4</b>	
Atrioventricular septal defect (endocardial cushion defect)	18	11	34	
	<b>5.3</b>	<b>7.9</b>	<b>6.1</b>	
Biliary atresia	<6	14	18	
	.	<b>10.0</b>	<b>3.2</b>	
Choanal atresia	8	<6	15	
	<b>2.4</b>	.	<b>2.7</b>	
Cleft lip with and without cleft palate	46	53	112	
	<b>13.5</b>	<b>37.9</b>	<b>20.1</b>	
Cleft palate without cleft lip	30	63	99	
	<b>8.8</b>	<b>45.1</b>	<b>17.7</b>	
Coarctation of aorta	20	8	30	
	<b>5.9</b>	<b>5.7</b>	<b>5.4</b>	
Common truncus	<6	<6	10	
	.	.	<b>1.8</b>	
Congenital cataract	11	17	32	
	<b>3.2</b>	<b>12.2</b>	<b>5.7</b>	
Congenital hip dislocation	74	28	114	
	<b>21.8</b>	<b>20.0</b>	<b>20.4</b>	
Diaphragmatic hernia	12	18	32	
	<b>3.5</b>	<b>12.9</b>	<b>5.7</b>	
Down syndrome (Trisomy 21)	44	28	87	
	<b>13.0</b>	<b>20.0</b>	<b>15.6</b>	
Ebstein anomaly	<6	<6	8	
	.	.	<b>1.4</b>	
Encephalocele	10	11	23	
	<b>2.9</b>	<b>7.9</b>	<b>4.1</b>	
Epispadias	8	<6	10	
	<b>2.4</b>	.	<b>1.8</b>	
Esophageal atresia/tracheoesophageal fistula	6	7	15	
	<b>1.8</b>	<b>5.0</b>	<b>2.7</b>	
Hirschsprung disease (congenital megacolon)	20	16	41	
	<b>5.9</b>	<b>11.4</b>	<b>7.3</b>	
Hydrocephalus without spina bifida	24	17	55	
	<b>7.1</b>	<b>12.2</b>	<b>9.9</b>	
Hypoplastic left heart syndrome	10	<6	15	
	<b>2.9</b>	.	<b>2.7</b>	
Hypospadias*	209	47	304	
	<b>118.9</b>	<b>65.2</b>	<b>105.5</b>	
Microcephalus	52	44	106	
	<b>15.3</b>	<b>31.5</b>	<b>19.0</b>	
Obstructive genitourinary defect	197	84	321	
	<b>58.0</b>	<b>60.1</b>	<b>57.5</b>	
Patent ductus arteriosus	265	170	512	1
	<b>78.0</b>	<b>121.6</b>	<b>91.8</b>	
Pulmonary valve atresia and stenosis	36	40	84	
	<b>10.6</b>	<b>28.6</b>	<b>15.1</b>	
Pyloric stenosis	74	63	144	
	<b>21.8</b>	<b>45.1</b>	<b>25.8</b>	
Rectal and large intestinal atresia/stenosis	32	22	58	
	<b>9.4</b>	<b>15.7</b>	<b>10.4</b>	
Reduction deformity, lower limbs	26	16	48	
	<b>7.7</b>	<b>11.4</b>	<b>8.6</b>	
Reduction deformity, upper limbs	12	10	27	
	<b>3.5</b>	<b>7.2</b>	<b>4.8</b>	

**Alaska****Birth Defects Counts and Prevalence 2006-2010 (Prevalence per 10,000 Live Births)**

Defect	Maternal Race/Ethnicity		Total**	Notes
	Non-Hispanic White	American Indian or Alaska Native		
Renal agenesis/hypoplasia	24 <i>7.1</i>	11 <i>7.9</i>	42 <i>7.5</i>	
Spina bifida without anencephalus	18 <i>5.3</i>	12 <i>8.6</i>	31 <i>5.6</i>	
Tetralogy of Fallot	13 <i>3.8</i>	15 <i>10.7</i>	31 <i>5.6</i>	
Total anomalous pulmonary venous return (TAPVR)	<6 .	6 <i>4.3</i>	12 <i>2.2</i>	
Transposition of great arteries - All	13 <i>3.8</i>	12 <i>8.6</i>	26 <i>4.7</i>	
Tricuspid valve atresia and stenosis	<6 .	<6 .	6 <i>1.1</i>	
Trisomy 13	<6 .	<6 .	7 <i>1.3</i>	
Trisomy 18	<6 .	<6 .	10 <i>1.8</i>	
Ventricular septal defect	252 <i>74.2</i>	256 <i>183.1</i>	553 <i>99.1</i>	2
<b>Total Live Births</b>	<b>33969</b>	<b>13983</b>	<b>55785</b>	
<b>Total Male Live Births</b>	<b>17572</b>	<b>7208</b>	<b>28802</b>	

\*Hypospadias: prevalence per 10,000 male live births

\*\*Total includes unknown race

**Alaska**  
**Trisomy Counts and Prevalence by Maternal Age 2006-2010 (Prevalence per 10,000 Live Births)**

Defect	Age		Total**	Notes
	Less than 35	35 and greater		
Down syndrome (Trisomy 21)	49 <i>10.0</i>	38 <i>56.1</i>	87 <i>15.6</i>	
Trisomy 13	5 <i>1.0</i>	2 <i>3.0</i>	7 <i>1.3</i>	
Trisomy 18	4 <i>0.8</i>	6 <i>8.9</i>	10 <i>1.8</i>	
<b>Total Live Births</b>	<b>441090</b>	<b>60975</b>	<b>502065</b>	

\*\*Total includes unknown maternal age

**Notes**

1. Patent ductus arteriosus - only includes those with birth weight greater or equal to 2500 grams
2. Ventricular septal defect - The ABDR is a passive surveillance system. Reports are not submitted as 'probable'. However, the ABDR does not conduct case verification on these reports.

**General comments**

- Alaska conducts surveillance for FAS using FASSNET methodology. Contact the program for data on FAS and FASD.
- Cases matched to Alaska birth certificates only; birth cohort 2002-2006 for major anomalies only (see attached lists of ICD9 codes).
- Data was indicated by race for non-Hispanic White and non-Hispanic AK Native only. Live birth numbers were queried from VS data sets and not from published VS data as VS does not publish breakdowns on these two races with indicated ethnicity.
- Gastroschisis and omphalocele are not separated and are reported under the same ICD9 code.
- The ABDR does not collect data on still births or terminations; live birth information only.
- The ABDR does not collect or provide information on amniotic bands.
- The ABDR does not provide data to any other state agency for the purpose of further metabolic and/or medical testing.
- The ABDR does not provide numbers for cells with <6 cases.
- The Alaska Birth Defects Registry does not provide data on individual years within the birth cohort; only totals by race and age are presented with individual year data.
- The Alaska Birth Defects Registry uses the ICD-9 coding system.

**Arizona**  
**Birth Defects Counts and Prevalence 2006-2010 (Prevalence per 10,000 Live Births)**

Defect	Maternal Race/Ethnicity					Total**	Notes
	Non-Hispanic White	Non-Hispanic Black or African	Hispanic	Asian or Pacific Islander	American Indian or Alaska Native		
Anencephalus	19 <i>0.9</i>	3 <i>1.5</i>	45 <i>2.2</i>	1 <i>0.6</i>	3 <i>1.0</i>	72 <i>1.5</i>	
Aniridia	2 <i>0.1</i>	0 <i>0.0</i>	2 <i>0.1</i>	1 <i>0.6</i>	0 <i>0.0</i>	5 <i>0.1</i>	
Anophthalmia/microphthalmia	10 <i>0.5</i>	1 <i>0.5</i>	24 <i>1.2</i>	1 <i>0.6</i>	3 <i>1.0</i>	40 <i>0.8</i>	
Anotia/microtia	14 <i>0.7</i>	0 <i>0.0</i>	33 <i>1.6</i>	3 <i>1.9</i>	7 <i>2.3</i>	57 <i>1.2</i>	1
Aortic valve stenosis	34 <i>1.7</i>	4 <i>2.1</i>	46 <i>2.2</i>	2 <i>1.3</i>	4 <i>1.3</i>	90 <i>1.9</i>	
Atrioventricular septal defect (endocardial cushion defect)	2 <i>0.1</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	2 <i>0.0</i>	
Biliary atresia	4 <i>0.2</i>	2 <i>1.0</i>	5 <i>0.2</i>	2 <i>1.3</i>	2 <i>0.7</i>	15 <i>0.3</i>	
Bladder exstrophy	2 <i>0.1</i>	0 <i>0.0</i>	5 <i>0.2</i>	0 <i>0.0</i>	0 <i>0.0</i>	7 <i>0.1</i>	
Choanal atresia	20 <i>1.0</i>	1 <i>0.5</i>	16 <i>0.8</i>	0 <i>0.0</i>	1 <i>0.3</i>	40 <i>0.8</i>	
Cleft lip with and without cleft palate	185 <i>9.1</i>	14 <i>7.2</i>	234 <i>11.3</i>	12 <i>7.6</i>	61 <i>20.0</i>	514 <i>10.6</i>	
Cleft palate without cleft lip	118 <i>5.8</i>	7 <i>3.6</i>	134 <i>6.5</i>	14 <i>8.9</i>	19 <i>6.2</i>	298 <i>6.2</i>	
Coarctation of aorta	104 <i>5.1</i>	6 <i>3.1</i>	81 <i>3.9</i>	6 <i>3.8</i>	13 <i>4.3</i>	212 <i>4.4</i>	
Common truncus	8 <i>0.4</i>	2 <i>1.0</i>	10 <i>0.5</i>	1 <i>0.6</i>	1 <i>0.3</i>	23 <i>0.5</i>	
Congenital cataract	7 <i>0.3</i>	0 <i>0.0</i>	17 <i>0.8</i>	0 <i>0.0</i>	3 <i>1.0</i>	29 <i>0.6</i>	
Diaphragmatic hernia	37 <i>1.8</i>	3 <i>1.5</i>	44 <i>2.1</i>	2 <i>1.3</i>	8 <i>2.6</i>	97 <i>2.0</i>	
Down syndrome (Trisomy 21)	239 <i>11.7</i>	19 <i>9.8</i>	253 <i>12.2</i>	16 <i>10.2</i>	35 <i>11.5</i>	571 <i>11.8</i>	
Ebstein anomaly	13 <i>0.6</i>	0 <i>0.0</i>	15 <i>0.7</i>	2 <i>1.3</i>	5 <i>1.6</i>	36 <i>0.7</i>	
Encephalocele	9 <i>0.4</i>	1 <i>0.5</i>	16 <i>0.8</i>	2 <i>1.3</i>	4 <i>1.3</i>	32 <i>0.7</i>	
Esophageal atresia/tracheoesophageal fistula	51 <i>2.5</i>	3 <i>1.5</i>	43 <i>2.1</i>	1 <i>0.6</i>	4 <i>1.3</i>	102 <i>2.1</i>	
Gastroschisis	93 <i>4.6</i>	6 <i>3.1</i>	97 <i>4.7</i>	7 <i>4.5</i>	24 <i>7.9</i>	235 <i>4.9</i>	
Hirschsprung disease (congenital megacolon)	28 <i>1.4</i>	3 <i>1.5</i>	26 <i>1.3</i>	2 <i>1.3</i>	0 <i>0.0</i>	61 <i>1.3</i>	
Hypoplastic left heart syndrome	59 <i>2.9</i>	8 <i>4.1</i>	47 <i>2.3</i>	4 <i>2.5</i>	12 <i>3.9</i>	132 <i>2.7</i>	
Omphalocele	34 <i>1.7</i>	3 <i>1.5</i>	37 <i>1.8</i>	7 <i>4.5</i>	4 <i>1.3</i>	87 <i>1.8</i>	
Pulmonary valve atresia and stenosis	86 <i>4.2</i>	5 <i>2.6</i>	100 <i>4.8</i>	8 <i>5.1</i>	18 <i>5.9</i>	221 <i>4.6</i>	
Pulmonary valve atresia	39 <i>1.9</i>	3 <i>1.5</i>	42 <i>2.0</i>	4 <i>2.5</i>	6 <i>2.0</i>	97 <i>2.0</i>	
Reduction deformity, lower limbs	10 <i>0.5</i>	6 <i>3.1</i>	23 <i>1.1</i>	1 <i>0.6</i>	2 <i>0.7</i>	43 <i>0.9</i>	
Reduction deformity, upper limbs	36 <i>1.8</i>	7 <i>3.6</i>	49 <i>2.4</i>	2 <i>1.3</i>	9 <i>3.0</i>	107 <i>2.2</i>	
Spina bifida without anencephalus	62 <i>3.0</i>	7 <i>3.6</i>	79 <i>3.8</i>	3 <i>1.9</i>	16 <i>5.3</i>	173 <i>3.6</i>	
Tetralogy of Fallot	86 <i>4.2</i>	5 <i>2.6</i>	82 <i>4.0</i>	5 <i>3.2</i>	17 <i>5.6</i>	199 <i>4.1</i>	
Total anomalous pulmonary venous return (TAPVR)	5 <i>1.3</i>	0 <i>0.0</i>	4 <i>1.2</i>	0 <i>0.0</i>	2 <i>3.5</i>	11 <i>1.3</i>	
Transposition of great arteries - All	49 <i>2.4</i>	5 <i>2.6</i>	53 <i>2.6</i>	5 <i>3.2</i>	5 <i>1.6</i>	120 <i>2.5</i>	
dextro-Transposition of great arteries (d-TGA)	48 <i>2.4</i>	5 <i>2.6</i>	42 <i>2.0</i>	4 <i>2.5</i>	4 <i>1.3</i>	106 <i>2.2</i>	

**Arizona**  
**Birth Defects Counts and Prevalence 2006-2010 (Prevalence per 10,000 Live Births)**

Defect	Maternal Race/Ethnicity					Total**	Notes
	Non-Hispanic White	Non-Hispanic Black or African	Hispanic	Asian or Pacific Islander	American Indian or Alaska Native		
Tricuspid valve atresia and stenosis	2 <i>0.5</i>	0 <i>0.0</i>	2 <i>0.6</i>	0 <i>0.0</i>	0 <i>0.0</i>	4 <i>0.5</i>	
Tricuspid valve atresia	2 <i>0.5</i>	0 <i>0.0</i>	2 <i>0.6</i>	0 <i>0.0</i>	0 <i>0.0</i>	4 <i>0.5</i>	
Trisomy 13	16 <i>0.8</i>	4 <i>2.1</i>	24 <i>1.2</i>	7 <i>4.5</i>	2 <i>0.7</i>	53 <i>1.1</i>	
Trisomy 18	36 <i>1.8</i>	3 <i>1.5</i>	35 <i>1.7</i>	5 <i>3.2</i>	10 <i>3.3</i>	89 <i>1.8</i>	
Ventricular septal defect	7 <i>1.6</i>	0 <i>0.0</i>	11 <i>2.4</i>	0 <i>0.0</i>	5 <i>8.1</i>	23 <i>2.3</i>	
<b>Total Live Births</b>	<b>203663</b>	<b>19366</b>	<b>207183</b>	<b>15693</b>	<b>30448</b>	<b>482974</b>	

\*Hypospadias: prevalence per 10,000 male live births

\*\*Total includes unknown race

**Arizona**  
**Trisomy Counts and Prevalence by Maternal Age 2006-2010 (Prevalence per 10,000 Live Births)**

Defect	Age		Total**	Notes
	Less than 35	35 and greater		
Down syndrome (Trisomy 21)	313 <i>7.4</i>	258 <i>41.5</i>	571 <i>11.8</i>	
Trisomy 13	37 <i>0.9</i>	16 <i>2.6</i>	53 <i>1.1</i>	
Trisomy 18	58 <i>1.4</i>	30 <i>4.8</i>	89 <i>1.8</i>	
<b>Total Live Births</b>	<b>420596</b>	<b>62242</b>	<b>482974</b>	

\*\*Total includes unknown maternal age

**Notes**

1. Only reportable if occurring with confirmed hearing loss.

**General comments**

-ABDMP provides data on 30 categories of birth defects through 2009, and 32 categories beginning in 2010.

-ABDMP tables include only confirmed cases with 'most likely,' 'probable,' or 'precise' diagnoses. 'Possible' diagnoses are not included.

-In this data submission, ABDMP adhered to the requested race/Hispanic categories. However, for traditional in-state reports ABDMP categorizes Whites as Hispanic or non-Hispanic, and for other races (i.e. Black, Asian, and American Indian) retains the single race code regardless of their Hispanic designation.

-Registration of liveborn cases by ABDMP requires an Arizona live birth certificate.

-Stillbirths are included in this report if there is an Arizona fetal death certificate, regardless of fetal weight or gestational age.

-Terminations are not included in ABDMP data reports.

**Arkansas**  
**Birth Defects Counts and Prevalence 2006-2010 (Prevalence per 10,000 Live Births)**

Defect	Maternal Race/Ethnicity					Total**	Notes
	Non-Hispanic White	Non-Hispanic Black or African	Hispanic	Asian or Pacific Islander	American Indian or Alaska Native		
Amniotic bands	27 <b>2.0</b>	11 <b>2.8</b>	3 <b>1.4</b>	1 <b>2.3</b>	0 <b>0.0</b>	42 <b>2.1</b>	
Anencephalus	47 <b>3.5</b>	6 <b>1.6</b>	13 <b>6.1</b>	0 <b>0.0</b>	0 <b>0.0</b>	66 <b>3.3</b>	
Aniridia	3 <b>0.2</b>	1 <b>0.3</b>	0 <b>0.0</b>	0 <b>0.0</b>	0 <b>0.0</b>	4 <b>0.2</b>	
Anophthalmia/microphthalmia	24 <b>1.8</b>	4 <b>1.0</b>	3 <b>1.4</b>	0 <b>0.0</b>	1 <b>9.2</b>	32 <b>1.6</b>	
Anotia/microtia	22 <b>1.6</b>	2 <b>0.5</b>	19 <b>8.9</b>	1 <b>2.3</b>	0 <b>0.0</b>	44 <b>2.2</b>	
Aortic valve stenosis	59 <b>4.4</b>	5 <b>1.3</b>	6 <b>2.8</b>	0 <b>0.0</b>	0 <b>0.0</b>	70 <b>3.5</b>	
Atrial septal defect	423 <b>31.4</b>	102 <b>26.4</b>	59 <b>27.7</b>	19 <b>43.7</b>	5 <b>46.1</b>	608 <b>30.4</b>	
Atrioventricular septal defect (endocardial cushion defect)	100 <b>7.4</b>	27 <b>7.0</b>	10 <b>4.7</b>	4 <b>9.2</b>	0 <b>0.0</b>	141 <b>7.0</b>	
Biliary atresia	4 <b>0.3</b>	2 <b>0.5</b>	0 <b>0.0</b>	1 <b>2.3</b>	0 <b>0.0</b>	7 <b>0.3</b>	
Bladder exstrophy	4 <b>0.3</b>	1 <b>0.3</b>	0 <b>0.0</b>	0 <b>0.0</b>	0 <b>0.0</b>	5 <b>0.2</b>	
Choanal atresia	7 <b>0.5</b>	4 <b>1.0</b>	0 <b>0.0</b>	0 <b>0.0</b>	1 <b>9.2</b>	12 <b>0.6</b>	
Cleft lip with and without cleft palate	168 <b>12.5</b>	31 <b>8.0</b>	16 <b>7.5</b>	2 <b>4.6</b>	0 <b>0.0</b>	217 <b>10.8</b>	
Cleft palate without cleft lip	106 <b>7.9</b>	23 <b>5.9</b>	11 <b>5.2</b>	0 <b>0.0</b>	1 <b>9.2</b>	141 <b>7.0</b>	
Coarctation of aorta	113 <b>8.4</b>	20 <b>5.2</b>	12 <b>5.6</b>	0 <b>0.0</b>	0 <b>0.0</b>	145 <b>7.2</b>	
Common truncus	9 <b>0.7</b>	3 <b>0.8</b>	2 <b>0.9</b>	1 <b>2.3</b>	0 <b>0.0</b>	15 <b>0.7</b>	
Congenital cataract	53 <b>3.9</b>	13 <b>3.4</b>	7 <b>3.3</b>	1 <b>2.3</b>	1 <b>9.2</b>	75 <b>3.7</b>	
Congenital hip dislocation	17 <b>1.3</b>	3 <b>0.8</b>	3 <b>1.4</b>	1 <b>2.3</b>	0 <b>0.0</b>	24 <b>1.2</b>	
Diaphragmatic hernia	48 <b>3.6</b>	9 <b>2.3</b>	5 <b>2.3</b>	0 <b>0.0</b>	0 <b>0.0</b>	62 <b>3.1</b>	
Down syndrome (Trisomy 21)	176 <b>13.1</b>	26 <b>6.7</b>	33 <b>15.5</b>	3 <b>6.9</b>	0 <b>0.0</b>	238 <b>11.9</b>	
Ebstein anomaly	11 <b>0.8</b>	2 <b>0.5</b>	4 <b>1.9</b>	0 <b>0.0</b>	1 <b>9.2</b>	18 <b>0.9</b>	
Encephalocele	14 <b>1.0</b>	11 <b>2.8</b>	4 <b>1.9</b>	0 <b>0.0</b>	0 <b>0.0</b>	29 <b>1.4</b>	
Epispadias	9 <b>0.7</b>	1 <b>0.3</b>	0 <b>0.0</b>	0 <b>0.0</b>	0 <b>0.0</b>	10 <b>0.5</b>	
Esophageal atresia/tracheoesophageal fistula	48 <b>3.6</b>	8 <b>2.1</b>	3 <b>1.4</b>	2 <b>4.6</b>	0 <b>0.0</b>	61 <b>3.0</b>	
Gastroschisis	95 <b>7.1</b>	19 <b>4.9</b>	9 <b>4.2</b>	1 <b>2.3</b>	2 <b>18.5</b>	126 <b>6.3</b>	
Hirschsprung disease (congenital megacolon)	40 <b>3.0</b>	11 <b>2.8</b>	2 <b>0.9</b>	1 <b>2.3</b>	0 <b>0.0</b>	54 <b>2.7</b>	
Hydrocephalus without spina bifida	71 <b>5.3</b>	23 <b>5.9</b>	14 <b>6.6</b>	2 <b>4.6</b>	0 <b>0.0</b>	110 <b>5.5</b>	
Hypoplastic left heart syndrome	59 <b>4.4</b>	13 <b>3.4</b>	1 <b>0.5</b>	1 <b>2.3</b>	1 <b>9.2</b>	75 <b>3.7</b>	
Hypospadias*	622 <b>89.6</b>	131 <b>66.9</b>	27 <b>25.1</b>	10 <b>45.0</b>	7 <b>129.2</b>	797 <b>77.7</b>	
Microcephalus	25 <b>1.9</b>	10 <b>2.6</b>	6 <b>2.8</b>	3 <b>6.9</b>	1 <b>9.2</b>	45 <b>2.2</b>	
Obstructive genitourinary defect	220 <b>16.4</b>	55 <b>14.2</b>	35 <b>16.4</b>	5 <b>11.5</b>	2 <b>18.5</b>	317 <b>15.8</b>	
Omphalocele	27 <b>2.0</b>	18 <b>4.7</b>	3 <b>1.4</b>	0 <b>0.0</b>	0 <b>0.0</b>	48 <b>2.4</b>	
Patent ductus arteriosus	112 <b>8.3</b>	32 <b>8.3</b>	20 <b>9.4</b>	5 <b>11.5</b>	3 <b>27.7</b>	172 <b>8.6</b>	1



**Arkansas****Birth Defects Counts and Prevalence 2006-2010 (Prevalence per 10,000 Live Births)**

Defect	Maternal Race/Ethnicity					Total**	Notes
	Non-Hispanic White	Non-Hispanic Black or African	Hispanic	Asian or Pacific Islander	American Indian or Alaska Native		
Pulmonary valve atresia and stenosis	184 <i>13.7</i>	54 <i>14.0</i>	27 <i>12.7</i>	9 <i>20.7</i>	2 <i>18.5</i>	276 <i>13.8</i>	
Pulmonary valve atresia	8 <i>0.6</i>	4 <i>1.0</i>	3 <i>1.4</i>	1 <i>2.3</i>	0 <i>0.0</i>	16 <i>0.8</i>	
Pyloric stenosis	283 <i>21.0</i>	31 <i>8.0</i>	59 <i>27.7</i>	3 <i>6.9</i>	3 <i>27.7</i>	379 <i>18.9</i>	
Rectal and large intestinal atresia/stenosis	93 <i>6.9</i>	27 <i>7.0</i>	20 <i>9.4</i>	5 <i>11.5</i>	1 <i>9.2</i>	146 <i>7.3</i>	
Reduction deformity, lower limbs	32 <i>2.4</i>	17 <i>4.4</i>	4 <i>1.9</i>	0 <i>0.0</i>	0 <i>0.0</i>	53 <i>2.6</i>	
Reduction deformity, upper limbs	69 <i>5.1</i>	11 <i>2.8</i>	12 <i>5.6</i>	6 <i>13.8</i>	0 <i>0.0</i>	98 <i>4.9</i>	
Renal agenesis/hypoplasia	28 <i>2.1</i>	13 <i>3.4</i>	9 <i>4.2</i>	0 <i>0.0</i>	0 <i>0.0</i>	50 <i>2.5</i>	
Spina bifida without anencephalus	68 <i>5.1</i>	7 <i>1.8</i>	12 <i>5.6</i>	1 <i>2.3</i>	0 <i>0.0</i>	88 <i>4.4</i>	
Tetralogy of Fallot	63 <i>4.7</i>	14 <i>3.6</i>	6 <i>2.8</i>	2 <i>4.6</i>	0 <i>0.0</i>	85 <i>4.2</i>	
Total anomalous pulmonary venous return (TAPVR)	16 <i>1.2</i>	5 <i>1.3</i>	2 <i>0.9</i>	2 <i>4.6</i>	1 <i>9.2</i>	26 <i>1.3</i>	
Transposition of great arteries - All	64 <i>4.8</i>	13 <i>3.4</i>	5 <i>2.3</i>	2 <i>4.6</i>	0 <i>0.0</i>	84 <i>4.2</i>	
dextro-Transposition of great arteries (d-TGA)	55 <i>4.1</i>	11 <i>2.8</i>	4 <i>1.9</i>	2 <i>4.6</i>	0 <i>0.0</i>	72 <i>3.6</i>	
Tricuspid valve atresia and stenosis	6 <i>0.4</i>	2 <i>0.5</i>	4 <i>1.9</i>	1 <i>2.3</i>	0 <i>0.0</i>	13 <i>0.6</i>	
Tricuspid valve atresia	6 <i>0.4</i>	2 <i>0.5</i>	4 <i>1.9</i>	1 <i>2.3</i>	0 <i>0.0</i>	13 <i>0.6</i>	
Trisomy 13	16 <i>1.2</i>	4 <i>1.0</i>	2 <i>0.9</i>	0 <i>0.0</i>	0 <i>0.0</i>	22 <i>1.1</i>	
Trisomy 18	38 <i>2.8</i>	11 <i>2.8</i>	6 <i>2.8</i>	0 <i>0.0</i>	0 <i>0.0</i>	55 <i>2.7</i>	
Ventricular septal defect	839 <i>62.4</i>	151 <i>39.1</i>	163 <i>76.4</i>	28 <i>64.5</i>	5 <i>46.1</i>	1186 <i>59.3</i>	
<b>Total Live Births</b>	<b>134507</b>	<b>38661</b>	<b>21325</b>	<b>4344</b>	<b>1084</b>	<b>200066</b>	
<b>Total Male Live Births</b>	<b>69383</b>	<b>19584</b>	<b>10753</b>	<b>2222</b>	<b>542</b>	<b>102552</b>	

\*Hypospadias: prevalence per 10,000 male live births

\*\*Total includes unknown race

**Arkansas****Trisomy Counts and Prevalence by Maternal Age 2006-2010 (Prevalence per 10,000 Live Births)**

Defect	Age		Total**	Notes
	Less than 35	35 and greater		
Down syndrome (Trisomy 21)	147 <b>8.0</b>	91 <b>58.2</b>	238 <b>11.9</b>	
Trisomy 13	19 <b>1.0</b>	3 <b>1.9</b>	22 <b>1.1</b>	
Trisomy 18	30 <b>1.6</b>	25 <b>16.0</b>	55 <b>2.7</b>	
<b>Total Live Births</b>	<b>184406</b>	<b>15636</b>	<b>200066</b>	

\*\*Total includes unknown maternal age

**Notes**

1. The case definition for patent ductus arteriosus changed starting with 2009 births.

**General comments**

-A locally modified 6-digit BPA/CDC coding system is used for coding birth defects.  
-Livebirth data for 2010 births are provisional.

**California**  
**Birth Defects Counts and Prevalence 2006-2010 (Prevalence per 10,000 Live Births)**

Defect	Maternal Race/Ethnicity					Total**	Notes
	White Non-Hispanic	Black Non-Hispanic	Hispanic	Asian or Pacific Islander Non-Hispanic	American Indian or Alaska Native Non-Hispanic		
Amniotic bands	10 <i>1.1</i>	<5 .	19 <i>0.9</i>	<5 .	<5 .	36 <i>1.0</i>	
Anencephalus	13 <i>1.5</i>	<5 .	61 <i>2.9</i>	<5 .	0 <i>0.0</i>	99 <i>2.9</i>	
Anophthalmia/microphthalmia	7 <i>0.8</i>	<5 .	13 <i>0.6</i>	<5 .	0 <i>0.0</i>	24 <i>0.7</i>	
Anotia/microtia	5 <i>0.6</i>	<5 .	73 <i>3.5</i>	8 <i>4.9</i>	<5 .	95 <i>2.8</i>	
Aortic valve stenosis	11 <i>1.2</i>	<5 .	23 <i>1.1</i>	<5 .	0 <i>0.0</i>	38 <i>1.1</i>	
Atrial septal defect	124 <i>14.0</i>	28 <i>17.7</i>	333 <i>15.9</i>	24 <i>14.8</i>	<5 .	528 <i>15.3</i>	1
Atrioventricular septal defect (endocardial cushion defect)	39 <i>4.4</i>	14 <i>8.9</i>	86 <i>4.1</i>	6 <i>3.7</i>	<5 .	152 <i>4.4</i>	
Biliary atresia	7 <i>0.8</i>	<5 .	9 <i>0.4</i>	<5 .	<5 .	21 <i>0.6</i>	
Bladder exstrophy	<5 .	<5 .	<5 .	0 <i>0.0</i>	0 <i>0.0</i>	6 <i>0.2</i>	
Choanal atresia	<5 .	0 <i>0.0</i>	5 <i>0.2</i>	0 <i>0.0</i>	0 <i>0.0</i>	8 <i>0.2</i>	
Cleft lip with and without cleft palate	75 <i>8.5</i>	<5 .	204 <i>9.8</i>	20 <i>12.3</i>	<5 .	325 <i>9.4</i>	
Cleft palate without cleft lip	30 <i>3.4</i>	<5 .	92 <i>4.4</i>	<5 .	<5 .	141 <i>4.1</i>	2
Coarctation of aorta	44 <i>5.0</i>	6 <i>3.8</i>	81 <i>3.9</i>	<5 .	<5 .	147 <i>4.3</i>	
Common truncus	<5 .	<5 .	6 <i>0.3</i>	0 <i>0.0</i>	0 <i>0.0</i>	8 <i>0.2</i>	
Congenital cataract	10 <i>1.1</i>	<5 .	20 <i>1.0</i>	<5 .	0 <i>0.0</i>	35 <i>1.0</i>	
Diaphragmatic hernia	22 <i>2.5</i>	<5 .	51 <i>2.4</i>	5 <i>3.1</i>	<5 .	83 <i>2.4</i>	
Down syndrome (Trisomy 21)	98 <i>11.1</i>	20 <i>12.7</i>	318 <i>15.2</i>	<5 .	<5 .	487 <i>14.1</i>	
Ebstein anomaly	8 <i>0.9</i>	0 <i>0.0</i>	12 <i>0.6</i>	<5 .	0 <i>0.0</i>	23 <i>0.7</i>	
Encephalocele	<5 .	<5 .	16 <i>0.8</i>	<5 .	<5 .	27 <i>0.8</i>	
Esophageal atresia/tracheoesophageal fistula	18 <i>2.0</i>	0 <i>0.0</i>	27 <i>1.3</i>	<5 .	<5 .	50 <i>1.5</i>	3
Fetus or newborn affected by maternal alcohol use	<5 .	0 <i>0.0</i>	<5 .	0 <i>0.0</i>	0 <i>0.0</i>	<5 .	
Gastroschisis	47 <i>5.3</i>	7 <i>4.4</i>	109 <i>5.2</i>	12 <i>7.4</i>	0 <i>0.0</i>	187 <i>5.4</i>	
Hydrocephalus without spina bifida	18 <i>2.0</i>	<5 .	42 <i>2.0</i>	<5 .	<5 .	72 <i>2.1</i>	
Hypoplastic left heart syndrome	19 <i>2.1</i>	<5 .	34 <i>1.6</i>	5 <i>3.1</i>	0 <i>0.0</i>	66 <i>1.9</i>	
Hypospadias*	71 <i>15.6</i>	8 <i>10.0</i>	80 <i>7.5</i>	<5 .	<5 .	173 <i>9.8</i>	4
Omphalocele	7 <i>0.8</i>	<5 .	20 <i>1.0</i>	<5 .	0 <i>0.0</i>	36 <i>1.0</i>	
Pulmonary valve atresia and stenosis	57 <i>6.4</i>	9 <i>5.7</i>	117 <i>5.6</i>	15 <i>9.2</i>	<5 .	208 <i>6.0</i>	
Pulmonary valve atresia	10 <i>1.1</i>	<5 .	30 <i>1.4</i>	<5 .	<5 .	45 <i>1.3</i>	
Rectal and large intestinal atresia/stenosis	28 <i>3.2</i>	<5 .	75 <i>3.6</i>	11 <i>6.8</i>	<5 .	131 <i>3.8</i>	5
Reduction deformity, lower limbs	12 <i>1.4</i>	<5 .	15 <i>0.7</i>	0 <i>0.0</i>	<5 .	30 <i>0.9</i>	
Reduction deformity, upper limbs	21 <i>2.4</i>	5 <i>3.2</i>	52 <i>2.5</i>	5 <i>3.1</i>	<5 .	89 <i>2.6</i>	
Renal agenesis/hypoplasia	6 <i>0.7</i>	0 <i>0.0</i>	20 <i>1.0</i>	<5 .	0 <i>0.0</i>	31 <i>0.9</i>	6

**California**  
**Birth Defects Counts and Prevalence 2006-2010 (Prevalence per 10,000 Live Births)**

Defect	Maternal Race/Ethnicity					Total**	Notes
	White Non-Hispanic	Black Non-Hispanic	Hispanic	Asian or Pacific Islander Non-Hispanic	American Indian or Alaska Native Non-Hispanic		
Spina bifida without anencephalus	33 3.7	<5 .	83 4.0	<5 .	<5 .	141 4.1	
Tetralogy of Fallot	29 3.3	<5 .	61 2.9	5 3.1	0 0.0	97 2.8	
Total anomalous pulmonary venous return (TAPVR)	9 1.0	0 0.0	34 1.6	<5 .	<5 .	46 1.3	
Transposition of great arteries - All	16 1.8	<5 .	29 1.4	<5 .	0 0.0	50 1.5	
dextro-Transposition of great arteries (d-TGA)	16 1.8	<5 .	29 1.4	<5 .	0 0.0	50 1.5	
Tricuspid valve atresia	6 0.7	0 0.0	13 0.6	<5 .	0 0.0	20 0.6	
Trisomy 13	9 1.0	<5 .	19 0.9	<5 .	0 0.0	39 1.1	
Trisomy 18	20 2.3	<5 .	57 2.7	<5 .	0 0.0	107 3.1	
<b>Total Live Births</b>	<b>88656</b>	<b>15778</b>	<b>209068</b>	<b>16240</b>	<b>2667</b>	<b>344413</b>	
<b>Total Male Live Births</b>	<b>45651</b>	<b>8005</b>	<b>106240</b>	<b>8322</b>	<b>1371</b>	<b>175758</b>	

<5 indicates cell size suppressed to protect confidentiality and/or to indicate case count less than 5.

\*Hypospadias: prevalence per 10,000 male live births

\*\*Total includes unknown race

**California****Trisomy Counts and Prevalence by Maternal Age 2006-2010 (Prevalence per 10,000 Live Births)**

Defect	Maternal Age (years)		Total**	Notes
	Less than 35	35+		
Down syndrome (Trisomy 21)	249 <i>8.1</i>	226 <i>58.9</i>	487 <i>14.1</i>	
Trisomy 13	23 <i>0.8</i>	11 <i>2.9</i>	39 <i>1.1</i>	
Trisomy 18	50 <i>1.6</i>	40 <i>10.4</i>	107 <i>3.1</i>	
<b>Total Live Births</b>	<b>305987</b>	<b>38366</b>	<b>344413</b>	

\*\*Total includes unknown maternal age

**Notes**

1. Atrial septal defect (ASD) cases are included if confirmed by physician review or echo or cath or surgery or autopsy; an ASD that is a component of another major heart malformation 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**

- 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.
- Stillbirth greater than or equal to 20 weeks is included for all defect types.
- The criteria used to identify birth defects case counts have been refined from that used in previous years to reflect variations in data collection ascertainment rules for certain birth defects in some counties and birth years.

## Colorado

### Birth Defects Counts and Prevalence 2006-2010 (Prevalence per 10,000 Live Births)

Defect	Maternal Race/Ethnicity					Total**	Notes
	White Non-Hispanic	Black Non-Hispanic	Hispanic	Asian or Pacific Islander Non-Hispanic	American Indian or Alaska Native Non-Hispanic		
Anencephalus	26 <i>1.3</i>	2 <i>1.3</i>	23 <i>2.1</i>	2 <i>1.7</i>	1 <i>4.0</i>	58 <i>1.7</i>	1
Aniridia	7 <i>0.3</i>	0 <i>0.0</i>	2 <i>0.2</i>	0 <i>0.0</i>	0 <i>0.0</i>	9 <i>0.3</i>	
Anophthalmia/microphthalmia	28 <i>1.4</i>	3 <i>1.9</i>	21 <i>1.9</i>	0 <i>0.0</i>	0 <i>0.0</i>	56 <i>1.6</i>	
Anotia/microtia	45 <i>2.2</i>	6 <i>3.9</i>	46 <i>4.3</i>	3 <i>2.6</i>	1 <i>4.0</i>	105 <i>3.0</i>	
Aortic valve stenosis	75 <i>3.6</i>	4 <i>2.6</i>	33 <i>3.1</i>	0 <i>0.0</i>	1 <i>4.0</i>	115 <i>3.3</i>	
Atrial septal defect	2083 <i>101.1</i>	229 <i>147.9</i>	1171 <i>108.6</i>	128 <i>109.6</i>	25 <i>100.6</i>	3692 <i>106.5</i>	
Atrioventricular septal defect (endocardial cushion defect)	84 <i>4.1</i>	12 <i>7.8</i>	38 <i>3.5</i>	5 <i>4.3</i>	2 <i>8.0</i>	144 <i>4.2</i>	2
Biliary atresia	26 <i>1.3</i>	2 <i>1.3</i>	10 <i>0.9</i>	0 <i>0.0</i>	0 <i>0.0</i>	39 <i>1.1</i>	
Bladder exstrophy	7 <i>0.3</i>	0 <i>0.0</i>	3 <i>0.3</i>	0 <i>0.0</i>	1 <i>4.0</i>	11 <i>0.3</i>	
Choanal atresia	39 <i>1.9</i>	6 <i>3.9</i>	19 <i>1.8</i>	1 <i>0.9</i>	1 <i>4.0</i>	70 <i>2.0</i>	
Cleft lip with and without cleft palate	226 <i>11.0</i>	11 <i>7.1</i>	148 <i>13.7</i>	7 <i>6.0</i>	3 <i>12.1</i>	407 <i>11.7</i>	
Cleft palate without cleft lip	177 <i>8.6</i>	11 <i>7.1</i>	84 <i>7.8</i>	4 <i>3.4</i>	1 <i>4.0</i>	283 <i>8.2</i>	
Coarctation of aorta	193 <i>9.4</i>	13 <i>8.4</i>	98 <i>9.1</i>	3 <i>2.6</i>	1 <i>4.0</i>	312 <i>9.0</i>	
Common truncus	14 <i>0.7</i>	1 <i>0.6</i>	11 <i>1.0</i>	0 <i>0.0</i>	1 <i>4.0</i>	29 <i>0.8</i>	
Congenital cataract	35 <i>1.7</i>	2 <i>1.3</i>	24 <i>2.2</i>	1 <i>0.9</i>	0 <i>0.0</i>	63 <i>1.8</i>	
Congenital hip dislocation	292 <i>14.2</i>	9 <i>5.8</i>	147 <i>13.6</i>	14 <i>12.0</i>	2 <i>8.0</i>	471 <i>13.6</i>	
Diaphragmatic hernia	74 <i>3.6</i>	7 <i>4.5</i>	31 <i>2.9</i>	4 <i>3.4</i>	0 <i>0.0</i>	124 <i>3.6</i>	
Down syndrome (Trisomy 21)	295 <i>14.3</i>	30 <i>19.4</i>	169 <i>15.7</i>	17 <i>14.6</i>	1 <i>4.0</i>	715 <i>20.6</i>	
Ebstein anomaly	20 <i>1.0</i>	0 <i>0.0</i>	7 <i>0.6</i>	3 <i>2.6</i>	0 <i>0.0</i>	30 <i>0.9</i>	
Encephalocele	15 <i>0.7</i>	4 <i>2.6</i>	14 <i>1.3</i>	1 <i>0.9</i>	0 <i>0.0</i>	38 <i>1.1</i>	
Epispadias	21 <i>1.0</i>	3 <i>1.9</i>	9 <i>0.8</i>	0 <i>0.0</i>	0 <i>0.0</i>	33 <i>1.0</i>	
Esophageal atresia/tracheoesophageal fistula	86 <i>4.2</i>	6 <i>3.9</i>	31 <i>2.9</i>	2 <i>1.7</i>	1 <i>4.0</i>	129 <i>3.7</i>	
Gastroschisis	72 <i>3.5</i>	5 <i>3.2</i>	68 <i>6.3</i>	2 <i>1.7</i>	1 <i>4.0</i>	154 <i>4.4</i>	3
Hirschsprung disease (congenital megacolon)	51 <i>2.5</i>	4 <i>2.6</i>	20 <i>1.9</i>	1 <i>0.9</i>	0 <i>0.0</i>	77 <i>2.2</i>	
Hydrocephalus without spina bifida	134 <i>6.5</i>	20 <i>12.9</i>	108 <i>10.0</i>	7 <i>6.0</i>	3 <i>12.1</i>	279 <i>8.1</i>	
Hypoplastic left heart syndrome	51 <i>2.5</i>	5 <i>3.2</i>	30 <i>2.8</i>	0 <i>0.0</i>	0 <i>0.0</i>	88 <i>2.5</i>	
Hypospadias*	1492 <i>140.9</i>	108 <i>136.4</i>	391 <i>70.6</i>	52 <i>88.1</i>	15 <i>119.5</i>	2083 <i>117.2</i>	
Microcephalus	155 <i>7.5</i>	20 <i>12.9</i>	123 <i>11.4</i>	4 <i>3.4</i>	4 <i>16.1</i>	312 <i>9.0</i>	
Obstructive genitourinary defect	834 <i>40.5</i>	65 <i>42.0</i>	438 <i>40.6</i>	53 <i>45.4</i>	9 <i>36.2</i>	1426 <i>41.2</i>	
Omphalocele	38 <i>1.8</i>	5 <i>3.2</i>	21 <i>1.9</i>	1 <i>0.9</i>	0 <i>0.0</i>	77 <i>2.2</i>	4
Patent ductus arteriosus	849 <i>41.2</i>	94 <i>60.7</i>	460 <i>42.7</i>	47 <i>40.3</i>	11 <i>44.2</i>	1476 <i>42.6</i>	5
Pulmonary valve atresia and stenosis	147 <i>7.1</i>	16 <i>10.3</i>	95 <i>8.8</i>	8 <i>6.9</i>	1 <i>4.0</i>	270 <i>7.8</i>	

**Colorado**  
**Birth Defects Counts and Prevalence 2006-2010 (Prevalence per 10,000 Live Births)**

Defect	Maternal Race/Ethnicity					Total**	Notes
	White Non-Hispanic	Black Non-Hispanic	Hispanic	Asian or Pacific Islander Non-Hispanic	American Indian or Alaska Native Non-Hispanic		
Pulmonary valve atresia	33 <i>1.6</i>	7 <i>4.5</i>	27 <i>2.5</i>	3 <i>2.6</i>	0 <i>0.0</i>	72 <i>2.1</i>	
Pyloric stenosis	274 <i>13.3</i>	14 <i>9.0</i>	188 <i>17.4</i>	3 <i>2.6</i>	6 <i>24.1</i>	487 <i>14.1</i>	
Rectal and large intestinal atresia/stenosis	106 <i>5.1</i>	7 <i>4.5</i>	81 <i>7.5</i>	4 <i>3.4</i>	3 <i>12.1</i>	213 <i>6.1</i>	
Reduction deformity, lower limbs	33 <i>1.6</i>	2 <i>1.3</i>	7 <i>0.6</i>	2 <i>1.7</i>	1 <i>4.0</i>	52 <i>1.5</i>	
Reduction deformity, upper limbs	50 <i>2.4</i>	3 <i>1.9</i>	31 <i>2.9</i>	1 <i>0.9</i>	1 <i>4.0</i>	100 <i>2.9</i>	
Renal agenesis/hypoplasia	98 <i>4.8</i>	10 <i>6.5</i>	51 <i>4.7</i>	2 <i>1.7</i>	1 <i>4.0</i>	183 <i>5.3</i>	
Spina bifida without anencephalus	63 <i>3.1</i>	3 <i>1.9</i>	43 <i>4.0</i>	2 <i>1.7</i>	2 <i>8.0</i>	122 <i>3.5</i>	6
Tetralogy of Fallot	80 <i>3.9</i>	8 <i>5.2</i>	38 <i>3.5</i>	8 <i>6.9</i>	0 <i>0.0</i>	134 <i>3.9</i>	
Total anomalous pulmonary venous return (TAPVR)	13 <i>0.6</i>	1 <i>0.6</i>	24 <i>2.2</i>	0 <i>0.0</i>	0 <i>0.0</i>	38 <i>1.1</i>	
Transposition of great arteries - All	65 <i>3.2</i>	5 <i>3.2</i>	37 <i>3.4</i>	3 <i>2.6</i>	1 <i>4.0</i>	117 <i>3.4</i>	
dextro-Transposition of great arteries (d-TGA)	46 <i>2.2</i>	3 <i>1.9</i>	20 <i>1.9</i>	2 <i>1.7</i>	0 <i>0.0</i>	75 <i>2.2</i>	
Tricuspid valve atresia and stenosis	23 <i>1.1</i>	4 <i>2.6</i>	22 <i>2.0</i>	1 <i>0.9</i>	0 <i>0.0</i>	53 <i>1.5</i>	7
Trisomy 13	22 <i>1.1</i>	1 <i>0.6</i>	14 <i>1.3</i>	1 <i>0.9</i>	1 <i>4.0</i>	89 <i>2.6</i>	
Trisomy 18	35 <i>1.7</i>	3 <i>1.9</i>	33 <i>3.1</i>	5 <i>4.3</i>	0 <i>0.0</i>	164 <i>4.7</i>	
Ventricular septal defect	912 <i>44.3</i>	81 <i>52.3</i>	544 <i>50.4</i>	45 <i>38.5</i>	14 <i>56.3</i>	1629 <i>47.0</i>	8
<b>Total Live Births</b>	<b>206083</b>	<b>15479</b>	<b>107852</b>	<b>11676</b>	<b>2486</b>	<b>346517</b>	
<b>Total Male Live Births</b>	<b>105866</b>	<b>7919</b>	<b>55352</b>	<b>5903</b>	<b>1255</b>	<b>177794</b>	

\*Hypospadias: prevalence per 10,000 male live births

\*\*Total includes unknown race

**Colorado**  
**Trisomy Counts and Prevalence by Maternal Age 2006-2010 (Prevalence per 10,000 Live Births)**

Defect	Maternal Age (years)		Total	Notes
	Less than 35	35+		
Down syndrome (Trisomy 21)	317 <i>10.9</i>	374 <i>67.8</i>	715 <i>20.6</i>	
Trisomy 13	47 <i>1.6</i>	37 <i>6.7</i>	89 <i>2.6</i>	
Trisomy 18	73 <i>2.5</i>	83 <i>15.1</i>	164 <i>4.7</i>	
<b>Total Live Births</b>	<b>291331</b>	<b>55140</b>	<b>346517</b>	

\*\*Total includes unknown maternal age

**Notes**

1. Anencephalus: live births and fetal deaths any gestational age
2. Atrioventricular septal defect: Cannot include Inlet VSD
3. Gastroschisis: medical record review
4. Omphalocele: medical record review
5. Patent ductus arteriosus: birth weight greater than or equal to 2500 grams
6. Spina bifida without anencephalus: live birth and fetal deaths any gestational age
7. Tricuspid valve atresia and stenosis: Tricuspid stenosis and hypoplasia included
8. Ventricular septal defects: includes probable cases

**General comments**

- CDPHE (Colorado Department of Public Health and Environment) disclaims responsibility for any analysis, interpretations, or conclusions.
- Contact State Program directly in regards to fetal alcohol syndrome
- Medicaid added as a data source starting with the 2009 data year.
- Reports of critical congenital heart categories have been confirmed/invalidated for this time period



**Delaware**  
**Birth Defects Counts and Prevalence 2006-2010 (Prevalence per 10,000 Live Births)**

Defect	Maternal Race/Ethnicity					Total**	Notes
	Non-Hispanic White	Non-Hispanic Black or African	Hispanic	Asian or Pacific Islander	American Indian or Alaska Native		
Amniotic bands	1 <i>0.5</i>	2 <i>2.1</i>	2 <i>3.7</i>	0 <i>0.0</i>	0 <i>0.0</i>	5 <i>1.4</i>	
Anencephalus	2 <i>1.0</i>	1 <i>1.0</i>	3 <i>5.6</i>	0 <i>0.0</i>	0 <i>0.0</i>	7 <i>2.0</i>	
Aniridia	1 <i>0.5</i>	0 <i>0.0</i>	1 <i>1.9</i>	0 <i>0.0</i>	0 <i>0.0</i>	2 <i>0.6</i>	
Anophthalmia/microphthalmia	2 <i>1.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	1 <i>6.4</i>	0 <i>0.0</i>	3 <i>0.8</i>	
Anotia/microtia	9 <i>4.7</i>	2 <i>2.1</i>	7 <i>13.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	18 <i>5.0</i>	
Aortic valve stenosis	8 <i>4.2</i>	0 <i>0.0</i>	0 <i>0.0</i>	1 <i>6.4</i>	0 <i>0.0</i>	9 <i>2.5</i>	1
Atrial septal defect	48 <i>25.1</i>	22 <i>22.9</i>	16 <i>29.7</i>	0 <i>0.0</i>	0 <i>0.0</i>	86 <i>24.0</i>	2
Atrioventricular septal defect (endocardial cushion defect)	14 <i>7.3</i>	3 <i>3.1</i>	2 <i>3.7</i>	0 <i>0.0</i>	0 <i>0.0</i>	19 <i>5.3</i>	
Biliary atresia	1 <i>0.5</i>	1 <i>1.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	2 <i>0.6</i>	
Choanal atresia	2 <i>1.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	2 <i>0.6</i>	
Cleft lip with and without cleft palate	18 <i>9.4</i>	4 <i>4.2</i>	4 <i>7.4</i>	2 <i>12.7</i>	0 <i>0.0</i>	29 <i>8.1</i>	
Cleft palate without cleft lip	16 <i>8.4</i>	4 <i>4.2</i>	4 <i>7.4</i>	2 <i>12.7</i>	0 <i>0.0</i>	26 <i>7.3</i>	3
Coarctation of aorta	5 <i>2.6</i>	3 <i>3.1</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	8 <i>2.2</i>	
Common truncus	1 <i>0.5</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	1 <i>0.3</i>	
Congenital cataract	6 <i>3.1</i>	1 <i>1.0</i>	4 <i>7.4</i>	1 <i>6.4</i>	0 <i>0.0</i>	12 <i>3.4</i>	
Congenital hip dislocation	63 <i>32.9</i>	5 <i>5.2</i>	9 <i>16.7</i>	4 <i>25.4</i>	0 <i>0.0</i>	82 <i>22.9</i>	
Diaphragmatic hernia	3 <i>1.6</i>	0 <i>0.0</i>	2 <i>3.7</i>	1 <i>6.4</i>	0 <i>0.0</i>	6 <i>1.7</i>	
Down syndrome (Trisomy 21)	28 <i>14.6</i>	7 <i>7.3</i>	4 <i>7.4</i>	4 <i>25.4</i>	0 <i>0.0</i>	43 <i>12.0</i>	4
Ebstein anomaly	3 <i>1.6</i>	1 <i>1.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	4 <i>1.1</i>	
Encephalocele	2 <i>1.0</i>	2 <i>2.1</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	4 <i>1.1</i>	
Epispadias	1 <i>0.5</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	2 <i>0.6</i>	
Esophageal atresia/tracheoesophageal fistula	3 <i>1.6</i>	1 <i>1.0</i>	2 <i>3.7</i>	0 <i>0.0</i>	0 <i>0.0</i>	6 <i>1.7</i>	
Fetus or newborn affected by maternal alcohol use	1 <i>0.5</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	1 <i>0.3</i>	
Gastroschisis	14 <i>7.3</i>	4 <i>4.2</i>	4 <i>7.4</i>	0 <i>0.0</i>	0 <i>0.0</i>	22 <i>6.1</i>	
Hirschsprung disease (congenital megacolon)	4 <i>2.1</i>	1 <i>1.0</i>	2 <i>3.7</i>	0 <i>0.0</i>	0 <i>0.0</i>	7 <i>2.0</i>	
Hydrocephalus without spina bifida	8 <i>4.2</i>	1 <i>1.0</i>	1 <i>1.9</i>	1 <i>6.4</i>	0 <i>0.0</i>	12 <i>3.4</i>	5
Hypoplastic left heart syndrome	5 <i>2.6</i>	4 <i>4.2</i>	6 <i>11.1</i>	0 <i>0.0</i>	0 <i>0.0</i>	15 <i>4.2</i>	
Hypospadias*	85 <i>86.8</i>	43 <i>88.3</i>	7 <i>25.8</i>	6 <i>73.3</i>	1 <i>434.8</i>	145 <i>79.4</i>	
Microcephalus	8 <i>4.2</i>	12 <i>12.5</i>	2 <i>3.7</i>	4 <i>25.4</i>	1 <i>200.0</i>	30 <i>8.4</i>	6
Obstructive genitourinary defect	201 <i>105.0</i>	54 <i>56.2</i>	39 <i>72.3</i>	22 <i>139.9</i>	0 <i>0.0</i>	317 <i>88.5</i>	7
Omphalocele	1 <i>0.5</i>	4 <i>4.2</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	5 <i>1.4</i>	
Patent ductus arteriosus	18 <i>9.4</i>	17 <i>17.7</i>	6 <i>11.1</i>	0 <i>0.0</i>	0 <i>0.0</i>	41 <i>11.4</i>	8

**Delaware**  
**Birth Defects Counts and Prevalence 2006-2010 (Prevalence per 10,000 Live Births)**

Defect	Maternal Race/Ethnicity					Total**	Notes
	Non-Hispanic White	Non-Hispanic Black or African	Hispanic	Asian or Pacific Islander	American Indian or Alaska Native		
Pulmonary valve atresia and stenosis	30 <i>15.7</i>	17 <i>17.7</i>	2 <i>3.7</i>	1 <i>6.4</i>	0 <i>0.0</i>	50 <i>14.0</i>	9
Pyloric stenosis	25 <i>13.1</i>	3 <i>3.1</i>	9 <i>16.7</i>	2 <i>12.7</i>	0 <i>0.0</i>	40 <i>11.2</i>	
Rectal and large intestinal atresia/stenosis	10 <i>5.2</i>	2 <i>2.1</i>	2 <i>3.7</i>	0 <i>0.0</i>	0 <i>0.0</i>	15 <i>4.2</i>	
Reduction deformity, lower limbs	0 <i>0.0</i>	3 <i>3.1</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	3 <i>0.8</i>	
Reduction deformity, upper limbs	5 <i>2.6</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	5 <i>1.4</i>	
Renal agenesis/hypoplasia	13 <i>6.8</i>	6 <i>6.2</i>	6 <i>11.1</i>	1 <i>6.4</i>	0 <i>0.0</i>	26 <i>7.3</i>	
Spina bifida without anencephalus	5 <i>2.6</i>	4 <i>4.2</i>	1 <i>1.9</i>	0 <i>0.0</i>	0 <i>0.0</i>	11 <i>3.1</i>	11
Tetralogy of Fallot	10 <i>5.2</i>	2 <i>2.1</i>	2 <i>3.7</i>	3 <i>19.1</i>	0 <i>0.0</i>	17 <i>4.7</i>	12
Total anomalous pulmonary venous return (TAPVR)	3 <i>1.6</i>	1 <i>1.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	4 <i>1.1</i>	
Transposition of great arteries - All	6 <i>3.1</i>	3 <i>3.1</i>	4 <i>7.4</i>	0 <i>0.0</i>	0 <i>0.0</i>	13 <i>3.6</i>	
Tricuspid valve atresia and stenosis	0 <i>0.0</i>	4 <i>4.2</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	4 <i>1.1</i>	1
Trisomy 13	1 <i>0.5</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	1 <i>0.3</i>	4
Trisomy 18	4 <i>2.1</i>	3 <i>3.1</i>	2 <i>3.7</i>	1 <i>6.4</i>	0 <i>0.0</i>	10 <i>2.8</i>	4
Ventricular septal defect	157 <i>82.0</i>	65 <i>67.6</i>	45 <i>83.4</i>	10 <i>63.6</i>	1 <i>200.0</i>	280 <i>78.2</i>	15
<b>Total Live Births</b>	<b>19138</b>	<b>9616</b>	<b>5396</b>	<b>1572</b>	<b>50</b>	<b>35819</b>	
<b>Total Male Live Births</b>	<b>9796</b>	<b>4872</b>	<b>2718</b>	<b>818</b>	<b>23</b>	<b>18253</b>	

\*Hypospadias: prevalence per 10,000 male live births

\*\*Total includes unknown race

**Delaware**  
**Trisomy Counts and Prevalence by Maternal Age 2006-2010 (Prevalence per 10,000 Live Births)**

Defect	Age		Total**	Notes
	Less than 35	35 and greater		
Down syndrome (Trisomy 21)	23 <i>7.4</i>	19 <i>38.5</i>	43 <i>12.0</i>	4
Trisomy 13	0 <i>0.0</i>	1 <i>2.0</i>	1 <i>0.3</i>	4
Trisomy 18	5 <i>1.6</i>	5 <i>10.1</i>	10 <i>2.8</i>	4
<b>Total Live Births</b>	<b>30890</b>	<b>4929</b>	<b>35819</b>	

\*\*Total includes unknown maternal age

**Notes**

1. Trivial or limited are not included.
2. Atrial septal fenestrations are reported as an atrial septal defect (ASD). ASDs that self-close (not present after a month) are considered Patent Foramen Ovale (PFO). PFOs are not counted.
3. Pierre Robin sequence defects are included as a cleft palate.
4. All chromosomal defects require a cytogenetics report.
5. Benign external hydrocephalus or hydrocephalus due to a secondary cause are not included.
6. Head circumference must be less than the 5th percentile.
7. All obstructive and non-obstructive genitourinary defects (i.e., all hydronephrosis and other types of kidney dilation) are included as well as all resolved defects that were confirmed postnatally.
8. The newborn must weigh 2500 grams or greater and the PDA must be present at one month of age.
9. Peripheral, branch, trivial, or limited are not included.
10. Delaware did not perform CCHD screening in 2007, 2008, and 2009; Peripheral, branch, trivial, or limited are not included.
11. Spina bifida occulta is not included.
12. A ventricular septal defect with an overriding aorta is counted as Tetralogy of Fallot.
13. Delaware did not perform CCHD screening in 2007, 2008, and 2009.

**General comments**

- 2007 Maternal Fetal Medicine (MFM) cases were derived from cytogenetic lists and fetal therapy lists. 2008 MFM cases were derived from all possible defect cases handled by MFM. 2009 MFM cases were derived from cytogenetic lists only.
- 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.
- 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 does not distinguish spontaneous terminations from elective terminations. Stillbirths, miscarriages, and terminations are all currently reported together.
- Registry was not collecting data in 2006. Registry data from 2010 is currently being vetted.

**Florida**  
**Birth Defects Counts and Prevalence 2006-2010 (Prevalence per 10,000 Live Births)**

Defect	Maternal Race/Ethnicity					Total**	Notes
	White Non-Hispanic	Black Non-Hispanic	Hispanic	Asian or Pacific Islander Non-Hispanic	American Indian or Alaska Native Non-Hispanic		
Anencephalus	30 <i>0.6</i>	16 <i>0.6</i>	12 <i>0.4</i>	0 <i>0.0</i>	0 <i>0.0</i>	62 <i>0.5</i>	1
Aniridia	2 <i>0.0</i>	3 <i>0.1</i>	1 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	6 <i>0.1</i>	
Anophthalmia/microphthalmia	47 <i>0.9</i>	24 <i>1.0</i>	23 <i>0.7</i>	1 <i>0.3</i>	0 <i>0.0</i>	96 <i>0.8</i>	
Anotia/microtia	37 <i>0.7</i>	5 <i>0.2</i>	32 <i>1.0</i>	3 <i>1.0</i>	1 <i>4.5</i>	79 <i>0.7</i>	
Aortic valve stenosis	101 <i>2.0</i>	21 <i>0.9</i>	34 <i>1.0</i>	4 <i>1.3</i>	1 <i>4.5</i>	163 <i>1.4</i>	
Atrioventricular septal defect (endocardial cushion defect)	200 <i>4.0</i>	119 <i>4.8</i>	105 <i>3.2</i>	17 <i>5.5</i>	0 <i>0.0</i>	452 <i>4.0</i>	2
Biliary atresia	39 <i>0.8</i>	44 <i>1.8</i>	23 <i>0.7</i>	3 <i>1.0</i>	1 <i>4.5</i>	114 <i>1.0</i>	
Bladder exstrophy	15 <i>0.3</i>	9 <i>0.4</i>	8 <i>0.2</i>	0 <i>0.0</i>	0 <i>0.0</i>	32 <i>0.3</i>	
Choanal atresia	87 <i>1.7</i>	27 <i>1.1</i>	44 <i>1.3</i>	5 <i>1.6</i>	0 <i>0.0</i>	166 <i>1.5</i>	
Cleft lip with and without cleft palate	478 <i>9.5</i>	123 <i>5.0</i>	217 <i>6.6</i>	27 <i>8.7</i>	1 <i>4.5</i>	856 <i>7.5</i>	
Cleft palate without cleft lip	338 <i>6.7</i>	121 <i>4.9</i>	159 <i>4.9</i>	19 <i>6.2</i>	0 <i>0.0</i>	645 <i>5.7</i>	
Coarctation of aorta	402 <i>8.0</i>	135 <i>5.5</i>	192 <i>5.9</i>	15 <i>4.9</i>	3 <i>13.5</i>	767 <i>6.7</i>	
Common truncus	55 <i>1.1</i>	15 <i>0.6</i>	21 <i>0.6</i>	3 <i>1.0</i>	0 <i>0.0</i>	95 <i>0.8</i>	
Congenital cataract	75 <i>1.5</i>	37 <i>1.5</i>	29 <i>0.9</i>	2 <i>0.6</i>	0 <i>0.0</i>	144 <i>1.3</i>	
Congenital hip dislocation	483 <i>9.6</i>	98 <i>4.0</i>	276 <i>8.4</i>	28 <i>9.1</i>	4 <i>17.9</i>	902 <i>7.9</i>	
Diaphragmatic hernia	169 <i>3.3</i>	90 <i>3.6</i>	83 <i>2.5</i>	6 <i>1.9</i>	0 <i>0.0</i>	364 <i>3.2</i>	
Down syndrome (Trisomy 21)	667 <i>13.2</i>	314 <i>12.7</i>	423 <i>12.9</i>	45 <i>14.6</i>	4 <i>17.9</i>	1483 <i>13.0</i>	1
Ebstein anomaly	38 <i>0.8</i>	14 <i>0.6</i>	14 <i>0.4</i>	2 <i>0.6</i>	1 <i>4.5</i>	70 <i>0.6</i>	
Encephalocele	35 <i>0.7</i>	33 <i>1.3</i>	28 <i>0.9</i>	2 <i>0.6</i>	0 <i>0.0</i>	100 <i>0.9</i>	
Epispadias	81 <i>1.6</i>	23 <i>0.9</i>	25 <i>0.8</i>	1 <i>0.3</i>	0 <i>0.0</i>	133 <i>1.2</i>	
Esophageal atresia/tracheoesophageal fistula	120 <i>2.4</i>	48 <i>1.9</i>	72 <i>2.2</i>	2 <i>0.6</i>	0 <i>0.0</i>	247 <i>2.2</i>	
Gastroschisis	310 <i>6.1</i>	70 <i>2.8</i>	111 <i>3.4</i>	7 <i>2.3</i>	0 <i>0.0</i>	504 <i>4.4</i>	3
Hirschsprung disease (congenital megacolon)	141 <i>2.8</i>	99 <i>4.0</i>	66 <i>2.0</i>	4 <i>1.3</i>	0 <i>0.0</i>	316 <i>2.8</i>	
Hydrocephalus without spina bifida	302 <i>6.0</i>	281 <i>11.4</i>	191 <i>5.8</i>	19 <i>6.2</i>	1 <i>4.5</i>	810 <i>7.1</i>	
Hypoplastic left heart syndrome	171 <i>3.4</i>	93 <i>3.8</i>	80 <i>2.4</i>	4 <i>1.3</i>	0 <i>0.0</i>	355 <i>3.1</i>	
Hypospadias*	2199 <i>85.0</i>	808 <i>64.2</i>	790 <i>47.1</i>	80 <i>50.2</i>	3 <i>25.8</i>	3971 <i>68.2</i>	
Microcephalus	293 <i>5.8</i>	219 <i>8.9</i>	189 <i>5.8</i>	12 <i>3.9</i>	3 <i>13.5</i>	724 <i>6.4</i>	
Obstructive genitourinary defect	1918 <i>38.0</i>	734 <i>29.7</i>	1438 <i>43.9</i>	109 <i>35.3</i>	5 <i>22.4</i>	4301 <i>37.8</i>	
Omphalocele	25 <i>0.5</i>	19 <i>0.8</i>	10 <i>0.3</i>	1 <i>0.3</i>	0 <i>0.0</i>	57 <i>0.5</i>	4
Pulmonary valve atresia and stenosis	484 <i>9.6</i>	322 <i>13.0</i>	291 <i>8.9</i>	20 <i>6.5</i>	3 <i>13.5</i>	1137 <i>10.0</i>	
Pulmonary valve atresia	78 <i>1.5</i>	47 <i>1.9</i>	43 <i>1.3</i>	5 <i>1.6</i>	0 <i>0.0</i>	175 <i>1.5</i>	
Pyloric stenosis	1829 <i>36.2</i>	403 <i>16.3</i>	777 <i>23.7</i>	16 <i>5.2</i>	1 <i>4.5</i>	3066 <i>27.0</i>	

**Florida****Birth Defects Counts and Prevalence 2006-2010 (Prevalence per 10,000 Live Births)**

Defect	Maternal Race/Ethnicity					Total**	Notes
	White Non-Hispanic	Black Non-Hispanic	Hispanic	Asian or Pacific Islander Non-Hispanic	American Indian or Alaska Native Non-Hispanic		
Rectal and large intestinal atresia/stenosis	220 <i>4.4</i>	121 <i>4.9</i>	119 <i>3.6</i>	11 <i>3.6</i>	1 <i>4.5</i>	485 <i>4.3</i>	
Reduction deformity, lower limbs	77 <i>1.5</i>	47 <i>1.9</i>	47 <i>1.4</i>	4 <i>1.3</i>	0 <i>0.0</i>	179 <i>1.6</i>	
Reduction deformity, upper limbs	135 <i>2.7</i>	57 <i>2.3</i>	52 <i>1.6</i>	4 <i>1.3</i>	0 <i>0.0</i>	249 <i>2.2</i>	
Renal agenesis/hypoplasia	244 <i>4.8</i>	105 <i>4.3</i>	123 <i>3.8</i>	10 <i>3.2</i>	1 <i>4.5</i>	491 <i>4.3</i>	
Spina bifida without anencephalus	145 <i>2.9</i>	64 <i>2.6</i>	96 <i>2.9</i>	5 <i>1.6</i>	0 <i>0.0</i>	314 <i>2.8</i>	1
Tetralogy of Fallot	271 <i>5.4</i>	123 <i>5.0</i>	112 <i>3.4</i>	19 <i>6.2</i>	1 <i>4.5</i>	540 <i>4.7</i>	
Total anomalous pulmonary venous return (TAPVR)	40 <i>0.8</i>	31 <i>1.3</i>	25 <i>0.8</i>	6 <i>1.9</i>	0 <i>0.0</i>	103 <i>0.9</i>	
Transposition of great arteries - All	243 <i>4.8</i>	109 <i>4.4</i>	133 <i>4.1</i>	8 <i>2.6</i>	0 <i>0.0</i>	503 <i>4.4</i>	
dextro-Transposition of great arteries (d-TGA)	145 <i>2.9</i>	39 <i>1.6</i>	70 <i>2.1</i>	0 <i>0.0</i>	0 <i>0.0</i>	261 <i>2.3</i>	
Tricuspid valve atresia and stenosis	61 <i>1.2</i>	29 <i>1.2</i>	30 <i>0.9</i>	1 <i>0.3</i>	0 <i>0.0</i>	125 <i>1.1</i>	2
Trisomy 13	42 <i>0.8</i>	32 <i>1.3</i>	23 <i>0.7</i>	0 <i>0.0</i>	0 <i>0.0</i>	100 <i>0.9</i>	1
Trisomy 18	80 <i>1.6</i>	67 <i>2.7</i>	59 <i>1.8</i>	6 <i>1.9</i>	0 <i>0.0</i>	217 <i>1.9</i>	1
Ventricular septal defect	2863 <i>56.7</i>	1283 <i>52.0</i>	1985 <i>60.6</i>	147 <i>47.6</i>	8 <i>35.9</i>	6394 <i>56.2</i>	2
<b>Total Live Births</b>	<b>504621</b>	<b>246756</b>	<b>327639</b>	<b>30885</b>	<b>2230</b>	<b>1137228</b>	
<b>Total Male Live Births</b>	<b>258581</b>	<b>125827</b>	<b>167780</b>	<b>15931</b>	<b>1163</b>	<b>582127</b>	

\*Hypospadias: prevalence per 10,000 male live births

\*\*Total includes unknown race

**Florida**  
**Trisomy Counts and Prevalence by Maternal Age 2006-2010 (Prevalence per 10,000 Live Births)**

Defect	Maternal Age (years)		Total	Notes
	35	35+		
Down syndrome (Trisomy 21)	782 <i>8.1</i>	701 <i>42.1</i>	1483 <i>13.0</i>	1
Trisomy 13	66 <i>0.7</i>	34 <i>2.0</i>	100 <i>0.9</i>	1
Trisomy 18	128 <i>1.3</i>	89 <i>5.3</i>	217 <i>1.9</i>	1
<b>Total Live Births</b>	<b>970738</b>	<b>166443</b>	<b>1137228</b>	

\*\*Total includes unknown maternal age

**Notes**

1. Florida reports live births only
2. Includes probable cases
3. Cases of Gastroschisis were differentiated from Omphalocele by using 54.71 procedure code in 2006-2009 and the 756.73 ICD-9-CM code in 2010
4. Reported for 2009 and 2010 only using the ICD-9-CM code 756.72

**General comments**

-Atrial Septal Defect, Fetus or newborn affected by maternal alcohol use and patent ductus arteriosus are not reported

## Georgia

### Birth Defects Counts and Prevalence 2006-2010 (Prevalence per 10,000 Live Births)

Defect	Maternal Race/Ethnicity					Total**	Notes
	White Non-Hispanic	Black Non-Hispanic	Hispanic	Asian or Pacific Islander Non-Hispanic	American Indian or Alaska Native Non-Hispanic		
Amniotic bands	6 <i>0.8</i>	25 <i>2.4</i>	4 <i>0.6</i>	2 <i>1.2</i>	0 <i>0.0</i>	37 <i>1.4</i>	
Anencephalus	16 <i>2.1</i>	30 <i>2.9</i>	18 <i>2.9</i>	2 <i>1.2</i>	0 <i>0.0</i>	74 <i>2.8</i>	
Aniridia	1 <i>0.1</i>	3 <i>0.3</i>	1 <i>0.2</i>	0 <i>0.0</i>	0 <i>0.0</i>	7 <i>0.3</i>	
Anophthalmia/microphthalmia	4 <i>0.5</i>	12 <i>1.2</i>	10 <i>1.6</i>	2 <i>1.2</i>	0 <i>0.0</i>	31 <i>1.2</i>	
Anotia/microtia	8 <i>1.1</i>	13 <i>1.3</i>	14 <i>2.2</i>	0 <i>0.0</i>	0 <i>0.0</i>	38 <i>1.4</i>	
Aortic valve stenosis	20 <i>2.7</i>	16 <i>1.6</i>	6 <i>1.0</i>	1 <i>0.6</i>	0 <i>0.0</i>	46 <i>1.7</i>	
Atrial septal defect	168 <i>22.4</i>	195 <i>19.0</i>	128 <i>20.3</i>	14 <i>8.6</i>	0 <i>0.0</i>	532 <i>19.9</i>	
Atrioventricular septal defect (endocardial cushion defect)	43 <i>5.7</i>	86 <i>8.4</i>	30 <i>4.8</i>	2 <i>1.2</i>	1 <i>39.1</i>	178 <i>6.6</i>	
Biliary atresia	3 <i>0.4</i>	12 <i>1.2</i>	2 <i>0.3</i>	0 <i>0.0</i>	0 <i>0.0</i>	19 <i>0.7</i>	
Bladder exstrophy	2 <i>0.3</i>	2 <i>0.2</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	4 <i>0.1</i>	
Choanal atresia	8 <i>1.1</i>	10 <i>1.0</i>	0 <i>0.0</i>	1 <i>0.6</i>	0 <i>0.0</i>	20 <i>0.7</i>	
Cleft lip with and without cleft palate	68 <i>9.1</i>	89 <i>8.7</i>	59 <i>9.4</i>	8 <i>4.9</i>	6 <i>234.4</i>	244 <i>9.1</i>	
Cleft palate without cleft lip	35 <i>4.7</i>	49 <i>4.8</i>	40 <i>6.3</i>	5 <i>3.1</i>	2 <i>78.1</i>	138 <i>5.2</i>	
Coarctation of aorta	44 <i>5.9</i>	43 <i>4.2</i>	26 <i>4.1</i>	3 <i>1.8</i>	0 <i>0.0</i>	127 <i>4.7</i>	
Common truncus	10 <i>1.3</i>	17 <i>1.7</i>	4 <i>0.6</i>	1 <i>0.6</i>	0 <i>0.0</i>	34 <i>1.3</i>	
Congenital cataract	16 <i>2.1</i>	17 <i>1.7</i>	9 <i>1.4</i>	2 <i>1.2</i>	0 <i>0.0</i>	44 <i>1.6</i>	
Congenital hip dislocation	82 <i>10.9</i>	25 <i>2.4</i>	49 <i>7.8</i>	2 <i>1.2</i>	1 <i>39.1</i>	172 <i>6.4</i>	
Diaphragmatic hernia	20 <i>2.7</i>	23 <i>2.2</i>	22 <i>3.5</i>	2 <i>1.2</i>	1 <i>39.1</i>	80 <i>3.0</i>	
Down syndrome (Trisomy 21)	173 <i>23.0</i>	165 <i>16.1</i>	127 <i>20.2</i>	25 <i>15.4</i>	2 <i>78.1</i>	535 <i>20.0</i>	
Ebstein anomaly	4 <i>0.5</i>	3 <i>0.3</i>	7 <i>1.1</i>	1 <i>0.6</i>	0 <i>0.0</i>	16 <i>0.6</i>	
Encephalocele	0 <i>0.0</i>	13 <i>1.3</i>	4 <i>0.6</i>	5 <i>3.1</i>	1 <i>39.1</i>	29 <i>1.1</i>	
Epispadias	4 <i>0.5</i>	6 <i>0.6</i>	1 <i>0.2</i>	0 <i>0.0</i>	0 <i>0.0</i>	11 <i>0.4</i>	
Esophageal atresia/tracheoesophageal fistula	28 <i>3.7</i>	20 <i>1.9</i>	7 <i>1.1</i>	0 <i>0.0</i>	0 <i>0.0</i>	58 <i>2.2</i>	
Fetus or newborn affected by maternal alcohol use	5 <i>0.7</i>	3 <i>0.3</i>	1 <i>0.2</i>	0 <i>0.0</i>	0 <i>0.0</i>	9 <i>0.3</i>	
Gastroschisis	29 <i>3.9</i>	50 <i>4.9</i>	28 <i>4.4</i>	5 <i>3.1</i>	0 <i>0.0</i>	120 <i>4.5</i>	
Hirschsprung disease (congenital megacolon)	10 <i>1.3</i>	33 <i>3.2</i>	3 <i>0.5</i>	0 <i>0.0</i>	1 <i>39.1</i>	50 <i>1.9</i>	
Hydrocephalus without spina bifida	74 <i>9.9</i>	120 <i>11.7</i>	39 <i>6.2</i>	11 <i>6.8</i>	3 <i>117.2</i>	281 <i>10.5</i>	
Hypoplastic left heart syndrome	20 <i>2.7</i>	16 <i>1.6</i>	10 <i>1.6</i>	3 <i>1.8</i>	0 <i>0.0</i>	55 <i>2.1</i>	
Hypospadias*	328 <i>85.0</i>	328 <i>62.7</i>	80 <i>24.8</i>	23 <i>27.4</i>	2 <i>146.0</i>	798 <i>58.2</i>	
Microcephalus	26 <i>3.5</i>	73 <i>7.1</i>	29 <i>4.6</i>	3 <i>1.8</i>	1 <i>39.1</i>	139 <i>5.2</i>	
Obstructive genitourinary defect	414 <i>55.1</i>	350 <i>34.1</i>	278 <i>44.1</i>	34 <i>20.9</i>	12 <i>468.8</i>	1188 <i>44.4</i>	
Omphalocele	19 <i>2.5</i>	34 <i>3.3</i>	15 <i>2.4</i>	1 <i>0.6</i>	1 <i>39.1</i>	78 <i>2.9</i>	

**Georgia**  
**Birth Defects Counts and Prevalence 2006-2010 (Prevalence per 10,000 Live Births)**

Defect	Maternal Race/Ethnicity					Total**	Notes
	White Non-Hispanic	Black Non-Hispanic	Hispanic	Asian or Pacific Islander Non-Hispanic	American Indian or Alaska Native Non-Hispanic		
Patent ductus arteriosus	256 <i>34.1</i>	247 <i>24.0</i>	163 <i>25.9</i>	17 <i>10.5</i>	6 <i>234.4</i>	727 <i>27.2</i>	1
Pulmonary valve atresia and stenosis	48 <i>6.4</i>	75 <i>7.3</i>	38 <i>6.0</i>	9 <i>5.5</i>	1 <i>39.1</i>	183 <i>6.8</i>	
Pulmonary valve atresia	12 <i>1.6</i>	20 <i>1.9</i>	14 <i>2.2</i>	1 <i>0.6</i>	0 <i>0.0</i>	55 <i>2.1</i>	
Pyloric stenosis	111 <i>14.8</i>	59 <i>5.7</i>	95 <i>15.1</i>	5 <i>3.1</i>	0 <i>0.0</i>	292 <i>10.9</i>	
Rectal and large intestinal atresia/stenosis	24 <i>3.2</i>	33 <i>3.2</i>	37 <i>5.9</i>	9 <i>5.5</i>	0 <i>0.0</i>	113 <i>4.2</i>	
Reduction deformity, lower limbs	14 <i>1.9</i>	24 <i>2.3</i>	12 <i>1.9</i>	0 <i>0.0</i>	0 <i>0.0</i>	54 <i>2.0</i>	
Reduction deformity, upper limbs	14 <i>1.9</i>	35 <i>3.4</i>	15 <i>2.4</i>	1 <i>0.6</i>	0 <i>0.0</i>	73 <i>2.7</i>	
Renal agenesis/hypoplasia	49 <i>6.5</i>	60 <i>5.8</i>	26 <i>4.1</i>	3 <i>1.8</i>	1 <i>39.1</i>	149 <i>5.6</i>	
Spina bifida without anencephalus	40 <i>5.3</i>	35 <i>3.4</i>	29 <i>4.6</i>	4 <i>2.5</i>	0 <i>0.0</i>	117 <i>4.4</i>	
Tetralogy of Fallot	42 <i>5.6</i>	51 <i>5.0</i>	13 <i>2.1</i>	7 <i>4.3</i>	0 <i>0.0</i>	124 <i>4.6</i>	
Total anomalous pulmonary venous return (TAPVR)	7 <i>0.9</i>	10 <i>1.0</i>	10 <i>1.6</i>	2 <i>1.2</i>	0 <i>0.0</i>	31 <i>1.2</i>	
Transposition of great arteries - All	34 <i>4.5</i>	38 <i>3.7</i>	15 <i>2.4</i>	2 <i>1.2</i>	0 <i>0.0</i>	91 <i>3.4</i>	
dextro-Transposition of great arteries (d-TGA)	32 <i>4.3</i>	30 <i>2.9</i>	12 <i>1.9</i>	2 <i>1.2</i>	0 <i>0.0</i>	78 <i>2.9</i>	
Tricuspid valve atresia and stenosis	11 <i>1.5</i>	23 <i>2.2</i>	8 <i>1.3</i>	2 <i>1.2</i>	0 <i>0.0</i>	54 <i>2.0</i>	
Tricuspid valve atresia	7 <i>0.9</i>	18 <i>1.8</i>	4 <i>0.6</i>	1 <i>0.6</i>	0 <i>0.0</i>	31 <i>1.2</i>	
Trisomy 13	13 <i>1.7</i>	24 <i>2.3</i>	3 <i>0.5</i>	0 <i>0.0</i>	0 <i>0.0</i>	45 <i>1.7</i>	
Trisomy 18	47 <i>6.3</i>	33 <i>3.2</i>	17 <i>2.7</i>	10 <i>6.2</i>	1 <i>39.1</i>	131 <i>4.9</i>	
Ventricular septal defect	516 <i>68.7</i>	437 <i>42.5</i>	346 <i>54.9</i>	40 <i>24.6</i>	6 <i>234.4</i>	1421 <i>53.1</i>	
<b>Total Live Births</b>	<b>75115</b>	<b>102735</b>	<b>63007</b>	<b>16259</b>	<b>256</b>	<b>267700</b>	
<b>Total Male Live Births</b>	<b>38594</b>	<b>52299</b>	<b>32280</b>	<b>8402</b>	<b>137</b>	<b>137034</b>	

\*Hypospadias: prevalence per 10,000 male live births

\*\*Total includes unknown race



**Georgia**  
**Trisomy Counts and Prevalence by Maternal Age 2006-2010 (Prevalence per 10,000 Live Births)**

Defect	Maternal Age (years)		Total**	Notes
	Less than 35	35+		
Down syndrome (Trisomy 21)	257 <i>11.8</i>	259 <i>51.0</i>	535 <i>20.0</i>	
Trisomy 13	28 <i>1.3</i>	17 <i>3.3</i>	45 <i>1.7</i>	
Trisomy 18	40 <i>1.8</i>	89 <i>17.5</i>	131 <i>4.9</i>	
<b>Total Live Births</b>	<b>216932</b>	<b>50765</b>	<b>267700</b>	

\*\*Total includes unknown maternal age

**Notes**

1. Cases included if gestational age at birth was greater than or equal to 36 weeks and PDA was last noted at  $\geq 6$  weeks of age; or if gestational age at birth was greater than or equal to 36 weeks and PDA noted at  $< 6$  wks of age was treated or if another heart defect was present

**General comments**

-All totals include definite, probable/possible, and prenatal diagnoses

-All totals include live births and stillbirths greater than or equal to 20 weeks, elective terminations at any gestational age, and prenatal diagnoses with undocumented outcome at any gestational age.

-Georgia uses CDC/BPA codes

-NCHS bridged race data were not available. Multiple-race individuals are included in the totals only.

**Illinois****Birth Defects Counts and Prevalence 2006-2010 (Prevalence per 10,000 Live Births)**

Defect	Maternal Race/Ethnicity					Total**	Notes
	White Non-Hispanic	Black Non-Hispanic	Hispanic	Asian or Pacific Islander Non-Hispanic	American Indian or Alaska Native Non-Hispanic		
Amniotic bands	53 <i>1.2</i>	19 <i>1.3</i>	9 <i>0.4</i>	3 <i>0.6</i>	0 <i>0.0</i>	85 <i>1.0</i>	
Anencephalus	67 <i>1.5</i>	24 <i>1.6</i>	31 <i>1.5</i>	5 <i>1.1</i>	0 <i>0.0</i>	127 <i>1.5</i>	
Aniridia	1 <i>0.0</i>	0 <i>0.0</i>	1 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	2 <i>0.0</i>	
Anophthalmia/microphthalmia	59 <i>1.3</i>	12 <i>0.8</i>	20 <i>1.0</i>	8 <i>1.7</i>	0 <i>0.0</i>	100 <i>1.1</i>	
Anotia/microtia	66 <i>1.4</i>	9 <i>0.6</i>	38 <i>1.8</i>	8 <i>1.7</i>	0 <i>0.0</i>	124 <i>1.4</i>	
Aortic valve stenosis	72 <i>1.6</i>	8 <i>0.5</i>	4 <i>0.2</i>	2 <i>0.4</i>	0 <i>0.0</i>	87 <i>1.0</i>	
Atrial septal defect	1272 <i>27.7</i>	450 <i>29.7</i>	248 <i>11.9</i>	73 <i>15.7</i>	2 <i>16.2</i>	2074 <i>23.8</i>	
Atrioventricular septal defect (endocardial cushion defect)	265 <i>5.8</i>	83 <i>5.5</i>	42 <i>2.0</i>	4 <i>0.9</i>	0 <i>0.0</i>	399 <i>4.6</i>	
Biliary atresia	9 <i>0.2</i>	3 <i>0.2</i>	1 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	13 <i>0.1</i>	
Bladder exstrophy	19 <i>0.4</i>	2 <i>0.1</i>	1 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	22 <i>0.3</i>	
Choanal atresia	57 <i>1.2</i>	15 <i>1.0</i>	10 <i>0.5</i>	4 <i>0.9</i>	0 <i>0.0</i>	87 <i>1.0</i>	
Cleft lip with and without cleft palate	507 <i>11.0</i>	89 <i>5.9</i>	85 <i>4.1</i>	36 <i>7.7</i>	2 <i>16.2</i>	724 <i>8.3</i>	
Cleft palate without cleft lip	301 <i>6.6</i>	46 <i>3.0</i>	50 <i>2.4</i>	20 <i>4.3</i>	0 <i>0.0</i>	422 <i>4.8</i>	
Coarctation of aorta	169 <i>3.7</i>	33 <i>2.2</i>	36 <i>1.7</i>	5 <i>1.1</i>	0 <i>0.0</i>	247 <i>2.8</i>	
Common truncus	25 <i>0.5</i>	9 <i>0.6</i>	2 <i>0.1</i>	1 <i>0.2</i>	0 <i>0.0</i>	37 <i>0.4</i>	
Congenital cataract	40 <i>0.9</i>	18 <i>1.2</i>	7 <i>0.3</i>	1 <i>0.2</i>	0 <i>0.0</i>	67 <i>0.8</i>	
Congenital hip dislocation	208 <i>4.5</i>	12 <i>0.8</i>	20 <i>1.0</i>	11 <i>2.4</i>	0 <i>0.0</i>	252 <i>2.9</i>	
Diaphragmatic hernia	128 <i>2.8</i>	39 <i>2.6</i>	16 <i>0.8</i>	10 <i>2.1</i>	0 <i>0.0</i>	196 <i>2.3</i>	
Down syndrome (Trisomy 21)	753 <i>16.4</i>	149 <i>9.8</i>	165 <i>7.9</i>	39 <i>8.4</i>	1 <i>8.1</i>	1121 <i>12.9</i>	
Ebstein anomaly	31 <i>0.7</i>	3 <i>0.2</i>	7 <i>0.3</i>	0 <i>0.0</i>	0 <i>0.0</i>	41 <i>0.5</i>	
Encephalocele	28 <i>0.6</i>	18 <i>1.2</i>	15 <i>0.7</i>	2 <i>0.4</i>	0 <i>0.0</i>	63 <i>0.7</i>	
Epispadias	76 <i>1.7</i>	20 <i>1.3</i>	5 <i>0.2</i>	0 <i>0.0</i>	0 <i>0.0</i>	101 <i>1.2</i>	
Esophageal atresia/tracheoesophageal fistula	132 <i>2.9</i>	23 <i>1.5</i>	20 <i>1.0</i>	7 <i>1.5</i>	0 <i>0.0</i>	184 <i>2.1</i>	
Fetus or newborn affected by maternal alcohol use	9 <i>0.2</i>	7 <i>0.5</i>	1 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	17 <i>0.2</i>	
Gastroschisis	232 <i>5.1</i>	64 <i>4.2</i>	47 <i>2.3</i>	5 <i>1.1</i>	0 <i>0.0</i>	349 <i>4.0</i>	
Hirschsprung disease (congenital megacolon)	50 <i>1.1</i>	21 <i>1.4</i>	10 <i>0.5</i>	4 <i>0.9</i>	0 <i>0.0</i>	85 <i>1.0</i>	
Hydrocephalus without spina bifida	343 <i>7.5</i>	180 <i>11.9</i>	83 <i>4.0</i>	26 <i>5.6</i>	0 <i>0.0</i>	637 <i>7.3</i>	
Hypoplastic left heart syndrome	106 <i>2.3</i>	31 <i>2.0</i>	17 <i>0.8</i>	7 <i>1.5</i>	0 <i>0.0</i>	161 <i>1.8</i>	
Hypospadias*	1615 <i>68.6</i>	380 <i>49.4</i>	105 <i>9.9</i>	84 <i>35.1</i>	1 <i>15.5</i>	2207 <i>49.6</i>	
Microcephalus	207 <i>4.5</i>	125 <i>8.2</i>	48 <i>2.3</i>	8 <i>1.7</i>	0 <i>0.0</i>	392 <i>4.5</i>	
Obstructive genitourinary defect	1615 <i>35.2</i>	354 <i>23.4</i>	242 <i>11.6</i>	133 <i>28.6</i>	1 <i>8.1</i>	2361 <i>27.1</i>	
Omphalocele	89 <i>1.9</i>	29 <i>1.9</i>	19 <i>0.9</i>	3 <i>0.6</i>	0 <i>0.0</i>	140 <i>1.6</i>	

**Illinois****Birth Defects Counts and Prevalence 2006-2010 (Prevalence per 10,000 Live Births)**

Defect	Maternal Race/Ethnicity					Total**	Notes
	White Non-Hispanic	Black Non-Hispanic	Hispanic	Asian or Pacific Islander Non-Hispanic	American Indian or Alaska Native Non-Hispanic		
Patent ductus arteriosus	1201 <i>26.2</i>	349 <i>23.0</i>	230 <i>11.0</i>	70 <i>15.0</i>	1 <i>8.1</i>	1866 <i>21.4</i>	1
Pulmonary valve atresia and stenosis	130 <i>2.8</i>	52 <i>3.4</i>	21 <i>1.0</i>	7 <i>1.5</i>	0 <i>0.0</i>	211 <i>2.4</i>	
Pulmonary valve atresia	23 <i>0.5</i>	11 <i>0.7</i>	5 <i>0.2</i>	1 <i>0.2</i>	0 <i>0.0</i>	41 <i>0.5</i>	
Pyloric stenosis	30 <i>0.7</i>	6 <i>0.4</i>	4 <i>0.2</i>	0 <i>0.0</i>	0 <i>0.0</i>	40 <i>0.5</i>	
Rectal and large intestinal atresia/stenosis	187 <i>4.1</i>	59 <i>3.9</i>	35 <i>1.7</i>	20 <i>4.3</i>	0 <i>0.0</i>	304 <i>3.5</i>	
Reduction deformity, lower limbs	81 <i>1.8</i>	20 <i>1.3</i>	10 <i>0.5</i>	5 <i>1.1</i>	0 <i>0.0</i>	116 <i>1.3</i>	
Reduction deformity, upper limbs	174 <i>3.8</i>	59 <i>3.9</i>	26 <i>1.2</i>	7 <i>1.5</i>	0 <i>0.0</i>	269 <i>3.1</i>	
Renal agenesis/hypoplasia	254 <i>5.5</i>	55 <i>3.6</i>	45 <i>2.2</i>	16 <i>3.4</i>	0 <i>0.0</i>	371 <i>4.3</i>	
Spina bifida without anencephalus	157 <i>3.4</i>	27 <i>1.8</i>	33 <i>1.6</i>	15 <i>3.2</i>	0 <i>0.0</i>	234 <i>2.7</i>	
Tetralogy of Fallot	163 <i>3.6</i>	51 <i>3.4</i>	32 <i>1.5</i>	19 <i>4.1</i>	0 <i>0.0</i>	267 <i>3.1</i>	
Total anomalous pulmonary venous return (TAPVR)	26 <i>0.6</i>	9 <i>0.6</i>	16 <i>0.8</i>	4 <i>0.9</i>	0 <i>0.0</i>	55 <i>0.6</i>	
Transposition of great arteries - All	103 <i>2.2</i>	25 <i>1.6</i>	27 <i>1.3</i>	9 <i>1.9</i>	0 <i>0.0</i>	167 <i>1.9</i>	
Tricuspid valve atresia and stenosis	66 <i>1.4</i>	24 <i>1.6</i>	16 <i>0.8</i>	5 <i>1.1</i>	1 <i>8.1</i>	113 <i>1.3</i>	
Trisomy 13	70 <i>1.5</i>	19 <i>1.3</i>	12 <i>0.6</i>	4 <i>0.9</i>	0 <i>0.0</i>	106 <i>1.2</i>	
Trisomy 18	109 <i>2.4</i>	35 <i>2.3</i>	36 <i>1.7</i>	11 <i>2.4</i>	0 <i>0.0</i>	192 <i>2.2</i>	
Ventricular septal defect	2283 <i>49.8</i>	487 <i>32.1</i>	378 <i>18.1</i>	116 <i>24.9</i>	3 <i>24.4</i>	3304 <i>38.0</i>	
<b>Total Live Births</b>	<b>458879</b>	<b>151591</b>	<b>208756</b>	<b>46530</b>	<b>1232</b>	<b>870570</b>	
<b>Total Male Live Births</b>	<b>235264</b>	<b>76975</b>	<b>106106</b>	<b>23899</b>	<b>647</b>	<b>444716</b>	

\*Hypospadias: prevalence per 10,000 male live births

\*\*Total includes unknown race

**Illinois****Trisomy Counts and Prevalence by Maternal Age 2006-2010 (Prevalence per 10,000 Live Births)**

Defect	Maternal Age (years)		Total	Notes
	35	35+		
Down syndrome (Trisomy 21)	551 <i>7.5</i>	559 <i>41.3</i>	1121 <i>12.9</i>	
Trisomy 13	70 <i>1.0</i>	32 <i>2.4</i>	106 <i>1.2</i>	
Trisomy 18	84 <i>1.1</i>	89 <i>6.6</i>	192 <i>2.2</i>	
<b>Total Live Births</b>	<b>735034</b>	<b>135477</b>	<b>870570</b>	

\*\*Total includes unknown maternal age

**Notes**

1. Only includes cases where the birth weight  $\geq$  2500g

**General comments**

-2010 birth (denominator) data are provisional.

-Illinois is under court order that limits the data that can be collected about a termination. The birth defect registry is therefore unable to obtain birth defect information from terminations.

-In 2009, Illinois reduced the number of charts that were reviewed for birth defects, dropping primarily children with very low-birth weights and no reported associated birth defects

## Indiana

### Birth Defects Counts and Prevalence 2006-2010 (Prevalence per 10,000 Live Births)

Defect	Maternal Race/Ethnicity					Total**	Notes
	Non-Hispanic White	Non-Hispanic Black or African	Hispanic	Asian or Pacific Islander	American Indian or Alaska Native		
Anencephalus	7 <i>0.2</i>	2 <i>0.4</i>	1 <i>0.3</i>	1 <i>1.0</i>	0 <i>0.0</i>	11 <i>0.3</i>	
Aniridia	10 <i>0.3</i>	3 <i>0.5</i>	1 <i>0.3</i>	0 <i>0.0</i>	0 <i>0.0</i>	14 <i>0.3</i>	
Anophthalmia/microphthalmia	24 <i>0.8</i>	2 <i>0.4</i>	2 <i>0.5</i>	2 <i>2.1</i>	0 <i>0.0</i>	30 <i>0.7</i>	
Anotia/microtia	33 <i>1.0</i>	3 <i>0.5</i>	2 <i>0.5</i>	0 <i>0.0</i>	0 <i>0.0</i>	39 <i>0.9</i>	
Aortic valve stenosis	47 <i>1.5</i>	4 <i>0.7</i>	4 <i>1.0</i>	1 <i>1.0</i>	0 <i>0.0</i>	57 <i>1.3</i>	
Atrial septal defect	1420 <i>44.5</i>	241 <i>42.8</i>	144 <i>37.3</i>	44 <i>45.4</i>	4 <i>51.3</i>	1891 <i>43.8</i>	1
Atrioventricular septal defect (endocardial cushion defect)	131 <i>4.1</i>	18 <i>3.2</i>	9 <i>2.3</i>	3 <i>3.1</i>	1 <i>12.8</i>	166 <i>3.8</i>	2
Biliary atresia	17 <i>0.5</i>	8 <i>1.4</i>	3 <i>0.8</i>	1 <i>1.0</i>	0 <i>0.0</i>	29 <i>0.7</i>	
Bladder exstrophy	15 <i>0.5</i>	1 <i>0.2</i>	1 <i>0.3</i>	0 <i>0.0</i>	0 <i>0.0</i>	18 <i>0.4</i>	
Choanal atresia	52 <i>1.6</i>	2 <i>0.4</i>	5 <i>1.3</i>	1 <i>1.0</i>	0 <i>0.0</i>	62 <i>1.4</i>	
Cleft lip with and without cleft palate	299 <i>9.4</i>	27 <i>4.8</i>	39 <i>10.1</i>	11 <i>11.3</i>	1 <i>12.8</i>	383 <i>8.9</i>	
Cleft palate without cleft lip	222 <i>7.0</i>	29 <i>5.2</i>	14 <i>3.6</i>	6 <i>6.2</i>	0 <i>0.0</i>	277 <i>6.4</i>	
Coarctation of aorta	207 <i>6.5</i>	19 <i>3.4</i>	23 <i>6.0</i>	5 <i>5.2</i>	1 <i>12.8</i>	258 <i>6.0</i>	
Common truncus	19 <i>0.6</i>	1 <i>0.2</i>	1 <i>0.3</i>	0 <i>0.0</i>	0 <i>0.0</i>	21 <i>0.5</i>	
Congenital cataract	21 <i>0.7</i>	7 <i>1.2</i>	1 <i>0.3</i>	1 <i>1.0</i>	0 <i>0.0</i>	32 <i>0.7</i>	
Congenital hip dislocation	254 <i>8.0</i>	14 <i>2.5</i>	26 <i>6.7</i>	8 <i>8.2</i>	0 <i>0.0</i>	304 <i>7.0</i>	
Diaphragmatic hernia	86 <i>2.7</i>	16 <i>2.8</i>	15 <i>3.9</i>	2 <i>2.1</i>	0 <i>0.0</i>	121 <i>2.8</i>	
Down syndrome (Trisomy 21)	403 <i>12.6</i>	37 <i>6.6</i>	53 <i>13.7</i>	15 <i>15.5</i>	1 <i>12.8</i>	515 <i>11.9</i>	
Ebstein anomaly	23 <i>0.7</i>	1 <i>0.2</i>	1 <i>0.3</i>	1 <i>1.0</i>	0 <i>0.0</i>	26 <i>0.6</i>	
Encephalocele	24 <i>0.8</i>	1 <i>0.2</i>	4 <i>1.0</i>	1 <i>1.0</i>	0 <i>0.0</i>	30 <i>0.7</i>	
Epispadias	33 <i>1.0</i>	7 <i>1.2</i>	1 <i>0.3</i>	2 <i>2.1</i>	0 <i>0.0</i>	43 <i>1.0</i>	3
Esophageal atresia/tracheoesophageal fistula	82 <i>2.6</i>	8 <i>1.4</i>	14 <i>3.6</i>	1 <i>1.0</i>	1 <i>12.8</i>	106 <i>2.5</i>	
Fetus or newborn affected by maternal alcohol use	103 <i>3.2</i>	25 <i>4.4</i>	7 <i>1.8</i>	16 <i>16.5</i>	0 <i>0.0</i>	154 <i>3.6</i>	
Gastroschisis	145 <i>4.5</i>	22 <i>3.9</i>	21 <i>5.4</i>	2 <i>2.1</i>	0 <i>0.0</i>	196 <i>4.5</i>	4
Hirschsprung disease (congenital megacolon)	63 <i>2.0</i>	13 <i>2.3</i>	13 <i>3.4</i>	1 <i>1.0</i>	0 <i>0.0</i>	93 <i>2.2</i>	
Hydrocephalus without spina bifida	151 <i>4.7</i>	43 <i>7.6</i>	16 <i>4.1</i>	6 <i>6.2</i>	1 <i>12.8</i>	221 <i>5.1</i>	
Hypoplastic left heart syndrome	55 <i>1.7</i>	12 <i>2.1</i>	8 <i>2.1</i>	2 <i>2.1</i>	1 <i>12.8</i>	79 <i>1.8</i>	
Hypospadias*	1159 <i>70.9</i>	122 <i>42.9</i>	50 <i>25.4</i>	14 <i>27.9</i>	1 <i>26.9</i>	1365 <i>61.8</i>	3
Microcephalus	307 <i>9.6</i>	59 <i>10.5</i>	36 <i>9.3</i>	18 <i>18.6</i>	2 <i>25.6</i>	428 <i>9.9</i>	
Obstructive genitourinary defect	820 <i>25.7</i>	116 <i>20.6</i>	84 <i>21.8</i>	20 <i>20.6</i>	2 <i>25.6</i>	1056 <i>24.5</i>	
Omphalocele	21 <i>0.7</i>	6 <i>1.1</i>	1 <i>0.3</i>	1 <i>1.0</i>	0 <i>0.0</i>	29 <i>0.7</i>	4
Patent ductus arteriosus	666 <i>20.9</i>	191 <i>34.0</i>	83 <i>21.5</i>	26 <i>26.8</i>	6 <i>76.9</i>	994 <i>23.0</i>	5

**Indiana****Birth Defects Counts and Prevalence 2006-2010 (Prevalence per 10,000 Live Births)**

Defect	Maternal Race/Ethnicity					Total**	Notes
	Non-Hispanic White	Non-Hispanic Black or African	Hispanic	Asian or Pacific Islander	American Indian or Alaska Native		
Pulmonary valve atresia and stenosis	237 <i>7.4</i>	45 <i>8.0</i>	22 <i>5.7</i>	6 <i>6.2</i>	1 <i>12.8</i>	317 <i>7.3</i>	
Pyloric stenosis	912 <i>28.6</i>	80 <i>14.2</i>	105 <i>27.2</i>	7 <i>7.2</i>	5 <i>64.1</i>	1128 <i>26.2</i>	
Rectal and large intestinal atresia/stenosis	144 <i>4.5</i>	20 <i>3.6</i>	18 <i>4.7</i>	5 <i>5.2</i>	1 <i>12.8</i>	189 <i>4.4</i>	
Reduction deformity, lower limbs	31 <i>1.0</i>	11 <i>2.0</i>	8 <i>2.1</i>	1 <i>1.0</i>	0 <i>0.0</i>	52 <i>1.2</i>	
Reduction deformity, upper limbs	92 <i>2.9</i>	12 <i>2.1</i>	12 <i>3.1</i>	0 <i>0.0</i>	0 <i>0.0</i>	116 <i>2.7</i>	
Renal agenesis/hypoplasia	111 <i>3.5</i>	10 <i>1.8</i>	13 <i>3.4</i>	2 <i>2.1</i>	0 <i>0.0</i>	138 <i>3.2</i>	
Spina bifida without anencephalus	153 <i>4.8</i>	14 <i>2.5</i>	18 <i>4.7</i>	1 <i>1.0</i>	0 <i>0.0</i>	189 <i>4.4</i>	
Tetralogy of Fallot	89 <i>2.8</i>	14 <i>2.5</i>	12 <i>3.1</i>	2 <i>2.1</i>	0 <i>0.0</i>	119 <i>2.8</i>	
Total anomalous pulmonary venous return (TAPVR)	25 <i>0.8</i>	5 <i>0.9</i>	4 <i>1.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	35 <i>0.8</i>	
Transposition of great arteries - All	155 <i>4.9</i>	18 <i>3.2</i>	13 <i>3.4</i>	0 <i>0.0</i>	0 <i>0.0</i>	194 <i>4.5</i>	6
Tricuspid valve atresia and stenosis	25 <i>0.8</i>	5 <i>0.9</i>	4 <i>1.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	34 <i>0.8</i>	7
Trisomy 13	14 <i>0.4</i>	4 <i>0.7</i>	5 <i>1.3</i>	0 <i>0.0</i>	0 <i>0.0</i>	23 <i>0.5</i>	
Trisomy 18	37 <i>1.2</i>	9 <i>1.6</i>	5 <i>1.3</i>	1 <i>1.0</i>	0 <i>0.0</i>	53 <i>1.2</i>	
Ventricular septal defect	1336 <i>41.9</i>	137 <i>24.4</i>	149 <i>38.6</i>	40 <i>41.2</i>	1 <i>12.8</i>	1688 <i>39.1</i>	8
<b>Total Live Births</b>	<b>318802</b>	<b>56253</b>	<b>38559</b>	<b>9700</b>	<b>780</b>	<b>431306</b>	
<b>Total Male Live Births</b>	<b>163503</b>	<b>28470</b>	<b>19664</b>	<b>5017</b>	<b>372</b>	<b>220710</b>	

\*Hypospadias: prevalence per 10,000 male live births

\*\*Total includes unknown race

## Indiana

### Trisomy Counts and Prevalence by Maternal Age 2006-2010 (Prevalence per 10,000 Live Births)

Defect	Age		Total**	Notes
	Less than 35	35 and greater		
Down syndrome (Trisomy 21)	298 <i>7.8</i>	217 <i>46.8</i>	515 <i>11.9</i>	
Trisomy 13	17 <i>0.4</i>	6 <i>1.3</i>	23 <i>0.5</i>	
Trisomy 18	31 <i>0.8</i>	21 <i>4.5</i>	53 <i>1.2</i>	
<b>Total Live Births</b>	<b>383803</b>	<b>46415</b>	<b>431306</b>	

\*\*Total includes unknown maternal age

#### Notes

1. Large increase in the number of probable cases of Atrial Septal Defect and Patent Ductus Arteriosus for 2010; believed to stem from an increased awareness of congenital heart defects among physicians statewide, and a large increase in the number of echocardiograms ordered at less than 6 weeks of age, with no follow-up echo performed after 6 weeks to invalidate/confirm.
2. Atrioventricular septal defect: Data does not distinguish BPA code 745.487 (2006-2010).
3. Prior to July 2009, all children reported with either hypospadias or epispadias were reviewed for a combined disorder of 'hypospadias/epispadias.' Since that time our system was modified and children are currently reviewed for hypospadias and epispadias separately.
4. Indiana utilizes BPA codes to differentiate gastroschisis from omphalocele.
5. Data reported for children who were gestational age greater than or equal to 36 weeks at birth and whose PDA was last noted at greater than or equal to 6 weeks of age (2006-2010); Unable to exclude infants of less than 2500 grams birth weight. Large increase in the number of probable cases of Atrial Septal Defect and Patent Ductus Arteriosus for 2010; believed to stem from an increased awareness of congenital heart defects among physicians statewide, and a large increase in the number of echocardiograms ordered at less than 6 weeks of age, with no follow-up echo performed after 6 weeks to invalidate/confirm.
6. Transposition of great arteries: Data includes entire coding range of 745.10 - 745.19 (2006-2010).
7. Tricuspid valve atresia and stenosis: Data does not distinguish BPA codes 746.105 or 746.106 (2006-2010).
8. Ventricular septal defect: Data does not distinguish BPA code 745.487 (2006-2010); Probable cases included.
9. &c9

#### General comments

- Birth defects rates based on fewer than 20 cases are unstable.
- Case ascertainment in Indiana is a combination of passive ascertainment by electronic submission of hospital discharge information and active ascertainment through chart auditing of 45 targeted conditions identified through hospital discharge ICD-9-CM codes.
- Data includes children whose conditions were classified with a status of either 'confirmed' or 'probable' based on the abstracted information.
- Indiana does not collect or report information on stillbirths or terminations. Data reported is based on livebirths (2006-2010).
- Report based on data as of 05/24/2013. As additional information is constantly entering the system, updated data for birth years 2007-2010 will be submitted, along with 2011 data, in the next report.

**Iowa****Birth Defects Counts and Prevalence 2006-2010 (Prevalence per 10,000 Live Births)**

Defect	Maternal Race/Ethnicity					Total**	Notes
	Non-Hispanic White	Non-Hispanic Black or African	Hispanic	Asian or Pacific Islander	American Indian or Alaska Native		
Amniotic bands	17 <i>1.0</i>	4 <i>4.8</i>	4 <i>2.5</i>	0 <i>0.0</i>	0 <i>0.0</i>	26 <i>1.3</i>	
Anencephalus	47 <i>2.8</i>	3 <i>3.6</i>	7 <i>4.3</i>	2 <i>4.1</i>	0 <i>0.0</i>	61 <i>3.1</i>	
Anophthalmia/microphthalmia	32 <i>1.9</i>	4 <i>4.8</i>	7 <i>4.3</i>	2 <i>4.1</i>	1 <i>10.1</i>	46 <i>2.3</i>	
Anotia/microtia	32 <i>1.9</i>	1 <i>1.2</i>	9 <i>5.5</i>	0 <i>0.0</i>	0 <i>0.0</i>	43 <i>2.2</i>	
Aortic valve stenosis	56 <i>3.3</i>	2 <i>2.4</i>	1 <i>0.6</i>	3 <i>6.2</i>	2 <i>20.1</i>	64 <i>3.2</i>	
Atrial septal defect	504 <i>30.0</i>	35 <i>42.0</i>	43 <i>26.3</i>	8 <i>16.5</i>	8 <i>80.6</i>	600 <i>30.0</i>	
Atrioventricular septal defect (endocardial cushion defect)	111 <i>6.6</i>	8 <i>9.6</i>	13 <i>8.0</i>	3 <i>6.2</i>	0 <i>0.0</i>	135 <i>6.8</i>	
Biliary atresia	7 <i>0.4</i>	2 <i>2.4</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	9 <i>0.5</i>	
Bladder exstrophy	4 <i>0.2</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	4 <i>0.2</i>	
Choanal atresia	34 <i>2.0</i>	1 <i>1.2</i>	2 <i>1.2</i>	1 <i>2.1</i>	0 <i>0.0</i>	38 <i>1.9</i>	
Cleft lip with and without cleft palate	169 <i>10.1</i>	11 <i>13.2</i>	18 <i>11.0</i>	5 <i>10.3</i>	2 <i>20.1</i>	205 <i>10.3</i>	
Cleft palate without cleft lip	133 <i>7.9</i>	2 <i>2.4</i>	10 <i>6.1</i>	4 <i>8.2</i>	1 <i>10.1</i>	150 <i>7.5</i>	
Coarctation of aorta	95 <i>5.7</i>	3 <i>3.6</i>	8 <i>4.9</i>	1 <i>2.1</i>	1 <i>10.1</i>	108 <i>5.4</i>	
Common truncus	8 <i>0.5</i>	0 <i>0.0</i>	0 <i>0.0</i>	1 <i>2.1</i>	0 <i>0.0</i>	9 <i>0.5</i>	
Congenital cataract	45 <i>2.7</i>	1 <i>1.2</i>	5 <i>3.1</i>	3 <i>6.2</i>	1 <i>10.1</i>	55 <i>2.8</i>	
Congenital hip dislocation	87 <i>5.2</i>	3 <i>3.6</i>	9 <i>5.5</i>	5 <i>10.3</i>	0 <i>0.0</i>	104 <i>5.2</i>	
Diaphragmatic hernia	20 <i>1.2</i>	1 <i>1.2</i>	1 <i>0.6</i>	0 <i>0.0</i>	0 <i>0.0</i>	22 <i>1.1</i>	
Down syndrome (Trisomy 21)	237 <i>14.1</i>	8 <i>9.6</i>	38 <i>23.3</i>	10 <i>20.6</i>	0 <i>0.0</i>	299 <i>15.0</i>	
Ebstein anomaly	17 <i>1.0</i>	0 <i>0.0</i>	1 <i>0.6</i>	1 <i>2.1</i>	0 <i>0.0</i>	19 <i>1.0</i>	
Encephalocele	19 <i>1.1</i>	0 <i>0.0</i>	1 <i>0.6</i>	0 <i>0.0</i>	0 <i>0.0</i>	21 <i>1.1</i>	
Epispadias	8 <i>0.5</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	8 <i>0.4</i>	
Esophageal atresia/tracheoesophageal fistula	37 <i>2.2</i>	0 <i>0.0</i>	3 <i>1.8</i>	2 <i>4.1</i>	0 <i>0.0</i>	42 <i>2.1</i>	
Fetus or newborn affected by maternal alcohol use	6 <i>0.4</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	7 <i>0.4</i>	
Gastroschisis	77 <i>4.6</i>	6 <i>7.2</i>	13 <i>8.0</i>	3 <i>6.2</i>	3 <i>30.2</i>	102 <i>5.1</i>	1
Hirschsprung disease (congenital megacolon)	29 <i>1.7</i>	2 <i>2.4</i>	3 <i>1.8</i>	0 <i>0.0</i>	1 <i>10.1</i>	35 <i>1.8</i>	
Hydrocephalus without spina bifida	193 <i>11.5</i>	11 <i>13.2</i>	19 <i>11.6</i>	7 <i>14.4</i>	0 <i>0.0</i>	234 <i>11.7</i>	
Hypoplastic left heart syndrome	43 <i>2.6</i>	2 <i>2.4</i>	5 <i>3.1</i>	1 <i>2.1</i>	0 <i>0.0</i>	51 <i>2.6</i>	
Hypospadias*	458 <i>53.3</i>	19 <i>44.5</i>	22 <i>26.5</i>	7 <i>28.6</i>	1 <i>19.5</i>	508 <i>49.7</i>	
Microcephalus	183 <i>10.9</i>	14 <i>16.8</i>	21 <i>12.9</i>	5 <i>10.3</i>	1 <i>10.1</i>	225 <i>11.3</i>	
Obstructive genitourinary defect	490 <i>29.2</i>	18 <i>21.6</i>	52 <i>31.9</i>	15 <i>30.9</i>	2 <i>20.1</i>	579 <i>29.0</i>	
Omphalocele	46 <i>2.7</i>	3 <i>3.6</i>	2 <i>1.2</i>	1 <i>2.1</i>	0 <i>0.0</i>	53 <i>2.7</i>	1
Patent ductus arteriosus	448 <i>26.7</i>	22 <i>26.4</i>	54 <i>33.1</i>	14 <i>28.9</i>	4 <i>40.3</i>	545 <i>27.3</i>	2



**Iowa****Birth Defects Counts and Prevalence 2006-2010 (Prevalence per 10,000 Live Births)**

Defect	Maternal Race/Ethnicity					Total**	Notes
	Non-Hispanic White	Non-Hispanic Black or African	Hispanic	Asian or Pacific Islander	American Indian or Alaska Native		
Pulmonary valve atresia and stenosis	207 <i>12.3</i>	9 <i>10.8</i>	11 <i>6.7</i>	7 <i>14.4</i>	2 <i>20.1</i>	238 <i>11.9</i>	
Pulmonary valve atresia	19 <i>1.1</i>	1 <i>1.2</i>	0 <i>0.0</i>	1 <i>2.1</i>	0 <i>0.0</i>	21 <i>1.1</i>	
Pyloric stenosis	429 <i>25.6</i>	14 <i>16.8</i>	40 <i>24.5</i>	1 <i>2.1</i>	4 <i>40.3</i>	489 <i>24.5</i>	
Rectal and large intestinal atresia/stenosis	78 <i>4.6</i>	6 <i>7.2</i>	12 <i>7.4</i>	3 <i>6.2</i>	0 <i>0.0</i>	99 <i>5.0</i>	
Reduction deformity, lower limbs	31 <i>1.8</i>	5 <i>6.0</i>	3 <i>1.8</i>	3 <i>6.2</i>	0 <i>0.0</i>	42 <i>2.1</i>	
Reduction deformity, upper limbs	68 <i>4.1</i>	9 <i>10.8</i>	11 <i>6.7</i>	2 <i>4.1</i>	0 <i>0.0</i>	90 <i>4.5</i>	
Renal agenesis/hypoplasia	120 <i>7.2</i>	5 <i>6.0</i>	11 <i>6.7</i>	4 <i>8.2</i>	0 <i>0.0</i>	142 <i>7.1</i>	
Spina bifida without anencephalus	70 <i>4.2</i>	7 <i>8.4</i>	14 <i>8.6</i>	1 <i>2.1</i>	1 <i>10.1</i>	93 <i>4.7</i>	
Tetralogy of Fallot	61 <i>3.6</i>	2 <i>2.4</i>	6 <i>3.7</i>	1 <i>2.1</i>	1 <i>10.1</i>	72 <i>3.6</i>	
Total anomalous pulmonary venous return (TAPVR)	22 <i>1.3</i>	0 <i>0.0</i>	4 <i>2.5</i>	0 <i>0.0</i>	1 <i>10.1</i>	27 <i>1.4</i>	
Transposition of great arteries - All	57 <i>3.4</i>	2 <i>2.4</i>	3 <i>1.8</i>	3 <i>6.2</i>	0 <i>0.0</i>	66 <i>3.3</i>	
dextro-Transposition of great arteries (d-TGA)	49 <i>2.9</i>	1 <i>1.2</i>	3 <i>1.8</i>	3 <i>6.2</i>	0 <i>0.0</i>	56 <i>2.8</i>	
Tricuspid valve atresia and stenosis	43 <i>2.6</i>	1 <i>1.2</i>	4 <i>2.5</i>	0 <i>0.0</i>	2 <i>20.1</i>	51 <i>2.6</i>	
Tricuspid valve atresia	14 <i>0.8</i>	0 <i>0.0</i>	2 <i>1.2</i>	0 <i>0.0</i>	1 <i>10.1</i>	17 <i>0.9</i>	
Trisomy 13	24 <i>1.4</i>	1 <i>1.2</i>	4 <i>2.5</i>	1 <i>2.1</i>	0 <i>0.0</i>	33 <i>1.7</i>	
Trisomy 18	53 <i>3.2</i>	6 <i>7.2</i>	8 <i>4.9</i>	1 <i>2.1</i>	0 <i>0.0</i>	69 <i>3.5</i>	
Ventricular septal defect	940 <i>56.0</i>	38 <i>45.6</i>	87 <i>53.3</i>	23 <i>47.4</i>	8 <i>80.6</i>	1098 <i>54.9</i>	3
<b>Total Live Births</b>	<b>167743</b>	<b>8326</b>	<b>16325</b>	<b>4851</b>	<b>993</b>	<b>199824</b>	
<b>Total Male Live Births</b>	<b>85932</b>	<b>4271</b>	<b>8306</b>	<b>2444</b>	<b>514</b>	<b>102277</b>	

\*Hypospadias: prevalence per 10,000 male live births

\*\*Total includes unknown race

**Iowa****Trisomy Counts and Prevalence by Maternal Age 2006-2010 (Prevalence per 10,000 Live Births)**

Defect	Age		Total**	Notes
	Less than 35	35 and greater		
Down syndrome (Trisomy 21)	163 <i>9.1</i>	135 <i>62.9</i>	299 <i>15.0</i>	
Trisomy 13	24 <i>1.3</i>	9 <i>4.2</i>	33 <i>1.7</i>	
Trisomy 18	40 <i>2.2</i>	29 <i>13.5</i>	69 <i>3.5</i>	
<b>Total Live Births</b>	<b>178356</b>	<b>21459</b>	<b>199824</b>	

\*\*Total includes unknown maternal age

**Notes**

1. Use BPA codes to distinguish omphalocele and gastroschisis
2. Included only if weight greater than or equal to 2500 grams. Did not exclude if gestational less than 36 weeks and was not able to determine if defects last noted greater than or equal to 6 weeks of age
3. Probable cases are not included.

**Kansas****Birth Defects Counts and Prevalence 2006-2010 (Prevalence per 10,000 Live Births)**

Defect	Maternal Race/Ethnicity					Total**	Notes
	White Non-Hispanic	Black Non-Hispanic	Hispanic	Asian or Pacific Islander Non-Hispanic	American Indian or Alaska Native Non-Hispanic		
Amniotic bands	5 <i>0.4</i>	0 <i>0.0</i>	2 <i>0.6</i>	0 <i>0.0</i>	0 <i>0.0</i>	7 <i>0.4</i>	
Anencephalus	30 <i>2.1</i>	3 <i>2.2</i>	15 <i>4.6</i>	1 <i>1.8</i>	1 <i>8.6</i>	50 <i>2.5</i>	
Anophthalmia/microphthalmia	1 <i>0.1</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	3 <i>0.2</i>	
Anotia/microtia	2 <i>0.1</i>	0 <i>0.0</i>	6 <i>1.8</i>	0 <i>0.0</i>	0 <i>0.0</i>	8 <i>0.4</i>	
Aortic valve stenosis	1 <i>0.1</i>	0 <i>0.0</i>	1 <i>0.3</i>	0 <i>0.0</i>	0 <i>0.0</i>	3 <i>0.2</i>	
Atrial septal defect	168 <i>11.8</i>	27 <i>19.5</i>	87 <i>26.5</i>	5 <i>8.8</i>	1 <i>8.6</i>	684 <i>34.3</i>	
Atrioventricular septal defect (endocardial cushion defect)	10 <i>0.7</i>	1 <i>0.7</i>	3 <i>0.9</i>	0 <i>0.0</i>	0 <i>0.0</i>	17 <i>0.9</i>	
Biliary atresia	1 <i>0.1</i>	0 <i>0.0</i>	1 <i>0.3</i>	0 <i>0.0</i>	0 <i>0.0</i>	3 <i>0.2</i>	
Bladder exstrophy	2 <i>0.1</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	3 <i>0.2</i>	
Choanal atresia	3 <i>0.2</i>	0 <i>0.0</i>	1 <i>0.3</i>	0 <i>0.0</i>	0 <i>0.0</i>	10 <i>0.5</i>	
Cleft lip with and without cleft palate	122 <i>8.6</i>	5 <i>3.6</i>	30 <i>9.1</i>	3 <i>5.3</i>	1 <i>8.6</i>	181 <i>9.1</i>	
Cleft palate without cleft lip	52 <i>3.7</i>	4 <i>2.9</i>	22 <i>6.7</i>	2 <i>3.5</i>	2 <i>17.2</i>	96 <i>4.8</i>	
Coarctation of aorta	3 <i>0.2</i>	0 <i>0.0</i>	3 <i>0.9</i>	0 <i>0.0</i>	0 <i>0.0</i>	20 <i>1.0</i>	
Common truncus	1 <i>0.1</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	4 <i>0.2</i>	
Congenital cataract	0 <i>0.0</i>	0 <i>0.0</i>	1 <i>0.3</i>	0 <i>0.0</i>	0 <i>0.0</i>	3 <i>0.2</i>	
Congenital hip dislocation	12 <i>0.8</i>	0 <i>0.0</i>	4 <i>1.2</i>	0 <i>0.0</i>	0 <i>0.0</i>	38 <i>1.9</i>	
Diaphragmatic hernia	11 <i>0.8</i>	1 <i>0.7</i>	7 <i>2.1</i>	1 <i>1.8</i>	0 <i>0.0</i>	26 <i>1.3</i>	
Down syndrome (Trisomy 21)	130 <i>9.2</i>	6 <i>4.3</i>	36 <i>11.0</i>	5 <i>8.8</i>	0 <i>0.0</i>	203 <i>10.2</i>	
Ebstein anomaly	0 <i>0.0</i>	0 <i>0.0</i>	1 <i>0.3</i>	0 <i>0.0</i>	0 <i>0.0</i>	3 <i>0.2</i>	
Encephalocele	5 <i>0.4</i>	0 <i>0.0</i>	2 <i>0.6</i>	0 <i>0.0</i>	0 <i>0.0</i>	8 <i>0.4</i>	
Epispadias	0 <i>0.0</i>	1 <i>0.7</i>	2 <i>0.6</i>	0 <i>0.0</i>	0 <i>0.0</i>	3 <i>0.2</i>	
Esophageal atresia/tracheoesophageal fistula	9 <i>0.6</i>	0 <i>0.0</i>	3 <i>0.9</i>	0 <i>0.0</i>	0 <i>0.0</i>	18 <i>0.9</i>	
Fetus or newborn affected by maternal alcohol use	4 <i>0.3</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	7 <i>0.4</i>	
Gastroschisis	61 <i>4.3</i>	4 <i>2.9</i>	9 <i>2.7</i>	1 <i>1.8</i>	0 <i>0.0</i>	99 <i>5.0</i>	
Hirschsprung disease (congenital megacolon)	5 <i>0.4</i>	0 <i>0.0</i>	4 <i>1.2</i>	0 <i>0.0</i>	0 <i>0.0</i>	18 <i>0.9</i>	
Hydrocephalus without spina bifida	34 <i>2.4</i>	5 <i>3.6</i>	9 <i>2.7</i>	0 <i>0.0</i>	0 <i>0.0</i>	75 <i>3.8</i>	
Hypoplastic left heart syndrome	10 <i>0.7</i>	0 <i>0.0</i>	5 <i>1.5</i>	1 <i>1.8</i>	0 <i>0.0</i>	22 <i>1.1</i>	
Hypospadias*	131 <i>18.0</i>	14 <i>20.0</i>	21 <i>12.6</i>	2 <i>6.7</i>	1 <i>17.2</i>	244 <i>23.9</i>	
Microcephalus	4 <i>0.3</i>	2 <i>1.4</i>	9 <i>2.7</i>	0 <i>0.0</i>	0 <i>0.0</i>	27 <i>1.4</i>	
Obstructive genitourinary defect	63 <i>4.4</i>	6 <i>4.3</i>	34 <i>10.4</i>	5 <i>8.8</i>	0 <i>0.0</i>	192 <i>9.6</i>	

**Kansas****Birth Defects Counts and Prevalence 2006-2010 (Prevalence per 10,000 Live Births)**

Defect	Maternal Race/Ethnicity					Total**	Notes
	White Non-Hispanic	Black Non-Hispanic	Hispanic	Asian or Pacific Islander Non-Hispanic	American Indian or Alaska Native Non-Hispanic		
Omphalocele	24 <i>1.7</i>	2 <i>1.4</i>	4 <i>1.2</i>	2 <i>3.5</i>	0 <i>0.0</i>	37 <i>1.9</i>	
Patent ductus arteriosus	64 <i>4.5</i>	10 <i>7.2</i>	40 <i>12.2</i>	1 <i>1.8</i>	1 <i>8.6</i>	133 <i>6.7</i>	1
Pulmonary valve atresia and stenosis	15 <i>1.1</i>	3 <i>2.2</i>	3 <i>0.9</i>	0 <i>0.0</i>	0 <i>0.0</i>	38 <i>1.9</i>	
Pyloric stenosis	41 <i>2.9</i>	1 <i>0.7</i>	19 <i>5.8</i>	0 <i>0.0</i>	1 <i>8.6</i>	119 <i>6.0</i>	
Rectal and large intestinal atresia/stenosis	5 <i>0.4</i>	2 <i>1.4</i>	8 <i>2.4</i>	2 <i>3.5</i>	0 <i>0.0</i>	28 <i>1.4</i>	
Reduction deformity, lower limbs	11 <i>0.8</i>	0 <i>0.0</i>	1 <i>0.3</i>	1 <i>1.8</i>	0 <i>0.0</i>	21 <i>1.1</i>	
Reduction deformity, upper limbs	8 <i>0.6</i>	1 <i>0.7</i>	5 <i>1.5</i>	1 <i>1.8</i>	0 <i>0.0</i>	22 <i>1.1</i>	
Renal agenesis/hypoplasia	11 <i>0.8</i>	2 <i>1.4</i>	5 <i>1.5</i>	0 <i>0.0</i>	0 <i>0.0</i>	26 <i>1.3</i>	
Spina bifida without anencephalus	31 <i>2.2</i>	2 <i>1.4</i>	12 <i>3.7</i>	0 <i>0.0</i>	0 <i>0.0</i>	64 <i>3.2</i>	
Tetralogy of Fallot	9 <i>0.6</i>	0 <i>0.0</i>	4 <i>1.2</i>	0 <i>0.0</i>	0 <i>0.0</i>	20 <i>1.0</i>	
Total anomalous pulmonary venous return (TAPVR)	1 <i>0.1</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	4 <i>0.2</i>	
Transposition of great arteries - All	15 <i>1.1</i>	1 <i>0.7</i>	6 <i>1.8</i>	0 <i>0.0</i>	0 <i>0.0</i>	32 <i>1.6</i>	
Tricuspid valve atresia and stenosis	1 <i>0.1</i>	1 <i>0.7</i>	2 <i>0.6</i>	0 <i>0.0</i>	0 <i>0.0</i>	4 <i>0.2</i>	
Trisomy 13	4 <i>0.3</i>	0 <i>0.0</i>	2 <i>0.6</i>	2 <i>3.5</i>	0 <i>0.0</i>	13 <i>0.7</i>	
Trisomy 18	14 <i>1.0</i>	1 <i>0.7</i>	9 <i>2.7</i>	0 <i>0.0</i>	0 <i>0.0</i>	26 <i>1.3</i>	
Ventricular septal defect	76 <i>5.4</i>	6 <i>4.3</i>	56 <i>17.1</i>	1 <i>1.8</i>	1 <i>8.6</i>	271 <i>13.6</i>	
<b>Total Live Births</b>	<b>141995</b>	<b>13881</b>	<b>32825</b>	<b>5709</b>	<b>1164</b>	<b>199493</b>	
<b>Total Male Live Births</b>	<b>72650</b>	<b>7017</b>	<b>16730</b>	<b>2973</b>	<b>580</b>	<b>101955</b>	

\*Hypospadias: prevalence per 10,000 male live births

\*\*Total includes unknown race

**Kansas****Trisomy Counts and Prevalence by Maternal Age 2006-2010 (Prevalence per 10,000 Live Births)**

Defect	Maternal Age (years)		Total	Notes
	Less than 35	35+		
Down syndrome (Trisomy 21)	112 <i>6.3</i>	76 <i>36.2</i>	203 <i>10.2</i>	
Trisomy 13	6 <i>0.3</i>	3 <i>1.4</i>	13 <i>0.7</i>	
Trisomy 18	13 <i>0.7</i>	12 <i>5.7</i>	26 <i>1.3</i>	
<b>Total Live Births</b>	<b>178484</b>	<b>20991</b>	<b>199493</b>	

\*\*Total includes unknown maternal age

**Notes**

1. Includes only birth weight  $\geq$ 2500g or gestational age  $\geq$ 36 weeks; unable to select defect last noted at  $\geq$ 6 wks of age.

**General comments**

-A passive system; all are probable cases; Includes in-state resident births only.

-Aniridia had zero cases reported

-Kansas does not formally provide CCHD screening. No data is available for pulmonary valve atresia, dextro-Transposition of great arteries (d-TGA) or Tricuspid valve atresia.

**Kentucky**  
**Birth Defects Counts and Prevalence 2006-2010 (Prevalence per 10,000 Live Births)**

Defect	Maternal Race/Ethnicity					Total**	Notes
	Non-Hispanic White	Non-Hispanic Black or African	Hispanic	Asian or Pacific Islander	American Indian or Alaska Native		
Anencephalus	40 <i>1.7</i>	4 <i>1.5</i>	5 <i>3.5</i>	0 <i>0.0</i>	0 <i>0.0</i>	50 <i>1.8</i>	
Aniridia	2 <i>0.1</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	2 <i>0.1</i>	
Anophthalmia/microphthalmia	10 <i>0.4</i>	3 <i>1.2</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	13 <i>0.5</i>	
Anotia/microtia	8 <i>0.3</i>	1 <i>0.4</i>	3 <i>2.1</i>	1 <i>2.6</i>	0 <i>0.0</i>	13 <i>0.5</i>	
Aortic valve stenosis	30 <i>1.3</i>	3 <i>1.2</i>	1 <i>0.7</i>	1 <i>2.6</i>	0 <i>0.0</i>	36 <i>1.3</i>	
Atrial septal defect	3785 <i>159.5</i>	848 <i>326.1</i>	191 <i>132.7</i>	48 <i>122.8</i>	5 <i>148.4</i>	5040 <i>177.3</i>	1
Atrioventricular septal defect (endocardial cushion defect)	61 <i>2.6</i>	8 <i>3.1</i>	3 <i>2.1</i>	1 <i>2.6</i>	0 <i>0.0</i>	75 <i>2.6</i>	
Biliary atresia	10 <i>0.4</i>	1 <i>0.4</i>	2 <i>1.4</i>	0 <i>0.0</i>	0 <i>0.0</i>	13 <i>0.5</i>	
Bladder exstrophy	5 <i>0.3</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	5 <i>0.2</i>	
Choanal atresia	25 <i>1.1</i>	2 <i>0.8</i>	1 <i>0.7</i>	0 <i>0.0</i>	0 <i>0.0</i>	29 <i>1.0</i>	
Cleft lip with and without cleft palate	236 <i>9.9</i>	19 <i>7.3</i>	13 <i>9.0</i>	1 <i>2.6</i>	0 <i>0.0</i>	284 <i>10.0</i>	
Cleft palate without cleft lip	103 <i>4.3</i>	7 <i>2.7</i>	1 <i>0.7</i>	2 <i>5.1</i>	0 <i>0.0</i>	117 <i>4.1</i>	
Coarctation of aorta	117 <i>6.2</i>	11 <i>5.3</i>	4 <i>3.5</i>	1 <i>3.3</i>	0 <i>0.0</i>	134 <i>5.9</i>	
Common truncus	12 <i>0.6</i>	1 <i>0.5</i>	1 <i>0.9</i>	0 <i>0.0</i>	0 <i>0.0</i>	15 <i>0.7</i>	
Congenital cataract	15 <i>0.6</i>	1 <i>0.4</i>	2 <i>1.4</i>	0 <i>0.0</i>	0 <i>0.0</i>	18 <i>0.6</i>	
Congenital hip dislocation	143 <i>6.0</i>	6 <i>2.3</i>	5 <i>3.5</i>	1 <i>2.6</i>	0 <i>0.0</i>	164 <i>5.8</i>	
Diaphragmatic hernia	59 <i>3.1</i>	7 <i>3.4</i>	1 <i>0.9</i>	0 <i>0.0</i>	0 <i>0.0</i>	71 <i>3.1</i>	
Down syndrome (Trisomy 21)	248 <i>10.5</i>	28 <i>10.8</i>	17 <i>11.8</i>	4 <i>10.2</i>	1 <i>29.7</i>	303 <i>10.7</i>	
Ebstein anomaly	14 <i>0.6</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	14 <i>0.5</i>	
Encephalocele	15 <i>0.6</i>	1 <i>0.4</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	17 <i>0.6</i>	
Epispadias	16 <i>1.1</i>	3 <i>2.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	19 <i>1.1</i>	
Esophageal atresia/tracheoesophageal fistula	46 <i>1.9</i>	5 <i>1.9</i>	3 <i>2.1</i>	1 <i>2.6</i>	0 <i>0.0</i>	57 <i>2.0</i>	
Fetus or newborn affected by maternal alcohol use	19 <i>0.8</i>	15 <i>5.8</i>	2 <i>1.4</i>	1 <i>2.6</i>	1 <i>29.7</i>	47 <i>1.7</i>	
Gastroschisis	83 <i>3.5</i>	5 <i>1.9</i>	6 <i>4.2</i>	0 <i>0.0</i>	0 <i>0.0</i>	103 <i>3.6</i>	
Hirschsprung disease (congenital megacolon)	45 <i>1.9</i>	11 <i>4.2</i>	1 <i>0.7</i>	3 <i>7.7</i>	0 <i>0.0</i>	63 <i>2.2</i>	
Hydrocephalus without spina bifida	119 <i>5.0</i>	9 <i>3.5</i>	3 <i>2.1</i>	1 <i>2.6</i>	1 <i>29.7</i>	133 <i>4.7</i>	
Hypoplastic left heart syndrome	60 <i>2.5</i>	8 <i>3.1</i>	4 <i>2.8</i>	0 <i>0.0</i>	0 <i>0.0</i>	77 <i>2.7</i>	
Hypospadias*	933 <i>76.7</i>	108 <i>81.7</i>	27 <i>37.0</i>	5 <i>24.8</i>	1 <i>58.1</i>	1092 <i>75.0</i>	
Microcephalus	65 <i>2.7</i>	14 <i>5.4</i>	3 <i>2.1</i>	0 <i>0.0</i>	0 <i>0.0</i>	83 <i>2.9</i>	
Obstructive genitourinary defect	447 <i>18.8</i>	40 <i>15.4</i>	32 <i>22.2</i>	7 <i>17.9</i>	0 <i>0.0</i>	543 <i>19.1</i>	
Omphalocele	25 <i>1.1</i>	6 <i>2.3</i>	2 <i>1.4</i>	0 <i>0.0</i>	0 <i>0.0</i>	35 <i>1.2</i>	
Patent ductus arteriosus	1716 <i>72.3</i>	354 <i>136.1</i>	97 <i>67.4</i>	15 <i>38.4</i>	3 <i>89.0</i>	2220 <i>78.1</i>	

**Kentucky**  
**Birth Defects Counts and Prevalence 2006-2010 (Prevalence per 10,000 Live Births)**

Defect	Maternal Race/Ethnicity					Total**	Notes
	Non-Hispanic White	Non-Hispanic Black or African	Hispanic	Asian or Pacific Islander	American Indian or Alaska Native		
Pulmonary valve atresia and stenosis	171 7.2	19 7.3	7 4.9	2 5.1	0 0.0	202 7.1	
Pulmonary valve atresia	30 6.7	3 6.4	1 3.6	0 0.0	0 0.0	37 6.8	
Pyloric stenosis	736 31.0	41 15.8	16 11.1	3 7.7	1 29.7	806 28.4	
Rectal and large intestinal atresia/stenosis	126 5.3	16 6.2	5 3.5	3 7.7	0 0.0	157 5.5	
Reduction deformity, lower limbs	33 1.4	2 0.8	2 1.4	0 0.0	0 0.0	41 1.4	
Reduction deformity, upper limbs	38 1.6	3 1.2	1 0.7	1 2.6	1 29.7	44 1.5	
Renal agenesis/hypoplasia	105 4.4	10 3.8	5 3.5	1 2.6	0 0.0	123 4.3	
Spina bifida without anencephalus	87 3.7	9 3.5	2 1.4	0 0.0	0 0.0	100 3.5	
Tetralogy of Fallot	82 3.5	11 4.2	2 1.4	1 2.6	0 0.0	98 3.4	
Total anomalous pulmonary venous return (TAPVR)	9 1.0	1 1.0	1 1.7	0 0.0	0 0.0	11 1.0	
Transposition of great arteries - All	92 3.9	9 3.5	5 3.5	1 2.6	0 0.0	110 3.9	
dextro-Transposition of great arteries (d-TGA)	5 1.1	1 2.1	0 0.0	0 0.0	0 0.0	7 1.3	
Tricuspid valve atresia and stenosis	24 1.0	3 1.2	1 0.7	0 0.0	0 0.0	29 1.0	
Tricuspid valve atresia	5 1.1	1 2.1	0 0.0	0 0.0	0 0.0	7 1.3	
Trisomy 13	18 0.8	2 0.8	3 2.1	0 0.0	0 0.0	25 0.9	
Trisomy 18	40 1.7	1 0.4	3 2.1	0 0.0	0 0.0	45 1.6	
Ventricular septal defect	969 40.8	125 48.1	61 42.4	14 35.8	1 29.7	1220 42.9	1
<b>Total Live Births</b>	<b>237305</b>	<b>26004</b>	<b>14398</b>	<b>3910</b>	<b>337</b>	<b>284258</b>	
<b>Total Male Live Births</b>	<b>121648</b>	<b>13226</b>	<b>7295</b>	<b>2020</b>	<b>172</b>	<b>145540</b>	

\*Hypospadias: prevalence per 10,000 male live births

\*\*Total includes unknown race

**Kentucky**  
**Trisomy Counts and Prevalence by Maternal Age 2006-2010 (Prevalence per 10,000 Live Births)**

Defect	Age		Total**	Notes
	Less than 35	35 and greater		
Down syndrome (Trisomy 21)	163 <i>6.4</i>	131 <i>47.9</i>	303 <i>10.7</i>	
Trisomy 13	21 <i>0.8</i>	3 <i>1.1</i>	25 <i>0.9</i>	
Trisomy 18	13 <i>0.5</i>	20 <i>7.3</i>	45 <i>1.6</i>	
<b>Total Live Births</b>	<b>256276</b>	<b>27360</b>	<b>284258</b>	

\*\*Total includes unknown maternal age

**Notes**

1. Probable cases are included



**Louisiana**  
**Birth Defects Counts and Prevalence 2006-2008 (Prevalence per 10,000 Live Births)**

Defect	Maternal Race/Ethnicity					Total**	Notes
	Non-Hispanic White	Non-Hispanic Black or African	Hispanic	Asian or Pacific Islander	American Indian or Alaska Native		
Amniotic bands	8 <i>1.1</i>	6 <i>1.1</i>	<5 .	0 <i>0.0</i>	0 <i>0.0</i>	15 <i>1.1</i>	
Anencephalus	6 <i>0.8</i>	8 <i>1.5</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	14 <i>1.0</i>	
Aniridia	0 <i>0.0</i>	<5 .	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	<5 .	1
Anophthalmia/microphthalmia	8 <i>1.1</i>	<5 .	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	12 <i>0.9</i>	
Anotia/microtia	8 <i>1.1</i>	0 <i>0.0</i>	<5 .	0 <i>0.0</i>	0 <i>0.0</i>	11 <i>0.8</i>	
Aortic valve stenosis	17 <i>2.4</i>	9 <i>1.6</i>	0 <i>0.0</i>	<5 .	0 <i>0.0</i>	27 <i>2.0</i>	
Atrial septal defect	450 <i>63.5</i>	324 <i>59.2</i>	36 <i>51.5</i>	16 <i>63.4</i>	5 <i>85.0</i>	833 <i>61.2</i>	
Atrioventricular septal defect (endocardial cushion defect)	53 <i>7.5</i>	25 <i>4.6</i>	<5 .	5 <i>19.8</i>	0 <i>0.0</i>	85 <i>6.2</i>	
Biliary atresia	10 <i>1.4</i>	8 <i>1.5</i>	<5 .	<5 .	0 <i>0.0</i>	21 <i>1.5</i>	
Bladder exstrophy	<5 .	<5 .	0 <i>0.0</i>	0 <i>0.0</i>	<5 .	8 <i>0.6</i>	
Choanal atresia	14 <i>2.0</i>	6 <i>1.1</i>	<5 .	0 <i>0.0</i>	0 <i>0.0</i>	22 <i>1.6</i>	
Cleft lip with and without cleft palate	59 <i>8.3</i>	36 <i>6.6</i>	11 <i>15.7</i>	<5 .	<5 .	109 <i>8.0</i>	
Cleft palate without cleft lip	63 <i>8.9</i>	30 <i>5.5</i>	6 <i>8.6</i>	<5 .	0 <i>0.0</i>	100 <i>7.3</i>	
Coarctation of aorta	31 <i>4.4</i>	24 <i>4.4</i>	<5 .	<5 .	0 <i>0.0</i>	59 <i>4.3</i>	
Common truncus	11 <i>1.6</i>	<5 .	0 <i>0.0</i>	<5 .	0 <i>0.0</i>	16 <i>1.2</i>	
Congenital cataract	11 <i>1.6</i>	8 <i>1.5</i>	<5 .	0 <i>0.0</i>	0 <i>0.0</i>	20 <i>1.5</i>	
Congenital hip dislocation	55 <i>7.8</i>	19 <i>3.5</i>	<5 .	<5 .	<5 .	80 <i>5.9</i>	
Diaphragmatic hernia	20 <i>2.8</i>	10 <i>1.8</i>	5 <i>7.2</i>	0 <i>0.0</i>	0 <i>0.0</i>	35 <i>2.6</i>	
Down syndrome (Trisomy 21)	106 <i>15.0</i>	54 <i>9.9</i>	9 <i>12.9</i>	8 <i>31.7</i>	<5 .	178 <i>13.1</i>	
Ebstein anomaly	7 <i>1.0</i>	5 <i>0.9</i>	<5 .	0 <i>0.0</i>	0 <i>0.0</i>	13 <i>1.0</i>	
Encephalocele	5 <i>0.7</i>	8 <i>1.5</i>	<5 .	0 <i>0.0</i>	0 <i>0.0</i>	14 <i>1.0</i>	
Epispadias	10 <i>1.4</i>	7 <i>1.3</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	17 <i>1.2</i>	
Esophageal atresia/tracheoesophageal fistula	16 <i>2.3</i>	10 <i>1.8</i>	<5 .	<5 .	0 <i>0.0</i>	29 <i>2.1</i>	
Fetus or newborn affected by maternal alcohol use	9 <i>1.3</i>	13 <i>2.4</i>	<5 .	0 <i>0.0</i>	<5 .	24 <i>1.8</i>	
Gastroschisis	47 <i>6.6</i>	21 <i>3.8</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	68 <i>5.0</i>	
Hirschsprung disease (congenital megacolon)	20 <i>2.8</i>	21 <i>3.8</i>	<5 .	0 <i>0.0</i>	0 <i>0.0</i>	42 <i>3.1</i>	
Hydrocephalus without spina bifida	32 <i>4.5</i>	35 <i>6.4</i>	5 <i>7.2</i>	<5 .	<5 .	76 <i>5.6</i>	
Hypoplastic left heart syndrome	11 <i>1.6</i>	10 <i>1.8</i>	<5 .	0 <i>0.0</i>	<5 .	24 <i>1.8</i>	
Hypospadias*	283 <i>78.0</i>	161 <i>57.8</i>	9 <i>25.3</i>	<5 .	<5 .	459 <i>66.0</i>	
Microcephalus	56 <i>7.9</i>	88 <i>16.1</i>	5 <i>7.2</i>	<5 .	0 <i>0.0</i>	151 <i>11.1</i>	
Obstructive genitourinary defect	202 <i>28.5</i>	123 <i>22.5</i>	16 <i>22.9</i>	<5 .	<5 .	348 <i>25.6</i>	
Omphalocele	9 <i>1.3</i>	15 <i>2.7</i>	<5 .	0 <i>0.0</i>	<5 .	26 <i>1.9</i>	

**Louisiana****Birth Defects Counts and Prevalence 2006-2008 (Prevalence per 10,000 Live Births)**

Defect	Maternal Race/Ethnicity					Total**	Notes
	Non-Hispanic White	Non-Hispanic Black or African	Hispanic	Asian or Pacific Islander	American Indian or Alaska Native		
Patent ductus arteriosus	293 <i>41.3</i>	175 <i>32.0</i>	18 <i>25.8</i>	8 <i>31.7</i>	<5 .	495 <i>36.3</i>	2
Pulmonary valve atresia and stenosis	60 <i>8.5</i>	46 <i>8.4</i>	<5 .	<5 .	0 <i>0.0</i>	112 <i>8.2</i>	
Pulmonary valve atresia	12 <i>1.7</i>	5 <i>0.9</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	17 <i>1.2</i>	
Pyloric stenosis	112 <i>15.8</i>	36 <i>6.6</i>	10 <i>14.3</i>	<5 .	<5 .	163 <i>12.0</i>	
Rectal and large intestinal atresia/stenosis	34 <i>4.8</i>	23 <i>4.2</i>	<5 .	<5 .	<5 .	62 <i>4.6</i>	
Reduction deformity, lower limbs	11 <i>1.6</i>	12 <i>2.2</i>	<5 .	0 <i>0.0</i>	0 <i>0.0</i>	24 <i>1.8</i>	
Reduction deformity, upper limbs	15 <i>2.1</i>	15 <i>2.7</i>	<5 .	0 <i>0.0</i>	0 <i>0.0</i>	32 <i>2.3</i>	
Renal agenesis/hypoplasia	38 <i>5.4</i>	28 <i>5.1</i>	<5 .	0 <i>0.0</i>	0 <i>0.0</i>	67 <i>4.9</i>	
Spina bifida without anencephalus	26 <i>3.7</i>	11 <i>2.0</i>	<5 .	<5 .	0 <i>0.0</i>	40 <i>2.9</i>	
Tetralogy of Fallot	31 <i>4.4</i>	21 <i>3.8</i>	<5 .	0 <i>0.0</i>	0 <i>0.0</i>	54 <i>4.0</i>	
Transposition of great arteries - All	32 <i>4.5</i>	15 <i>2.7</i>	<5 .	<5 .	<5 .	50 <i>3.7</i>	
dextro-Transposition of great arteries (d-TGA)	29 <i>4.1</i>	14 <i>2.6</i>	<5 .	<5 .	<5 .	46 <i>3.4</i>	
Tricuspid valve atresia and stenosis	<5 .	8 <i>1.5</i>	<5 .	<5 .	0 <i>0.0</i>	13 <i>1.0</i>	
Tricuspid valve atresia	<5 .	6 <i>1.1</i>	<5 .	<5 .	0 <i>0.0</i>	11 <i>0.8</i>	
Trisomy 13	<5 .	<5 .	<5 .	0 <i>0.0</i>	0 <i>0.0</i>	9 <i>0.7</i>	
Trisomy 18	15 <i>2.1</i>	5 <i>0.9</i>	<5 .	<5 .	0 <i>0.0</i>	24 <i>1.8</i>	
Ventricular septal defect	438 <i>61.8</i>	241 <i>44.0</i>	30 <i>42.9</i>	11 <i>43.6</i>	<5 .	724 <i>53.2</i>	
<b>Total Live Births</b>	<b>70886</b>	<b>54755</b>	<b>6989</b>	<b>2525</b>	<b>588</b>	<b>136201</b>	
<b>Total Male Live Births</b>	<b>36271</b>	<b>27854</b>	<b>3563</b>	<b>1299</b>	<b>284</b>	<b>69506</b>	

\*Hypospadias: prevalence per 10,000 male live births

\*\*Total includes unknown race

**Louisiana**  
**Trisomy Counts and Prevalence by Maternal Age 2006-2008 (Prevalence per 10,000 Live Births)**

Defect	Maternal Age (years)		Total	Notes
	Less than 35 years old	35 years old or older		
Down syndrome (Trisomy 21)	99 <b>8.0</b>	79 <b>61.1</b>	178 <b>13.1</b>	
Trisomy 13	7 <b>0.6</b>	<5 .	9 <b>0.7</b>	
Trisomy 18	16 <b>1.3</b>	8 <b>6.2</b>	24 <b>1.8</b>	
<b>Total Live Births</b>	<b>123257</b>	<b>12932</b>	<b>136201</b>	

\*\*Total includes unknown maternal age

**Notes**

1. Aniridia only reported for 2008
2. Includes only if weight  $\geq$  2500 grams or gestational age  $\geq$  36 wks, however, unable to define if defect lasted at  $\geq$  6 wks of age

**General comments**

- 2006 birth defects data include only live births to Louisiana residents at birth that occurred in Greater New Orleans, Baton Rouge, Lake Charles and Shreveport areas.
- 2007 birth defects data include only live births to Louisiana residents at birth that occurred in Greater New Orleans, Baton Rouge, Lafayette, Lake Charles, Mandeville, and Shreveport areas
- 2008 birth defects data are provisional and include only live births to Louisiana residents that occurred in Greater New Orleans, Baton Rouge, Lafayette, Lake Charles, Mandeville, and Shreveport
- 2009 birth defects data are not provided because most of records have not been reviewed
- 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 stillbirths yet

**Maine****Birth Defects Counts and Prevalence 2006-2010 (Prevalence per 10,000 Live Births)**

Defect	Maternal Race/Ethnicity					Total**	Notes
	White Non-Hispanic	Black Non-Hispanic	Hispanic	Asian or Pacific Islander Non-Hispanic	American Indian or Alaska Native Non-Hispanic		
Anencephalus	8 <i>1.3</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	9 <i>1.4</i>	
Cleft lip with and without cleft palate	49 <i>7.9</i>	0 <i>0.0</i>	0 <i>0.0</i>	1 <i>9.0</i>	1 <i>17.8</i>	53 <i>8.0</i>	
Cleft palate without cleft lip	44 <i>7.1</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	44 <i>6.6</i>	
Coarctation of aorta	30 <i>4.8</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	30 <i>4.5</i>	
Common truncus	7 <i>1.1</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	7 <i>1.1</i>	
Down syndrome (Trisomy 21)	71 <i>11.5</i>	1 <i>5.8</i>	3 <i>29.3</i>	0 <i>0.0</i>	1 <i>17.8</i>	81 <i>12.2</i>	
Encephalocele	2 <i>0.3</i>	0 <i>0.0</i>	1 <i>9.8</i>	0 <i>0.0</i>	0 <i>0.0</i>	3 <i>0.5</i>	
Gastroschisis	39 <i>6.3</i>	0 <i>0.0</i>	0 <i>0.0</i>	2 <i>18.1</i>	0 <i>0.0</i>	41 <i>6.2</i>	1
Hypoplastic left heart syndrome	18 <i>2.9</i>	0 <i>0.0</i>	1 <i>9.8</i>	0 <i>0.0</i>	0 <i>0.0</i>	21 <i>3.2</i>	
Hypospadias*	116 <i>62.6</i>	5 <i>36.1</i>	2 <i>64.3</i>	1 <i>30.6</i>	1 <i>54.3</i>	125 <i>62.5</i>	2
Omphalocele	15 <i>2.4</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	15 <i>2.3</i>	3
Pulmonary valve atresia	8 <i>0.6</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	8 <i>0.6</i>	
Reduction deformity, lower limbs	2 <i>0.6</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	2 <i>0.5</i>	2
Reduction deformity, upper limbs	2 <i>0.6</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	1 <i>28.3</i>	3 <i>0.8</i>	2
Spina bifida without anencephalus	22 <i>3.5</i>	1 <i>5.8</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	23 <i>3.5</i>	
Tetralogy of Fallot	22 <i>3.5</i>	0 <i>0.0</i>	1 <i>9.8</i>	0 <i>0.0</i>	0 <i>0.0</i>	23 <i>3.5</i>	4
Transposition of great arteries - All	30 <i>4.8</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	1 <i>17.8</i>	32 <i>4.8</i>	
dextro-Transposition of great arteries (d-TGA)	20 <i>3.2</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	21 <i>3.2</i>	
Tricuspid valve atresia and stenosis	5 <i>0.8</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	5 <i>0.8</i>	
Total Live Births	61985	1724	1024	1108	561	66605	
<b>Total Male Live Births (2008-2010)</b>	<b>18523</b>	<b>581</b>	<b>311</b>	<b>327</b>	<b>184</b>	<b>19995</b>	

\*Hypospadias: prevalence per 10,000 male live births

\*\*Total includes unknown race

**Maine**  
**Trisomy Counts and Prevalence by Maternal Age 2006-2010 (Prevalence per 10,000 Live Births)**

Defect	Maternal Age (years)		Total	Notes
	Less than 35	35+		
Down syndrome (Trisomy 21)	49	32	81	
	8.5	34.8	12.2	
<b>Total Live Births</b>	<b>57422</b>	<b>9183</b>	<b>66605</b>	

\*\*Total includes unknown maternal age

**Notes**

1. Gastroschisis is coded 756.73. Cases are also abstracted to determine diagnosis
2. Surveillance for this condition began with 2008 births
3. Omphalocele is coded 756.72. Cases are also abstracted to determine diagnosis
4. 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.

**Maryland**  
**Birth Defects Counts and Prevalence 2006-2010 (Prevalence per 10,000 Live Births)**

Defect	Maternal Race/Ethnicity					Total**	Notes
	Non-Hispanic White	Non-Hispanic Black or African	Hispanic	Asian or Pacific Islander	American Indian or Alaska Native		
Amniotic bands	2 <i>0.3</i>	2 <i>0.4</i>	1 <i>0.5</i>	0 <i>0.0</i>	0 <i>0.0</i>	5 <i>0.3</i>	
Anencephalus	59 <i>3.4</i>	21 <i>1.6</i>	9 <i>1.8</i>	2 <i>0.8</i>	0 <i>0.0</i>	100 <i>2.6</i>	
Anophthalmia/micropthalmia	2 <i>0.1</i>	7 <i>0.5</i>	1 <i>0.2</i>	0 <i>0.0</i>	0 <i>0.0</i>	10 <i>0.3</i>	
Anotia/microtia	9 <i>0.5</i>	4 <i>0.3</i>	7 <i>1.4</i>	2 <i>0.8</i>	0 <i>0.0</i>	22 <i>0.6</i>	
Aortic valve stenosis	3 <i>0.3</i>	0 <i>0.0</i>	1 <i>0.3</i>	0 <i>0.0</i>	0 <i>0.0</i>	4 <i>0.2</i>	
Atrial septal defect	27 <i>1.5</i>	26 <i>2.0</i>	8 <i>1.6</i>	1 <i>0.4</i>	0 <i>0.0</i>	62 <i>1.6</i>	
Atrioventricular septal defect (endocardial cushion defect)	21 <i>1.5</i>	18 <i>1.7</i>	3 <i>0.7</i>	0 <i>0.0</i>	0 <i>0.0</i>	42 <i>1.4</i>	
Biliary atresia	0 <i>0.0</i>	2 <i>0.4</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	2 <i>0.1</i>	
Bladder exstrophy	10 <i>0.6</i>	1 <i>0.1</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	12 <i>0.3</i>	
Choanal atresia	1 <i>0.1</i>	2 <i>0.2</i>	4 <i>0.8</i>	0 <i>0.0</i>	0 <i>0.0</i>	7 <i>0.2</i>	
Cleft lip with and without cleft palate	160 <i>9.1</i>	57 <i>4.5</i>	51 <i>10.0</i>	14 <i>5.4</i>	0 <i>0.0</i>	286 <i>7.5</i>	
Cleft palate without cleft lip	83 <i>4.7</i>	25 <i>2.0</i>	9 <i>1.8</i>	3 <i>1.2</i>	0 <i>0.0</i>	123 <i>3.2</i>	
Coarctation of aorta	12 <i>0.8</i>	6 <i>0.6</i>	0 <i>0.0</i>	2 <i>1.0</i>	0 <i>0.0</i>	20 <i>0.6</i>	
Common truncus	1 <i>0.1</i>	1 <i>0.2</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	2 <i>0.1</i>	
Congenital cataract	3 <i>0.3</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	3 <i>0.1</i>	
Congenital hip dislocation	31 <i>1.8</i>	5 <i>0.4</i>	7 <i>1.4</i>	1 <i>0.4</i>	0 <i>0.0</i>	45 <i>1.2</i>	
Diaphragmatic hernia	28 <i>1.6</i>	14 <i>1.1</i>	6 <i>1.2</i>	2 <i>0.8</i>	0 <i>0.0</i>	50 <i>1.3</i>	
Down syndrome (Trisomy 21)	199 <i>11.3</i>	112 <i>8.8</i>	45 <i>8.8</i>	26 <i>10.0</i>	1 <i>12.3</i>	401 <i>10.5</i>	
Ebstein anomaly	7 <i>0.5</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	7 <i>0.2</i>	
Encephalocele	10 <i>0.6</i>	5 <i>0.4</i>	1 <i>0.2</i>	0 <i>0.0</i>	0 <i>0.0</i>	17 <i>0.4</i>	
Epispadias	5 <i>0.4</i>	1 <i>0.1</i>	2 <i>0.5</i>	1 <i>0.5</i>	0 <i>0.0</i>	9 <i>0.3</i>	
Esophageal atresia/tracheoesophageal fistula	31 <i>1.8</i>	20 <i>1.6</i>	7 <i>1.4</i>	1 <i>0.4</i>	0 <i>0.0</i>	61 <i>1.6</i>	
Gastroschisis	96 <i>5.5</i>	64 <i>5.0</i>	22 <i>4.3</i>	7 <i>2.7</i>	0 <i>0.0</i>	196 <i>5.1</i>	1
Hirschsprung disease (congenital megacolon)	4 <i>0.4</i>	3 <i>0.4</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	7 <i>0.3</i>	
Hydrocephalus without spina bifida	70 <i>4.0</i>	46 <i>3.6</i>	11 <i>2.2</i>	5 <i>1.9</i>	0 <i>0.0</i>	135 <i>3.5</i>	
Hypoplastic left heart syndrome	20 <i>1.4</i>	8 <i>0.8</i>	0 <i>0.0</i>	4 <i>1.9</i>	0 <i>0.0</i>	33 <i>1.1</i>	
Hypospadias*	440 <i>48.6</i>	246 <i>38.1</i>	51 <i>19.6</i>	29 <i>21.5</i>	0 <i>.</i>	781 <i>40.1</i>	
Microcephalus	5 <i>0.3</i>	8 <i>0.6</i>	6 <i>1.2</i>	1 <i>0.4</i>	0 <i>0.0</i>	20 <i>0.5</i>	
Obstructive genitourinary defect	12 <i>0.9</i>	4 <i>0.4</i>	0 <i>0.0</i>	1 <i>0.5</i>	0 <i>0.0</i>	17 <i>0.6</i>	
Patent ductus arteriosus	17 <i>1.0</i>	16 <i>1.3</i>	4 <i>0.8</i>	1 <i>0.4</i>	0 <i>0.0</i>	38 <i>1.0</i>	
Pulmonary valve atresia and stenosis	5 <i>0.5</i>	5 <i>0.6</i>	0 <i>0.0</i>	2 <i>1.3</i>	0 <i>0.0</i>	12 <i>0.5</i>	
Pulmonary valve atresia	3 <i>0.4</i>	1 <i>0.2</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	4 <i>0.3</i>	

**Maryland**  
**Birth Defects Counts and Prevalence 2006-2010 (Prevalence per 10,000 Live Births)**

Defect	Maternal Race/Ethnicity					Total**	Notes
	Non-Hispanic White	Non-Hispanic Black or African	Hispanic	Asian or Pacific Islander	American Indian or Alaska Native		
Pyloric stenosis	1 <i>0.3</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	1 <i>0.1</i>	
Rectal and large intestinal atresia/stenosis	29 <i>1.6</i>	23 <i>1.8</i>	4 <i>0.8</i>	3 <i>1.2</i>	0 <i>0.0</i>	59 <i>1.5</i>	
Reduction deformity, lower limbs	32 <i>1.8</i>	27 <i>2.1</i>	5 <i>1.0</i>	1 <i>0.4</i>	0 <i>0.0</i>	67 <i>1.8</i>	
Reduction deformity, upper limbs	36 <i>2.0</i>	33 <i>2.6</i>	14 <i>2.7</i>	3 <i>1.2</i>	0 <i>0.0</i>	88 <i>2.3</i>	
Renal agenesis/hypoplasia	49 <i>2.8</i>	35 <i>2.7</i>	4 <i>0.8</i>	6 <i>2.3</i>	0 <i>0.0</i>	98 <i>2.6</i>	
Spina bifida without anencephalus	64 <i>3.6</i>	25 <i>2.0</i>	13 <i>2.6</i>	5 <i>1.9</i>	0 <i>0.0</i>	109 <i>2.9</i>	
Tetralogy of Fallot	21 <i>1.2</i>	19 <i>1.5</i>	1 <i>0.2</i>	5 <i>1.9</i>	0 <i>0.0</i>	46 <i>1.2</i>	
Transposition of great arteries - All	17 <i>1.0</i>	14 <i>1.1</i>	6 <i>1.2</i>	5 <i>1.9</i>	0 <i>0.0</i>	43 <i>1.1</i>	
dextro-Transposition of great arteries (d-TGA)	7 <i>0.5</i>	5 <i>0.5</i>	4 <i>1.0</i>	1 <i>0.5</i>	0 <i>0.0</i>	18 <i>0.6</i>	
Tricuspid valve atresia and stenosis	3 <i>0.4</i>	1 <i>0.2</i>	0 <i>0.0</i>	1 <i>1.0</i>	0 <i>0.0</i>	5 <i>0.3</i>	
Tricuspid valve atresia	3 <i>0.4</i>	1 <i>0.2</i>	0 <i>0.0</i>	1 <i>1.0</i>	0 <i>0.0</i>	5 <i>0.3</i>	
Trisomy 13	21 <i>1.2</i>	13 <i>1.0</i>	3 <i>0.6</i>	2 <i>0.8</i>	0 <i>0.0</i>	40 <i>1.0</i>	
Trisomy 18	59 <i>3.4</i>	21 <i>1.6</i>	15 <i>2.9</i>	6 <i>2.3</i>	0 <i>0.0</i>	108 <i>2.8</i>	
Ventricular septal defect	36 <i>2.5</i>	29 <i>2.8</i>	6 <i>1.4</i>	5 <i>2.5</i>	0 <i>0.0</i>	76 <i>2.5</i>	
<b>Total Live Births</b>	<b>176074</b>	<b>127596</b>	<b>50963</b>	<b>25957</b>	<b>815</b>	<b>381537</b>	
<b>Total Male Live Births</b>	<b>90449</b>	<b>64557</b>	<b>26052</b>	<b>13464</b>	<b>.</b>	<b>194978</b>	

\*Hypospadias: prevalence per 10,000 male live births

\*\*Total includes unknown race

**Maryland**  
**Trisomy Counts and Prevalence by Maternal Age 2006-2010 (Prevalence per 10,000 Live Births)**

Defect	Age		Total**	Notes
	Less than 35	35 and greater		
Down syndrome (Trisomy 21)	190 <i>6.1</i>	209 <i>29.9</i>	401 <i>10.5</i>	
Trisomy 13	21 <i>0.7</i>	19 <i>2.7</i>	40 <i>1.0</i>	
Trisomy 18	48 <i>1.5</i>	59 <i>8.4</i>	108 <i>2.8</i>	
<b>Total Live Births</b>	<b>311496</b>	<b>70003</b>	<b>381537</b>	

\*\*Total includes unknown maternal age

**Notes**

1. The data reported for gastroschisis is from ICD9 code 756.79 (Abdominal Wall Defect).

**General comments**

-Age cutoff for stillbirths and terminations is 20 weeks.

-All data is based on hospital reporting through a passive collection system. Data obtained from Vital Statistics does not provide specific diagnosis for validation.

-Data for CCHD 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.

-Male births for American Indian or Alaska Native not available separate from total.

-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. For 2009 and 2010 the racial categories added up to more than the total number of births so 'Others/Unknowns' could be identified. For 2006 through 2008 we categorized the difference as 'Other/Unknown'.

-The total number of births data was received from Vital Statistics. HISPANIC category includes all births to mothers of Hispanic origin of any race.

-Total male live births indicates total live male births in the state of Maryland which includes races categorized as 'other' or American Indian or Alaska Native.



**Massachusetts**  
**Birth Defects Counts and Prevalence 2006-2010 (Prevalence per 10,000 Live Births)**

Defect	Maternal Race/Ethnicity					Total**	Notes
	White Non-Hispanic	Black Non-Hispanic	Hispanic	Asian or Pacific Islander Non-Hispanic	American Indian or Alaska Native Non-Hispanic		
Amniotic bands	22 <i>0.9</i>	7 <i>2.1</i>	8 <i>1.5</i>	0 <i>0.0</i>	0 <i>0.0</i>	37 <i>1.0</i>	
Anencephalus	11 <i>0.4</i>	2 <i>0.6</i>	4 <i>0.7</i>	2 <i>0.7</i>	0 <i>0.0</i>	21 <i>0.6</i>	
Aniridia	2 <i>0.1</i>	0 <i>0.0</i>	1 <i>0.2</i>	1 <i>0.3</i>	0 <i>0.0</i>	4 <i>0.1</i>	
Anophthalmia/microphthalmia	25 <i>1.0</i>	11 <i>3.3</i>	12 <i>2.2</i>	2 <i>0.7</i>	0 <i>0.0</i>	50 <i>1.3</i>	
Anotia/microtia	41 <i>1.6</i>	3 <i>0.9</i>	14 <i>2.6</i>	10 <i>3.5</i>	0 <i>0.0</i>	69 <i>1.8</i>	
Aortic valve stenosis	45 <i>1.8</i>	7 <i>2.1</i>	7 <i>1.3</i>	1 <i>0.3</i>	0 <i>0.0</i>	61 <i>1.6</i>	
Atrial septal defect	499 <i>19.5</i>	80 <i>24.0</i>	98 <i>18.1</i>	52 <i>18.0</i>	3 <i>38.4</i>	749 <i>19.7</i>	
Atrioventricular septal defect (endocardial cushion defect)	132 <i>5.2</i>	23 <i>6.9</i>	16 <i>3.0</i>	6 <i>2.1</i>	0 <i>0.0</i>	183 <i>4.8</i>	
Biliary atresia	12 <i>0.5</i>	1 <i>0.3</i>	4 <i>0.7</i>	5 <i>1.7</i>	1 <i>12.8</i>	23 <i>0.6</i>	
Bladder exstrophy	4 <i>0.2</i>	0 <i>0.0</i>	1 <i>0.2</i>	0 <i>0.0</i>	0 <i>0.0</i>	5 <i>0.1</i>	1
Choanal atresia	23 <i>0.9</i>	1 <i>0.3</i>	5 <i>0.9</i>	0 <i>0.0</i>	0 <i>0.0</i>	30 <i>0.8</i>	
Cleft lip with and without cleft palate	215 <i>8.4</i>	19 <i>5.7</i>	39 <i>7.2</i>	25 <i>8.6</i>	0 <i>0.0</i>	303 <i>8.0</i>	
Cleft palate without cleft lip	153 <i>6.0</i>	6 <i>1.8</i>	30 <i>5.6</i>	7 <i>2.4</i>	0 <i>0.0</i>	202 <i>5.3</i>	
Coarctation of aorta	118 <i>4.6</i>	11 <i>3.3</i>	21 <i>3.9</i>	5 <i>1.7</i>	1 <i>12.8</i>	160 <i>4.2</i>	
Common truncus	13 <i>0.5</i>	1 <i>0.3</i>	2 <i>0.4</i>	0 <i>0.0</i>	1 <i>12.8</i>	17 <i>0.4</i>	
Congenital cataract	61 <i>2.4</i>	13 <i>3.9</i>	18 <i>3.3</i>	2 <i>0.7</i>	0 <i>0.0</i>	96 <i>2.5</i>	
Diaphragmatic hernia	67 <i>2.6</i>	9 <i>2.7</i>	10 <i>1.9</i>	5 <i>1.7</i>	1 <i>12.8</i>	100 <i>2.6</i>	
Down syndrome (Trisomy 21)	315 <i>12.3</i>	53 <i>15.9</i>	75 <i>13.9</i>	28 <i>9.7</i>	3 <i>38.4</i>	486 <i>12.8</i>	
Ebstein anomaly	11 <i>0.4</i>	1 <i>0.3</i>	3 <i>0.6</i>	0 <i>0.0</i>	0 <i>0.0</i>	15 <i>0.4</i>	
Encephalocele	4 <i>0.2</i>	0 <i>0.0</i>	3 <i>0.6</i>	0 <i>0.0</i>	0 <i>0.0</i>	8 <i>0.2</i>	
Esophageal atresia/tracheoesophageal fistula	67 <i>2.6</i>	6 <i>1.8</i>	11 <i>2.0</i>	2 <i>0.7</i>	1 <i>12.8</i>	88 <i>2.3</i>	
Gastroschisis	70 <i>2.7</i>	16 <i>4.8</i>	33 <i>6.1</i>	5 <i>1.7</i>	0 <i>0.0</i>	132 <i>3.5</i>	
Hirschsprung disease (congenital megacolon)	48 <i>1.9</i>	3 <i>0.9</i>	13 <i>2.4</i>	9 <i>3.1</i>	1 <i>12.8</i>	76 <i>2.0</i>	
Hydrocephalus without spina bifida	66 <i>2.6</i>	24 <i>7.2</i>	24 <i>4.4</i>	3 <i>1.0</i>	0 <i>0.0</i>	122 <i>3.2</i>	
Hypoplastic left heart syndrome	42 <i>1.6</i>	5 <i>1.5</i>	9 <i>1.7</i>	1 <i>0.3</i>	0 <i>0.0</i>	59 <i>1.6</i>	
Hypospadias*	367 <i>28.0</i>	51 <i>29.9</i>	38 <i>13.7</i>	23 <i>15.4</i>	1 <i>25.4</i>	490 <i>25.1</i>	2
Microcephalus	42 <i>1.6</i>	9 <i>2.7</i>	12 <i>2.2</i>	2 <i>0.7</i>	1 <i>12.8</i>	66 <i>1.7</i>	3
Obstructive genitourinary defect	383 <i>15.0</i>	48 <i>14.4</i>	102 <i>18.9</i>	43 <i>14.9</i>	0 <i>0.0</i>	590 <i>15.5</i>	
Omphalocele	28 <i>1.1</i>	9 <i>2.7</i>	8 <i>1.5</i>	1 <i>0.3</i>	0 <i>0.0</i>	47 <i>1.2</i>	
Patent ductus arteriosus	333 <i>13.0</i>	49 <i>14.7</i>	70 <i>13.0</i>	34 <i>11.7</i>	2 <i>25.6</i>	502 <i>13.2</i>	4
Pulmonary valve atresia and stenosis	170 <i>6.7</i>	37 <i>11.1</i>	44 <i>8.1</i>	17 <i>5.9</i>	0 <i>0.0</i>	275 <i>7.2</i>	
Pulmonary valve atresia	14 <i>0.5</i>	2 <i>0.6</i>	4 <i>0.7</i>	1 <i>0.3</i>	0 <i>0.0</i>	22 <i>0.6</i>	

**Massachusetts**  
**Birth Defects Counts and Prevalence 2006-2010 (Prevalence per 10,000 Live Births)**

Defect	Maternal Race/Ethnicity					Total**	Notes
	White Non-Hispanic	Black Non-Hispanic	Hispanic	Asian or Pacific Islander Non-Hispanic	American Indian or Alaska Native Non-Hispanic		
Rectal and large intestinal atresia/stenosis	83 3.2	9 2.7	20 3.7	9 3.1	1 12.8	127 3.3	
Reduction deformity, lower limbs	29 1.1	5 1.5	16 3.0	2 0.7	0 0.0	53 1.4	
Reduction deformity, upper limbs	73 2.9	5 1.5	25 4.6	5 1.7	0 0.0	110 2.9	
Renal agenesis/hypoplasia	6 0.2	5 1.5	2 0.4	0 0.0	0 0.0	14 0.4	5
Spina bifida without anencephalus	49 1.9	7 2.1	14 2.6	3 1.0	0 0.0	77 2.0	
Tetralogy of Fallot	95 3.7	20 6.0	29 5.4	16 5.5	0 0.0	166 4.4	
Total anomalous pulmonary venous return (TAPVR)	20 0.8	2 0.6	5 0.9	7 2.4	0 0.0	34 0.9	
Transposition of great arteries - All	88 3.4	9 2.7	13 2.4	4 1.4	1 12.8	119 3.1	
dextro-Transposition of great arteries (d-TGA)	76 3.0	7 2.1	13 2.4	4 1.4	1 12.8	105 2.8	
Tricuspid valve atresia and stenosis	19 0.7	3 0.9	2 0.4	1 0.3	0 0.0	26 0.7	
Tricuspid valve atresia	18 0.7	2 0.6	2 0.4	1 0.3	0 0.0	24 0.6	
Trisomy 13	18 0.7	3 0.9	5 0.9	0 0.0	0 0.0	26 0.7	
Trisomy 18	29 1.1	11 3.3	15 2.8	4 1.4	0 0.0	62 1.6	
Ventricular septal defect	491 19.2	69 20.7	113 20.9	60 20.7	0 0.0	754 19.8	6
<b>Total Live Births</b>	<b>255599</b>	<b>33308</b>	<b>54035</b>	<b>28942</b>	<b>781</b>	<b>380407</b>	
<b>Total Male Live Births</b>	<b>130909</b>	<b>17075</b>	<b>27669</b>	<b>14951</b>	<b>393</b>	<b>194980</b>	

\*Hypospadias: prevalence per 10,000 male live births

\*\*Total includes unknown race

**Massachusetts**  
**Trisomy Counts and Prevalence by Maternal Age 2006-2010 (Prevalence per 10,000 Live Births)**

Defect	Maternal Age (years)		Total	Notes
	Less than 35	35+		
Down syndrome (Trisomy 21)	218 <i>7.4</i>	268 <i>30.9</i>	486 <i>12.8</i>	
Trisomy 13	13 <i>0.4</i>	13 <i>1.5</i>	26 <i>0.7</i>	
Trisomy 18	32 <i>1.1</i>	30 <i>3.5</i>	62 <i>1.6</i>	
<b>Total Live Births</b>	<b>293581</b>	<b>86826</b>	<b>380407</b>	

\*\*Total includes unknown maternal age

**Notes**

- 1.Excludes isolated diagnosis without surgical intervention and secondary diagnosis without postnatal confirmation.
- 2.Excludes 1st degree and not otherwise specified.
3. Defined as head circumference 2 standard deviations below normal.
4. Weight <=2500 gms is excluded. We have fairly stringent criteria for coding Patent Ductus Arteriosus.
- 5.Excludes isolated unilateral renal agenesis/hypoplasia.
- 6.Excludes isolated muscular Ventricular Septal Defects.

**General comments**

- 2010 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.
- Pyloric stenosis, congenital hip dislocation, epispadias, and Fetus or newborn affected by maternal alcohol use are not collected.
- Source for race and Hispanic ethnicity is vital records.
- Stillbirths are included, terminations are not included.

## Michigan

### Birth Defects Counts and Prevalence 2006-2010 (Prevalence per 10,000 Live Births)

Defect	Maternal Race/Ethnicity					Total**	Notes
	White Non-Hispanic	Black Non-Hispanic	Hispanic	Asian or Pacific Islander Non-Hispanic	American Indian or Alaska Native Non-Hispanic		
Anencephalus	61 <i>1.4</i>	12 <i>1.1</i>	7 <i>1.6</i>	2 <i>0.9</i>	1 <i>3.5</i>	89 <i>1.5</i>	
Aniridia	11 <i>0.3</i>	2 <i>0.2</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	13 <i>0.2</i>	
Anophthalmia/microphthalmia	58 <i>1.4</i>	20 <i>1.8</i>	4 <i>0.9</i>	3 <i>1.4</i>	0 <i>0.0</i>	88 <i>1.5</i>	
Anotia/microtia	51 <i>1.2</i>	12 <i>1.1</i>	4 <i>0.9</i>	3 <i>1.4</i>	0 <i>0.0</i>	71 <i>1.2</i>	
Aortic valve stenosis	98 <i>2.3</i>	13 <i>1.2</i>	8 <i>1.8</i>	7 <i>3.3</i>	0 <i>0.0</i>	132 <i>2.2</i>	
Atrial septal defect	3606 <i>85.3</i>	1226 <i>111.9</i>	230 <i>52.0</i>	132 <i>62.0</i>	26 <i>91.3</i>	5329 <i>87.9</i>	
Atrioventricular septal defect (endocardial cushion defect)	242 <i>5.7</i>	59 <i>5.4</i>	13 <i>2.9</i>	10 <i>4.7</i>	0 <i>0.0</i>	336 <i>5.5</i>	
Biliary atresia	39 <i>0.9</i>	16 <i>1.5</i>	2 <i>0.5</i>	5 <i>2.3</i>	0 <i>0.0</i>	65 <i>1.1</i>	
Bladder exstrophy	12 <i>0.3</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	1 <i>3.5</i>	15 <i>0.2</i>	
Choanal atresia	68 <i>1.6</i>	18 <i>1.6</i>	1 <i>0.2</i>	2 <i>0.9</i>	0 <i>0.0</i>	92 <i>1.5</i>	
Cleft lip with and without cleft palate	493 <i>11.7</i>	63 <i>5.7</i>	26 <i>5.9</i>	20 <i>9.4</i>	2 <i>7.0</i>	625 <i>10.3</i>	
Cleft palate without cleft lip	291 <i>6.9</i>	40 <i>3.6</i>	14 <i>3.2</i>	11 <i>5.2</i>	3 <i>10.5</i>	367 <i>6.1</i>	
Coarctation of aorta	279 <i>6.6</i>	59 <i>5.4</i>	23 <i>5.2</i>	12 <i>5.6</i>	4 <i>14.0</i>	391 <i>6.4</i>	
Common truncus	52 <i>1.2</i>	25 <i>2.3</i>	2 <i>0.5</i>	3 <i>1.4</i>	0 <i>0.0</i>	86 <i>1.4</i>	1
Congenital cataract	89 <i>2.1</i>	15 <i>1.4</i>	3 <i>0.7</i>	3 <i>1.4</i>	2 <i>7.0</i>	117 <i>1.9</i>	
Congenital hip dislocation	543 <i>12.8</i>	60 <i>5.5</i>	22 <i>5.0</i>	22 <i>10.3</i>	2 <i>7.0</i>	664 <i>11.0</i>	
Diaphragmatic hernia	151 <i>3.6</i>	30 <i>2.7</i>	10 <i>2.3</i>	6 <i>2.8</i>	1 <i>3.5</i>	207 <i>3.4</i>	
Down syndrome (Trisomy 21)	578 <i>13.7</i>	136 <i>12.4</i>	39 <i>8.8</i>	31 <i>14.6</i>	3 <i>10.5</i>	821 <i>13.5</i>	
Ebstein anomaly	31 <i>0.7</i>	8 <i>0.7</i>	2 <i>0.5</i>	3 <i>1.4</i>	0 <i>0.0</i>	44 <i>0.7</i>	
Encephalocele	38 <i>0.9</i>	10 <i>0.9</i>	3 <i>0.7</i>	0 <i>0.0</i>	0 <i>0.0</i>	51 <i>0.8</i>	
Epispadias	31 <i>0.7</i>	10 <i>0.9</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	41 <i>0.7</i>	
Esophageal atresia/tracheoesophageal fistula	116 <i>2.7</i>	17 <i>1.6</i>	4 <i>0.9</i>	6 <i>2.8</i>	0 <i>0.0</i>	147 <i>2.4</i>	
Fetus or newborn affected by maternal alcohol use	30 <i>0.7</i>	17 <i>1.6</i>	0 <i>0.0</i>	1 <i>0.5</i>	0 <i>0.0</i>	49 <i>0.8</i>	
Gastroschisis	11 <i>1.4</i>	7 <i>3.3</i>	1 <i>1.2</i>	0 <i>0.0</i>	0 <i>0.0</i>	19 <i>1.7</i>	2
Hirschsprung disease (congenital megacolon)	115 <i>2.7</i>	46 <i>4.2</i>	4 <i>0.9</i>	4 <i>1.9</i>	1 <i>3.5</i>	174 <i>2.9</i>	
Hydrocephalus without spina bifida	368 <i>8.7</i>	129 <i>11.8</i>	18 <i>4.1</i>	17 <i>8.0</i>	6 <i>21.1</i>	563 <i>9.3</i>	
Hypoplastic left heart syndrome	159 <i>3.8</i>	57 <i>5.2</i>	7 <i>1.6</i>	8 <i>3.8</i>	1 <i>3.5</i>	238 <i>3.9</i>	1
Hypospadias*	1301 <i>60.1</i>	254 <i>45.5</i>	44 <i>19.4</i>	50 <i>45.3</i>	14 <i>97.4</i>	1700 <i>54.8</i>	
Microcephalus	375 <i>8.9</i>	127 <i>11.6</i>	28 <i>6.3</i>	20 <i>9.4</i>	2 <i>7.0</i>	573 <i>9.4</i>	
Obstructive genitourinary defect	919 <i>21.7</i>	157 <i>14.3</i>	59 <i>13.3</i>	34 <i>16.0</i>	6 <i>21.1</i>	1203 <i>19.8</i>	

## Michigan

### Birth Defects Counts and Prevalence 2006-2010 (Prevalence per 10,000 Live Births)

Defect	Maternal Race/Ethnicity					Total**	Notes
	White Non-Hispanic	Black Non-Hispanic	Hispanic	Asian or Pacific Islander Non-Hispanic	American Indian or Alaska Native Non-Hispanic		
Omphalocele	40 <i>5.1</i>	10 <i>4.7</i>	1 <i>1.2</i>	1 <i>2.0</i>	0 <i>0.0</i>	53 <i>4.6</i>	2
Patent ductus arteriosus	1193 <i>28.2</i>	451 <i>41.2</i>	98 <i>22.2</i>	44 <i>20.7</i>	11 <i>38.6</i>	1821 <i>30.0</i>	
Pulmonary valve atresia and stenosis	425 <i>10.0</i>	164 <i>15.0</i>	24 <i>5.4</i>	20 <i>9.4</i>	3 <i>10.5</i>	648 <i>10.7</i>	1
Pulmonary valve atresia	91 <i>2.2</i>	41 <i>3.7</i>	7 <i>1.6</i>	6 <i>2.8</i>	2 <i>7.0</i>	152 <i>2.5</i>	1
Pyloric stenosis	789 <i>18.7</i>	77 <i>7.0</i>	61 <i>13.8</i>	12 <i>5.6</i>	6 <i>21.1</i>	965 <i>15.9</i>	
Rectal and large intestinal atresia/stenosis	205 <i>4.8</i>	47 <i>4.3</i>	13 <i>2.9</i>	11 <i>5.2</i>	2 <i>7.0</i>	284 <i>4.7</i>	
Reduction deformity, lower limbs	75 <i>1.8</i>	24 <i>2.2</i>	6 <i>1.4</i>	2 <i>0.9</i>	2 <i>7.0</i>	115 <i>1.9</i>	
Reduction deformity, upper limbs	114 <i>2.7</i>	29 <i>2.6</i>	8 <i>1.8</i>	2 <i>0.9</i>	2 <i>7.0</i>	157 <i>2.6</i>	
Renal agenesis/hypoplasia	215 <i>5.1</i>	67 <i>6.1</i>	16 <i>3.6</i>	13 <i>6.1</i>	3 <i>10.5</i>	324 <i>5.3</i>	
Spina bifida without anencephalus	225 <i>5.3</i>	26 <i>2.4</i>	16 <i>3.6</i>	11 <i>5.2</i>	1 <i>3.5</i>	290 <i>4.8</i>	
Tetralogy of Fallot	235 <i>5.6</i>	71 <i>6.5</i>	12 <i>2.7</i>	10 <i>4.7</i>	1 <i>3.5</i>	342 <i>5.6</i>	1
Total anomalous pulmonary venous return (TAPVR)	42 <i>1.0</i>	20 <i>1.8</i>	5 <i>1.1</i>	5 <i>2.3</i>	2 <i>7.0</i>	76 <i>1.3</i>	1
Transposition of great arteries - All	243 <i>5.7</i>	54 <i>4.9</i>	8 <i>1.8</i>	14 <i>6.6</i>	5 <i>17.6</i>	334 <i>5.5</i>	1
dextro-Transposition of great arteries (d-TGA)	159 <i>3.8</i>	30 <i>2.7</i>	4 <i>0.9</i>	6 <i>2.8</i>	3 <i>10.5</i>	209 <i>3.4</i>	1
Tricuspid valve atresia and stenosis	58 <i>1.4</i>	18 <i>1.6</i>	2 <i>0.5</i>	2 <i>0.9</i>	1 <i>3.5</i>	82 <i>1.4</i>	1
Tricuspid valve atresia	58 <i>1.4</i>	18 <i>1.6</i>	2 <i>0.5</i>	2 <i>0.9</i>	1 <i>3.5</i>	82 <i>1.4</i>	1
Trisomy 13	37 <i>0.9</i>	12 <i>1.1</i>	3 <i>0.7</i>	2 <i>0.9</i>	0 <i>0.0</i>	57 <i>0.9</i>	
Trisomy 18	86 <i>2.0</i>	33 <i>3.0</i>	5 <i>1.1</i>	3 <i>1.4</i>	0 <i>0.0</i>	132 <i>2.2</i>	
Ventricular septal defect	1776 <i>42.0</i>	442 <i>40.3</i>	112 <i>25.3</i>	76 <i>35.7</i>	10 <i>35.1</i>	2479 <i>40.9</i>	
<b>Total Live Births</b>	<b>422945</b>	<b>109592</b>	<b>44243</b>	<b>21279</b>	<b>2848</b>	<b>606386</b>	
<b>Total Male Live Births</b>	<b>216599</b>	<b>55811</b>	<b>22695</b>	<b>11030</b>	<b>1437</b>	<b>310432</b>	

\*Hypospadias: prevalence per 10,000 male live births

\*\*Total includes unknown race

**Michigan****Trisomy Counts and Prevalence by Maternal Age 2006-2010 (Prevalence per 10,000 Live Births)**

Defect	Maternal Age (years)		Total**	Notes
	Less than 35	35+		
Down syndrome (Trisomy 21)	467 <i>8.9</i>	332 <i>41.7</i>	821 <i>13.5</i>	
Trisomy 13	44 <i>0.8</i>	10 <i>1.3</i>	57 <i>0.9</i>	
Trisomy 18	80 <i>1.5</i>	48 <i>6.0</i>	132 <i>2.2</i>	
<b>Total Live Births</b>	<b>526630</b>	<b>79711</b>	<b>606386</b>	

\*\*Total includes unknown maternal age

**Notes**

- 1.Live births only.
- 2.Not collected until 2010.

**Minnesota**  
**Birth Defects Counts and Prevalence 2006-2010 (Prevalence per 10,000 Live Births)**

Defect	Maternal Race/Ethnicity					Total**	Notes
	Non-Hispanic White	Non-Hispanic Black or African	Hispanic	Asian or Pacific Islander	American Indian or Alaska Native		
Anencephalus	2 <i>0.3</i>	1 <i>0.5</i>	4 <i>2.9</i>	4 <i>2.6</i>	1 <i>6.6</i>	12 <i>1.0</i>	
Aniridia	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	1 <i>0.7</i>	0 <i>0.0</i>	1 <i>0.1</i>	
Anophthalmia/microphthalmia	5 <i>0.8</i>	2 <i>0.9</i>	2 <i>1.4</i>	0 <i>0.0</i>	0 <i>0.0</i>	9 <i>0.8</i>	
Anotia/microtia	5 <i>0.8</i>	1 <i>0.5</i>	3 <i>2.1</i>	3 <i>2.0</i>	0 <i>0.0</i>	13 <i>1.1</i>	
Aortic valve stenosis	7 <i>1.1</i>	2 <i>0.9</i>	1 <i>0.7</i>	0 <i>0.0</i>	0 <i>0.0</i>	10 <i>0.8</i>	
Atrial septal defect	89 <i>14.1</i>	47 <i>21.2</i>	26 <i>18.6</i>	25 <i>16.5</i>	1 <i>6.6</i>	205 <i>17.1</i>	
Atrioventricular septal defect (endocardial cushion defect)	29 <i>4.6</i>	14 <i>6.3</i>	6 <i>4.3</i>	6 <i>4.0</i>	1 <i>6.6</i>	60 <i>5.0</i>	
Biliary atresia	5 <i>0.8</i>	0 <i>0.0</i>	0 <i>0.0</i>	1 <i>0.7</i>	0 <i>0.0</i>	7 <i>0.6</i>	
Bladder exstrophy	1 <i>0.2</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	1 <i>0.1</i>	
Choanal atresia	7 <i>1.1</i>	3 <i>1.4</i>	3 <i>2.1</i>	0 <i>0.0</i>	0 <i>0.0</i>	13 <i>1.1</i>	
Cleft lip with and without cleft palate	56 <i>8.9</i>	16 <i>7.2</i>	16 <i>11.5</i>	16 <i>10.5</i>	5 <i>33.2</i>	115 <i>9.6</i>	
Cleft palate without cleft lip	41 <i>6.5</i>	7 <i>3.2</i>	12 <i>8.6</i>	6 <i>4.0</i>	1 <i>6.6</i>	70 <i>5.8</i>	
Coarctation of aorta	32 <i>5.1</i>	11 <i>5.0</i>	5 <i>3.6</i>	6 <i>4.0</i>	1 <i>6.6</i>	62 <i>5.2</i>	
Common truncus	2 <i>0.3</i>	1 <i>0.5</i>	1 <i>0.7</i>	0 <i>0.0</i>	0 <i>0.0</i>	6 <i>0.5</i>	
Congenital cataract	7 <i>1.1</i>	1 <i>0.5</i>	1 <i>0.7</i>	1 <i>0.7</i>	0 <i>0.0</i>	11 <i>0.9</i>	
Congenital hip dislocation	26 <i>4.1</i>	12 <i>5.4</i>	11 <i>7.9</i>	1 <i>0.7</i>	1 <i>6.6</i>	52 <i>4.3</i>	
Diaphragmatic hernia	21 <i>3.3</i>	1 <i>0.5</i>	6 <i>4.3</i>	5 <i>3.3</i>	0 <i>0.0</i>	33 <i>2.8</i>	
Down syndrome (Trisomy 21)	89 <i>14.1</i>	45 <i>20.3</i>	25 <i>17.9</i>	15 <i>9.9</i>	3 <i>19.9</i>	183 <i>15.3</i>	
Ebstein anomaly	2 <i>0.3</i>	2 <i>0.9</i>	1 <i>0.7</i>	0 <i>0.0</i>	0 <i>0.0</i>	5 <i>0.4</i>	
Encephalocele	1 <i>0.2</i>	2 <i>0.9</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	3 <i>0.3</i>	
Epispadias	6 <i>1.0</i>	1 <i>0.5</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	7 <i>0.6</i>	
Esophageal atresia/tracheoesophageal fistula	19 <i>3.0</i>	5 <i>2.3</i>	3 <i>2.1</i>	2 <i>1.3</i>	0 <i>0.0</i>	30 <i>2.5</i>	
Gastroschisis	19 <i>3.0</i>	7 <i>3.2</i>	8 <i>5.7</i>	10 <i>6.6</i>	1 <i>6.6</i>	46 <i>3.8</i>	
Hirschsprung disease (congenital megacolon)	9 <i>1.4</i>	4 <i>1.8</i>	3 <i>2.1</i>	3 <i>2.0</i>	0 <i>0.0</i>	20 <i>1.7</i>	
Hydrocephalus without spina bifida	16 <i>2.5</i>	8 <i>3.6</i>	6 <i>4.3</i>	1 <i>0.7</i>	1 <i>6.6</i>	32 <i>2.7</i>	
Hypoplastic left heart syndrome	17 <i>2.7</i>	3 <i>1.4</i>	4 <i>2.9</i>	0 <i>0.0</i>	0 <i>0.0</i>	25 <i>2.1</i>	
Hypospadias*	196 <i>61.0</i>	63 <i>55.8</i>	18 <i>25.6</i>	12 <i>15.3</i>	2 <i>27.4</i>	304 <i>49.8</i>	
Microcephalus	13 <i>2.1</i>	21 <i>9.5</i>	14 <i>10.0</i>	11 <i>7.2</i>	0 <i>0.0</i>	61 <i>5.1</i>	
Obstructive genitourinary defect	133 <i>21.1</i>	45 <i>20.3</i>	37 <i>26.5</i>	26 <i>17.1</i>	1 <i>6.6</i>	254 <i>21.2</i>	
Omphalocele	8 <i>1.3</i>	5 <i>2.3</i>	3 <i>2.1</i>	0 <i>0.0</i>	0 <i>0.0</i>	18 <i>1.5</i>	
Patent ductus arteriosus	99 <i>15.7</i>	53 <i>23.9</i>	31 <i>22.2</i>	19 <i>12.5</i>	1 <i>6.6</i>	213 <i>17.8</i>	
Pulmonary valve atresia and stenosis	34 <i>5.4</i>	16 <i>7.2</i>	11 <i>7.9</i>	10 <i>6.6</i>	2 <i>13.3</i>	76 <i>6.3</i>	

**Minnesota**  
**Birth Defects Counts and Prevalence 2006-2010 (Prevalence per 10,000 Live Births)**

Defect	Maternal Race/Ethnicity					Total**	Notes
	Non-Hispanic White	Non-Hispanic Black or African	Hispanic	Asian or Pacific Islander	American Indian or Alaska Native		
Pulmonary valve atresia	5 <i>0.8</i>	4 <i>1.8</i>	1 <i>0.7</i>	2 <i>1.3</i>	1 <i>6.6</i>	13 <i>1.1</i>	
Pyloric stenosis	124 <i>19.7</i>	22 <i>9.9</i>	22 <i>15.8</i>	4 <i>2.6</i>	8 <i>53.2</i>	193 <i>16.1</i>	
Rectal and large intestinal atresia/stenosis	22 <i>3.5</i>	8 <i>3.6</i>	5 <i>3.6</i>	3 <i>2.0</i>	0 <i>0.0</i>	40 <i>3.3</i>	
Reduction deformity, lower limbs	4 <i>0.6</i>	5 <i>2.3</i>	1 <i>0.7</i>	0 <i>0.0</i>	1 <i>6.6</i>	11 <i>0.9</i>	
Reduction deformity, upper limbs	9 <i>1.4</i>	3 <i>1.4</i>	3 <i>2.1</i>	3 <i>2.0</i>	2 <i>13.3</i>	21 <i>1.8</i>	
Renal agenesis/hypoplasia	22 <i>3.5</i>	8 <i>3.6</i>	8 <i>5.7</i>	7 <i>4.6</i>	1 <i>6.6</i>	49 <i>4.1</i>	
Spina bifida without anencephalus	23 <i>3.7</i>	2 <i>0.9</i>	4 <i>2.9</i>	1 <i>0.7</i>	1 <i>6.6</i>	33 <i>2.8</i>	
Tetralogy of Fallot	30 <i>4.8</i>	8 <i>3.6</i>	2 <i>1.4</i>	9 <i>5.9</i>	0 <i>0.0</i>	51 <i>4.3</i>	
Transposition of great arteries - All	25 <i>4.0</i>	6 <i>2.7</i>	5 <i>3.6</i>	7 <i>4.6</i>	0 <i>0.0</i>	47 <i>3.9</i>	
dextro-Transposition of great arteries (d-TGA)	24 <i>3.8</i>	6 <i>2.7</i>	5 <i>3.6</i>	7 <i>4.6</i>	0 <i>0.0</i>	46 <i>3.8</i>	
Tricuspid valve atresia	4 <i>0.6</i>	3 <i>1.4</i>	0 <i>0.0</i>	1 <i>0.7</i>	0 <i>0.0</i>	8 <i>0.7</i>	1
Trisomy 13	2 <i>0.3</i>	5 <i>2.3</i>	4 <i>2.9</i>	0 <i>0.0</i>	0 <i>0.0</i>	11 <i>0.9</i>	
Trisomy 18	11 <i>1.7</i>	8 <i>3.6</i>	1 <i>0.7</i>	4 <i>2.6</i>	0 <i>0.0</i>	24 <i>2.0</i>	
Ventricular septal defect	188 <i>29.9</i>	85 <i>38.4</i>	63 <i>45.1</i>	33 <i>21.7</i>	6 <i>39.9</i>	395 <i>33.0</i>	
<b>Total Live Births</b>	<b>62934</b>	<b>22137</b>	<b>13956</b>	<b>15186</b>	<b>1505</b>	<b>119785</b>	
<b>Total Male Live Births</b>	<b>32109</b>	<b>11299</b>	<b>7040</b>	<b>7859</b>	<b>731</b>	<b>61082</b>	

\*Hypospadias: prevalence per 10,000 male live births

\*\*Total includes unknown race



**Minnesota****Trisomy Counts and Prevalence by Maternal Age 2006-2010 (Prevalence per 10,000 Live Births)**

Defect	Maternal Age (years)		Total	Notes
	Less than 35 years old	35 years old or older		
Down syndrome (Trisomy 21)	76 <i>7.7</i>	107 <i>49.6</i>	183 <i>15.3</i>	
Trisomy 13	6 <i>0.6</i>	5 <i>2.3</i>	11 <i>0.9</i>	
Trisomy 18	10 <i>1.0</i>	14 <i>6.5</i>	24 <i>2.0</i>	
<b>Total Live Births</b>	<b>98210</b>	<b>21564</b>	<b>119785</b>	

\*\*Total includes unknown maternal age

**Notes**

1.746.100 only included in Minnesota surveillance

**General comments**

- All data include confirmed cases only
- All data is for live births only. Stillbirths and Terminations are not included.
- Amniotic bands are not included in Minnesota surveillance
- Data are for Hennepin and Ramsey Counties only
- Minnesota uses BPA codes

**Mississippi**  
**Birth Defects Counts and Prevalence 2006-2010 (Prevalence per 10,000 Live Births)**

Defect	Maternal Race/Ethnicity					Total**	Notes
	Non-Hispanic White	Non-Hispanic Black or African	Hispanic	Asian or Pacific Islander	American Indian or Alaska Native		
Anencephalus	3 <i>0.3</i>	6 <i>0.6</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	9 <i>0.4</i>	
Aniridia	1 <i>0.1</i>	1 <i>0.1</i>	1 <i>1.3</i>	0 <i>0.0</i>	0 <i>0.0</i>	3 <i>0.1</i>	
Anophthalmia/microphthalmia	5 <i>0.5</i>	7 <i>0.7</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	12 <i>0.5</i>	
Anotia/microtia	14 <i>1.3</i>	12 <i>1.2</i>	2 <i>2.7</i>	1 <i>4.3</i>	1 <i>6.5</i>	31 <i>1.4</i>	
Aortic valve stenosis	17 <i>1.5</i>	9 <i>0.9</i>	1 <i>1.3</i>	0 <i>0.0</i>	0 <i>0.0</i>	28 <i>1.3</i>	
Atrial septal defect	735 <i>66.6</i>	885 <i>90.0</i>	25 <i>33.2</i>	14 <i>59.8</i>	34 <i>222.7</i>	1729 <i>78.5</i>	
Atrioventricular septal defect (endocardial cushion defect)	30 <i>2.7</i>	43 <i>4.4</i>	3 <i>4.0</i>	3 <i>12.8</i>	0 <i>0.0</i>	81 <i>3.7</i>	
Biliary atresia	5 <i>0.5</i>	7 <i>0.7</i>	1 <i>1.3</i>	0 <i>0.0</i>	0 <i>0.0</i>	14 <i>0.6</i>	
Bladder exstrophy	3 <i>0.3</i>	1 <i>0.1</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	4 <i>0.2</i>	
Choanal atresia	2 <i>0.2</i>	1 <i>0.1</i>	0 <i>0.0</i>	0 <i>0.0</i>	1 <i>6.5</i>	4 <i>0.2</i>	
Cleft lip with and without cleft palate	81 <i>7.3</i>	57 <i>5.8</i>	5 <i>6.6</i>	5 <i>21.4</i>	1 <i>6.5</i>	155 <i>7.0</i>	
Cleft palate without cleft lip	47 <i>4.3</i>	34 <i>3.5</i>	2 <i>2.7</i>	3 <i>12.8</i>	0 <i>0.0</i>	86 <i>3.9</i>	
Coarctation of aorta	38 <i>3.4</i>	19 <i>1.9</i>	3 <i>4.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	60 <i>2.7</i>	
Common truncus	6 <i>0.5</i>	5 <i>0.5</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	11 <i>0.5</i>	
Congenital cataract	3 <i>0.3</i>	6 <i>0.6</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	9 <i>0.4</i>	
Congenital hip dislocation	21 <i>1.9</i>	16 <i>1.6</i>	1 <i>1.3</i>	0 <i>0.0</i>	0 <i>0.0</i>	40 <i>1.8</i>	
Diaphragmatic hernia	21 <i>1.9</i>	24 <i>2.4</i>	4 <i>5.3</i>	0 <i>0.0</i>	0 <i>0.0</i>	51 <i>2.3</i>	
Down syndrome (Trisomy 21)	100 <i>9.1</i>	77 <i>7.8</i>	9 <i>12.0</i>	1 <i>4.3</i>	1 <i>6.5</i>	194 <i>8.8</i>	
Ebstein anomaly	8 <i>0.7</i>	6 <i>0.6</i>	1 <i>1.3</i>	0 <i>0.0</i>	0 <i>0.0</i>	15 <i>0.7</i>	
Encephalocele	5 <i>0.5</i>	3 <i>0.3</i>	1 <i>1.3</i>	0 <i>0.0</i>	0 <i>0.0</i>	9 <i>0.4</i>	
Epispadias	3 <i>0.3</i>	4 <i>0.4</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	7 <i>0.3</i>	
Esophageal atresia/tracheoesophageal fistula	35 <i>3.2</i>	13 <i>1.3</i>	0 <i>0.0</i>	0 <i>0.0</i>	2 <i>13.1</i>	50 <i>2.3</i>	
Fetus or newborn affected by maternal alcohol use	21 <i>1.9</i>	23 <i>2.3</i>	0 <i>0.0</i>	1 <i>4.3</i>	2 <i>13.1</i>	49 <i>2.2</i>	
Gastroschisis	33 <i>3.0</i>	29 <i>2.9</i>	0 <i>0.0</i>	1 <i>4.3</i>	0 <i>0.0</i>	64 <i>2.9</i>	1
Hirschsprung disease (congenital megacolon)	24 <i>2.2</i>	36 <i>3.7</i>	0 <i>0.0</i>	1 <i>4.3</i>	0 <i>0.0</i>	63 <i>2.9</i>	
Hydrocephalus without spina bifida	90 <i>8.2</i>	101 <i>10.3</i>	3 <i>4.0</i>	0 <i>0.0</i>	2 <i>13.1</i>	202 <i>9.2</i>	
Hypoplastic left heart syndrome	34 <i>3.1</i>	26 <i>2.6</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	60 <i>2.7</i>	
Hypospadias*	224 <i>39.6</i>	318 <i>63.5</i>	4 <i>10.5</i>	4 <i>33.2</i>	2 <i>25.9</i>	564 <i>50.1</i>	
Microcephalus	118 <i>10.7</i>	221 <i>22.5</i>	2 <i>2.7</i>	2 <i>8.5</i>	5 <i>32.7</i>	352 <i>16.0</i>	
Obstructive genitourinary defect	201 <i>18.2</i>	178 <i>18.1</i>	6 <i>8.0</i>	4 <i>17.1</i>	1 <i>6.5</i>	394 <i>17.9</i>	
Patent ductus arteriosus	229 <i>20.8</i>	249 <i>25.3</i>	18 <i>23.9</i>	5 <i>21.4</i>	13 <i>85.1</i>	521 <i>23.7</i>	2
Pulmonary valve atresia and stenosis	97 <i>8.8</i>	121 <i>12.3</i>	3 <i>4.0</i>	3 <i>12.8</i>	1 <i>6.5</i>	229 <i>10.4</i>	

**Mississippi**  
**Birth Defects Counts and Prevalence 2006-2010 (Prevalence per 10,000 Live Births)**

Defect	Maternal Race/Ethnicity					Total**	Notes
	Non-Hispanic White	Non-Hispanic Black or African	Hispanic	Asian or Pacific Islander	American Indian or Alaska Native		
Pyloric stenosis	187 <i>16.9</i>	69 <i>7.0</i>	5 <i>6.6</i>	2 <i>8.5</i>	1 <i>6.5</i>	269 <i>12.2</i>	
Rectal and large intestinal atresia/stenosis	24 <i>2.2</i>	34 <i>3.5</i>	3 <i>4.0</i>	3 <i>12.8</i>	1 <i>6.5</i>	68 <i>3.1</i>	
Reduction deformity, lower limbs	17 <i>1.5</i>	16 <i>1.6</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	33 <i>1.5</i>	
Reduction deformity, upper limbs	21 <i>1.9</i>	14 <i>1.4</i>	1 <i>1.3</i>	1 <i>4.3</i>	0 <i>0.0</i>	40 <i>1.8</i>	
Renal agenesis/hypoplasia	21 <i>1.9</i>	21 <i>2.1</i>	1 <i>1.3</i>	1 <i>4.3</i>	0 <i>0.0</i>	44 <i>2.0</i>	
Spina bifida without anencephalus	37 <i>3.4</i>	17 <i>1.7</i>	1 <i>1.3</i>	2 <i>8.5</i>	0 <i>0.0</i>	59 <i>2.7</i>	
Tetralogy of Fallot	66 <i>6.0</i>	58 <i>5.9</i>	2 <i>2.7</i>	2 <i>8.5</i>	1 <i>6.5</i>	130 <i>5.9</i>	
Transposition of great arteries - All	39 <i>3.5</i>	43 <i>4.4</i>	3 <i>4.0</i>	4 <i>17.1</i>	1 <i>6.5</i>	92 <i>4.2</i>	
Tricuspid valve atresia and stenosis	16 <i>1.5</i>	25 <i>2.5</i>	1 <i>1.3</i>	2 <i>8.5</i>	0 <i>0.0</i>	46 <i>2.1</i>	
Trisomy 13	6 <i>0.5</i>	9 <i>0.9</i>	0 <i>0.0</i>	1 <i>4.3</i>	0 <i>0.0</i>	16 <i>0.7</i>	
Trisomy 18	16 <i>1.5</i>	13 <i>1.3</i>	2 <i>2.7</i>	0 <i>0.0</i>	0 <i>0.0</i>	32 <i>1.5</i>	
Ventricular septal defect	424 <i>38.4</i>	393 <i>40.0</i>	26 <i>34.6</i>	6 <i>25.6</i>	12 <i>78.6</i>	884 <i>40.1</i>	3
<b>Total Live Births</b>	<b>110338</b>	<b>98344</b>	<b>7524</b>	<b>2340</b>	<b>1527</b>	<b>220198</b>	
<b>Total Male Live Births</b>	<b>56637</b>	<b>50069</b>	<b>3801</b>	<b>1204</b>	<b>773</b>	<b>112546</b>	

\*Hypospadias: prevalence per 10,000 male live births

\*\*Total includes unknown race

**Mississippi**  
**Trisomy Counts and Prevalence by Maternal Age 2006-2010 (Prevalence per 10,000 Live Births)**

Defect	Age		Total**	Notes
	Less than 35	35 and greater		
Down syndrome (Trisomy 21)	132 <i>6.5</i>	62 <i>37.5</i>	194 <i>8.8</i>	
Trisomy 13	15 <i>0.7</i>	1 <i>0.6</i>	16 <i>0.7</i>	
Trisomy 18	23 <i>1.1</i>	9 <i>5.4</i>	32 <i>1.5</i>	
<b>Total Live Births</b>	<b>203629</b>	<b>16552</b>	<b>220198</b>	

\*\*Total includes unknown maternal age

**Notes**

- 1.MSDH does not distinguish between gastrochisis and omphalocele. Both are counted as gastrochisis.
- 2.Only cases with =>2500 grams birth weight are included.
- 3.MSDH does not indicate probable causes.

**General comments**

-Mississippi uses the ICD-9 coding system.

## Nebraska

### Birth Defects Counts and Prevalence 2006-2010 (Prevalence per 10,000 Live Births)

Defect	Maternal Race/Ethnicity					Total**	Notes
	Non-Hispanic White	Non-Hispanic Black or African	Hispanic	Asian or Pacific Islander	American Indian or Alaska Native		
Amniotic bands	5 <i>0.5</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	5 <i>0.4</i>	
Anencephalus	29 <i>2.9</i>	2 <i>2.3</i>	9 <i>4.4</i>	0 <i>0.0</i>	0 <i>0.0</i>	40 <i>3.0</i>	
Aniridia	1 <i>0.1</i>	1 <i>1.1</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	2 <i>0.1</i>	
Anophthalmia/microphthalmia	7 <i>0.7</i>	0 <i>0.0</i>	1 <i>0.5</i>	1 <i>3.2</i>	0 <i>0.0</i>	11 <i>0.8</i>	
Anotia/microtia	15 <i>1.5</i>	1 <i>1.1</i>	14 <i>6.9</i>	1 <i>3.2</i>	0 <i>0.0</i>	31 <i>2.3</i>	
Aortic valve stenosis	26 <i>2.6</i>	1 <i>1.1</i>	2 <i>1.0</i>	0 <i>0.0</i>	1 <i>4.8</i>	30 <i>2.2</i>	
Atrial septal defect	275 <i>27.9</i>	25 <i>28.7</i>	50 <i>24.5</i>	6 <i>19.2</i>	4 <i>19.0</i>	368 <i>27.6</i>	
Atrioventricular septal defect (endocardial cushion defect)	16 <i>1.6</i>	1 <i>1.1</i>	1 <i>0.5</i>	1 <i>3.2</i>	0 <i>0.0</i>	19 <i>1.4</i>	
Biliary atresia	7 <i>0.7</i>	3 <i>3.4</i>	2 <i>1.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	12 <i>0.9</i>	
Bladder exstrophy	4 <i>0.4</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	4 <i>0.3</i>	
Choanal atresia	20 <i>2.0</i>	3 <i>3.4</i>	3 <i>1.5</i>	0 <i>0.0</i>	0 <i>0.0</i>	26 <i>1.9</i>	
Cleft lip with and without cleft palate	106 <i>10.7</i>	6 <i>6.9</i>	25 <i>12.3</i>	5 <i>16.0</i>	6 <i>28.5</i>	152 <i>11.4</i>	
Cleft palate without cleft lip	59 <i>6.0</i>	6 <i>6.9</i>	12 <i>5.9</i>	3 <i>9.6</i>	1 <i>4.8</i>	88 <i>6.6</i>	
Coarctation of aorta	68 <i>6.9</i>	0 <i>0.0</i>	10 <i>4.9</i>	2 <i>6.4</i>	0 <i>0.0</i>	82 <i>6.1</i>	
Common truncus	5 <i>0.5</i>	0 <i>0.0</i>	1 <i>0.5</i>	0 <i>0.0</i>	1 <i>4.8</i>	7 <i>0.5</i>	
Congenital cataract	29 <i>2.9</i>	1 <i>1.1</i>	3 <i>1.5</i>	2 <i>6.4</i>	1 <i>4.8</i>	36 <i>2.7</i>	
Congenital hip dislocation	85 <i>8.6</i>	1 <i>1.1</i>	16 <i>7.8</i>	3 <i>9.6</i>	3 <i>14.3</i>	108 <i>8.1</i>	
Diaphragmatic hernia	23 <i>2.3</i>	2 <i>2.3</i>	7 <i>3.4</i>	0 <i>0.0</i>	1 <i>4.8</i>	33 <i>2.5</i>	
Down syndrome (Trisomy 21)	163 <i>16.5</i>	10 <i>11.5</i>	42 <i>20.6</i>	5 <i>16.0</i>	1 <i>4.8</i>	227 <i>17.0</i>	
Ebstein's anomaly	7 <i>0.7</i>	0 <i>0.0</i>	2 <i>1.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	9 <i>0.7</i>	
Encephalocele	5 <i>0.5</i>	2 <i>2.3</i>	4 <i>2.0</i>	1 <i>3.2</i>	0 <i>0.0</i>	13 <i>1.0</i>	
Epispadias	6 <i>0.6</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	6 <i>0.4</i>	
Esophageal atresia/tracheoesophageal fistula	17 <i>1.7</i>	1 <i>1.1</i>	5 <i>2.5</i>	0 <i>0.0</i>	0 <i>0.0</i>	23 <i>1.7</i>	
Fetus or newborn affected by maternal alcohol use	1 <i>0.1</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	1 <i>0.1</i>	
Gastroschisis	51 <i>5.2</i>	3 <i>3.4</i>	10 <i>4.9</i>	2 <i>6.4</i>	7 <i>33.3</i>	75 <i>5.6</i>	
Hirschsprung's disease (congenital megacolon)	26 <i>2.6</i>	1 <i>1.1</i>	3 <i>1.5</i>	2 <i>6.4</i>	1 <i>4.8</i>	33 <i>2.5</i>	
Hydrocephalus without spina bifida	71 <i>7.2</i>	6 <i>6.9</i>	15 <i>7.4</i>	4 <i>12.8</i>	1 <i>4.8</i>	101 <i>7.6</i>	
Hypoplastic left heart syndrome	37 <i>3.8</i>	0 <i>0.0</i>	6 <i>2.9</i>	0 <i>0.0</i>	0 <i>0.0</i>	45 <i>3.4</i>	
Hypospadias	386 <i>76.4</i>	28 <i>63.0</i>	40 <i>38.2</i>	8 <i>49.3</i>	2 <i>18.1</i>	477 <i>69.7</i>	
Microcephalus	68 <i>6.9</i>	10 <i>11.5</i>	23 <i>11.3</i>	2 <i>6.4</i>	3 <i>14.3</i>	109 <i>8.2</i>	
Obstructive genitourinary defect	167 <i>16.9</i>	13 <i>14.9</i>	30 <i>14.7</i>	7 <i>22.4</i>	2 <i>9.5</i>	224 <i>16.8</i>	
Omphalocele	27 <i>2.7</i>	2 <i>2.3</i>	3 <i>1.5</i>	1 <i>3.2</i>	0 <i>0.0</i>	34 <i>2.5</i>	
Patent ductus arteriosus	237 <i>24.0</i>	20 <i>23.0</i>	46 <i>22.6</i>	5 <i>16.0</i>	2 <i>9.5</i>	318 <i>23.8</i>	

**Nebraska**  
**Birth Defects Counts and Prevalence 2006-2010 (Prevalence per 10,000 Live Births)**

Defect	Maternal Race/Ethnicity					Total**	Notes
	Non-Hispanic White	Non-Hispanic Black or African	Hispanic	Asian or Pacific Islander	American Indian or Alaska Native		
Pulmonary valve atresia and stenosis	70 <i>7.1</i>	6 <i>6.9</i>	6 <i>2.9</i>	0 <i>0.0</i>	1 <i>4.8</i>	83 <i>6.2</i>	
Pulmonary valve atresia	13 <i>1.3</i>	0 <i>0.0</i>	2 <i>1.0</i>	0 <i>0.0</i>	1 <i>4.8</i>	16 <i>1.2</i>	
Pyloric stenosis	179 <i>18.2</i>	2 <i>2.3</i>	28 <i>13.7</i>	2 <i>6.4</i>	1 <i>4.8</i>	213 <i>16.0</i>	
Rectal and large intestinal atresia/stenosis	41 <i>4.2</i>	4 <i>4.6</i>	11 <i>5.4</i>	3 <i>9.6</i>	1 <i>4.8</i>	63 <i>4.7</i>	
Reduction deformity, lower limbs	18 <i>1.8</i>	2 <i>2.3</i>	0 <i>0.0</i>	1 <i>3.2</i>	0 <i>0.0</i>	21 <i>1.6</i>	
Reduction deformity, upper limbs	29 <i>2.9</i>	2 <i>2.3</i>	8 <i>3.9</i>	1 <i>3.2</i>	0 <i>0.0</i>	41 <i>3.1</i>	
Renal agenesis/hypoplasia	46 <i>4.7</i>	2 <i>2.3</i>	11 <i>5.4</i>	1 <i>3.2</i>	0 <i>0.0</i>	61 <i>4.6</i>	
Spina bifida without anencephalus	55 <i>5.6</i>	7 <i>8.0</i>	8 <i>3.9</i>	1 <i>3.2</i>	0 <i>0.0</i>	71 <i>5.3</i>	
Tetralogy of Fallot	28 <i>2.8</i>	1 <i>1.1</i>	4 <i>2.0</i>	0 <i>0.0</i>	1 <i>4.8</i>	35 <i>2.6</i>	
Total anomalous pulmonary venous return (TAPVR)	6 <i>0.6</i>	0 <i>0.0</i>	6 <i>2.9</i>	0 <i>0.0</i>	0 <i>0.0</i>	12 <i>0.9</i>	
Transposition of great arteries - All	37 <i>3.8</i>	2 <i>2.3</i>	6 <i>2.9</i>	0 <i>0.0</i>	0 <i>0.0</i>	46 <i>3.4</i>	
dextro-Transposition of great arteries (d-TGA)	36 <i>3.7</i>	2 <i>2.3</i>	6 <i>2.9</i>	0 <i>0.0</i>	0 <i>0.0</i>	45 <i>3.4</i>	
Tricuspid valve atresia and stenosis	7 <i>0.7</i>	2 <i>2.3</i>	1 <i>0.5</i>	0 <i>0.0</i>	1 <i>4.8</i>	13 <i>1.0</i>	
Tricuspid valve atresia	7 <i>0.7</i>	2 <i>2.3</i>	1 <i>0.5</i>	0 <i>0.0</i>	1 <i>4.8</i>	13 <i>1.0</i>	
Trisomy 13	14 <i>1.4</i>	2 <i>2.3</i>	5 <i>2.5</i>	0 <i>0.0</i>	0 <i>0.0</i>	22 <i>1.6</i>	
Trisomy 18	31 <i>3.1</i>	5 <i>5.7</i>	5 <i>2.5</i>	0 <i>0.0</i>	1 <i>4.8</i>	43 <i>3.2</i>	
Ventricular septal defect	411 <i>41.7</i>	21 <i>24.1</i>	82 <i>40.2</i>	8 <i>25.6</i>	4 <i>19.0</i>	543 <i>40.7</i>	
<b>Total Live Births</b>	<b>98613</b>	<b>8713</b>	<b>20395</b>	<b>3130</b>	<b>2102</b>	<b>133497</b>	
<b>Total Male Live Births</b>	<b>50500</b>	<b>4444</b>	<b>10483</b>	<b>1623</b>	<b>1107</b>	<b>68423</b>	

\*Hypospadias: prevalence per 10,000 male live births

\*\*Total includes unknown race

**Nebraska****Trisomy Counts and Prevalence by Maternal Age 2006-2010 (Prevalence per 10,000 Live Births)**

Defect	Age		Total**	Notes
	Less than 35	35 and greater		
Down syndrome (Trisomy 21)	129 <i>10.9</i>	98 <i>64.1</i>	227 <i>17.0</i>	
Trisomy 13	19 <i>1.6</i>	3 <i>2.0</i>	22 <i>1.6</i>	
Trisomy 18	27 <i>2.3</i>	16 <i>10.5</i>	43 <i>3.2</i>	
<b>Total Live Births</b>	<b>118194</b>	<b>15298</b>	<b>133497</b>	

\*\*Total includes unknown maternal age

**General comments**

- Probable cases were not included.
- Terminations are not a source for birth defects in Nebraska.

**Nevada****Birth Defects Counts and Prevalence 2006-2010 (Prevalence per 10,000 Live Births)**

Defect	Maternal Race/Ethnicity					Total**	Notes
	White Non-Hispanic	Black Non-Hispanic	Hispanic	Asian or Pacific Islander Non-Hispanic	American Indian or Alaska Native Non-Hispanic		
Anencephalus	0 <i>0.0</i>	1 <i>0.6</i>	8 <i>1.1</i>	0 <i>0.0</i>	0 <i>0.0</i>	9 <i>0.5</i>	
Anophthalmia/microphthalmia	5 <i>0.6</i>	3 <i>1.7</i>	9 <i>1.2</i>	0 <i>0.0</i>	0 <i>0.0</i>	17 <i>0.9</i>	
Anotia/microtia	5 <i>0.6</i>	0 <i>0.0</i>	2 <i>0.3</i>	0 <i>0.0</i>	0 <i>0.0</i>	7 <i>0.4</i>	
Aortic valve stenosis	15 <i>1.8</i>	2 <i>1.1</i>	9 <i>1.2</i>	1 <i>0.7</i>	0 <i>0.0</i>	27 <i>1.4</i>	
Atrial septal defect	634 <i>77.6</i>	228 <i>130.0</i>	628 <i>84.1</i>	146 <i>95.5</i>	15 <i>66.0</i>	1681 <i>86.7</i>	
Atrioventricular septal defect (endocardial cushion defect)	22 <i>2.7</i>	3 <i>1.7</i>	27 <i>3.6</i>	0 <i>0.0</i>	0 <i>0.0</i>	54 <i>2.8</i>	
Biliary atresia	3 <i>0.4</i>	1 <i>0.6</i>	3 <i>0.4</i>	4 <i>2.6</i>	0 <i>0.0</i>	11 <i>0.6</i>	
Bladder exstrophy	1 <i>0.1</i>	0 <i>0.0</i>	3 <i>0.4</i>	0 <i>0.0</i>	0 <i>0.0</i>	4 <i>0.2</i>	
Choanal atresia	10 <i>1.2</i>	1 <i>0.6</i>	11 <i>1.5</i>	0 <i>0.0</i>	0 <i>0.0</i>	22 <i>1.1</i>	
Cleft lip with and without cleft palate	73 <i>8.9</i>	11 <i>6.3</i>	79 <i>10.6</i>	9 <i>5.9</i>	3 <i>13.2</i>	178 <i>9.2</i>	
Cleft palate without cleft lip	34 <i>4.2</i>	5 <i>2.9</i>	32 <i>4.3</i>	3 <i>2.0</i>	0 <i>0.0</i>	75 <i>3.9</i>	
Coarctation of aorta	44 <i>5.4</i>	8 <i>4.6</i>	49 <i>6.6</i>	8 <i>5.2</i>	1 <i>4.4</i>	112 <i>5.8</i>	
Common truncus	4 <i>0.5</i>	0 <i>0.0</i>	7 <i>0.9</i>	2 <i>1.3</i>	0 <i>0.0</i>	13 <i>0.7</i>	
Congenital cataract	3 <i>0.4</i>	1 <i>0.6</i>	8 <i>1.1</i>	1 <i>0.7</i>	0 <i>0.0</i>	14 <i>0.7</i>	
Congenital hip dislocation	61 <i>7.5</i>	12 <i>6.8</i>	50 <i>6.7</i>	7 <i>4.6</i>	2 <i>8.8</i>	136 <i>7.0</i>	
Diaphragmatic hernia	28 <i>3.4</i>	3 <i>1.7</i>	18 <i>2.4</i>	3 <i>2.0</i>	0 <i>0.0</i>	53 <i>2.7</i>	
Down syndrome (Trisomy 21)	84 <i>10.3</i>	24 <i>13.7</i>	125 <i>16.7</i>	17 <i>11.1</i>	1 <i>4.4</i>	258 <i>13.3</i>	1
Ebstein anomaly	8 <i>1.0</i>	0 <i>0.0</i>	8 <i>1.1</i>	1 <i>0.7</i>	0 <i>0.0</i>	17 <i>0.9</i>	
Encephalocele	8 <i>1.0</i>	5 <i>2.9</i>	2 <i>0.3</i>	0 <i>0.0</i>	0 <i>0.0</i>	16 <i>0.8</i>	
Epispadias	2 <i>0.2</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	2 <i>0.1</i>	
Esophageal atresia/tracheoesophageal fistula	17 <i>2.1</i>	4 <i>2.3</i>	14 <i>1.9</i>	5 <i>3.3</i>	0 <i>0.0</i>	41 <i>2.1</i>	
Fetus or newborn affected by maternal alcohol use	20 <i>2.4</i>	8 <i>4.6</i>	3 <i>0.4</i>	2 <i>1.3</i>	1 <i>4.4</i>	35 <i>1.8</i>	
Hirschsprung disease (congenital megacolon)	12 <i>1.5</i>	14 <i>8.0</i>	10 <i>1.3</i>	2 <i>1.3</i>	0 <i>0.0</i>	39 <i>2.0</i>	
Hydrocephalus without spina bifida	33 <i>4.0</i>	15 <i>8.6</i>	45 <i>6.0</i>	6 <i>3.9</i>	2 <i>8.8</i>	105 <i>5.4</i>	
Hypoplastic left heart syndrome	12 <i>1.5</i>	5 <i>2.9</i>	16 <i>2.1</i>	2 <i>1.3</i>	0 <i>0.0</i>	38 <i>2.0</i>	
Hypospadias*	190 <i>45.2</i>	34 <i>37.9</i>	81 <i>21.3</i>	13 <i>16.5</i>	5 <i>44.3</i>	332 <i>33.5</i>	
Microcephalus	28 <i>3.4</i>	12 <i>6.8</i>	30 <i>4.0</i>	1 <i>0.7</i>	0 <i>0.0</i>	74 <i>3.8</i>	
Obstructive genitourinary defect	241 <i>29.5</i>	22 <i>12.5</i>	209 <i>28.0</i>	38 <i>24.9</i>	6 <i>26.4</i>	533 <i>27.5</i>	
Patent ductus arteriosus	554 <i>67.8</i>	191 <i>108.9</i>	553 <i>74.0</i>	128 <i>83.7</i>	12 <i>52.8</i>	1462 <i>75.4</i>	
Pulmonary valve atresia and stenosis	63 <i>7.7</i>	23 <i>13.1</i>	67 <i>9.0</i>	15 <i>9.8</i>	2 <i>8.8</i>	175 <i>9.0</i>	
Pulmonary valve atresia	7 <i>0.9</i>	2 <i>1.1</i>	10 <i>1.3</i>	5 <i>3.3</i>	0 <i>0.0</i>	24 <i>1.2</i>	
Pyloric stenosis	119 <i>14.6</i>	14 <i>8.0</i>	119 <i>15.9</i>	4 <i>2.6</i>	3 <i>13.2</i>	275 <i>14.2</i>	



**Nevada****Birth Defects Counts and Prevalence 2006-2010 (Prevalence per 10,000 Live Births)**

Defect	Maternal Race/Ethnicity					Total**	Notes
	White Non-Hispanic	Black Non-Hispanic	Hispanic	Asian or Pacific Islander Non-Hispanic	American Indian or Alaska Native Non-Hispanic		
Rectal and large intestinal atresia/stenosis	22 <i>2.7</i>	4 <i>2.3</i>	29 <i>3.9</i>	8 <i>5.2</i>	0 <i>0.0</i>	67 <i>3.5</i>	
Reduction deformity, lower limbs	7 <i>0.9</i>	2 <i>1.1</i>	11 <i>1.5</i>	0 <i>0.0</i>	0 <i>0.0</i>	20 <i>1.0</i>	
Reduction deformity, upper limbs	17 <i>2.1</i>	3 <i>1.7</i>	17 <i>2.3</i>	0 <i>0.0</i>	1 <i>4.4</i>	38 <i>2.0</i>	
Renal agenesis/hypoplasia	27 <i>3.3</i>	7 <i>4.0</i>	26 <i>3.5</i>	9 <i>5.9</i>	0 <i>0.0</i>	74 <i>3.8</i>	
Spina bifida without anencephalus	10 <i>1.2</i>	10 <i>5.7</i>	15 <i>2.0</i>	1 <i>0.7</i>	0 <i>0.0</i>	36 <i>1.9</i>	
Tetralogy of Fallot	45 <i>5.5</i>	8 <i>4.6</i>	37 <i>5.0</i>	4 <i>2.6</i>	2 <i>8.8</i>	98 <i>5.1</i>	
Total anomalous pulmonary venous return (TAPVR)	4 <i>0.5</i>	0 <i>0.0</i>	5 <i>0.7</i>	2 <i>1.3</i>	0 <i>0.0</i>	11 <i>0.6</i>	
Transposition of great arteries - All	34 <i>4.2</i>	6 <i>3.4</i>	34 <i>4.6</i>	1 <i>0.7</i>	1 <i>4.4</i>	80 <i>4.1</i>	2
dextro-Transposition of great arteries (d-TGA)	17 <i>2.1</i>	3 <i>1.7</i>	12 <i>1.6</i>	0 <i>0.0</i>	1 <i>4.4</i>	36 <i>1.9</i>	
Tricuspid valve atresia and stenosis	7 <i>0.9</i>	4 <i>2.3</i>	8 <i>1.1</i>	1 <i>0.7</i>	1 <i>4.4</i>	22 <i>1.1</i>	3
Trisomy 13	5 <i>0.6</i>	1 <i>0.6</i>	5 <i>0.7</i>	0 <i>0.0</i>	0 <i>0.0</i>	12 <i>0.6</i>	1
Trisomy 18	9 <i>1.1</i>	1 <i>0.6</i>	19 <i>2.5</i>	2 <i>1.3</i>	0 <i>0.0</i>	32 <i>1.7</i>	1
Ventricular septal defect	342 <i>41.8</i>	63 <i>35.9</i>	368 <i>49.3</i>	45 <i>29.4</i>	10 <i>44.0</i>	847 <i>43.7</i>	4
<b>Total Live Births</b>	<b>81749</b>	<b>17534</b>	<b>74710</b>	<b>15289</b>	<b>2272</b>	<b>193902</b>	
<b>Total Male Live Births</b>	<b>42012</b>	<b>8980</b>	<b>37944</b>	<b>7886</b>	<b>1129</b>	<b>99138</b>	

\*Hypospadias: prevalence per 10,000 male live births

\*\*Total includes unknown race

**Nevada****Trisomy Counts and Prevalence by Maternal Age 2006-2010 (Prevalence per 10,000 Live Births)**

Defect	Maternal Age (years)		Total**	Notes
	Less than 35	35+		
Down syndrome (Trisomy 21)	114 <i>6.8</i>	108 <i>40.7</i>	258 <i>13.3</i>	1
Trisomy 13	8 <i>0.5</i>	2 <i>0.8</i>	12 <i>0.6</i>	1
Trisomy 18	16 <i>1.0</i>	11 <i>4.1</i>	32 <i>1.7</i>	1
<b>Total Live Births</b>	<b>167305</b>	<b>26557</b>	<b>193902</b>	

\*\*Total includes unknown maternal age

**Notes**

1. Live births only.
2. Transposition of the Great Arteries: we do not use the new CDC/BPA codes; information includes the entire range.
3. Tricuspid Valve Atresia: do not use the new CDC/BPA codes so cases with 746.106 are included in this category.
4. Ventricular septal defect: excluded if less than 2500 grams birth weight or less than 36 weeks gestation; we do not use the new CDC/BPA codes - cannot distinguish BPA 745.487.

**General comments**

- Data are reported for live births and Nevada resident births only.
- Nevada uses ICD-9 Coding system.
- Probable/possible diagnoses are excluded.
- Still births and terminations not included (Nevada collects data on live births only)

## New Hampshire

### Birth Defects Counts and Prevalence 2006-2010 (Prevalence per 10,000 Live Births)

Defect	Maternal Race/Ethnicity					Total**	Notes
	White Non-Hispanic	Black Non-Hispanic	Hispanic	Asian or Pacific Islander Non-Hispanic	American Indian or Alaska Native Non-Hispanic		
Amniotic bands	3 <i>0.5</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	4 <i>0.6</i>	
Anencephalus	3 <i>0.5</i>	0 <i>0.0</i>	0 <i>0.0</i>	1 <i>4.1</i>	0 <i>0.0</i>	4 <i>0.6</i>	
Aniridia	1 <i>0.2</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	1 <i>0.1</i>	
Anophthalmia/microphthalmia	3 <i>0.5</i>	1 <i>8.8</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	5 <i>0.7</i>	
Anotia/microtia	11 <i>1.8</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	1 <i>64.5</i>	13 <i>1.9</i>	
Aortic valve stenosis	9 <i>1.5</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	11 <i>1.6</i>	
Atrial septal defect	59 <i>9.6</i>	1 <i>8.8</i>	3 <i>38.3</i>	4 <i>16.5</i>	0 <i>0.0</i>	81 <i>11.8</i>	
Atrioventricular septal defect (endocardial cushion defect)	13 <i>2.1</i>	1 <i>8.8</i>	0 <i>0.0</i>	1 <i>4.1</i>	0 <i>0.0</i>	22 <i>3.2</i>	
Biliary atresia	2 <i>0.3</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	2 <i>0.3</i>	
Bladder exstrophy	0 <i>0.0</i>	0 <i>0.0</i>	1 <i>12.8</i>	0 <i>0.0</i>	0 <i>0.0</i>	1 <i>0.1</i>	
Choanal atresia	2 <i>0.3</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	2 <i>0.3</i>	
Cleft lip with and without cleft palate	38 <i>6.2</i>	0 <i>0.0</i>	1 <i>12.8</i>	2 <i>8.2</i>	0 <i>0.0</i>	54 <i>7.9</i>	
Cleft palate without cleft lip	31 <i>5.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	1 <i>4.1</i>	1 <i>64.5</i>	45 <i>6.6</i>	
Coarctation of aorta	17 <i>2.8</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	26 <i>3.8</i>	
Common truncus	3 <i>0.5</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	4 <i>0.6</i>	
Congenital cataract	8 <i>1.3</i>	1 <i>8.8</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	10 <i>1.5</i>	
Congenital hip dislocation	34 <i>5.5</i>	0 <i>0.0</i>	2 <i>25.5</i>	0 <i>0.0</i>	0 <i>0.0</i>	42 <i>6.1</i>	
Diaphragmatic hernia	12 <i>1.9</i>	1 <i>8.8</i>	0 <i>0.0</i>	5 <i>20.6</i>	0 <i>0.0</i>	20 <i>2.9</i>	
Down syndrome (Trisomy 21)	49 <i>7.9</i>	1 <i>8.8</i>	1 <i>12.8</i>	3 <i>12.4</i>	1 <i>64.5</i>	70 <i>10.2</i>	
Ebstein anomaly	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	3 <i>0.4</i>	
Encephalocele	3 <i>0.5</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	5 <i>0.7</i>	
Epispadias	2 <i>0.3</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	2 <i>0.3</i>	
Esophageal atresia/tracheoesophageal fistula	11 <i>1.8</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	14 <i>2.0</i>	
Fetus or newborn affected by maternal alcohol use	2 <i>0.3</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	2 <i>0.3</i>	
Gastroschisis	12 <i>1.9</i>	0 <i>0.0</i>	1 <i>12.8</i>	0 <i>0.0</i>	0 <i>0.0</i>	15 <i>2.2</i>	1
Hirschsprung disease (congenital megacolon)	7 <i>1.1</i>	0 <i>0.0</i>	2 <i>25.5</i>	0 <i>0.0</i>	0 <i>0.0</i>	10 <i>1.5</i>	
Hydrocephalus without spina bifida	8 <i>1.3</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	10 <i>1.5</i>	
Hypoplastic left heart syndrome	6 <i>1.0</i>	1 <i>8.8</i>	1 <i>12.8</i>	0 <i>0.0</i>	1 <i>64.5</i>	13 <i>1.9</i>	
Hypospadias*	218 <i>69.0</i>	3 <i>50.8</i>	5 <i>126.3</i>	5 <i>40.8</i>	0 <i>0.0</i>	264 <i>75.2</i>	
Microcephalus	22 <i>3.6</i>	1 <i>8.8</i>	1 <i>12.8</i>	1 <i>4.1</i>	0 <i>0.0</i>	30 <i>4.4</i>	
Obstructive genitourinary defect	135 <i>21.9</i>	3 <i>26.5</i>	9 <i>114.8</i>	5 <i>20.6</i>	0 <i>0.0</i>	192 <i>28.0</i>	
Omphalocele	7 <i>1.1</i>	0 <i>0.0</i>	1 <i>12.8</i>	0 <i>0.0</i>	0 <i>0.0</i>	9 <i>1.3</i>	1

**New Hampshire**  
**Birth Defects Counts and Prevalence 2006-2010 (Prevalence per 10,000 Live Births)**

Defect	Maternal Race/Ethnicity					Total**	Notes
	White Non-Hispanic	Black Non-Hispanic	Hispanic	Asian or Pacific Islander Non-Hispanic	American Indian or Alaska Native Non-Hispanic		
Patent ductus arteriosus	25 <i>4.0</i>	2 <i>17.7</i>	0 <i>0.0</i>	1 <i>4.1</i>	0 <i>0.0</i>	32 <i>4.7</i>	2
Pulmonary valve atresia and stenosis	32 <i>5.2</i>	3 <i>26.5</i>	1 <i>12.8</i>	1 <i>4.1</i>	0 <i>0.0</i>	47 <i>6.9</i>	
Pyloric stenosis	121 <i>19.6</i>	0 <i>0.0</i>	3 <i>38.3</i>	2 <i>8.2</i>	1 <i>64.5</i>	160 <i>23.3</i>	
Rectal and large intestinal atresia/stenosis	17 <i>2.8</i>	0 <i>0.0</i>	2 <i>25.5</i>	0 <i>0.0</i>	0 <i>0.0</i>	26 <i>3.8</i>	
Reduction deformity, lower limbs	4 <i>0.6</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	5 <i>0.7</i>	
Reduction deformity, upper limbs	12 <i>1.9</i>	0 <i>0.0</i>	1 <i>12.8</i>	0 <i>0.0</i>	0 <i>0.0</i>	18 <i>2.6</i>	
Renal agenesis/hypoplasia	37 <i>6.0</i>	0 <i>0.0</i>	4 <i>51.0</i>	1 <i>4.1</i>	0 <i>0.0</i>	51 <i>7.4</i>	
Spina bifida without anencephalus	10 <i>1.6</i>	0 <i>0.0</i>	1 <i>12.8</i>	0 <i>0.0</i>	0 <i>0.0</i>	14 <i>2.0</i>	
Tetralogy of Fallot	12 <i>1.9</i>	1 <i>8.8</i>	3 <i>38.3</i>	1 <i>4.1</i>	0 <i>0.0</i>	26 <i>3.8</i>	
Transposition of great arteries - All	9 <i>1.5</i>	1 <i>8.8</i>	1 <i>12.8</i>	0 <i>0.0</i>	0 <i>0.0</i>	20 <i>2.9</i>	
Tricuspid valve atresia and stenosis	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	1 <i>0.1</i>	
Trisomy 13	3 <i>0.5</i>	1 <i>8.8</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	5 <i>0.7</i>	
Trisomy 18	6 <i>1.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	11 <i>1.6</i>	
Ventricular septal defect	89 <i>14.4</i>	2 <i>17.7</i>	3 <i>38.3</i>	3 <i>12.4</i>	0 <i>0.0</i>	129 <i>18.8</i>	3
<b>Total Live Births</b>	<b>61736</b>	<b>1133</b>	<b>784</b>	<b>2427</b>	<b>155</b>	<b>68586</b>	
<b>Total Male Live Births</b>	<b>31606</b>	<b>590</b>	<b>396</b>	<b>1226</b>	<b>74</b>	<b>35113</b>	

\*Hypospadias: prevalence per 10,000 male live births

\*\*Total includes unknown race

**New Hampshire**  
**Trisomy Counts and Prevalence by Maternal Age 2006-2010 (Prevalence per 10,000 Live Births)**

Defect	Maternal Age (years)		Total**	Notes
	Less than 35	35+		
Down syndrome (Trisomy 21)	47 <b>8.3</b>	21 <b>17.6</b>	70 <b>10.2</b>	
Trisomy 13	1 <b>0.2</b>	3 <b>2.5</b>	5 <b>0.7</b>	
Trisomy 18	5 <b>0.9</b>	6 <b>5.0</b>	11 <b>1.6</b>	
<b>Total Live Births</b>	<b>56477</b>	<b>11913</b>	<b>68586</b>	

\*\*Total includes unknown maternal age

**Notes**

1. ICD-9 code data and active medical record abstraction used for all gastroschisis and omphalocele cases. For gastroschisis and omphalocele, cases are distinguished using active medical chart review.
2. Includes weight greater than or equal to 2500 grams only.
3. Probable cases not included.

**General comments**

- Data for all birth conditions includes data ascertained during calendar years 2006 through 2010 for NH 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 NH 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 Guidelines.

**New Jersey**  
**Birth Defects Counts and Prevalence 2006-2010 (Prevalence per 10,000 Live Births)**

Defect	Maternal Race/Ethnicity					Total**	Notes
	White Non-Hispanic	Black Non-Hispanic	Hispanic	Asian or Pacific Islander Non-Hispanic	American Indian or Alaska Native Non-Hispanic		
Amniotic bands	10 <i>0.4</i>	9 <i>1.1</i>	18 <i>1.3</i>	0 <i>0.0</i>	0 <i>0.0</i>	38 <i>0.7</i>	1
Anencephalus	6 <i>0.2</i>	2 <i>0.2</i>	7 <i>0.5</i>	1 <i>0.2</i>	0 <i>0.0</i>	16 <i>0.3</i>	
Aniridia	7 <i>0.3</i>	0 <i>0.0</i>	2 <i>0.1</i>	0 <i>0.0</i>	0 <i>0.0</i>	10 <i>0.2</i>	
Anophthalmia/microphthalmia	19 <i>0.7</i>	8 <i>1.0</i>	24 <i>1.7</i>	6 <i>1.1</i>	0 <i>0.0</i>	58 <i>1.1</i>	
Anotia/microtia	38 <i>1.5</i>	12 <i>1.4</i>	56 <i>3.9</i>	9 <i>1.7</i>	0 <i>0.0</i>	119 <i>2.2</i>	
Aortic valve stenosis	30 <i>1.2</i>	6 <i>0.7</i>	14 <i>1.0</i>	1 <i>0.2</i>	0 <i>0.0</i>	54 <i>1.0</i>	
Atrial septal defect	598 <i>23.4</i>	415 <i>49.9</i>	523 <i>36.6</i>	135 <i>24.9</i>	7 <i>112.2</i>	1723 <i>31.2</i>	2
Atrioventricular septal defect (endocardial cushion defect)	77 <i>3.0</i>	28 <i>3.4</i>	36 <i>2.5</i>	9 <i>1.7</i>	1 <i>16.0</i>	155 <i>2.8</i>	
Biliary atresia	7 <i>0.3</i>	8 <i>1.0</i>	11 <i>0.8</i>	4 <i>0.7</i>	0 <i>0.0</i>	31 <i>0.6</i>	
Bladder exstrophy	2 <i>0.1</i>	1 <i>0.1</i>	3 <i>0.2</i>	0 <i>0.0</i>	0 <i>0.0</i>	6 <i>0.1</i>	
Choanal atresia	34 <i>1.3</i>	17 <i>2.0</i>	27 <i>1.9</i>	2 <i>0.4</i>	0 <i>0.0</i>	82 <i>1.5</i>	
Cleft lip with and without cleft palate	197 <i>7.7</i>	41 <i>4.9</i>	134 <i>9.4</i>	54 <i>9.9</i>	2 <i>32.1</i>	440 <i>8.0</i>	
Cleft palate without cleft lip	141 <i>5.5</i>	38 <i>4.6</i>	104 <i>7.3</i>	45 <i>8.3</i>	0 <i>0.0</i>	340 <i>6.2</i>	
Coarctation of aorta	95 <i>3.7</i>	25 <i>3.0</i>	52 <i>3.6</i>	11 <i>2.0</i>	1 <i>16.0</i>	190 <i>3.4</i>	
Common truncus	9 <i>0.4</i>	3 <i>0.4</i>	14 <i>1.0</i>	1 <i>0.2</i>	0 <i>0.0</i>	27 <i>0.5</i>	
Congenital cataract	37 <i>1.5</i>	18 <i>2.2</i>	43 <i>3.0</i>	5 <i>0.9</i>	1 <i>16.0</i>	106 <i>1.9</i>	
Congenital hip dislocation	114 <i>4.5</i>	21 <i>2.5</i>	61 <i>4.3</i>	27 <i>5.0</i>	1 <i>16.0</i>	230 <i>4.2</i>	
Diaphragmatic hernia	33 <i>1.3</i>	7 <i>0.8</i>	28 <i>2.0</i>	9 <i>1.7</i>	0 <i>0.0</i>	80 <i>1.4</i>	
Down syndrome (Trisomy 21)	307 <i>12.0</i>	102 <i>12.3</i>	200 <i>14.0</i>	38 <i>7.0</i>	3 <i>48.1</i>	672 <i>12.2</i>	
Ebstein anomaly	16 <i>0.6</i>	5 <i>0.6</i>	14 <i>1.0</i>	1 <i>0.2</i>	0 <i>0.0</i>	36 <i>0.7</i>	
Encephalocele	15 <i>0.6</i>	4 <i>0.5</i>	8 <i>0.6</i>	4 <i>0.7</i>	0 <i>0.0</i>	32 <i>0.6</i>	
Epispadias	55 <i>2.2</i>	18 <i>2.2</i>	28 <i>2.0</i>	6 <i>1.1</i>	1 <i>16.0</i>	112 <i>2.0</i>	
Esophageal atresia/tracheoesophageal fistula	64 <i>2.5</i>	15 <i>1.8</i>	32 <i>2.2</i>	6 <i>1.1</i>	0 <i>0.0</i>	119 <i>2.2</i>	
Fetus or newborn affected by maternal alcohol use	6 <i>0.2</i>	11 <i>1.3</i>	0 <i>0.0</i>	0 <i>0.0</i>	1 <i>16.0</i>	19 <i>0.3</i>	
Gastroschisis	49 <i>1.9</i>	23 <i>2.8</i>	45 <i>3.2</i>	4 <i>0.7</i>	1 <i>16.0</i>	124 <i>2.2</i>	3
Hirschsprung disease (congenital megacolon)	49 <i>1.9</i>	23 <i>2.8</i>	24 <i>1.7</i>	8 <i>1.5</i>	0 <i>0.0</i>	107 <i>1.9</i>	
Hydrocephalus without spina bifida	70 <i>2.7</i>	51 <i>6.1</i>	81 <i>5.7</i>	8 <i>1.5</i>	0 <i>0.0</i>	215 <i>3.9</i>	
Hypoplastic left heart syndrome	35 <i>1.4</i>	14 <i>1.7</i>	30 <i>2.1</i>	2 <i>0.4</i>	0 <i>0.0</i>	86 <i>1.6</i>	
Hypospadias*	1349 <i>103.4</i>	317 <i>74.6</i>	386 <i>53.0</i>	173 <i>62.1</i>	6 <i>184.6</i>	2285 <i>81.0</i>	
Microcephalus	112 <i>4.4</i>	74 <i>8.9</i>	131 <i>9.2</i>	33 <i>6.1</i>	0 <i>0.0</i>	360 <i>6.5</i>	
Obstructive genitourinary defect	1179 <i>46.2</i>	286 <i>34.4</i>	587 <i>41.1</i>	198 <i>36.5</i>	5 <i>80.1</i>	2295 <i>41.6</i>	
Omphalocele	20 <i>0.8</i>	21 <i>2.5</i>	14 <i>1.0</i>	4 <i>0.7</i>	0 <i>0.0</i>	60 <i>1.1</i>	3

**New Jersey**  
**Birth Defects Counts and Prevalence 2006-2010 (Prevalence per 10,000 Live Births)**

Defect	Maternal Race/Ethnicity					Total**	Notes
	White Non-Hispanic	Black Non-Hispanic	Hispanic	Asian or Pacific Islander Non-Hispanic	American Indian or Alaska Native Non-Hispanic		
Patent ductus arteriosus	1519 <i>59.6</i>	725 <i>87.1</i>	971 <i>68.0</i>	279 <i>51.4</i>	5 <i>80.1</i>	3542 <i>64.2</i>	
Pulmonary valve atresia and stenosis	247 <i>9.7</i>	120 <i>14.4</i>	128 <i>9.0</i>	37 <i>6.8</i>	1 <i>16.0</i>	544 <i>9.9</i>	
Pulmonary valve atresia	18 <i>0.7</i>	13 <i>1.6</i>	14 <i>1.0</i>	3 <i>0.6</i>	0 <i>0.0</i>	51 <i>0.9</i>	
Pyloric stenosis	433 <i>17.0</i>	66 <i>7.9</i>	257 <i>18.0</i>	28 <i>5.2</i>	0 <i>0.0</i>	811 <i>14.7</i>	
Rectal and large intestinal atresia/stenosis	79 <i>3.1</i>	21 <i>2.5</i>	53 <i>3.7</i>	19 <i>3.5</i>	1 <i>16.0</i>	178 <i>3.2</i>	
Reduction deformity, lower limbs	53 <i>2.1</i>	29 <i>3.5</i>	27 <i>1.9</i>	9 <i>1.7</i>	0 <i>0.0</i>	122 <i>2.2</i>	
Reduction deformity, upper limbs	58 <i>2.3</i>	32 <i>3.8</i>	50 <i>3.5</i>	12 <i>2.2</i>	0 <i>0.0</i>	160 <i>2.9</i>	
Renal agenesis/hypoplasia	141 <i>5.5</i>	36 <i>4.3</i>	71 <i>5.0</i>	13 <i>2.4</i>	1 <i>16.0</i>	271 <i>4.9</i>	
Spina bifida without anencephalus	70 <i>2.7</i>	25 <i>3.0</i>	54 <i>3.8</i>	7 <i>1.3</i>	1 <i>16.0</i>	163 <i>3.0</i>	
Tetralogy of Fallot	77 <i>3.0</i>	45 <i>5.4</i>	49 <i>3.4</i>	20 <i>3.7</i>	0 <i>0.0</i>	203 <i>3.7</i>	
Total anomalous pulmonary venous return (TAPVR)	16 <i>0.6</i>	9 <i>1.1</i>	16 <i>1.1</i>	1 <i>0.2</i>	0 <i>0.0</i>	42 <i>0.8</i>	
Transposition of great arteries - All	67 <i>2.6</i>	35 <i>4.2</i>	43 <i>3.0</i>	15 <i>2.8</i>	0 <i>0.0</i>	168 <i>3.0</i>	
dextro-Transposition of great arteries (d-TGA)	45 <i>1.8</i>	15 <i>1.8</i>	24 <i>1.7</i>	9 <i>1.7</i>	0 <i>0.0</i>	98 <i>1.8</i>	
Tricuspid valve atresia and stenosis	14 <i>0.5</i>	11 <i>1.3</i>	10 <i>0.7</i>	3 <i>0.6</i>	0 <i>0.0</i>	39 <i>0.7</i>	
Trisomy 13	5 <i>0.2</i>	4 <i>0.5</i>	6 <i>0.4</i>	1 <i>0.2</i>	0 <i>0.0</i>	17 <i>0.3</i>	
Trisomy 18	20 <i>0.8</i>	15 <i>1.8</i>	17 <i>1.2</i>	5 <i>0.9</i>	0 <i>0.0</i>	57 <i>1.0</i>	
Ventricular septal defect	1583 <i>62.1</i>	480 <i>57.7</i>	915 <i>64.1</i>	264 <i>48.6</i>	7 <i>112.2</i>	3299 <i>59.8</i>	4
<b>Total Live Births</b>	<b>255042</b>	<b>83229</b>	<b>142833</b>	<b>54273</b>	<b>624</b>	<b>552040</b>	
<b>Total Male Live Births</b>	<b>130476</b>	<b>42504</b>	<b>72837</b>	<b>27845</b>	<b>325</b>	<b>282238</b>	

\*Hypospadias: prevalence per 10,000 male live births

\*\*Total includes unknown race

**New Jersey**  
**Trisomy Counts and Prevalence by Maternal Age 2006-2010 (Prevalence per 10,000 Live Births)**

Defect	Maternal Age (years)		Total	Notes
	Less than 35	35+		
Down syndrome (Trisomy 21)	279 <i>6.4</i>	350 <i>29.7</i>	672 <i>12.2</i>	
Trisomy 13	10 <i>0.2</i>	7 <i>0.6</i>	17 <i>0.3</i>	
Trisomy 18	27 <i>0.6</i>	30 <i>2.5</i>	57 <i>1.0</i>	
<b>Total Live Births</b>	<b>434084</b>	<b>117855</b>	<b>552040</b>	

\*\*Total includes unknown maternal age

**Notes**

- 1.Used codes 658.80 and 762.80.
- 2.ASD only, PFO coded separately.
- 3.Gastroschisis coded 756.79, Omphalocele coded 756.78.
- 4.Only confirmed cases included.

**General comments**

- Hybrid system; Passive with audit, uses ICD9-CM; 2010 live birth file is not final and is missing about 3000 out-of-state births;New web-based system implemented on July 1, 2009 with reduced reporting of prematurity-related and minor diagnoses.
- New Jersey collects live births only.



**New York**  
**Birth Defects Counts and Prevalence 2006-2010 (Prevalence per 10,000 Live Births)**

Defect	Maternal Race/Ethnicity					Total**	Notes
	White Non-Hispanic	Black Non-Hispanic	Hispanic	Asian or Pacific Islander Non-Hispanic	American Indian or Alaska Native Non-Hispanic		
Amniotic bands	32 <i>0.5</i>	14 <i>0.7</i>	19 <i>0.7</i>	2 <i>0.2</i>	0 <i>0.0</i>	67 <i>0.5</i>	
Anencephalus	20 <i>0.3</i>	8 <i>0.4</i>	16 <i>0.6</i>	2 <i>0.2</i>	0 <i>0.0</i>	47 <i>0.4</i>	1
Aniridia	10 <i>0.2</i>	2 <i>0.1</i>	5 <i>0.2</i>	1 <i>0.1</i>	0 <i>0.0</i>	18 <i>0.1</i>	
Anophthalmia/microphthalmia	58 <i>1.0</i>	21 <i>1.1</i>	46 <i>1.7</i>	17 <i>1.4</i>	0 <i>0.0</i>	143 <i>1.2</i>	
Anotia/microtia	60 <i>1.0</i>	8 <i>0.4</i>	52 <i>1.9</i>	11 <i>0.9</i>	1 <i>4.3</i>	134 <i>1.1</i>	
Aortic valve stenosis	145 <i>2.5</i>	21 <i>1.1</i>	48 <i>1.7</i>	12 <i>1.0</i>	0 <i>0.0</i>	229 <i>1.9</i>	
Atrial septal defect	2129 <i>36.0</i>	1380 <i>69.6</i>	1289 <i>46.7</i>	584 <i>46.5</i>	8 <i>34.8</i>	5493 <i>45.1</i>	
Atrioventricular septal defect (endocardial cushion defect)	256 <i>4.3</i>	126 <i>6.4</i>	108 <i>3.9</i>	46 <i>3.7</i>	1 <i>4.3</i>	548 <i>4.5</i>	
Biliary atresia	45 <i>0.8</i>	41 <i>2.1</i>	34 <i>1.2</i>	22 <i>1.8</i>	1 <i>4.3</i>	144 <i>1.2</i>	
Bladder exstrophy	18 <i>0.3</i>	2 <i>0.1</i>	0 <i>0.0</i>	1 <i>0.1</i>	0 <i>0.0</i>	21 <i>0.2</i>	
Choanal atresia	135 <i>2.3</i>	37 <i>1.9</i>	49 <i>1.8</i>	9 <i>0.7</i>	0 <i>0.0</i>	231 <i>1.9</i>	
Cleft lip with and without cleft palate	481 <i>8.1</i>	89 <i>4.5</i>	210 <i>7.6</i>	76 <i>6.1</i>	3 <i>13.0</i>	877 <i>7.2</i>	
Cleft palate without cleft lip	362 <i>6.1</i>	95 <i>4.8</i>	136 <i>4.9</i>	73 <i>5.8</i>	1 <i>4.3</i>	680 <i>5.6</i>	
Coarctation of aorta	332 <i>5.6</i>	109 <i>5.5</i>	144 <i>5.2</i>	48 <i>3.8</i>	1 <i>4.3</i>	647 <i>5.3</i>	
Common truncus	31 <i>0.5</i>	20 <i>1.0</i>	11 <i>0.4</i>	8 <i>0.6</i>	0 <i>0.0</i>	71 <i>0.6</i>	
Congenital cataract	112 <i>1.9</i>	54 <i>2.7</i>	53 <i>1.9</i>	16 <i>1.3</i>	0 <i>0.0</i>	240 <i>2.0</i>	2
Congenital hip dislocation	580 <i>9.8</i>	69 <i>3.5</i>	260 <i>9.4</i>	83 <i>6.6</i>	0 <i>0.0</i>	1005 <i>8.2</i>	
Diaphragmatic hernia	155 <i>2.6</i>	38 <i>1.9</i>	56 <i>2.0</i>	23 <i>1.8</i>	1 <i>4.3</i>	279 <i>2.3</i>	
Down syndrome (Trisomy 21)	735 <i>12.4</i>	263 <i>13.3</i>	357 <i>12.9</i>	92 <i>7.3</i>	1 <i>4.3</i>	1484 <i>12.2</i>	
Ebstein anomaly	33 <i>0.6</i>	12 <i>0.6</i>	18 <i>0.7</i>	6 <i>0.5</i>	0 <i>0.0</i>	71 <i>0.6</i>	
Encephalocele	43 <i>0.7</i>	20 <i>1.0</i>	20 <i>0.7</i>	10 <i>0.8</i>	0 <i>0.0</i>	95 <i>0.8</i>	
Epispadias	105 <i>1.8</i>	55 <i>2.8</i>	52 <i>1.9</i>	12 <i>1.0</i>	0 <i>0.0</i>	228 <i>1.9</i>	
Esophageal atresia/tracheoesophageal fistula	172 <i>2.9</i>	38 <i>1.9</i>	59 <i>2.1</i>	22 <i>1.8</i>	0 <i>0.0</i>	302 <i>2.5</i>	
Fetus or newborn affected by maternal alcohol use	26 <i>0.4</i>	27 <i>1.4</i>	15 <i>0.5</i>	0 <i>0.0</i>	0 <i>0.0</i>	70 <i>0.6</i>	
Gastroschisis	154 <i>2.6</i>	46 <i>2.3</i>	77 <i>2.8</i>	8 <i>0.6</i>	4 <i>17.4</i>	293 <i>2.4</i>	3
Hirschsprung disease (congenital megacolon)	171 <i>2.9</i>	83 <i>4.2</i>	50 <i>1.8</i>	23 <i>1.8</i>	0 <i>0.0</i>	334 <i>2.7</i>	
Hydrocephalus without spina bifida	422 <i>7.1</i>	235 <i>11.9</i>	237 <i>8.6</i>	76 <i>6.1</i>	2 <i>8.7</i>	995 <i>8.2</i>	
Hypoplastic left heart syndrome	164 <i>2.8</i>	52 <i>2.6</i>	72 <i>2.6</i>	21 <i>1.7</i>	3 <i>13.0</i>	319 <i>2.6</i>	
Hypospadias*	2891 <i>95.2</i>	669 <i>66.2</i>	669 <i>47.5</i>	292 <i>45.0</i>	8 <i>71.0</i>	4619 <i>74.0</i>	4
Microcephalus	319 <i>5.4</i>	199 <i>10.0</i>	224 <i>8.1</i>	56 <i>4.5</i>	2 <i>8.7</i>	819 <i>6.7</i>	
Obstructive genitourinary defect	2431 <i>41.1</i>	626 <i>31.6</i>	1074 <i>38.9</i>	604 <i>48.1</i>	11 <i>47.8</i>	4834 <i>39.7</i>	
Omphalocele	70 <i>1.2</i>	32 <i>1.6</i>	30 <i>1.1</i>	15 <i>1.2</i>	3 <i>13.0</i>	153 <i>1.3</i>	

**New York**  
**Birth Defects Counts and Prevalence 2006-2010 (Prevalence per 10,000 Live Births)**

Defect	Maternal Race/Ethnicity					Total**	Notes
	White Non-Hispanic	Black Non-Hispanic	Hispanic	Asian or Pacific Islander Non-Hispanic	American Indian or Alaska Native Non-Hispanic		
Patent ductus arteriosus	1813 <i>30.7</i>	1012 <i>51.0</i>	697 <i>25.3</i>	390 <i>31.1</i>	13 <i>56.5</i>	4015 <i>33.0</i>	
Pulmonary valve atresia and stenosis	463 <i>7.8</i>	230 <i>11.6</i>	216 <i>7.8</i>	94 <i>7.5</i>	2 <i>8.7</i>	1030 <i>8.5</i>	
Pulmonary valve atresia	52 <i>0.9</i>	25 <i>1.3</i>	33 <i>1.2</i>	13 <i>1.0</i>	0 <i>0.0</i>	126 <i>1.0</i>	
Pyloric stenosis	1492 <i>25.2</i>	250 <i>12.6</i>	741 <i>26.9</i>	130 <i>10.4</i>	9 <i>39.1</i>	2657 <i>21.8</i>	
Rectal and large intestinal atresia/stenosis	239 <i>4.0</i>	67 <i>3.4</i>	134 <i>4.9</i>	50 <i>4.0</i>	1 <i>4.3</i>	502 <i>4.1</i>	
Reduction deformity, lower limbs	53 <i>0.9</i>	32 <i>1.6</i>	21 <i>0.8</i>	6 <i>0.5</i>	1 <i>4.3</i>	117 <i>1.0</i>	
Reduction deformity, upper limbs	159 <i>2.7</i>	41 <i>2.1</i>	61 <i>2.2</i>	12 <i>1.0</i>	1 <i>4.3</i>	279 <i>2.3</i>	
Renal agenesis/hypoplasia	302 <i>5.1</i>	88 <i>4.4</i>	107 <i>3.9</i>	41 <i>3.3</i>	2 <i>8.7</i>	554 <i>4.5</i>	
Spina bifida without anencephalus	139 <i>2.4</i>	39 <i>2.0</i>	63 <i>2.3</i>	26 <i>2.1</i>	0 <i>0.0</i>	272 <i>2.2</i>	
Tetralogy of Fallot	300 <i>5.1</i>	101 <i>5.1</i>	99 <i>3.6</i>	64 <i>5.1</i>	2 <i>8.7</i>	582 <i>4.8</i>	
Total anomalous pulmonary venous return (TAPVR)	57 <i>1.0</i>	23 <i>1.2</i>	42 <i>1.5</i>	13 <i>1.0</i>	0 <i>0.0</i>	136 <i>1.1</i>	
Transposition of great arteries - All	174 <i>2.9</i>	47 <i>2.4</i>	62 <i>2.2</i>	28 <i>2.2</i>	0 <i>0.0</i>	320 <i>2.6</i>	
dextro-Transposition of great arteries (d-TGA)	165 <i>2.8</i>	47 <i>2.4</i>	62 <i>2.2</i>	26 <i>2.1</i>	0 <i>0.0</i>	309 <i>2.5</i>	
Tricuspid valve atresia and stenosis	52 <i>0.9</i>	41 <i>2.1</i>	42 <i>1.5</i>	18 <i>1.4</i>	0 <i>0.0</i>	158 <i>1.3</i>	
Tricuspid valve atresia	28 <i>0.5</i>	15 <i>0.8</i>	18 <i>0.7</i>	9 <i>0.7</i>	0 <i>0.0</i>	71 <i>0.6</i>	
Trisomy 13	42 <i>0.7</i>	18 <i>0.9</i>	22 <i>0.8</i>	8 <i>0.6</i>	0 <i>0.0</i>	90 <i>0.7</i>	
Trisomy 18	54 <i>0.9</i>	38 <i>1.9</i>	41 <i>1.5</i>	10 <i>0.8</i>	0 <i>0.0</i>	146 <i>1.2</i>	
Ventricular septal defect	2806 <i>47.4</i>	823 <i>41.5</i>	1283 <i>46.5</i>	507 <i>40.4</i>	12 <i>52.1</i>	5534 <i>45.4</i>	
<b>Total Live Births</b>	<b>591438</b>	<b>198275</b>	<b>275951</b>	<b>125493</b>	<b>2302</b>	<b>1218258</b>	
<b>Total Male Live Births</b>	<b>303652</b>	<b>101036</b>	<b>140866</b>	<b>64926</b>	<b>1127</b>	<b>624350</b>	

\*Hypospadias: prevalence per 10,000 male live births

\*\*Total includes unknown race

**New York**  
**Trisomy Counts and Prevalence by Maternal Age 2006-2010 (Prevalence per 10,000 Live Births)**

Defect	Maternal Age (years)		Total	Notes
	Less than 35	35+		
Down syndrome (Trisomy 21)	712 <i>7.3</i>	772 <i>32.2</i>	1484 <i>12.2</i>	
Trisomy 13	63 <i>0.6</i>	27 <i>1.1</i>	90 <i>0.7</i>	
Trisomy 18	65 <i>0.7</i>	81 <i>3.4</i>	146 <i>1.2</i>	
<b>Total Live Births</b>	<b>978555</b>	<b>239476</b>	<b>1218258</b>	

\*\*Total includes unknown maternal age

**North Carolina**  
**Birth Defects Counts and Prevalence 2006-2010 (Prevalence per 10,000 Live Births)**

Defect	Maternal Race/Ethnicity					Total**	Notes
	White Non-Hispanic	Black Non-Hispanic	Hispanic	Asian or Pacific Islander Non-Hispanic	American Indian or Alaska Native Non-Hispanic		
Amniotic bands	53 <i>1.5</i>	24 <i>1.6</i>	13 <i>1.3</i>	4 <i>2.0</i>	4 <i>4.6</i>	100 <i>1.6</i>	
Anencephalus	86 <i>2.4</i>	28 <i>1.9</i>	37 <i>3.6</i>	6 <i>3.0</i>	4 <i>4.6</i>	178 <i>2.8</i>	
Aniridia	2 <i>0.1</i>	4 <i>0.3</i>	1 <i>0.1</i>	1 <i>0.5</i>	0 <i>0.0</i>	8 <i>0.1</i>	
Anophthalmia/microphthalmia	55 <i>1.6</i>	32 <i>2.1</i>	23 <i>2.2</i>	4 <i>2.0</i>	1 <i>1.1</i>	115 <i>1.8</i>	
Anotia/microtia	48 <i>1.4</i>	15 <i>1.0</i>	35 <i>3.4</i>	5 <i>2.5</i>	6 <i>6.9</i>	110 <i>1.7</i>	
Aortic valve stenosis	93 <i>2.6</i>	36 <i>2.4</i>	24 <i>2.3</i>	2 <i>1.0</i>	3 <i>3.4</i>	158 <i>2.5</i>	
Atrial septal defect	1541 <i>43.5</i>	856 <i>56.9</i>	433 <i>41.7</i>	64 <i>32.2</i>	65 <i>74.3</i>	2968 <i>46.5</i>	
Atrioventricular septal defect (endocardial cushion defect)	226 <i>6.4</i>	96 <i>6.4</i>	61 <i>5.9</i>	9 <i>4.5</i>	7 <i>8.0</i>	403 <i>6.3</i>	
Biliary atresia	21 <i>0.6</i>	16 <i>1.1</i>	9 <i>0.9</i>	0 <i>0.0</i>	1 <i>1.1</i>	47 <i>0.7</i>	
Bladder exstrophy	8 <i>0.2</i>	8 <i>0.5</i>	3 <i>0.3</i>	0 <i>0.0</i>	0 <i>0.0</i>	19 <i>0.3</i>	
Choanal atresia	46 <i>1.3</i>	21 <i>1.4</i>	17 <i>1.6</i>	2 <i>1.0</i>	1 <i>1.1</i>	87 <i>1.4</i>	
Cleft lip with and without cleft palate	347 <i>9.8</i>	104 <i>6.9</i>	92 <i>8.9</i>	17 <i>8.6</i>	13 <i>14.9</i>	574 <i>9.0</i>	
Cleft palate without cleft lip	267 <i>7.5</i>	57 <i>3.8</i>	50 <i>4.8</i>	17 <i>8.6</i>	7 <i>8.0</i>	399 <i>6.3</i>	
Coarctation of aorta	198 <i>5.6</i>	66 <i>4.4</i>	43 <i>4.1</i>	10 <i>5.0</i>	6 <i>6.9</i>	324 <i>5.1</i>	
Common truncus	30 <i>0.8</i>	14 <i>0.9</i>	9 <i>0.9</i>	2 <i>1.0</i>	1 <i>1.1</i>	56 <i>0.9</i>	
Congenital cataract	38 <i>1.1</i>	29 <i>1.9</i>	8 <i>0.8</i>	3 <i>1.5</i>	1 <i>1.1</i>	79 <i>1.2</i>	
Diaphragmatic hernia	101 <i>2.8</i>	32 <i>2.1</i>	29 <i>2.8</i>	7 <i>3.5</i>	3 <i>3.4</i>	174 <i>2.7</i>	
Down syndrome (Trisomy 21)	434 <i>12.2</i>	143 <i>9.5</i>	143 <i>13.8</i>	26 <i>13.1</i>	14 <i>16.0</i>	771 <i>12.1</i>	
Ebstein anomaly	33 <i>0.9</i>	9 <i>0.6</i>	9 <i>0.9</i>	6 <i>3.0</i>	0 <i>0.0</i>	57 <i>0.9</i>	
Encephalocele	42 <i>1.2</i>	19 <i>1.3</i>	16 <i>1.5</i>	2 <i>1.0</i>	2 <i>2.3</i>	82 <i>1.3</i>	
Epispadias	29 <i>0.8</i>	18 <i>1.2</i>	3 <i>0.3</i>	0 <i>0.0</i>	0 <i>0.0</i>	50 <i>0.8</i>	
Esophageal atresia/tracheoesophageal fistula	97 <i>2.7</i>	27 <i>1.8</i>	16 <i>1.5</i>	3 <i>1.5</i>	3 <i>3.4</i>	146 <i>2.3</i>	
Gastroschisis	155 <i>4.4</i>	63 <i>4.2</i>	45 <i>4.3</i>	6 <i>3.0</i>	6 <i>6.9</i>	278 <i>4.4</i>	
Hirschsprung disease (congenital megacolon)	87 <i>2.5</i>	59 <i>3.9</i>	11 <i>1.1</i>	5 <i>2.5</i>	1 <i>1.1</i>	163 <i>2.6</i>	
Hydrocephalus without spina bifida	344 <i>9.7</i>	189 <i>12.6</i>	95 <i>9.2</i>	14 <i>7.0</i>	10 <i>11.4</i>	660 <i>10.3</i>	
Hypoplastic left heart syndrome	92 <i>2.6</i>	38 <i>2.5</i>	27 <i>2.6</i>	3 <i>1.5</i>	1 <i>1.1</i>	162 <i>2.5</i>	
Hypospadias*	1215 <i>66.7</i>	410 <i>53.5</i>	121 <i>22.8</i>	49 <i>47.4</i>	34 <i>76.6</i>	1831 <i>56.0</i>	
Microcephalus	151 <i>4.3</i>	101 <i>6.7</i>	47 <i>4.5</i>	9 <i>4.5</i>	3 <i>3.4</i>	312 <i>4.9</i>	
Obstructive genitourinary defect	1386 <i>39.1</i>	551 <i>36.6</i>	375 <i>36.1</i>	72 <i>36.2</i>	39 <i>44.6</i>	2430 <i>38.1</i>	
Omphalocele	73 <i>2.1</i>	35 <i>2.3</i>	19 <i>1.8</i>	8 <i>4.0</i>	0 <i>0.0</i>	135 <i>2.1</i>	
Patent ductus arteriosus	1199 <i>33.8</i>	554 <i>36.8</i>	378 <i>36.4</i>	59 <i>29.7</i>	36 <i>41.2</i>	2229 <i>34.9</i>	
Pulmonary valve atresia and stenosis	264 <i>7.4</i>	145 <i>9.6</i>	83 <i>8.0</i>	12 <i>6.0</i>	7 <i>8.0</i>	511 <i>8.0</i>	

**North Carolina**  
**Birth Defects Counts and Prevalence 2006-2010 (Prevalence per 10,000 Live Births)**

Defect	Maternal Race/Ethnicity					Total**	Notes
	White Non-Hispanic	Black Non-Hispanic	Hispanic	Asian or Pacific Islander Non-Hispanic	American Indian or Alaska Native Non-Hispanic		
Pulmonary valve atresia	45 <i>1.3</i>	34 <i>2.3</i>	17 <i>1.6</i>	5 <i>2.5</i>	1 <i>1.1</i>	102 <i>1.6</i>	
Pyloric stenosis	734 <i>20.7</i>	91 <i>6.0</i>	198 <i>19.1</i>	8 <i>4.0</i>	23 <i>26.3</i>	1056 <i>16.5</i>	
Rectal and large intestinal atresia/stenosis	147 <i>4.1</i>	59 <i>3.9</i>	61 <i>5.9</i>	5 <i>2.5</i>	5 <i>5.7</i>	279 <i>4.4</i>	
Reduction deformity, lower limbs	61 <i>1.7</i>	31 <i>2.1</i>	19 <i>1.8</i>	3 <i>1.5</i>	4 <i>4.6</i>	119 <i>1.9</i>	
Reduction deformity, upper limbs	126 <i>3.6</i>	62 <i>4.1</i>	34 <i>3.3</i>	6 <i>3.0</i>	8 <i>9.1</i>	237 <i>3.7</i>	
Renal agenesis/hypoplasia	245 <i>6.9</i>	107 <i>7.1</i>	70 <i>6.7</i>	11 <i>5.5</i>	9 <i>10.3</i>	445 <i>7.0</i>	
Spina bifida without anencephalus	153 <i>4.3</i>	43 <i>2.9</i>	59 <i>5.7</i>	8 <i>4.0</i>	2 <i>2.3</i>	268 <i>4.2</i>	
Tetralogy of Fallot	156 <i>4.4</i>	77 <i>5.1</i>	33 <i>3.2</i>	10 <i>5.0</i>	9 <i>10.3</i>	287 <i>4.5</i>	
Total anomalous pulmonary venous return (TAPVR)	39 <i>1.1</i>	15 <i>1.0</i>	19 <i>1.8</i>	5 <i>2.5</i>	2 <i>2.3</i>	80 <i>1.3</i>	
Transposition of great arteries - All	117 <i>3.3</i>	37 <i>2.5</i>	30 <i>2.9</i>	8 <i>4.0</i>	4 <i>4.6</i>	196 <i>3.1</i>	
dextro-Transposition of great arteries (d-TGA)	104 <i>2.9</i>	34 <i>2.3</i>	24 <i>2.3</i>	6 <i>3.0</i>	3 <i>3.4</i>	171 <i>2.7</i>	
Tricuspid valve atresia and stenosis	62 <i>1.7</i>	34 <i>2.3</i>	24 <i>2.3</i>	1 <i>0.5</i>	5 <i>5.7</i>	126 <i>2.0</i>	
Tricuspid valve atresia	50 <i>1.4</i>	31 <i>2.1</i>	21 <i>2.0</i>	1 <i>0.5</i>	4 <i>4.6</i>	107 <i>1.7</i>	
Trisomy 13	34 <i>1.0</i>	23 <i>1.5</i>	14 <i>1.3</i>	2 <i>1.0</i>	1 <i>1.1</i>	76 <i>1.2</i>	
Trisomy 18	99 <i>2.8</i>	38 <i>2.5</i>	25 <i>2.4</i>	10 <i>5.0</i>	2 <i>2.3</i>	181 <i>2.8</i>	
Ventricular septal defect	1503 <i>42.4</i>	619 <i>41.1</i>	559 <i>53.8</i>	67 <i>33.7</i>	44 <i>50.3</i>	2796 <i>43.8</i>	
<b>Total Live Births</b>	<b>354429</b>	<b>150454</b>	<b>103812</b>	<b>19865</b>	<b>8745</b>	<b>638377</b>	
<b>Total Male Live Births</b>	<b>182123</b>	<b>76589</b>	<b>53047</b>	<b>10331</b>	<b>4439</b>	<b>327062</b>	

\*Hypospadias: prevalence per 10,000 male live births

\*\*Total includes unknown race

**North Carolina**  
**Trisomy Counts and Prevalence by Maternal Age 2006-2010 (Prevalence per 10,000 Live Births)**

Defect	Maternal Age (years)		Total**	Notes
	Less than 35	35+		
Down syndrome (Trisomy 21)	431 <i>7.7</i>	337 <i>41.2</i>	771 <i>12.1</i>	
Trisomy 13	56 <i>1.0</i>	20 <i>2.4</i>	76 <i>1.2</i>	
Trisomy 18	100 <i>1.8</i>	79 <i>9.7</i>	181 <i>2.8</i>	
<b>Total Live Births</b>	<b>556641</b>	<b>81703</b>	<b>638377</b>	

\*\*Total includes unknown maternal age

## North Dakota

### Birth Defects Counts and Prevalence 2006-2010 (Prevalence per 10,000 Live Births)

Defect	Maternal Race/Ethnicity					Total**	Notes
	White Non-Hispanic	Black Non-Hispanic	Hispanic	Asian or Pacific Islander Non-Hispanic	American Indian or Alaska Native Non-Hispanic		
Anencephalus	24 <i>6.7</i>	1 <i>13.9</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	25 <i>5.6</i>	
Anophthalmia/microphthalmia	1 <i>0.3</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	1 <i>0.2</i>	
Anotia/microtia	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	2 <i>4.2</i>	2 <i>0.5</i>	
Aortic valve stenosis	9 <i>2.5</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	1 <i>2.1</i>	10 <i>2.3</i>	
Atrial septal defect	243 <i>67.7</i>	9 <i>124.8</i>	0 <i>0.0</i>	0 <i>0.0</i>	84 <i>176.1</i>	342 <i>77.0</i>	
Atrioventricular septal defect (endocardial cushion defect)	6 <i>1.7</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	4 <i>8.4</i>	11 <i>2.5</i>	1
Biliary atresia	2 <i>0.6</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	1 <i>2.1</i>	3 <i>0.7</i>	
Bladder exstrophy	1 <i>0.3</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	1 <i>0.2</i>	
Choanal atresia	3 <i>0.8</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	3 <i>0.7</i>	
Cleft lip with and without cleft palate	56 <i>15.6</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	11 <i>23.1</i>	70 <i>15.8</i>	
Cleft palate without cleft lip	59 <i>16.4</i>	1 <i>13.9</i>	0 <i>0.0</i>	0 <i>0.0</i>	7 <i>14.7</i>	67 <i>15.1</i>	
Coarctation of aorta	11 <i>3.1</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	1 <i>2.1</i>	12 <i>2.7</i>	
Common truncus	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	2 <i>4.2</i>	2 <i>0.5</i>	
Congenital cataract	7 <i>2.0</i>	1 <i>13.9</i>	0 <i>0.0</i>	0 <i>0.0</i>	1 <i>2.1</i>	10 <i>2.3</i>	
Diaphragmatic hernia	14 <i>3.9</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	5 <i>10.5</i>	19 <i>4.3</i>	
Down syndrome (Trisomy 21)	35 <i>9.8</i>	1 <i>13.9</i>	0 <i>0.0</i>	2 <i>33.2</i>	0 <i>0.0</i>	41 <i>9.2</i>	
Ebstein anomaly	5 <i>1.4</i>	1 <i>13.9</i>	0 <i>0.0</i>	0 <i>0.0</i>	1 <i>2.1</i>	7 <i>1.6</i>	
Encephalocele	1 <i>0.3</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	1 <i>2.1</i>	2 <i>0.5</i>	
Esophageal atresia/tracheoesophageal fistula	18 <i>5.0</i>	1 <i>13.9</i>	0 <i>0.0</i>	0 <i>0.0</i>	1 <i>2.1</i>	20 <i>4.5</i>	
Fetus or newborn affected by maternal alcohol use	1 <i>0.3</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	2 <i>4.2</i>	3 <i>0.7</i>	
Gastroschisis	21 <i>5.9</i>	2 <i>27.7</i>	0 <i>0.0</i>	1 <i>16.6</i>	16 <i>33.5</i>	40 <i>9.0</i>	2
Hirschsprung disease (congenital megacolon)	8 <i>2.2</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	3 <i>6.3</i>	11 <i>2.5</i>	
Hydrocephalus without spina bifida	17 <i>4.7</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	6 <i>12.6</i>	25 <i>5.6</i>	
Hypoplastic left heart syndrome	12 <i>3.3</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	1 <i>2.1</i>	13 <i>2.9</i>	
Hypospadias*	53 <i>28.9</i>	2 <i>48.1</i>	0 <i>0.0</i>	1 <i>40.8</i>	5 <i>19.4</i>	61 <i>26.9</i>	3
Microcephalus	13 <i>3.6</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	1 <i>2.1</i>	15 <i>3.4</i>	
Obstructive genitourinary defect	4 <i>1.1</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	4 <i>0.9</i>	
Omphalocele	4 <i>1.1</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	1 <i>2.1</i>	5 <i>1.1</i>	4
Patent ductus arteriosus	168 <i>46.8</i>	5 <i>69.3</i>	0 <i>0.0</i>	2 <i>33.2</i>	46 <i>96.4</i>	225 <i>50.6</i>	5
Pulmonary valve atresia and stenosis	46 <i>12.8</i>	1 <i>13.9</i>	0 <i>0.0</i>	0 <i>0.0</i>	14 <i>29.4</i>	62 <i>14.0</i>	6
Pyloric stenosis	83 <i>23.1</i>	1 <i>13.9</i>	0 <i>0.0</i>	0 <i>0.0</i>	20 <i>41.9</i>	105 <i>23.6</i>	
Rectal and large intestinal atresia/stenosis	13 <i>3.6</i>	1 <i>13.9</i>	0 <i>0.0</i>	0 <i>0.0</i>	1 <i>2.1</i>	15 <i>3.4</i>	

**North Dakota**  
**Birth Defects Counts and Prevalence 2006-2010 (Prevalence per 10,000 Live Births)**

Defect	Maternal Race/Ethnicity					Total**	Notes
	White Non-Hispanic	Black Non-Hispanic	Hispanic	Asian or Pacific Islander Non-Hispanic	American Indian or Alaska Native Non-Hispanic		
Reduction deformity, lower limbs	4 <i>1.1</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	2 <i>4.2</i>	6 <i>1.4</i>	
Reduction deformity, upper limbs	3 <i>0.8</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	3 <i>0.7</i>	
Renal agenesis/hypoplasia	11 <i>3.1</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	4 <i>8.4</i>	15 <i>3.4</i>	
Spina bifida without anencephalus	18 <i>5.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	7 <i>14.7</i>	25 <i>5.6</i>	
Tetralogy of Fallot	19 <i>5.3</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	7 <i>14.7</i>	26 <i>5.9</i>	
Total anomalous pulmonary venous return (TAPVR)	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	1 <i>2.1</i>	1 <i>0.2</i>	
Transposition of great arteries - All	21 <i>5.9</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	1 <i>2.1</i>	22 <i>5.0</i>	
Tricuspid valve atresia and stenosis	5 <i>1.4</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	5 <i>1.1</i>	7
Trisomy 18	4 <i>1.1</i>	0 <i>0.0</i>	0 <i>0.0</i>	1 <i>16.6</i>	0 <i>0.0</i>	5 <i>1.1</i>	8
Ventricular septal defect	130 <i>36.2</i>	3 <i>41.6</i>	0 <i>0.0</i>	0 <i>0.0</i>	42 <i>88.1</i>	184 <i>41.4</i>	9
<b>Total Live Births</b>	<b>35881</b>	<b>721</b>	<b>1733</b>	<b>602</b>	<b>4770</b>	<b>44427</b>	
<b>Total Male Live Births</b>	<b>18331</b>	<b>416</b>	<b>762</b>	<b>245</b>	<b>2575</b>	<b>22680</b>	

\*Hypospadias: prevalence per 10,000 male live births

\*\*Total includes unknown race



**North Dakota**  
**Trisomy Counts and Prevalence by Maternal Age 2006-2010 (Prevalence per 10,000 Live Births)**

Defect	Maternal Age (years)		Total**	Notes
	Less than 35	35+		
Down syndrome (Trisomy 21)	25 <i>6.3</i>	15 <i>33.2</i>	41 <i>9.2</i>	
Trisomy 13	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	8
Trisomy 18	4 <i>1.0</i>	1 <i>2.2</i>	5 <i>1.1</i>	8
<b>Total Live Births</b>	<b>39847</b>	<b>4520</b>	<b>44427</b>	

\*\*Total includes unknown maternal age

**Notes**

- 1.State uses ICD-9 code 745.60, .61, .69 for confirmed diagnosis. We cannot distinguish 745.487 CDC/BPA codes.
- 2.North Dakota Vital Statistics collects data using ICD-10 codes. Gastroschisis and Omphalocele cannot be distinguished.
- 3.The state uses ICD-9 codes and cannot distinguish between epispadias & hypospadias unless reported.
- 4.North Dakota Vital Statistics collects data using ICD-10 codes; Gastroschisis and Omphalocele cannot be distinguished. North Dakota Vital Statistics has started collected data using ICD-10 codes for Omphalocele from 2008 onwards in the birth certificates.
- 5.Infants less than 2500 grams birth weight are unable to be excluded.
- 6.Only ICD-9 code 746.01
- 7.State uses ICD-9 code 746.1 for confirmed diagnosis. We cannot distinguish 746.105 and 746.106 CDC/BPA codes.
- 8.North Dakota Vital Statistics implemented electronic registration of births starting in 2006. Underascertainment of confirmed trisomy cases are suspected in the new electronic birth certificate.
- 9.State uses ICD-9 code 745.4 for confirmed diagnosis. We cannot distinguish 745.487 and 745.498 CDC/BPA codes.

**General comments**

- During the reporting period 2013, 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 ND Birth Defects Monitoring System and includes data for births with defects for infants born in the calendar year 2010 from the Division of Medical Genetics program.
- Fetal Death or 'birth resulting in stillbirth' means death prior to the complete expulsion or extraction from its mother of a product of human conception, irrespective of the duration of pregnancy. The death is indicated by the fact that after such expulsion or extraction the fetus does not breathe or show any evidence of life such as beating of the heart, pulsation of the umbilical cord, or definite movement of voluntary muscles. North Dakota does not require reporting of this event before 20 weeks of gestation. Although collection is attempted, reporting is poor.
- North Dakota Vital Statistics implemented electronic registration of births starting in 2006.
- 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.

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

Defect	Maternal Race/Ethnicity					Total**	Notes
	Non-Hispanic White	Non-Hispanic Black or African	Hispanic	Asian or Pacific Islander	American Indian or Alaska Native		
Cleft lip with and without cleft palate	119 <i>10.5</i>	14 <i>5.6</i>	5 <i>7.3</i>	3 <i>9.6</i>	0 <i>0.0</i>	141 <i>9.5</i>	1
Cleft palate without cleft lip	94 <i>8.3</i>	19 <i>7.7</i>	3 <i>4.4</i>	2 <i>6.4</i>	0 <i>0.0</i>	118 <i>7.9</i>	1
Down syndrome (Trisomy 21)	126 <i>11.1</i>	27 <i>10.9</i>	8 <i>11.6</i>	3 <i>9.6</i>	1 <i>46.3</i>	165 <i>11.1</i>	2
Spina bifida without anencephalus	40 <i>3.5</i>	3 <i>1.2</i>	3 <i>4.4</i>	0 <i>0.0</i>	0 <i>0.0</i>	46 <i>3.1</i>	3
Trisomy 13	10 <i>0.9</i>	2 <i>0.8</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	12 <i>0.8</i>	2
Trisomy 18	15 <i>1.3</i>	8 <i>3.2</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	23 <i>1.5</i>	2
<b>Total Live Births</b>	<b>113542</b>	<b>24818</b>	<b>6887</b>	<b>3129</b>	<b>216</b>	<b>148592</b>	
<b>Total Male Live Births</b>	<b>57955</b>	<b>12532</b>	<b>3482</b>	<b>1605</b>	<b>103</b>	<b>75677</b>	

\*\*Total includes unknown race

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

Defect	Maternal Age (years)		Total	Notes
	Less than 35 years old	35 years old or older		
Down syndrome (Trisomy 21)	96 <i>7.3</i>	69 <i>39.6</i>	165 <i>11.1</i>	2
Trisomy 13	9 <i>0.7</i>	3 <i>1.7</i>	12 <i>0.8</i>	2
Trisomy 18	7 <i>0.5</i>	16 <i>9.2</i>	23 <i>1.5</i>	2
<b>Total Live Births</b>	<b>131185</b>	<b>17407</b>	<b>148592</b>	

\*\*Total includes unknown maternal age

**Notes**

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

**General comments**

-Data is only available for the year 2008.

**Oklahoma**  
**Birth Defects Counts and Prevalence 2006-2010 (Prevalence per 10,000 Live Births)**

Defect	Maternal Race/Ethnicity					Total**	Notes
	Non-Hispanic White	Non-Hispanic Black or African	Hispanic	Asian or Pacific Islander	American Indian or Alaska Native		
Amniotic bands	9 <i>0.5</i>	3 <i>1.2</i>	1 <i>0.3</i>	1 <i>1.6</i>	2 <i>0.7</i>	16 <i>0.6</i>	
Anencephalus	45 <i>2.6</i>	4 <i>1.6</i>	7 <i>2.0</i>	2 <i>3.3</i>	7 <i>2.3</i>	65 <i>2.4</i>	
Aniridia	6 <i>0.3</i>	0 <i>0.0</i>	1 <i>0.3</i>	0 <i>0.0</i>	0 <i>0.0</i>	8 <i>0.3</i>	
Anophthalmia/microphthalmia	24 <i>1.4</i>	2 <i>0.8</i>	6 <i>1.7</i>	1 <i>1.6</i>	6 <i>2.0</i>	39 <i>1.4</i>	
Anotia/microtia	35 <i>2.0</i>	2 <i>0.8</i>	14 <i>4.0</i>	2 <i>3.3</i>	5 <i>1.7</i>	58 <i>2.2</i>	
Aortic valve stenosis	69 <i>4.0</i>	6 <i>2.4</i>	9 <i>2.5</i>	0 <i>0.0</i>	5 <i>1.7</i>	89 <i>3.3</i>	
Atrial septal defect	1244 <i>72.2</i>	203 <i>82.6</i>	171 <i>48.3</i>	17 <i>28.0</i>	256 <i>84.7</i>	1903 <i>70.7</i>	
Atrioventricular septal defect (endocardial cushion defect)	88 <i>5.1</i>	15 <i>6.1</i>	10 <i>2.8</i>	0 <i>0.0</i>	15 <i>5.0</i>	128 <i>4.8</i>	
Biliary atresia	12 <i>0.7</i>	1 <i>0.4</i>	2 <i>0.6</i>	0 <i>0.0</i>	3 <i>1.0</i>	18 <i>0.7</i>	
Bladder exstrophy	6 <i>0.3</i>	1 <i>0.4</i>	0 <i>0.0</i>	0 <i>0.0</i>	2 <i>0.7</i>	9 <i>0.3</i>	
Choanal atresia	30 <i>1.7</i>	2 <i>0.8</i>	3 <i>0.8</i>	1 <i>1.6</i>	4 <i>1.3</i>	40 <i>1.5</i>	
Cleft lip with and without cleft palate	147 <i>8.5</i>	16 <i>6.5</i>	17 <i>4.8</i>	4 <i>6.6</i>	29 <i>9.6</i>	214 <i>8.0</i>	
Cleft palate without cleft lip	256 <i>14.9</i>	19 <i>7.7</i>	30 <i>8.5</i>	6 <i>9.9</i>	47 <i>15.6</i>	358 <i>13.3</i>	
Coarctation of aorta	95 <i>5.5</i>	15 <i>6.1</i>	14 <i>4.0</i>	2 <i>3.3</i>	17 <i>5.6</i>	144 <i>5.4</i>	
Common truncus	20 <i>1.2</i>	4 <i>1.6</i>	2 <i>0.6</i>	1 <i>1.6</i>	3 <i>1.0</i>	30 <i>1.1</i>	
Congenital cataract	38 <i>2.2</i>	6 <i>2.4</i>	1 <i>0.3</i>	0 <i>0.0</i>	3 <i>1.0</i>	49 <i>1.8</i>	
Congenital hip dislocation	77 <i>4.5</i>	5 <i>2.0</i>	15 <i>4.2</i>	4 <i>6.6</i>	10 <i>3.3</i>	112 <i>4.2</i>	
Diaphragmatic hernia	75 <i>4.4</i>	6 <i>2.4</i>	13 <i>3.7</i>	2 <i>3.3</i>	8 <i>2.6</i>	104 <i>3.9</i>	
Down syndrome (Trisomy 21)	203 <i>11.8</i>	24 <i>9.8</i>	67 <i>18.9</i>	6 <i>9.9</i>	32 <i>10.6</i>	332 <i>12.3</i>	
Ebstein anomaly	13 <i>0.8</i>	0 <i>0.0</i>	2 <i>0.6</i>	0 <i>0.0</i>	2 <i>0.7</i>	17 <i>0.6</i>	
Encephalocele	17 <i>1.0</i>	5 <i>2.0</i>	1 <i>0.3</i>	1 <i>1.6</i>	1 <i>0.3</i>	26 <i>1.0</i>	
Epispadias	10 <i>0.6</i>	3 <i>1.2</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	13 <i>0.5</i>	
Esophageal atresia/tracheoesophageal fistula	53 <i>3.1</i>	8 <i>3.3</i>	8 <i>2.3</i>	1 <i>1.6</i>	10 <i>3.3</i>	80 <i>3.0</i>	
Fetus or newborn affected by maternal alcohol use	5 <i>0.3</i>	1 <i>0.4</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	6 <i>0.2</i>	
Gastroschisis	113 <i>6.6</i>	7 <i>2.8</i>	20 <i>5.6</i>	3 <i>4.9</i>	33 <i>10.9</i>	176 <i>6.5</i>	
Hirschsprung disease (congenital megacolon)	30 <i>1.7</i>	6 <i>2.4</i>	2 <i>0.6</i>	1 <i>1.6</i>	5 <i>1.7</i>	44 <i>1.6</i>	
Hydrocephalus without spina bifida	115 <i>6.7</i>	16 <i>6.5</i>	17 <i>4.8</i>	1 <i>1.6</i>	21 <i>7.0</i>	171 <i>6.4</i>	
Hypoplastic left heart syndrome	43 <i>2.5</i>	2 <i>0.8</i>	4 <i>1.1</i>	1 <i>1.6</i>	9 <i>3.0</i>	60 <i>2.2</i>	
Hypospadias*	410 <i>46.5</i>	48 <i>38.3</i>	15 <i>8.3</i>	8 <i>25.8</i>	49 <i>32.0</i>	533 <i>38.8</i>	
Microcephalus	133 <i>7.7</i>	24 <i>9.8</i>	20 <i>5.6</i>	1 <i>1.6</i>	23 <i>7.6</i>	203 <i>7.5</i>	
Obstructive genitourinary defect	772 <i>44.8</i>	88 <i>35.8</i>	142 <i>40.1</i>	24 <i>39.5</i>	95 <i>31.4</i>	1124 <i>41.8</i>	
Omphalocele	44 <i>2.6</i>	8 <i>3.3</i>	7 <i>2.0</i>	0 <i>0.0</i>	6 <i>2.0</i>	65 <i>2.4</i>	

**Oklahoma**  
**Birth Defects Counts and Prevalence 2006-2010 (Prevalence per 10,000 Live Births)**

Defect	Maternal Race/Ethnicity					Total**	Notes
	Non-Hispanic White	Non-Hispanic Black or African	Hispanic	Asian or Pacific Islander	American Indian or Alaska Native		
Pulmonary valve atresia and stenosis	128 <i>7.4</i>	21 <i>8.5</i>	23 <i>6.5</i>	2 <i>3.3</i>	23 <i>7.6</i>	197 <i>7.3</i>	
Pulmonary valve atresia	17 <i>1.0</i>	3 <i>1.2</i>	3 <i>0.8</i>	0 <i>0.0</i>	3 <i>1.0</i>	26 <i>1.0</i>	
Pyloric stenosis	769 <i>44.6</i>	42 <i>17.1</i>	131 <i>37.0</i>	8 <i>13.2</i>	138 <i>45.7</i>	1090 <i>40.5</i>	
Rectal and large intestinal atresia/stenosis	112 <i>6.5</i>	17 <i>6.9</i>	21 <i>5.9</i>	3 <i>4.9</i>	16 <i>5.3</i>	170 <i>6.3</i>	
Reduction deformity, lower limbs	27 <i>1.6</i>	2 <i>0.8</i>	5 <i>1.4</i>	0 <i>0.0</i>	4 <i>1.3</i>	39 <i>1.4</i>	
Reduction deformity, upper limbs	59 <i>3.4</i>	9 <i>3.7</i>	8 <i>2.3</i>	1 <i>1.6</i>	18 <i>6.0</i>	96 <i>3.6</i>	
Renal agenesis/hypoplasia	101 <i>5.9</i>	12 <i>4.9</i>	18 <i>5.1</i>	3 <i>4.9</i>	16 <i>5.3</i>	153 <i>5.7</i>	
Spina bifida without anencephalus	87 <i>5.1</i>	6 <i>2.4</i>	12 <i>3.4</i>	0 <i>0.0</i>	9 <i>3.0</i>	116 <i>4.3</i>	
Tetralogy of Fallot	83 <i>4.8</i>	16 <i>6.5</i>	16 <i>4.5</i>	1 <i>1.6</i>	15 <i>5.0</i>	131 <i>4.9</i>	
Total anomalous pulmonary venous return (TAPVR)	22 <i>1.3</i>	4 <i>1.6</i>	5 <i>1.4</i>	0 <i>0.0</i>	9 <i>3.0</i>	40 <i>1.5</i>	
Transposition of great arteries - All	62 <i>3.6</i>	8 <i>3.3</i>	7 <i>2.0</i>	1 <i>1.6</i>	11 <i>3.6</i>	89 <i>3.3</i>	
dextro-Transposition of great arteries (d-TGA)	57 <i>3.3</i>	8 <i>3.3</i>	6 <i>1.7</i>	1 <i>1.6</i>	11 <i>3.6</i>	83 <i>3.1</i>	
Tricuspid valve atresia and stenosis	21 <i>1.2</i>	3 <i>1.2</i>	5 <i>1.4</i>	0 <i>0.0</i>	2 <i>0.7</i>	31 <i>1.2</i>	
Tricuspid valve atresia	15 <i>0.9</i>	3 <i>1.2</i>	3 <i>0.8</i>	0 <i>0.0</i>	1 <i>0.3</i>	22 <i>0.8</i>	
Trisomy 13	20 <i>1.2</i>	4 <i>1.6</i>	2 <i>0.6</i>	0 <i>0.0</i>	5 <i>1.7</i>	31 <i>1.2</i>	
Trisomy 18	37 <i>2.1</i>	9 <i>3.7</i>	2 <i>0.6</i>	1 <i>1.6</i>	7 <i>2.3</i>	56 <i>2.1</i>	
Ventricular septal defect	973 <i>56.5</i>	144 <i>58.6</i>	178 <i>50.3</i>	21 <i>34.6</i>	161 <i>53.3</i>	1485 <i>55.2</i>	
<b>Total Live Births</b>	<b>172234</b>	<b>24580</b>	<b>35414</b>	<b>6075</b>	<b>30211</b>	<b>269052</b>	
<b>Total Male Live Births</b>	<b>88148</b>	<b>12524</b>	<b>18005</b>	<b>3095</b>	<b>15336</b>	<b>137367</b>	

\*Hypospadias: prevalence per 10,000 male live births

\*\*Total includes unknown race

**Oklahoma**  
**Trisomy Counts and Prevalence by Maternal Age 2006-2010 (Prevalence per 10,000 Live Births)**

Defect	Age		Total**	Notes
	Less than 35	35 and greater		
Down syndrome (Trisomy 21)	188 <i>7.6</i>	143 <i>63.5</i>	332 <i>12.3</i>	
Trisomy 13	24 <i>1.0</i>	7 <i>3.1</i>	31 <i>1.2</i>	
Trisomy 18	39 <i>1.6</i>	17 <i>7.6</i>	56 <i>2.1</i>	
<b>Total Live Births</b>	<b>246518</b>	<b>22513</b>	<b>269052</b>	

\*\*Total includes unknown maternal age

**General comments**

-Oklahoma definition of stillbirth is baby born dead (without heart rate), at or after 20th gestational week; includes babies that died during labor.

**Puerto Rico**  
**Birth Defects Counts and Prevalence 2006-2010 (Prevalence per 10,000 Live Births)**

Defect	Maternal Race/Ethnicity					Total**	Notes
	Non-Hispanic White	Non-Hispanic Black or African	Hispanic	Asian or Pacific Islander	American Indian or Alaska Native		
Anencephalus	0	0	93	0	0	93	
	.	.	<b>4.1</b>	.	.	<b>4.1</b>	
Anophthalmia/microphthalmia	0	0	20	0	0	20	1
	.	.	<b>1.5</b>	.	.	<b>1.5</b>	
Anotia/microtia	0	0	34	0	0	34	1
	.	.	<b>2.6</b>	.	.	<b>2.6</b>	
Aortic valve stenosis	0	0	42	0	0	42	
	.	.	<b>1.8</b>	.	.	<b>1.8</b>	
Atrial septal defect	0	0	502	0	0	502	2
	.	.	<b>22.0</b>	.	.	<b>22.0</b>	
Atrioventricular septal defect (endocardial cushion defect)	0	0	100	0	0	100	3
	.	.	<b>4.4</b>	.	.	<b>4.4</b>	
Cleft lip with and without cleft palate	0	0	209	0	0	209	
	.	.	<b>9.2</b>	.	.	<b>9.2</b>	
Cleft palate without cleft lip	0	0	145	0	0	145	
	.	.	<b>6.4</b>	.	.	<b>6.4</b>	
Coarctation of aorta	0	0	247	0	0	247	
	.	.	<b>10.8</b>	.	.	<b>10.8</b>	
Common truncus	0	0	13	0	0	13	
	.	.	<b>0.6</b>	.	.	<b>0.6</b>	
Down syndrome (Trisomy 21)	0	0	324	0	0	324	
	.	.	<b>14.2</b>	.	.	<b>14.2</b>	
Ebstein anomaly	0	0	21	0	0	21	
	.	.	<b>0.9</b>	.	.	<b>0.9</b>	
Encephalocele	0	0	29	0	0	29	
	.	.	<b>1.3</b>	.	.	<b>1.3</b>	
Epispadias	0	0	6	0	0	6	4
	.	.	<b>0.3</b>	.	.	<b>0.3</b>	
Gastroschisis	0	0	116	0	0	116	5
	.	.	<b>5.1</b>	.	.	<b>5.1</b>	
Hypoplastic left heart syndrome	0	0	50	0	0	50	
	.	.	<b>2.2</b>	.	.	<b>2.2</b>	
Hypospadias*	0	0	307	0	0	307	4
	.	.	<b>33.3</b>	.	.	<b>33.3</b>	
Omphalocele	0	0	57	0	0	57	5
	.	.	<b>2.5</b>	.	.	<b>2.5</b>	
Patent ductus arteriosus	0	0	551	0	0	551	6
	.	.	<b>24.1</b>	.	.	<b>24.1</b>	
Pulmonary valve atresia and stenosis	0	0	239	0	0	239	
	.	.	<b>10.5</b>	.	.	<b>10.5</b>	
Pulmonary valve atresia	0	0	22	0	0	22	
	.	.	<b>1.0</b>	.	.	<b>1.0</b>	
Reduction deformity, lower limbs	0	0	36	0	0	36	
	.	.	<b>1.6</b>	.	.	<b>1.6</b>	
Reduction deformity, upper limbs	0	0	81	0	0	81	
	.	.	<b>3.5</b>	.	.	<b>3.5</b>	
Spina bifida without anencephalus	0	0	109	0	0	109	
	.	.	<b>4.8</b>	.	.	<b>4.8</b>	
Tetralogy of Fallot	0	0	92	0	0	92	
	.	.	<b>4.0</b>	.	.	<b>4.0</b>	
Total anomalous pulmonary venous return (TAPVR)	0	0	15	0	0	15	
	.	.	<b>0.7</b>	.	.	<b>0.7</b>	
Transposition of great arteries - All	0	0	64	0	0	64	
	.	.	<b>2.8</b>	.	.	<b>2.8</b>	
dextro-Transposition of great arteries (d-TGA)	0	0	54	0	0	54	
	.	.	<b>2.4</b>	.	.	<b>2.4</b>	
Tricuspid valve atresia and stenosis	0	0	29	0	0	29	7
	.	.	<b>1.3</b>	.	.	<b>1.3</b>	
Trisomy 13	0	0	30	0	0	30	
	.	.	<b>1.3</b>	.	.	<b>1.3</b>	
Trisomy 18	0	0	83	0	0	83	
	.	.	<b>3.6</b>	.	.	<b>3.6</b>	
Ventricular septal defect	0	0	554	0	0	554	8
	.	.	<b>24.3</b>	.	.	<b>24.3</b>	

**Puerto Rico****Birth Defects Counts and Prevalence 2006-2010 (Prevalence per 10,000 Live Births)**

Defect	Maternal Race/Ethnicity					Total**	Notes
	Non-Hispanic White	Non-Hispanic Black or African	Hispanic	Asian or Pacific Islander	American Indian or Alaska Native		
Total Live Births	0	0	228267	0	0	228267	
Total Male Live Births	0	0	92279	0	0	92279	

\*Hypospadias: prevalence per 10,000 male live births

\*\*Total includes unknown race



**Puerto Rico**  
**Trisomy Counts and Prevalence by Maternal Age 2006-2010 (Prevalence per 10,000 Live Births)**

Defect	Age		Total**	Notes
	Less than 35	35 and greater		
Down syndrome (Trisomy 21)	190 <i>9.1</i>	134 <i>70.4</i>	324 <i>14.2</i>	
Trisomy 13	19 <i>0.9</i>	11 <i>5.8</i>	30 <i>1.3</i>	
Trisomy 18	50 <i>2.4</i>	33 <i>17.3</i>	83 <i>3.6</i>	
<b>Total Live Births</b>	<b>209158</b>	<b>19038</b>	<b>228267</b>	

\*\*Total includes unknown maternal age

**Notes**

- 1.Data only available 2008-2010.
- 2.Excludes PFO.
- 3.Only includes AV Canal.
- 4.Data only available 2007-2010.
- 5.We used clinical diagnosis to distinguish the two conditions.
- 6.Unable to exclude infants with defect last noted at less than 6 weeks of age.
- 7.Excludes 746.106 and 746.105.
- 8.Excludes probable cases. We can't distinguish inlet VSD from other VSD. However we exclude inlet/posterior type VSD in the presence of AV Canal.

**General comments**

- Probable/possible diagnoses were not included.
- The coding system used was ICD 9 CM.
- We include stillbirths and terminations (no gestational age cut off) in our counts.

**Rhode Island**  
**Birth Defects Counts and Prevalence 2006-2010 (Prevalence per 10,000 Live Births)**

Defect	Maternal Race/Ethnicity					Total**	Notes
	Non-Hispanic White	Non-Hispanic Black or African	Hispanic	Asian or Pacific Islander	American Indian or Alaska Native		
Amniotic bands	0 <i>0.0</i>	0 <i>0.0</i>	3 <i>2.5</i>	0 <i>0.0</i>	0 <i>0.0</i>	3 <i>0.5</i>	
Anencephalus	3 <i>0.8</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	3 <i>0.5</i>	
Anophthalmia/microphthalmia	1 <i>0.3</i>	1 <i>2.0</i>	1 <i>0.8</i>	0 <i>0.0</i>	0 <i>0.0</i>	3 <i>0.5</i>	
Anotia/microtia	1 <i>0.3</i>	0 <i>0.0</i>	4 <i>3.4</i>	0 <i>0.0</i>	1 <i>18.6</i>	6 <i>1.0</i>	
Aortic valve stenosis	4 <i>1.1</i>	1 <i>2.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	5 <i>0.9</i>	
Atrial septal defect	117 <i>32.7</i>	26 <i>52.6</i>	45 <i>37.8</i>	4 <i>15.8</i>	3 <i>55.9</i>	198 <i>34.4</i>	
Atrioventricular septal defect (endocardial cushion defect)	11 <i>3.1</i>	1 <i>2.0</i>	1 <i>0.8</i>	0 <i>0.0</i>	0 <i>0.0</i>	13 <i>2.3</i>	
Biliary atresia	1 <i>0.3</i>	1 <i>2.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	3 <i>0.5</i>	
Bladder exstrophy	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	1 <i>0.2</i>	
Choanal atresia	2 <i>0.6</i>	1 <i>2.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	3 <i>0.5</i>	
Cleft lip with and without cleft palate	19 <i>5.3</i>	2 <i>4.0</i>	11 <i>9.2</i>	2 <i>7.9</i>	0 <i>0.0</i>	35 <i>6.1</i>	
Cleft palate without cleft lip	24 <i>6.7</i>	1 <i>2.0</i>	7 <i>5.9</i>	3 <i>11.8</i>	1 <i>18.6</i>	36 <i>6.3</i>	
Coarctation of aorta	4 <i>1.1</i>	2 <i>4.0</i>	4 <i>3.4</i>	1 <i>3.9</i>	0 <i>0.0</i>	11 <i>1.9</i>	
Common truncus	0 <i>0.0</i>	1 <i>2.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	1 <i>0.2</i>	
Congenital cataract	1 <i>0.3</i>	1 <i>2.0</i>	1 <i>0.8</i>	0 <i>0.0</i>	0 <i>0.0</i>	3 <i>0.5</i>	
Congenital hip dislocation	35 <i>9.8</i>	4 <i>8.1</i>	7 <i>5.9</i>	0 <i>0.0</i>	0 <i>0.0</i>	46 <i>8.0</i>	
Diaphragmatic hernia	10 <i>2.8</i>	1 <i>2.0</i>	3 <i>2.5</i>	1 <i>3.9</i>	0 <i>0.0</i>	16 <i>2.8</i>	
Down syndrome (Trisomy 21)	48 <i>13.4</i>	5 <i>10.1</i>	16 <i>13.4</i>	2 <i>7.9</i>	0 <i>0.0</i>	84 <i>14.6</i>	
Ebstein anomaly	3 <i>0.8</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	3 <i>0.5</i>	
Encephalocele	1 <i>0.3</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	1 <i>0.2</i>	
Epispadias	8 <i>2.2</i>	1 <i>2.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	9 <i>1.6</i>	
Esophageal atresia/tracheoesophageal fistula	9 <i>2.5</i>	1 <i>2.0</i>	4 <i>3.4</i>	0 <i>0.0</i>	0 <i>0.0</i>	15 <i>2.6</i>	
Fetus or newborn affected by maternal alcohol use	5 <i>1.4</i>	4 <i>8.1</i>	4 <i>3.4</i>	0 <i>0.0</i>	0 <i>0.0</i>	15 <i>2.6</i>	
Gastroschisis	11 <i>3.1</i>	4 <i>8.1</i>	8 <i>6.7</i>	1 <i>3.9</i>	0 <i>0.0</i>	24 <i>4.2</i>	
Hirschsprung disease (congenital megacolon)	2 <i>0.6</i>	0 <i>0.0</i>	3 <i>2.5</i>	0 <i>0.0</i>	0 <i>0.0</i>	6 <i>1.0</i>	
Hydrocephalus without spina bifida	15 <i>4.2</i>	4 <i>8.1</i>	5 <i>4.2</i>	2 <i>7.9</i>	1 <i>18.6</i>	29 <i>5.0</i>	
Hypoplastic left heart syndrome	4 <i>1.1</i>	1 <i>2.0</i>	1 <i>0.8</i>	2 <i>7.9</i>	0 <i>0.0</i>	8 <i>1.4</i>	
Hypospadias*	143 <i>77.6</i>	22 <i>87.3</i>	46 <i>75.0</i>	4 <i>32.3</i>	1 <i>36.8</i>	221 <i>75.1</i>	
Microcephalus	11 <i>3.1</i>	2 <i>4.0</i>	4 <i>3.4</i>	3 <i>11.8</i>	0 <i>0.0</i>	20 <i>3.5</i>	
Obstructive genitourinary defect	99 <i>27.7</i>	22 <i>44.5</i>	37 <i>31.0</i>	7 <i>27.6</i>	1 <i>18.6</i>	172 <i>29.9</i>	
Omphalocele	6 <i>1.7</i>	2 <i>4.0</i>	3 <i>2.5</i>	0 <i>0.0</i>	0 <i>0.0</i>	11 <i>1.9</i>	
Patent ductus arteriosus	108 <i>30.2</i>	23 <i>46.6</i>	44 <i>36.9</i>	7 <i>27.6</i>	2 <i>37.2</i>	190 <i>33.0</i>	1

**Rhode Island**  
**Birth Defects Counts and Prevalence 2006-2010 (Prevalence per 10,000 Live Births)**

Defect	Maternal Race/Ethnicity					Total**	Notes
	Non-Hispanic White	Non-Hispanic Black or African	Hispanic	Asian or Pacific Islander	American Indian or Alaska Native		
Pulmonary valve atresia and stenosis	19 5.3	3 6.1	10 8.4	1 3.9	1 18.6	35 6.1	
Pulmonary valve atresia	6 1.7	0 0.0	2 1.7	0 0.0	1 18.6	9 1.6	
Pyloric stenosis	16 4.5	3 6.1	5 4.2	0 0.0	1 18.6	27 4.7	
Rectal and large intestinal atresia/stenosis	12 3.4	4 8.1	5 4.2	1 3.9	0 0.0	22 3.8	
Reduction deformity, lower limbs	7 2.0	0 0.0	3 2.5	0 0.0	0 0.0	10 1.7	
Reduction deformity, upper limbs	7 2.0	0 0.0	1 0.8	0 0.0	0 0.0	9 1.6	
Renal agenesis/hypoplasia	3 0.8	1 2.0	1 0.8	0 0.0	0 0.0	6 1.0	
Spina bifida without anencephalus	8 2.2	1 2.0	5 4.2	0 0.0	0 0.0	15 2.6	
Tetralogy of Fallot	9 2.5	2 4.0	6 5.0	0 0.0	0 0.0	19 3.3	
Total anomalous pulmonary venous return (TAPVR)	1 0.3	0 0.0	3 2.5	0 0.0	0 0.0	4 0.7	
Transposition of great arteries - All	9 2.5	1 2.0	4 3.4	2 7.9	0 0.0	17 3.0	
dextro-Transposition of great arteries (d-TGA)	4 1.1	1 2.0	3 2.5	1 3.9	0 0.0	9 1.6	
Tricuspid valve atresia and stenosis	0 0.0	0 0.0	1 0.8	0 0.0	1 18.6	2 0.3	
Tricuspid valve atresia	0 0.0	0 0.0	1 0.8	0 0.0	1 18.6	2 0.3	
Trisomy 13	2 0.6	2 4.0	3 2.5	1 3.9	0 0.0	10 1.7	
Trisomy 18	11 3.1	1 2.0	4 3.4	0 0.0	0 0.0	19 3.3	
Ventricular septal defect	131 36.6	15 30.4	48 40.3	11 43.4	1 18.6	210 36.5	
<b>Total Live Births</b>	<b>35791</b>	<b>4940</b>	<b>11917</b>	<b>2534</b>	<b>537</b>	<b>57518</b>	
<b>Total Male Live Births</b>	<b>18416</b>	<b>2521</b>	<b>6134</b>	<b>1238</b>	<b>272</b>	<b>29429</b>	

\*Hypospadias: prevalence per 10,000 male live births

\*\*Total includes unknown race

**Rhode Island**  
**Trisomy Counts and Prevalence by Maternal Age 2006-2010 (Prevalence per 10,000 Live Births)**

Defect	Age		Total**	Notes
	Less than 35	35 and greater		
Down syndrome (Trisomy 21)	35 <i>7.4</i>	40 <i>40.0</i>	84 <i>14.6</i>	
Trisomy 13	4 <i>0.8</i>	5 <i>5.0</i>	10 <i>1.7</i>	
Trisomy 18	8 <i>1.7</i>	9 <i>9.0</i>	19 <i>3.3</i>	
<b>Total Live Births</b>	<b>47524</b>	<b>9988</b>	<b>57518</b>	

\*\*Total includes unknown maternal age

**Notes**

1.Excludes PDA less than 36 weeks of gestation.

**General comments**

- 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.
- Total live births by race has been revised for 2008-2009.

**South Carolina**  
**Birth Defects Counts and Prevalence 2006-2010 (Prevalence per 10,000 Live Births)**

Defect	Maternal Race/Ethnicity					Total**	Notes
	White Non-Hispanic	Black Non-Hispanic	Hispanic	Asian or Pacific Islander Non-Hispanic	American Indian or Alaska Native Non-Hispanic		
Anencephalus	33 <i>1.9</i>	21 <i>2.1</i>	14 <i>4.8</i>	0 <i>0.0</i>	0 <i>0.0</i>	70 <i>2.3</i>	
Aniridia	3 <i>0.2</i>	2 <i>0.2</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	5 <i>0.2</i>	
Anophthalmia/microphthalmia	7 <i>0.4</i>	4 <i>0.4</i>	1 <i>0.3</i>	0 <i>0.0</i>	0 <i>0.0</i>	12 <i>0.4</i>	
Anotia/microtia	6 <i>0.4</i>	6 <i>0.6</i>	0 <i>0.0</i>	1 <i>2.0</i>	0 <i>0.0</i>	13 <i>0.4</i>	
Aortic valve stenosis	12 <i>0.7</i>	6 <i>0.6</i>	5 <i>1.7</i>	1 <i>2.0</i>	0 <i>0.0</i>	26 <i>0.8</i>	
Atrial septal defect	226 <i>22.0</i>	152 <i>24.7</i>	53 <i>28.7</i>	7 <i>23.6</i>	0 <i>0.0</i>	445 <i>23.4</i>	1
Atrioventricular septal defect (endocardial cushion defect)	77 <i>4.5</i>	58 <i>5.8</i>	10 <i>3.4</i>	0 <i>0.0</i>	0 <i>0.0</i>	147 <i>4.7</i>	
Biliary atresia	6 <i>0.4</i>	7 <i>0.7</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	13 <i>0.4</i>	
Bladder exstrophy	0 <i>0.0</i>	2 <i>0.2</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	2 <i>0.1</i>	
Choanal atresia	11 <i>0.6</i>	6 <i>0.6</i>	3 <i>1.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	22 <i>0.7</i>	
Cleft lip with and without cleft palate	147 <i>8.6</i>	57 <i>5.7</i>	28 <i>9.6</i>	8 <i>15.9</i>	2 <i>16.2</i>	250 <i>8.1</i>	
Cleft palate without cleft lip	78 <i>4.6</i>	49 <i>4.9</i>	12 <i>4.1</i>	2 <i>4.0</i>	0 <i>0.0</i>	143 <i>4.6</i>	
Coarctation of aorta	91 <i>5.3</i>	33 <i>3.3</i>	10 <i>3.4</i>	2 <i>4.0</i>	0 <i>0.0</i>	137 <i>4.4</i>	
Common truncus	13 <i>0.8</i>	3 <i>0.3</i>	1 <i>0.3</i>	0 <i>0.0</i>	1 <i>8.1</i>	18 <i>0.6</i>	
Congenital cataract	10 <i>0.6</i>	4 <i>0.4</i>	3 <i>1.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	17 <i>0.5</i>	
Congenital hip dislocation	60 <i>3.5</i>	13 <i>1.3</i>	16 <i>5.5</i>	2 <i>4.0</i>	0 <i>0.0</i>	91 <i>2.9</i>	
Diaphragmatic hernia	42 <i>2.5</i>	15 <i>1.5</i>	13 <i>4.5</i>	0 <i>0.0</i>	0 <i>0.0</i>	71 <i>2.3</i>	
Down syndrome (Trisomy 21)	109 <i>10.6</i>	52 <i>8.7</i>	21 <i>12.4</i>	4 <i>12.8</i>	0 <i>0.0</i>	189 <i>10.3</i>	2
Ebstein anomaly	10 <i>0.6</i>	4 <i>0.4</i>	1 <i>0.3</i>	2 <i>4.0</i>	0 <i>0.0</i>	17 <i>0.5</i>	
Encephalocele	18 <i>1.1</i>	10 <i>1.0</i>	9 <i>3.1</i>	2 <i>4.0</i>	0 <i>0.0</i>	39 <i>1.3</i>	
Epispadias	4 <i>1.2</i>	1 <i>0.5</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	5 <i>0.8</i>	3
Esophageal atresia/tracheoesophageal fistula	10 <i>0.6</i>	7 <i>0.7</i>	2 <i>0.7</i>	0 <i>0.0</i>	0 <i>0.0</i>	19 <i>0.6</i>	
Gastroschisis	24 <i>1.4</i>	7 <i>0.7</i>	5 <i>1.7</i>	1 <i>2.0</i>	0 <i>0.0</i>	38 <i>1.2</i>	
Hirschsprung disease (congenital megacolon)	25 <i>1.5</i>	14 <i>1.4</i>	1 <i>0.3</i>	0 <i>0.0</i>	0 <i>0.0</i>	40 <i>1.3</i>	
Hydrocephalus without spina bifida	97 <i>5.7</i>	62 <i>6.2</i>	18 <i>6.2</i>	3 <i>6.0</i>	0 <i>0.0</i>	180 <i>5.8</i>	
Hypoplastic left heart syndrome	42 <i>2.5</i>	31 <i>3.1</i>	10 <i>3.4</i>	1 <i>2.0</i>	0 <i>0.0</i>	84 <i>2.7</i>	
Microcephalus	46 <i>2.7</i>	55 <i>5.5</i>	22 <i>7.6</i>	3 <i>6.0</i>	0 <i>0.0</i>	129 <i>4.2</i>	
Obstructive genitourinary defect	110 <i>6.5</i>	51 <i>5.1</i>	27 <i>9.3</i>	1 <i>2.0</i>	0 <i>0.0</i>	194 <i>6.3</i>	
Omphalocele	11 <i>0.6</i>	8 <i>0.8</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	19 <i>0.6</i>	
Patent ductus arteriosus	196 <i>19.1</i>	179 <i>29.0</i>	51 <i>27.7</i>	6 <i>20.3</i>	1 <i>14.0</i>	441 <i>23.2</i>	4

**South Carolina**  
**Birth Defects Counts and Prevalence 2006-2010 (Prevalence per 10,000 Live Births)**

Defect	Maternal Race/Ethnicity					Total**	Notes
	White Non-Hispanic	Black Non-Hispanic	Hispanic	Asian or Pacific Islander Non-Hispanic	American Indian or Alaska Native Non-Hispanic		
Pulmonary valve atresia and stenosis	93 <i>5.5</i>	63 <i>6.3</i>	18 <i>6.2</i>	1 <i>2.0</i>	1 <i>8.1</i>	181 <i>5.8</i>	
Pulmonary valve atresia	20 <i>1.2</i>	16 <i>1.6</i>	5 <i>1.7</i>	0 <i>0.0</i>	0 <i>0.0</i>	42 <i>1.4</i>	
Pyloric stenosis	70 <i>6.8</i>	25 <i>4.1</i>	20 <i>10.8</i>	1 <i>3.4</i>	1 <i>14.0</i>	119 <i>6.3</i>	5
Rectal and large intestinal atresia/stenosis	42 <i>2.5</i>	16 <i>1.6</i>	2 <i>0.7</i>	2 <i>4.0</i>	1 <i>8.1</i>	63 <i>2.0</i>	
Reduction deformity, lower limbs	39 <i>2.3</i>	26 <i>2.6</i>	5 <i>1.7</i>	0 <i>0.0</i>	0 <i>0.0</i>	70 <i>2.3</i>	
Reduction deformity, upper limbs	46 <i>2.7</i>	28 <i>2.8</i>	15 <i>5.2</i>	0 <i>0.0</i>	1 <i>8.1</i>	91 <i>2.9</i>	
Renal agenesis/hypoplasia	51 <i>3.0</i>	33 <i>3.3</i>	9 <i>3.1</i>	1 <i>2.0</i>	0 <i>0.0</i>	94 <i>3.0</i>	
Spina bifida without anencephalus	64 <i>3.8</i>	18 <i>1.8</i>	7 <i>2.4</i>	2 <i>4.0</i>	0 <i>0.0</i>	91 <i>2.9</i>	
Tetralogy of Fallot	63 <i>3.7</i>	53 <i>5.3</i>	12 <i>4.1</i>	1 <i>2.0</i>	0 <i>0.0</i>	131 <i>4.2</i>	
Transposition of great arteries - All	84 <i>4.9</i>	38 <i>3.8</i>	8 <i>2.8</i>	1 <i>2.0</i>	1 <i>8.1</i>	136 <i>4.4</i>	
dextro-Transposition of great arteries (d-TGA)	45 <i>2.6</i>	15 <i>1.5</i>	3 <i>1.0</i>	0 <i>0.0</i>	1 <i>8.1</i>	66 <i>2.1</i>	
Tricuspid valve atresia and stenosis	10 <i>0.6</i>	10 <i>1.0</i>	5 <i>1.7</i>	1 <i>2.0</i>	0 <i>0.0</i>	26 <i>0.8</i>	
Trisomy 13	8 <i>0.8</i>	10 <i>1.7</i>	1 <i>0.6</i>	0 <i>0.0</i>	0 <i>0.0</i>	20 <i>1.1</i>	6
Trisomy 18	22 <i>2.1</i>	13 <i>2.2</i>	6 <i>3.5</i>	0 <i>0.0</i>	0 <i>0.0</i>	41 <i>2.2</i>	7
Ventricular septal defect	534 <i>31.3</i>	319 <i>31.8</i>	146 <i>50.2</i>	13 <i>25.8</i>	2 <i>16.2</i>	1024 <i>33.0</i>	
<b>Total Live Births</b>	<b>170368</b>	<b>100370</b>	<b>29088</b>	<b>5038</b>	<b>1237</b>	<b>310007</b>	
<b>Total Male Live Births</b>	<b>86927</b>	<b>50658</b>	<b>14931</b>	<b>2520</b>	<b>656</b>	<b>157707</b>	

\*\*Total includes unknown race

**South Carolina**  
**Trisomy Counts and Prevalence by Maternal Age 2006-2010 (Prevalence per 10,000 Live Births)**

Defect	Maternal Age (years)		Total	Notes
	Less than 35	35+		
Down syndrome (Trisomy 21)	100 <i>6.1</i>	89 <i>44.8</i>	189 <i>10.3</i>	2
Trisomy 13	16 <i>1.0</i>	4 <i>2.0</i>	20 <i>1.1</i>	6
Trisomy 18	22 <i>1.3</i>	19 <i>9.6</i>	41 <i>2.2</i>	7
<b>Total Live Births (2008-2010)</b>	<b>163862</b>	<b>19864</b>	<b>183735</b>	

\*\*Total includes unknown maternal age

**Notes**

1. Atrial Septal Defect was dropped beginning in 2009. Prevalence reflects live birth data for the years 2006-2008
2. Down Syndrome was collected beginning in 2008. Prevalence reflects live birth data for the years 2008-2010
3. Epispadias data only available for 2010. Prevalence reflects live birth data for the year 2010
4. Patent Ductus Arteriosus was dropped beginning in 2009. Prevalence reflects live birth data for the years 2006-2008
5. Pyloric Stenosis was dropped beginning in 2009. Prevalence reflects live birth data for the years 2006-2008
6. Trisomy 13 was collected beginning in 2008. Prevalence reflects live birth data for the years 2008-2010
7. Trisomy 18 was collected beginning in 2008. Prevalence reflects live birth data for the years 2008-2010

**Tennessee**  
**Birth Defects Counts and Prevalence 2006-2010 (Prevalence per 10,000 Live Births)**

Defect	Maternal Race/Ethnicity					Total**	Notes
	White Non-Hispanic	Black Non-Hispanic	Hispanic	Asian or Pacific Islander Non-Hispanic	American Indian or Alaska Native Non-Hispanic		
Anencephalus	28 <i>1.0</i>	8 <i>0.9</i>	7 <i>1.8</i>	1 <i>1.2</i>	0 <i>0.0</i>	45 <i>1.1</i>	
Aniridia	7 <i>0.2</i>	0 <i>0.0</i>	1 <i>0.3</i>	0 <i>0.0</i>	0 <i>0.0</i>	8 <i>0.2</i>	
Anophthalmia/microphthalmia	26 <i>0.9</i>	15 <i>1.7</i>	3 <i>0.8</i>	1 <i>1.2</i>	0 <i>0.0</i>	46 <i>1.1</i>	
Anotia/microtia	19 <i>0.7</i>	3 <i>0.3</i>	7 <i>1.8</i>	1 <i>1.2</i>	0 <i>0.0</i>	30 <i>0.7</i>	
Aortic valve stenosis	68 <i>2.4</i>	3 <i>0.3</i>	7 <i>1.8</i>	0 <i>0.0</i>	0 <i>0.0</i>	79 <i>1.9</i>	
Atrial septal defect	2801 <i>99.8</i>	1370 <i>157.5</i>	337 <i>87.0</i>	50 <i>61.2</i>	1 <i>15.6</i>	4574 <i>109.5</i>	
Atrioventricular septal defect (endocardial cushion defect)	118 <i>4.2</i>	36 <i>4.1</i>	11 <i>2.8</i>	1 <i>1.2</i>	0 <i>0.0</i>	166 <i>4.0</i>	1
Biliary atresia	20 <i>0.7</i>	5 <i>0.6</i>	5 <i>1.3</i>	3 <i>3.7</i>	0 <i>0.0</i>	33 <i>0.8</i>	
Bladder exstrophy	17 <i>0.6</i>	4 <i>0.5</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	21 <i>0.5</i>	
Choanal atresia	57 <i>2.0</i>	9 <i>1.0</i>	4 <i>1.0</i>	0 <i>0.0</i>	1 <i>15.6</i>	71 <i>1.7</i>	
Cleft lip with and without cleft palate	351 <i>12.5</i>	57 <i>6.6</i>	35 <i>9.0</i>	1 <i>1.2</i>	2 <i>31.2</i>	451 <i>10.8</i>	
Cleft palate without cleft lip	252 <i>9.0</i>	50 <i>5.7</i>	22 <i>5.7</i>	6 <i>7.3</i>	1 <i>15.6</i>	331 <i>7.9</i>	
Coarctation of aorta	202 <i>7.2</i>	51 <i>5.9</i>	32 <i>8.3</i>	1 <i>1.2</i>	0 <i>0.0</i>	287 <i>6.9</i>	
Common truncus	32 <i>1.1</i>	5 <i>0.6</i>	3 <i>0.8</i>	1 <i>1.2</i>	0 <i>0.0</i>	41 <i>1.0</i>	
Congenital cataract	71 <i>2.5</i>	22 <i>2.5</i>	2 <i>0.5</i>	4 <i>4.9</i>	0 <i>0.0</i>	99 <i>2.4</i>	
Congenital hip dislocation	255 <i>9.1</i>	47 <i>5.4</i>	32 <i>8.3</i>	4 <i>4.9</i>	0 <i>0.0</i>	338 <i>8.1</i>	
Diaphragmatic hernia	117 <i>4.2</i>	39 <i>4.5</i>	17 <i>4.4</i>	5 <i>6.1</i>	0 <i>0.0</i>	178 <i>4.3</i>	
Down syndrome (Trisomy 21)	393 <i>14.0</i>	116 <i>13.3</i>	64 <i>16.5</i>	10 <i>12.2</i>	0 <i>0.0</i>	586 <i>14.0</i>	
Ebstein anomaly	28 <i>1.0</i>	8 <i>0.9</i>	4 <i>1.0</i>	2 <i>2.4</i>	0 <i>0.0</i>	42 <i>1.0</i>	
Encephalocele	36 <i>1.3</i>	11 <i>1.3</i>	10 <i>2.6</i>	0 <i>0.0</i>	0 <i>0.0</i>	57 <i>1.4</i>	
Epispadias	47 <i>1.7</i>	12 <i>1.4</i>	3 <i>0.8</i>	0 <i>0.0</i>	0 <i>0.0</i>	62 <i>1.5</i>	
Esophageal atresia/tracheoesophageal fistula	77 <i>2.7</i>	15 <i>1.7</i>	12 <i>3.1</i>	0 <i>0.0</i>	0 <i>0.0</i>	104 <i>2.5</i>	
Fetus or newborn affected by maternal alcohol use	52 <i>1.9</i>	31 <i>3.6</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	83 <i>2.0</i>	
Gastroschisis	190 <i>6.8</i>	25 <i>2.9</i>	19 <i>4.9</i>	3 <i>3.7</i>	0 <i>0.0</i>	237 <i>5.7</i>	2
Hirschsprung disease (congenital megacolon)	77 <i>2.7</i>	43 <i>4.9</i>	6 <i>1.5</i>	0 <i>0.0</i>	1 <i>15.6</i>	128 <i>3.1</i>	
Hydrocephalus without spina bifida	199 <i>7.1</i>	83 <i>9.5</i>	40 <i>10.3</i>	4 <i>4.9</i>	0 <i>0.0</i>	327 <i>7.8</i>	
Hypoplastic left heart syndrome	104 <i>3.7</i>	33 <i>3.8</i>	16 <i>4.1</i>	0 <i>0.0</i>	0 <i>0.0</i>	154 <i>3.7</i>	
Hypospadias*	1684 <i>117.0</i>	466 <i>105.0</i>	69 <i>34.9</i>	24 <i>57.5</i>	2 <i>64.5</i>	2254 <i>105.4</i>	
Microcephalus	318 <i>11.3</i>	110 <i>12.6</i>	52 <i>13.4</i>	2 <i>2.4</i>	0 <i>0.0</i>	486 <i>11.6</i>	
Obstructive genitourinary defect	999 <i>35.6</i>	185 <i>21.3</i>	96 <i>24.8</i>	30 <i>36.7</i>	0 <i>0.0</i>	1314 <i>31.4</i>	
Omphalocele	74 <i>2.6</i>	29 <i>3.3</i>	9 <i>2.3</i>	0 <i>0.0</i>	0 <i>0.0</i>	112 <i>2.7</i>	3
Patent ductus arteriosus	1667 <i>59.4</i>	716 <i>82.3</i>	235 <i>60.7</i>	38 <i>46.5</i>	2 <i>31.2</i>	2663 <i>63.7</i>	4



**Tennessee**  
**Birth Defects Counts and Prevalence 2006-2010 (Prevalence per 10,000 Live Births)**

Defect	Maternal Race/Ethnicity					Total**	Notes
	White Non-Hispanic	Black Non-Hispanic	Hispanic	Asian or Pacific Islander Non-Hispanic	American Indian or Alaska Native Non-Hispanic		
Pulmonary valve atresia and stenosis	278 <b>9.9</b>	90 <b>10.3</b>	26 <b>6.7</b>	8 <b>9.8</b>	2 <b>31.2</b>	405 <b>9.7</b>	
Pulmonary valve atresia	45 <b>1.6</b>	16 <b>1.8</b>	7 <b>1.8</b>	2 <b>2.4</b>	0 <b>0.0</b>	71 <b>1.7</b>	
Pyloric stenosis	1347 <b>48.0</b>	221 <b>25.4</b>	185 <b>47.8</b>	12 <b>14.7</b>	2 <b>31.2</b>	1772 <b>42.4</b>	
Rectal and large intestinal atresia/stenosis	180 <b>6.4</b>	47 <b>5.4</b>	25 <b>6.5</b>	1 <b>1.2</b>	1 <b>15.6</b>	256 <b>6.1</b>	
Reduction deformity, lower limbs	57 <b>2.0</b>	23 <b>2.6</b>	6 <b>1.5</b>	2 <b>2.4</b>	0 <b>0.0</b>	89 <b>2.1</b>	
Reduction deformity, upper limbs	60 <b>2.1</b>	19 <b>2.2</b>	14 <b>3.6</b>	2 <b>2.4</b>	0 <b>0.0</b>	95 <b>2.3</b>	
Renal agenesis/hypoplasia	145 <b>5.2</b>	54 <b>6.2</b>	22 <b>5.7</b>	4 <b>4.9</b>	0 <b>0.0</b>	225 <b>5.4</b>	
Spina bifida without anencephalus	113 <b>4.0</b>	26 <b>3.0</b>	23 <b>5.9</b>	3 <b>3.7</b>	0 <b>0.0</b>	165 <b>3.9</b>	
Tetralogy of Fallot	185 <b>6.6</b>	49 <b>5.6</b>	21 <b>5.4</b>	3 <b>3.7</b>	0 <b>0.0</b>	258 <b>6.2</b>	
Transposition of great arteries - All	165 <b>5.9</b>	47 <b>5.4</b>	24 <b>6.2</b>	4 <b>4.9</b>	0 <b>0.0</b>	242 <b>5.8</b>	5
dextro-Transposition of great arteries (d-TGA)	67 <b>2.4</b>	17 <b>2.0</b>	8 <b>2.1</b>	3 <b>3.7</b>	0 <b>0.0</b>	95 <b>2.3</b>	
Tricuspid valve atresia and stenosis	43 <b>1.5</b>	6 <b>0.7</b>	2 <b>0.5</b>	0 <b>0.0</b>	0 <b>0.0</b>	52 <b>1.2</b>	6
Trisomy 13	17 <b>0.6</b>	12 <b>1.4</b>	3 <b>0.8</b>	1 <b>1.2</b>	0 <b>0.0</b>	35 <b>0.8</b>	
Trisomy 18	51 <b>1.8</b>	14 <b>1.6</b>	10 <b>2.6</b>	1 <b>1.2</b>	0 <b>0.0</b>	76 <b>1.8</b>	
Ventricular septal defect	1348 <b>48.0</b>	405 <b>46.6</b>	195 <b>50.4</b>	25 <b>30.6</b>	2 <b>31.2</b>	1983 <b>47.5</b>	7
<b>Total Live Births</b>	<b>280780</b>	<b>86972</b>	<b>38725</b>	<b>8168</b>	<b>642</b>	<b>417903</b>	
<b>Total Male Live Births</b>	<b>143899</b>	<b>44382</b>	<b>19791</b>	<b>4177</b>	<b>310</b>	<b>213856</b>	

\*Hypospadias: prevalence per 10,000 male live births

\*\*Total includes unknown race

**Tennessee**  
**Trisomy Counts and Prevalence by Maternal Age 2006-2010 (Prevalence per 10,000 Live Births)**

Defect	Maternal Age (years)		Total	Notes
	Less than 35	35+		
Down syndrome (Trisomy 21)	349 <i>9.3</i>	237 <i>55.2</i>	586 <i>14.0</i>	
Trisomy 13	28 <i>0.7</i>	7 <i>1.6</i>	35 <i>0.8</i>	
Trisomy 18	48 <i>1.3</i>	28 <i>6.5</i>	76 <i>1.8</i>	
<b>Total Live Births</b>	<b>374846</b>	<b>42915</b>	<b>417903</b>	

\*\*Total includes unknown maternal age

**Notes**

1. Tennessee does not use the new CDC/BPA codes and cannot distinguish 745.487 from other VSD.
2. ICD-9 Procedure 54.71
3. ICD-9 Procedure Code not equal to 54.71
4. Birthweight equal to 2500 grams.
5. Tennessee does not use the new CDC/BPA codes; information includes the entire range.
6. Tennessee does not use the new CDC/BPA codes and cases with 746.106 are included within this category
7. Includes probable cases. Tennessee does not use the new CDC/BPA codes and cannot distinguish 745.487.

**Texas**  
**Birth Defects Counts and Prevalence 2006-2009 (Prevalence per 10,000 Live Births)**

Defect	Maternal Race/Ethnicity					Total**	Notes
	Non-Hispanic White	Non-Hispanic Black or African	Hispanic	Asian or Pacific Islander	American Indian or Alaska Native		
Amniotic bands	47 <i>0.9</i>	20 <i>1.1</i>	51 <i>0.6</i>	4 <i>0.7</i>	1 <i>3.4</i>	124 <i>0.8</i>	
Anencephalus	110 <i>2.0</i>	35 <i>1.9</i>	254 <i>3.1</i>	8 <i>1.3</i>	0 <i>0.0</i>	417 <i>2.6</i>	
Aniridia	6 <i>0.1</i>	2 <i>0.1</i>	7 <i>0.1</i>	1 <i>0.2</i>	0 <i>0.0</i>	16 <i>0.1</i>	
Anophthalmia/microphthalmia	168 <i>3.0</i>	50 <i>2.7</i>	284 <i>3.5</i>	14 <i>2.4</i>	2 <i>6.9</i>	521 <i>3.2</i>	
Anotia/microtia	104 <i>1.9</i>	30 <i>1.6</i>	397 <i>4.9</i>	23 <i>3.9</i>	3 <i>10.3</i>	559 <i>3.5</i>	
Aortic valve stenosis	142 <i>2.6</i>	32 <i>1.7</i>	195 <i>2.4</i>	8 <i>1.3</i>	1 <i>3.4</i>	384 <i>2.4</i>	
Atrial septal defect	3520 <i>63.8</i>	1286 <i>70.1</i>	5246 <i>65.0</i>	303 <i>50.9</i>	16 <i>54.8</i>	10437 <i>64.7</i>	
Atrioventricular septal defect (endocardial cushion defect)	285 <i>5.2</i>	93 <i>5.1</i>	325 <i>4.0</i>	13 <i>2.2</i>	1 <i>3.4</i>	720 <i>4.5</i>	
Biliary atresia	36 <i>0.7</i>	11 <i>0.6</i>	65 <i>0.8</i>	7 <i>1.2</i>	2 <i>6.9</i>	122 <i>0.8</i>	
Bladder exstrophy	15 <i>0.3</i>	2 <i>0.1</i>	8 <i>0.1</i>	1 <i>0.2</i>	0 <i>0.0</i>	26 <i>0.2</i>	
Choanal atresia	86 <i>1.6</i>	23 <i>1.3</i>	95 <i>1.2</i>	7 <i>1.2</i>	0 <i>0.0</i>	212 <i>1.3</i>	
Cleft lip with and without cleft palate	606 <i>11.0</i>	126 <i>6.9</i>	898 <i>11.1</i>	58 <i>9.7</i>	3 <i>10.3</i>	1701 <i>10.5</i>	
Cleft palate without cleft lip	368 <i>6.7</i>	92 <i>5.0</i>	477 <i>5.9</i>	34 <i>5.7</i>	0 <i>0.0</i>	977 <i>6.1</i>	
Coarctation of aorta	314 <i>5.7</i>	67 <i>3.7</i>	426 <i>5.3</i>	20 <i>3.4</i>	3 <i>10.3</i>	836 <i>5.2</i>	
Common truncus	42 <i>0.8</i>	12 <i>0.7</i>	65 <i>0.8</i>	4 <i>0.7</i>	0 <i>0.0</i>	123 <i>0.8</i>	
Congenital cataract	117 <i>2.1</i>	44 <i>2.4</i>	148 <i>1.8</i>	7 <i>1.2</i>	0 <i>0.0</i>	320 <i>2.0</i>	
Congenital hip dislocation	266 <i>4.8</i>	43 <i>2.3</i>	352 <i>4.4</i>	33 <i>5.5</i>	1 <i>3.4</i>	702 <i>4.4</i>	
Diaphragmatic hernia	165 <i>3.0</i>	41 <i>2.2</i>	244 <i>3.0</i>	12 <i>2.0</i>	1 <i>3.4</i>	466 <i>2.9</i>	
Down syndrome (Trisomy 21)	703 <i>12.7</i>	182 <i>9.9</i>	1232 <i>15.3</i>	67 <i>11.2</i>	3 <i>10.3</i>	2209 <i>13.7</i>	
Ebstein anomaly	36 <i>0.7</i>	4 <i>0.2</i>	55 <i>0.7</i>	6 <i>1.0</i>	0 <i>0.0</i>	101 <i>0.6</i>	
Encephalocele	38 <i>0.7</i>	18 <i>1.0</i>	99 <i>1.2</i>	3 <i>0.5</i>	0 <i>0.0</i>	163 <i>1.0</i>	
Epispadias	65 <i>1.2</i>	23 <i>1.3</i>	63 <i>0.8</i>	6 <i>1.0</i>	0 <i>0.0</i>	157 <i>1.0</i>	
Esophageal atresia/tracheoesophageal fistula	130 <i>2.4</i>	24 <i>1.3</i>	169 <i>2.1</i>	10 <i>1.7</i>	2 <i>6.9</i>	338 <i>2.1</i>	
Fetus or newborn affected by maternal alcohol use	12 <i>0.2</i>	7 <i>0.4</i>	11 <i>0.1</i>	1 <i>0.2</i>	0 <i>0.0</i>	31 <i>0.2</i>	
Gastroschisis	331 <i>6.0</i>	78 <i>4.3</i>	525 <i>6.5</i>	14 <i>2.4</i>	1 <i>3.4</i>	953 <i>5.9</i>	
Hirschsprung disease (congenital megacolon)	99 <i>1.8</i>	46 <i>2.5</i>	66 <i>0.8</i>	12 <i>2.0</i>	2 <i>6.9</i>	228 <i>1.4</i>	
Hydrocephalus without spina bifida	398 <i>7.2</i>	124 <i>6.8</i>	627 <i>7.8</i>	17 <i>2.9</i>	2 <i>6.9</i>	1176 <i>7.3</i>	
Hypoplastic left heart syndrome	128 <i>2.3</i>	47 <i>2.6</i>	159 <i>2.0</i>	6 <i>1.0</i>	1 <i>3.4</i>	342 <i>2.1</i>	
Hypospadias*	2344 <i>82.8</i>	623 <i>66.6</i>	1572 <i>38.2</i>	157 <i>51.5</i>	11 <i>72.9</i>	4732 <i>57.4</i>	
Microcephalus	527 <i>9.6</i>	276 <i>15.0</i>	979 <i>12.1</i>	59 <i>9.9</i>	7 <i>24.0</i>	1862 <i>11.5</i>	
Obstructive genitourinary defect	2589 <i>46.9</i>	591 <i>32.2</i>	3905 <i>48.4</i>	285 <i>47.8</i>	13 <i>44.6</i>	7434 <i>46.1</i>	
Omphalocele	105 <i>1.9</i>	45 <i>2.5</i>	166 <i>2.1</i>	9 <i>1.5</i>	2 <i>6.9</i>	335 <i>2.1</i>	

**Texas**  
**Birth Defects Counts and Prevalence 2006-2009 (Prevalence per 10,000 Live Births)**

Defect	Maternal Race/Ethnicity					Total**	Notes
	Non-Hispanic White	Non-Hispanic Black or African	Hispanic	Asian or Pacific Islander	American Indian or Alaska Native		
Patent ductus arteriosus	3010 <i>54.6</i>	983 <i>53.6</i>	5097 <i>63.2</i>	303 <i>50.9</i>	12 <i>41.1</i>	9468 <i>58.7</i>	1
Pulmonary valve atresia and stenosis	493 <i>8.9</i>	199 <i>10.9</i>	899 <i>11.1</i>	34 <i>5.7</i>	4 <i>13.7</i>	1635 <i>10.1</i>	
Pulmonary valve atresia	77 <i>1.4</i>	24 <i>1.3</i>	135 <i>1.7</i>	4 <i>0.7</i>	0 <i>0.0</i>	242 <i>1.5</i>	
Pyloric stenosis	1234 <i>22.4</i>	158 <i>8.6</i>	1809 <i>22.4</i>	24 <i>4.0</i>	5 <i>17.1</i>	3241 <i>20.1</i>	
Rectal and large intestinal atresia/stenosis	289 <i>5.2</i>	72 <i>3.9</i>	463 <i>5.7</i>	26 <i>4.4</i>	3 <i>10.3</i>	864 <i>5.4</i>	
Reduction deformity, lower limbs	117 <i>2.1</i>	49 <i>2.7</i>	144 <i>1.8</i>	6 <i>1.0</i>	0 <i>0.0</i>	318 <i>2.0</i>	
Reduction deformity, upper limbs	243 <i>4.4</i>	76 <i>4.1</i>	322 <i>4.0</i>	18 <i>3.0</i>	5 <i>17.1</i>	666 <i>4.1</i>	
Renal agenesis/hypoplasia	334 <i>6.1</i>	106 <i>5.8</i>	511 <i>6.3</i>	26 <i>4.4</i>	3 <i>10.3</i>	987 <i>6.1</i>	
Spina bifida without anencephalus	191 <i>3.5</i>	47 <i>2.6</i>	336 <i>4.2</i>	5 <i>0.8</i>	1 <i>3.4</i>	585 <i>3.6</i>	
Tetralogy of Fallot	220 <i>4.0</i>	89 <i>4.9</i>	287 <i>3.6</i>	31 <i>5.2</i>	2 <i>6.9</i>	638 <i>4.0</i>	
Total anomalous pulmonary venous return (TAPVR)	72 <i>1.3</i>	17 <i>0.9</i>	184 <i>2.3</i>	8 <i>1.3</i>	1 <i>3.4</i>	284 <i>1.8</i>	
Transposition of great arteries - All	234 <i>4.2</i>	52 <i>2.8</i>	281 <i>3.5</i>	24 <i>4.0</i>	1 <i>3.4</i>	593 <i>3.7</i>	2
dextro-Transposition of great arteries (d-TGA)	217 <i>3.9</i>	55 <i>3.0</i>	268 <i>3.3</i>	23 <i>3.9</i>	1 <i>3.4</i>	566 <i>3.5</i>	
Tricuspid valve atresia and stenosis	94 <i>1.7</i>	45 <i>2.5</i>	155 <i>1.9</i>	10 <i>1.7</i>	0 <i>0.0</i>	307 <i>1.9</i>	
Tricuspid valve atresia	44 <i>0.8</i>	18 <i>1.0</i>	58 <i>0.7</i>	4 <i>0.7</i>	0 <i>0.0</i>	125 <i>0.8</i>	
Trisomy 13	63 <i>1.1</i>	23 <i>1.3</i>	94 <i>1.2</i>	10 <i>1.7</i>	0 <i>0.0</i>	191 <i>1.2</i>	
Trisomy 18	147 <i>2.7</i>	49 <i>2.7</i>	223 <i>2.8</i>	22 <i>3.7</i>	0 <i>0.0</i>	448 <i>2.8</i>	
Ventricular septal defect	3130 <i>56.8</i>	868 <i>47.3</i>	5723 <i>71.0</i>	292 <i>49.0</i>	15 <i>51.4</i>	10084 <i>62.5</i>	3
<b>Total Live Births</b>	<b>551516</b>	<b>183402</b>	<b>806505</b>	<b>59568</b>	<b>2918</b>	<b>1613603</b>	
<b>Total Male Live Births</b>	<b>283019</b>	<b>93563</b>	<b>411108</b>	<b>30498</b>	<b>1508</b>	<b>824643</b>	

\*Hypospadias: prevalence per 10,000 male live births

\*\*Total includes unknown race

**Texas**  
**Trisomy Counts and Prevalence by Maternal Age 2006-2009 (Prevalence per 10,000 Live Births)**

Defect	Age		Total**	Notes
	Less than 35	35 and greater		
Down syndrome (Trisomy 21)	1249 <i>8.8</i>	960 <i>51.1</i>	2209 <i>13.7</i>	
Trisomy 13	136 <i>1.0</i>	55 <i>2.9</i>	191 <i>1.2</i>	
Trisomy 18	241 <i>1.7</i>	207 <i>11.0</i>	448 <i>2.8</i>	
<b>Total Live Births</b>	<b>1425617</b>	<b>187892</b>	<b>1613603</b>	

\*\*Total includes unknown maternal age

**Notes**

1. In Texas, coding of patent ductus arteriosus (PDA) is based on the following criteria: infant must be greater than 36 weeks gestation and less than 12 weeks of age at diagnosis and not on prostaglandin. Also, PDA is coded only if there is another reportable defect present, or if there was a medical/surgical intervention for this problem.
2. 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.
3. Ventricular Septal Defect: We are unable to distinguish inlet VSD from other types of VSD.

**General comments**

- Due to migration to Oracle data base, Texas can not access 2010 data at this time.
- 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 2006-2010 (Prevalence per 10,000 Live Births)

Defect	Maternal Race/Ethnicity					Total**	Notes
	White Non-Hispanic	Black Non-Hispanic	Hispanic	Asian or Pacific Islander Non-Hispanic	American Indian or Alaska Native Non-Hispanic		
Amniotic bands	18 <i>0.9</i>	0 <i>0.0</i>	3 <i>0.7</i>	0 <i>0.0</i>	0 <i>0.0</i>	22 <i>0.8</i>	
Anencephalus	56 <i>2.7</i>	1 <i>3.9</i>	11 <i>2.5</i>	2 <i>2.2</i>	2 <i>5.8</i>	73 <i>2.7</i>	
Aniridia	1 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	1 <i>0.0</i>	
Anophthalmia/microphthalmia	9 <i>0.4</i>	1 <i>3.9</i>	3 <i>0.7</i>	0 <i>0.0</i>	0 <i>0.0</i>	13 <i>0.5</i>	
Anotia/microtia	59 <i>2.8</i>	0 <i>0.0</i>	17 <i>3.9</i>	1 <i>1.1</i>	0 <i>0.0</i>	77 <i>2.9</i>	
Aortic valve stenosis	97 <i>4.7</i>	0 <i>0.0</i>	20 <i>4.6</i>	7 <i>7.7</i>	1 <i>2.9</i>	125 <i>4.6</i>	
Atrial septal defect	848 <i>40.7</i>	14 <i>54.3</i>	191 <i>43.8</i>	48 <i>53.1</i>	15 <i>43.8</i>	1121 <i>41.5</i>	
Atrioventricular septal defect (endocardial cushion defect)	121 <i>5.8</i>	2 <i>7.8</i>	25 <i>5.7</i>	4 <i>4.4</i>	2 <i>5.8</i>	154 <i>5.7</i>	
Biliary atresia	16 <i>0.8</i>	2 <i>7.8</i>	2 <i>0.5</i>	0 <i>0.0</i>	0 <i>0.0</i>	20 <i>0.7</i>	
Bladder exstrophy	6 <i>0.3</i>	0 <i>0.0</i>	0 <i>0.0</i>	1 <i>1.1</i>	0 <i>0.0</i>	7 <i>0.3</i>	
Choanal atresia	18 <i>0.9</i>	0 <i>0.0</i>	2 <i>0.5</i>	0 <i>0.0</i>	0 <i>0.0</i>	20 <i>0.7</i>	
Cleft lip with and without cleft palate	307 <i>14.7</i>	4 <i>15.5</i>	46 <i>10.5</i>	5 <i>5.5</i>	4 <i>11.7</i>	370 <i>13.7</i>	
Cleft palate without cleft lip	144 <i>6.9</i>	0 <i>0.0</i>	17 <i>3.9</i>	9 <i>10.0</i>	5 <i>14.6</i>	176 <i>6.5</i>	
Coarctation of aorta	218 <i>10.5</i>	4 <i>15.5</i>	36 <i>8.3</i>	5 <i>5.5</i>	2 <i>5.8</i>	266 <i>9.8</i>	
Common truncus	14 <i>0.7</i>	1 <i>3.9</i>	1 <i>0.2</i>	0 <i>0.0</i>	0 <i>0.0</i>	16 <i>0.6</i>	
Congenital cataract	66 <i>3.2</i>	1 <i>3.9</i>	4 <i>0.9</i>	2 <i>2.2</i>	1 <i>2.9</i>	74 <i>2.7</i>	
Congenital hip dislocation	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	
Diaphragmatic hernia	35 <i>1.7</i>	0 <i>0.0</i>	5 <i>1.1</i>	1 <i>1.1</i>	3 <i>8.8</i>	44 <i>1.6</i>	
Down syndrome (Trisomy 21)	285 <i>13.7</i>	5 <i>19.4</i>	84 <i>19.3</i>	14 <i>15.5</i>	3 <i>8.8</i>	401 <i>14.8</i>	
Ebstein anomaly	27 <i>1.3</i>	0 <i>0.0</i>	1 <i>0.2</i>	1 <i>1.1</i>	1 <i>2.9</i>	31 <i>1.1</i>	
Encephalocele	17 <i>0.8</i>	0 <i>0.0</i>	6 <i>1.4</i>	0 <i>0.0</i>	0 <i>0.0</i>	24 <i>0.9</i>	
Epispadias	0 <i>0.0</i>	0 <i>0.0</i>	1 <i>0.2</i>	0 <i>0.0</i>	0 <i>0.0</i>	2 <i>0.1</i>	
Esophageal atresia/tracheoesophageal fistula	52 <i>2.5</i>	0 <i>0.0</i>	18 <i>4.1</i>	5 <i>5.5</i>	1 <i>2.9</i>	77 <i>2.9</i>	
Gastroschisis	92 <i>4.4</i>	4 <i>15.5</i>	24 <i>5.5</i>	11 <i>12.2</i>	6 <i>17.5</i>	137 <i>5.1</i>	
Hirschsprung disease (congenital megacolon)	39 <i>1.9</i>	0 <i>0.0</i>	3 <i>0.7</i>	7 <i>7.7</i>	0 <i>0.0</i>	49 <i>1.8</i>	
Hydrocephalus without spina bifida	86 <i>4.1</i>	5 <i>19.4</i>	14 <i>3.2</i>	1 <i>1.1</i>	2 <i>5.8</i>	108 <i>4.0</i>	
Hypoplastic left heart syndrome	75 <i>3.6</i>	2 <i>7.8</i>	14 <i>3.2</i>	1 <i>1.1</i>	0 <i>0.0</i>	92 <i>3.4</i>	
Hypospadias*	829 <i>77.3</i>	14 <i>103.6</i>	41 <i>18.5</i>	20 <i>41.7</i>	5 <i>28.7</i>	916 <i>65.9</i>	
Microcephalus	123 <i>5.9</i>	3 <i>11.6</i>	27 <i>6.2</i>	2 <i>2.2</i>	3 <i>8.8</i>	158 <i>5.8</i>	
Obstructive genitourinary defect	78 <i>3.7</i>	0 <i>0.0</i>	14 <i>3.2</i>	5 <i>5.5</i>	0 <i>0.0</i>	99 <i>3.7</i>	
Omphalocele	67 <i>3.2</i>	3 <i>11.6</i>	14 <i>3.2</i>	1 <i>1.1</i>	0 <i>0.0</i>	86 <i>3.2</i>	
Pulmonary valve atresia and stenosis	318 <i>15.3</i>	3 <i>11.6</i>	58 <i>13.3</i>	23 <i>25.4</i>	4 <i>11.7</i>	409 <i>15.1</i>	

**Utah****Birth Defects Counts and Prevalence 2006-2010 (Prevalence per 10,000 Live Births)**

Defect	Maternal Race/Ethnicity					Total**	Notes
	White Non-Hispanic	Black Non-Hispanic	Hispanic	Asian or Pacific Islander Non-Hispanic	American Indian or Alaska Native Non-Hispanic		
Pulmonary valve atresia	23 <i>1.1</i>	0 <i>0.0</i>	8 <i>1.8</i>	5 <i>5.5</i>	0 <i>0.0</i>	38 <i>1.4</i>	
Pyloric stenosis	319 <i>15.3</i>	1 <i>3.9</i>	84 <i>19.3</i>	6 <i>6.6</i>	4 <i>11.7</i>	416 <i>15.4</i>	
Rectal and large intestinal atresia/stenosis	75 <i>3.6</i>	2 <i>7.8</i>	17 <i>3.9</i>	5 <i>5.5</i>	2 <i>5.8</i>	102 <i>3.8</i>	
Reduction deformity, lower limbs	35 <i>1.7</i>	1 <i>3.9</i>	5 <i>1.1</i>	4 <i>4.4</i>	0 <i>0.0</i>	45 <i>1.7</i>	
Reduction deformity, upper limbs	102 <i>4.9</i>	1 <i>3.9</i>	25 <i>5.7</i>	4 <i>4.4</i>	1 <i>2.9</i>	135 <i>5.0</i>	
Renal agenesis/hypoplasia	68 <i>3.3</i>	1 <i>3.9</i>	13 <i>3.0</i>	6 <i>6.6</i>	0 <i>0.0</i>	89 <i>3.3</i>	
Spina bifida without anencephalus	84 <i>4.0</i>	1 <i>3.9</i>	17 <i>3.9</i>	1 <i>1.1</i>	2 <i>5.8</i>	105 <i>3.9</i>	
Tetralogy of Fallot	73 <i>3.5</i>	1 <i>3.9</i>	16 <i>3.7</i>	6 <i>6.6</i>	2 <i>5.8</i>	99 <i>3.7</i>	
Total anomalous pulmonary venous return (TAPVR)	23 <i>1.1</i>	0 <i>0.0</i>	9 <i>2.1</i>	2 <i>2.2</i>	2 <i>5.8</i>	36 <i>1.3</i>	
Transposition of great arteries - All	96 <i>4.6</i>	2 <i>7.8</i>	18 <i>4.1</i>	4 <i>4.4</i>	1 <i>2.9</i>	123 <i>4.6</i>	
dextro-Transposition of great arteries (d-TGA)	51 <i>2.4</i>	0 <i>0.0</i>	6 <i>1.4</i>	2 <i>2.2</i>	0 <i>0.0</i>	59 <i>2.2</i>	
Tricuspid valve atresia and stenosis	27 <i>1.3</i>	1 <i>3.9</i>	7 <i>1.6</i>	3 <i>3.3</i>	0 <i>0.0</i>	38 <i>1.4</i>	
Trisomy 13	37 <i>1.8</i>	2 <i>7.8</i>	16 <i>3.7</i>	1 <i>1.1</i>	0 <i>0.0</i>	56 <i>2.1</i>	
Trisomy 18	75 <i>3.6</i>	5 <i>19.4</i>	15 <i>3.4</i>	1 <i>1.1</i>	1 <i>2.9</i>	99 <i>3.7</i>	
Ventricular septal defect	495 <i>23.7</i>	14 <i>54.3</i>	117 <i>26.8</i>	18 <i>19.9</i>	7 <i>20.4</i>	653 <i>24.2</i>	
<b>Total Live Births</b>	<b>208442</b>	<b>2579</b>	<b>43611</b>	<b>9045</b>	<b>3423</b>	<b>270156</b>	
<b>Total Male Live Births</b>	<b>107296</b>	<b>1352</b>	<b>22131</b>	<b>4797</b>	<b>1741</b>	<b>138913</b>	

\*Hypospadias: prevalence per 10,000 male live births

\*\*Total includes unknown race

**Utah****Trisomy Counts and Prevalence by Maternal Age 2006-2010 (Prevalence per 10,000 Live Births)**

Defect	Maternal Age (years)		Total	Notes
	35	35+		
Down syndrome (Trisomy 21)	227 <i>9.3</i>	174 <i>67.1</i>	401 <i>14.8</i>	
Trisomy 13	38 <i>1.6</i>	18 <i>6.9</i>	56 <i>2.1</i>	
Trisomy 18	57 <i>2.3</i>	42 <i>16.2</i>	99 <i>3.7</i>	
<b>Total Live Births</b>	<b>244199</b>	<b>25947</b>	<b>270156</b>	

\*\*Total includes unknown maternal age

**General comments**

-Patent ductus arteriosus, Congenital Hip Dislocation, and Fetus or newborn affected by maternal alcohol use are not collected in Utah.



**Vermont**  
**Birth Defects Counts and Prevalence 2006-2010 (Prevalence per 10,000 Live Births)**

Defect	Maternal Race/Ethnicity					Total**	Notes
	White Non-Hispanic	Black Non-Hispanic	Hispanic	Asian or Pacific Islander Non-Hispanic	American Indian or Alaska Native Non-Hispanic		
Anencephalus	4 <i>1.3</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	4 <i>1.3</i>	
Anotia/microtia	4 <i>1.3</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	5 <i>1.6</i>	
Aortic valve stenosis	12 <i>4.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	12 <i>3.8</i>	
Atrial septal defect	129 <i>43.0</i>	3 <i>80.0</i>	2 <i>52.5</i>	0 <i>0.0</i>	2 <i>540.5</i>	139 <i>43.9</i>	
Atrioventricular septal defect (endocardial cushion defect)	11 <i>3.7</i>	1 <i>26.7</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	13 <i>4.1</i>	
Bladder exstrophy	1 <i>0.3</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	1 <i>0.3</i>	
Cleft lip with and without cleft palate	35 <i>11.7</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	36 <i>11.4</i>	
Cleft palate without cleft lip	22 <i>7.3</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	22 <i>6.9</i>	
Coarctation of aorta	23 <i>7.7</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	23 <i>7.3</i>	
Common truncus	2 <i>0.7</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	2 <i>0.6</i>	
Diaphragmatic hernia	11 <i>3.7</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	11 <i>3.5</i>	
Down syndrome (Trisomy 21)	36 <i>12.0</i>	1 <i>26.7</i>	1 <i>26.2</i>	0 <i>0.0</i>	0 <i>0.0</i>	39 <i>12.3</i>	
Ebstein anomaly	1 <i>0.3</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	1 <i>0.3</i>	
Encephalocele	2 <i>0.7</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	2 <i>0.6</i>	
Epispadias	1 <i>0.3</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	1 <i>0.3</i>	
Esophageal atresia/tracheoesophageal fistula	10 <i>3.3</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	10 <i>3.2</i>	
Gastroschisis	5 <i>1.7</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	8 <i>2.5</i>	1
Hypoplastic left heart syndrome	9 <i>3.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	9 <i>2.8</i>	
Hypospadias*	116 <i>74.9</i>	1 <i>55.2</i>	0 <i>0.0</i>	1 <i>38.3</i>	0 <i>0.0</i>	120 <i>73.4</i>	
Obstructive genitourinary defect	155 <i>51.7</i>	3 <i>80.0</i>	1 <i>26.2</i>	0 <i>0.0</i>	0 <i>0.0</i>	160 <i>50.5</i>	
Omphalocele	1 <i>0.3</i>	1 <i>26.7</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	2 <i>0.6</i>	1
Patent ductus arteriosus	44 <i>14.7</i>	1 <i>26.7</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	46 <i>14.5</i>	2
Pulmonary valve atresia and stenosis	37 <i>12.3</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	38 <i>12.0</i>	
Pulmonary valve atresia	1 <i>0.3</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	1 <i>0.3</i>	
Rectal and large intestinal atresia/stenosis	11 <i>3.7</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	11 <i>3.5</i>	
Renal agenesis/hypoplasia	15 <i>5.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	15 <i>4.7</i>	
Spina bifida without anencephalus	9 <i>3.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	9 <i>2.8</i>	
Tetralogy of Fallot	17 <i>5.7</i>	2 <i>53.3</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	19 <i>6.0</i>	
Transposition of great arteries - All	13 <i>4.3</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	13 <i>4.1</i>	
dextro-Transposition of great arteries (d-TGA)	8 <i>2.7</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	8 <i>2.5</i>	
Tricuspid valve atresia and stenosis	2 <i>0.7</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	2 <i>0.6</i>	
Trisomy 13	1 <i>0.3</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	1 <i>0.3</i>	

**Vermont****Birth Defects Counts and Prevalence 2006-2010 (Prevalence per 10,000 Live Births)**

Defect	Maternal Race/Ethnicity					Total**	Notes
	White Non-Hispanic	Black Non-Hispanic	Hispanic	Asian or Pacific Islander Non-Hispanic	American Indian or Alaska Native Non-Hispanic		
Trisomy 18	3 <i>1.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	3 <i>0.9</i>	
Ventricular septal defect	186 <i>62.1</i>	3 <i>80.0</i>	3 <i>78.7</i>	2 <i>40.7</i>	0 <i>0.0</i>	196 <i>61.8</i>	
<b>Total Live Births</b>	<b>29970</b>	<b>375</b>	<b>381</b>	<b>492</b>	<b>37</b>	<b>31698</b>	
<b>Total Male Live Births</b>	<b>15487</b>	<b>181</b>	<b>185</b>	<b>261</b>	<b>21</b>	<b>16350</b>	

\*Hypospadias: prevalence per 10,000 male live births

\*\*Total includes unknown race

**Vermont****Trisomy Counts and Prevalence by Maternal Age 2006-2010 (Prevalence per 10,000 Live Births)**

Defect	Maternal Age (years)		Total**	Notes
	Less than 35	35+		
Down syndrome (Trisomy 21)	18 <i>6.8</i>	21 <i>40.2</i>	39 <i>12.3</i>	
Trisomy 13	1 <i>0.4</i>	0 <i>0.0</i>	1 <i>0.3</i>	
Trisomy 18	2 <i>0.8</i>	1 <i>1.9</i>	3 <i>0.9</i>	
<b>Total Live Births</b>	<b>26468</b>	<b>5230</b>	<b>31698</b>	

\*\*Total includes unknown maternal age

**Notes**

1. Vermont uses ICD-9 codes but also reviews hospital records and repair procedures to differentiate between Gastroschisis and Omphalocele.
2. Included only if weight greater than or equal to 2500 grams.

**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 predominately uses the ICD-9-CM coding system and does not include probable cases.
- Vermont's program only collects data on live births.

**Virginia**  
**Birth Defects Counts and Prevalence 2006-2010 (Prevalence per 10,000 Live Births)**

Defect	Maternal Race/Ethnicity					Total**	Notes
	Non-Hispanic White	Non-Hispanic Black or African	Hispanic	Asian or Pacific Islander	American Indian or Alaska Native		
Anencephalus	25 <i>0.8</i>	7 <i>0.6</i>	8 <i>1.1</i>	5 <i>1.4</i>	0 <i>0.0</i>	62 <i>1.2</i>	
Aniridia	5 <i>0.2</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	6 <i>0.1</i>	
Anophthalmia/microphthalmia	17 <i>0.6</i>	6 <i>0.5</i>	4 <i>0.6</i>	0 <i>0.0</i>	0 <i>0.0</i>	31 <i>0.6</i>	
Anotia/microtia	17 <i>0.6</i>	10 <i>0.9</i>	13 <i>1.9</i>	3 <i>0.8</i>	0 <i>0.0</i>	51 <i>1.0</i>	
Aortic valve stenosis	44 <i>1.5</i>	5 <i>0.4</i>	8 <i>1.1</i>	3 <i>0.8</i>	0 <i>0.0</i>	82 <i>1.5</i>	
Atrial septal defect	2408 <i>79.5</i>	1121 <i>97.8</i>	993 <i>142.4</i>	429 <i>116.7</i>	6 <i>77.6</i>	6125 <i>115.7</i>	
Atrioventricular septal defect (endocardial cushion defect)	99 <i>3.3</i>	57 <i>5.0</i>	14 <i>2.0</i>	10 <i>2.7</i>	0 <i>0.0</i>	222 <i>4.2</i>	
Biliary atresia	17 <i>0.6</i>	4 <i>0.3</i>	2 <i>0.3</i>	2 <i>0.5</i>	0 <i>0.0</i>	29 <i>0.5</i>	
Bladder exstrophy	6 <i>0.2</i>	2 <i>0.2</i>	0 <i>0.0</i>	1 <i>0.3</i>	0 <i>0.0</i>	10 <i>0.2</i>	
Choanal atresia	43 <i>1.4</i>	13 <i>1.1</i>	8 <i>1.1</i>	2 <i>0.5</i>	0 <i>0.0</i>	81 <i>1.5</i>	
Cleft lip with and without cleft palate	275 <i>9.1</i>	50 <i>4.4</i>	73 <i>10.5</i>	21 <i>5.7</i>	1 <i>12.9</i>	528 <i>10.0</i>	
Cleft palate without cleft lip	195 <i>6.4</i>	40 <i>3.5</i>	34 <i>4.9</i>	27 <i>7.3</i>	0 <i>0.0</i>	378 <i>7.1</i>	
Coarctation of aorta	149 <i>4.9</i>	40 <i>3.5</i>	30 <i>4.3</i>	13 <i>3.5</i>	0 <i>0.0</i>	287 <i>5.4</i>	
Common truncus	14 <i>0.5</i>	11 <i>1.0</i>	4 <i>0.6</i>	3 <i>0.8</i>	0 <i>0.0</i>	37 <i>0.7</i>	
Congenital cataract	24 <i>0.8</i>	16 <i>1.4</i>	6 <i>0.9</i>	2 <i>0.5</i>	0 <i>0.0</i>	59 <i>1.1</i>	
Congenital hip dislocation	165 <i>5.4</i>	23 <i>2.0</i>	39 <i>5.6</i>	16 <i>4.4</i>	0 <i>0.0</i>	293 <i>5.5</i>	
Diaphragmatic hernia	53 <i>1.7</i>	37 <i>3.2</i>	23 <i>3.3</i>	2 <i>0.5</i>	0 <i>0.0</i>	136 <i>2.6</i>	
Down syndrome (Trisomy 21)	322 <i>10.6</i>	114 <i>9.9</i>	113 <i>16.2</i>	43 <i>11.7</i>	0 <i>0.0</i>	732 <i>13.8</i>	
Ebstein anomaly	22 <i>0.7</i>	10 <i>0.9</i>	4 <i>0.6</i>	5 <i>1.4</i>	0 <i>0.0</i>	61 <i>1.2</i>	
Encephalocele	15 <i>0.5</i>	4 <i>0.3</i>	4 <i>0.6</i>	0 <i>0.0</i>	0 <i>0.0</i>	29 <i>0.5</i>	
Epispadias	31 <i>1.0</i>	14 <i>1.2</i>	5 <i>0.7</i>	1 <i>0.3</i>	0 <i>0.0</i>	59 <i>1.1</i>	
Esophageal atresia/tracheoesophageal fistula	74 <i>2.4</i>	31 <i>2.7</i>	10 <i>1.4</i>	3 <i>0.8</i>	0 <i>0.0</i>	133 <i>2.5</i>	
Fetus or newborn affected by maternal alcohol use	16 <i>0.5</i>	11 <i>1.0</i>	3 <i>0.4</i>	0 <i>0.0</i>	0 <i>0.0</i>	39 <i>0.7</i>	
Gastroschisis	20 <i>0.7</i>	8 <i>0.7</i>	6 <i>0.9</i>	1 <i>0.3</i>	0 <i>0.0</i>	67 <i>1.3</i>	
Hirschsprung disease (congenital megacolon)	62 <i>2.0</i>	31 <i>2.7</i>	7 <i>1.0</i>	4 <i>1.1</i>	0 <i>0.0</i>	130 <i>2.5</i>	
Hydrocephalus without spina bifida	123 <i>4.1</i>	88 <i>7.7</i>	33 <i>4.7</i>	10 <i>2.7</i>	0 <i>0.0</i>	313 <i>5.9</i>	
Hypoplastic left heart syndrome	58 <i>1.9</i>	21 <i>1.8</i>	14 <i>2.0</i>	3 <i>0.8</i>	1 <i>12.9</i>	125 <i>2.4</i>	
Hypospadias*	875 <i>57.1</i>	261 <i>44.7</i>	91 <i>25.4</i>	73 <i>38.8</i>	0 <i>0.0</i>	1560 <i>58.0</i>	
Microcephalus	112 <i>3.7</i>	65 <i>5.7</i>	47 <i>6.7</i>	17 <i>4.6</i>	0 <i>0.0</i>	301 <i>5.7</i>	
Obstructive genitourinary defect	631 <i>20.8</i>	180 <i>15.7</i>	144 <i>20.7</i>	86 <i>23.4</i>	0 <i>0.0</i>	1279 <i>24.2</i>	
Omphalocele	5 <i>0.2</i>	4 <i>0.3</i>	2 <i>0.3</i>	1 <i>0.3</i>	0 <i>0.0</i>	25 <i>0.5</i>	
Patent ductus arteriosus	1864 <i>61.5</i>	1073 <i>93.6</i>	781 <i>112.0</i>	307 <i>83.5</i>	5 <i>64.7</i>	5170 <i>97.7</i>	

**Virginia**  
**Birth Defects Counts and Prevalence 2006-2010 (Prevalence per 10,000 Live Births)**

Defect	Maternal Race/Ethnicity					Total**	Notes
	Non-Hispanic White	Non-Hispanic Black or African	Hispanic	Asian or Pacific Islander	American Indian or Alaska Native		
Pulmonary valve atresia and stenosis	256 <i>8.5</i>	147 <i>12.8</i>	90 <i>12.9</i>	52 <i>14.1</i>	1 <i>12.9</i>	669 <i>12.6</i>	
Pyloric stenosis	440 <i>14.5</i>	89 <i>7.8</i>	79 <i>11.3</i>	16 <i>4.4</i>	1 <i>12.9</i>	713 <i>13.5</i>	
Rectal and large intestinal atresia/stenosis	119 <i>3.9</i>	22 <i>1.9</i>	25 <i>3.6</i>	5 <i>1.4</i>	0 <i>0.0</i>	217 <i>4.1</i>	
Reduction deformity, lower limbs	31 <i>1.0</i>	15 <i>1.3</i>	2 <i>0.3</i>	3 <i>0.8</i>	1 <i>12.9</i>	61 <i>1.2</i>	
Reduction deformity, upper limbs	75 <i>2.5</i>	22 <i>1.9</i>	12 <i>1.7</i>	5 <i>1.4</i>	1 <i>12.9</i>	129 <i>2.4</i>	
Renal agenesis/hypoplasia	75 <i>2.5</i>	28 <i>2.4</i>	16 <i>2.3</i>	3 <i>0.8</i>	2 <i>25.9</i>	159 <i>3.0</i>	
Spina bifida without anencephalus	109 <i>3.6</i>	40 <i>3.5</i>	41 <i>5.9</i>	4 <i>1.1</i>	0 <i>0.0</i>	231 <i>4.4</i>	
Tetralogy of Fallot	104 <i>3.4</i>	55 <i>4.8</i>	22 <i>3.2</i>	12 <i>3.3</i>	0 <i>0.0</i>	245 <i>4.6</i>	
Transposition of great arteries - All	140 <i>4.6</i>	50 <i>4.4</i>	25 <i>3.6</i>	12 <i>3.3</i>	0 <i>0.0</i>	284 <i>5.4</i>	
Tricuspid valve atresia and stenosis	21 <i>0.7</i>	12 <i>1.0</i>	5 <i>0.7</i>	5 <i>1.4</i>	0 <i>0.0</i>	53 <i>1.0</i>	
Trisomy 13	17 <i>0.6</i>	7 <i>0.6</i>	11 <i>1.6</i>	1 <i>0.3</i>	0 <i>0.0</i>	54 <i>1.0</i>	
Trisomy 18	43 <i>1.4</i>	17 <i>1.5</i>	7 <i>1.0</i>	7 <i>1.9</i>	0 <i>0.0</i>	89 <i>1.7</i>	
Ventricular septal defect	1220 <i>40.3</i>	396 <i>34.5</i>	418 <i>60.0</i>	159 <i>43.3</i>	3 <i>38.8</i>	2709 <i>51.2</i>	
<b>Total Live Births</b>	<b>302884</b>	<b>114667</b>	<b>69722</b>	<b>36761</b>	<b>773</b>	<b>529380</b>	
<b>Total Male Live Births</b>	<b>153291</b>	<b>58359</b>	<b>35765</b>	<b>18821</b>	<b>387</b>	<b>268969</b>	

\*Hypospadias: prevalence per 10,000 male live births

\*\*Total includes unknown race

**Virginia**  
**Trisomy Counts and Prevalence by Maternal Age 2006-2010 (Prevalence per 10,000 Live Births)**

Defect	Age		Total**	Notes
	Less than 35	35 and greater		
Down syndrome (Trisomy 21)	325 <i>7.3</i>	272 <i>31.4</i>	732 <i>13.8</i>	
Trisomy 13	29 <i>0.7</i>	22 <i>2.5</i>	54 <i>1.0</i>	
Trisomy 18	39 <i>0.9</i>	36 <i>4.2</i>	89 <i>1.7</i>	
<b>Total Live Births</b>	<b>442835</b>	<b>86545</b>	<b>529380</b>	

\*\*Total includes unknown maternal age

**Washington****Birth Defects Counts and Prevalence 2006-2009 (Prevalence per 10,000 Live Births)**

<b>Maternal Race/Ethnicity</b>		
<b>Defect</b>	<b>Total**</b>	<b>Notes</b>
Anencephalus	15 <i>0.4</i>	
Cleft lip with and without cleft palate	406 <i>11.4</i>	
Cleft palate without cleft lip	314 <i>8.8</i>	
Down syndrome (Trisomy 21)	461 <i>13.0</i>	
Epispadias	24 <i>0.7</i>	
Hypospadias*	945 <i>51.9</i>	
Reduction deformity, lower limbs	64 <i>1.8</i>	
Reduction deformity, upper limbs	93 <i>2.6</i>	
Spina bifida without anencephalus	102 <i>2.9</i>	
<b>Total Live Births</b>	<b>355278</b>	
<b>Total Male Live Births</b>	<b>182015</b>	

\*Hypospadias: prevalence per 10,000 male live births

\*\*Total includes unknown race

**Washington****Trisomy Counts and Prevalence by Maternal Age 2006-2009 (Prevalence per 10,000 Live Births)**

<b>Maternal Age (years)</b>		
<b>Defect</b>	<b>Total**</b>	<b>Notes</b>
Down syndrome (Trisomy 21)	461 <i>13.0</i>	
<b>Total Live Births</b>	<b>355278</b>	

\*\*Total includes unknown maternal age

**General comments**

- Washington could not report case data by race.
- Washington's case totals include 5-7% duplicate cases, depending on condition.



## West Virginia

### Birth Defects Counts and Prevalence 2006-2010 (Prevalence per 10,000 Live Births)

Defect	Maternal Race/Ethnicity					Total**	Notes
	White Non-Hispanic	Black Non-Hispanic	Hispanic	Asian or Pacific Islander Non-Hispanic	American Indian or Alaska Native Non-Hispanic		
Anencephalus	26 2.7	0 0.0	1 8.1	0 0.0	0 0.0	28 2.8	
Anophthalmia/microphthalmia	2 0.2	0 0.0	0 0.0	0 0.0	0 0.0	2 0.2	
Anotia/microtia	4 0.4	0 0.0	0 0.0	0 0.0	0 0.0	4 0.4	
Aortic valve stenosis	11 1.2	0 0.0	0 0.0	0 0.0	0 0.0	14 1.4	
Atrial septal defect	717 75.7	18 49.2	2 16.3	3 33.4	0 0.0	916 90.4	
Atrioventricular septal defect (endocardial cushion defect)	18 1.9	0 0.0	0 0.0	0 0.0	0 0.0	20 2.0	
Biliary atresia	3 0.3	0 0.0	0 0.0	0 0.0	0 0.0	3 0.3	
Bladder exstrophy	1 0.1	0 0.0	0 0.0	0 0.0	0 0.0	2 0.2	
Choanal atresia	2 0.2	0 0.0	0 0.0	0 0.0	0 0.0	5 0.5	
Cleft lip with and without cleft palate	24 2.5	1 2.7	0 0.0	1 11.1	0 0.0	27 2.7	
Cleft palate without cleft lip	60 6.3	1 2.7	0 0.0	1 11.1	0 0.0	65 6.4	
Coarctation of aorta	27 2.9	1 2.7	0 0.0	0 0.0	0 0.0	31 3.1	
Common truncus	52 5.5	2 5.5	0 0.0	0 0.0	0 0.0	54 5.3	
Congenital cataract	3 0.3	0 0.0	0 0.0	0 0.0	0 0.0	3 0.3	
Congenital hip dislocation	8 0.8	0 0.0	0 0.0	0 0.0	0 0.0	10 1.0	
Diaphragmatic hernia	12 1.3	1 2.7	0 0.0	0 0.0	0 0.0	14 1.4	
Down syndrome (Trisomy 21)	48 5.1	3 8.2	0 0.0	0 0.0	0 0.0	70 6.9	
Ebstein anomaly	8 0.8	0 0.0	0 0.0	0 0.0	0 0.0	8 0.8	
Encephalocele	2 0.2	0 0.0	0 0.0	0 0.0	0 0.0	3 0.3	
Epispadias	7 0.7	0 0.0	0 0.0	0 0.0	0 0.0	8 0.8	
Esophageal atresia/tracheoesophageal fistula	9 1.0	0 0.0	0 0.0	0 0.0	0 0.0	13 1.3	
Fetus or newborn affected by maternal alcohol use	15 1.6	0 0.0	0 0.0	0 0.0	0 0.0	18 1.8	
Hirschsprung disease (congenital megacolon)	11 1.2	2 5.5	0 0.0	0 0.0	0 0.0	16 1.6	
Hydrocephalus without spina bifida	31 3.3	0 0.0	0 0.0	0 0.0	0 0.0	35 3.5	
Hypoplastic left heart syndrome	12 1.3	1 2.7	0 0.0	0 0.0	0 0.0	18 1.8	
Hypospadias*	152 33.1	4 22.5	0 0.0	0 0.0	0 0.0	189 38.4	
Microcephalus	19 2.0	1 2.7	0 0.0	0 0.0	0 0.0	29 2.9	
Obstructive genitourinary defect	44 4.6	1 2.7	1 8.1	0 0.0	0 0.0	48 4.7	
Patent ductus arteriosus	260 27.5	13 35.5	0 0.0	1 11.1	0 0.0	304 30.0	1
Pulmonary valve atresia and stenosis	34 3.6	0 0.0	0 0.0	0 0.0	0 0.0	51 5.0	
Pulmonary valve atresia	6 0.6	0 0.0	0 0.0	0 0.0	0 0.0	8 0.8	
Pyloric stenosis	68 7.2	1 2.7	0 0.0	1 11.1	0 0.0	78 7.7	

**West Virginia**  
**Birth Defects Counts and Prevalence 2006-2010 (Prevalence per 10,000 Live Births)**

Defect	Maternal Race/Ethnicity					Total**	Notes
	White Non-Hispanic	Black Non-Hispanic	Hispanic	Asian or Pacific Islander Non-Hispanic	American Indian or Alaska Native Non-Hispanic		
Rectal and large intestinal atresia/stenosis	23 <i>2.4</i>	1 <i>2.7</i>	1 <i>8.1</i>	0 <i>0.0</i>	0 <i>0.0</i>	30 <i>3.0</i>	
Reduction deformity, lower limbs	7 <i>0.7</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	8 <i>0.8</i>	
Reduction deformity, upper limbs	10 <i>1.1</i>	1 <i>2.7</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	11 <i>1.1</i>	
Renal agenesis/hypoplasia	26 <i>2.7</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	30 <i>3.0</i>	
Spina bifida without anencephalus	32 <i>3.4</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	32 <i>3.2</i>	
Tetralogy of Fallot	30 <i>3.2</i>	1 <i>2.7</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	46 <i>4.5</i>	
Total anomalous pulmonary venous return (TAPVR)	2 <i>0.2</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	4 <i>0.4</i>	
Transposition of great arteries - All	18 <i>1.9</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	27 <i>2.7</i>	
dextro-Transposition of great arteries (d-TGA)	12 <i>1.3</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	17 <i>1.7</i>	
Tricuspid valve atresia and stenosis	7 <i>0.7</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	12 <i>1.2</i>	
Tricuspid valve atresia	7 <i>0.7</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	12 <i>1.2</i>	
Trisomy 13	3 <i>0.3</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	6 <i>0.6</i>	
Trisomy 18	9 <i>1.0</i>	1 <i>2.7</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	11 <i>1.1</i>	
Ventricular septal defect	198 <i>20.9</i>	4 <i>10.9</i>	0 <i>0.0</i>	1 <i>11.1</i>	0 <i>0.0</i>	240 <i>23.7</i>	
<b>Total Live Births</b>	<b>94656</b>	<b>3660</b>	<b>1227</b>	<b>899</b>	<b>119</b>	<b>101298</b>	
<b>Total Male Live Births</b>	<b>45879</b>	<b>1781</b>	<b>600</b>	<b>458</b>	<b>55</b>	<b>49267</b>	

\*Hypospadias: prevalence per 10,000 male live births

\*\*Total includes unknown race

**West Virginia**  
**Trisomy Counts and Prevalence by Maternal Age 2006-2010 (Prevalence per 10,000 Live Births)**

Defect	Maternal Age (years)		Total**	Notes
	Less than 35	35+		
Down syndrome (Trisomy 21)	32 <i>3.5</i>	14 <i>16.6</i>	70 <i>6.9</i>	
Trisomy 13	2 <i>0.2</i>	1 <i>1.2</i>	6 <i>0.6</i>	
Trisomy 18	6 <i>0.7</i>	3 <i>3.5</i>	11 <i>1.1</i>	
<b>Total Live Births</b>	<b>92251</b>	<b>8457</b>	<b>101298</b>	

\*\*Total includes unknown maternal age

**Notes**

1. Includes only births greater than or equal to 2500 grams or greater than or equal to 36 weeks gestation.

**General comments**

- Birth defects defined by ICD-9 coding.
- Probable cases are included.
- Stillbirths and terminations per birth defect are not collected.

**Wisconsin**  
**Birth Defects Counts and Prevalence 2006-2010 (Prevalence per 10,000 Live Births)**

Defect	Maternal Race/Ethnicity					Total**	Notes
	Non-Hispanic White	Non-Hispanic Black or African	Hispanic	Asian or Pacific Islander	American Indian or Alaska Native		
Anencephalus	32 <i>1.3</i>	4 <i>1.1</i>	8 <i>2.4</i>	5 <i>3.5</i>	0 <i>0.0</i>	49 <i>1.5</i>	
Aniridia	3 <i>0.1</i>	3 <i>0.9</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	6 <i>0.2</i>	
Anophthalmia/microphthalmia	15 <i>0.6</i>	4 <i>1.1</i>	1 <i>0.3</i>	0 <i>0.0</i>	0 <i>0.0</i>	20 <i>0.6</i>	
Anotia/microtia	18 <i>0.7</i>	2 <i>0.6</i>	13 <i>3.9</i>	0 <i>0.0</i>	0 <i>0.0</i>	33 <i>1.0</i>	
Aortic valve stenosis	19 <i>0.8</i>	1 <i>0.3</i>	1 <i>0.3</i>	0 <i>0.0</i>	1 <i>1.8</i>	22 <i>0.7</i>	
Atrial septal defect	1010 <i>40.6</i>	119 <i>34.1</i>	132 <i>39.3</i>	37 <i>26.1</i>	42 <i>77.0</i>	1340 <i>39.8</i>	
Atrioventricular septal defect (endocardial cushion defect)	48 <i>1.9</i>	7 <i>2.0</i>	3 <i>0.9</i>	1 <i>0.7</i>	0 <i>0.0</i>	59 <i>1.8</i>	1
Biliary atresia	3 <i>0.1</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	3 <i>0.1</i>	
Bladder exstrophy	8 <i>0.3</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	8 <i>0.2</i>	
Choanal atresia	32 <i>1.3</i>	1 <i>0.3</i>	5 <i>1.5</i>	1 <i>0.7</i>	0 <i>0.0</i>	39 <i>1.2</i>	
Cleft lip with and without cleft palate	239 <i>9.6</i>	27 <i>7.7</i>	31 <i>9.2</i>	11 <i>7.8</i>	8 <i>14.7</i>	316 <i>9.4</i>	
Cleft palate without cleft lip	158 <i>6.4</i>	16 <i>4.6</i>	13 <i>3.9</i>	7 <i>4.9</i>	2 <i>3.7</i>	197 <i>5.8</i>	
Coarctation of aorta	41 <i>1.6</i>	8 <i>2.3</i>	7 <i>2.1</i>	0 <i>0.0</i>	1 <i>1.8</i>	57 <i>1.7</i>	
Common truncus	14 <i>0.6</i>	1 <i>0.3</i>	2 <i>0.6</i>	0 <i>0.0</i>	0 <i>0.0</i>	17 <i>0.5</i>	
Congenital cataract	19 <i>0.8</i>	4 <i>1.1</i>	3 <i>0.9</i>	0 <i>0.0</i>	0 <i>0.0</i>	27 <i>0.8</i>	
Congenital hip dislocation	164 <i>6.6</i>	6 <i>1.7</i>	23 <i>6.8</i>	4 <i>2.8</i>	0 <i>0.0</i>	197 <i>5.8</i>	
Diaphragmatic hernia	42 <i>1.7</i>	6 <i>1.7</i>	9 <i>2.7</i>	1 <i>0.7</i>	1 <i>1.8</i>	59 <i>1.8</i>	
Down syndrome (Trisomy 21)	307 <i>12.3</i>	26 <i>7.4</i>	65 <i>19.3</i>	27 <i>19.1</i>	5 <i>9.2</i>	430 <i>12.8</i>	
Ebstein anomaly	4 <i>0.2</i>	0 <i>0.0</i>	2 <i>0.6</i>	1 <i>0.7</i>	1 <i>1.8</i>	8 <i>0.2</i>	
Encephalocele	9 <i>0.4</i>	1 <i>0.3</i>	0 <i>0.0</i>	1 <i>0.7</i>	0 <i>0.0</i>	11 <i>0.3</i>	
Epispadias	19 <i>0.8</i>	5 <i>1.4</i>	2 <i>0.6</i>	1 <i>0.7</i>	0 <i>0.0</i>	27 <i>0.8</i>	
Esophageal atresia/tracheoesophageal fistula	48 <i>1.9</i>	5 <i>1.4</i>	4 <i>1.2</i>	1 <i>0.7</i>	0 <i>0.0</i>	58 <i>1.7</i>	
Fetus or newborn affected by maternal alcohol use	22 <i>0.9</i>	10 <i>2.9</i>	2 <i>0.6</i>	0 <i>0.0</i>	3 <i>5.5</i>	37 <i>1.1</i>	
Hirschsprung disease (congenital megacolon)	16 <i>0.6</i>	3 <i>0.9</i>	2 <i>0.6</i>	2 <i>1.4</i>	0 <i>0.0</i>	23 <i>0.7</i>	
Hydrocephalus without spina bifida	88 <i>3.5</i>	23 <i>6.6</i>	13 <i>3.9</i>	2 <i>1.4</i>	0 <i>0.0</i>	126 <i>3.7</i>	
Hypoplastic left heart syndrome	44 <i>1.8</i>	11 <i>3.1</i>	4 <i>1.2</i>	0 <i>0.0</i>	1 <i>1.8</i>	60 <i>1.8</i>	
Hypospadias*	959 <i>75.1</i>	129 <i>73.3</i>	57 <i>33.2</i>	14 <i>19.6</i>	11 <i>39.6</i>	1171 <i>67.9</i>	
Microcephalus	42 <i>1.7</i>	6 <i>1.7</i>	6 <i>1.8</i>	2 <i>1.4</i>	0 <i>0.0</i>	56 <i>1.7</i>	
Obstructive genitourinary defect	488 <i>19.6</i>	37 <i>10.6</i>	40 <i>11.9</i>	28 <i>19.8</i>	14 <i>25.7</i>	607 <i>18.0</i>	
Patent ductus arteriosus	701 <i>28.2</i>	115 <i>32.9</i>	110 <i>32.7</i>	31 <i>21.9</i>	27 <i>49.5</i>	984 <i>29.2</i>	
Pulmonary valve atresia and stenosis	63 <i>2.5</i>	20 <i>5.7</i>	11 <i>3.3</i>	4 <i>2.8</i>	4 <i>7.3</i>	102 <i>3.0</i>	
Pulmonary valve atresia	6 <i>0.3</i>	0 <i>0.0</i>	2 <i>0.7</i>	1 <i>0.9</i>	0 <i>0.0</i>	9 <i>0.3</i>	

**Wisconsin****Birth Defects Counts and Prevalence 2006-2010 (Prevalence per 10,000 Live Births)**

Defect	Maternal Race/Ethnicity					Total**	Notes
	Non-Hispanic White	Non-Hispanic Black or African	Hispanic	Asian or Pacific Islander	American Indian or Alaska Native		
Pyloric stenosis	5 <i>0.2</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	5 <i>0.1</i>	
Rectal and large intestinal atresia/stenosis	81 <i>3.3</i>	6 <i>1.7</i>	11 <i>3.3</i>	3 <i>2.1</i>	1 <i>1.8</i>	102 <i>3.0</i>	
Reduction deformity, lower limbs	33 <i>1.3</i>	4 <i>1.1</i>	4 <i>1.2</i>	2 <i>1.4</i>	0 <i>0.0</i>	43 <i>1.3</i>	
Reduction deformity, upper limbs	62 <i>2.5</i>	10 <i>2.9</i>	8 <i>2.4</i>	3 <i>2.1</i>	2 <i>3.7</i>	85 <i>2.5</i>	
Renal agenesis/hypoplasia	97 <i>3.9</i>	7 <i>2.0</i>	6 <i>1.8</i>	3 <i>2.1</i>	1 <i>1.8</i>	114 <i>3.4</i>	
Spina bifida without anencephalus	74 <i>3.0</i>	9 <i>2.6</i>	10 <i>3.0</i>	2 <i>1.4</i>	1 <i>1.8</i>	96 <i>2.8</i>	
Tetralogy of Fallot	60 <i>2.4</i>	16 <i>4.6</i>	11 <i>3.3</i>	3 <i>2.1</i>	1 <i>1.8</i>	91 <i>2.7</i>	
Total anomalous pulmonary venous return (TAPVR)	5 <i>0.2</i>	1 <i>0.3</i>	1 <i>0.3</i>	0 <i>0.0</i>	0 <i>0.0</i>	7 <i>0.2</i>	
Transposition of great arteries - All	50 <i>2.0</i>	5 <i>1.4</i>	11 <i>3.3</i>	0 <i>0.0</i>	3 <i>5.5</i>	69 <i>2.0</i>	
dextro-Transposition of great arteries (d-TGA)	27 <i>1.3</i>	2 <i>0.7</i>	4 <i>1.5</i>	0 <i>0.0</i>	1 <i>2.3</i>	34 <i>1.2</i>	
Tricuspid valve atresia and stenosis	17 <i>0.7</i>	3 <i>0.9</i>	2 <i>0.6</i>	2 <i>1.4</i>	0 <i>0.0</i>	24 <i>0.7</i>	2
Tricuspid valve atresia	1 <i>0.0</i>	0 <i>0.0</i>	1 <i>0.4</i>	0 <i>0.0</i>	0 <i>0.0</i>	2 <i>0.1</i>	
Trisomy 13	20 <i>0.8</i>	3 <i>0.9</i>	3 <i>0.9</i>	1 <i>0.7</i>	0 <i>0.0</i>	27 <i>0.8</i>	
Trisomy 18	50 <i>2.0</i>	7 <i>2.0</i>	6 <i>1.8</i>	2 <i>1.4</i>	0 <i>0.0</i>	66 <i>2.0</i>	
Ventricular septal defect	619 <i>24.9</i>	61 <i>17.5</i>	122 <i>36.3</i>	33 <i>23.3</i>	20 <i>36.6</i>	855 <i>25.4</i>	3
<b>Total Live Births</b>	<b>248656</b>	<b>34946</b>	<b>33608</b>	<b>14170</b>	<b>5458</b>	<b>337011</b>	
<b>Total Male Live Births</b>	<b>127709</b>	<b>17602</b>	<b>17172</b>	<b>7157</b>	<b>2778</b>	<b>172507</b>	

\*Hypospadias: prevalence per 10,000 male live births

\*\*Total includes unknown race

**Wisconsin****Trisomy Counts and Prevalence by Maternal Age 2006-2010 (Prevalence per 10,000 Live Births)**

Defect	Age		Total**	Notes
	Less than 35	35 and greater		
Down syndrome (Trisomy 21)	231 <i>7.9</i>	199 <i>45.9</i>	430 <i>12.8</i>	
Trisomy 13	18 <i>0.6</i>	9 <i>2.1</i>	27 <i>0.8</i>	
Trisomy 18	40 <i>1.4</i>	26 <i>6.0</i>	66 <i>2.0</i>	
<b>Total Live Births</b>	<b>293689</b>	<b>43322</b>	<b>337011</b>	

\*\*Total includes unknown maternal age

**Notes**

1. Cannot include Inlet VSD, common atrioventricular (AV) canal type VSD.
2. Cases with tricuspid stenosis or hypoplasia are included.
3. Including probable cases, cannot exclude; Hospital practice in coding is not known.

**Department of Defense**  
**Birth Defects Counts and Prevalence 2006-2010 (Prevalence per 10,000 Live Births)**

Defect	Maternal Race/Ethnicity					Total**	Notes
	White Non-Hispanic	Black Non-Hispanic	Hispanic	Asian or Pacific Islander Non-Hispanic	American Indian or Alaska Native Non-Hispanic		
Anencephalus	22 <i>0.6</i>	7 <i>0.9</i>	5 <i>0.8</i>	3 <i>1.2</i>	0 <i>0.0</i>	38 <i>0.7</i>	1
Aniridia	7 <i>0.2</i>	1 <i>0.1</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	8 <i>0.1</i>	
Anophthalmia/microphthalmia	59 <i>1.6</i>	19 <i>2.3</i>	13 <i>2.0</i>	5 <i>1.9</i>	3 <i>2.9</i>	100 <i>1.8</i>	
Anotia/microtia	69 <i>1.8</i>	12 <i>1.5</i>	12 <i>1.9</i>	5 <i>1.9</i>	4 <i>3.8</i>	103 <i>1.8</i>	
Aortic valve stenosis	144 <i>3.8</i>	20 <i>2.5</i>	18 <i>2.8</i>	6 <i>2.3</i>	5 <i>4.8</i>	194 <i>3.4</i>	
Atrial septal defect	3189 <i>84.7</i>	755 <i>93.0</i>	541 <i>85.1</i>	185 <i>71.8</i>	77 <i>73.8</i>	4843 <i>85.0</i>	2
Atrioventricular septal defect (endocardial cushion defect)	223 <i>5.9</i>	58 <i>7.1</i>	40 <i>6.3</i>	10 <i>3.9</i>	5 <i>4.8</i>	342 <i>6.0</i>	3
Biliary atresia	39 <i>1.0</i>	9 <i>1.1</i>	9 <i>1.4</i>	2 <i>0.8</i>	1 <i>1.0</i>	60 <i>1.1</i>	
Bladder exstrophy	16 <i>0.4</i>	2 <i>0.2</i>	2 <i>0.3</i>	1 <i>0.4</i>	0 <i>0.0</i>	21 <i>0.4</i>	
Choanal atresia	107 <i>2.8</i>	17 <i>2.1</i>	13 <i>2.0</i>	3 <i>1.2</i>	2 <i>1.9</i>	143 <i>2.5</i>	
Cleft lip with and without cleft palate	485 <i>12.9</i>	50 <i>6.2</i>	60 <i>9.4</i>	30 <i>11.6</i>	8 <i>7.7</i>	647 <i>11.4</i>	
Cleft palate without cleft lip	460 <i>12.2</i>	62 <i>7.6</i>	63 <i>9.9</i>	23 <i>8.9</i>	7 <i>6.7</i>	629 <i>11.0</i>	
Coarctation of aorta	343 <i>9.1</i>	68 <i>8.4</i>	47 <i>7.4</i>	15 <i>5.8</i>	10 <i>9.6</i>	491 <i>8.6</i>	
Common truncus	87 <i>2.3</i>	15 <i>1.8</i>	13 <i>2.0</i>	5 <i>1.9</i>	3 <i>2.9</i>	123 <i>2.2</i>	
Congenital cataract	110 <i>2.9</i>	25 <i>3.1</i>	30 <i>4.7</i>	8 <i>3.1</i>	1 <i>1.0</i>	176 <i>3.1</i>	
Congenital hip dislocation	800 <i>21.3</i>	84 <i>10.3</i>	116 <i>18.2</i>	41 <i>15.9</i>	26 <i>24.9</i>	1088 <i>19.1</i>	
Diaphragmatic hernia	157 <i>4.2</i>	26 <i>3.2</i>	24 <i>3.8</i>	9 <i>3.5</i>	2 <i>1.9</i>	219 <i>3.8</i>	
Down syndrome (Trisomy 21)	550 <i>14.6</i>	105 <i>12.9</i>	90 <i>14.2</i>	35 <i>13.6</i>	9 <i>8.6</i>	804 <i>14.1</i>	1
Ebstein anomaly	39 <i>1.0</i>	8 <i>1.0</i>	7 <i>1.1</i>	3 <i>1.2</i>	3 <i>2.9</i>	63 <i>1.1</i>	
Encephalocele	38 <i>1.0</i>	12 <i>1.5</i>	12 <i>1.9</i>	3 <i>1.2</i>	3 <i>2.9</i>	69 <i>1.2</i>	
Epispadias	57 <i>1.5</i>	16 <i>2.0</i>	8 <i>1.3</i>	3 <i>1.2</i>	1 <i>1.0</i>	85 <i>1.5</i>	
Esophageal atresia/tracheoesophageal fistula	112 <i>3.0</i>	20 <i>2.5</i>	10 <i>1.6</i>	5 <i>1.9</i>	1 <i>1.0</i>	151 <i>2.6</i>	
Fetus or newborn affected by maternal alcohol use	26 <i>0.7</i>	4 <i>0.5</i>	1 <i>0.2</i>	0 <i>0.0</i>	0 <i>0.0</i>	31 <i>0.5</i>	
Hirschsprung disease (congenital megacolon)	141 <i>3.7</i>	44 <i>5.4</i>	30 <i>4.7</i>	14 <i>5.4</i>	7 <i>6.7</i>	245 <i>4.3</i>	
Hydrocephalus without spina bifida	361 <i>9.6</i>	89 <i>11.0</i>	46 <i>7.2</i>	20 <i>7.8</i>	9 <i>8.6</i>	534 <i>9.4</i>	
Hypoplastic left heart syndrome	158 <i>4.2</i>	40 <i>4.9</i>	23 <i>3.6</i>	9 <i>3.5</i>	7 <i>6.7</i>	243 <i>4.3</i>	
Hypospadias*	2060 <i>106.2</i>	376 <i>91.2</i>	235 <i>72.4</i>	119 <i>88.9</i>	49 <i>92.0</i>	2911 <i>99.4</i>	
Microcephalus	386 <i>10.3</i>	97 <i>11.9</i>	53 <i>8.3</i>	24 <i>9.3</i>	7 <i>6.7</i>	579 <i>10.2</i>	
Obstructive genitourinary defect	1736 <i>46.1</i>	264 <i>32.5</i>	308 <i>48.4</i>	115 <i>44.6</i>	49 <i>46.9</i>	2512 <i>44.1</i>	
Pulmonary valve atresia and stenosis	684 <i>18.2</i>	207 <i>25.5</i>	118 <i>18.6</i>	37 <i>14.4</i>	19 <i>18.2</i>	1082 <i>19.0</i>	
Pulmonary valve atresia	92 <i>2.4</i>	24 <i>3.0</i>	16 <i>2.5</i>	9 <i>3.5</i>	2 <i>1.9</i>	146 <i>2.6</i>	
Pyloric stenosis	1068 <i>28.4</i>	92 <i>11.3</i>	157 <i>24.7</i>	28 <i>10.9</i>	33 <i>31.6</i>	1405 <i>24.7</i>	

**Department of Defense**  
**Birth Defects Counts and Prevalence 2006-2010 (Prevalence per 10,000 Live Births)**

Defect	Maternal Race/Ethnicity					Total**	Notes
	White Non-Hispanic	Black Non-Hispanic	Hispanic	Asian or Pacific Islander Non-Hispanic	American Indian or Alaska Native Non-Hispanic		
Rectal and large intestinal atresia/stenosis	238 <b>6.3</b>	35 <b>4.3</b>	25 <b>3.9</b>	27 <b>10.5</b>	5 <b>4.8</b>	337 <b>5.9</b>	
Reduction deformity, lower limbs	101 <b>2.7</b>	26 <b>3.2</b>	11 <b>1.7</b>	4 <b>1.6</b>	4 <b>3.8</b>	149 <b>2.6</b>	
Reduction deformity, upper limbs	130 <b>3.5</b>	21 <b>2.6</b>	25 <b>3.9</b>	7 <b>2.7</b>	4 <b>3.8</b>	188 <b>3.3</b>	
Renal agenesis/hypoplasia	215 <b>5.7</b>	26 <b>3.2</b>	41 <b>6.4</b>	13 <b>5.0</b>	6 <b>5.7</b>	307 <b>5.4</b>	
Spina bifida without anencephalus	196 <b>5.2</b>	28 <b>3.4</b>	28 <b>4.4</b>	10 <b>3.9</b>	10 <b>9.6</b>	279 <b>4.9</b>	1
Tetralogy of Fallot	227 <b>6.0</b>	48 <b>5.9</b>	40 <b>6.3</b>	25 <b>9.7</b>	7 <b>6.7</b>	352 <b>6.2</b>	
Total anomalous pulmonary venous return (TAPVR)	52 <b>1.4</b>	15 <b>1.8</b>	14 <b>2.2</b>	4 <b>1.6</b>	0 <b>0.0</b>	89 <b>1.6</b>	
Transposition of great arteries - All	216 <b>5.7</b>	33 <b>4.1</b>	35 <b>5.5</b>	15 <b>5.8</b>	4 <b>3.8</b>	308 <b>5.4</b>	
dextro-Transposition of great arteries (d-TGA)	145 <b>3.9</b>	20 <b>2.5</b>	20 <b>3.1</b>	12 <b>4.7</b>	2 <b>1.9</b>	203 <b>3.6</b>	
Tricuspid valve atresia and stenosis	56 <b>1.5</b>	17 <b>2.1</b>	4 <b>0.6</b>	5 <b>1.9</b>	1 <b>1.0</b>	86 <b>1.5</b>	
Trisomy 13	40 <b>1.1</b>	19 <b>2.3</b>	7 <b>1.1</b>	1 <b>0.4</b>	0 <b>0.0</b>	68 <b>1.2</b>	1
Trisomy 18	70 <b>1.9</b>	9 <b>1.1</b>	14 <b>2.2</b>	5 <b>1.9</b>	0 <b>0.0</b>	99 <b>1.7</b>	1
Ventricular septal defect	2814 <b>74.8</b>	481 <b>59.2</b>	452 <b>71.1</b>	158 <b>61.3</b>	73 <b>69.9</b>	4051 <b>71.1</b>	4
<b>Total Live Births</b>	<b>376395</b>	<b>81201</b>	<b>63572</b>	<b>25768</b>	<b>10440</b>	<b>569832</b>	
<b>Total Male Live Births</b>	<b>194057</b>	<b>41247</b>	<b>32457</b>	<b>13382</b>	<b>5324</b>	<b>292921</b>	

\*Hypospadias: prevalence per 10,000 male live births

\*\*Total includes unknown race



**Department of Defense  
Trisomy Counts and Prevalence by Maternal Age 2006-2010 (Prevalence per 10,000 Live Births)**

Defect	Maternal Age (years)		Total**	Notes
	Less than 35	35+		
Down syndrome (Trisomy 21)	508 <i>10.2</i>	272 <i>52.9</i>	804 <i>14.1</i>	1
Trisomy 13	56 <i>1.1</i>	10 <i>1.9</i>	68 <i>1.2</i>	1
Trisomy 18	60 <i>1.2</i>	34 <i>6.6</i>	99 <i>1.7</i>	1
<b>Total Live Births</b>	<b>497466</b>	<b>51421</b>	<b>569832</b>	

\*\*Total includes unknown maternal age

**Notes**

1. DoD Registry only captures livebirths
2. DoD Registry relies on ICD-9-CM codes and cannot differentiate 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 2013

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, Universities, Hospitals, Community Nursing Services, Environmental Agencies/Organizations, Early Childhood Prevention Programs, Advocacy Groups

**Program status:** Currently collecting data

**Start year:** 1996

**Earliest year of available data:** 1996

**Organizational location:** Department of Health and Social Services, Division of Public Health, Section of Women's, Children's and Family Health, Maternal Child Health Epidemiology

**Population covered annually:** 11,000

**Statewide:** Yes

**Current legislation or rule:** 7 AAC 27.012

**Legislation year enacted:** 1996

**Case Definition**

**Outcomes covered:** ICD-9 Codes 237.7, 243, 255.2, 270, 271, 277, 279, 282, 284.0, 331, 334, 335, 343, 359, 362.74, 389, 740-760, 760.71

**Pregnancy outcome:** Live Births (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 ascertainment, Population based, Passive case ascertainment with case verification of selected conditions including FAS and NTDs

**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:** Disease index or discharge index, 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/clinical genetics facilities

**Other sources:** Physician reports

**Case Ascertainment**

**Conditions warranting chart review in newborn period:** any chart with an ICD-9 code of 760.71 and other birth defects as selected for review by the ABDR Program Manager.

**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, Apgar, etc.), Birth defect diagnostic information

**Data Collection Methods and Storage**

**Data Collection:** Printed abstract/report filled out by staff, 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.)

**Database storage/management:** Access

**Data Analysis**

**Data analysis software:** Epi-Info, SAS, Access

**Quality assurance:** Validity checks, Re-abstraction of cases, Double-checking of assigned codes, Comparison/verification between multiple data sources, Timeliness, Record linkage and de-duplication

**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, Grant proposals, Education/public awareness, Prevention projects, Monitoring outbreaks and cluster investigations

**System Integration**

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

**Funding**

**Funding Source:** 80% general state funds, 20% MCH funds

**Other**

**Web site:** www.epi.alaska.gov/mchebi/ABDR

**Surveillance reports on file:** see website

**Contacts**

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**Arizona***Arizona Birth Defects Monitoring Program (ABDMP)*

**Purpose:** Surveillance, Referral to Services, Referral to Prevention/Intervention

**Partner:** Local Health Departments, Universities, Hospitals, Community Nursing Services, Early Childhood Prevention Programs, Advocacy Groups, Legislators

**Program status:** Currently collecting data

**Start year:** 1986

**Earliest year of available data:** 1986

**Organizational location:** Department of Health (Bureau of Public Health Statistics/Office of Health Registries)

**Population covered annually:** 87,053 live births and 443 spontaneous fetal losses in AZ to AZ residents, 2010

**Statewide:** Yes

**Current legislation or rule:** Statute-  
[www.azleg.state.az.us/ars/36/00133.htm](http://www.azleg.state.az.us/ars/36/00133.htm)

**Rule-** [www.azsos.gov/public\\_services/Title\\_09/9-04.htm](http://www.azsos.gov/public_services/Title_09/9-04.htm); Effective 1991

**Legislation year enacted:** 1988

**Case Definition**

**Outcomes covered:** Major birth defects and genetic diseases, as defined by the BPA/MACDP codes. Covered conditions vary by year of birth.

**Pregnancy outcome:** Live Births (All gestational ages and birth weights), Fetal deaths - stillbirths, spontaneous abortions, etc. (20 weeks gestation and greater, Stillbirths with a fetal death certificate can be of any gestational age or weight), Terminations are not included in the electronic database.

**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 (which occurs 2-3 years after the child's birth or fetal death), then the more precise diagnosis is used.

**Residence:** Cases are born in Arizona and have an Arizona abstract indicating mother's residence in AZ

**Surveillance Methods**

**Case ascertainment:** Active case ascertainment, Population based, 1986-2004: 44 categories; 2005-2009: 31 categories; 2010: 32 categories of defects; 2011:34 categories of defects.

**Vital Records:** Birth certificates, Fetal death certificates

**Other state based registries:** Programs for children with special needs, Newborn hearing screening program

**Delivery hospitals:** Disease index or discharge index, Discharge summaries, Mother's chart for stillborn

**Pediatric & tertiary care hospitals:** Disease index or discharge index, Discharge summaries, Mother's chart for stillborn

**Third party payers:** Indian Health Services

**Other specialty facilities:** Prenatal diagnostic facilities (ultrasound, etc.), Cytogenetic laboratories, Genetic counseling/clinical genetics facilities

**Case Ascertainment**

**Conditions warranting chart review in newborn period:** Any chart with a ICD9-CM code 740-759, Any chart with a selected list of ICD9-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 prenatal diagnosed or suspected cases

**Conditions warranting chart review beyond the newborn period:** Any infant with a codeable 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, length, gestation, etc.), Tests and procedures used to make birth defect diagnosis

**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, Maternal risk factors, 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:** Hard copy abstract/report filled out by ABDMP staff

**Database storage/management:** 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, 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 investigation, 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:** 15% general state funds, 14% MCH funds, and 71% CDC Cooperative grant funds

**Other**

**Web site:** <http://www.azdhs.gov/phs/phstats/bdr/index.htm>

**Surveillance reports on file:** Same as Above

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**Arkansas***Arkansas Reproductive Health Monitoring System (ARHMS)*

**Purpose:** Surveillance, Research, Referral to Prevention/Intervention  
**Partner:** Local Health Departments, Universities, Hospitals, Advocacy Groups, Legislators  
**Program status:** Currently collecting data  
**Start year:** 1980  
**Earliest year of available data:** 1980  
**Organizational location:** University, Arkansas Children's Hospital  
**Population covered annually:** 41,000  
**Statewide:** Yes  
**Current legislation or rule:** Senate Bill Act 214  
**Legislation year enacted:** 1985

**Case Definition**

**Outcomes covered:** major structural birth defects  
**Pregnancy outcome:** Live Births (All gestational ages and birth weights), Fetal deaths - stillbirths, spontaneous abortions, etc. (All gestational ages), Elective Terminations (All gestational ages)  
**Age:** two years after delivery  
**Residence:** in and out of state births to state residents

**Surveillance Methods**

**Case ascertainment:** Active case ascertainment, Population based  
**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 & tertiary care hospitals:** Disease index or discharge index, Discharge summaries, ICU/NICU logs or charts, Specialty outpatient clinics  
**Other specialty facilities:** Prenatal diagnostic facilities (ultrasound, etc.), Genetic counseling/clinical genetics facilities  
**Other sources:** Physician reports

**Case Ascertainment**

**Conditions warranting chart review in newborn period:** Any chart with a ICD9-CM code 740-759, Any chart with a selected list of ICD9-CM codes 740-759, All stillborn infants  
**Conditions warranting chart review beyond the newborn period:** Any infant with a codeable defect  
**Coding:** locally modified BPA/CDC and NBDPS coding system

**Data Collected**

**Infant/fetus:** Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Birth measurements (weight, gestation, Apgar, 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 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:** Electronic file/report filled out by staff at facility (laptop, web-based, etc.)  
**Database storage/management:** Access

**Data Analysis**

**Data analysis software:** SAS, Access, STATA  
**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 investigation, Time trends, 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 case finding data to final birth file

**Funding**

**Funding Source:** 100% general state funds

**Other**

**Web site:** <http://arbirthdefectsresearch.uams.edu/>

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**California***California Birth Defects Monitoring Program (CBDMP)*

**Purpose:** Surveillance, Research

**Partner:** Local Health Departments, Universities, Hospitals, Environmental Agencies/Organizations

**Program status:** Currently collecting data

**Start year:** 1983

**Earliest year of available data:** 1983

**Organizational location:** Department of Health (California Department of Public Health: Maternal, Child, Adolescent Health Division, Center for Family Health)

**Population covered annually:** 70,000

**Statewide:** No, The Program 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, the Program has statutory authority to conduct active surveillance anywhere in the state when warranted by environmental incidents or concerns.

**Current legislation or rule:** Health and Safety Code, Division 102, Part 2, Chapter 1, Sections 103825-103855, effective 1982, recodified 1996.

**Legislation year enacted:** 1982

**Case Definition**

**Outcomes covered:** Serious structural birth defects, primarily encompassed within ICD codes 740-759

**Pregnancy outcome:** Live Births (All gestational ages and birth weights), Fetal deaths - stillbirths, spontaneous abortions, etc. (less than 20 week gestation, 20 weeks gestation and greater), Elective Terminations (less than 20 week gestation, 20 weeks gestation and greater)

**Age:** one year

**Residence:** In-state births to residents of 1 of 8 counties; does not include births in military hospitals.

**Surveillance Methods**

**Case ascertainment:** Active case ascertainment, Population based

**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

**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

**Other specialty facilities:** Prenatal diagnostic facilities (ultrasound, etc.), Cytogenetic laboratories, Genetic counseling/clinical genetics facilities, Maternal serum screening facilities

**Case Ascertainment**

**Conditions warranting chart review in newborn period:** Any chart with a ICD9-CM code 740-759, Any chart with a selected list of ICD9-CM codes outside 740-759, Any chart with selected procedure codes, Any chart with selected defects or medical conditions (e.g., abnormal facies, congenital heart disease), All stillborn infants, All neonatal deaths, All elective abortions, All prenatal diagnosed or suspected cases, Apgar 0-0

**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., recurrent blockage), GU condition (e.g., recurrent infections), Cardiovascular condition, All infant deaths (excluding prematurity), Ocular conditions, Any infant with a codeable defect

**Coding:** CDC BPA coding system 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, Apgar, 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, 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 storage/management:** 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 investigation, 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, 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 birth and fetal death files

**Funding**

**Funding Source:** 100% special fund

**Other**

**Web site:** [www.cdph.ca.gov/programs/CBDMP](http://www.cdph.ca.gov/programs/CBDMP)

**Comments:** Please send inquiries to [mchinet@cdph.ca.gov](mailto:mchinet@cdph.ca.gov).

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**Colorado***Colorado Responds To Children With Special Needs: Colorado (CRCSN)*

**Purpose:** Surveillance, Referral to Services, Referral to Prevention/Intervention

**Partner:** Local Health Departments, Universities, Hospitals, Community Nursing Services, Environmental Agencies/Organizations, Early Childhood Prevention Programs, Advocacy Groups

**Program status:** Currently collecting data

**Start year:** 1988

**Earliest year of available data:** 1989

**Organizational location:** Department of Health (Epidemiology/Environment)

**Population covered annually:** 65,188(2012)

**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:** Live Births (All gestational ages and birth weights), Fetal deaths - stillbirths, spontaneous abortions, etc. (less than 20 week gestation, 20 weeks gestation and greater, less than 20 week limited to selected post-mortem pathology sites)

**Age:** up to the 3rd birthday (up to the 10th birthday for fetal alcohol syndrome)

**Residence:** events occurring in-state or out-of-state to Colorado residents

**Surveillance Methods**

**Case ascertainment:** Combination of active and passive case ascertainment

**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, selected postmortem pathology sites

**Pediatric & tertiary care hospitals:** Disease index or discharge index, Postmortem/pathology logs, Specialty outpatient clinics, selected postmortem pathology sites

**Third party payers:** Medicaid databases

**Other specialty facilities:** Cytogenetic laboratories, Genetic counseling/clinical genetics facilities

**Other sources:** Physician reports, selected sites for fetal alcohol syndrome and muscular dystrophy

**Case Ascertainment**

**Conditions warranting chart review in newborn period:** selected chart reviews for prenatal to age 3: for statistical trends monitoring (20 conditions - categories); selected death and fetal deaths; fetal alcohol syndrome (to age 10); active case ascertainment data sources (postmortem pathology and specialty clinics); quality control (selected procedures); and others as needed.

**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, Apgar, 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, Pregnancy/delivery complications, Maternal risk factors

**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

**Database storage/management:** Access, Conversion to SQL Server

**Data Analysis**

**Data analysis software:** SAS, Access, ArcView (GIS software), Maptitude, SaTScan

**Quality assurance:** Validity checks, Comparison/verification between multiple data sources, Timeliness, ongoing quality control procedures for problematic conditions and situations; 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 investigation, 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, Referral, Grant proposals, Education/public awareness, Prevention projects, environmental studies

**System Integration**

**System links:** Link to other state registries/databases, Ongoing match to vital records files (birth, death, fetal death)

**Funding**

**Funding Source:** 26% General state Funds, 31% Service fees, 43% CDC grant

**Other**

**Web site:** <http://www.cdphe.state.co.us>

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**Connecticut***Connecticut Birth Defects Registry (CTBDR)*

**Purpose:** Surveillance, Research, Referral to Services, Referral to Prevention/Intervention, reporting for MCH Block Grant

**Partner:** Hospitals, Environmental Agencies/Organizations, Early Childhood Prevention Programs, Advocacy Groups, CT Council on Genomics

**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:** 43,000

**Statewide:** Yes

**Current legislation or rule:** Sec. 19a-56a. (Formerly Sec. 10a-132b), Birth defects surveillance program; Sec. 19a-54. (Formerly Sec. 19-21a), Registration of physically handicapped children; Sec. 19a-53. (Formerly Sec. 19-21), Reports of physical defects of children.

**Legislation year enacted:** Sec. 10a-132b: 1991; Sec. 19-21a: 1949 Sec. 19-21: 1949.

**Case Definition**

**Outcomes covered:** All major structural birth defects; biochemical, genetic and hearing impairment through linkage with Newborn Screening System; any condition that 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:** Live Births (All gestational ages and birth weights, Other gestational age and/or birth weight criterion, PDA  $\geq$  to 2500 grams birth weight)

**Age:** Up to one year after delivery for birth defects

**Residence:** In state births to state residents

**Surveillance Methods**

**Case ascertainment:** Passive case ascertainment, Population based

**Vital Records:** Birth certificates, Death certificates, Matched birth/death file, inpatient hospitalizations and emergency room visits

**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, 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.

**Midwifery facilities:** Midwifery facilities

**Other sources:** Physician reports, Mandatory reporting by health care providers and facilities; CSHCN Programs; Newborn Screening System (for genetic disorders and hearing impairment).

**Case Ascertainment**

**Coding:** ICD-9-CM, test written in 'other' field categories

**Data Collected**

**Infant/fetus:** Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Birth measurements (weight, gestation, Apgar, 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, Maternal risk factors, 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 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.)

**Database storage/management:** Access, Oracle

**Data Analysis**

**Data analysis software:** SAS, Access, STATA, 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 investigation, Time trends, Time-space cluster analyses, Capture-recapture analyses, Epidemiologic studies (using only program data), Needs assessment, Service delivery, Referral, Grant proposals, Education/public awareness, Prevention projects, Provider education

**System Integration**

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

**Funding**

**Funding Source:** 100% MCH funds

**Other**

**Web site:** <http://www.ct.gov/dph/birthdefectsregistry>

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**Delaware***Delaware Birth Defects Surveillance Project*

**Purpose:** Surveillance, Referral to Prevention/Intervention

**Partner:** Hospitals, Early Childhood Prevention Programs

**Program status:** Currently collecting data

**Start year:** 2007

**Earliest year of available data:** 2007, 2008, 2009

**Organizational location:** Department of Health and Social Services, Division of Public Health, Family Health Services

**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:** Birth Defects Registry - Selected birth defects for passive surveillance, developmental disabilities if due to a birth defect, selected metabolic defects, genetic diseases, infant mortality, congenital infections, Autism

**Pregnancy outcome:** Live Births (Other gestational age and/or birth weight criterion, any gestation for live birth, greater than 20 weeks for fetal death), Fetal deaths - (stillbirths, spontaneous abortions, etc. (20 weeks gestation and greater)

**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, hospital discharge records/data

**Other state based registries:** Programs for children with special needs, Newborn hearing screening program, Newborn metabolic screening program, Development Disabilities Surveillance, Cancer registry, AIDS/HIV registry

**Delivery hospitals:** Disease index or discharge index, Discharge summaries, Postmortem/pathology logs, High risk pregnancy

**Pediatric & tertiary care hospitals:** Disease index or discharge index, Discharge summaries, Specialty outpatient clinics

**Midwifery facilities:** Midwifery facilities

**Other specialty facilities:** Prenatal diagnostic facilities (ultrasound, etc.)

**Other sources:** Physician reports

**Case Ascertainment**

**Conditions warranting chart review in newborn period:** Any chart with a ICD9-CM code 740-759, Any chart with selected defects or medical conditions (e.g., 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:** Facial dysmorphism or abnormal facies, Failure to thrive, Development delay, Cardiovascular condition, All infant deaths (excluding prematurity), Ocular conditions, Auditory/hearing conditions, Any infant with a codeable defect

**Coding:** ICD-9-CM, six-digit modified BPA/ICD-9 codes

**Data Collected**

**Infant/fetus:** Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Birth measurements (weight, gestation, Apgar, 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, Maternal risk factors

**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 submitted by other agencies (hospitals, etc.)

**Database storage/management:** Natus Medical Inc.

**Data Analysis**

**Data analysis software:** Natus Medical Inc.

**Quality assurance:** Validity checks, Comparison/verification between multiple data sources, Clinical review, none at this time

**Data use and analysis:** Only became active in early 2010 with review of calendar year 2007

**System Integration**

**System links:** link to Newborn Bloodspot and Hearing Screening

**System integration:** Initial check into Newborn Bloodspot Screening records with a link that pulls info to Birth Defects Registry from Newborn Bloodspot Screening case management system.

**Funding**

**Funding Source:** 100% genetic screening revenues

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

**Purpose:** Research, Referral to Services, Referral to Prevention/Intervention

**Partner:** Hospitals

**Program status:** Interested in developing a surveillance program

**Surveillance Methods**

**Other state based registries:** Newborn hearing screening program, Newborn metabolic screening program

**Data Collected**

**Mother:** Maternal risk factors

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**Florida***Florida Birth Defects Registry (FBDR)*

**Purpose:** Surveillance, Research, Referral to Prevention/Intervention, educate health care professionals, women of childbearing age and general public about birth defects.

**Partner:** Local Health Departments, Universities, Hospitals, Environmental Agencies/Organizations, Early Childhood Prevention Programs, Advocacy Groups, 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/Environment), University

**Population covered annually:** 212,954 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 selected genetic disorders

**Pregnancy outcome:** Live Births

**Age:** until age 1

**Residence:** Florida

**Surveillance Methods**

**Case ascertainment:** Passive case ascertainment, Population based, FL has two CDC funded cooperative agreements that 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**

**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, Apgar, 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, Maternal risk factors

**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 storage/management:** 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 investigation, Time trends, 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

**Other**

**Web site:** www.fbdr.org

**Surveillance reports on file:** publications, procedure manuals, electronic case ascertainment database 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***Metropolitan Atlanta Congenital Defects Program (MACDP)*

**Purpose:** Surveillance, Research

**Partner:** Local Health Departments, Universities, Hospitals, Advocacy Groups, 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:** 3,500

**Statewide:** No, Births to mothers residing within one of three central counties in the metropolitan Atlanta area of the state of Georgia

**Current legislation or rule:** State Laws Official Georgia Code Annotated (OCGA) 31-12-2

**Case Definition**

**Outcomes covered:** All major structural and genetic birth defects

**Pregnancy outcome:** Live Births ( $\geq 20$  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 ascertainment, Population based

**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, 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 genetics facilities

**Case Ascertainment**

**Conditions warranting chart review in newborn period:** Any chart with a ICD9-CM code 740-759, Any chart with a selected list of ICD9-CM codes outside 740-759, Any chart with selected defects or medical conditions (e.g., 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- to <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., recurrent blockage), Cardiovascular condition, All infant deaths (excluding prematurity), Any infant with a codeable 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, Apgar, 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 diagnostic information, Pregnancy/delivery complications, Maternal risk factors, 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 program staff (laptop, web-based, etc.)

**Database storage/management:** 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 investigation, Time trends, Time-space cluster analyses, Observed vs. expected analyses, Epidemiologic studies (using only program data), Identification of potential cases for other epidemiologic studies, Service delivery, Education/public awareness, Prevention projects, survival analysis

**System Integration**

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

**Funding**

**Funding Source:** 100% Intramural CDC funding

**Other**

**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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**Georgia***Georgia Birth Defects Reporting And Information System (GBDRIS)*

*Program status:* Interested in developing a surveillance program

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**Hawaii***Hawaii Birth Defects Program (HBDP)*

**Purpose:** Surveillance, Report incidences and trends, develop preventive strategies, develop a statewide registry

**Partner:** Local Health Departments, Universities, Hospitals, Community Nursing Services, Early Childhood Prevention Programs, Advocacy Groups, Legislators, Hawaii Health Data Warehouse

**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:** 18,913 (average over past 3 years)

**Statewide:** Yes

**Current legislation or rule:** HRS §321.421 to 426; HRS §321.41 to 44

**Legislation year enacted:** 2002

**Case Definition**

**Outcomes covered:** All outcomes identified on the ICD-9 and CDC/BPA codes for the NBDPN Annual Report to CDC as well as other adverse neonatal conditions such as congenital infections, fetal alcohol syndrome, and specific chromosomal syndromes

**Pregnancy outcome:** Live Births (All gestational ages and birth weights), Fetal deaths - stillbirths, spontaneous abortions, etc. (All gestational ages), Elective Terminations (All gestational ages, Elective medical terminations that were carried out because a screening test or diagnostic procedure documented that the fetus was severely impaired with a birth defect, and the parents elected not to bring the baby to term)

**Age:** Up to one year after delivery

**Residence:** All in-state Hawaii births (resident and non-resident).

**Surveillance Methods**

**Case ascertainment:** Active case ascertainment, Population based, Hospital based

**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, Surgery logs, Prenatal summaries

**Pediatric & tertiary care hospitals:** Disease index or discharge index, Discharge summaries, ICU/NICU logs or charts, Postmortem/pathology logs, Surgery logs, Laboratory logs

**Other specialty facilities:** Prenatal diagnostic facilities (ultrasound, etc.), Cytogenetic laboratories, Genetic counseling/clinical genetics facilities

**Other sources:** Physician reports

**Case Ascertainment**

**Conditions warranting chart review in newborn period:** Any chart with a ICD9-CM code 740-759, Any chart with a selected list of ICD9-CM codes outside 740-759, Any chart with selected defects or medical conditions (e.g., abnormal facies, congenital heart disease), All stillborn infants, All neonatal deaths, All prenatal diagnosed or suspected cases, Medical terminations and spontaneous abortions where fetus was diagnosed with a birth defect, and parents elected not to bring baby to term, or mother spontaneously aborted.

**Conditions warranting chart review beyond the newborn period:** Facial dysmorphism or abnormal facies, Failure to thrive, Cardiovascular condition, All infant deaths (excluding prematurity), Ocular conditions, Any infant with a codeable 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, Apgar, 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, Maternal risk factors, 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:** Electronic file/report filled out by staff at facility (laptop, web-based, etc.)

**Database storage/management:** Access

**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, Clinical review, 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, Grant proposals, Education/public awareness, Prevention projects, State Surveillance Data Report

**Funding**

**Funding Source:** 100% Birth Defects Special Fund (state fund from marriage license fee)

**Other**

**Web site:** <http://hawaii.gov/health/family-child-health/genetics/hbdhome.html>

**Surveillance reports on file:** Thirteen HBDP Statewide Surveillance Data Reports: (1) 1989-1991, (2) 1988-1993, (3) 1988-1994, (4) 1988-1995, (5) 1987-1996, (6) 1986-1997, (7) 1986-1998, (8) 1986-1999, (9) 1986-2000, (10) 1986-2001, (11) 1986-2002, (12) 1986-2003, (13) 1986-2005.

**Additional information on file:** Hawai'i Statutory Authority; HBDP Publications; HBDP Case finding list; HBDP BPA Codes

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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, Prevention/Intervention

***Partner:*** Local Health Departments, Universities, Hospitals, Early Childhood Prevention Programs, State agency serving children with special healthcare needs

***Program status:*** Currently collecting data

***Start year:*** 1986

***Earliest year of available data:*** 1989

***Organizational location:*** Department of Health (Epidemiology/Environment)

***Population covered annually:*** 165,000

***Statewide:*** Yes

***Current legislation or rule:*** Illinois Health and Hazardous Substances Registry Act (410 ILCS 525)

***Legislation year enacted:*** 1985

**Case Definition**

***Outcomes covered:*** ICD-9-CM Codes 740.0 through 759.9; infants positive for controlled substances; very low birth weight (< 1500g); fetal death; death during the newborn hospital stay; serious congenital infections; congenital endocrine, metabolic or immune disorders; congenital blood disorders; other conditions such as retinopathy of prematurity, intrauterine growth retardation, FAS

***Pregnancy outcome:*** Live Births (All gestational ages and birth weights), Fetal deaths - stillbirths, spontaneous abortions, etc. (20 weeks gestation and greater)

***Age:*** Up to 2 years of age

***Residence:*** In and out of state births to state residents

**Surveillance Methods**

***Case ascertainment:*** Combination of active and passive case ascertainment, Population based, Hospital based

***Vital Records:*** Birth certificates, Fetal death certificates

***Other state based registries:*** Newborn metabolic screening program

***Delivery hospitals:*** Disease index or discharge index, Discharge summaries, hospitals mandated to identify and report newborn cases

***Pediatric & tertiary care hospitals:*** Disease index or discharge index, Discharge summaries, hospitals mandated to report newborns discharged from any of the NICU or specialty units

***Other specialty facilities:*** Genetic counseling/clinical genetics facilities

**Case Ascertainment**

***Conditions warranting chart review in newborn period:*** Any chart with a selected list of ICD9-CM codes outside 740-759, Any chart with selected defects or medical conditions (e.g. abnormal facies, congenital heart disease), All neonatal deaths

***Conditions warranting chart review beyond the newborn period:*** Any infant with a codeable defect

***Coding:*** Modified CDC/BPA coding system

**Data Collected**

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

***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, 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.)

***Database storage/management:*** Access, Mainframe

**Data Analysis**

***Data analysis software:*** SAS, Access, Arc Map, JoinPoint

***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 investigation, Time trends, Epidemiologic studies (using only program data), Needs assessment, Service delivery, Referral, Grant proposals, Education/public awareness, Prevention projects, Public Use Data Set

**System Integration**

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

***System integration:*** The APORS program data is incorporated into a data warehouse at the Illinois Department of Healthcare and Family Services.

**Funding**

***Funding Source:*** 75% general state funds, 25% Service fees

**Other**

***Web site:*** www.idph.state.il.us/about/epi/apors.htm

***Surveillance reports on file:*** Surveillance reports are available on-line -- visit website listed above, as are public use data sets.

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**Indiana***Indiana Birth Defects & Problems Registry (IBDPR)*

**Purpose:** Surveillance, Research, Referral to Services

**Partner:** Universities, Hospitals, Early Childhood Prevention Programs, Advocacy Groups, Legislators

**Program status:** Currently collecting data

**Start year:** 2002

**Earliest year of available data:** 2003 birth data is available in 2006

**Organizational location:** Department of Health (Epidemiology/Environment), Department of Health (Maternal and Child Health), Department of Health (State Health Data Center)

**Population covered annually:** 89,000

**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:** Live Births (All gestational ages and birth weights)

**Age:** up to 5 years (FAS, autism); 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**

**Case ascertainment:** Combination of active and passive case ascertainment, Hospital based

**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/clinical genetics facilities

**Other sources:** Physician reports

**Case Ascertainment**

**Conditions warranting chart review in newborn period:** Any chart with a ICD9-CM code 740-759, Any chart with a selected list of ICD9-CM codes outside 740-759

**Conditions warranting chart review beyond the newborn period:** Any infant with a codeable 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, Apgar, 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.), Gravity/parity, Illnesses/conditions, Prenatal care, Prenatal diagnostic information, Pregnancy/delivery complications, Maternal risk factors, 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 storage/management:** 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, Monitoring outbreaks and cluster investigation, 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 screening data.

**Funding**

**Funding Source:** 20% MCH funds, 80% From the IBDPR fund obtained through birth certificate sales.

**Other**

**Web site:** [www.birthdefects.in.gov](http://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, Prevention education programs  
**Partner:** Local Health Departments, Universities, Hospitals, Environmental Agencies/Organizations, Advocacy Groups, Legislators  
**Program status:** Currently collecting data  
**Start year:** 1983  
**Earliest year of available data:** 1983  
**Organizational location:** University  
**Population covered annually:** 37,831 average 10 year  
**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, Duchenne/Becker, congenital, distal, Emery-Dreifuss, fascioscapulohumeral, limb-girdle, myotonic, and oculopharyngeal muscular dystrophies, fetal deaths with and without birth defects, newborn screening disorders  
**Pregnancy outcome:** Live Births (All gestational ages and birth weights), Fetal deaths - stillbirths, spontaneous abortions, etc. (All gestational ages), Elective Terminations (All gestational ages)  
**Age:** 1 year  
**Residence:** maternal residence in Iowa at time of delivery

**Surveillance Methods**

**Case ascertainment:** Active case ascertainment, Population based  
**Vital Records:** Birth certificates, Death certificates, Fetal death certificates, Fetal Death Evaluation Protocol  
**Other state based registries:** Programs for children with special needs, Development 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 genetics facilities, Maternal serum screening facilities  
**Other sources:** Physician reports, Outpatient surgery facilities

**Case Ascertainment**

**Conditions warranting chart review in newborn period:** Any chart with a ICD9-CM code 740-759, Any chart with a selected list of ICD9-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 (e.g., 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, muscular dystrophy

**Conditions warranting chart review beyond the newborn period:** Facial dysmorphism or abnormal facies, Failure to thrive, Development delay, CNS condition (e.g., seizure), GI condition (e.g., recurrent blockage), GU condition (e.g. recurrent infections), Cardiovascular condition, All infant deaths (excluding prematurity), Ocular conditions, Auditory/hearing conditions, Any infant with a codeable 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, Apgar, 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, Maternal risk factors, 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 storage/management:** 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 investigation, 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. For specific studies, data may be linked with environmental databases or other state databases.

**Funding**

**Funding Source:** 35% general state funds, 65% CDC grant

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**Kansas***Birth Defects Information System (BDIS)*

**Purpose:** Registry

**Partner:** Hospitals

**Program status:** Interested in developing a surveillance program

**Start year:** 1985

**Earliest year of available data:** 1985

**Organizational location:** Department of Health (Epidemiology/Environment), Department of Health (Vital Statistics), Department of Health (Maternal and Child Health)

**Population covered annually:** 39,628 (Year 2011)

**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 and low Apgar scores are also reported to BDIS.

**Pregnancy outcome:** Live Births (All gestational ages and birth weights), Fetal deaths - stillbirths, spontaneous abortions, etc. (greater than 350 grams)

**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 ascertainment, Population based

**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

**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, Apgar, etc.)

**Mother:** Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Gravidity/parity, Maternal risk factors

**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.). 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 storage/management:** Access, SQL Server

**Data Analysis**

**Data analysis software:** SAS

**Quality assurance:** Comparison/verification between multiple data sources, Office of Vital Statistics conducts verification on live birth and stillbirth (fetal death) certificate data.

**Data use and analysis:** Routine statistical monitoring, Baseline rates, Rates by demographic and other variables, Monitoring outbreaks and cluster investigation, Time trends, Grant proposals, ad-hoc upon request

**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](http://www.kdheks.gov/bfh/birth_defects.htm)

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**Kentucky***Kentucky Birth Surveillance Registry (KBSR)*

**Purpose:** Surveillance, Referral to Services, Referral to Prevention/Intervention, Prevention of birth defects

**Partner:** Local Health Departments, Universities, Hospitals, Environmental Agencies/Organizations, Early Childhood Prevention Programs, Advocacy Groups, Legislators

**Program status:** Currently collecting data

**Start year:** 1996

**Earliest year of available data:** 1998

**Organizational location:** Department of Health (Maternal and Child Health), Department for Public Health, Division of Maternal and Child Health, Early Childhood Development Branch

**Population covered annually:** 56,000

**Statewide:** Yes

**Current legislation or rule:** KRS 211.651-211.670

**Legislation year enacted:** 1992

**Case Definition**

**Outcomes covered:** major birth defects, genetic diseases, fetal mortality

**Pregnancy outcome:** Live Births (All gestational ages and birth weights) Fetal deaths - stillbirths, spontaneous abortions, etc. (20 weeks gestation and greater, 20 weeks or 350 grams)

**Age:** up to fifth birthday

**Residence:** all in-state births; out of state births to state residents

**Surveillance Methods**

**Case ascertainment:** Combination of active and passive case ascertainment

**Vital Records:** Birth certificates, Death certificates, Matched birth/death file, Fetal death certificates, medical laboratory reporting mandated; outpatient reporting voluntary

**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), ICU/NICU logs or charts, Specialty outpatient clinics, laboratory records

**Pediatric & tertiary care hospitals:** Disease index or discharge index, Discharge summaries, ICU/NICU logs or charts, laboratory records

**Other specialty facilities:** Cytogenetic laboratories, Genetic counseling/clinical genetics facilities

**Other sources:** Physician reports, local health departments

**Case Ascertainment**

**Conditions warranting chart review in newborn period:** Any chart with a ICD9-CM code 740-759, Any chart with a selected list of ICD9-CM codes outside 740-759, Any chart with selected defects or medical conditions (e.g., 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), Cardiovascular condition, Any infant with a codeable defect

**Coding:** ICD-9-CM, ICD-10 for Vital Statistics death data

**Data Collected**

**Infant/fetus:** Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Birth measurements (weight, gestation, Apgar, 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, Maternal risk factors, 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.)

**Database storage/management:** Access

**Data Analysis**

**Data analysis software:** SAS, Access, Link Plus

**Quality assurance:** 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 investigation, 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, IRB-approved research projects

**System Integration**

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

**System integration:** True positives identified by newborn screening are integrated into the KBSR database.

**Funding**

**Funding Source:** 40% general state funds, 60% Service fees

**Other**

**Web site:** <http://chfs.ky.gov/dph/ach/eecd/kbsr.htm>

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**Louisiana***Louisiana Birth Defects Monitoring Network (LBDMN)*

**Purpose:** Surveillance, Research, Referral to Services, Referral to Prevention/Intervention

**Partner:** Local Health Departments, Universities, Hospitals, Environmental Agencies/Organizations, Early Childhood Prevention Programs, Advocacy Groups

**Program status:** Currently collecting data

**Start year:** 2005

**Earliest year of available data:** 2005

**Organizational location:** Department of Health Title V CYSHCN Programs

**Population covered annually:** approx. 61,000 (2009)

**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 diseases

**Pregnancy outcome:** Live Births ( $\geq 20$  weeks or  $\geq 350$  grams)

**Age:** up to three years old

**Residence:** in- and out-of-state births to state residents

**Surveillance Methods**

**Case ascertainment:** Combination of active and passive case ascertainment, Population based

**Vital Records:** Birth 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

**Case Ascertainment**

**Conditions warranting chart review in newborn period:** Any chart with an ICD9-CM code 740-759, Any chart with a selected list of ICD9-CM codes outside 740-759

**Conditions warranting chart review beyond the newborn period:** Any infant with a codeable 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, Apgar score, 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, Maternal risk factors, 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 scanning of printed records, Hand-written, printed forms phased out in 2011.

**Database storage/management:** Access, Excel, InfoPath/SharePoint stored in SQL

**Data Analysis**

**Data analysis software:** SAS, Access, GIS

**Quality assurance:** Validity checks, Re-abstraction of cases,

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, Time trends, Education/public awareness, Prevention projects

**System Integration**

**System links:** Link case finding data to final birth file, link case finding data to infant death file

**System integration:** Integration with Louisiana Electronic Event Registration System (LEERS) birth and death records will be completed by January 2014.

**Funding**

**Funding Source:** 28% CDC grant, 72% Title V CSHCN funds

**Other**

**Web site:** [www.dhh.la.gov/lbdmn](http://www.dhh.la.gov/lbdmn)

**Surveillance reports on file:** Louisiana Morbidity Report, May-June 2009, Vol 20, No 3; Results from Louisiana 2006-2008 Birth Defects Surveillance System. A poster presented at 2013 NBDPN Annual Meeting in Atlanta; 2005-2008 linked birth defects and birth records data; Maps of 12 major birth defects by region and parish created by EPHT using 2006-2008 linked birth defects and birth records data

**Additional information on file:** Advisory Board Documentation

**Comments:**

<http://www.prd.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, Education

**Partner:** Universities, Hospitals, Community Nursing Services, Environmental Agencies/Organizations, Early Childhood Prevention Programs, Advocacy Groups, March of Dimes, New Hampshire Birth Conditions Program

**Program status:** Currently collecting data

**Start year:** 1999

**Earliest year of available data:** 2003

**Organizational location:** Department of Health (Division of Population Health/MCH 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:** Live Births (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, Population based, 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

**Midwifery facilities:** Midwifery facilities

**Other specialty facilities:** Prenatal diagnostic facilities (ultrasound, etc.), Cytogenetic laboratories, Genetic counseling/clinical genetics facilities, Maternal serum screening facilities

**Other sources:** Physician reports, Children with Special Health Needs

**Case Ascertainment**

**Conditions warranting chart review in newborn period:** Any chart with a ICD9-CM code 740-759, Any chart with selected defects or medical conditions (e.g., 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 codeable 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, Apgar, 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, Maternal risk factors, Family history

**Data Collection Methods and Storage**

**Data Collection:** Printed abstract/report filled out by staff, 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.), Electronic scanning of printed records

**Database storage/management:** 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, Baseline rates, Rates by demographic and other variables, 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:** 85% MCH funds, 15% Maine Environmental Public Health Tracking grant

**Other**

**Web site:** [http://www.maine.gov/dhhs/boh/cshn/birth\\_defects/index.html](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, Universities, Hospitals, Environmental Agencies/Organizations, Early Childhood Prevention Programs, Advocacy Groups, 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:** Live Births (All gestational ages and birth weights), Fetal deaths - stillbirths, spontaneous abortions, etc. (20 weeks gestation and greater, or  $\geq$  500 grams weight; reports accepted on fetal deaths <500 grams or <20 weeks gestation if sent to us); 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 unless the body is transported for burial.

**Age:** Newborn

**Residence:** all in-state births

**Surveillance Methods**

**Case ascertainment:** Passive case ascertainment, Population based

**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

**Midwifery facilities:** Midwifery facilities

**Case Ascertainment**

**Conditions warranting chart review in 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, Apgar, 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, Maternal risk factors, 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, Printed abstract/report submitted by other agencies (hospitals, etc.), Electronic reporting began 5/1/13

**Database storage/management:** 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

**Other**

**Web site:** <http://phpa.dhmm.maryland.gov/genetics/SitePages/bdris.aspx>

**Surveillance reports on file:** All reports submitted to CDC

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**Massachusetts**

*Birth Defects Monitoring Program, Massachusetts Center For Birth Defects Research And Prevention, Massachusetts Department Of Public Health (MBDMP)*

**Purpose:** Surveillance, Research, Referral to Prevention/Intervention  
**Partner:** Universities, Hospitals, Environmental Agencies/Organizations, Early Childhood Prevention Programs, Advocacy Groups  
**Program status:** Currently collecting data  
**Start year:** 1997  
**Earliest year of available data:** 1999 for statewide data  
**Organizational location:** Department of Public Health (Bureau of Family Health and Nutrition)  
**Population covered annually:** 73,000  
**Statewide:** Yes  
**Current legislation or rule:** Massachusetts General Laws, Chapter 111, Section 67E. In 2002 the Massachusetts Legislature amended this statute, expanding the birth defects monitoring program. Regulations (105 CMR 302.000) were promulgated on February 6, 2009.  
**Legislation year enacted:** 1963

**Case Definition**

**Outcomes covered:** Major structural birth defects and chromosomal anomalies of medical, surgical or cosmetic significance  
**Pregnancy outcome:** Live Births (All gestational ages and birth weights) Fetal deaths - stillbirths, spontaneous abortions, etc. (Reportable fetal deaths:  $\geq 20$  weeks gestation or  $\geq 350$  grams)  
**Age:** Up to one year  
**Residence:** In and out-of-state births to state residents

**Surveillance Methods**

**Case ascertainment:** Combination of active and passive case ascertainment, Population based  
**Vital Records:** Birth certificates, Death certificates, 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  
**Pediatric & tertiary care hospitals:** Disease index or discharge index, ICU/NICU logs or charts, Postmortem/pathology logs, Specialty outpatient clinics

**Case Ascertainment**

**Conditions warranting chart review in newborn period:** Any chart with a ICD9-CM code 740-759, Any chart with a selected list of ICD9-CM codes outside 740-759, Any chart with selected defects or medical conditions (e.g., abnormal facies, congenital heart disease), All stillborn infants, All neonatal deaths  
**Conditions warranting chart review beyond the newborn period:** Facial dysmorphism or abnormal facies, Failure to thrive, GI condition (e.g. recurrent blockage), Ocular conditions, Cardiovascular condition, All infant deaths (excluding prematurity), Auditory/hearing conditions, Any infant with a codeable 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, Apgar, 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, Maternal risk factors, 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, Printed abstract/report submitted by other agencies (hospitals, etc.), Electronic file/report submitted by other agencies (hospitals, etc.), Electronic scanning of printed records, Data from Confidential Reporting and Abstracting Form is entered into electronic surveillance database based on paper or electronic records (laptops).

**Database storage/management:** Access

**Data Analysis**

**Data analysis software:** SAS, Access, Excel  
**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 investigation, 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, Grant proposals, Education/public awareness, 1) selected cases from surveillance are eligible for CDCs National Birth Defects Prevention Study 2) contributed data to other surveillance research projects

**System Integration**

**System links:** 1) link case finding data to final birth file, 2) Link case finding data to final fetal death file, 3) Massachusetts Pregnancy to Early Life Longitudinal (PELL) Data System

**Funding**

**Funding Source:** 28% general state funds, 72% MCH funds

**Other**

**Web site:** <http://www.mass.gov/dph/birthdefects>  
**Surveillance reports on file:** go to <http://www.mass.gov/dph/birthdefects> to view or download annual surveillance reports.

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**Michigan***Michigan Birth Defects Registry (MBDR)*

**Purpose:** Surveillance, Research, Referral to Services, Referral to Prevention/Intervention, prevalence and mortality statistics

**Partner:** Local Health Departments, Universities, Hospitals, Early Childhood Prevention Programs, Advocacy Groups, 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:** Live Births (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 ascertainment, Combination of active and passive case ascertainment, Population based

**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, Specialty outpatient clinics

**Pediatric & tertiary care hospitals:** Disease index or discharge index, Specialty outpatient clinics

**Third party payers:** Medicaid databases, CSHCS

**Other specialty facilities:** Cytogenetic laboratories, Genetic counseling/clinical genetics facilities

**Case Ascertainment**

**Conditions warranting chart review in newborn period:** Any chart with a selected list of ICD9-CM codes outside 740-759, Any chart with selected defects or medical conditions (e.g., 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., recurrent 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 codeable 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, Apgar, 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, Maternal risk factors  
**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 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.)  
**Electronic Birth Certificate birth defects reporting module**

**Database storage/management:** Fox-pro

**Data Analysis**

**Data analysis software:** SPSS, 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, Baseline rates, Rates by demographic and other variables, Monitoring outbreaks and cluster investigation, 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% Service fees, 90% Vital Records Fees

**Other**

**Web site:** [http://www.michigan.gov/mdch/0,1607,7-132-2944\\_4670---,00.html](http://www.michigan.gov/mdch/0,1607,7-132-2944_4670---,00.html)

**Additional information on file:**

[http://www.michigan.gov/mdch/0,1607,7-132-2945\\_5221-16665--,00.html](http://www.michigan.gov/mdch/0,1607,7-132-2945_5221-16665--,00.html)

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**Minnesota***Minnesota Birth Defects Information System (BDIS)*

**Purpose:** Surveillance, Research, Referral to Services, Referral to Prevention/Intervention

**Partner:** Local Health Departments, Universities, Hospitals, Environmental Agencies/Organizations, Early Childhood Prevention Programs, Advocacy Groups

**Program status:** Currently collecting data

**Start year:** 2005

**Earliest year of available data:** 2006

**Organizational location:** Department of Health (Community & Family Health)

**Population covered annually:** 70,000

**Statewide:** No, Prevalence estimates are available for the two largest counties in Minnesota, Hennepin and Ramsey counties, which account for just under 50% of MN births. The surveillance system has been gradually expanding and is currently covering about 82% of live births. Statewide surveillance is expected to be completed by the end of 2013.

**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:** Live Births (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 ascertainment, Combination of active and passive case ascertainment, Population based

**Vital Records:** Birth certificates, Death certificates, Matched birth/death file

**Other state based registries:** Newborn hearing screening program, Newborn metabolic screening program; Beginning in 2013, newborn CCHD 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

**Other sources:** Statewide de-identified hospital discharge dataset

**Case Ascertainment**

**Conditions warranting chart review in newborn period:** Any chart with a ICD9-CM code 740-759, Any chart with selected defects or medical conditions (e.g., abnormal facies, congenital heart disease), Any birth certificate with a birth defect box checked. Starting with 2009 births, all deaths prior to age 2 with a birth defect indicated as cause of death on death certificates

**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, Apgar, 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, Maternal risk factors, Family history

**Father:** 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 filled out by staff off-site using remote access to EMRs or PDF files of EMRs.

**Database storage/management:** 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, Data/hospital audits, Clinical review, Timeliness, Physician review as needed

**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, Grant proposals, Education/public awareness, Prevention projects, Collaboration with Environmental Public Health Tracking Program. Additional analyses will be conducted when sufficient data are available. Surveillance should be statewide by the end of 2013.

**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 the birth defects database to view relevant case information. In 2012, LPH began entering follow up and service/program updates into BDIS. **System integration:** BDIS is integrated with Newborn Hearing program. 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 2013 as universal newborn CCHD screening is implemented.

**Funding**

**Funding Source:** 85% general state funds, 15% CDC grant

**Other**

**Web site:** <http://www.health.state.mn.us/birthdefects>

**Additional information on file:** Folic Acid Guidelines for physicians

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**Mississippi***Mississippi Birth Defects Surveillance Registry (BDRS)*

**Purpose:** Surveillance

**Partner:** Local Health Departments, Hospitals, Title V Children with Special Health Care Needs

**Program status:** Currently collecting data

**Start year:** 2000

**Earliest year of available data:** 2000

**Organizational location:** Department of Health (Maternal and Child Health), Department of Health (Genetic Services Bureau)

**Population covered annually:** 42,000

**Statewide:** Yes

**Current legislation or rule:** Section 41-21-205 of the Mississippi Code of 1972

**Legislation year enacted:** 1997

**Case Definition**

**Outcomes covered:** Live births and reportable fetal deaths with birth defects (fetal death of 20 completed weeks of gestation or more, or a weight of 350 grams or more) shall be reported.

**Pregnancy outcome:** Live Births (All gestational ages and birth weights), Fetal deaths - stillbirths, spontaneous abortions, etc. (20 weeks gestation and greater, or 350 grams or more)

**Age:** Birth to 21 years

**Residence:** in state and out of state births to residents

**Surveillance Methods**

**Case ascertainment:** Passive case ascertainment, Population based

**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:** 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/clinical genetics 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, Apgar, 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 agencies (hospitals, etc.), Electronic file/report submitted by other agencies (hospitals, etc.)

**Database storage/management:** Access

**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, Baseline rates, Rates by demographic and other variables, Needs assessment, Education/public awareness

**Funding**

**Funding Source:** 100% genetic screening revenues

**Other**

**Web site:** www.healthymms.com

**Surveillance reports on file:** Birth Defects Surveillance Report 2000-2007

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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:** ICD9 codes 740-759, plus genetic, metabolic, and other disorders

**Pregnancy outcome:** Live Births (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:** Passive 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, Apgar, 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, Maternal risk factors

**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 storage/management:** 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

**Other**

**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 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 2000 through 2004. Registry suspended beginning with calendar year 2005 births due to loss of CDC funding.

**Pregnancy outcome:** all gestational ages

**Funding**

**Funding Source:** No funding available since 8/26/2005

**Other**

**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 Defects Registry*

**Purpose:** Surveillance, We are in the process of exploring our policy on expanding the use of the birth defects data

**Partner:** Hospitals, Early Childhood Prevention Programs, Nebraska Department of Health and Human Services, Vital Statistics and MCH

**Program status:** Currently collecting data

**Start year:** 1973

**Earliest year of available data:** 1973

**Organizational location:** Department of Health (Vital Statistics), Department of Health (Nebraska Department of Health and Human Services, Public Health, Office of Health Statistics)

**Population covered annually:** Statewide, 26,000 births annually

**Statewide:** Yes

**Current legislation or rule:** Laws 1972, LB 1203, §1, §2, §3, §4 (alternate citation: Public Health and Welfare [Codes] §71-645, §71-646, §71-647, §71-648, §71-649)

**Legislation year enacted:** 1972

**Case Definition**

**Outcomes covered:** All birth defects, exclusions according to CDC exclusion list

**Pregnancy outcome:** Live Births (Greater than 20 weeks and greater than 500 grams), Fetal deaths - stillbirths, spontaneous abortions, etc. (20 weeks gestation and greater)

**Age:** Birth to 1 year

**Residence:** In-state and out-of-state births to state residents.

**Surveillance Methods**

**Case ascertainment:** Passive case ascertainment

**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, 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

**Midwifery facilities:** Midwifery facilities

**Other specialty facilities:** Genetic counseling/clinical genetics facilities

**Other sources:** Physician reports

**Case Ascertainment**

**Conditions warranting chart review in newborn period:** We are a passive system and don't conduct chart reviews on any conditions in newborn period and beyond the newborn period

**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, Apgar, 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 storage/management:** SQL

**Data Analysis**

**Data analysis software:** SAS, Reports from Netsmart.

**Quality assurance:** Re-abstraction of cases, Double-checking of assigned codes, Comparison/verification between multiple data sources, Case finding, data coding and entry.

**Data use and analysis:** Baseline rates, Monitoring outbreaks and cluster investigation, Epidemiologic studies (using only program data), Identification of potential cases for other epidemiologic studies, Needs assessment, Grant proposals, Incidence rates, trend analysis, birth defect registry.

**System Integration**

**System links:** Birth

**System integration:** Integrated with births, fetal deaths, deaths and hearing screening.

**Funding**

**Funding Source:** 100% MCH funds

**Other**

**Web site:**

[http://dhhs.ne.gov/publichealth/Pages/vitalrecords\\_partners.aspx](http://dhhs.ne.gov/publichealth/Pages/vitalrecords_partners.aspx)

**Surveillance reports on file:**

[http://dhhs.ne.gov/publichealth/Pages/ced\\_vs.aspx](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

**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:** About 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:** Live Births (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 and passive case ascertainment, 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/clinical genetics facilities

**Other sources:** Physician reports

**Case Ascertainment**

**Conditions warranting chart review in newborn period:** Any chart with a ICD9-CM code 740-759, Any chart with a selected list of ICD9-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, Development delay, CNS condition (e.g., seizure), GI condition (e.g., recurrent blockage), GU condition (e.g., recurrent infections), Cardiovascular condition, Any infant with a codeable 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, Apgar, 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, Maternal risk factors, 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 storage/management:** Access

**Data Analysis**

**Data analysis software:** SAS, 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 investigation, 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.

**Funding**

**Funding Source:** 100% MCH Block Grant

**Other**

**Surveillance reports on file:**

[http://health.nv.gov/PUBLICATIONS/OHSS/2009\\_NBOMS\\_Annual\\_Report.pdf](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 Services, Referral to Prevention/Intervention

**Partner:** Local Health Departments, Universities, Hospitals, Environmental Agencies/Organizations, Early Childhood Prevention Programs, Advocacy Groups, Legislators

**Program status:** Currently collecting data

**Start year:** 2003

**Earliest year of available data:** 2003

**Organizational location:** Department of Health (Maternal and Child Health), Department of Health (Bureau of Special Medical Services: Bureau of Nutrition and Health Promotion, Department of Environmental Services Bureau of Environmental Health), University

**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:** Live Births (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, in-state and out-of-state

**Surveillance Methods**

**Case ascertainment:** Active case ascertainment, Population based

**Vital Records:** Birth certificates, Fetal death certificates, Elective termination certificates, hospital ICD-9 codes for admissions, discharges and transports, fetal pathology reviews at Dartmouth Hitchcock Medical Center

**Other state based registries:** Programs for children with special needs, Newborn hearing screening program

**Delivery hospitals:** Discharge summaries, Obstetrics logs (i.e., labor & delivery), Regular nursery logs, ICU/NICU logs or charts, Postmortem/pathology logs, Specialty outpatient clinics, medical records abstraction of charts of selected ICD 9 Codes

**Pediatric & tertiary care hospitals:** Discharge summaries, ICU/NICU logs or charts, Postmortem/pathology logs, Specialty outpatient clinics, cytogenetics laboratory, perinatal pathology logs, Medical Genetics Clinic files, molecular genetics laboratory, Prenatal Diagnosis Program files

**Other specialty facilities:** Prenatal diagnostic facilities (ultrasound, etc.), Cytogenetic laboratories, Genetic counseling/clinical genetics facilities

**Case Ascertainment**

**Conditions warranting chart review in newborn period:** Any chart with a ICD9-CM code 740-759, Any chart with a selected list of ICD9-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 (e.g., abnormal facies, congenital heart disease), All stillborn infants, All neonatal deaths, All infants in NICU or special care nursery, All prenatal diagnosed or suspected cases, 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 codeable 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, Apgar, 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, Maternal risk factors, 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 storage/management:** 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, Access

**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 statewide 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

**Other**

**Web site:** www.nhbc.org

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**New Jersey***Special Child Health Services Registry (SCHS REGISTRY)*

**Purpose:** Surveillance, Research, Referral to Services, Referral to Prevention/Intervention

**Partner:** Local Health Departments, Universities, Hospitals, Community Nursing Services, Environmental Agencies/Organizations, Early Childhood Prevention Programs, Advocacy Groups, 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:** 110,000

**Statewide:** Yes

**Current legislation or rule:** NJSA 26:8-40.20 et seq., NJAC 8:20 - Amended: 1990, 1991, 1992, 2005, Readopted: 2010, Rule Amendments Adopted: 2009; Re-adopted 2010

**Legislation year enacted:** 1983

**Case Definition**

**Outcomes covered:** All birth defects (structural, genetic, and biochemical), all Autism Spectrum Disorders, and severe hyperbilirubinemia, are required to be reported; all special needs and any condition which places a child at risk (prematurity, asthma, cancer, developmental delay) are also reported but not required.

**Pregnancy outcome:** Live Births (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 or younger

**Residence:** all NJ residents, in and out of state

**Surveillance Methods**

**Case ascertainment:** Combination of active and passive case ascertainment, Population based

**Vital Records:** Birth and 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, Surgery logs, Cardiac catheterization laboratories, Specialty outpatient clinics, quality assurance visit consisting of chart review of 3 month period

**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, quality assurance visit consisting of chart review of 3 month period

**Midwifery facilities:** Midwifery facilities

**Third party payers:** Universal Billing database is used for Quality Assurance activities

**Other specialty facilities:** Cytogenetic laboratories, Genetic counseling/clinical genetics facilities

**Other sources:** 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 newborn period:** Any chart with a ICD9-CM code 740-759, Any chart with a selected list of ICD9-CM codes outside 740-759, All neonatal deaths, all death certificates for < 3 years old

**Conditions warranting chart review beyond the newborn period:** GI condition (e.g., recurrent blockage), GU condition (e.g., recurrent

infections), Cardiovascular condition, All infant deaths (excluding prematurity), Ocular conditions, Any infant with a codeable 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, Apgar, 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 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.), implementation of a web-based reporting ongoing since July 1, 2009

**Database storage/management:** 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 registry with birth certificate registry and the death certificate registry

**Data use and analysis:** Routine statistical monitoring, Public health program evaluation, Baseline rates, Rates by demographic and other variables, Monitoring outbreaks and cluster investigation, 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 SCHS Registry. Metabolic screening program provides direct report to SCHS Registry. Autism Registry 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

**Partner:** Universities, Hospitals, Environmental Agencies/Organizations, Early Childhood Prevention Programs, Advocacy Groups, Legislators, Private providers

**Program status:** Currently collecting data

**Start year:** 1995

**Earliest year of available data:** 1995

**Organizational location:** Department of Health (Epidemiology/Environment), Department of Health (Maternal and Child Health)

**Population covered annually:** 30,000

**Statewide:** Yes

**Current legislation or rule:** In January 2000, birth defects became a reportable condition. These conditions are updated by the Office of Epidemiology. This did not involve legislation, only a change in regulations.

**Legislation year enacted:** January 1, 2000

**Case Definition**

**Outcomes covered:** 740-760.71, Currently focused on major birth defects of interest to Environmental Public Health Tracking.

**Pregnancy outcome:** Live Births (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 years

**Residence:** Births to New Mexico residents.

**Surveillance Methods**

**Case ascertainment:** Passive case ascertainment, Population based

**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, medical chart review

**Pediatric & tertiary care hospitals:** Disease index or discharge index, Specialty outpatient clinics, specialty outpatient clinics, including neurosurgery, plastic surgery, pediatric surgical specialists, prenatal diagnostic providers

**Third party payers:** Medicaid databases, Health maintenance organization (HMOs), Indian health services, Children's Medical Services (CMS)

**Other specialty facilities:** Prenatal diagnostic facilities (ultrasound, etc.), Cytogenetic laboratories

**Other sources:** Physician reports

**Case Ascertainment**

**Conditions warranting chart review in newborn period:** Chart reviews only done to clarify birth defect diagnosis identified through other means, e.g., nonspecific diagnosis such as 749

**Coding:** CDC coding system based on BPA, ICD-9-CM, ICD10 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.)

**Data Collection Methods and Storage**

**Data Collection:** Printed abstract/report filled out by staff, Electronic file/report submitted by other agencies (hospitals, etc.)

**Database storage/management:** Stata version 12.0

**Data Analysis**

**Data analysis software:** Stata version 12.0

**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, Monitoring outbreaks and cluster investigation, 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, Link to death file

**Funding**

**Funding Source:** 100% CDC Environmental Public Health Tracking grant. We are actively seeking resources to support this effort.

**Other**

**Web site:**

[https://nmtracking.unm.edu/health\\_effects/birthdefects/about\\_birthdefects](https://nmtracking.unm.edu/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, Community outreach and education

**Partner:** Universities, Hospitals, Early Childhood Prevention Programs, March Of Dimes

**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 - 300,000

**Statewide:** Yes

**Current legislation or rule:** Public Health Law Art. 2, Title, II, Sect 225(5)(t) and Art. 2 Title I, sect 206(I)(j): Codes, Rules and Regulations, Chap 1, State Sanitary Code, part 22.3

**Legislation year enacted:** 1982

**Case Definition**

**Outcomes covered:** Major malformations - a detailed list is available upon request

**Pregnancy outcome:** Live Births (All gestational ages and birth weights)

**Age:** 2 years

**Residence:** in-state and out-of-state birth to state resident; in-state birth to nonresident; 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

**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, Specialty outpatient clinics

**Other specialty facilities:** Cytogenetic laboratories

**Other sources:** Physician reports, Cytogenetic laboratories

**Case Ascertainment**

**Conditions warranting chart review in newborn period:** Any chart with an ICD9-CM code 740-759

**Conditions warranting chart review beyond the newborn period:** Any infant with a codeable 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, Apgar, 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:** Electronic file/report submitted by other agencies (hospitals, etc.)

**Database storage/management:** Access, 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 investigation, 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), 9.3% State Superfund

**Other**

**Web site:**

[http://www.health.state.ny.us/diseases/congenital\\_malformations/cmrmhome.htm](http://www.health.state.ny.us/diseases/congenital_malformations/cmrmhome.htm)

**Surveillance reports on file:** Reports for 1983-2007

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**North Carolina***North Carolina Birth Defects Monitoring Program (NCBDMP)*

**Purpose:** Surveillance, Research, Referral to Services, Referral to Prevention/Intervention, Education, Advocacy

**Partner:** Local Health Departments, Universities, Hospitals, Environmental Agencies/Organizations, Early Childhood Prevention Programs, Advocacy Groups, Legislators

**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:** 122,000

**Statewide:** Yes

**Current legislation or rule:** NCGS 130A-131

**Legislation year enacted:** 1995

**Case Definition**

**Outcomes covered:** major birth defects

**Pregnancy outcome:** Live Births (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 one year after delivery

**Residence:** NC resident births, in-state and out-of-state occurrence

**Surveillance Methods**

**Case ascertainment:** Active case ascertainment, Population based

**Vital Records:** Birth certificates, Death certificates, Matched birth/death file, Fetal death certificates

**Other state based registries:** Programs for children with special needs

**Delivery hospitals:** Disease index or discharge index, Discharge summaries, Obstetrics logs (i.e., labor & delivery), Specialty outpatient clinics

**Pediatric & tertiary care hospitals:** Disease index or discharge index, Discharge summaries, ICU/NICU logs or charts, Specialty outpatient clinics

**Third party payers:** Medicaid databases

**Other specialty facilities:** Prenatal diagnostic facilities (ultrasound, etc.), Genetic counseling/clinical genetics facilities

**Case Ascertainment**

**Conditions warranting chart review in newborn period:** Any chart with a ICD9-CM code 740-759, Any chart with a selected list of ICD9-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 codeable 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, Apgar, 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, Maternal risk factors, 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 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.)

**Database storage/management:** Access, Mainframe, SAS

**Data Analysis**

**Data analysis software:** SAS, Access, Various software for spatial analyses

**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 investigation, Time trends, Time-space cluster analyses, Observed vs. expected analyses, Epidemiologic studies (using only program data), Identification of potential cases for other epidemiologic studies, Service delivery, Referral, Grant proposals, Education/public awareness, Prevention projects, advocacy

**System Integration**

**System links:** Link to other state registries/databases, Link case finding data to final birth file, Link to environmental databases, Vital Statistics, Medicaid Paid Claims, MCH Program Data

**Funding**

**Funding Source:** 95% General state funds, 5% CDC grant

**Other**

**Web site:** <http://www.schs.state.nc.us/SCHS/bdmp/>

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**North Dakota***North Dakota Birth Defects Monitoring System (NDBDMS)*

**Purpose:** Surveillance

**Partner:** Universities, March of Dimes, Department of Human Services

**Program status:** Currently collecting data

**Start year:** 2002

**Earliest year of available data:** 1994

**Organizational location:** Department of Health (Vital Statistics),  
Department of Health (Maternal and Child Health), Department of Health  
(Children's Special Health Services)

**Population covered annually:** 10,072

**Statewide:** Yes

**Current legislation or rule:** North Dakota Century code 23-41

**Legislation year enacted:** 1941

**Case Definition**

**Outcomes covered:** selected birth defects (NTDs, congenital heart defects, cleft lip and palate, chromosomal anomalies) and other risk factors that may lead to health and developmental problems

**Pregnancy outcome:** Live Births (All gestational ages and birth weights, Numbers collected and reported via Vital Records), Fetal deaths - stillbirths, spontaneous abortions, etc. (20 weeks gestation and greater, numbers collected and reported via Vital Records), Elective Terminations (less than 20 week gestation, 20 weeks gestation and greater, Numbers collected and reported via Vital Records)

**Age:** Newborn period

**Residence:** In-state resident births and out of state birth receiving services in ND

**Surveillance Methods**

**Case ascertainment:** Passive case ascertainment

**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, Cancer registry, AIDS/HIV registry, FAS

**Delivery hospitals:** Birth certificate completion

**Pediatric & tertiary care hospitals:** Specialty outpatient clinics

**Third party payers:** Medicaid databases

**Other specialty facilities:** Genetic counseling/clinical genetics facilities

**Other sources:** Physician reports

**Case Ascertainment**

**Conditions warranting chart review in newborn period:** Any chart with a ICD9-CM code 740-759, Any chart with selected defects or medical conditions (e.g., abnormal facies, congenital heart disease), Any birth certificate with a birth defect box checked

**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, Apgar, 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, Maternal risk factors, 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 storage/management:** Access, Mainframe, DB2, SPSS, Excel

**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, Time trends, Epidemiologic studies (using only program data), Needs assessment, Service delivery, Referral, Grant proposals, Education/public awareness

**System Integration**

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

**System integration:** The program/system/registry is integrated with birth, death, fetal death, Medicaid claims payment, Children with Special Healthcare Needs databases and genetics program data from the Division of Medical Genetics at the University of North Dakota School of Medicine and Health Sciences .

**Funding**

**Funding Source:** 100% From the State System Development Initiative(SSDI) Grant

**Other**

**Web site:** <http://www.ndhealth.gov/cshs/>

**Surveillance reports on file:** North Dakota Birth Defects Monitoring System -Summary Report 2001-2005

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**Ohio***Ohio Connections For Children With Special Needs (OCCSN)*

**Purpose:** Surveillance, Research, Referral to Services, Referral to Prevention/Intervention

**Partner:** Local Health Departments, Universities, Hospitals, Environmental Agencies/Organizations, Early Childhood Prevention Programs, Advocacy Groups, Legislators, NIOSH, Title V CSHCN, Ohio Hospital Association

**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:** 143,000

**Statewide:** Yes

Current legislation or rule: Ohio Revised Code (ORC) 3705.30 - 3705.36, signed into law in July, 2000.

"The Director of Health shall establish and, if funds for this purpose are available, implement a statewide birth defects information system for the collection of information concerning congenital anomalies, stillbirths, and abnormal conditions of newborns." Ohio Administrative Code (OAC) 3701-57-01 to 3701-57-04.revised 2010

**Legislation year enacted:** 2000

**Case Definition**

**Outcomes covered:** Major birth defects recommended by NBDPN, disorders on state newborn bloodspot panel, disorders related to infant hearing loss

**Pregnancy outcome:** Live Births (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 children 0 to 5 years of age seen for medical care at a hospital in Ohio; all in and out of state births and fetal deaths to state residents

**Surveillance Methods**

**Case ascertainment:** Passive case ascertainment, and passive case ascertainment with follow-up for certain disorders.

**Vital Records:** Birth certificates, Death certificates, Matched birth/death file, Fetal death certificates (20 weeks gestation and greater)

**Other state based registries:** Programs for children with special needs, Newborn metabolic screening program, Title V CSHCN Program data, Genetics Program Data System, Part C Early Intervention System Data, Newborn Bloodspot Screening Data

**Delivery hospitals:** Hospital data for medical records and billing

**Pediatric & tertiary care hospitals:** Hospital data for medical records and billing

**Other specialty facilities:** Genetic counseling/clinical genetics facilities

**Case Ascertainment**

**Conditions warranting chart review in newborn period:** Any birth certificate with a birth defect box checked, ICD-9-CM, 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.), Reporting hospitals upload CSV flat file to secure website for integration. Low volume reporters can manually key data into user interface on secure internet site.

**Database storage/management:** SQL 2008 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 (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, Baseline rates, Observed vs. expected analyses, Epidemiologic studies (using only program data), Referral, Grant proposals, Education/public awareness, Prevention projects, IRB approved research projects

**System Integration**

**System links:** Link to other state registries/databases

**System integration:** OCCSN data system shares common demographic file with Vital Statistics and Genetics Program data system

**Funding**

**Funding Source:** 100% CDC grant

**Other**

**Web site:**

<http://www.odh.ohio.gov/odhPrograms/cmh/bdefects/birthdefects1.aspx>

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**Oklahoma***Oklahoma Birth Defects Registry (OBDR)*

**Purpose:** Surveillance, Referral to Services, Referral to Prevention/Intervention

**Partner:** Local Health Departments, Universities, Hospitals, Early Childhood Prevention Programs, Advocacy Groups, Legislators, Cytogenetics/ & Medical Genetics

**Program status:** Currently collecting data

**Start year:** 1992; statewide 1994

**Earliest year of available data:** 1992; 1994 statewide

**Organizational location:** Department of Health (Prevention and Preparedness)

**Population covered annually:** 55,000

**Statewide:** Yes

**Current legislation or rule:** 63 O.S. Section 1-550.2

**Legislation year enacted:** 1992

**Case Definition**

**Outcomes covered:** modified 6-digit ICD-9-CM codes for birth defects and genetic diseases (CDC/BPA)

**Pregnancy outcome:** Live Births ( $\geq$  20 weeks gestation), Fetal deaths - stillbirths, spontaneous abortions, etc. (20 weeks gestation and greater), Elective Terminations (20 weeks gestation and greater)

**Age:** 2 years

**Residence:** in-state births to state residents

**Surveillance Methods**

**Case ascertainment:** Active case ascertainment, Population based

**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, Discharge summaries, Obstetrics logs (i.e., labor & delivery), Regular nursery logs, ICU/NICU logs or charts, Pediatric logs, Surgery logs, Specialty outpatient clinics

**Pediatric & tertiary care hospitals:** Disease index or discharge index, Discharge summaries, ICU/NICU logs or charts, Pediatric logs, Surgery logs, Specialty outpatient clinics

**Third party payers:** Indian health services, military hospitals delivering babies

**Other specialty facilities:** Prenatal diagnostic facilities (ultrasound, etc.), Cytogenetic laboratories, Genetic counseling/clinical genetics facilities

**Case Ascertainment**

**Conditions warranting chart review in newborn period:** Any chart with a ICD9-CM code 740-759, Any chart with a selected list of ICD9-CM codes outside 740-759, Any chart with a CDC/BPA code

**Conditions warranting chart review beyond the newborn period:** Any infant with a codeable 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, Apgar, 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, Maternal risk factors, 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

**Database storage/management:** Access

**Data Analysis**

**Data analysis software:** SAS, Access, ArcView GIS

**Quality assurance:** Validity checks, Re-abstraction of cases, Double-checking of assigned codes, Timeliness, editing of all completed abstracts

**Data use and analysis:** Routine statistical monitoring, Baseline rates, Rates by demographic and other variables, Monitoring outbreaks and cluster investigation, Time trends, Time-space cluster analyses, Needs assessment, Referral, Grant proposals, Education/public awareness, Prevention projects, program quality assurance

**Funding**

**Funding Source:** 13% General state funds, 57% MC funds, 30% CDC grant

**Other****Web site:**

[http://www.ok.gov/health/Child\\_and\\_Family\\_Health/Screening\\_and\\_Special\\_Services/](http://www.ok.gov/health/Child_and_Family_Health/Screening_and_Special_Services/)

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**Oregon***Birth Anomalies Registry (BAR)*

**Purpose:** Surveillance

**Partner:** Environmental Agencies/Organizations, Advocacy Groups, Legislators

**Program status:** Currently collecting data

**Start year:** 2013

**Earliest year of available data:** None yet ready for publication

**Organizational location:** Public Health Division (Maternal and Child Health)

**Population covered annually:** 45,000

**Statewide:** Yes

**Current legislation or rule:** None

**Case Definition**

**Outcomes covered:** EPHT-12

**Pregnancy outcome:** Live Births (All gestational ages and birth weights)

**Age:** 0-1 years now

**Residence:** In-state births to state residents

**Surveillance Methods**

**Case ascertainment:** Link birth certificate to hospital discharge dataset

**Vital Records:** Birth certificates

**Delivery hospitals:** Hospital Discharge Dataset

**Pediatric & tertiary care hospitals:** Hospital Discharge Dataset

**Third party payers:** Medicaid data

**Case Ascertainment**

**Conditions warranting chart review in newborn period:** None at this point; undecided regarding future expanded list of anomalies

**Coding:** CDC coding system based on BPA, ICD-9-CM

**Data Collected**

**Infant/fetus:** 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

**Father:** Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.)

**Data Analysis**

**Data analysis software:** SPSS

**Data use and analysis:** Routine statistical monitoring at this point

**System Integration**

**System links:** Link to other state databases

**Funding**

**Funding Source:** Environmental Public Health Tracking (EPHT), Title V from Maternal and Child Health Bureau.

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**Pennsylvania***Pennsylvania Birth Defects Surveillance Database*

**Program status:** No surveillance program

**Organizational location:** Department of Health (Vital Statistics), Department of Health (Maternal and Child Health)

**Population covered annually:** 142,370 total live births in 2001; 142,388 total live births in 2002; 145,952 total live births in 2003; 144,499 total live births in 2004.

**Statewide:** Yes

**Data Collected**

**Mother:** Maternal risk factors

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**Puerto Rico***Puerto Rico Birth Defects Surveillance and Prevention System (PRBDSS)*

**Purpose:** Surveillance, Referral to Services, Referral to Prevention/Intervention  
**Partner:** Local Health Departments, Universities, Hospitals, Community Nursing Services, Early Childhood Prevention Programs, Advocacy Groups

**Program status:** Currently collecting data

**Start year:** 1995

**Earliest year of available data:** 1995

**Organizational location:** Department of Health (Maternal and Child Health)

**Population covered annually:** 42,000

**Statewide:** Yes

**Current legislation or rule:** Yes, Law 351

**Legislation year enacted:** September 16th, 2004

**Case Definition**

**Outcomes covered:** Selected birth defects - neural tube defects, cleft lip and/or cleft palate, talipes equinovarus, limb defects, ventral wall defects, ambiguous genitalia, trisomy 13, 18 and 21, albinism, congenital heart defects, hipos/epispadias, Jarcho-Levin syndrome, anotia, microtia, anophthalmia, microphthalmia and bladder extrophy.

**Pregnancy outcome:** Live Births (All gestational ages and birth weights), Fetal deaths - stillbirths, spontaneous abortions, etc. (All gestational ages), Elective Terminations (All gestational ages)

**Age:** up to 6 years after delivery

**Residence:** in-state birth to state residents

**Surveillance Methods**

**Case ascertainment:** Active case ascertainment, Population based

**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:** 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:** Discharge summaries, ICU/NICU logs or charts, Pediatric logs, Postmortem/pathology logs, Surgery logs, Laboratory logs

**Third party payers:** Medicaid databases, Health maintenance organization (HMOs)

**Other specialty facilities:** Prenatal diagnostic facilities (ultrasound, etc.), Cytogenetic laboratories

**Other sources:** Physician reports

**Case Ascertainment**

**Conditions warranting chart review in newborn period:** Any chart with a ICD9-CM code 740-759, Any chart with a selected list of ICD9-CM codes outside 740-759, Any chart with selected procedure codes, Any chart with selected defects or medical conditions (e.g., abnormal facies, congenital heart disease), Any birth certificate with a birth defect box checked, All stillborn infants, All neonatal deaths, All elective abortions, 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, Cardiovascular

condition, All infant deaths (excluding prematurity), Ocular conditions, Auditory/hearing conditions, Any infant with a codeable 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, Apgar, 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 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 agencies (hospitals, etc.)

**Database storage/management:** Access

**Data Analysis**

**Data analysis software:** SPSS

**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 investigation, Time trends, Time-space cluster 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

**Funding**

**Funding Source:** 70% MCH funds, 30% CDC grant

**Other**

**Web site:** <http://www.salud.gov.pr>

**Surveillance reports on file:** PR Birth Defects Datebook 2012

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**Rhode Island***Rhode Island Birth Defects Program*

**Purpose:** Surveillance, Referral to Services, Referral to Prevention/Intervention

**Partner:** Universities, Hospitals, Community Nursing Services, Environmental Agencies/Organizations, Early Childhood Prevention Programs, Advocacy Groups, 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:** Live Births (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:** Birth-4 years

**Residence:** RI residents

**Surveillance Methods**

**Case ascertainment:** Combination of active and passive case ascertainment

**Vital Records:** Birth and death certificates, Matched birth/death file

**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; Newborn Bloodspot Screening; Early Intervention; Immunization; Lead Poisoning; WIC; Home Visiting and Vital Records

**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 genetics facilities, Maternal serum screening facilities

**Other sources:** Physician reports

**Case Ascertainment**

**Conditions warranting chart review in newborn period:** Any chart with a ICD9-CM code 740-759 and 760.71, Any chart with a selected list of ICD9-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 code 740-759 and other sentinel conditions

**Conditions warranting chart review beyond the newborn period:** Any infant with a codeable 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, Apgar, 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, Maternal risk factors, 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.)

**Database storage/management:** 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, Clinical review, Timeliness

**Data use and analysis:** Routine statistical monitoring, Baseline rates, Rates by demographic and other variables, Monitoring outbreaks and cluster investigation, 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 to KIDSNET (Newborn Developmental Risk Screening; Universal Newborn Hearing; Newborn Bloodspot Screening; Early Intervention; Immunization; Lead Poisoning; WIC; Home Visiting; and Vital Records); hospital discharge database

**System integration:** Integrated into KIDSNET for web-based provider reporting

**Funding**

**Funding Source:** 10% MCH funds, 85% CDC grant, 5% State

**Other**

**Web site:** <http://www.health.ri.gov/programs/birthdefects>

**Surveillance reports on file:** 2012 Rhode Island Birth Defects Data Book

**Comments:** Chart reviews are also conducted for ICD-9-CM codes 740-759 and other sentinel conditions after the newborn period from sources such as, genetics counseling and testing centers.

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**South Carolina***South Carolina Birth Defects Program (SCBDP)*

**Purpose:** Surveillance, Research, Referral to Prevention/Intervention

**Partner:** Local Health Departments, Universities, Hospitals, Environmental Agencies/Organizations, Advocacy Groups, Greenwood Genetic Center (GGC)

**Program status:** Currently collecting data

**Start year:** GGC began monitoring in 1992; transitioned to SC DHEC and expanded in 2006

**Earliest year of available data:** via GGC, for 3 categories of defects, since 1993

**Organizational location:** Department of Health (Maternal and Child Health)

**Population covered annually:** 57,338

**Statewide:** Yes

**Current legislation or rule:** A281,R308,H4115

**Legislation year enacted:** 2004

**Case Definition**

**Outcomes covered:** Neural tube defects, cardiovascular defects, genitourinary defects, musculoskeletal defects, orofacial clefts

**Pregnancy outcome:** Live Births (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:** Currently monitoring in-state births to persons residing in South Carolina

**Surveillance Methods**

**Case ascertainment:** Active case ascertainment

**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, Cancer registry, autopsy

**Delivery hospitals:** Disease index or discharge index, Discharge summaries, Postmortem/pathology logs, ICD-9 codes

**Pediatric & tertiary care hospitals:** Disease index or discharge index, Discharge summaries, ICD-9 codes

**Other specialty facilities:** Prenatal diagnostic facilities (ultrasound, etc.), Cytogenetic laboratories, Genetic counseling/clinical genetics facilities

**Other sources:** Physician reports

**Case Ascertainment**

**Conditions warranting chart review in newborn period:** Any chart with a ICD9-CM code 740-759, Any chart with a selected list of ICD9-CM codes outside 740-759, Any chart with selected defects or medical conditions (e.g., abnormal facies, congenital heart disease, All stillborn infants, All elective abortions, All prenatal diagnosed or suspected cases, birth certificate with neural tube defect box checked

**Conditions warranting chart review beyond the newborn period:** Any infant with a codeable 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, Apgar, 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 storage/management:** Access, SQL Server

**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, Clinical review

**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, Referral, Grant proposals, Education/public awareness, Prevention projects

**System Integration**

**System links:** Link case finding data to final birth file, Link to environmental databases, SC Vital Records

**System integration:** SC Vital Records

**Funding**

**Funding Source:** 100% General state funds

**Other**

**Web site:** <http://www.scdhec.gov/health/mch/rpu/bd.htm>

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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

**Partner:** Local Health Departments, Universities, Hospitals, Early Childhood Prevention Programs, Legislators

**Program status:** Currently collecting data

**Start year:** 2000

**Earliest year of available data:** 1999

**Organizational location:** Department of Health; Office of Policy, Planning & Assessment; Research Division

**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:** Live Births (All gestational ages and birth weights), Fetal deaths - stillbirths, spontaneous abortions, etc. (500 grams or more, or in the absence of weight, 22 completed weeks of gestation or more)

**Age:** up to one year after delivery

**Residence:** in and out of state births to state residents

**Surveillance Methods**

**Case ascertainment:** Passive case ascertainment, Population based, Hospital based

**Vital Records:** Birth certificates, Death certificates, Matched birth/death file, Fetal death certificates

**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

**Midwifery facilities:** Midwifery facilities

**Case Ascertainment**

**Conditions warranting chart review in newborn period:** Any chart with a ICD9-CM code 740-759, Any chart with selected procedure codes, Any chart with selected defects or medical conditions (e.g., 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 codeable 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, Apgar, 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, Maternal risk factors

**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 storage/management:** 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, Data/hospital audits

**Data use and analysis:** Routine statistical monitoring, Baseline rates, Rates by demographic and other variables, Monitoring outbreaks and cluster investigation, Time trends, Epidemiologic studies (using only program data), Identification of potential cases for other epidemiologic studies, Needs assessment, 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% general state funds

**Other**

**Web site:** <http://hit.state.tn.us/Reports.aspx>

**Surveillance reports on file:** Tennessee Birth Defects Registry 2003-2008

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## Texas

## Texas Birth Defects Epidemiology And Surveillance Branch (TBDES)

**Purpose:** Surveillance, Research, Referral to Services, Referral to Prevention/Intervention  
**Partner:** Universities, Hospitals, Environmental Agencies/Organizations, Advocacy Groups, Legislators  
**Program status:** Currently collecting data  
**Start year:** 1994  
**Earliest year of available data:** 1996  
**Organizational location:** Department of Health (Epidemiology/Environment)  
**Population covered annually:** 385,746 in 2010  
**Statewide:** Yes  
**Current legislation or rule:** Health and Safety Code, Title 2, Subtitle D, Section 1, Chapter 87.  
**Legislation year enacted:** 1993

**Case Definition**

**Outcomes covered:** all major structural birth defects and fetal alcohol syndrome  
**Pregnancy outcome:** Live Births (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 - FAS up to 6 years  
**Residence:** in and out of state births to state residents

**Surveillance Methods**

**Case ascertainment:** Active case ascertainment, Population based  
**Vital Records:** We are now using fetal death certificates (2009+) to aid in case finding.  
**Delivery hospitals:** Disease index or discharge index, Discharge summaries, Obstetrics logs (i.e., labor & delivery), Regular nurseries logs, ICU/NICU logs or charts, Pediatric logs, Postmortem/pathology logs, Surgery logs, Cardiac catheterization laboratories, Specialty outpatient clinics, genetics logs, stillbirth logs, 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 logs, radiology logs  
**Midwifery facilities:** Midwifery facilities  
**Other sources:** licensed birthing centers

**Case Ascertainment**

**Conditions warranting chart review in newborn period:** Any chart with a ICD9-CM code 740-759, Any chart with a selected list of ICD9-CM codes outside 740-759, Any chart with selected defects or medical conditions (e.g., 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., recurrent blockage), GU condition (e.g., recurrent infections), Cardiovascular condition, Any infant with a codeable 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, Apgar, 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 diagnostic information, Pregnancy/delivery complications, Maternal risk factors, 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  
**Database storage/management:** 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, Baseline rates, Rates by demographic and other variables, Monitoring outbreaks and cluster investigation, 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 \* Note: does not include CDC-funded Texas Birth Defects Research Center funds

**Other**

**Web site:** [www.dshs.state.tx.us/birthdefects/](http://www.dshs.state.tx.us/birthdefects/)  
**Comments:** In order to maintain efficiency with increasing workloads; we stopped the routine review and abstraction of mother's medical records (we still occasionally abstract specific information from the mother's record when it's needed and can't be found elsewhere) and that change only applies to live born cases (we still routinely review and abstract information from mother's medical records for other pregnancy outcomes).

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**Utah***Utah Birth Defect Network (UBDN)*

**Purpose:** Surveillance, Research, Referral to Services, Referral to Prevention/Intervention, education  
**Partner:** Universities, Hospitals, Environmental Agencies/Organizations, Advocacy Groups, Legislators  
**Program status:** Currently collecting data  
**Start year:** 1994  
**Earliest year of available data:** 1994  
**Organizational location:** Department of Health (Maternal and Child Health), CSHCN, University  
**Population covered annually:** 50,000  
**Statewide:** Yes  
**Current legislation or rule:** Birth Defect Rule (R398-5)  
**Legislation year enacted:** 1999

**Case Definition**

**Outcomes covered:** 742.000 - 759.000  
**Pregnancy outcome:** Live Births (All gestational ages and birth weights), Fetal deaths - stillbirths, spontaneous abortions, etc. (20 weeks gestation and greater, stillbirths 20 weeks gestation or greater), Elective Terminations (All gestational ages)  
**Age:** 2 years  
**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  
**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, Specialty outpatient clinics  
**Midwifery facilities:** Midwifery facilities  
**Other specialty facilities:** Prenatal diagnostic facilities (ultrasound, etc.), Cytogenetic laboratories, Genetic counseling/clinical genetics facilities  
**Other sources:** Physician reports, lay midwives

**Case Ascertainment**

**Conditions warranting chart review in newborn period:** Any chart with a ICD9-CM code 740-759, Any chart with a selected list of ICD9-CM codes outside 740-759, Any chart with selected defects or medical conditions (e.g., 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, all fetal deaths 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 codeable 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, Apgar, 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, Maternal risk factors, 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:** Electronic abstract/report filled out by staff, Printed abstract/report submitted by other agencies (hospitals, etc.), Electronic file/report submitted by other agencies (hospitals, etc.)  
**Database storage/management:** Access

**Data Analysis**

**Data analysis software:** SPSS, SAS, Access, Epi2000, Stata 8  
**Quality assurance:** Validity checks, Re-abstraction of cases, 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

**System Integration**

**System links:** Link to environmental databases, link to birth records

**Funding**

**Funding Source:** 100%MCH funds

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**Vermont***Birth Information Network (BIN)*

**Purpose:** Surveillance, Referral to Services, Referral to Prevention/Intervention, Prevention education  
**Partner:** Hospitals, Environmental Agencies/Organizations, Early Childhood Prevention Programs, Advocacy Groups, Green Mountain Care Board

**Program status:** Currently collecting data

**Start year:** 2006

**Earliest year of available data:** 2006

**Organizational location:** Department of Health (Statistics)

**Population covered annually:** 6,200

**Statewide:** Yes

**Current legislation or rule:** Act 32 (TITLE 18 VSA §5087)

**Legislation year enacted:** 2003

**Case Definition**

**Outcomes covered:** Major birth defects and genetic diseases, very low birth weight (less than 1500 grams)

**Pregnancy outcome:** Live Births (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 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

**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 newborn period:** Any chart with selected procedure codes, Any chart with selected defects or medical conditions (e.g., 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 codeable 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, Apgar, 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, Maternal risk factors

**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.)

**Database storage/management:** 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 investigation, Observed vs expected analyses, 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:** 100% CDC grant

**Other**

**Web site:** [http://healthvermont.gov/tracking/health\\_birthdefects.aspx](http://healthvermont.gov/tracking/health_birthdefects.aspx)

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**Virginia***Virginia Congenital Anomalies Reporting And Education System (VACARES)*

**Purpose:** Surveillance, Research, Referral to Services, Referral to Prevention/Intervention

**Partner:** Universities, Hospitals, Early Childhood Prevention Programs, Children with Special Health Care Needs, Care Connection for Children Network

**Program status:** Currently collecting data

**Start year:** 1985

**Earliest year of available data:** 1987

**Organizational location:** Department of Health (Vital Statistics), Department of Health: Division of Child and Family Health, Child Health Programs, Genetics and Newborn Screening

**Population covered annually:** ~102,000

**Statewide:** Yes

**Current legislation or rule:** Health Law 32.1-69.1,-69.1:1,-69.2

**Legislation year enacted:** 1985, amended 1986, 1988, 2006

**Case Definition**

**Outcomes covered:** Major birth defects and genetic diseases

**Pregnancy outcome:** Live Births (All gestational ages and birth weights), Fetal deaths - stillbirths, spontaneous abortions, etc. (All gestational ages, Only for the Neural tube defect and Trisomy cases requested)

**Age:** Below 24 months of age

**Residence:** All in state births; Out of state births hospitalized in state up to 24 months of age with reportable birth defect

**Surveillance Methods**

**Case ascertainment:** Passive case ascertainment, Population based

**Vital Records:** Birth certificates, Death certificates, Matched birth/death file

**Other state based registries:** Newborn hearing screening program, Newborn metabolic screening program

**Delivery hospitals:** Discharge summaries, medical records abstracts codes from charts

**Pediatric & tertiary care hospitals:** Discharge summaries

**Other specialty facilities:** Genetic counseling/clinical genetics facilities

**Case Ascertainment**

**Conditions warranting chart review in newborn period:** Any chart with a ICD9-CM code 740-759, Any chart with a selected list of ICD9-CM codes outside 740-759, Any chart with selected defects or medical conditions (e.g., abnormal facies, congenital heart disease), Any birth certificate with a birth defect box checked, All neonatal deaths, Chart review done by the coders in Health Information Management

**Conditions warranting chart review beyond the newborn period:** Any infant with a codeable defect

**Coding:** ICD-9-CM, ICD-10 for death certificate

**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 submitted by other agencies (hospitals, etc.), Electronic file/report submitted by other agencies (hospitals, etc.)

**Database storage/management:** Oracle

**Data Analysis**

**Data analysis software:** SAS, Access

**Quality assurance:** Validity checks, 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, Needs assessment, Service delivery, Referral, Grant proposals, Education/public awareness, Prevention projects

**System Integration**

**System links:** Link to other state registries/databases

**System integration:** Virginia birth defects registry data (VaCARES) are reported by hospitals to the state health department via the Virginia Infant Screening and Infant Tracking System (VISITS II), which is a Web-based integrated data tracking and management system. VISITS II is a component of the Virginia Vital Events and Screening Tracking System (VVESTS), which also includes the Virginia electronic birth certificate and Virginia Early Hearing Detection and Intervention Program databases.

**Other**

**Web site:** <http://www.vahealth.org/gns/vaCares.htm>

**Surveillance reports on file:** Virginia Congenital Anomalies Reporting and Education System: Birth Defect Surveillance Data 1989-1998 available on Web site.

**Additional information on file:** Family Brochure and Parent Fact Sheets (English and Spanish) available on Web site.

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**Virginia***Virginia Congenital Anomalies Reporting And Education System (VACARES)*

**Purpose:** Surveillance, Research, Referral to Services, Referral to Prevention/Intervention

**Partner:** Universities, Hospitals, Early Childhood Prevention Programs, Children with Special Health Care Needs, Care Connection for Children Network

**Program status:** Currently collecting data

**Start year:** 1985

**Earliest year of available data:** 1987

**Organizational location:** Department of Health (Vital Statistics), Department of Health (Other, please specify):, Division of Child and Family Health, Child Health Programs, Genetics and Newborn Screening

**Population covered annually:** ~102,000

**Statewide:** Yes

**Current legislation or rule:** Health Law 32.1-69.1,-69.1:1,-69.2

**Legislation year enacted:** 1985, amended 1986, 1988, 2006

**Case Definition**

**Outcomes covered:** Major birth defects and genetic diseases

**Pregnancy outcome:** Live Births, All gestational ages and birth weights, Fetal deaths (stillbirths, spontaneous abortions, etc.), All gestational ages, Only for the Neural tube defect and Trisomy cases requested

**Age:** Below 24 months of age

**Residence:** All in state births; Out of state births hospitalized in state up to 24 months of age with reportable birth defect

**Surveillance Methods**

**Case ascertainment:** Passive case ascertainment, Population based

**Vital Records:** Birth certificates, Death certificates, Matched birth/death file

**Other state based registries:** Newborn hearing screening program, Newborn metabolic screening program

**Delivery hospitals:** Discharge summaries, medical records abstracts codes from charts

**Pediatric & tertiary care hospitals:** Discharge summaries

**Other specialty facilities:** Genetic counseling/clinical genetics facilities

**Case Ascertainment**

**Conditions warranting chart review in newborn period:** Any chart with a ICD9-CM code 740-759, Any chart with a selected list of ICD9-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 neonatal deaths, Chart review done by the coders in Health Information Management

**Conditions warranting chart review beyond the newborn period:** Any infant with a codeable defect

**Coding:** ICD-9-CM, ICD-10 for death certificate

**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 submitted by other agencies (hospitals, etc.), Electronic file/report submitted by other agencies (hospitals, etc.)

**Database storage/management:** Oracle

**Data Analysis**

**Data analysis software:** SAS, Access

**Quality assurance:** Validity checks, 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, Needs assessment, Service delivery, Referral, Grant proposals, Education/public awareness, Prevention projects

**System Integration**

**System links:** Link to other state registries/databases

**System integration:** Virginia birth defects registry data (VaCARES) are reported by hospitals to the state health department via the Virginia Infant Screening and Infant Tracking System (VISITS II), which is a Web-based integrated data tracking and management system. VISITS II is a component of the Virginia Vital Events and Screening Tracking System (VVESTS), which also includes the Virginia electronic birth certificate and Virginia Early Hearing Detection and Intervention Program databases.

**Funding**

**Funding Source:** 100% MCH funds

**Other**

**Web site:** <http://www.vahealth.org/gns/vaCares.htm>

**Surveillance reports on file:** Virginia Congenital Anomalies Reporting and Education System: Birth Defect Surveillance Data 1989-1998 available on Web site.

**Additional information on file:** Family Brochure and Parent Fact Sheets (English and Spanish) available on Web site.

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**Washington***Washington State Birth Defects Surveillance System (BDSS)*

**Purpose:** Surveillance

**Partner:** Local Health Departments, Universities, Hospitals, Environmental Agencies/Organizations

**Program status:** Currently collecting data

**Start year:** 1986- Active and 1991- Passive

**Earliest year of available data:** 1987

**Organizational location:** Department of Health (Office of Healthy Communities)

**Population covered annually:** 90,000

**Statewide:** Yes

**Current legislation or rule:** Notifiable Conditions: WAC 246-101

**Legislation year enacted:** 2000

**Case Definition**

**Outcomes covered:** From 1987 to 1991 (active surveillance), and from 1991 to the 2000 (passive surveillance), the cases reportable to the Birth Defects Registry included those with ICD-9-CM codes 740-759, selected primary cancers, selected metabolic conditions, and FAS/FAE. Since the adoption of the Notifiable Conditions law in 2000, conditions subject to mandatory reporting are neural tube defects, orofacial clefts, limb deficiencies, abdominal wall defects, hypospadias/epispadias and Down Syndrome. FAS/FAE, Cerebral Palsy and Autism are designated as reportable with systems being established to ascertain cases outside the hospital setting.

**Pregnancy outcome:** Live Births (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 ten for FAS/FAE, Cerebral Palsy and Autism.

**Residence:** resident births; children born, diagnosed or treated in-state

**Surveillance Methods**

**Case ascertainment:** Passive case ascertainment

**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, 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 agencies (hospitals, etc.), Electronic file/report submitted by other agencies (hospitals, etc.), Casefinding 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 storage/management:** 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 investigation, 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 Congenital Abnormalities Registry, Education And Surveillance System (CARESS)***Purpose:** Surveillance, Research, Referral to Services, Referral to Prevention/Intervention**Partner:** Universities, Hospitals, Early Childhood Prevention Programs, Advocacy Groups**Program status:** Currently collecting data**Start year:** 1989**Earliest year of available data:** 1989**Organizational location:** Department of Health (Epidemiology/Environment), Department of Health (Vital Statistics), Department of Health (Maternal and Child Health)**Population covered annually:** 21,000**Statewide:** Yes**Current legislation or rule:** State Statute Section 16-5-12a**Legislation year enacted:** 1991Legislation updated: 2002**Case Definition****Outcomes covered:** congenital anomalies of ICD-9 codes 740-759, 760, 764, 765, 766**Pregnancy outcome:** Live Births (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 ascertainment, monthly reports sent from birthing facilities across the state and reproductive outcome forms submitted by facilities and individual physicians**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, Development Disabilities Surveillance, Cancer registry, AIDS/HIV registry, SIDS/SUID**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, Pediatric logs, Specialty outpatient clinics, physicians complete reproductive outcomes forms for those diagnosed after delivery**Other specialty facilities:** Genetic counseling/clinical genetics facilities**Other sources:** Physician reports, pediatric referrals of children diagnosed after delivery and discharge**Case Ascertainment****Conditions warranting chart review in newborn period:** Any chart with a ICD9-CM code 740-759, Any chart with a selected list of ICD9-CM codes outside 740-759, Any chart with selected procedure codes, Any chart with selected defects or medical conditions (e.g., abnormal facies, congenital heart disease), Any birth certificate with a birth defect box checked, Infants with low birth weight or low gestation (less than 2500 grams or less than 37 weeks), All stillborn infants, All neonatal deaths, All elective abortions, All infants with low APGAR scores, All infants in NICU or special care nursery**Conditions warranting chart review beyond the newborn period:** Facial dysmorphism or abnormal facies, Failure to thrive, Development delay, CNS condition (e.g., seizure), GI condition (e.g., recurrent 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 codeable defect

**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 measurements (weight, gestation, Apgar, 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, Prenatal diagnostic information, Pregnancy/delivery complications, Maternal risk factors, 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 submitted by other agencies (hospitals, etc.), Electronic file/report submitted by other agencies (hospitals, etc.)**Database storage/management:** Access**Data Analysis****Data analysis software:** Access**Quality assurance:** Validity checks, 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, Plans continue to link several programs housed in the Office of Maternal, Child and Family Health.**Funding****Funding Source:** 100% MCH Title V Block Grant funds**Other****Web site:** <http://www.wvdhhr.org/caress/>**Contacts****Kathryn G. Cummons, MSW  
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**Wisconsin***Wisconsin Birth Defects Registry (WBDR)*

**Purpose:** Surveillance, Research, Referral to Services

**Partner:** Local Health Departments, Universities, Hospitals, Environmental Agencies/Organizations, Early Childhood Prevention Programs, Advocacy Groups

**Program status:** Currently collecting data

**Start year:** 2004

**Earliest year of available data:** 2004

**Organizational location:** Department of Health (Maternal and Child Health)

**Population covered annually:** ~69,000

**Statewide:** Yes

**Current legislation or rule:** Wisconsin Statutes 253.12

**Rules:** *HFS 116*--Took effect April 1, 2003

**Legislation year enacted:** 2000; rules 2003

**Case Definition**

**Outcomes covered:** structural malformations, deformations, disruptions, or dysplasias; genetic, inherited, or biochemical diseases.

**Pregnancy outcome:** Live Births (20 weeks gestational age or greater), Fetal deaths - stillbirths, spontaneous abortions, etc. (20 weeks gestation and greater)

**Age:** birth to 2 years

**Residence:** Statute mandates reporting of birth defects diagnosed or treated in Wisconsin regardless of residence status

**Surveillance Methods**

**Case ascertainment:** Passive case ascertainment, Population based

**Delivery hospitals:** case reports from nursery managers

**Pediatric & tertiary care hospitals:** case reports from pediatric specialty clinics

**Midwifery facilities:** Midwifery facilities

**Third party payers:** Health maintenance organization (HMOs)

**Other specialty facilities:** Genetic counseling/clinical genetics facilities

**Other sources:** Physician reports

**Case Ascertainment**

**Coding:** Wisconsin codes assigned to a specific list of birth defects cross-walked to ICD-9-CM where possible

**Data Collected**

**Infant/fetus:** Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Birth measurements (weight, gestation, Apgar, 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 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.), Organizations can report by uploading multiple records from their electronic patient records system to the WBDR secure website.

**Database storage/management:** Oracle

**Data Analysis**

**Data analysis software:** SAS

**Quality assurance:** Validity checks, Comparison/verification between multiple data sources

**Data use and analysis:** Routine statistical monitoring, Baseline rates, Rates by demographic and other variables, Monitoring outbreaks and cluster investigation, 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, Prevention projects

**System Integration**

**System links:** Legislation currently prohibits data linkage.

**Funding**

**Funding Source:** MCH Block grant - staffing and Birth Record/Certificate fees - Registry/Program Private foundation

**Other**

**Web site:** <https://phin.wisconsin.gov/wbdr/index.html>

**Surveillance reports on file:** <http://www.dhs.wisconsin.gov/health/children/birthdefects/index.htm>

**Comments:** We have stopped printing reports as of 2008 and instead post them to our website.

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**Wyoming**

**Program status:** Interested in developing a surveillance program

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**US Department of Defense***United States Department of Defense (DoD) Birth and Infant Health Registry***Purpose:** Surveillance, Research**Partner:** Universities, Hospitals, 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, San Diego, CA**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:** Live Births (All gestational ages and birth weights)**Age:** birth to 1 year**Residence:** Worldwide; any birth to a US military beneficiary.**Surveillance Methods****Case ascertainment:** Combination of active and passive case ascertainment, Population based, 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 newborn period:** Any chart with a ICD9-CM code 740-759, Any chart with a selected list of ICD9-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 codeable 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, Apgar, 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 storage/management:** 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, Time trends, Observed vs. expected analyses, Epidemiologic studies (using only program data), Identification of potential cases for other epidemiologic studies, Grant proposals, Prevention projects**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/Pages/Department164.aspx>**Surveillance reports on file:** DoD/Health Affairs policy memorandum; annual reports**Contacts****Ava Marie S. Conlin, DO, MPH****Deployment Health Research Department, Dept. 164, Naval Health Research Center****140 Sylvester Road****San Diego, CA 92106-3521****Phone: 619-767-4489****Fax: 619-767-4806****E-mail: [ava.conlin@med.navy.mil](mailto:ava.conlin@med.navy.mil)****Gia R. Gumbs, MPH****DoD Birth and Infant Health Registry****140 Sylvester Road****San Diego, CA 92106-3521****Phone: 619-553-9255****Fax: 619-767-4806****E-mail: [NHRC-birthregistry@med.navy.mil](mailto:NHRC-birthregistry@med.navy.mil)**