

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

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

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

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

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

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

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

**Arizona**  
**Birth Defects Counts and Prevalence 2007 - 2011 (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		
Tricuspid valve atresia and stenosis	4 <i>0.5</i>	0 <i>0.0</i>	6 <i>0.9</i>	0 <i>0.0</i>	0 <i>0.0</i>	10 <i>0.6</i>	2
Tricuspid valve atresia	4 <i>0.5</i>	0 <i>0.0</i>	6 <i>0.9</i>	0 <i>0.0</i>	0 <i>0.0</i>	10 <i>0.6</i>	
Trisomy 13	16 <i>0.8</i>	4 <i>2.0</i>	19 <i>1.0</i>	7 <i>4.4</i>	0 <i>0.0</i>	46 <i>1.0</i>	
Trisomy 18	36 <i>1.8</i>	4 <i>2.0</i>	32 <i>1.6</i>	5 <i>3.1</i>	8 <i>2.7</i>	85 <i>1.8</i>	
Trisomy 21 (Down syndrome)	233 <i>11.7</i>	19 <i>9.7</i>	257 <i>13.2</i>	16 <i>10.0</i>	36 <i>12.0</i>	570 <i>12.2</i>	
<b>Total live births</b>	<b>198888</b>	<b>19686</b>	<b>194791</b>	<b>15951</b>	<b>29929</b>	<b>466158</b>	

\*Hypospadias prevalence per 10,000 male live births

\*\*Total includes unknown and other maternal race/ethnicity

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

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

\*\*Total includes unknown maternal age

**Notes**

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

**General comments**

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

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

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

**Arkansas**  
**Birth Defects Counts and Prevalence 2007 - 2011 (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		
Limb deficiencies (reduction defects)	89 <i>6.7</i>	25 <i>6.6</i>	11 <i>5.3</i>	4 <i>11.9</i>	0 <i>0.0</i>	129 <i>6.5</i>	
Omphalocele	33 <i>2.5</i>	13 <i>3.4</i>	5 <i>2.4</i>	0 <i>0.0</i>	0 <i>0.0</i>	51 <i>2.6</i>	
Pulmonary valve atresia and stenosis	199 <i>15.0</i>	60 <i>15.8</i>	29 <i>13.9</i>	11 <i>32.8</i>	2 <i>19.3</i>	301 <i>15.2</i>	
Pulmonary valve atresia	8 <i>0.6</i>	4 <i>1.1</i>	3 <i>1.4</i>	1 <i>3.0</i>	0 <i>0.0</i>	16 <i>0.8</i>	
Rectal and large intestinal atresia/stenosis	56 <i>4.2</i>	13 <i>3.4</i>	6 <i>2.9</i>	2 <i>6.0</i>	0 <i>0.0</i>	77 <i>3.9</i>	
Renal agenesis/hypoplasia	31 <i>2.3</i>	10 <i>2.6</i>	9 <i>4.3</i>	0 <i>0.0</i>	0 <i>0.0</i>	50 <i>2.5</i>	
Single ventricle	7 <i>0.5</i>	4 <i>1.1</i>	2 <i>1.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	13 <i>0.7</i>	
Small intestinal atresia/stenosis	41 <i>3.1</i>	12 <i>3.2</i>	9 <i>4.3</i>	1 <i>3.0</i>	1 <i>9.7</i>	64 <i>3.2</i>	
Spina bifida without anencephalus	67 <i>5.0</i>	9 <i>2.4</i>	12 <i>5.7</i>	2 <i>6.0</i>	0 <i>0.0</i>	90 <i>4.6</i>	
Tetralogy of Fallot	61 <i>4.6</i>	16 <i>4.2</i>	6 <i>2.9</i>	2 <i>6.0</i>	1 <i>9.7</i>	86 <i>4.4</i>	
Total anomalous pulmonary venous connection	12 <i>0.9</i>	4 <i>1.1</i>	2 <i>1.0</i>	2 <i>6.0</i>	2 <i>19.3</i>	22 <i>1.1</i>	
Transposition of the great arteries (TGA)	65 <i>4.9</i>	9 <i>2.4</i>	6 <i>2.9</i>	3 <i>8.9</i>	0 <i>0.0</i>	83 <i>4.2</i>	
Dextro-transposition of great arteries (d-TGA)	58 <i>4.4</i>	8 <i>2.1</i>	5 <i>2.4</i>	3 <i>8.9</i>	0 <i>0.0</i>	74 <i>3.7</i>	
Tricuspid valve atresia	8 <i>0.6</i>	3 <i>0.8</i>	4 <i>1.9</i>	1 <i>3.0</i>	0 <i>0.0</i>	16 <i>0.8</i>	
Trisomy 13	11 <i>0.8</i>	5 <i>1.3</i>	4 <i>1.9</i>	0 <i>0.0</i>	0 <i>0.0</i>	20 <i>1.0</i>	
Trisomy 18	45 <i>3.4</i>	12 <i>3.2</i>	7 <i>3.4</i>	0 <i>0.0</i>	0 <i>0.0</i>	64 <i>3.2</i>	
Trisomy 21 (Down syndrome)	168 <i>12.7</i>	29 <i>7.6</i>	32 <i>15.3</i>	3 <i>8.9</i>	0 <i>0.0</i>	232 <i>11.8</i>	
Turner syndrome	18 <i>1.4</i>	2 <i>0.5</i>	3 <i>1.4</i>	0 <i>0.0</i>	0 <i>0.0</i>	23 <i>1.2</i>	
Ventricular septal defect	871 <i>65.6</i>	167 <i>43.9</i>	174 <i>83.3</i>	36 <i>107.4</i>	2 <i>19.3</i>	1251 <i>63.4</i>	
<b>Total live births</b>	<b>132776</b>	<b>38012</b>	<b>20888</b>	<b>3352</b>	<b>1036</b>	<b>197395</b>	
<b>Male live births</b>	<b>68276</b>	<b>19362</b>	<b>10602</b>	<b>1702</b>	<b>534</b>	<b>101146</b>	

\*Hypospadias prevalence per 10,000 male live births

\*\*Total includes unknown and other maternal race/ethnicity

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

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

\*\*Total includes unknown maternal age

**California**  
**Birth Defects Counts and Prevalence 2007 - 2011 (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	11 <i>1.3</i>	<5 .	60 <i>2.5</i>	<5 .	0 <i>0.0</i>	97 <i>2.9</i>	
Anophthalmia/microphthalmia	8 <i>0.9</i>	0 <i>0.0</i>	17 <i>0.7</i>	<5 .	0 <i>0.0</i>	28 <i>0.8</i>	
Anotia/microtia	6 <i>0.7</i>	<5 .	88 <i>3.7</i>	10 <i>3.9</i>	0 <i>0.0</i>	108 <i>3.2</i>	
Aortic valve stenosis	15 <i>1.7</i>	<5 .	19 <i>0.8</i>	<5 .	<5 .	40 <i>1.2</i>	
Atrial septal defect	113 <i>13.0</i>	30 <i>18.9</i>	284 <i>12.1</i>	31 <i>12.0</i>	<5 .	467 <i>13.7</i>	1
Atrioventricular septal defect (Endocardial cushion defect)	40 <i>4.6</i>	14 <i>8.8</i>	87 <i>3.7</i>	10 <i>3.9</i>	<5 .	156 <i>4.6</i>	
Biliary atresia	7 <i>0.8</i>	<5 .	11 <i>0.5</i>	<5 .	<5 .	23 <i>0.7</i>	
Bladder exstrophy	<5 .	<5 .	<5 .	<5 .	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 alone	25 <i>2.9</i>	<5 .	52 <i>2.2</i>	12 <i>4.7</i>	<5 .	94 <i>2.8</i>	
Cleft lip with cleft palate	44 <i>5.0</i>	<5 .	138 <i>5.9</i>	15 <i>5.8</i>	<5 .	209 <i>6.2</i>	
Cleft palate alone	32 <i>3.7</i>	<5 .	85 <i>3.6</i>	10 <i>3.9</i>	<5 .	136 <i>4.0</i>	2
Cloacal exstrophy	<5 .	0 <i>0.0</i>	<5 .	0 <i>0.0</i>	0 <i>0.0</i>	<5 .	
Coarctation of the aorta	52 <i>6.0</i>	10 <i>6.3</i>	86 <i>3.7</i>	10 <i>3.9</i>	<5 .	165 <i>4.9</i>	
Common truncus (truncus arteriosus)	<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>	
Congenital cataract	10 <i>1.1</i>	<5 .	17 <i>0.7</i>	6 <i>2.3</i>	0 <i>0.0</i>	34 <i>1.0</i>	
Craniosynostosis	33 <i>3.8</i>	0 <i>0.0</i>	68 <i>2.9</i>	<5 .	0 <i>0.0</i>	105 <i>3.1</i>	
Diaphragmatic hernia	25 <i>2.9</i>	<5 .	49 <i>2.1</i>	7 <i>2.7</i>	0 <i>0.0</i>	86 <i>2.5</i>	
Double outlet right ventricle	15 <i>1.7</i>	<5 .	47 <i>2.0</i>	8 <i>3.1</i>	<5 .	76 <i>2.2</i>	
Ebstein anomaly	8 <i>0.9</i>	0 <i>0.0</i>	11 <i>0.5</i>	<5 .	0 <i>0.0</i>	21 <i>0.6</i>	
Encephalocele	6 <i>0.7</i>	<5 .	19 <i>0.8</i>	<5 .	<5 .	32 <i>0.9</i>	
Esophageal atresia/tracheoesophageal fistula	21 <i>2.4</i>	0 <i>0.0</i>	26 <i>1.1</i>	<5 .	<5 .	52 <i>1.5</i>	3
Gastroschisis	46 <i>5.3</i>	6 <i>3.8</i>	109 <i>4.6</i>	14 <i>5.4</i>	<5 .	189 <i>5.6</i>	
Holoprosencephaly	6 <i>0.7</i>	<5 .	26 <i>1.1</i>	<5 .	0 <i>0.0</i>	38 <i>1.1</i>	
Hypoplastic left heart syndrome	23 <i>2.6</i>	5 <i>3.2</i>	35 <i>1.5</i>	7 <i>2.7</i>	0 <i>0.0</i>	73 <i>2.1</i>	
Hypospadias*	74 <i>16.5</i>	10 <i>12.5</i>	77 <i>7.4</i>	14 <i>10.6</i>	<5 .	179 <i>10.3</i>	4
Interrupted aortic arch	<5 .	<5 .	8 <i>0.3</i>	0 <i>0.0</i>	0 <i>0.0</i>	13 <i>0.4</i>	
Limb deficiencies (reduction defects)	29 <i>3.3</i>	5 <i>3.2</i>	63 <i>2.7</i>	6 <i>2.3</i>	<5 .	109 <i>3.2</i>	
Omphalocele	7 <i>0.8</i>	<5 .	26 <i>1.1</i>	<5 .	0 <i>0.0</i>	44 <i>1.3</i>	
Pulmonary valve atresia and stenosis	46 <i>5.3</i>	10 <i>6.3</i>	123 <i>5.2</i>	22 <i>8.5</i>	<5 .	206 <i>6.1</i>	

**California**  
**Birth Defects Counts and Prevalence 2007 - 2011 (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	8 <i>0.9</i>	<5 .	37 <i>1.6</i>	<5 .	<5 .	51 <i>1.5</i>	
Rectal and large intestinal atresia/stenosis	22 <i>2.5</i>	<5 .	70 <i>3.0</i>	15 <i>5.8</i>	<5 .	117 <i>3.4</i>	5
Renal agenesis/hypoplasia	6 <i>0.7</i>	0 <i>0.0</i>	14 <i>0.6</i>	<5 .	0 <i>0.0</i>	21 <i>0.6</i>	6
Single ventricle	7 <i>0.8</i>	<5 .	26 <i>1.1</i>	<5 .	0 <i>0.0</i>	36 <i>1.1</i>	
Small intestinal atresia/stenosis	21 <i>2.4</i>	7 <i>4.4</i>	90 <i>3.8</i>	8 <i>3.1</i>	<5 .	132 <i>3.9</i>	
Spina bifida without anencephalus	31 <i>3.6</i>	<5 .	82 <i>3.5</i>	<5 .	<5 .	135 <i>4.0</i>	
Tetralogy of Fallot	31 <i>3.6</i>	<5 .	65 <i>2.8</i>	5 <i>1.9</i>	0 <i>0.0</i>	105 <i>3.1</i>	
Total anomalous pulmonary venous connection	11 <i>1.3</i>	<5 .	44 <i>1.9</i>	<5 .	<5 .	64 <i>1.9</i>	
Transposition of the great arteries (TGA)	12 <i>1.4</i>	<5 .	33 <i>1.4</i>	5 <i>1.9</i>	0 <i>0.0</i>	52 <i>1.5</i>	
Dextro-transposition of great arteries (d-TGA)	12 <i>1.4</i>	<5 .	33 <i>1.4</i>	5 <i>1.9</i>	0 <i>0.0</i>	52 <i>1.5</i>	
Tricuspid valve atresia	7 <i>0.8</i>	0 <i>0.0</i>	14 <i>0.6</i>	<5 .	<5 .	22 <i>0.6</i>	
Trisomy 13	8 <i>0.9</i>	<5 .	20 <i>0.8</i>	<5 .	0 <i>0.0</i>	46 <i>1.4</i>	
Trisomy 18	20 <i>2.3</i>	<5 .	55 <i>2.3</i>	8 <i>3.1</i>	0 <i>0.0</i>	113 <i>3.3</i>	
Trisomy 21 (Down syndrome)	97 <i>11.1</i>	21 <i>13.3</i>	314 <i>13.3</i>	35 <i>13.6</i>	<5 .	489 <i>14.4</i>	
<b>Total live births</b>	<b>87196</b>	<b>15846</b>	<b>235353</b>	<b>25779</b>	<b>2117</b>	<b>339759</b>	
<b>Male live births</b>	<b>44929</b>	<b>8010</b>	<b>104163</b>	<b>13194</b>	<b>1086</b>	<b>173117</b>	

\*Hypospadias prevalence per 10,000 male live births

\*\*Total includes unknown and other maternal race/ethnicity

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

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

\*\*Total includes unknown maternal age

**Notes**

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

**General comments**

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

## Colorado

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

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

**Colorado**  
**Birth Defects Counts and Prevalence 2007 - 2011 (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	41 <i>2.0</i>	4 <i>2.6</i>	21 <i>2.0</i>	1 <i>0.9</i>	0 <i>0.0</i>	81 <i>2.4</i>	3
Pulmonary valve atresia and stenosis	126 <i>6.2</i>	10 <i>6.4</i>	73 <i>7.1</i>	10 <i>8.5</i>	2 <i>8.2</i>	225 <i>6.6</i>	
Pulmonary valve atresia	33 <i>1.6</i>	5 <i>3.2</i>	27 <i>2.6</i>	3 <i>2.6</i>	0 <i>0.0</i>	70 <i>2.1</i>	
Rectal and large intestinal atresia/stenosis	95 <i>4.7</i>	8 <i>5.1</i>	71 <i>6.9</i>	8 <i>6.8</i>	4 <i>16.5</i>	201 <i>5.9</i>	
Renal agenesis/hypoplasia	94 <i>4.6</i>	11 <i>7.1</i>	53 <i>5.1</i>	4 <i>3.4</i>	1 <i>4.1</i>	186 <i>5.5</i>	
Single ventricle	17 <i>0.8</i>	2 <i>1.3</i>	12 <i>1.2</i>	0 <i>0.0</i>	1 <i>4.1</i>	32 <i>0.9</i>	
Small intestinal atresia/stenosis	99 <i>4.8</i>	5 <i>3.2</i>	71 <i>6.9</i>	4 <i>3.4</i>	3 <i>12.4</i>	190 <i>5.6</i>	
Spina bifida without anencephalus	65 <i>3.2</i>	3 <i>1.9</i>	51 <i>4.9</i>	2 <i>1.7</i>	2 <i>8.2</i>	130 <i>3.8</i>	1
Tetralogy of Fallot	75 <i>3.7</i>	6 <i>3.9</i>	38 <i>3.7</i>	6 <i>5.1</i>	0 <i>0.0</i>	125 <i>3.7</i>	
Total anomalous pulmonary venous connection	13 <i>0.6</i>	0 <i>0.0</i>	21 <i>2.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	36 <i>1.1</i>	
Transposition of the great arteries (TGA)	66 <i>3.2</i>	4 <i>2.6</i>	34 <i>3.3</i>	5 <i>4.3</i>	0 <i>0.0</i>	113 <i>3.3</i>	
Dextro-transposition of great arteries (d-TGA)	44 <i>2.2</i>	4 <i>2.6</i>	25 <i>2.4</i>	4 <i>3.4</i>	0 <i>0.0</i>	81 <i>2.4</i>	
Tricuspid valve atresia and stenosis	17 <i>0.8</i>	4 <i>2.6</i>	7 <i>0.7</i>	1 <i>0.9</i>	0 <i>0.0</i>	30 <i>0.9</i>	4
Trisomy 13	15 <i>0.7</i>	2 <i>1.3</i>	15 <i>1.5</i>	0 <i>0.0</i>	0 <i>0.0</i>	77 <i>2.3</i>	
Trisomy 18	33 <i>1.6</i>	4 <i>2.6</i>	33 <i>3.2</i>	5 <i>4.3</i>	1 <i>4.1</i>	173 <i>5.1</i>	
Trisomy 21 (Down syndrome)	277 <i>13.6</i>	30 <i>19.3</i>	169 <i>16.4</i>	13 <i>11.1</i>	2 <i>8.2</i>	719 <i>21.1</i>	
Turner syndrome	23 <i>1.1</i>	2 <i>1.3</i>	22 <i>2.1</i>	4 <i>3.4</i>	0 <i>0.0</i>	66 <i>1.9</i>	
Ventricular septal defect	888 <i>43.5</i>	83 <i>53.4</i>	545 <i>52.7</i>	51 <i>43.4</i>	11 <i>45.3</i>	1615 <i>47.4</i>	5
<b>Total live births</b>	<b>204204</b>	<b>15542</b>	<b>103340</b>	<b>11750</b>	<b>2426</b>	<b>340832</b>	
<b>Male live births</b>	<b>105087</b>	<b>7908</b>	<b>53121</b>	<b>5876</b>	<b>1221</b>	<b>175036</b>	

\*Hypospadias prevalence per 10,000 male live births

\*\*Total includes unknown and other maternal race/ethnicity

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

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

\*\*Total includes unknown maternal age

**Notes**

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

**General comments**

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

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

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

**Delaware**  
**Birth Defects Counts and Prevalence 2007 - 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	8	3	2	0	0	13	
	<i>3.1</i>	<i>2.4</i>	<i>2.9</i>	<i>0.0</i>	<i>0.0</i>	<i>2.8</i>	
Rectal and large intestinal atresia/stenosis	17	2	2	0	0	22	
	<i>6.7</i>	<i>1.6</i>	<i>2.9</i>	<i>0.0</i>	<i>0.0</i>	<i>4.7</i>	
Renal agenesis/hypoplasia	20	8	6	1	0	35	
	<i>7.9</i>	<i>6.3</i>	<i>8.8</i>	<i>4.8</i>	<i>0.0</i>	<i>7.4</i>	
Single ventricle	5	0	0	0	0	5	
	<i>2.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>1.1</i>	
Small intestinal atresia/stenosis	7	4	2	0	0	13	
	<i>2.7</i>	<i>3.2</i>	<i>2.9</i>	<i>0.0</i>	<i>0.0</i>	<i>2.8</i>	
Spina bifida without anencephalus	6	4	1	0	0	12	8
	<i>2.4</i>	<i>3.2</i>	<i>1.5</i>	<i>0.0</i>	<i>0.0</i>	<i>2.5</i>	
Tetralogy of Fallot	13	3	3	4	0	23	9
	<i>5.1</i>	<i>2.4</i>	<i>4.4</i>	<i>19.1</i>	<i>0.0</i>	<i>4.9</i>	
Total anomalous pulmonary venous connection	4	1	0	0	0	5	
	<i>1.6</i>	<i>0.8</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>1.1</i>	
Transposition of the great arteries (TGA)	9	3	5	1	0	18	
	<i>3.5</i>	<i>2.4</i>	<i>7.3</i>	<i>4.8</i>	<i>0.0</i>	<i>3.8</i>	
Dextro-transposition of great arteries (d-TGA)	8	3	5	1	0	17	
	<i>3.1</i>	<i>2.4</i>	<i>7.3</i>	<i>4.8</i>	<i>0.0</i>	<i>3.6</i>	
Tricuspid valve atresia and stenosis	4	6	0	0	0	10	
	<i>1.6</i>	<i>4.7</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>2.1</i>	
Tricuspid valve atresia	0	1	0	0	0	1	
	<i>0.0</i>	<i>0.8</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.2</i>	
Trisomy 13	1	0	1	0	0	2	
	<i>0.4</i>	<i>0.0</i>	<i>1.5</i>	<i>0.0</i>	<i>0.0</i>	<i>0.4</i>	
Trisomy 18	6	4	2	1	0	13	
	<i>2.4</i>	<i>3.2</i>	<i>2.9</i>	<i>4.8</i>	<i>0.0</i>	<i>2.8</i>	
Trisomy 21 (Down syndrome)	39	12	5	4	0	60	
	<i>15.3</i>	<i>9.5</i>	<i>7.3</i>	<i>19.1</i>	<i>0.0</i>	<i>12.7</i>	
Turner syndrome	5	0	2	0	0	7	
	<i>2.0</i>	<i>0.0</i>	<i>2.9</i>	<i>0.0</i>	<i>0.0</i>	<i>1.5</i>	
Ventricular septal defect	212	82	64	14	1	375	10
	<i>83.2</i>	<i>64.7</i>	<i>93.8</i>	<i>67.0</i>	<i>158.7</i>	<i>79.5</i>	
<b>Total live births</b>	<b>25476</b>	<b>12670</b>	<b>6823</b>	<b>2091</b>	<b>63</b>	<b>47183</b>	
<b>Male live births</b>	<b>13043</b>	<b>6438</b>	<b>3430</b>	<b>1080</b>	<b>29</b>	<b>24053</b>	

\*Hypospadias prevalence per 10,000 male live births

\*\*Total includes unknown and other maternal race/ethnicity

## Delaware

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

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

\*\*Total includes unknown maternal age

#### Notes

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

#### General comments

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

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

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

**Florida**  
**Birth Defects Counts and Prevalence 2007 - 2011 (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	436 <i>8.8</i>	309 <i>12.6</i>	296 <i>9.4</i>	22 <i>6.9</i>	3 <i>15.1</i>	1086 <i>9.8</i>	
Pulmonary valve atresia	69 <i>1.4</i>	47 <i>1.9</i>	45 <i>1.4</i>	5 <i>1.6</i>	0 <i>0.0</i>	171 <i>1.5</i>	
Rectal and large intestinal atresia/stenosis	199 <i>4.0</i>	119 <i>4.9</i>	116 <i>3.7</i>	12 <i>3.8</i>	1 <i>5.0</i>	459 <i>4.1</i>	
Renal agenesis/hypoplasia	255 <i>5.2</i>	117 <i>4.8</i>	132 <i>4.2</i>	11 <i>3.4</i>	1 <i>5.0</i>	526 <i>4.7</i>	
Single ventricle	53 <i>1.1</i>	47 <i>1.9</i>	37 <i>1.2</i>	5 <i>1.6</i>	0 <i>0.0</i>	148 <i>1.3</i>	
Small intestinal atresia/stenosis	265 <i>5.4</i>	149 <i>6.1</i>	137 <i>4.3</i>	16 <i>5.0</i>	0 <i>0.0</i>	577 <i>5.2</i>	
Spina bifida without anencephalus	162 <i>3.3</i>	60 <i>2.5</i>	87 <i>2.8</i>	8 <i>2.5</i>	0 <i>0.0</i>	321 <i>2.9</i>	
Tetralogy of Fallot	256 <i>5.2</i>	122 <i>5.0</i>	114 <i>3.6</i>	18 <i>5.6</i>	2 <i>10.1</i>	527 <i>4.7</i>	
Total anomalous pulmonary venous connection	43 <i>0.9</i>	35 <i>1.4</i>	34 <i>1.1</i>	5 <i>1.6</i>	0 <i>0.0</i>	118 <i>1.1</i>	
Transposition of the great arteries (TGA)	167 <i>3.4</i>	47 <i>1.9</i>	77 <i>2.4</i>	1 <i>0.3</i>	0 <i>0.0</i>	300 <i>2.7</i>	
Dextro-transposition of great arteries (d-TGA)	142 <i>2.9</i>	36 <i>1.5</i>	64 <i>2.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	250 <i>2.2</i>	
Tricuspid valve atresia and stenosis	53 <i>1.1</i>	32 <i>1.3</i>	29 <i>0.9</i>	2 <i>0.6</i>	0 <i>0.0</i>	120 <i>1.1</i>	
Trisomy 13	42 <i>0.9</i>	30 <i>1.2</i>	24 <i>0.8</i>	0 <i>0.0</i>	0 <i>0.0</i>	98 <i>0.9</i>	
Trisomy 18	84 <i>1.7</i>	59 <i>2.4</i>	64 <i>2.0</i>	7 <i>2.2</i>	0 <i>0.0</i>	220 <i>2.0</i>	
Trisomy 21 (Down syndrome)	658 <i>13.3</i>	312 <i>12.8</i>	426 <i>13.5</i>	44 <i>13.8</i>	3 <i>15.1</i>	1478 <i>13.3</i>	
Turner syndrome	30 <i>0.6</i>	18 <i>0.7</i>	28 <i>0.9</i>	0 <i>0.0</i>	0 <i>0.0</i>	78 <i>0.7</i>	
Ventricular septal defect	2891 <i>58.6</i>	1312 <i>53.7</i>	2040 <i>64.5</i>	159 <i>49.8</i>	5 <i>25.2</i>	6532 <i>58.7</i>	
<b>Total live births</b>	<b>493102</b>	<b>244455</b>	<b>316075</b>	<b>31917</b>	<b>1982</b>	<b>1111955</b>	
<b>Male live births</b>	<b>253017</b>	<b>124539</b>	<b>161861</b>	<b>16539</b>	<b>1030</b>	<b>569537</b>	

\*Hypospadias prevalence per 10,000 male live births

\*\*Total includes unknown and other maternal race/ethnicity

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

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

\*\*Total includes unknown maternal age

**Notes**

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

**General comments**

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

**Georgia (Metropolitan Atlanta Congenital Defects Program)**  
**Birth Defects Counts and Prevalence 2007 - 2011 (Prevalence per 10,000 Live Births)**

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

**Georgia (Metropolitan Atlanta Congenital Defects Program)**  
**Birth Defects Counts and Prevalence 2007 - 2011 (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		
Limb deficiencies (reduction defects)	29 <i>4.0</i>	59 <i>5.8</i>	24 <i>4.0</i>	2 <i>1.2</i>	0 <i>0.0</i>	124 <i>4.8</i>	
Omphalocele	21 <i>2.9</i>	38 <i>3.8</i>	14 <i>2.3</i>	3 <i>1.9</i>	1 <i>47.4</i>	90 <i>3.5</i>	
Pulmonary valve atresia and stenosis	46 <i>6.4</i>	70 <i>6.9</i>	37 <i>6.2</i>	7 <i>4.3</i>	1 <i>47.4</i>	178 <i>6.8</i>	
Pulmonary valve atresia	11 <i>1.5</i>	20 <i>2.0</i>	15 <i>2.5</i>	0 <i>0.0</i>	0 <i>0.0</i>	56 <i>2.1</i>	
Rectal and large intestinal atresia/stenosis	27 <i>3.7</i>	40 <i>4.0</i>	33 <i>5.5</i>	8 <i>4.9</i>	0 <i>0.0</i>	118 <i>4.5</i>	
Renal agenesis/hypoplasia	61 <i>8.4</i>	63 <i>6.2</i>	21 <i>3.5</i>	8 <i>4.9</i>	1 <i>47.4</i>	168 <i>6.4</i>	
Single ventricle	4 <i>0.6</i>	12 <i>1.2</i>	11 <i>1.8</i>	2 <i>1.2</i>	0 <i>0.0</i>	34 <i>1.3</i>	
Small intestinal atresia/stenosis	26 <i>3.6</i>	45 <i>4.5</i>	20 <i>3.3</i>	7 <i>4.3</i>	0 <i>0.0</i>	107 <i>4.1</i>	
Spina bifida without anencephalus	34 <i>4.7</i>	37 <i>3.7</i>	29 <i>4.8</i>	4 <i>2.5</i>	0 <i>0.0</i>	111 <i>4.3</i>	
Tetralogy of Fallot	45 <i>6.2</i>	52 <i>5.2</i>	10 <i>1.7</i>	6 <i>3.7</i>	0 <i>0.0</i>	124 <i>4.8</i>	
Total anomalous pulmonary venous connection	5 <i>0.7</i>	8 <i>0.8</i>	9 <i>1.5</i>	3 <i>1.9</i>	0 <i>0.0</i>	27 <i>1.0</i>	
Transposition of the great arteries (TGA)	29 <i>4.0</i>	26 <i>2.6</i>	16 <i>2.7</i>	1 <i>0.6</i>	0 <i>0.0</i>	77 <i>3.0</i>	
Dextro-transposition of great arteries (d-TGA)	26 <i>3.6</i>	19 <i>1.9</i>	8 <i>1.3</i>	1 <i>0.6</i>	0 <i>0.0</i>	58 <i>2.2</i>	
Tricuspid valve atresia and stenosis	10 <i>1.4</i>	17 <i>1.7</i>	7 <i>1.2</i>	2 <i>1.2</i>	0 <i>0.0</i>	45 <i>1.7</i>	
Tricuspid valve atresia	5 <i>0.7</i>	8 <i>0.8</i>	2 <i>0.3</i>	1 <i>0.6</i>	0 <i>0.0</i>	18 <i>0.7</i>	
Trisomy 13	12 <i>1.7</i>	26 <i>2.6</i>	5 <i>0.8</i>	1 <i>0.6</i>	0 <i>0.0</i>	50 <i>1.9</i>	
Trisomy 18	50 <i>6.9</i>	41 <i>4.1</i>	14 <i>2.3</i>	11 <i>6.8</i>	1 <i>47.4</i>	142 <i>5.4</i>	
Trisomy 21 (Down syndrome)	184 <i>25.4</i>	166 <i>16.5</i>	121 <i>20.2</i>	28 <i>17.3</i>	2 <i>94.8</i>	559 <i>21.4</i>	
Turner syndrome	19 <i>2.6</i>	25 <i>2.5</i>	6 <i>1.0</i>	5 <i>3.1</i>	0 <i>0.0</i>	64 <i>2.5</i>	
Ventricular septal defect	495 <i>68.4</i>	436 <i>43.2</i>	322 <i>53.8</i>	46 <i>28.4</i>	6 <i>284.4</i>	1396 <i>53.5</i>	
<b>Total live births</b>	<b>72389</b>	<b>100899</b>	<b>59807</b>	<b>16187</b>	<b>211</b>	<b>260850</b>	
<b>Male live births</b>	<b>37233</b>	<b>51428</b>	<b>30560</b>	<b>8312</b>	<b>111</b>	<b>133459</b>	

\*Hypospadias prevalence per 10,000 male live births

\*\*Total includes unknown and other maternal race/ethnicity

**Georgia (Metropolitan Atlanta Congenital Defects Program)  
Trisomy Counts and Prevalence by Maternal Age 2007 - 2011 (Prevalence per 10,000 Live Births)**

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

\*\*Total includes unknown maternal age

**General comments**

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

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

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

**Illinois****Birth Defects Counts and Prevalence 2007 - 2011 (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	81 <i>1.8</i>	33 <i>2.3</i>	49 <i>2.4</i>	3 <i>0.6</i>	0 <i>0.0</i>	166 <i>2.0</i>	
Pulmonary valve atresia and stenosis	115 <i>2.6</i>	46 <i>3.2</i>	51 <i>2.5</i>	8 <i>1.7</i>	0 <i>0.0</i>	220 <i>2.6</i>	
Pulmonary valve atresia	21 <i>0.5</i>	10 <i>0.7</i>	13 <i>0.6</i>	2 <i>0.4</i>	0 <i>0.0</i>	46 <i>0.5</i>	
Rectal and large intestinal atresia/stenosis	139 <i>3.1</i>	58 <i>4.0</i>	74 <i>3.7</i>	19 <i>4.0</i>	0 <i>0.0</i>	291 <i>3.4</i>	
Renal agenesis/hypoplasia	211 <i>4.7</i>	67 <i>4.6</i>	98 <i>4.9</i>	20 <i>4.2</i>	0 <i>0.0</i>	396 <i>4.7</i>	
Single ventricle	20 <i>0.4</i>	5 <i>0.3</i>	5 <i>0.2</i>	1 <i>0.2</i>	0 <i>0.0</i>	31 <i>0.4</i>	
Small intestinal atresia/stenosis	62 <i>1.4</i>	19 <i>1.3</i>	44 <i>2.2</i>	9 <i>1.9</i>	0 <i>0.0</i>	134 <i>1.6</i>	
Spina bifida without anencephalus	123 <i>2.8</i>	24 <i>1.6</i>	65 <i>3.2</i>	13 <i>2.7</i>	0 <i>0.0</i>	227 <i>2.7</i>	
Tetralogy of Fallot	135 <i>3.0</i>	50 <i>3.4</i>	59 <i>2.9</i>	17 <i>3.6</i>	0 <i>0.0</i>	262 <i>3.1</i>	
Total anomalous pulmonary venous connection	26 <i>0.6</i>	11 <i>0.8</i>	28 <i>1.4</i>	3 <i>0.6</i>	0 <i>0.0</i>	68 <i>0.8</i>	
Transposition of the great arteries (TGA)	114 <i>2.6</i>	24 <i>1.6</i>	45 <i>2.2</i>	10 <i>2.1</i>	0 <i>0.0</i>	193 <i>2.3</i>	
Dextro-transposition of great arteries (d-TGA)	95 <i>2.1</i>	22 <i>1.5</i>	35 <i>1.7</i>	10 <i>2.1</i>	0 <i>0.0</i>	162 <i>1.9</i>	
Tricuspid valve atresia and stenosis	73 <i>1.6</i>	29 <i>2.0</i>	37 <i>1.8</i>	6 <i>1.3</i>	1 <i>10.6</i>	146 <i>1.7</i>	2
Tricuspid valve atresia	66 <i>1.5</i>	24 <i>1.6</i>	27 <i>1.3</i>	6 <i>1.3</i>	1 <i>10.6</i>	124 <i>1.5</i>	3
Trisomy 13	70 <i>1.6</i>	21 <i>1.4</i>	31 <i>1.5</i>	4 <i>0.8</i>	0 <i>0.0</i>	132 <i>1.6</i>	
Trisomy 18	75 <i>1.7</i>	29 <i>2.0</i>	46 <i>2.3</i>	7 <i>1.5</i>	0 <i>0.0</i>	173 <i>2.0</i>	
Trisomy 21 (Down syndrome)	585 <i>13.1</i>	128 <i>8.8</i>	314 <i>15.7</i>	42 <i>8.9</i>	1 <i>10.6</i>	1073 <i>12.7</i>	
Turner syndrome	26 <i>0.6</i>	3 <i>0.2</i>	20 <i>1.0</i>	1 <i>0.2</i>	0 <i>0.0</i>	50 <i>0.6</i>	
Ventricular septal defect	1820 <i>40.7</i>	471 <i>32.3</i>	817 <i>40.8</i>	146 <i>30.8</i>	2 <i>21.3</i>	3269 <i>38.6</i>	4
<b>Total live births</b>	<b>446701</b>	<b>146003</b>	<b>200024</b>	<b>47388</b>	<b>941</b>	<b>847854</b>	
<b>Male live births</b>	<b>229296</b>	<b>74208</b>	<b>101678</b>	<b>24358</b>	<b>494</b>	<b>433523</b>	

\*Hypospadias prevalence per 10,000 male live births

\*\*Total includes unknown and other maternal race/ethnicity

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

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

\*\*Total includes unknown maternal age

**Notes**

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

**General comments**

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

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

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

**Iowa****Birth Defects Counts and Prevalence 2007 - 2011 (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		
Limb deficiencies (reduction defects)	90 <i>5.5</i>	13 <i>15.4</i>	14 <i>8.6</i>	5 <i>9.9</i>	0 <i>0.0</i>	122 <i>6.2</i>	
Omphalocele	42 <i>2.5</i>	2 <i>2.4</i>	3 <i>1.8</i>	1 <i>2.0</i>	0 <i>0.0</i>	49 <i>2.5</i>	
Pulmonary valve atresia and stenosis	210 <i>12.7</i>	12 <i>14.2</i>	16 <i>9.8</i>	9 <i>17.9</i>	1 <i>10.4</i>	249 <i>12.6</i>	
Pulmonary valve atresia	21 <i>1.3</i>	1 <i>1.2</i>	2 <i>1.2</i>	0 <i>0.0</i>	0 <i>0.0</i>	24 <i>1.2</i>	
Rectal and large intestinal atresia/stenosis	77 <i>4.7</i>	4 <i>4.7</i>	13 <i>8.0</i>	2 <i>4.0</i>	0 <i>0.0</i>	96 <i>4.9</i>	
Renal agenesis/hypoplasia	103 <i>6.2</i>	3 <i>3.5</i>	9 <i>5.5</i>	5 <i>9.9</i>	0 <i>0.0</i>	121 <i>6.1</i>	
Single ventricle	11 <i>0.7</i>	3 <i>3.5</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	14 <i>0.7</i>	
Small intestinal atresia/stenosis	53 <i>3.2</i>	2 <i>2.4</i>	12 <i>7.4</i>	1 <i>2.0</i>	0 <i>0.0</i>	69 <i>3.5</i>	
Spina bifida without anencephalus	61 <i>3.7</i>	6 <i>7.1</i>	14 <i>8.6</i>	1 <i>2.0</i>	1 <i>10.4</i>	84 <i>4.3</i>	
Tetralogy of Fallot	63 <i>3.8</i>	4 <i>4.7</i>	5 <i>3.1</i>	1 <i>2.0</i>	1 <i>10.4</i>	75 <i>3.8</i>	
Total anomalous pulmonary venous connection	16 <i>1.0</i>	0 <i>0.0</i>	3 <i>1.8</i>	0 <i>0.0</i>	0 <i>0.0</i>	19 <i>1.0</i>	
Transposition of the great arteries (TGA)	58 <i>3.5</i>	2 <i>2.4</i>	7 <i>4.3</i>	3 <i>6.0</i>	0 <i>0.0</i>	71 <i>3.6</i>	1
Dextro-transposition of great arteries (d-TGA)	52 <i>3.2</i>	1 <i>1.2</i>	6 <i>3.7</i>	3 <i>6.0</i>	0 <i>0.0</i>	62 <i>3.1</i>	
Tricuspid valve atresia and stenosis	48 <i>2.9</i>	2 <i>2.4</i>	6 <i>3.7</i>	0 <i>0.0</i>	1 <i>10.4</i>	57 <i>2.9</i>	
Tricuspid valve atresia	10 <i>0.6</i>	0 <i>0.0</i>	3 <i>1.8</i>	0 <i>0.0</i>	0 <i>0.0</i>	13 <i>0.7</i>	
Trisomy 13	25 <i>1.5</i>	0 <i>0.0</i>	4 <i>2.5</i>	1 <i>2.0</i>	0 <i>0.0</i>	33 <i>1.7</i>	
Trisomy 18	52 <i>3.2</i>	6 <i>7.1</i>	6 <i>3.7</i>	3 <i>6.0</i>	0 <i>0.0</i>	67 <i>3.4</i>	
Trisomy 21 (Down syndrome)	201 <i>12.2</i>	12 <i>14.2</i>	37 <i>22.8</i>	7 <i>13.9</i>	0 <i>0.0</i>	263 <i>13.3</i>	
Turner syndrome	39 <i>2.4</i>	5 <i>5.9</i>	4 <i>2.5</i>	1 <i>2.0</i>	0 <i>0.0</i>	50 <i>2.5</i>	
Ventricular septal defect	944 <i>57.2</i>	40 <i>47.3</i>	93 <i>57.2</i>	23 <i>45.7</i>	8 <i>83.6</i>	1110 <i>56.2</i>	2
<b>Total live births</b>	<b>164960</b>	<b>8454</b>	<b>16253</b>	<b>5033</b>	<b>957</b>	<b>197436</b>	
<b>Male live births</b>	<b>84396</b>	<b>4365</b>	<b>8199</b>	<b>2539</b>	<b>480</b>	<b>100860</b>	

\*Hypospadias prevalence per 10,000 male live births

\*\*Total includes unknown and other maternal race/ethnicity

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

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

\*\*Total includes unknown maternal age

**Notes**

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

**General comments**

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

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

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

**Kansas****Birth Defects Counts and Prevalence 2007 - 2011 (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	31 <i>2.2</i>	<5 .	13 <i>4.0</i>	<5 .	0 <i>0.0</i>	61 <i>3.1</i>	
Tetralogy of Fallot	9 <i>0.6</i>	0 <i>0.0</i>	<5 .	0 <i>0.0</i>	0 <i>0.0</i>	17 <i>0.9</i>	
Total anomalous pulmonary venous connection	<5 .	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	<5 .	
Transposition of the great arteries (TGA)	14 <i>1.0</i>	<5 .	<5 .	<5 .	0 <i>0.0</i>	21 <i>1.1</i>	
Tricuspid valve atresia and stenosis	<5 .	<5 .	<5 .	0 <i>0.0</i>	0 <i>0.0</i>	5 <i>0.3</i>	
Trisomy 13	<5 .	<5 .	<5 .	<5 .	0 <i>0.0</i>	12 <i>0.6</i>	
Trisomy 18	17 <i>1.2</i>	<5 .	7 <i>2.2</i>	0 <i>0.0</i>	0 <i>0.0</i>	26 <i>1.3</i>	
Trisomy 21 (Down syndrome)	133 <i>9.4</i>	5 <i>3.6</i>	46 <i>14.1</i>	8 <i>14.1</i>	<5 .	219 <i>11.0</i>	
Turner syndrome	9 <i>0.6</i>	<5 .	<5 .	0 <i>0.0</i>	0 <i>0.0</i>	13 <i>0.7</i>	
Ventricular septal defect	106 <i>7.5</i>	9 <i>6.5</i>	61 <i>18.7</i>	<5 .	<5 .	270 <i>13.6</i>	
<b>Total live births</b>	<b>141135</b>	<b>13800</b>	<b>32549</b>	<b>5678</b>	<b>1119</b>	<b>198340</b>	
<b>Male live births</b>	<b>72282</b>	<b>6989</b>	<b>16602</b>	<b>2957</b>	<b>548</b>	<b>101454</b>	

\*Hypospadias prevalence per 10,000 male live births

\*\*Total includes unknown and other maternal race/ethnicity

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

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

\*\*Total includes unknown maternal age

**General comments**

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

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

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

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

-Unspecified non live births definition: not applicable

## Kentucky

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

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

## Kentucky

### Birth Defects Counts and Prevalence 2007 - 2011 (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	5 <i>0.6</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	12 <i>1.1</i>	1
Pulmonary valve atresia and stenosis	78 <i>3.4</i>	14 <i>5.5</i>	6 <i>4.2</i>	0 <i>0.0</i>	0 <i>0.0</i>	123 <i>4.4</i>	
Pulmonary valve atresia	8 <i>0.3</i>	1 <i>0.4</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	13 <i>0.5</i>	
Rectal and large intestinal atresia/stenosis	62 <i>2.7</i>	7 <i>2.8</i>	5 <i>3.5</i>	2 <i>6.8</i>	0 <i>0.0</i>	85 <i>3.0</i>	
Renal agenesis/hypoplasia	76 <i>3.3</i>	8 <i>3.1</i>	2 <i>1.4</i>	5 <i>17.0</i>	0 <i>0.0</i>	107 <i>3.8</i>	
Single ventricle	7 <i>0.3</i>	1 <i>0.4</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	8 <i>0.3</i>	
Small intestinal atresia/stenosis	36 <i>1.6</i>	7 <i>2.8</i>	4 <i>2.8</i>	0 <i>0.0</i>	0 <i>0.0</i>	55 <i>2.0</i>	
Spina bifida without anencephalus	71 <i>3.1</i>	9 <i>3.5</i>	6 <i>4.2</i>	0 <i>0.0</i>	0 <i>0.0</i>	105 <i>3.8</i>	
Tetralogy of Fallot	41 <i>1.8</i>	10 <i>3.9</i>	1 <i>0.7</i>	0 <i>0.0</i>	0 <i>0.0</i>	63 <i>2.3</i>	
Total anomalous pulmonary venous connection	4 <i>0.2</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>	
Transposition of the great arteries (TGA)	22 <i>0.9</i>	1 <i>0.4</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	30 <i>1.1</i>	
Dextro-transposition of great arteries (d-TGA)	14 <i>0.6</i>	1 <i>0.4</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	19 <i>0.7</i>	
Tricuspid valve atresia and stenosis	14 <i>0.6</i>	1 <i>0.4</i>	1 <i>0.7</i>	0 <i>0.0</i>	0 <i>0.0</i>	19 <i>0.7</i>	
Tricuspid valve atresia	14 <i>0.6</i>	1 <i>0.4</i>	1 <i>0.7</i>	0 <i>0.0</i>	0 <i>0.0</i>	19 <i>0.7</i>	
Trisomy 13	7 <i>0.3</i>	1 <i>0.4</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	9 <i>0.3</i>	
Trisomy 18	11 <i>0.5</i>	3 <i>1.2</i>	2 <i>1.4</i>	0 <i>0.0</i>	0 <i>0.0</i>	22 <i>0.8</i>	
Trisomy 21 (Down syndrome)	183 <i>7.9</i>	27 <i>10.6</i>	17 <i>11.8</i>	0 <i>0.0</i>	1 <i>30.8</i>	248 <i>8.9</i>	
Turner syndrome	12 <i>0.5</i>	3 <i>1.2</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	17 <i>0.6</i>	
Ventricular septal defect	479 <i>20.7</i>	61 <i>24.0</i>	40 <i>27.8</i>	7 <i>23.8</i>	1 <i>30.8</i>	700 <i>25.1</i>	
<b>Total live births</b>	<b>231650</b>	<b>25399</b>	<b>14379</b>	<b>2937</b>	<b>325</b>	<b>279188</b>	
<b>Male live births</b>	<b>118822</b>	<b>12885</b>	<b>7282</b>	<b>1494</b>	<b>158</b>	<b>142968</b>	

\*Hypospadias prevalence per 10,000 male live births

\*\*Total includes unknown and other maternal race/ethnicity

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

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

\*\*Total includes unknown maternal age

**Notes**

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

**General comments**

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

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

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

**Louisiana**  
**Birth Defects Counts and Prevalence 2007 - 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	7 <i>0.9</i>	6 <i>1.1</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	13 <i>0.9</i>	
Rectal and large intestinal atresia/stenosis	37 <i>4.9</i>	21 <i>3.7</i>	<5 .	<5 .	<5 .	64 <i>4.5</i>	
Renal agenesis/hypoplasia	39 <i>5.1</i>	26 <i>4.6</i>	<5 .	0 <i>0.0</i>	<5 .	67 <i>4.7</i>	
Small intestinal atresia/stenosis	<5 .	<5 .	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	<5 .	
Spina bifida without anencephalus	23 <i>3.0</i>	11 <i>1.9</i>	<5 .	0 <i>0.0</i>	0 <i>0.0</i>	36 <i>2.5</i>	
Tetralogy of Fallot	26 <i>3.4</i>	31 <i>5.5</i>	<5 .	0 <i>0.0</i>	0 <i>0.0</i>	59 <i>4.1</i>	
Transposition of the great arteries (TGA)	26 <i>3.4</i>	11 <i>1.9</i>	<5 .	<5 .	<5 .	41 <i>2.9</i>	
Dextro-transposition of great arteries (d-TGA)	22 <i>2.9</i>	8 <i>1.4</i>	<5 .	<5 .	<5 .	34 <i>2.4</i>	
Tricuspid valve atresia and stenosis	<5 .	<5 .	<5 .	<5 .	<5 .	8 <i>0.6</i>	
Tricuspid valve atresia	<5 .	<5 .	<5 .	<5 .	<5 .	6 <i>0.4</i>	
Trisomy 13	6 <i>0.8</i>	<5 .	<5 .	0 <i>0.0</i>	0 <i>0.0</i>	10 <i>0.7</i>	
Trisomy 18	14 <i>1.8</i>	9 <i>1.6</i>	<5 .	<5 .	0 <i>0.0</i>	28 <i>1.9</i>	
Trisomy 21 (Down syndrome)	104 <i>13.6</i>	45 <i>7.9</i>	10 <i>13.8</i>	8 <i>31.9</i>	<5 .	168 <i>11.7</i>	
Turner syndrome	7 <i>1.4</i>	<5 .	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	8 <i>0.9</i>	
Ventricular septal defect	430 <i>56.4</i>	244 <i>43.1</i>	30 <i>41.5</i>	11 <i>43.9</i>	5 <i>73.1</i>	721 <i>50.2</i>	
<b>Total live births</b>	<b>76204</b>	<b>56622</b>	<b>7234</b>	<b>2505</b>	<b>684</b>	<b>143645</b>	
<b>Male live births</b>	<b>38980</b>	<b>28867</b>	<b>3665</b>	<b>1307</b>	<b>327</b>	<b>73343</b>	

\*Hypospadias prevalence per 10,000 male live births

\*\*Total includes unknown and other maternal race/ethnicity

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

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

\*\*Total includes unknown maternal age

**General comments**

-2007 birth defects data include only live births to Louisiana residents at birth that occurred in 6 of 9 regions: Greater New Orleans, Baton Rouge, Lafayette, Lake Charles, Mandeville, and Shreveport.

-2008 birth defects data are provisional and include only live births to Louisiana residents that occurred in 6 of 9 regions: Greater New Orleans, Baton Rouge, Lafayette, Lake Charles, Mandeville, and.

-2009 birth defects data are provisional and include only live births to Louisiana residents that occurred in 4 of 9 regions: Baton Rouge, Lake Charles, Mandeville, and Shreveport.

-2010 birth defects data are provisional and include only live births to Louisiana residents that occurred in 2 of 9 regions: Mandeville and Shreveport. -All probable cases are included.

-CDC/BPA codes are used to define the birth defects.

-Louisiana is an active surveillance state that began identifying births in 2005. Birth defects surveillance has not been conducted among terminations and still births yet.

-The 2011 cohort will not be complete until 12/31/2014 because the LA case definition includes children up to their third birthday.

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

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

\*Hypospadias prevalence per 10,000 male live births

\*\*Total includes unknown and other maternal race/ethnicity

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

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

\*\*Total includes unknown maternal age

**Notes**

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

**General comments**

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

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

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

## Maryland

### Birth Defects Counts and Prevalence 2007 - 2011 (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	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>	3
Pulmonary valve atresia and stenosis	4 <i>0.2</i>	3 <i>0.2</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	7 <i>0.2</i>	
Pulmonary valve atresia	2 <i>0.1</i>	1 <i>0.1</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	3 <i>0.1</i>	
Rectal and large intestinal atresia/stenosis	26 <i>1.5</i>	19 <i>1.5</i>	7 <i>1.4</i>	4 <i>1.5</i>	0 <i>0.0</i>	57 <i>1.5</i>	
Renal agenesis/hypoplasia	44 <i>2.6</i>	32 <i>2.5</i>	3 <i>0.6</i>	3 <i>1.1</i>	0 <i>0.0</i>	86 <i>2.3</i>	
Single ventricle	0 <i>0.0</i>	2 <i>0.2</i>	1 <i>0.2</i>	0 <i>0.0</i>	0 <i>0.0</i>	3 <i>0.1</i>	
Small intestinal atresia/stenosis	20 <i>1.2</i>	7 <i>0.6</i>	1 <i>0.2</i>	2 <i>0.7</i>	0 <i>0.0</i>	32 <i>0.8</i>	
Spina bifida without anencephalus	54 <i>3.1</i>	21 <i>1.7</i>	9 <i>1.8</i>	4 <i>1.5</i>	0 <i>0.0</i>	90 <i>2.4</i>	
Tetralogy of Fallot	17 <i>1.0</i>	11 <i>0.9</i>	2 <i>0.4</i>	4 <i>1.5</i>	0 <i>0.0</i>	34 <i>0.9</i>	
Total anomalous pulmonary venous connection	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>0.0</i>	
Transposition of the great arteries (TGA)	12 <i>0.7</i>	9 <i>0.7</i>	3 <i>0.6</i>	4 <i>1.5</i>	0 <i>0.0</i>	29 <i>0.8</i>	
Dextro-transposition of great arteries (d-TGA)	12 <i>0.7</i>	9 <i>0.7</i>	3 <i>0.6</i>	4 <i>1.5</i>	0 <i>0.0</i>	29 <i>0.8</i>	
Tricuspid valve atresia and stenosis	3 <i>0.2</i>	2 <i>0.2</i>	0 <i>0.0</i>	1 <i>0.4</i>	0 <i>0.0</i>	6 <i>0.2</i>	
Tricuspid valve atresia	3 <i>0.2</i>	1 <i>0.1</i>	0 <i>0.0</i>	1 <i>0.4</i>	0 <i>0.0</i>	5 <i>0.1</i>	
Trisomy 13	19 <i>1.1</i>	10 <i>0.8</i>	2 <i>0.4</i>	1 <i>0.4</i>	0 <i>0.0</i>	32 <i>0.8</i>	
Trisomy 18	38 <i>2.2</i>	14 <i>1.1</i>	13 <i>2.5</i>	5 <i>1.9</i>	0 <i>0.0</i>	77 <i>2.0</i>	
Trisomy 21 (Down syndrome)	167 <i>9.7</i>	106 <i>8.4</i>	45 <i>8.8</i>	23 <i>8.6</i>	1 <i>12.2</i>	361 <i>9.6</i>	
Turner syndrome	9 <i>0.5</i>	5 <i>0.4</i>	2 <i>0.4</i>	2 <i>0.7</i>	0 <i>0.0</i>	20 <i>0.5</i>	
Ventricular septal defect	37 <i>2.1</i>	28 <i>2.2</i>	5 <i>1.0</i>	6 <i>2.2</i>	0 <i>0.0</i>	76 <i>2.0</i>	4
<b>Total live births</b>	<b>172514</b>	<b>125995</b>	<b>51215</b>	<b>26714</b>	<b>822</b>	<b>377355</b>	
<b>Male live births</b>	<b>88380</b>	<b>63771</b>	<b>26195</b>	<b>13863</b>	<b>.</b>	<b>192209</b>	

\*Hypospadias prevalence per 10,000 male live births

\*\*Total includes unknown and other maternal race/ethnicity

## Maryland

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

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

\*\*Total includes unknown maternal age

#### Notes

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

#### General comments

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

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

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

**Massachusetts**  
**Birth Defects Counts and Prevalence 2007 - 2011 (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		
Limb deficiencies (reduction defects)	87 <i>3.5</i>	9 <i>2.7</i>	33 <i>5.9</i>	6 <i>2.0</i>	0 <i>0.0</i>	139 <i>3.7</i>	
Omphalocele	40 <i>1.6</i>	9 <i>2.7</i>	6 <i>1.1</i>	2 <i>0.7</i>	0 <i>0.0</i>	59 <i>1.6</i>	
Pulmonary valve atresia and stenosis	178 <i>7.2</i>	45 <i>13.3</i>	43 <i>7.7</i>	15 <i>5.1</i>	1 <i>11.2</i>	289 <i>7.7</i>	
Pulmonary valve atresia	14 <i>0.6</i>	2 <i>0.6</i>	3 <i>0.5</i>	0 <i>0.0</i>	0 <i>0.0</i>	21 <i>0.6</i>	
Rectal and large intestinal atresia/stenosis	87 <i>3.5</i>	9 <i>2.7</i>	18 <i>3.2</i>	7 <i>2.4</i>	0 <i>0.0</i>	127 <i>3.4</i>	
Renal agenesis/hypoplasia	10 <i>0.4</i>	4 <i>1.2</i>	3 <i>0.5</i>	0 <i>0.0</i>	0 <i>0.0</i>	19 <i>0.5</i>	3
Single ventricle	8 <i>0.3</i>	3 <i>0.9</i>	1 <i>0.2</i>	2 <i>0.7</i>	0 <i>0.0</i>	14 <i>0.4</i>	
Small intestinal atresia/stenosis	77 <i>3.1</i>	9 <i>2.7</i>	15 <i>2.7</i>	11 <i>3.7</i>	1 <i>11.2</i>	117 <i>3.1</i>	
Spina bifida without anencephalus	60 <i>2.4</i>	8 <i>2.4</i>	13 <i>2.3</i>	3 <i>1.0</i>	0 <i>0.0</i>	91 <i>2.4</i>	
Tetralogy of Fallot	81 <i>3.3</i>	20 <i>5.9</i>	32 <i>5.7</i>	10 <i>3.4</i>	0 <i>0.0</i>	148 <i>3.9</i>	
Total anomalous pulmonary venous connection	19 <i>0.8</i>	1 <i>0.3</i>	8 <i>1.4</i>	9 <i>3.1</i>	0 <i>0.0</i>	37 <i>1.0</i>	
Transposition of the great arteries (TGA)	69 <i>2.8</i>	13 <i>3.8</i>	14 <i>2.5</i>	4 <i>1.4</i>	0 <i>0.0</i>	103 <i>2.7</i>	
Dextro-transposition of great arteries (d-TGA)	58 <i>2.3</i>	11 <i>3.2</i>	14 <i>2.5</i>	4 <i>1.4</i>	0 <i>0.0</i>	90 <i>2.4</i>	
Tricuspid valve atresia and stenosis	17 <i>0.7</i>	4 <i>1.2</i>	4 <i>0.7</i>	1 <i>0.3</i>	0 <i>0.0</i>	27 <i>0.7</i>	
Tricuspid valve atresia	15 <i>0.6</i>	2 <i>0.6</i>	3 <i>0.5</i>	1 <i>0.3</i>	0 <i>0.0</i>	22 <i>0.6</i>	
Trisomy 13	25 <i>1.0</i>	4 <i>1.2</i>	5 <i>0.9</i>	0 <i>0.0</i>	0 <i>0.0</i>	37 <i>1.0</i>	
Trisomy 18	47 <i>1.9</i>	10 <i>3.0</i>	18 <i>3.2</i>	6 <i>2.0</i>	0 <i>0.0</i>	96 <i>2.6</i>	
Trisomy 21 (Down syndrome)	347 <i>14.0</i>	57 <i>16.8</i>	94 <i>16.8</i>	36 <i>12.2</i>	2 <i>22.3</i>	558 <i>14.8</i>	
Turner syndrome	28 <i>1.1</i>	2 <i>0.6</i>	9 <i>1.6</i>	0 <i>0.0</i>	1 <i>11.2</i>	51 <i>1.4</i>	
Ventricular septal defect	511 <i>20.6</i>	70 <i>20.7</i>	127 <i>22.6</i>	70 <i>23.7</i>	0 <i>0.0</i>	795 <i>21.1</i>	4
<b>Total live births</b>	<b>248596</b>	<b>33855</b>	<b>56115</b>	<b>29495</b>	<b>895</b>	<b>375905</b>	
<b>Male live births</b>	<b>127466</b>	<b>17367</b>	<b>28752</b>	<b>15225</b>	<b>453</b>	<b>192806</b>	

\*Hypospadias prevalence per 10,000 male live births

\*\*Total includes unknown and other maternal race/ethnicity

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

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

\*\*Total includes unknown maternal age

**Notes**

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

**General comments**

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

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

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

## Michigan

### Birth Defects Counts and Prevalence 2007 - 2011 (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	72 <i>4.5</i>	25 <i>5.8</i>	4 <i>2.4</i>	1 <i>1.5</i>	0 <i>0.0</i>	106 <i>4.6</i>	
Pulmonary valve atresia and stenosis	368 <i>8.9</i>	151 <i>13.9</i>	30 <i>6.9</i>	25 <i>12.0</i>	1 <i>3.8</i>	579 <i>9.8</i>	
Pulmonary valve atresia	83 <i>2.0</i>	40 <i>3.7</i>	7 <i>1.6</i>	7 <i>3.4</i>	1 <i>3.8</i>	140 <i>2.4</i>	
Rectal and large intestinal atresia/stenosis	188 <i>4.5</i>	45 <i>4.1</i>	18 <i>4.1</i>	9 <i>4.3</i>	2 <i>7.5</i>	263 <i>4.4</i>	
Renal agenesis/hypoplasia	208 <i>5.0</i>	64 <i>5.9</i>	20 <i>4.6</i>	14 <i>6.7</i>	2 <i>7.5</i>	309 <i>5.2</i>	
Single ventricle	57 <i>1.4</i>	26 <i>2.4</i>	5 <i>1.2</i>	3 <i>1.4</i>	0 <i>0.0</i>	92 <i>1.6</i>	
Small intestinal atresia/stenosis	151 <i>3.6</i>	51 <i>4.7</i>	16 <i>3.7</i>	6 <i>2.9</i>	0 <i>0.0</i>	225 <i>3.8</i>	
Spina bifida without anencephalus	206 <i>5.0</i>	26 <i>2.4</i>	18 <i>4.1</i>	11 <i>5.3</i>	0 <i>0.0</i>	264 <i>4.5</i>	
Tetralogy of Fallot	226 <i>5.5</i>	72 <i>6.6</i>	17 <i>3.9</i>	14 <i>6.7</i>	1 <i>3.8</i>	333 <i>5.6</i>	
Total anomalous pulmonary venous connection	20 <i>0.8</i>	8 <i>1.2</i>	5 <i>1.9</i>	4 <i>3.1</i>	2 <i>11.9</i>	39 <i>1.1</i>	
Transposition of the great arteries (TGA)	214 <i>5.2</i>	56 <i>5.1</i>	10 <i>2.3</i>	20 <i>9.6</i>	4 <i>15.0</i>	307 <i>5.2</i>	
Dextro-transposition of great arteries (d-TGA)	146 <i>3.5</i>	35 <i>3.2</i>	6 <i>1.4</i>	10 <i>4.8</i>	2 <i>7.5</i>	201 <i>3.4</i>	
Tricuspid valve atresia and stenosis	57 <i>1.4</i>	18 <i>1.7</i>	6 <i>1.4</i>	3 <i>1.4</i>	1 <i>3.8</i>	85 <i>1.4</i>	
Tricuspid valve atresia	57 <i>1.4</i>	18 <i>1.7</i>	6 <i>1.4</i>	3 <i>1.4</i>	1 <i>3.8</i>	85 <i>1.4</i>	
Trisomy 13	25 <i>0.6</i>	13 <i>1.2</i>	3 <i>0.7</i>	3 <i>1.4</i>	0 <i>0.0</i>	44 <i>0.7</i>	
Trisomy 18	91 <i>2.2</i>	31 <i>2.8</i>	8 <i>1.8</i>	4 <i>1.9</i>	0 <i>0.0</i>	139 <i>2.3</i>	
Trisomy 21 (Down syndrome)	547 <i>13.2</i>	134 <i>12.3</i>	43 <i>9.9</i>	34 <i>16.3</i>	2 <i>7.5</i>	774 <i>13.1</i>	
Turner syndrome	35 <i>0.8</i>	7 <i>0.6</i>	7 <i>1.6</i>	3 <i>1.4</i>	0 <i>0.0</i>	52 <i>0.9</i>	
Ventricular septal defect	1641 <i>39.6</i>	420 <i>38.6</i>	133 <i>30.6</i>	96 <i>46.1</i>	12 <i>45.1</i>	2313 <i>39.0</i>	1
<b>Total live births</b>	<b>414344</b>	<b>108854</b>	<b>43444</b>	<b>20814</b>	<b>2661</b>	<b>592894</b>	
<b>Male live births</b>	<b>212571</b>	<b>55534</b>	<b>22304</b>	<b>10746</b>	<b>1384</b>	<b>303989</b>	

\*Hypospadias prevalence per 10,000 male live births

\*\*Total includes unknown and other maternal race/ethnicity

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

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

\*\*Total includes unknown maternal age

**Notes**

1. Ventricular septal defect includes probable cases.

**General comments**

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

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

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

**Minnesota**  
**Birth Defects Counts and Prevalence 2007 - 2011 (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		
Single ventricle	9	4	3	1	1	20	
	<i>1.4</i>	<i>1.8</i>	<i>2.3</i>	<i>0.6</i>	<i>6.8</i>	<i>1.7</i>	
Spina bifida without anencephalus	20	3	5	2	1	35	
	<i>3.2</i>	<i>1.3</i>	<i>3.8</i>	<i>1.3</i>	<i>6.8</i>	<i>2.9</i>	
Tetralogy of Fallot	30	6	2	9	0	52	
	<i>4.8</i>	<i>2.7</i>	<i>1.5</i>	<i>5.7</i>	<i>0.0</i>	<i>4.4</i>	
Transposition of the great arteries (TGA)	17	5	4	5	1	35	
	<i>2.7</i>	<i>2.2</i>	<i>3.0</i>	<i>3.2</i>	<i>6.8</i>	<i>2.9</i>	
Dextro-transposition of great arteries (d-TGA)	17	4	4	4	1	33	
	<i>2.7</i>	<i>1.8</i>	<i>3.0</i>	<i>2.5</i>	<i>6.8</i>	<i>2.8</i>	
Tricuspid valve atresia and stenosis	4	2	0	1	0	7	
	<i>0.6</i>	<i>0.9</i>	<i>0.0</i>	<i>0.6</i>	<i>0.0</i>	<i>0.6</i>	
Tricuspid valve atresia	4	2	0	1	0	7	
	<i>0.6</i>	<i>0.9</i>	<i>0.0</i>	<i>0.6</i>	<i>0.0</i>	<i>0.6</i>	
Trisomy 13	2	6	5	0	0	14	
	<i>0.3</i>	<i>2.7</i>	<i>3.8</i>	<i>0.0</i>	<i>0.0</i>	<i>1.2</i>	
Trisomy 18	10	11	1	4	0	28	
	<i>1.6</i>	<i>4.9</i>	<i>0.8</i>	<i>2.5</i>	<i>0.0</i>	<i>2.4</i>	
Trisomy 21 (Down syndrome)	98	46	25	15	3	196	
	<i>15.6</i>	<i>20.5</i>	<i>19.0</i>	<i>9.5</i>	<i>20.4</i>	<i>16.5</i>	
Ventricular septal defect	225	101	64	38	7	462	
	<i>35.7</i>	<i>45.0</i>	<i>48.7</i>	<i>24.1</i>	<i>47.6</i>	<i>38.9</i>	
<b>Total live births</b>	<b>63019</b>	<b>22450</b>	<b>13135</b>	<b>15740</b>	<b>1471</b>	<b>118860</b>	
<b>Male live births</b>	<b>32294</b>	<b>11408</b>	<b>6666</b>	<b>8155</b>	<b>729</b>	<b>60781</b>	

\*Hypospadias prevalence per 10,000 male live births

\*\*Total includes unknown and other maternal race/ethnicity

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

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

\*\*Total includes unknown maternal age

### Mississippi Birth Defects Counts and Prevalence 2007 - 2011 (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	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>	
Anophthalmia/microphthalmia	4 <i>0.4</i>	7 <i>0.7</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	11 <i>0.5</i>	
Anotia/microtia	13 <i>1.2</i>	16 <i>1.7</i>	2 <i>2.7</i>	1 <i>4.2</i>	1 <i>6.7</i>	36 <i>1.7</i>	
Aortic valve stenosis	17 <i>1.6</i>	10 <i>1.1</i>	1 <i>1.4</i>	0 <i>0.0</i>	0 <i>0.0</i>	29 <i>1.4</i>	
Atrial septal defect	1020 <i>94.3</i>	1153 <i>122.0</i>	34 <i>46.5</i>	17 <i>72.0</i>	41 <i>275.5</i>	2336 <i>109.2</i>	
Atrioventricular septal defect (Endocardial cushion defect)	36 <i>3.3</i>	50 <i>5.3</i>	4 <i>5.5</i>	3 <i>12.7</i>	0 <i>0.0</i>	96 <i>4.5</i>	
Biliary atresia	4 <i>0.4</i>	9 <i>1.0</i>	1 <i>1.4</i>	0 <i>0.0</i>	0 <i>0.0</i>	15 <i>0.7</i>	
Bladder exstrophy	2 <i>0.2</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	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	1 <i>6.7</i>	1 <i>0.0</i>	
Cleft lip alone	27 <i>2.5</i>	15 <i>1.6</i>	2 <i>2.7</i>	0 <i>0.0</i>	1 <i>6.7</i>	45 <i>2.1</i>	
Cleft lip with cleft palate	57 <i>5.3</i>	45 <i>4.8</i>	2 <i>2.7</i>	4 <i>16.9</i>	1 <i>6.7</i>	115 <i>5.4</i>	
Cleft palate alone	52 <i>4.8</i>	38 <i>4.0</i>	3 <i>4.1</i>	4 <i>16.9</i>	0 <i>0.0</i>	97 <i>4.5</i>	
Cloacal exstrophy	3 <i>0.3</i>	11 <i>1.2</i>	1 <i>1.4</i>	1 <i>4.2</i>	0 <i>0.0</i>	16 <i>0.7</i>	
Clubfoot	5 <i>0.5</i>	1 <i>0.1</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	7 <i>0.3</i>	
Coarctation of the aorta	39 <i>3.6</i>	28 <i>3.0</i>	2 <i>2.7</i>	0 <i>0.0</i>	0 <i>0.0</i>	69 <i>3.2</i>	
Common truncus (truncus arteriosus)	4 <i>0.4</i>	4 <i>0.4</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	8 <i>0.4</i>	
Congenital cataract	0 <i>0.0</i>	6 <i>0.6</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	8 <i>0.4</i>	
Congenital posterior urethral valves	14 <i>1.3</i>	21 <i>2.2</i>	1 <i>1.4</i>	0 <i>0.0</i>	0 <i>0.0</i>	38 <i>1.8</i>	
Diaphragmatic hernia	20 <i>1.8</i>	23 <i>2.4</i>	2 <i>2.7</i>	1 <i>4.2</i>	0 <i>0.0</i>	50 <i>2.3</i>	
Double outlet right ventricle	21 <i>1.9</i>	28 <i>3.0</i>	3 <i>4.1</i>	2 <i>8.5</i>	0 <i>0.0</i>	54 <i>2.5</i>	
Ebstein anomaly	8 <i>0.7</i>	5 <i>0.5</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	13 <i>0.6</i>	
Encephalocele	5 <i>0.5</i>	4 <i>0.4</i>	1 <i>1.4</i>	0 <i>0.0</i>	0 <i>0.0</i>	10 <i>0.5</i>	
Esophageal atresia/tracheoesophageal fistula	30 <i>2.8</i>	17 <i>1.8</i>	1 <i>1.4</i>	0 <i>0.0</i>	2 <i>13.4</i>	51 <i>2.4</i>	
Gastroschisis	19 <i>1.8</i>	18 <i>1.9</i>	0 <i>0.0</i>	1 <i>4.2</i>	0 <i>0.0</i>	39 <i>1.8</i>	1
Holoprosencephaly	4 <i>0.4</i>	12 <i>1.3</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	16 <i>0.7</i>	
Hypoplastic left heart syndrome	39 <i>3.6</i>	31 <i>3.3</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	70 <i>3.3</i>	
Hypospadias*	274 <i>49.3</i>	363 <i>76.0</i>	6 <i>16.3</i>	4 <i>33.3</i>	2 <i>27.0</i>	678 <i>62.2</i>	
Interrupted aortic arch	1 <i>0.1</i>	1 <i>0.1</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	2 <i>0.1</i>	
Limb deficiencies (reduction defects)	34 <i>3.1</i>	35 <i>3.7</i>	1 <i>1.4</i>	2 <i>8.5</i>	0 <i>0.0</i>	78 <i>3.6</i>	
Pulmonary valve atresia and stenosis	122 <i>11.3</i>	139 <i>14.7</i>	3 <i>4.1</i>	3 <i>12.7</i>	1 <i>6.7</i>	275 <i>12.9</i>	

**Mississippi**  
**Birth Defects Counts and Prevalence 2007 - 2011 (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>2.1</i>	37 <i>3.9</i>	3 <i>4.1</i>	3 <i>12.7</i>	1 <i>6.7</i>	69 <i>3.2</i>	
Renal agenesis/hypoplasia	21 <i>1.9</i>	20 <i>2.1</i>	1 <i>1.4</i>	1 <i>4.2</i>	0 <i>0.0</i>	43 <i>2.0</i>	
Single ventricle	3 <i>0.3</i>	7 <i>0.7</i>	1 <i>1.4</i>	0 <i>0.0</i>	0 <i>0.0</i>	11 <i>0.5</i>	
Small intestinal atresia/stenosis	8 <i>0.9</i>	14 <i>1.8</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	22 <i>1.3</i>	
Spina bifida without anencephalus	31 <i>2.9</i>	22 <i>2.3</i>	1 <i>1.4</i>	2 <i>8.5</i>	0 <i>0.0</i>	60 <i>2.8</i>	
Tetralogy of Fallot	71 <i>6.6</i>	56 <i>5.9</i>	2 <i>2.7</i>	2 <i>8.5</i>	1 <i>6.7</i>	133 <i>6.2</i>	
Total anomalous pulmonary venous connection	4 <i>0.4</i>	3 <i>0.3</i>	1 <i>1.4</i>	1 <i>4.2</i>	0 <i>0.0</i>	9 <i>0.4</i>	
Transposition of the great arteries (TGA)	30 <i>2.8</i>	22 <i>2.3</i>	0 <i>0.0</i>	3 <i>12.7</i>	1 <i>6.7</i>	57 <i>2.7</i>	
Tricuspid valve atresia and stenosis	11 <i>1.0</i>	22 <i>2.3</i>	1 <i>1.4</i>	3 <i>12.7</i>	0 <i>0.0</i>	38 <i>1.8</i>	
Trisomy 13	6 <i>0.6</i>	8 <i>0.8</i>	0 <i>0.0</i>	1 <i>4.2</i>	0 <i>0.0</i>	15 <i>0.7</i>	
Trisomy 18	15 <i>1.4</i>	12 <i>1.3</i>	2 <i>2.7</i>	0 <i>0.0</i>	0 <i>0.0</i>	30 <i>1.4</i>	
Trisomy 21 (Down syndrome)	98 <i>9.1</i>	84 <i>8.9</i>	8 <i>10.9</i>	1 <i>4.2</i>	3 <i>20.2</i>	203 <i>9.5</i>	
Turner syndrome	1 <i>0.1</i>	0 <i>0.0</i>	1 <i>1.4</i>	0 <i>0.0</i>	0 <i>0.0</i>	2 <i>0.1</i>	
Ventricular septal defect	515 <i>47.6</i>	479 <i>50.7</i>	33 <i>45.2</i>	7 <i>29.7</i>	11 <i>73.9</i>	1092 <i>51.0</i>	2
<b>Total live births</b>	<b>108120</b>	<b>94527</b>	<b>7307</b>	<b>2360</b>	<b>1488</b>	<b>213977</b>	
<b>Male live births</b>	<b>55565</b>	<b>47787</b>	<b>3681</b>	<b>1200</b>	<b>741</b>	<b>109058</b>	

\*Hypospadias prevalence per 10,000 male live births

\*\*Total includes unknown and other maternal race/ethnicity

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

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

\*\*Total includes unknown maternal age

**Notes**

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

**General comments**

-Mississippi uses ICD-9 Codes.

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

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

**Nebraska**  
**Birth Defects Counts and Prevalence 2007 - 2011 (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	28 <i>2.9</i>	1 <i>1.1</i>	3 <i>1.5</i>	1 <i>3.1</i>	0 <i>0.0</i>	34 <i>2.6</i>	
Pulmonary valve atresia and stenosis	72 <i>7.3</i>	8 <i>9.2</i>	7 <i>3.5</i>	2 <i>6.2</i>	1 <i>4.9</i>	91 <i>6.9</i>	
Pulmonary valve atresia	14 <i>1.4</i>	1 <i>1.1</i>	5 <i>2.5</i>	0 <i>0.0</i>	1 <i>4.9</i>	21 <i>1.6</i>	
Rectal and large intestinal atresia/stenosis	55 <i>5.6</i>	4 <i>4.6</i>	10 <i>5.0</i>	3 <i>9.3</i>	0 <i>0.0</i>	73 <i>5.5</i>	
Renal agenesis/hypoplasia	54 <i>5.5</i>	3 <i>3.4</i>	12 <i>6.0</i>	1 <i>3.1</i>	2 <i>9.8</i>	77 <i>5.8</i>	
Single ventricle	15 <i>1.5</i>	3 <i>3.4</i>	2 <i>1.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	20 <i>1.5</i>	
Small intestinal atresia/stenosis	29 <i>3.0</i>	3 <i>3.4</i>	6 <i>3.0</i>	2 <i>6.2</i>	1 <i>4.9</i>	41 <i>3.1</i>	
Spina bifida without anencephalus	66 <i>6.7</i>	7 <i>8.0</i>	10 <i>5.0</i>	2 <i>6.2</i>	1 <i>4.9</i>	86 <i>6.5</i>	
Tetralogy of Fallot	33 <i>3.4</i>	0 <i>0.0</i>	3 <i>1.5</i>	0 <i>0.0</i>	1 <i>4.9</i>	38 <i>2.9</i>	
Total anomalous pulmonary venous connection	12 <i>1.2</i>	0 <i>0.0</i>	4 <i>2.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	16 <i>1.2</i>	
Transposition of the great arteries (TGA)	43 <i>4.4</i>	3 <i>3.4</i>	9 <i>4.5</i>	0 <i>0.0</i>	1 <i>4.9</i>	58 <i>4.4</i>	
Dextro-transposition of great arteries (d-TGA)	42 <i>4.3</i>	3 <i>3.4</i>	9 <i>4.5</i>	0 <i>0.0</i>	1 <i>4.9</i>	57 <i>4.3</i>	
Tricuspid valve atresia and stenosis	9 <i>0.9</i>	2 <i>2.3</i>	1 <i>0.5</i>	0 <i>0.0</i>	1 <i>4.9</i>	13 <i>1.0</i>	
Trisomy 13	14 <i>1.4</i>	1 <i>1.1</i>	4 <i>2.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	20 <i>1.5</i>	
Trisomy 18	35 <i>3.6</i>	7 <i>8.0</i>	8 <i>4.0</i>	0 <i>0.0</i>	1 <i>4.9</i>	52 <i>3.9</i>	
Trisomy 21 (Down syndrome)	189 <i>19.3</i>	10 <i>11.5</i>	41 <i>20.5</i>	4 <i>12.5</i>	2 <i>9.8</i>	254 <i>19.2</i>	
Turner syndrome	16 <i>1.6</i>	2 <i>2.3</i>	3 <i>1.5</i>	0 <i>0.0</i>	0 <i>0.0</i>	21 <i>1.6</i>	
Ventricular septal defect	419 <i>42.8</i>	29 <i>33.3</i>	97 <i>48.4</i>	8 <i>24.9</i>	4 <i>19.7</i>	576 <i>43.5</i>	
<b>Total live births</b>	<b>97972</b>	<b>8702</b>	<b>20047</b>	<b>3212</b>	<b>2031</b>	<b>132496</b>	
<b>Male live births</b>	<b>50115</b>	<b>4468</b>	<b>10244</b>	<b>1636</b>	<b>1055</b>	<b>67770</b>	

\*Hypospadias prevalence per 10,000 male live births

\*\*Total includes unknown and other maternal race/ethnicity

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

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

\*\*Total includes unknown maternal age

**General comments**

-Fetal deaths are a death prior to the complete expulsion or extraction of a product of conception from its mother, irrespective of the duration of pregnancy. Until the pregnancy has reached 20 weeks duration, it is not required that such a death be reported. It has to be at least 500 grams before it is included in the birth defect registry.

-Induced terminations are not a source for birth defects for Nebraska.

-Nebraska does not use the unspecified non-live birth category.

-Probable birth defects were not included.

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

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

**Nevada**  
**Birth Defects Counts and Prevalence 2007 - 2011 (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	66 <i>8.3</i>	32 <i>17.9</i>	66 <i>9.2</i>	8 <i>5.3</i>	3 <i>14.4</i>	183 <i>9.7</i>	
Rectal and large intestinal atresia/stenosis	25 <i>3.1</i>	3 <i>1.7</i>	26 <i>3.6</i>	6 <i>4.0</i>	0 <i>0.0</i>	63 <i>3.3</i>	
Renal agenesis/hypoplasia	36 <i>4.5</i>	10 <i>5.6</i>	23 <i>3.2</i>	8 <i>5.3</i>	1 <i>4.8</i>	84 <i>4.4</i>	
Single ventricle	4 <i>0.6</i>	3 <i>2.1</i>	7 <i>1.2</i>	0 <i>0.0</i>	0 <i>0.0</i>	15 <i>1.0</i>	
Small intestinal atresia/stenosis	24 <i>3.8</i>	8 <i>5.6</i>	21 <i>3.7</i>	3 <i>2.5</i>	1 <i>6.3</i>	58 <i>3.9</i>	
Spina bifida without anencephalus	13 <i>1.6</i>	9 <i>5.0</i>	16 <i>2.2</i>	3 <i>2.0</i>	0 <i>0.0</i>	41 <i>2.2</i>	
Tetralogy of Fallot	39 <i>4.9</i>	8 <i>4.5</i>	31 <i>4.3</i>	4 <i>2.7</i>	2 <i>9.6</i>	88 <i>4.7</i>	
Total anomalous pulmonary venous connection	4 <i>0.5</i>	0 <i>0.0</i>	4 <i>0.6</i>	2 <i>1.3</i>	0 <i>0.0</i>	11 <i>0.6</i>	
Transposition of the great arteries (TGA)	8 <i>1.0</i>	6 <i>3.4</i>	14 <i>1.9</i>	0 <i>0.0</i>	0 <i>0.0</i>	34 <i>1.8</i>	
Tricuspid valve atresia and stenosis	6 <i>0.9</i>	4 <i>2.8</i>	4 <i>0.7</i>	1 <i>0.8</i>	1 <i>5.8</i>	18 <i>1.2</i>	
Tricuspid valve atresia	0 <i>0.0</i>	1 <i>2.9</i>	1 <i>0.7</i>	0 <i>0.0</i>	0 <i>0.0</i>	2 <i>0.6</i>	
Trisomy 13	8 <i>1.0</i>	0 <i>0.0</i>	8 <i>1.1</i>	0 <i>0.0</i>	0 <i>0.0</i>	16 <i>0.8</i>	
Trisomy 18	7 <i>0.9</i>	2 <i>1.1</i>	19 <i>2.6</i>	1 <i>0.7</i>	0 <i>0.0</i>	32 <i>1.7</i>	
Trisomy 21 (Down syndrome)	86 <i>10.8</i>	24 <i>13.4</i>	103 <i>14.3</i>	13 <i>8.6</i>	2 <i>9.6</i>	243 <i>12.9</i>	
Turner syndrome	4 <i>0.5</i>	0 <i>0.0</i>	2 <i>0.3</i>	0 <i>0.0</i>	0 <i>0.0</i>	6 <i>0.3</i>	
Ventricular septal defect	358 <i>45.0</i>	74 <i>41.4</i>	342 <i>47.5</i>	44 <i>29.3</i>	8 <i>38.4</i>	879 <i>46.5</i>	
<b>Total live births</b>	<b>79488</b>	<b>17871</b>	<b>71982</b>	<b>15034</b>	<b>2083</b>	<b>189088</b>	
<b>Male live births</b>	<b>40870</b>	<b>9202</b>	<b>36595</b>	<b>7826</b>	<b>1021</b>	<b>96849</b>	

\*Hypospadias prevalence per 10,000 male live births

\*\*Total includes unknown and other maternal race/ethnicity

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

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

\*\*Total includes unknown maternal age

## New Hampshire Birth Defects Counts and Prevalence 2007 - 2011 (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	2 <i>0.3</i>	0 <i>0.0</i>	0 <i>0.0</i>	1 <i>4.1</i>	0 <i>0.0</i>	3 <i>0.4</i>	
Anophthalmia/microphthalmia	3 <i>0.5</i>	1 <i>8.7</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	4 <i>0.6</i>	
Anotia/microtia	10 <i>1.7</i>	0 <i>0.0</i>	0 <i>0.0</i>	1 <i>4.1</i>	0 <i>0.0</i>	12 <i>1.8</i>	
Aortic valve stenosis	7 <i>1.2</i>	1 <i>8.7</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	10 <i>1.5</i>	
Atrial septal defect	66 <i>10.9</i>	3 <i>26.0</i>	0 <i>0.0</i>	4 <i>16.4</i>	0 <i>0.0</i>	80 <i>11.9</i>	
Atrioventricular septal defect (Endocardial cushion defect)	11 <i>1.8</i>	1 <i>8.7</i>	0 <i>0.0</i>	1 <i>4.1</i>	0 <i>0.0</i>	19 <i>2.8</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>8.7</i>	0 <i>0.0</i>	0 <i>0.0</i>	1 <i>0.1</i>	
Choanal atresia	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>	3 <i>0.4</i>	
Cleft palate alone	32 <i>5.3</i>	1 <i>8.7</i>	0 <i>0.0</i>	1 <i>4.1</i>	1 <i>51.3</i>	38 <i>5.6</i>	
Coarctation of the aorta	19 <i>3.1</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	24 <i>3.6</i>	
Common truncus (truncus arteriosus)	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	7 <i>1.2</i>	1 <i>8.7</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	9 <i>1.3</i>	
Diaphragmatic hernia	10 <i>1.7</i>	1 <i>8.7</i>	0 <i>0.0</i>	4 <i>16.4</i>	0 <i>0.0</i>	15 <i>2.2</i>	
Ebstein anomaly	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>	2 <i>0.3</i>	
Encephalocele	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>	4 <i>0.6</i>	
Esophageal atresia/tracheoesophageal fistula	12 <i>2.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	14 <i>2.1</i>	
Gastroschisis	13 <i>2.2</i>	0 <i>0.0</i>	1 <i>8.7</i>	0 <i>0.0</i>	0 <i>0.0</i>	14 <i>2.1</i>	1
Hypoplastic left heart syndrome	3 <i>0.5</i>	1 <i>8.7</i>	1 <i>8.7</i>	0 <i>0.0</i>	1 <i>51.3</i>	9 <i>1.3</i>	
Hypospadias*	241 <i>77.9</i>	5 <i>82.6</i>	5 <i>88.2</i>	4 <i>32.1</i>	0 <i>0.0</i>	265 <i>76.9</i>	
Limb deficiencies (reduction defects)	9 <i>3.6</i>	0 <i>0.0</i>	1 <i>30.7</i>	0 <i>0.0</i>	0 <i>0.0</i>	12 <i>4.3</i>	
Omphalocele	9 <i>1.5</i>	2 <i>17.3</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	11 <i>1.6</i>	1
Pulmonary valve atresia and stenosis	35 <i>5.8</i>	4 <i>34.6</i>	1 <i>8.7</i>	1 <i>4.1</i>	0 <i>0.0</i>	45 <i>6.7</i>	
Rectal and large intestinal atresia/stenosis	22 <i>3.6</i>	2 <i>17.3</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	25 <i>3.7</i>	
Renal agenesis/hypoplasia	41 <i>6.8</i>	2 <i>17.3</i>	4 <i>34.8</i>	1 <i>4.1</i>	0 <i>0.0</i>	53 <i>7.9</i>	
Spina bifida without anencephalus	10 <i>1.7</i>	0 <i>0.0</i>	1 <i>8.7</i>	0 <i>0.0</i>	0 <i>0.0</i>	14 <i>2.1</i>	
Tetralogy of Fallot	13 <i>2.2</i>	1 <i>8.7</i>	3 <i>26.1</i>	1 <i>4.1</i>	0 <i>0.0</i>	24 <i>3.6</i>	
Total anomalous pulmonary venous connection	2 <i>0.4</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	2 <i>0.4</i>	
Transposition of the great arteries (TGA)	16 <i>2.7</i>	2 <i>17.3</i>	1 <i>8.7</i>	0 <i>0.0</i>	0 <i>0.0</i>	25 <i>3.7</i>	
Trisomy 13	2 <i>0.3</i>	1 <i>8.7</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	3 <i>0.4</i>	

**New Hampshire**  
**Birth Defects Counts and Prevalence 2007 - 2011 (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	7 <i>1.2</i>	1 <i>8.7</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	13 <i>1.9</i>	
Trisomy 21 (Down syndrome)	53 <i>8.8</i>	2 <i>17.3</i>	0 <i>0.0</i>	2 <i>8.2</i>	1 <i>51.3</i>	67 <i>10.0</i>	
Ventricular septal defect	90 <i>14.9</i>	3 <i>26.0</i>	2 <i>17.4</i>	3 <i>12.3</i>	0 <i>0.0</i>	113 <i>16.8</i>	2
<b>Total live births</b>	<b>60364</b>	<b>1155</b>	<b>1151</b>	<b>2436</b>	<b>195</b>	<b>67291</b>	
<b>Male live births</b>	<b>30946</b>	<b>605</b>	<b>567</b>	<b>1247</b>	<b>90</b>	<b>34479</b>	

\*Hypospadias prevalence per 10,000 male live births

\*\*Total includes unknown and other maternal race/ethnicity

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

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

\*\*Total includes unknown maternal age

### Notes

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

### General comments

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

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

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

**New Jersey**  
**Birth Defects Counts and Prevalence 2007 - 2011 (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	216 <i>8.8</i>	110 <i>13.5</i>	131 <i>9.2</i>	33 <i>6.1</i>	0 <i>0.0</i>	503 <i>9.3</i>	
Pulmonary valve atresia	15 <i>0.6</i>	11 <i>1.4</i>	14 <i>1.0</i>	2 <i>0.4</i>	0 <i>0.0</i>	45 <i>0.8</i>	
Rectal and large intestinal atresia/stenosis	76 <i>3.1</i>	23 <i>2.8</i>	51 <i>3.6</i>	20 <i>3.7</i>	1 <i>17.4</i>	178 <i>3.3</i>	
Renal agenesis/hypoplasia	143 <i>5.8</i>	33 <i>4.1</i>	73 <i>5.2</i>	17 <i>3.1</i>	1 <i>17.4</i>	277 <i>5.1</i>	
Single ventricle	7 <i>0.3</i>	7 <i>0.9</i>	6 <i>0.4</i>	2 <i>0.4</i>	0 <i>0.0</i>	23 <i>0.4</i>	
Small intestinal atresia/stenosis	69 <i>2.8</i>	34 <i>4.2</i>	46 <i>3.2</i>	11 <i>2.0</i>	0 <i>0.0</i>	163 <i>3.0</i>	
Spina bifida without anencephalus	58 <i>2.4</i>	24 <i>2.9</i>	60 <i>4.2</i>	9 <i>1.7</i>	0 <i>0.0</i>	158 <i>2.9</i>	
Tetralogy of Fallot	73 <i>3.0</i>	46 <i>5.7</i>	48 <i>3.4</i>	20 <i>3.7</i>	0 <i>0.0</i>	202 <i>3.8</i>	
Total anomalous pulmonary venous connection	11 <i>0.4</i>	10 <i>1.2</i>	16 <i>1.1</i>	1 <i>0.2</i>	0 <i>0.0</i>	39 <i>0.7</i>	
Transposition of the great arteries (TGA)	40 <i>1.6</i>	22 <i>2.7</i>	27 <i>1.9</i>	8 <i>1.5</i>	0 <i>0.0</i>	102 <i>1.9</i>	
Dextro-transposition of great arteries (d-TGA)	35 <i>1.4</i>	17 <i>2.1</i>	20 <i>1.4</i>	6 <i>1.1</i>	0 <i>0.0</i>	82 <i>1.5</i>	
Tricuspid valve atresia and stenosis	168 <i>6.8</i>	72 <i>8.8</i>	128 <i>9.0</i>	18 <i>3.3</i>	0 <i>0.0</i>	387 <i>7.2</i>	3
Tricuspid valve atresia	168 <i>6.8</i>	72 <i>8.8</i>	128 <i>9.0</i>	18 <i>3.3</i>	0 <i>0.0</i>	387 <i>7.2</i>	
Trisomy 13	5 <i>0.2</i>	5 <i>0.6</i>	9 <i>0.6</i>	0 <i>0.0</i>	0 <i>0.0</i>	21 <i>0.4</i>	
Trisomy 18	23 <i>0.9</i>	12 <i>1.5</i>	14 <i>1.0</i>	5 <i>0.9</i>	0 <i>0.0</i>	54 <i>1.0</i>	
Trisomy 21 (Down syndrome)	306 <i>12.5</i>	89 <i>10.9</i>	206 <i>14.5</i>	41 <i>7.6</i>	3 <i>52.1</i>	672 <i>12.5</i>	
Turner syndrome	16 <i>0.7</i>	1 <i>0.1</i>	8 <i>0.6</i>	1 <i>0.2</i>	0 <i>0.0</i>	27 <i>0.5</i>	
Ventricular septal defect	1489 <i>60.6</i>	471 <i>57.9</i>	905 <i>63.9</i>	277 <i>51.0</i>	4 <i>69.4</i>	3208 <i>59.6</i>	4
<b>Total live births</b>	<b>245655</b>	<b>81395</b>	<b>141629</b>	<b>54285</b>	<b>576</b>	<b>538066</b>	
<b>Male live births</b>	<b>125748</b>	<b>41496</b>	<b>72160</b>	<b>27873</b>	<b>317</b>	<b>275103</b>	

\*Hypospadias prevalence per 10,000 male live births

\*\*Total includes unknown and other maternal race/ethnicity

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

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

\*\*Total includes unknown maternal age

**Notes**

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

**General comments**

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

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

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

\*Hypospadias prevalence per 10,000 male live births

\*\*Total includes unknown and other maternal race/ethnicity

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

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

\*\*Total includes unknown maternal age

**Notes**

1. Medical records are reviewed to confirm this diagnosis

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

**General comments**

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

-Unspecified non-livebirths include terminations plus spontaneous abortions (not separated)

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

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

**New York**  
**Birth Defects Counts and Prevalence 2007 - 2011 (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		
Limb deficiencies (reduction defects)	190 <i>3.2</i>	73 <i>3.7</i>	81 <i>3.1</i>	15 <i>1.1</i>	1 <i>4.4</i>	371 <i>3.1</i>	
Omphalocele	64 <i>1.1</i>	29 <i>1.5</i>	30 <i>1.1</i>	11 <i>0.8</i>	3 <i>13.1</i>	138 <i>1.1</i>	
Pulmonary valve atresia and stenosis	442 <i>7.5</i>	217 <i>11.1</i>	219 <i>8.3</i>	103 <i>7.5</i>	1 <i>4.4</i>	1005 <i>8.3</i>	
Pulmonary valve atresia	53 <i>0.9</i>	21 <i>1.1</i>	27 <i>1.0</i>	15 <i>1.1</i>	0 <i>0.0</i>	119 <i>1.0</i>	
Rectal and large intestinal atresia/stenosis	234 <i>4.0</i>	63 <i>3.2</i>	125 <i>4.7</i>	55 <i>4.0</i>	1 <i>4.4</i>	491 <i>4.0</i>	
Renal agenesis/hypoplasia	309 <i>5.2</i>	79 <i>4.0</i>	114 <i>4.3</i>	42 <i>3.1</i>	3 <i>13.1</i>	565 <i>4.6</i>	
Single ventricle	56 <i>1.0</i>	22 <i>1.1</i>	26 <i>1.0</i>	12 <i>0.9</i>	0 <i>0.0</i>	116 <i>1.0</i>	
Small intestinal atresia/stenosis	250 <i>4.2</i>	106 <i>5.4</i>	108 <i>4.1</i>	54 <i>3.9</i>	1 <i>4.4</i>	530 <i>4.4</i>	
Spina bifida without anencephalus	140 <i>2.4</i>	39 <i>2.0</i>	67 <i>2.5</i>	23 <i>1.7</i>	0 <i>0.0</i>	274 <i>2.3</i>	
Tetralogy of Fallot	282 <i>4.8</i>	99 <i>5.1</i>	105 <i>4.0</i>	75 <i>5.5</i>	1 <i>4.4</i>	580 <i>4.8</i>	
Total anomalous pulmonary venous connection	55 <i>0.9</i>	32 <i>1.6</i>	46 <i>1.7</i>	17 <i>1.2</i>	0 <i>0.0</i>	152 <i>1.3</i>	
Transposition of the great arteries (TGA)	162 <i>2.8</i>	35 <i>1.8</i>	60 <i>2.3</i>	37 <i>2.7</i>	0 <i>0.0</i>	302 <i>2.5</i>	
Dextro-transposition of great arteries (d-TGA)	154 <i>2.6</i>	35 <i>1.8</i>	60 <i>2.3</i>	35 <i>2.5</i>	0 <i>0.0</i>	292 <i>2.4</i>	
Tricuspid valve atresia and stenosis	54 <i>0.9</i>	39 <i>2.0</i>	36 <i>1.4</i>	20 <i>1.5</i>	0 <i>0.0</i>	155 <i>1.3</i>	
Tricuspid valve atresia	26 <i>0.4</i>	14 <i>0.7</i>	15 <i>0.6</i>	13 <i>0.9</i>	0 <i>0.0</i>	69 <i>0.6</i>	
Trisomy 13	34 <i>0.6</i>	19 <i>1.0</i>	18 <i>0.7</i>	6 <i>0.4</i>	0 <i>0.0</i>	79 <i>0.6</i>	
Trisomy 18	57 <i>1.0</i>	40 <i>2.0</i>	41 <i>1.5</i>	10 <i>0.7</i>	0 <i>0.0</i>	151 <i>1.2</i>	
Trisomy 21 (Down syndrome)	719 <i>12.2</i>	261 <i>13.3</i>	358 <i>13.5</i>	118 <i>8.6</i>	1 <i>4.4</i>	1489 <i>12.3</i>	
Turner syndrome	51 <i>0.9</i>	12 <i>0.6</i>	24 <i>0.9</i>	9 <i>0.7</i>	0 <i>0.0</i>	100 <i>0.8</i>	
Ventricular septal defect	2840 <i>48.3</i>	828 <i>42.3</i>	1267 <i>47.8</i>	561 <i>40.8</i>	10 <i>43.7</i>	5625 <i>46.3</i>	
<b>Total live births</b>	<b>588599</b>	<b>195619</b>	<b>265201</b>	<b>137501</b>	<b>2287</b>	<b>1215430</b>	
<b>Male live births</b>	<b>302444</b>	<b>99566</b>	<b>134978</b>	<b>70942</b>	<b>1143</b>	<b>622414</b>	

\*Hypospadias prevalence per 10,000 male live births

\*\*Total includes unknown and other maternal race/ethnicity

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

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

\*\*Total includes unknown maternal age

## North Carolina

### Birth Defects Counts and Prevalence 2007 - 2011 (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	93 <i>2.7</i>	27 <i>1.8</i>	37 <i>3.7</i>	5 <i>2.5</i>	4 <i>4.6</i>	184 <i>2.9</i>	
Anophthalmia/microphthalmia	57 <i>1.6</i>	31 <i>2.1</i>	20 <i>2.0</i>	5 <i>2.5</i>	1 <i>1.2</i>	114 <i>1.8</i>	
Anotia/microtia	45 <i>1.3</i>	13 <i>0.9</i>	39 <i>3.9</i>	5 <i>2.5</i>	6 <i>6.9</i>	109 <i>1.7</i>	
Aortic valve stenosis	96 <i>2.7</i>	31 <i>2.1</i>	19 <i>1.9</i>	2 <i>1.0</i>	2 <i>2.3</i>	150 <i>2.4</i>	
Atrial septal defect	1699 <i>48.4</i>	914 <i>61.2</i>	497 <i>49.3</i>	76 <i>37.4</i>	68 <i>78.3</i>	3263 <i>51.7</i>	
Atrioventricular septal defect (Endocardial cushion defect)	231 <i>6.6</i>	103 <i>6.9</i>	65 <i>6.4</i>	9 <i>4.4</i>	8 <i>9.2</i>	422 <i>6.7</i>	
Biliary atresia	21 <i>0.6</i>	15 <i>1.0</i>	9 <i>0.9</i>	1 <i>0.5</i>	1 <i>1.2</i>	47 <i>0.7</i>	
Bladder exstrophy	9 <i>0.3</i>	10 <i>0.7</i>	3 <i>0.3</i>	0 <i>0.0</i>	0 <i>0.0</i>	22 <i>0.3</i>	
Choanal atresia	50 <i>1.4</i>	19 <i>1.3</i>	22 <i>2.2</i>	3 <i>1.5</i>	1 <i>1.2</i>	95 <i>1.5</i>	
Cleft lip alone	132 <i>3.8</i>	45 <i>3.0</i>	23 <i>2.3</i>	5 <i>2.5</i>	6 <i>6.9</i>	213 <i>3.4</i>	
Cleft lip with cleft palate	216 <i>6.2</i>	62 <i>4.2</i>	64 <i>6.3</i>	14 <i>6.9</i>	9 <i>10.4</i>	365 <i>5.8</i>	
Cleft palate alone	268 <i>7.6</i>	57 <i>3.8</i>	51 <i>5.1</i>	15 <i>7.4</i>	5 <i>5.8</i>	398 <i>6.3</i>	
Cloacal exstrophy	12 <i>0.3</i>	3 <i>0.2</i>	5 <i>0.5</i>	0 <i>0.0</i>	0 <i>0.0</i>	20 <i>0.3</i>	
Clubfoot	747 <i>21.3</i>	275 <i>18.4</i>	196 <i>19.4</i>	30 <i>14.8</i>	11 <i>12.7</i>	1265 <i>20.0</i>	
Coarctation of the aorta	206 <i>5.9</i>	61 <i>4.1</i>	42 <i>4.2</i>	11 <i>5.4</i>	3 <i>3.5</i>	324 <i>5.1</i>	
Common truncus (truncus arteriosus)	28 <i>0.8</i>	11 <i>0.7</i>	8 <i>0.8</i>	2 <i>1.0</i>	0 <i>0.0</i>	50 <i>0.8</i>	
Congenital cataract	34 <i>1.0</i>	28 <i>1.9</i>	8 <i>0.8</i>	3 <i>1.5</i>	1 <i>1.2</i>	74 <i>1.2</i>	
Congenital posterior urethral valves	99 <i>2.8</i>	67 <i>4.5</i>	17 <i>1.7</i>	3 <i>1.5</i>	3 <i>3.5</i>	190 <i>3.0</i>	
Craniosynostosis	275 <i>7.8</i>	50 <i>3.3</i>	47 <i>4.7</i>	4 <i>2.0</i>	4 <i>4.6</i>	381 <i>6.0</i>	
Diaphragmatic hernia	109 <i>3.1</i>	25 <i>1.7</i>	28 <i>2.8</i>	7 <i>3.4</i>	3 <i>3.5</i>	175 <i>2.8</i>	
Double outlet right ventricle	72 <i>2.1</i>	20 <i>1.3</i>	17 <i>1.7</i>	0 <i>0.0</i>	2 <i>2.3</i>	111 <i>1.8</i>	
Ebstein anomaly	27 <i>0.8</i>	11 <i>0.7</i>	10 <i>1.0</i>	4 <i>2.0</i>	1 <i>1.2</i>	53 <i>0.8</i>	
Encephalocele	36 <i>1.0</i>	21 <i>1.4</i>	16 <i>1.6</i>	2 <i>1.0</i>	1 <i>1.2</i>	78 <i>1.2</i>	
Esophageal atresia/tracheoesophageal fistula	97 <i>2.8</i>	29 <i>1.9</i>	17 <i>1.7</i>	2 <i>1.0</i>	2 <i>2.3</i>	147 <i>2.3</i>	
Gastroschisis	162 <i>4.6</i>	62 <i>4.2</i>	44 <i>4.4</i>	5 <i>2.5</i>	8 <i>9.2</i>	284 <i>4.5</i>	
Holoprosencephaly	35 <i>1.0</i>	27 <i>1.8</i>	16 <i>1.6</i>	2 <i>1.0</i>	4 <i>4.6</i>	86 <i>1.4</i>	
Hypoplastic left heart syndrome	90 <i>2.6</i>	36 <i>2.4</i>	27 <i>2.7</i>	5 <i>2.5</i>	0 <i>0.0</i>	160 <i>2.5</i>	
Hypospadias*	1193 <i>66.2</i>	393 <i>51.7</i>	128 <i>24.8</i>	57 <i>54.0</i>	31 <i>70.6</i>	1805 <i>55.9</i>	
Interrupted aortic arch	21 <i>0.6</i>	13 <i>0.9</i>	9 <i>0.9</i>	0 <i>0.0</i>	1 <i>1.2</i>	44 <i>0.7</i>	
Limb deficiencies (reduction defects)	176 <i>5.0</i>	88 <i>5.9</i>	48 <i>4.8</i>	9 <i>4.4</i>	11 <i>12.7</i>	333 <i>5.3</i>	

**North Carolina**  
**Birth Defects Counts and Prevalence 2007 - 2011 (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	77 <i>2.2</i>	40 <i>2.7</i>	24 <i>2.4</i>	6 <i>3.0</i>	1 <i>1.2</i>	150 <i>2.4</i>	
Pulmonary valve atresia and stenosis	273 <i>7.8</i>	135 <i>9.0</i>	79 <i>7.8</i>	16 <i>7.9</i>	8 <i>9.2</i>	513 <i>8.1</i>	
Pulmonary valve atresia	51 <i>1.5</i>	31 <i>2.1</i>	12 <i>1.2</i>	7 <i>3.4</i>	2 <i>2.3</i>	103 <i>1.6</i>	
Rectal and large intestinal atresia/stenosis	135 <i>3.8</i>	55 <i>3.7</i>	58 <i>5.8</i>	4 <i>2.0</i>	4 <i>4.6</i>	258 <i>4.1</i>	
Renal agenesis/hypoplasia	247 <i>7.0</i>	104 <i>7.0</i>	65 <i>6.4</i>	9 <i>4.4</i>	8 <i>9.2</i>	436 <i>6.9</i>	
Single ventricle	25 <i>0.7</i>	15 <i>1.0</i>	17 <i>1.7</i>	1 <i>0.5</i>	0 <i>0.0</i>	58 <i>0.9</i>	
Small intestinal atresia/stenosis	126 <i>3.6</i>	50 <i>3.3</i>	39 <i>3.9</i>	6 <i>3.0</i>	1 <i>1.2</i>	222 <i>3.5</i>	
Spina bifida without anencephalus	147 <i>4.2</i>	45 <i>3.0</i>	50 <i>5.0</i>	7 <i>3.4</i>	2 <i>2.3</i>	255 <i>4.0</i>	
Tetralogy of Fallot	140 <i>4.0</i>	76 <i>5.1</i>	32 <i>3.2</i>	13 <i>6.4</i>	9 <i>10.4</i>	272 <i>4.3</i>	
Total anomalous pulmonary venous connection	39 <i>1.1</i>	12 <i>0.8</i>	16 <i>1.6</i>	4 <i>2.0</i>	2 <i>2.3</i>	73 <i>1.2</i>	
Transposition of the great arteries (TGA)	121 <i>3.5</i>	45 <i>3.0</i>	25 <i>2.5</i>	8 <i>3.9</i>	3 <i>3.5</i>	203 <i>3.2</i>	
Dextro-transposition of great arteries (d-TGA)	87 <i>2.5</i>	27 <i>1.8</i>	14 <i>1.4</i>	6 <i>3.0</i>	3 <i>3.5</i>	137 <i>2.2</i>	
Tricuspid valve atresia and stenosis	70 <i>2.0</i>	36 <i>2.4</i>	21 <i>2.1</i>	2 <i>1.0</i>	7 <i>8.1</i>	136 <i>2.2</i>	
Tricuspid valve atresia	55 <i>1.6</i>	33 <i>2.2</i>	18 <i>1.8</i>	2 <i>1.0</i>	6 <i>6.9</i>	114 <i>1.8</i>	
Trisomy 13	39 <i>1.1</i>	31 <i>2.1</i>	12 <i>1.2</i>	1 <i>0.5</i>	0 <i>0.0</i>	85 <i>1.3</i>	
Trisomy 18	100 <i>2.9</i>	40 <i>2.7</i>	32 <i>3.2</i>	8 <i>3.9</i>	2 <i>2.3</i>	190 <i>3.0</i>	
Trisomy 21 (Down syndrome)	451 <i>12.9</i>	143 <i>9.6</i>	139 <i>13.8</i>	21 <i>10.3</i>	19 <i>21.9</i>	792 <i>12.5</i>	
Turner syndrome	53 <i>1.5</i>	10 <i>0.7</i>	12 <i>1.2</i>	0 <i>0.0</i>	0 <i>0.0</i>	78 <i>1.2</i>	
Ventricular septal defect	1539 <i>43.9</i>	626 <i>41.9</i>	566 <i>56.1</i>	67 <i>32.9</i>	40 <i>46.1</i>	2847 <i>45.1</i>	
<b>Total live births</b>	<b>350686</b>	<b>149337</b>	<b>100827</b>	<b>20334</b>	<b>8683</b>	<b>631134</b>	
<b>Male live births</b>	<b>180097</b>	<b>75953</b>	<b>51511</b>	<b>10556</b>	<b>4391</b>	<b>323148</b>	

\*Hypospadias prevalence per 10,000 male live births

\*\*Total includes unknown and other maternal race/ethnicity

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

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

\*\*Total includes unknown maternal age

**General comments**

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

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

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

**North Dakota**  
**Birth Defects Counts and Prevalence 2007 - 2011 (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		
Tetralogy of Fallot	20	0	0	0	7	27	
	<i>5.5</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>14.4</i>	<i>6.0</i>	
Total anomalous pulmonary venous connection	0	0	0	0	1	1	
	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>2.1</i>	<i>0.2</i>	
Transposition of the great arteries (TGA)	16	0	0	0	2	18	
	<i>4.4</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>4.1</i>	<i>4.0</i>	
Tricuspid valve atresia and stenosis	3	0	0	0	1	4	
	<i>0.8</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>2.1</i>	<i>0.9</i>	
Tricuspid valve atresia	3	0	0	0	1	4	
	<i>0.8</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>2.1</i>	<i>0.9</i>	
Trisomy 18	5	1	0	0	0	6	
	<i>1.4</i>	<i>12.2</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>1.3</i>	
Trisomy 21 (Down syndrome)	37	1	3	2	1	45	
	<i>10.2</i>	<i>12.2</i>	<i>17.7</i>	<i>31.7</i>	<i>2.1</i>	<i>10.0</i>	
Ventricular septal defect	129	3	6	2	40	182	3
	<i>35.6</i>	<i>36.7</i>	<i>35.4</i>	<i>31.7</i>	<i>82.2</i>	<i>40.4</i>	
<b>Total live births</b>	<b>36237</b>	<b>818</b>	<b>1697</b>	<b>630</b>	<b>4867</b>	<b>45045</b>	
<b>Male live births</b>	<b>18527</b>	<b>470</b>	<b>828</b>	<b>319</b>	<b>2506</b>	<b>23045</b>	

\*Hypospadias prevalence per 10,000 male live births

\*\*Total includes unknown and other maternal race/ethnicity

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

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

\*\*Total includes unknown maternal age

**Notes**

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

**General comments**

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

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

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		
Cleft lip alone	41 <i>3.6</i>	7 <i>2.8</i>	2 <i>2.9</i>	2 <i>6.4</i>	0 <i>0.0</i>	52 <i>3.5</i>	1
Cleft lip with cleft palate	77 <i>6.8</i>	7 <i>2.8</i>	3 <i>4.4</i>	1 <i>3.2</i>	0 <i>0.0</i>	88 <i>5.9</i>	1
Cleft palate alone	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
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>	2
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>	3
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>	3
Trisomy 21 (Down syndrome)	127 <i>11.2</i>	28 <i>11.3</i>	8 <i>11.6</i>	3 <i>9.6</i>	1 <i>46.3</i>	167 <i>11.2</i>	3
<b>Total live births</b>	<b>113542</b>	<b>24818</b>	<b>6887</b>	<b>3129</b>	<b>216</b>	<b>148592</b>	

\*Hypospadias prevalence per 10,000 male live births

\*\*Total includes unknown and other maternal race/ethnicity

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

Defect	Maternal Age (years)		Total	Notes
	Less than 35	35+		
Trisomy 13	9 <i>0.7</i>	3 <i>1.7</i>	12 <i>0.8</i>	3
Trisomy 18	7 <i>0.5</i>	16 <i>9.2</i>	23 <i>1.5</i>	3
Trisomy 21 (Down syndrome)	97 <i>7.4</i>	70 <i>40.2</i>	167 <i>11.2</i>	3
<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 July 5, 2011.
- 3.Data pulled on August 23, 2011.

**General comments**

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

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

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

**Oklahoma**  
**Birth Defects Counts and Prevalence 2007 - 2011 (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	43 <i>2.5</i>	7 <i>2.9</i>	8 <i>2.1</i>	0 <i>0.0</i>	4 <i>1.3</i>	62 <i>2.3</i>	
Pulmonary valve atresia and stenosis	61 <i>3.6</i>	6 <i>2.4</i>	9 <i>2.4</i>	0 <i>0.0</i>	11 <i>3.6</i>	91 <i>3.4</i>	
Pulmonary valve atresia	57 <i>3.3</i>	6 <i>2.4</i>	7 <i>1.9</i>	0 <i>0.0</i>	11 <i>3.6</i>	83 <i>3.1</i>	
Rectal and large intestinal atresia/stenosis	108 <i>6.3</i>	12 <i>4.9</i>	24 <i>6.4</i>	4 <i>6.2</i>	15 <i>5.0</i>	165 <i>6.1</i>	
Renal agenesis/hypoplasia	99 <i>5.8</i>	8 <i>3.3</i>	17 <i>4.5</i>	1 <i>1.6</i>	16 <i>5.3</i>	144 <i>5.3</i>	
Single ventricle	13 <i>0.8</i>	1 <i>0.4</i>	3 <i>0.8</i>	0 <i>0.0</i>	3 <i>1.0</i>	22 <i>0.8</i>	
Small intestinal atresia/stenosis	68 <i>4.0</i>	12 <i>4.9</i>	12 <i>3.2</i>	3 <i>4.7</i>	13 <i>4.3</i>	109 <i>4.0</i>	
Spina bifida without anencephalus	70 <i>4.1</i>	7 <i>2.9</i>	14 <i>3.7</i>	0 <i>0.0</i>	10 <i>3.3</i>	103 <i>3.8</i>	
Tetralogy of Fallot	82 <i>4.8</i>	16 <i>6.5</i>	15 <i>4.0</i>	2 <i>3.1</i>	14 <i>4.6</i>	130 <i>4.8</i>	
Total anomalous pulmonary venous connection	23 <i>1.3</i>	2 <i>0.8</i>	6 <i>1.6</i>	1 <i>1.6</i>	9 <i>3.0</i>	41 <i>1.5</i>	
Transposition of the great arteries (TGA)	65 <i>3.8</i>	5 <i>2.0</i>	12 <i>3.2</i>	0 <i>0.0</i>	8 <i>2.7</i>	94 <i>3.5</i>	
Dextro-transposition of great arteries (d-TGA)	52 <i>3.0</i>	4 <i>1.6</i>	4 <i>1.1</i>	0 <i>0.0</i>	7 <i>2.3</i>	69 <i>2.6</i>	
Tricuspid valve atresia and stenosis	22 <i>1.3</i>	4 <i>1.6</i>	6 <i>1.6</i>	0 <i>0.0</i>	2 <i>0.7</i>	35 <i>1.3</i>	
Tricuspid valve atresia	22 <i>1.3</i>	4 <i>1.6</i>	6 <i>1.6</i>	0 <i>0.0</i>	2 <i>0.7</i>	35 <i>1.3</i>	
Trisomy 13	20 <i>1.2</i>	2 <i>0.8</i>	3 <i>0.8</i>	0 <i>0.0</i>	3 <i>1.0</i>	28 <i>1.0</i>	
Trisomy 18	37 <i>2.2</i>	7 <i>2.9</i>	4 <i>1.1</i>	1 <i>1.6</i>	8 <i>2.7</i>	57 <i>2.1</i>	
Trisomy 21 (Down syndrome)	221 <i>13.0</i>	26 <i>10.6</i>	67 <i>17.8</i>	7 <i>10.9</i>	30 <i>9.9</i>	354 <i>13.1</i>	
Turner syndrome	20 <i>1.2</i>	1 <i>0.4</i>	4 <i>1.1</i>	0 <i>0.0</i>	2 <i>0.7</i>	27 <i>1.0</i>	
Ventricular septal defect	960 <i>56.3</i>	138 <i>56.3</i>	183 <i>48.6</i>	21 <i>32.7</i>	150 <i>49.7</i>	1469 <i>54.5</i>	
<b>Total live births</b>	<b>170598</b>	<b>24526</b>	<b>37651</b>	<b>6418</b>	<b>30156</b>	<b>269685</b>	
<b>Male live births</b>	<b>87326</b>	<b>12450</b>	<b>19174</b>	<b>3275</b>	<b>15337</b>	<b>137727</b>	

\*Hypospadias prevalence per 10,000 male live births

\*\*Total includes unknown and other maternal race/ethnicity

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

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

\*\*Total includes unknown maternal age

**General comments**

-Currently do not collect cloacal exstrophy.

-Fetal deaths are defined as baby born dead (without a heart rate), at or after 20th gestational week. Includes babies that died during labor.

-Oklahoma does not use the unspecified non-live birth category.

-Terminations are defined as fetus terminated by parental choice prior to 37 weeks. When labor is induced to deliver a fetus who is dead prior to the onset of labor it is not considered an elective termination.

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

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

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

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

\*Hypospadias prevalence per 10,000 male live births

\*\*Total includes unknown and other maternal race/ethnicity

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

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

\*\*Total includes unknown maternal age

**Notes**

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

**General comments**

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

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

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

**Rhode Island**  
**Birth Defects Counts and Prevalence 2007 - 2011 (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	10 <i>2.9</i>	3 <i>6.4</i>	8 <i>6.8</i>	1 <i>4.6</i>	0 <i>0.0</i>	22 <i>3.9</i>	
Renal agenesis/hypoplasia	5 <i>1.4</i>	2 <i>4.3</i>	2 <i>1.7</i>	0 <i>0.0</i>	0 <i>0.0</i>	10 <i>1.8</i>	
Single ventricle	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>	
Small intestinal atresia/stenosis	15 <i>4.3</i>	3 <i>6.4</i>	10 <i>8.4</i>	1 <i>4.6</i>	0 <i>0.0</i>	29 <i>5.2</i>	
Spina bifida without anencephalus	13 <i>3.7</i>	3 <i>6.4</i>	6 <i>5.1</i>	0 <i>0.0</i>	0 <i>0.0</i>	24 <i>4.3</i>	
Tetralogy of Fallot	11 <i>3.2</i>	2 <i>4.3</i>	4 <i>3.4</i>	0 <i>0.0</i>	0 <i>0.0</i>	19 <i>3.4</i>	
Total anomalous pulmonary venous connection	1 <i>0.3</i>	0 <i>0.0</i>	2 <i>1.7</i>	0 <i>0.0</i>	0 <i>0.0</i>	3 <i>0.5</i>	
Transposition of the great arteries (TGA)	8 <i>2.3</i>	0 <i>0.0</i>	5 <i>4.2</i>	0 <i>0.0</i>	0 <i>0.0</i>	16 <i>2.8</i>	
Dextro-transposition of great arteries (d-TGA)	3 <i>0.9</i>	0 <i>0.0</i>	4 <i>3.4</i>	0 <i>0.0</i>	0 <i>0.0</i>	9 <i>1.6</i>	
Tricuspid valve atresia and stenosis	0 <i>0.0</i>	0 <i>0.0</i>	1 <i>0.8</i>	0 <i>0.0</i>	1 <i>21.6</i>	2 <i>0.4</i>	
Tricuspid valve atresia	0 <i>0.0</i>	0 <i>0.0</i>	1 <i>0.8</i>	0 <i>0.0</i>	1 <i>21.6</i>	2 <i>0.4</i>	
Trisomy 13	4 <i>1.1</i>	2 <i>4.3</i>	3 <i>2.5</i>	0 <i>0.0</i>	0 <i>0.0</i>	11 <i>2.0</i>	
Trisomy 18	12 <i>3.4</i>	2 <i>4.3</i>	2 <i>1.7</i>	0 <i>0.0</i>	0 <i>0.0</i>	20 <i>3.6</i>	
Trisomy 21 (Down syndrome)	52 <i>14.9</i>	7 <i>14.9</i>	15 <i>12.7</i>	2 <i>9.2</i>	0 <i>0.0</i>	89 <i>15.8</i>	
Ventricular septal defect	150 <i>43.1</i>	23 <i>49.0</i>	47 <i>39.7</i>	11 <i>50.9</i>	1 <i>21.6</i>	236 <i>42.0</i>	1
<b>Total live births</b>	<b>34837</b>	<b>4695</b>	<b>11850</b>	<b>2163</b>	<b>462</b>	<b>56195</b>	
<b>Male live births</b>	<b>17940</b>	<b>2380</b>	<b>6073</b>	<b>1044</b>	<b>246</b>	<b>28759</b>	

\*Hypospadias prevalence per 10,000 male live births

\*\*Total includes unknown and other maternal race/ethnicity

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

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

\*\*Total includes unknown maternal age

**Notes**

1. Probable cases included.

**General comments**

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

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

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

**South Carolina**  
**Birth Defects Counts and Prevalence 2007 - 2011 (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		
Tricuspid valve atresia and stenosis	14 <i>0.8</i>	13 <i>1.3</i>	4 <i>1.4</i>	1 <i>2.0</i>	0 <i>0.0</i>	33 <i>1.1</i>	
Trisomy 13	12 <i>0.7</i>	12 <i>1.2</i>	3 <i>1.1</i>	1 <i>2.0</i>	0 <i>0.0</i>	29 <i>1.0</i>	2
Trisomy 18	32 <i>1.9</i>	18 <i>1.8</i>	6 <i>2.1</i>	0 <i>0.0</i>	0 <i>0.0</i>	56 <i>1.8</i>	3
Trisomy 21 (Down syndrome)	149 <i>8.7</i>	64 <i>6.5</i>	29 <i>10.3</i>	6 <i>11.7</i>	0 <i>0.0</i>	253 <i>8.3</i>	4
Ventricular septal defect	603 <i>35.2</i>	333 <i>33.7</i>	146 <i>52.0</i>	16 <i>31.2</i>	2 <i>15.6</i>	1111 <i>36.4</i>	5
<b>Total live births</b>	<b>171172</b>	<b>98949</b>	<b>28058</b>	<b>5128</b>	<b>1283</b>	<b>305245</b>	

\*Hypospadias prevalence per 10,000 male live births

\*\*Total includes unknown and other maternal race/ethnicity

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

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

\*\*Total includes unknown maternal age

**Notes**

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

**General comments**

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

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

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

**Tennessee**  
**Birth Defects Counts and Prevalence 2007 - 2011 (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		
Dextro-transposition of great arteries (d-TGA)	81 <i>2.9</i>	19 <i>2.2</i>	9 <i>2.4</i>	3 <i>3.6</i>	0 <i>0.0</i>	112 <i>2.7</i>	
Tricuspid valve atresia and stenosis	44 <i>1.6</i>	12 <i>1.4</i>	2 <i>0.5</i>	0 <i>0.0</i>	0 <i>0.0</i>	59 <i>1.4</i>	4
Trisomy 13	13 <i>0.5</i>	12 <i>1.4</i>	2 <i>0.5</i>	1 <i>1.2</i>	0 <i>0.0</i>	30 <i>0.7</i>	
Trisomy 18	50 <i>1.8</i>	13 <i>1.5</i>	9 <i>2.4</i>	1 <i>1.2</i>	0 <i>0.0</i>	73 <i>1.8</i>	
Trisomy 21 (Down syndrome)	390 <i>14.1</i>	116 <i>13.5</i>	66 <i>17.4</i>	14 <i>16.9</i>	0 <i>0.0</i>	588 <i>14.2</i>	
Ventricular septal defect	1327 <i>47.9</i>	411 <i>47.8</i>	201 <i>53.1</i>	32 <i>38.5</i>	2 <i>32.3</i>	1982 <i>48.0</i>	5
<b>Total live births</b>	<b>277192</b>	<b>85941</b>	<b>37857</b>	<b>8307</b>	<b>619</b>	<b>413057</b>	
<b>Male live births</b>	<b>141895</b>	<b>43839</b>	<b>19368</b>	<b>4262</b>	<b>295</b>	<b>211216</b>	

\*Hypospadias prevalence per 10,000 male live births

\*\*Total includes unknown and other maternal race/ethnicity

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

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

\*\*Total includes unknown maternal age

**Notes**

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

**General comments**

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

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

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

**Texas**  
**Birth Defects Counts and Prevalence 2007 - 2009 (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		
Total anomalous pulmonary venous connection	55 <i>1.3</i>	15 <i>1.1</i>	131 <i>2.2</i>	7 <i>1.5</i>	1 <i>4.6</i>	211 <i>1.7</i>	
Transposition of the great arteries (TGA)	178 <i>4.3</i>	38 <i>2.8</i>	214 <i>3.5</i>	15 <i>3.3</i>	1 <i>4.6</i>	447 <i>3.7</i>	1
Dextro-transposition of great arteries (d-TGA)	162 <i>3.9</i>	39 <i>2.8</i>	202 <i>3.3</i>	15 <i>3.3</i>	1 <i>4.6</i>	421 <i>3.5</i>	
Tricuspid valve atresia and stenosis	73 <i>1.8</i>	33 <i>2.4</i>	112 <i>1.8</i>	7 <i>1.5</i>	0 <i>0.0</i>	228 <i>1.9</i>	
Tricuspid valve atresia	31 <i>0.8</i>	15 <i>1.1</i>	44 <i>0.7</i>	3 <i>0.7</i>	0 <i>0.0</i>	94 <i>0.8</i>	
Trisomy 13	53 <i>1.3</i>	17 <i>1.2</i>	71 <i>1.2</i>	7 <i>1.5</i>	0 <i>0.0</i>	149 <i>1.2</i>	
Trisomy 18	105 <i>2.5</i>	35 <i>2.5</i>	175 <i>2.9</i>	18 <i>3.9</i>	0 <i>0.0</i>	338 <i>2.8</i>	
Trisomy 21 (Down syndrome)	527 <i>12.8</i>	135 <i>9.8</i>	909 <i>14.9</i>	58 <i>12.7</i>	3 <i>13.8</i>	1650 <i>13.6</i>	
Ventricular septal defect	2418 <i>58.5</i>	663 <i>48.2</i>	4457 <i>73.3</i>	218 <i>47.6</i>	11 <i>50.6</i>	7807 <i>64.3</i>	2
<b>Total live births</b>	<b>413073</b>	<b>137525</b>	<b>608343</b>	<b>45799</b>	<b>2174</b>	<b>1214294</b>	
<b>Male live births</b>	<b>212117</b>	<b>70030</b>	<b>310052</b>	<b>23517</b>	<b>1120</b>	<b>620606</b>	

\*Hypospadias prevalence per 10,000 male live births

\*\*Total includes unknown and other maternal race/ethnicity

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

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

\*\*Total includes unknown maternal age

**Notes**

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

**General comments**

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

## Utah

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

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

**Utah****Birth Defects Counts and Prevalence 2007 - 2011 (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	61 <i>3.0</i>	2 <i>7.5</i>	14 <i>3.3</i>	2 <i>2.1</i>	0 <i>0.0</i>	80 <i>3.0</i>	
Pulmonary valve atresia and stenosis	292 <i>14.2</i>	2 <i>7.5</i>	53 <i>12.3</i>	19 <i>20.3</i>	7 <i>20.4</i>	375 <i>14.0</i>	
Pulmonary valve atresia	21 <i>1.0</i>	0 <i>0.0</i>	4 <i>0.9</i>	4 <i>4.3</i>	0 <i>0.0</i>	30 <i>1.1</i>	
Rectal and large intestinal atresia/stenosis	73 <i>3.5</i>	1 <i>3.8</i>	16 <i>3.7</i>	8 <i>8.5</i>	1 <i>2.9</i>	100 <i>3.7</i>	
Renal agenesis/hypoplasia	67 <i>3.3</i>	1 <i>3.8</i>	16 <i>3.7</i>	6 <i>6.4</i>	1 <i>2.9</i>	92 <i>3.4</i>	
Single ventricle	9 <i>0.4</i>	0 <i>0.0</i>	3 <i>0.7</i>	0 <i>0.0</i>	0 <i>0.0</i>	12 <i>0.4</i>	
Small intestinal atresia/stenosis	32 <i>1.6</i>	1 <i>3.8</i>	4 <i>0.9</i>	3 <i>3.2</i>	0 <i>0.0</i>	40 <i>1.5</i>	
Spina bifida without anencephalus	75 <i>3.6</i>	2 <i>7.5</i>	14 <i>3.3</i>	2 <i>2.1</i>	2 <i>5.8</i>	95 <i>3.5</i>	
Tetralogy of Fallot	54 <i>2.6</i>	1 <i>3.8</i>	17 <i>3.9</i>	8 <i>8.5</i>	3 <i>8.7</i>	84 <i>3.1</i>	
Total anomalous pulmonary venous connection	23 <i>1.1</i>	0 <i>0.0</i>	11 <i>2.6</i>	2 <i>2.1</i>	3 <i>8.7</i>	39 <i>1.5</i>	
Transposition of the great arteries (TGA)	94 <i>4.6</i>	1 <i>3.8</i>	19 <i>4.4</i>	4 <i>4.3</i>	1 <i>2.9</i>	120 <i>4.5</i>	
Dextro-transposition of great arteries (d-TGA)	48 <i>2.3</i>	0 <i>0.0</i>	7 <i>1.6</i>	2 <i>2.1</i>	0 <i>0.0</i>	57 <i>2.1</i>	
Tricuspid valve atresia and stenosis	25 <i>1.2</i>	1 <i>3.8</i>	7 <i>1.6</i>	3 <i>3.2</i>	0 <i>0.0</i>	36 <i>1.3</i>	
Tricuspid valve atresia	25 <i>1.2</i>	1 <i>3.8</i>	7 <i>1.6</i>	3 <i>3.2</i>	0 <i>0.0</i>	36 <i>1.3</i>	
Trisomy 13	28 <i>1.4</i>	1 <i>3.8</i>	16 <i>3.7</i>	2 <i>2.1</i>	0 <i>0.0</i>	47 <i>1.8</i>	
Trisomy 18	71 <i>3.5</i>	3 <i>11.3</i>	16 <i>3.7</i>	1 <i>1.1</i>	2 <i>5.8</i>	95 <i>3.5</i>	
Trisomy 21 (Down syndrome)	288 <i>14.0</i>	4 <i>15.0</i>	86 <i>20.0</i>	18 <i>19.2</i>	5 <i>14.6</i>	412 <i>15.4</i>	
Turner syndrome	49 <i>2.4</i>	0 <i>0.0</i>	10 <i>2.3</i>	0 <i>0.0</i>	2 <i>5.8</i>	63 <i>2.4</i>	
Ventricular septal defect	483 <i>23.5</i>	12 <i>45.1</i>	136 <i>31.6</i>	18 <i>19.2</i>	7 <i>20.4</i>	658 <i>24.6</i>	
<b>Total live births</b>	<b>205711</b>	<b>2662</b>	<b>43056</b>	<b>9381</b>	<b>3433</b>	<b>267825</b>	
<b>Male live births</b>	<b>105744</b>	<b>1393</b>	<b>21818</b>	<b>4896</b>	<b>1762</b>	<b>137473</b>	

\*Hypospadias prevalence per 10,000 male live births

\*\*Total includes unknown and other maternal race/ethnicity

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

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

\*\*Total includes unknown maternal age

**General comments**

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

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

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	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>1.0</i>	
Anotia/microtia	4 <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>1.6</i>	
Aortic valve stenosis	17 <i>5.8</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	17 <i>5.4</i>	
Atrial septal defect	157 <i>53.3</i>	3 <i>79.2</i>	4 <i>105.8</i>	1 <i>18.8</i>	1 <i>277.8</i>	170 <i>54.4</i>	
Atrioventricular septal defect (Endocardial cushion defect)	15 <i>5.1</i>	1 <i>26.4</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	17 <i>5.4</i>	
Bladder exstrophy	1 <i>0.3</i>	0 <i>0.0</i>	0 <i>0.0</i>	1 <i>18.8</i>	0 <i>0.0</i>	2 <i>0.6</i>	
Cleft lip alone	18 <i>6.1</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	18 <i>5.8</i>	
Cleft lip with cleft palate	14 <i>4.8</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	15 <i>4.8</i>	
Cleft palate alone	23 <i>7.8</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	23 <i>7.4</i>	
Coarctation of the aorta	25 <i>8.5</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	25 <i>8.0</i>	
Common truncus (truncus arteriosus)	0 <i>0.0</i>	0 <i>0.0</i>	1 <i>26.5</i>	0 <i>0.0</i>	0 <i>0.0</i>	1 <i>0.3</i>	
Diaphragmatic hernia	10 <i>3.4</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>	
Double outlet right ventricle	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>	5 <i>1.6</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>	
Esophageal atresia/tracheoesophageal fistula	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>2.6</i>	
Gastroschisis	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>	11 <i>3.5</i>	1
Hypoplastic left heart syndrome	10 <i>3.4</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>	
Hypospadias*	107 <i>70.3</i>	1 <i>51.5</i>	0 <i>0.0</i>	1 <i>35.8</i>	0 <i>0.0</i>	110 <i>68.2</i>	
Omphalocele	2 <i>0.7</i>	1 <i>26.4</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	3 <i>1.0</i>	
Pulmonary valve atresia and stenosis	36 <i>12.2</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	37 <i>11.8</i>	
Rectal and large intestinal atresia/stenosis	13 <i>4.4</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	13 <i>4.2</i>	
Renal agenesis/hypoplasia	17 <i>5.8</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	17 <i>5.4</i>	
Small intestinal atresia/stenosis	13 <i>4.4</i>	0 <i>0.0</i>	0 <i>0.0</i>	1 <i>18.8</i>	0 <i>0.0</i>	14 <i>4.5</i>	2
Spina bifida without anencephalus	9 <i>3.1</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	9 <i>2.9</i>	
Tetralogy of Fallot	14 <i>4.8</i>	2 <i>52.8</i>	0 <i>0.0</i>	1 <i>18.8</i>	0 <i>0.0</i>	17 <i>5.4</i>	
Transposition of the great arteries (TGA)	13 <i>4.4</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	13 <i>4.2</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>2.6</i>	
Tricuspid valve atresia and 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>0.3</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 2007 - 2011 (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	4	0	0	0	0	4	
	<i>1.4</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>1.3</i>	
Trisomy 21 (Down syndrome)	39	1	0	1	0	42	
	<i>13.2</i>	<i>26.4</i>	<i>0.0</i>	<i>18.8</i>	<i>0.0</i>	<i>13.4</i>	
Ventricular septal defect	187	3	3	2	0	197	3
	<i>63.5</i>	<i>79.2</i>	<i>79.4</i>	<i>37.6</i>	<i>0.0</i>	<i>63.0</i>	
<b>Total live births</b>	<b>29437</b>	<b>379</b>	<b>378</b>	<b>532</b>	<b>36</b>	<b>31267</b>	
<b>Male live births</b>	<b>15210</b>	<b>194</b>	<b>185</b>	<b>279</b>	<b>21</b>	<b>16136</b>	

\*Hypospadias prevalence per 10,000 male live births

\*\*Total includes unknown and other maternal race/ethnicity

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

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

\*\*Total includes unknown maternal age

**Notes**

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

**General comments**

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

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

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

**Virginia**  
**Birth Defects Counts and Prevalence 2007 - 2011 (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	17 <i>0.6</i>	11 <i>1.0</i>	3 <i>0.4</i>	3 <i>0.8</i>	0 <i>0.0</i>	34 <i>0.6</i>	2
Pulmonary valve atresia and stenosis	283 <i>9.4</i>	152 <i>13.4</i>	98 <i>14.4</i>	64 <i>17.2</i>	0 <i>0.0</i>	600 <i>11.4</i>	
Pulmonary valve atresia	30 <i>1.0</i>	16 <i>1.4</i>	7 <i>1.0</i>	6 <i>1.6</i>	0 <i>0.0</i>	59 <i>1.1</i>	
Rectal and large intestinal atresia/stenosis	119 <i>3.9</i>	40 <i>3.5</i>	36 <i>5.3</i>	10 <i>2.7</i>	1 <i>13.4</i>	208 <i>4.0</i>	
Renal agenesis/hypoplasia	99 <i>3.3</i>	48 <i>4.2</i>	20 <i>2.9</i>	7 <i>1.9</i>	0 <i>0.0</i>	177 <i>3.4</i>	
Single ventricle	37 <i>1.2</i>	15 <i>1.3</i>	4 <i>0.6</i>	1 <i>0.3</i>	0 <i>0.0</i>	57 <i>1.1</i>	
Small intestinal atresia/stenosis	111 <i>3.7</i>	49 <i>4.3</i>	29 <i>4.3</i>	14 <i>3.8</i>	0 <i>0.0</i>	206 <i>3.9</i>	
Spina bifida without anencephalus	76 <i>2.5</i>	33 <i>2.9</i>	29 <i>4.3</i>	5 <i>1.3</i>	1 <i>13.4</i>	145 <i>2.8</i>	
Tetralogy of Fallot	124 <i>4.1</i>	72 <i>6.4</i>	28 <i>4.1</i>	21 <i>5.7</i>	1 <i>13.4</i>	248 <i>4.7</i>	
Total anomalous pulmonary venous connection	31 <i>1.0</i>	6 <i>0.5</i>	7 <i>1.0</i>	7 <i>1.9</i>	0 <i>0.0</i>	51 <i>1.0</i>	
Transposition of the great arteries (TGA)	76 <i>2.5</i>	27 <i>2.4</i>	13 <i>1.9</i>	10 <i>2.7</i>	0 <i>0.0</i>	127 <i>2.4</i>	
Dextro-transposition of great arteries (d-TGA)	58 <i>1.9</i>	21 <i>1.9</i>	11 <i>1.6</i>	8 <i>2.2</i>	0 <i>0.0</i>	99 <i>1.9</i>	
Tricuspid valve atresia and stenosis	22 <i>0.7</i>	13 <i>1.1</i>	9 <i>1.3</i>	6 <i>1.6</i>	0 <i>0.0</i>	50 <i>1.0</i>	3
Trisomy 13	15 <i>0.5</i>	10 <i>0.9</i>	11 <i>1.6</i>	2 <i>0.5</i>	1 <i>13.4</i>	39 <i>0.7</i>	
Trisomy 18	33 <i>1.1</i>	18 <i>1.6</i>	15 <i>2.2</i>	6 <i>1.6</i>	0 <i>0.0</i>	72 <i>1.4</i>	
Trisomy 21 (Down syndrome)	359 <i>11.9</i>	149 <i>13.1</i>	124 <i>18.3</i>	43 <i>11.6</i>	0 <i>0.0</i>	679 <i>12.9</i>	
Turner syndrome	22 <i>0.7</i>	7 <i>0.6</i>	11 <i>1.6</i>	2 <i>0.5</i>	0 <i>0.0</i>	42 <i>0.8</i>	
Ventricular septal defect	1399 <i>46.4</i>	468 <i>41.3</i>	440 <i>64.9</i>	189 <i>50.9</i>	5 <i>66.8</i>	2518 <i>47.9</i>	4
<b>Total live births</b>	<b>301322</b>	<b>113377</b>	<b>67824</b>	<b>37147</b>	<b>749</b>	<b>525433</b>	
<b>Male live births</b>	<b>154786</b>	<b>57274</b>	<b>34658</b>	<b>19090</b>	<b>371</b>	<b>268746</b>	

\*Hypospadias prevalence per 10,000 male live births

\*\*Total includes unknown and other maternal race/ethnicity

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

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

\*\*Total includes unknown maternal age

**Notes**

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

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

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

**West Virginia**  
**Birth Defects Counts and Prevalence 2007 - 2011 (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	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>	8 <i>0.8</i>	
Rectal and large intestinal atresia/stenosis	23 <i>2.4</i>	1 <i>2.7</i>	1 <i>7.9</i>	0 <i>0.0</i>	0 <i>0.0</i>	30 <i>2.9</i>	
Renal agenesis/hypoplasia	30 <i>3.1</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	38 <i>3.7</i>	
Single ventricle	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>	4 <i>0.4</i>	
Small intestinal atresia/stenosis	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>	31 <i>3.0</i>	
Spina bifida without anencephalus	34 <i>3.5</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	34 <i>3.3</i>	
Tetralogy of Fallot	29 <i>3.0</i>	1 <i>2.7</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	39 <i>3.8</i>	
Total anomalous pulmonary venous connection	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>	3 <i>0.3</i>	
Transposition of the great arteries (TGA)	20 <i>2.1</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	29 <i>2.8</i>	
Dextro-transposition of great arteries (d-TGA)	14 <i>1.4</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	17 <i>1.6</i>	
Tricuspid valve atresia and stenosis	8 <i>0.8</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	10 <i>1.0</i>	
Tricuspid valve atresia	8 <i>0.8</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	10 <i>1.0</i>	
Trisomy 13	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>	7 <i>0.7</i>	
Trisomy 18	8 <i>0.8</i>	1 <i>2.7</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	10 <i>1.0</i>	
Trisomy 21 (Down syndrome)	50 <i>5.2</i>	2 <i>5.4</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	75 <i>7.2</i>	
Turner syndrome	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>	4 <i>0.4</i>	
Ventricular septal defect	248 <i>25.7</i>	4 <i>10.8</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	306 <i>29.4</i>	
<b>Total live births</b>	<b>96576</b>	<b>3695</b>	<b>1267</b>	<b>1527</b>	<b>122</b>	<b>103974</b>	
<b>Male live births</b>	<b>45742</b>	<b>1825</b>	<b>596</b>	<b>449</b>	<b>59</b>	<b>49307</b>	

\*Hypospadias prevalence per 10,000 male live births

\*\*Total includes unknown and other maternal race/ethnicity

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

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

\*\*Total includes unknown maternal age

**General comments**

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

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

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

**Wisconsin**  
**Birth Defects Counts and Prevalence 2007 - 2011 (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	75 <i>3.1</i>	17 <i>5.0</i>	14 <i>4.2</i>	6 <i>4.2</i>	4 <i>7.9</i>	116 <i>3.5</i>	
Pulmonary valve atresia	6 <i>0.2</i>	0 <i>0.0</i>	2 <i>0.6</i>	2 <i>1.4</i>	0 <i>0.0</i>	10 <i>0.3</i>	
Rectal and large intestinal atresia/stenosis	76 <i>3.1</i>	4 <i>1.2</i>	12 <i>3.6</i>	4 <i>2.8</i>	0 <i>0.0</i>	98 <i>3.0</i>	
Renal agenesis/hypoplasia	102 <i>4.2</i>	6 <i>1.8</i>	10 <i>3.0</i>	3 <i>2.1</i>	0 <i>0.0</i>	122 <i>3.7</i>	
Single ventricle	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>	
Small intestinal atresia/stenosis	66 <i>2.7</i>	11 <i>3.2</i>	12 <i>3.6</i>	3 <i>2.1</i>	5 <i>9.9</i>	97 <i>2.9</i>	
Spina bifida without anencephalus	72 <i>3.0</i>	11 <i>3.2</i>	10 <i>3.0</i>	2 <i>1.4</i>	2 <i>4.0</i>	99 <i>3.0</i>	
Tetralogy of Fallot	60 <i>2.5</i>	16 <i>4.7</i>	12 <i>3.6</i>	5 <i>3.5</i>	1 <i>2.0</i>	94 <i>2.8</i>	
Total anomalous pulmonary venous connection	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 the great arteries (TGA)	52 <i>2.1</i>	4 <i>1.2</i>	10 <i>3.0</i>	0 <i>0.0</i>	2 <i>4.0</i>	70 <i>2.1</i>	
Dextro-transposition of great arteries (d-TGA)	32 <i>1.3</i>	2 <i>0.6</i>	4 <i>1.2</i>	0 <i>0.0</i>	2 <i>4.0</i>	42 <i>1.3</i>	
Tricuspid valve atresia and stenosis	14 <i>0.6</i>	0 <i>0.0</i>	2 <i>0.6</i>	2 <i>1.4</i>	0 <i>0.0</i>	18 <i>0.5</i>	
Tricuspid valve atresia	14 <i>0.6</i>	0 <i>0.0</i>	2 <i>0.6</i>	2 <i>1.4</i>	0 <i>0.0</i>	18 <i>0.5</i>	
Trisomy 13	17 <i>0.7</i>	3 <i>0.9</i>	3 <i>0.9</i>	1 <i>0.7</i>	0 <i>0.0</i>	24 <i>0.7</i>	
Trisomy 18	43 <i>1.8</i>	6 <i>1.8</i>	5 <i>1.5</i>	2 <i>1.4</i>	0 <i>0.0</i>	65 <i>2.0</i>	
Trisomy 21 (Down syndrome)	290 <i>11.9</i>	27 <i>7.9</i>	61 <i>18.4</i>	28 <i>19.5</i>	3 <i>5.9</i>	410 <i>12.4</i>	
Turner syndrome	8 <i>0.3</i>	4 <i>1.2</i>	2 <i>0.6</i>	0 <i>0.0</i>	0 <i>0.0</i>	14 <i>0.4</i>	
Ventricular septal defect	608 <i>25.0</i>	65 <i>19.1</i>	112 <i>33.8</i>	33 <i>22.9</i>	17 <i>33.6</i>	837 <i>25.2</i>	1
<b>Total live births</b>	<b>243565</b>	<b>34062</b>	<b>33143</b>	<b>14387</b>	<b>5063</b>	<b>331659</b>	
<b>Male live births</b>	<b>124976</b>	<b>17170</b>	<b>16867</b>	<b>7319</b>	<b>2586</b>	<b>169640</b>	

\*Hypospadias prevalence per 10,000 male live births

\*\*Total includes unknown and other maternal race/ethnicity

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

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

\*\*Total includes unknown maternal age

**Notes**

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

**General comments**

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

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

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

**Department of Defense**  
**Birth Defects Counts and Prevalence 2007 - 2011 (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	102 <i>2.6</i>	29 <i>3.6</i>	18 <i>2.7</i>	10 <i>3.8</i>	2 <i>1.9</i>	164 <i>2.8</i>	
Rectal and large intestinal atresia/stenosis	259 <i>6.6</i>	36 <i>4.4</i>	29 <i>4.4</i>	29 <i>11.0</i>	4 <i>3.8</i>	365 <i>6.2</i>	
Renal agenesis/hypoplasia	248 <i>6.3</i>	38 <i>4.7</i>	43 <i>6.5</i>	13 <i>4.9</i>	5 <i>4.7</i>	354 <i>6.0</i>	
Single ventricle	105 <i>2.7</i>	33 <i>4.0</i>	18 <i>2.7</i>	3 <i>1.1</i>	5 <i>4.7</i>	169 <i>2.9</i>	
Small intestinal atresia/stenosis	226 <i>5.8</i>	67 <i>8.2</i>	42 <i>6.4</i>	16 <i>6.1</i>	4 <i>3.8</i>	363 <i>6.2</i>	
Spina bifida without anencephalus	198 <i>5.1</i>	29 <i>3.6</i>	31 <i>4.7</i>	9 <i>3.4</i>	10 <i>9.5</i>	284 <i>4.8</i>	1
Tetralogy of Fallot	236 <i>6.0</i>	57 <i>7.0</i>	43 <i>6.5</i>	30 <i>11.4</i>	5 <i>4.7</i>	378 <i>6.4</i>	
Total anomalous pulmonary venous connection	53 <i>1.4</i>	17 <i>2.1</i>	15 <i>2.3</i>	4 <i>1.5</i>	0 <i>0.0</i>	93 <i>1.6</i>	
Transposition of the great arteries (TGA)	225 <i>5.8</i>	37 <i>4.5</i>	36 <i>5.5</i>	15 <i>5.7</i>	3 <i>2.8</i>	324 <i>5.5</i>	
Dextro-transposition of great arteries (d-TGA)	148 <i>3.8</i>	21 <i>2.6</i>	19 <i>2.9</i>	11 <i>4.2</i>	1 <i>0.9</i>	204 <i>3.5</i>	
Tricuspid valve atresia and stenosis	60 <i>1.5</i>	19 <i>2.3</i>	5 <i>0.8</i>	5 <i>1.9</i>	1 <i>0.9</i>	93 <i>1.6</i>	
Tricuspid valve atresia	60 <i>1.5</i>	19 <i>2.3</i>	5 <i>0.8</i>	5 <i>1.9</i>	1 <i>0.9</i>	93 <i>1.6</i>	
Trisomy 13	40 <i>1.0</i>	20 <i>2.5</i>	11 <i>1.7</i>	2 <i>0.8</i>	0 <i>0.0</i>	74 <i>1.3</i>	1
Trisomy 18	65 <i>1.7</i>	10 <i>1.2</i>	19 <i>2.9</i>	3 <i>1.1</i>	0 <i>0.0</i>	99 <i>1.7</i>	1
Trisomy 21 (Down syndrome)	574 <i>14.7</i>	112 <i>13.7</i>	100 <i>15.2</i>	32 <i>12.1</i>	10 <i>9.5</i>	846 <i>14.4</i>	1
Turner syndrome	62 <i>1.6</i>	6 <i>0.7</i>	10 <i>1.5</i>	2 <i>0.8</i>	1 <i>0.9</i>	81 <i>1.4</i>	
Ventricular septal defect	2908 <i>74.4</i>	525 <i>64.4</i>	471 <i>71.6</i>	158 <i>59.8</i>	73 <i>69.3</i>	4216 <i>71.7</i>	4
<b>Total live births</b>	<b>390621</b>	<b>81563</b>	<b>65818</b>	<b>26431</b>	<b>10528</b>	<b>588403</b>	
<b>Male live births</b>	<b>201529</b>	<b>41417</b>	<b>33517</b>	<b>13671</b>	<b>5385</b>	<b>302437</b>	

\*Hypospadias prevalence per 10,000 male live births

\*\*Total includes unknown and other maternal race/ethnicity

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

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

\*\*Total includes unknown maternal age

**Notes**

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

**General comments**

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

**STATE BIRTH DEFECTS SURVEILLANCE  
PROGRAM DIRECTORY**

Updated August 2014

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

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

**Alabama**

*Program status:* No surveillance program

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**Alaska***Alaska Birth Defects Registry (ABDR)*

**Purpose:** Surveillance, Research

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

**Program status:** Currently collecting data

**Start Year:** 1996

**Earliest year of available data:** 1996

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

**Population covered annually:** 11,000

**Statewide:** Yes

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

**Legislation year enacted:** 1996

**Case Definition**

**Outcomes covered:** 237.7-237.72 243 255.2 270.0-270.9 271.0-271.1 277.0-277.9 279.0-279.9 282.0-282.9 284 331.3-331.9 334.0-334.9 335.0-335.9 343.0-343.9 359.0-359.9 362.74 389.0-389.9 740.0-740.2 741.0-741.9 742.0-742.9 743.0-743.9 744.0-744.9 745.0-745.9 746.0-746.9 747.0-747.9 748.0-748.9 749.0-749.25 750.0-750.9 751.0-751.9 752.0-752.9 753.0-753.9 754.0-754.89 755.0-755.9 756.0-756.9 757.0-757.9 758.0-758.9 759.0-759.9 760.0-760.9 760.71

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

**Age:** Birth to sixth birthday

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

**Surveillance Methods**

**Case ascertainment:** Passive case-finding with case confirmation

**Vital Records:** Birth certificates

**Other state based registries:** Programs for children with special needs, Newborn hearing screening program, Newborn metabolic screening program, Genetics clinics, specialty clinics (heart, cleft lip/palate, neurodevelopmental), MIMR (FIMR), public health nursing

**Delivery Hospitals:** Reports are generated by the health information management departments, within hospitals and health care facilities, for any child encountered with a reportable ICD-9 code.

**Pediatric & tertiary care hospitals:** Reports are generated by the health information management departments, within hospitals and health care facilities, for any child encountered with a reportable ICD-9 code.

**Third party payers:** Medicaid databases, Indian health services

**Other specialty facilities:** Genetic counseling/clinic genetic facilities

**Other sources:** Physician reports

**Case Ascertainment**

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

Trisomy 13 (Patau Syndrome PAT) - 758.1 Trisomy 18 (Edwards syndrome EDW) - 758.2 Fetal Alcohol Syndrome (FAS) - 760.71  
**Coding:** ICD-9-CM, ICD-10-CM

**Data Collected**

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

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

**Father:** Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.)

**Data Collection Methods and Storage**

**Data Collection:** Printed abstract/report filled out by staff, Printed abstract/report submitted by other 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 collection and storage:** Access

**Data Analysis**

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

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

**Data use and analysis:** Routine statistical monitoring, Public health program evaluation, Baseline rates, Rates by demographic and other variables, Monitoring outbreaks and cluster investigations, Time trends, Epidemiologic studies (using only program data), Needs assessment, Service delivery, Grant proposals, Education/public awareness, Prevention projects

**System integration**

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

**System integration:** No

**Funding**

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

**Other**

**Web site:** <http://dhss.alaska.gov/dph/wcfh/Pages/mchept/abdr/default.aspx>

**Surveillance reports on file:**

<http://dhss.alaska.gov/dph/wcfh/Pages/mchept/mchdatabook/default.aspx>

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

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

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

**Program status:** Currently collecting data

**Start Year:** 1986

**Earliest year of available data:** 1986

**Organizational location:** Department of Health (Public Health Statistics)

**Population covered annually:** 85,132

**Statewide:** Yes

**Current legislation or rule:** Legislation enacted 1988; Rule effective 1991 Statute: 36-133; Rule: Arizona Administrative Code R9-4-Article 5

**Legislation year enacted:** 1988

**Case Definition**

**Pregnancy outcome:** Livebirths (All gestational ages and birth weights), Fetal deaths - stillbirths, spontaneous abortions, etc. (Any gestational age or weight if a fetal death certificate was issued)

**Age:** Up to one year after delivery. If the nature of a defect diagnosed in the first year of life is more precisely diagnosed later in the child's life, and this information is contained in the chart at the time of our review, then the more precise diagnosis

**Residence:** Arizona birth to an Arizona resident mother

**Surveillance Methods**

**Case ascertainment:** Active Case Finding

**Vital Records:** Birth certificates, Fetal death certificates, Hospital Discharge Database

**Delivery Hospitals:** Disease index or discharge index

**Other sources:** Midwifery facilities

**Case Ascertainment**

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

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

**Coding:** CDC coding system based on BPA

**Data Collected**

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

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

Illnesses/conditions, Prenatal diagnostic information, Pregnancy/delivery complications, Family history

**Father:** Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.)

**Data Collection Methods and Storage**

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

**Database collection and storage:** Access, Oracle

**Data Analysis**

**Data analysis software:** SAS, Access

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

**Data use and analysis:** Routine statistical monitoring, Public health program evaluation, Baseline rates, Rates by demographic and other variables, Monitoring outbreaks and cluster investigations, Time trends, Epidemiologic studies (using only program data), Identification of potential cases for other epidemiologic studies, Needs assessment, Service delivery, Referral, Grant proposals, Education/public awareness, Prevention projects

**System integration**

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

**Funding**

**Funding source:** 14.3% General state funds, 14.7% MCH funds, 71% CDC grant

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

**Surveillance reports on file:** Annual Reports

**Additional information on file:** Fact Sheets; Resources

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

**Purpose:** Surveillance, Research, Prevention activities

**Partner:** Local Health Departments, Hospitals, Advocacy Groups, Universities, Legislators

**Program status:** Currently collecting data

**Start Year:** 1980

**Earliest year of available data:** 1980

**Organizational location:** University, Pediatric hospital

**Population covered annually:** 40,000

**Statewide:** Yes

**Current legislation or rule:** Senate Bill Act 214, 1985

**Legislation year enacted:** 1985

**Case Definition**

**Outcomes covered:** Full range of structural malformations, syndromes, genetic diseases, other pregnancy outcomes

**Pregnancy outcome:** Livebirths (All gestational ages and birth weights), Fetal deaths - stillbirths, spontaneous abortions, etc. (All gestational ages), Elective terminations (All gestational ages)

**Age:** 2 years old

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

**Surveillance Methods**

**Case ascertainment:** Active Case Finding

**Delivery Hospitals:** Disease index or discharge index, Discharge summaries, Obstetrics logs (i.e., labor & delivery), ICU/NICU logs or charts, Surgery logs, Specialty outpatient clinics

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

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

**Case Ascertainment**

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

**Coding:** CDC coding system based on BPA

**Data Collected**

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

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

**Father:** Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Family history

**Data Collection Methods and Storage**

**Data Collection:** Electronic file/report filled out by staff at facility (laptop, web-based, etc.)

**Database collection and storage:** Access

**Data Analysis**

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

**Quality assurance:** Validity checks, Comparison/verification between multiple data sources, Clinical review, Timeliness

**Data use and analysis:** Routine statistical monitoring, Public health program evaluation, Rates by demographic and other variables, Monitoring outbreaks and cluster investigations, Epidemiologic studies (using only program data), Identification of potential cases for other epidemiologic studies, Grant proposals, Education/public awareness, Prevention projects

**System integration**

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

**System integration:** No

**Funding**

**Funding source:** 100% General state funds

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

**Contacts**

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

**Purpose:** Surveillance, Research

**Partner:** Local Health Departments, Hospitals, Universities

**Program status:** Currently collecting data

**Start Year:** 1983

**Earliest year of available data:** 1983

**Organizational location:** Department of Health (Maternal and Child Health)

**Population covered annually:** 70,000

**Statewide:** No, CBDMP currently monitors a sampling of California births that are demographically similar to the state as a whole and whose birth defects rates and trends have been reflective of those throughout California. Furthermore, CBDMP has statutory authority to conduct active surveillance anywhere in the state when warranted by environmental incidents or concerns.

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

**Legislation year enacted:** 1982

**Case Definition**

**Pregnancy outcome:** Livebirths (All gestational ages and birth weights), Fetal deaths - stillbirths, spontaneous abortions, etc. (All gestational ages), Elective terminations (All gestational ages)

**Age:** One year

**Residence:** In-state births to residence of counties monitored by CBDMP

**Surveillance Methods**

**Case ascertainment:** Active Case Finding

**Delivery Hospitals:** Disease index or discharge index, Discharge summaries, Obstetrics logs (i.e., labor & delivery), Regular nursery logs, ICU/NICU logs or charts, Pediatric logs, Postmortem/pathology logs, Surgery logs, Cardiac catheterization laboratories, Specialty outpatient clinics

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

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

**Case Ascertainment**

**Conditions warranting chart review in the newborn period:** Any chart with an ICD-9-CM code 740-759, Any chart with a selected list of ICD-9-CM codes outside 740-759, Any chart with selected procedure codes, Any chart with selected defects or medical conditions (i.e. abnormal facies, congenital heart disease), All stillborn infants, All neonatal deaths, All elective abortions, All prenatal diagnosed or suspected cases

**Conditions warranting chart review beyond the newborn period:** Facial dysmorphism or abnormal facies, Failure to thrive, GI condition (e.g. intestinal blockage), Cardiovascular condition, All infant deaths (excluding prematurity), Ocular conditions, Any infant with a codable defect

**Coding:** CDC BPA codes but modified for use in California

**Data Collected**

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

measurements (weight, gestation, Apgars, etc.), Tests and procedures, Infant complications, Birth defect diagnostic information

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

**Father:** Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Family history

**Data Collection Methods and Storage**

**Data Collection:** Electronic file/report filled out by staff at facility (laptop, web-based, etc.)

**Database collection and storage:** SQL server

**Data Analysis**

**Data analysis software:** SAS

**Quality assurance:** Validity checks, Re-abstraction of cases, Double-checking of assigned codes, Comparison/verification between multiple data sources, Clinical review, Validity checks are done on all abstracts

**Data use and analysis:** Routine statistical monitoring, Baseline rates, Rates by demographic and other variables, Monitoring outbreaks and cluster investigations, Time trends, Capture-recapture analyses, Observed vs. expected analyses, Epidemiologic studies (using only program data), Identification of potential cases for other epidemiologic studies, Needs assessment, Grant proposals, Education/public awareness

**System integration**

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

**Funding**

**Funding source:** 100% CBDMP Special Fund

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

**Surveillance reports on file:** Birth defect fact sheets and California regional birth defect data available on the website.

**Additional information on file:** Please send inquiries to [mchinet@cdph.ca.gov](mailto:mchinet@cdph.ca.gov)

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**Colorado***Colorado Responds to Children with Special Needs Section (CRCNS)*

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

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

**Program status:** Currently collecting data

**Start Year:** 1988

**Earliest year of available data:** 1989

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

**Population covered annually:** 65,004 (2013)

**Statewide:** Yes

**Current legislation or rule:** Colorado Revised Statutes (CRS) 25-1.5-101.25-1.5-105

**Legislation year enacted:** 1985

**Case Definition**

**Outcomes covered:** Structural birth defects, fetal alcohol syndrome, selected genetic and metabolic disorders; muscular dystrophy; selected developmental disabilities; very low birth weight (less than 1500 grams); others with medical risk factors for developmental delay.

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

**Age:** Up to the 5th birthday (up to 10th birthday for fetal alcohol syndrome)

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

**Surveillance Methods**

**Case ascertainment:** Active Case Finding, Passive case-finding with case confirmation

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

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

**Delivery Hospitals:** Disease index or discharge index, Postmortem/pathology logs, Specialty outpatient clinics

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

**Third party payers:** Medicaid databases

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

**Other sources:** Physician reports

**Case Ascertainment**

**Conditions warranting chart review in the newborn period:** Selected stillborn infants, Selected chart reviews for prenatal to age 3: for statistical trends monitoring (23 conditions-categories); fetal alcohol syndrome (to age 10), active case ascertainment data sources

**Coding:** ICD-9-CM, Extended code utilized to describe syndromes, further detail of a condition and to specify status.

**Data Collected**

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

measurements (weight, gestation, Apgars, etc.), Birth defect diagnostic information

**Mother:** Identification information (name, address, date-of-birth, etc.), Gravidity/parity, Pregnancy/delivery complications, Family history

**Father:** Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.)

**Data Collection Methods and Storage**

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

**Data Analysis**

**Data analysis software:** Epi-Info, SAS, Access, Arcview (GIS software); Maptitude, SaTScan, Centrus

**Quality assurance:** Re-abstraction of cases, Comparison/verification between multiple data sources, Clinical review, Timeliness, Records linkage and de-duplication

**Data use and analysis:** Routine statistical monitoring, Public health program evaluation, Baseline rates, Rates by demographic and other variables, Monitoring outbreaks and cluster investigations, Time trends, Time-space cluster analyses, Observed vs. expected analyses, Epidemiologic studies (using only program data), Identification of potential cases for other epidemiologic studies, Needs assessment, Referral, Grant proposals, Education/public awareness, Prevention projects, Environmental Studies

**System integration**

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

**Funding**

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

**Other**

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

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**Connecticut***Connecticut Birth Defects Registry (CT BDR)*

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

**Partner:** Hospitals, Environmental Agencies/Organizations, Advocacy Groups, Early Childhood Prevention Programs

**Program status:** Currently collecting data

**Start Year:** 2002

**Earliest year of available data:** 2000

**Organizational location:** Department of Health (Maternal and Child Health)

**Population covered annually:** 37,000

**Statewide:** Yes

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

**Case Definition**

**Outcomes covered:** All major structural birth defects; biochemical, genetic and hearing impairment through linkage with Newborn Screening System; any condition which places a child at risk for needing specialized medical care (i.e., complications of prematurity, cancer, trauma, etc.) ICD-9 codes 740 thru 759.9 and 760.71

**Pregnancy outcome:** Livebirths (All gestational ages and birth weights, PDA = to 2500 grams birth weight)

**Age:** Up to one year after delivery for birth defects, but reported up to age 5

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

**Surveillance Methods**

**Case ascertainment:** Passive case-finding without case confirmation

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

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

**Delivery Hospitals:** Disease index or discharge index, Discharge summaries, Reports from health care professionals in newborn nurseries and NICUs

**Pediatric & tertiary care hospitals:** Disease index or discharge index, Discharge summaries, Reports from health care professionals in pediatric inpatient and outpatient services planned for future

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

**Case Ascertainment**

**Coding:** ICD-9-CM

**Data Collected**

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

**Mother:** Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Gravidity/parity, Prenatal care, Pregnancy/delivery complications, Family history

**Father:** Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.)

**Data Collection Methods and Storage**

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

**Data Analysis**

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

**Quality assurance:** Validity checks, Comparison/verification between multiple data sources, Timeliness

**Data use and analysis:** Routine statistical monitoring, Public health program evaluation, Baseline rates, Rates by demographic and other variables, Monitoring outbreaks and cluster investigations, Time trends, Time-space cluster analyses, Epidemiologic studies (using only program data), Needs assessment, Referral, Grant proposals, Education/public awareness, Prevention projects, Provider education

**System integration**

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

**Funding**

**Funding source:** 100% General state funds

**Other**

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

**Surveillance reports on file:** NBDPN annual reports, state profiles

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**Delaware***Delaware Birth Defects Registry (DBDR)*

**Purpose:** Surveillance

**Partner:** Local Health Departments, Hospitals, Early Childhood Prevention Programs, Birthing Centers

**Program status:** Currently collecting data

**Start Year:** 2007

**Earliest year of available data:** 2007

**Organizational location:** Department of Health (Maternal and Child Health)

**Population covered annually:** 12,000

**Statewide:** Yes

**Current legislation or rule:** House Bill No. 197, an act to amend Title 16 of the Delaware Code relating to Birth Defects

**Legislation year enacted:** 1997

**Case Definition**

**Outcomes covered:** Selected major birth defects, selected metabolic defects, genetic diseases, and infant mortality.

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

**Age:** Birth to 5 years

**Residence:** In-state and out-of-state birth to state resident, and in-state birth to state non-resident

**Surveillance Methods**

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

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

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

**Delivery Hospitals:** Disease index or discharge index, Discharge summaries, Postmortem/pathology logs, Specialty outpatient clinics, High risk pregnancy logs

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

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

**Other sources:** Midwifery facilities, Physician reports

**Case Ascertainment**

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

**Conditions warranting chart review beyond the newborn period:** Facial dysmorphism or abnormal facies, GI condition (e.g. intestinal blockage), Cardiovascular condition, All infant deaths (excluding prematurity), Ocular conditions, Auditory/hearing conditions, Any infant with a codable defect

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

**Data Collected**

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

**Mother:** Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Gravidity/parity, Illnesses/conditions, Prenatal care, Prenatal diagnostic information, Pregnancy/delivery complications, Family history

**Father:** Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.)

**Data Collection Methods and Storage**

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

**Database collection and storage:** Access, Natus Medical, Inc.

**Data Analysis**

**Quality assurance:** Validity checks, Double-checking of assigned codes, Comparison/verification between multiple data sources, Clinical review

**Data use and analysis:** Routine statistical monitoring, Baseline rates, Rates by demographic and other variables, Time trends, Capture-recapture analyses, Epidemiologic studies (using only program data), Education/public awareness

**System integration**

**System links:** Link to other state registries/databases, Link to Newborn Bloodspot and Hearing Screening.

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

**Funding**

**Funding source:** 40% General state funds, 60% MCH funds

**Other**

**Web site:** <http://dhss.delaware.gov/dhss/dph/chca/dphbdr1.html>

**Surveillance reports on file:** Analysis of the 2007 Delaware Birth Defects Registry

<http://dhss.delaware.gov/dhss/dph/chca/files/birthdefectsregistryreport2007.pdf>

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

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

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

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

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

**Program status:** Currently collecting data

**Start Year:** 1998

**Earliest year of available data:** 1998

**Organizational location:** Department of Health (Epidemiology), University

**Population covered annually:** 211,228 in 2012

**Statewide:** Yes

**Current legislation or rule:** Section 381.0031(1,2) F.S., allows for development of a list of reportable conditions. Birth defects were added to the list in July 1999.

**Legislation year enacted:** 1999

**Case Definition**

**Outcomes covered:** Major structural malformations and genetic disorders

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

**Age:** Until age 1

**Residence:** Florida

**Surveillance Methods**

**Case ascertainment:** Passive case-ascertainment, population based, FL has two CDC funded cooperative agreements which use active case ascertainment which is linked to the passive surveillance program.

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

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

**Delivery Hospitals:** Disease index or discharge index

**Pediatric & tertiary care hospitals:** Disease index or discharge index

**Case Ascertainment**

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

**Coding:** ICD-9-CM

**Data Collected**

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

**Mother:** Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Gravidity/parity, Illnesses/conditions, Prenatal care, Pregnancy/delivery complications

**Father:** Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc)

**Data Collection Methods and Storage**

**Data Collection:** Electronic file/report submitted by other agencies (hospitals, etc.)

**Database collection and storage:** Access, Dedicated server for birth defects data.

**Data Analysis**

**Data analysis software:** SAS, Access, SQL, dBASE

**Quality assurance:** Validity checks, Comparison/verification between multiple data sources

**Data use and analysis:** Routine statistical monitoring, Public health program evaluation, Baseline rates, Rates by demographic and other variables, Monitoring outbreaks and cluster investigations, Time trends, Capture-recapture analyses, Observed vs. expected analyses, Epidemiologic studies (using only program data), Identification of potential cases for other epidemiologic studies, Grant proposals, Education/public awareness, Prevention projects

**System integration**

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

**System integration:** The department has created a maternally linked file beginning with 1998. The birth defects data has been included in this linked file. Birth defects data are displayed on the department's Environmental Public Health Tracking Program site.

**Funding**

**Funding source:** 62% General state funds, 34% CDC grant, 4% Private Foundation

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

**Surveillance reports on file:** Publications, procedure 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***Georgia Birth Defects Reporting And Information System (GBDRIS)*

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

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

**Program status:** Currently collecting data

**Start Year:** 2003

**Earliest year of available data:** 2005

**Organizational location:** Department of Health (Maternal and Child Health)

**Population covered annually:** 138,000

**Statewide:** Yes

**Current legislation or rule:** Birth defects are reportable under State Laws Official Code of Georgia Annotated (OCGA) 31-12-2 and 31-1-3.2 which mandate the reporting of notifiable diseases and newborn hearing screening, and Chapters 290-5-3-.02 and 290-5-24 of the Rules of Department of Human Resources, which regulate the reporting of notifiable diseases and metabolic disorders.

**Legislation year enacted:** updated in 2003

**Case Definition**

**Outcomes covered:** Major birth defects, genetic diseases, FAS and CP

**Pregnancy outcome:** Livebirths (All gestational ages and birth weights), Fetal deaths - stillbirths, spontaneous abortions, etc. (All gestational ages), Elective terminations (All gestational ages)

**Age:** Up to 18 years of age

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

**Surveillance Methods**

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

**Delivery Hospitals:** Disease index or discharge index, Discharge summaries

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

**Other specialty facilities:** Genetic counseling/clinic genetic facilities

**Other sources:** Physician reports

**Case Ascertainment**

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

**Coding:** ICD-9-CM

**Data Collected**

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

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

**Data Collection Methods and Storage**

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

**Database collection and storage:** Access

**Data Analysis**

**Data analysis software:** SAS, Access

**Quality assurance:** Validity checks, Double-checking of assigned codes, Comparison/verification between multiple data sources

**Data use and analysis:** Public health program evaluation, Service delivery

**System integration**

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

**Funding**

**Funding source:** 100% MCH funds

**Other**

**Web site:** <http://health.state.ga.us/epi/mch/birthdefects/gbdris/index.asp>

**Additional information on file:** In Georgia, please note that other surveillance is performed by MACDP and that is where the numbers for your report come from.

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**Georgia***Metropolitan Atlanta Congenital Defects Program (MACDP)*

**Purpose:** Surveillance, Research

**Partner:** Local Health Departments, Hospitals, Advocacy Groups, Universities, Laboratories, Prenatal Diagnostic Providers

**Program status:** Currently collecting data

**Start Year:** 1967

**Earliest year of available data:** 1968

**Organizational location:** CDC, National Center on Birth Defects and Developmental Disabilities

**Population covered annually:** 35,000

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

**Case Definition**

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

**Pregnancy outcome:** Livebirths ( $\geq 20$  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 Finding

**Vital Records:** Birth certificates

**Delivery Hospitals:** Disease index or discharge index, Discharge summaries, Obstetrics logs (i.e., labor & delivery), Regular nursery logs, ICU/NICU logs or charts, Pediatric logs, Postmortem/pathology logs, Induction logs and miscarriage logs

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

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

**Case Ascertainment**

**Conditions warranting chart review in the newborn period:** Any chart with an ICD-9-CM code 740-759, Any chart with a selected list of ICD-9-CM codes outside 740-759, Any chart with a CDC/BPA code, Any chart with selected defects or medical conditions (i.e. abnormal facies, congenital heart disease), Any birth certificate with a birth defect box checked, Infants with low birth weight or low gestation (Birth weight < 2500 grams and/or 20-36 weeks gestation), All stillborn infants, All neonatal deaths, All elective abortions, All infants with low APGAR scores, All infants in NICU or special care nursery, All prenatal diagnosed or suspected cases

**Conditions warranting chart review beyond the newborn period:** Facial dysmorphism or abnormal facies, Failure to thrive, CNS condition (e.g. seizure), GI condition (e.g. intestinal blockage), Cardiovascular condition, All infant deaths (excluding prematurity), Any infant with a codable defect

**Coding:** CDC coding system based on BPA

**Data Collected**

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

**Mother:** Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Gravidity/parity, Illnesses/conditions, Prenatal care, Prenatal diagnostic information, Pregnancy/delivery complications, Family history

**Father:** Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Family history

**Data Collection Methods and Storage**

**Data Collection:** Electronic file/report filled out by staff at facility (laptop, web-based, etc.)

**Database collection and storage:** Access, SQL Server, SAS

**Data Analysis**

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

**Quality assurance:** Validity checks, Double-checking of assigned codes, Comparison/verification between multiple data sources, Clinical review, Timeliness

**Data use and analysis:** Routine statistical monitoring, Public health program evaluation, Baseline rates, Rates by demographic and other variables, Monitoring outbreaks and cluster investigations, Time trends, Time-space cluster analyses, Observed vs. expected analyses, Epidemiologic studies (using only program data), Identification of potential cases for other epidemiologic studies, Education/public awareness, Prevention projects, Survival analysis

**System integration**

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

**Funding**

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

**Web site:** <http://www.cdc.gov/ncbddd/bd/macdp.htm>

**Surveillance reports on file:** MACDP 40th Anniversary Surveillance Report

**Additional information on file:** CDC/BPA Defect Code; Including prenatal diagnoses in BD monitoring

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

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

**Purpose:** Surveillance

**Partner:** Hospitals, Iowa Registry for Congenital and Inherited Disorders

**Program status:** Currently collecting data

**Start Year:** 1988

**Earliest year of available data:** 1986

**Organizational location:** Department of Health (Children with Special Health Needs Branch)

**Population covered annually:** 19,000

**Statewide:** Yes

**Current legislation or rule:** Hawaii Revised Statutes - sec. 321-421 through 426 Hawaii Revised Statutes - sec. 324-41 through 44

**Legislation year enacted:** 2002

**Case Definition**

**Pregnancy outcome:** Livebirths (All gestational ages and birth weights), Fetal deaths - stillbirths, spontaneous abortions, etc. (All gestational ages), Elective terminations (All gestational ages)

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

**Residence:** All in-state births

**Surveillance Methods**

**Case ascertainment:** Active Case Finding

**Delivery Hospitals:** Disease index or discharge index, Discharge summaries, Obstetrics logs (i.e., labor & delivery), Regular nursery logs, ICU/NICU logs or charts, Pediatric logs, Postmortem/pathology logs, Surgery logs, Specialty outpatient clinics

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

**Case Ascertainment**

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

**Conditions warranting chart review beyond the newborn period:** Facial dysmorphism or abnormal facies, CNS condition (e.g. seizure), GI condition (e.g. intestinal blockage), GU condition (e.g. recurrent infections), Cardiovascular condition, Ocular conditions, Auditory/hearing conditions, Any infant with a codable defect

**Coding:** CDC coding system based on BPA

**Data Collected**

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

**Mother:** Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Gravidity/parity, Illnesses/conditions, Prenatal care, Prenatal diagnostic information, Pregnancy/delivery complications, Family history

**Father:** Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Family history

**Data Collection Methods and Storage**

**Data Collection:** Electronic file/report filled out by staff at facility (laptop, web-based, etc.)

**Database collection and storage:** Access

**Data Analysis**

**Data analysis software:** SAS

**Quality assurance:** Re-abstraction of cases, Double-checking of assigned codes, Clinical review

**Funding**

**Funding source:** 100% State of Hawaii Birth Defects Special Fund

**Web site:** <http://health.hawaii.gov/genetics/programs/hbdhome/>

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**Idaho**

*Program status:* No surveillance program

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**Illinois***Adverse Pregnancy Outcomes Reporting System (APORS)*

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

**Partner:** Local Health Departments, Hospitals, Community Nursing Services, Early Childhood Prevention Programs, Genetic Clinics, Drug-testing laboratories, Illinois Department of Human Services, Illinois Department of Health and Family Services, Illinois Department of Children and Family Services, Illinois Newborn Metabolic Screening Program

**Program status:** Currently collecting data

**Start Year:** 1986

**Earliest year of available data:** 1989

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

**Statewide:** Yes

**Current legislation or rule:** Illinois Health and Hazardous Substances Registry Act (410 ILCS 525/) 77 Illinois Administrative Code 840

**Legislation year enacted:** 1984; last amended 2008

**Case Definition**

**Pregnancy outcome:** Livebirths (All gestational ages and birth weights), Fetal deaths - stillbirths, spontaneous abortions, etc. (20 weeks gestation and greater, or the family chose to hold a funeral)

**Age:** 2 years

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

**Surveillance Methods**

**Case ascertainment:** Passive case-finding with case confirmation, Passive case-finding without case confirmation

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

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

**Delivery Hospitals:** Discharge summaries, Reporting from all hospital nurseries

**Pediatric & tertiary care hospitals:** Reporting from all hospital nurseries

**Other specialty facilities:** Genetic counseling/clinic genetic facilities

**Case Ascertainment**

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

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

**Coding:** CDC coding system based on BPA, ICD-10-CM

**Data Collected**

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

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

**Father:** Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.)

**Data Collection Methods and Storage**

**Data Collection:** Printed abstract/report filled out by staff, Printed abstract/report submitted by other 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 collection and storage:** Access, Purpose-built system linked with Vital Record System

**Data Analysis**

**Data analysis software:** SAS, Access

**Quality assurance:** Validity checks, Re-abstraction of cases, Double-checking of assigned codes, Comparison/verification between multiple data sources, Data/hospital audits, Timeliness

**Data use and analysis:** Routine statistical monitoring, Public health program evaluation, Baseline rates, Rates by demographic and other variables, Time trends, Epidemiologic studies (using only program data), Needs assessment, Service delivery, Referral, Education/public awareness

**System integration**

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

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

**Funding**

**Funding source:** 66% General state funds, 29% CDC grant, 5% Other federal funding (non-CDC grants)

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

**Surveillance reports on file:** Birth Defects and Other Adverse Pregnancy Outcomes in Illinois 2005-2009 Trends in the Prevalence of Birth Defects in Illinois and Chicago 1989-2009

**Additional information on file:** QC reports, fact sheets

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

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

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

**Program status:** Currently collecting data

**Start Year:** 2002

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

**Population covered annually:** 85,000

**Statewide:** Yes

**Current legislation or rule:** IC 16-38-4-7 Rule 410 IAC 21-3

**Legislation year enacted:** 2001

**Case Definition**

**Outcomes covered:** ICD-9-CM Codes 740-759.9, Fetal Alcohol Spectrum Disorder (760.71), Pervasive Developmental Disorder (299.0), fetal deaths, metabolic disorders & hearing loss from newborn screening, selected neoplasms, congenital blood disorders, and certain eye disorders.

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

**Age:** Up to 5 years (FAS); all individuals with Autism Spectrum Disorders; up to 3 years for all other birth defects

**Residence:** In- and out-of-state (as reported to IBDPR) births to state residents

**Surveillance Methods**

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

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

**Delivery Hospitals:** Disease index or discharge index, Chart audits of 45 targeted birth defects

**Pediatric & tertiary care hospitals:** Disease index or discharge index, Chart audits of 45 targeted birth defects

**Other specialty facilities:** Genetic counseling/clinic genetic facilities

**Other sources:** Physician reports

**Case Ascertainment**

**Conditions warranting chart review in the newborn period:** Any chart with an ICD-9-CM code 740-759, Any chart with a selected list of ICD-9-CM codes outside 740-759

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

**Coding:** ICD-9-CM and BPA

**Data Collected**

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

**Mother:** Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Gravidity/parity, Illnesses/conditions, Prenatal care, Prenatal diagnostic information, Pregnancy/delivery complications, Family history

**Father:** Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Family history

**Data Collection Methods and Storage**

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

**Database collection and storage:** Oracle

**Data Analysis**

**Data analysis software:** SAS, Oracle and ArcView GIS

**Quality assurance:** Validity checks, Re-abstraction of cases, Double-checking of assigned codes, Comparison/verification between multiple data sources, Data/hospital audits, Clinical review, Timeliness

**Data use and analysis:** Routine statistical monitoring, Baseline rates, Rates by demographic and other variables, Needs assessment

**System integration**

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

**System integration:** The database is linked with birth, death, newborn hearing screening, and newborn metabolic and pulse oximetry screening data.

**Other**

**Web site:** [www.birthdefects.in.gov](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 Services, Prevention education programs

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

**Program status:** Currently collecting data

**Start Year:** 1983

**Earliest year of available data:** 1983

**Organizational location:** University

**Population covered annually:** 39,487 average live births per year (2007-2011)

**Statewide:** Yes

**Current legislation or rule:** Iowa Code 136A, Iowa Administrative Code 641-4.7

**Legislation year enacted:** 1986; Revised 2001, 2003, 2004, 2009, 2013

**Case Definition**

**Outcomes covered:** Major birth defects, muscular dystrophy, fetal deaths with and without birth defects, newborn screening disorders

**Pregnancy outcome:** Livebirths (All gestational ages and birth weights), Fetal deaths - stillbirths, spontaneous abortions, etc. (All gestational ages), Elective terminations (All gestational ages)

**Age:** 2 years

**Residence:** Maternal residence in Iowa at time of delivery

**Surveillance Methods**

**Case ascertainment:** Active case-finding

**Vital Records:** Birth certificates, Death certificates, Fetal death certificates, Fetal Death Evaluation Protocol

**Other state based registries:** Programs for children with special needs, Developmental Disabilities Surveillance, Cancer registry, AIDS/HIV registry, Iowa Perinatal Care Program

**Delivery Hospitals:** Disease index or discharge index, Discharge summaries, ICU/NICU logs or charts, Cardiac catheterization laboratories, Specialty outpatient clinics, Collect verbatim summaries of surgical reports, diagnostic test results, consultation reports, and autopsy/surgical pathology reports

**Pediatric & tertiary care hospitals:** Disease index or discharge index, Discharge summaries, ICU/NICU logs or charts, Cardiac catheterization laboratories, Specialty outpatient clinics, Collect verbatim summaries of surgical reports, diagnostic test results, consultation reports, and autopsy/surgical pathology reports

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

**Other sources:** Physician reports, Outpatient surgery facilities; IHA Discharge Data

**Case Ascertainment**

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

**Conditions warranting chart review beyond the newborn period:** Facial dysmorphism or abnormal facies, Failure to thrive, Developmental delay,

CNS condition (e.g. seizure), GI condition (e.g. intestinal blockage), GU condition (e.g. recurrent infections), Cardiovascular condition, All infant deaths (excluding prematurity), Ocular conditions, Auditory/hearing conditions, Any infant with a codable defect

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

**Data Collected**

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

**Mother:** Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Gravidity/parity, Illnesses/conditions, Prenatal care, Prenatal diagnostic information, Pregnancy/delivery complications, Family history

**Father:** Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Family history

**Data Collection Methods and Storage**

**Data Collection:** Electronic file/report filled out by staff at facility (laptop, web-based, etc.)

**Database collection and storage:** Access, Oracle, PC Server

**Data Analysis**

**Data analysis software:** SPSS, SAS, Access, Oracle

**Quality assurance:** Validity checks, Re-abstraction of cases, Double-checking of assigned codes, Comparison/verification between multiple data sources, Clinical review, Timeliness

**Data use and analysis:** Routine statistical monitoring, Public health program evaluation, Baseline rates, Rates by demographic and other variables, Monitoring outbreaks and cluster investigations, Time trends, Capture-recapture analyses, Observed vs. expected analyses, Epidemiologic studies (using only program data), Identification of potential cases for other epidemiologic studies, Needs assessment, Service delivery, Referral, Grant proposals, Education/public awareness, Prevention projects

**System integration**

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

**System integration:** For specific studies, data may be linked with environmental databases or other state databases.

**Funding**

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

**Other**

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

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

**Purpose:** Surveillance

**Partner:** Hospitals, Environmental Agencies/Organizations, Universities

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

**Start Year:** 1985

**Earliest year of available data:** 1985

**Organizational location:** Department of Health

(Epidemiology/Environment, Maternal and Child Health, Vital Statistics)

**Population covered annually:** 40,304

**Statewide:** Yes

**Current legislation or rule:** K.S.A. 65-1,241 through 65-1,246

**Legislation year enacted:** 2004

**Case Definition**

**Outcomes covered:** The outcome data below are available from Office of Vital Statistics. Live births and stillbirths (fetal deaths) information are used as part of the Birth Defects Information System (BDIS). Thirteen anomalies (and "other" congenital anomalies) are listed on the birth certificate and are reported, however, these are not linked to ICD-9 codes. In addition to major birth defects, low birth weight ( $\leq 1,200$  grams), low Apgar scores ( $\leq 5$  at five minutes), seizure or serious neurologic dysfunction, and significant birth injury [skeletal fracture(s), peripheral nerve injury, and/or soft tissue/solid organ hemorrhage which requires intervention] are also reported to BDIS.

**Pregnancy outcome:** Livebirths (All gestational ages and birth weights), Fetal deaths - stillbirths, spontaneous abortions, etc. (gestational age – not less than 20 completed weeks)

**Age:** Under five years of age with a primary diagnosis of a congenital anomaly or abnormal condition

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

**Surveillance Methods**

**Case ascertainment:** Passive case-finding without case confirmation

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

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

**Delivery Hospitals:** Reports

**Pediatric & tertiary care hospitals:** Reports

**Other sources:** Physician reports

**Case Ascertainment**

**Coding:** ICD-9-CM

**Data Collected**

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

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

**Father:** Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.)

**Data Collection Methods and Storage**

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

**Database collection and storage:** Access, SQL Server

**Data Analysis**

**Data analysis software:** SAS

**Quality assurance:** Office of Vital Statistics conducts verification on live birth and stillbirth (fetal death) certificate data.

**Data use and analysis:** Baseline rates, Rates by demographic and other variables, Time trends, Grant proposals, Ad-hoc upon request (e.g. cluster investigations)

**System integration**

**System links:** Link to other state registries/databases

**System integration:** Our program has a link with vital statistics records. BDIS uses the same data system (WebBFH) and shares information with Children and Youth with Special Health Care Needs and Newborn metabolic screening program.

**Funding**

**Funding source:** 100% MCH funds

**Other**

**Web site:** [http://www.kdheks.gov/bfh/birth\\_defects.htm](http://www.kdheks.gov/bfh/birth_defects.htm)

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

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

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

**Program status:** Currently collecting data

**Start Year:** 1998

**Earliest year of available data:** 1998

**Organizational location:** Department of Health (Maternal and Child Health)

**Population covered annually:** 54,000

**Statewide:** Yes

**Current legislation or rule:** Kentucky Revised Statute 211.660 Kentucky birth surveillance registry - Department's authority to promulgate administrative regulations. Effective July 15, 2002

**Legislation year enacted:** 2002

**Case Definition**

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

**Age:** Up to 5 years of age

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

**Surveillance Methods**

**Case ascertainment:** Active Case Finding, Passive case-finding with case confirmation

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

**Other state based registries:** Newborn CCHD Screening

**Delivery Hospitals:** Discharge summaries, Obstetrics logs (i.e., labor & delivery), ICU/NICU logs or charts

**Pediatric & tertiary care hospitals:** Discharge summaries

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

**Case Ascertainment**

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

**Coding:** ICD-9-CM

**Data Collected**

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

**Mother:** Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Gravidity/parity, Illnesses/conditions, Prenatal care, Prenatal diagnostic information, Pregnancy/delivery complications, Family history

**Father:** Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.)

**Data Collection Methods and Storage**

**Data Collection:** Electronic file/report filled out by staff at facility (laptop, web-based, etc.)

**Database collection and storage:** Access

**Data Analysis**

**Data analysis software:** SAS

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

**Data use and analysis:** Routine statistical monitoring, Public health program evaluation, Baseline rates, Rates by demographic and other variables, Monitoring outbreaks and cluster investigations, Time trends, Epidemiologic studies (using only program data), Service delivery, Grant proposals, Education/public awareness, Prevention projects

**System integration**

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

**System integration:** Birth records from vitals statistics are linked with all cases in the KBSR database.

**Web site:** <http://chfs.ky.gov/dph/mch/ecd/kbsr.htm>

**Surveillance reports on file:** Birth Defect Specific Fact Sheets; Contact of Partners

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

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

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

**Program status:** Currently collecting data

**Start Year:** 2005

**Earliest year of available data:** 2005

**Organizational location:** Department of Health (DHH/OPH/CPH/Title V CYSHCN Programs)

**Population covered annually:** 62,000

**Statewide:** Yes

**Current legislation or rule:** Law: LA R.S. 40:31.41 - 40:31.48, 2001.

DHH Rule: LAC 48:V. Chapters 161 and 163

**Legislation year enacted:** 2001

**Case Definition**

**Outcomes covered:** Major structural birth defects and selected genetic conditions

**Pregnancy outcome:** Livebirths (greater than or equal to 20 weeks gestation or greater than or equal to 350 grams)

**Age:** Up to three years old

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

**Surveillance Methods**

**Case ascertainment:** Active Case Finding, Combination of active and passive case ascertainment, population based

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

**Delivery Hospitals:** Disease index or discharge index, Discharge summaries, ICU/NICU logs or charts

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

**Third party payers:** Medicaid databases

**Case Ascertainment**

**Conditions warranting chart review in the newborn period:** Any chart with an ICD-9-CM code 740-759, Any chart with a selected list of ICD-9-CM codes outside 740-759

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

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

**Data Collected**

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

**Mother:** Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Gravidity/parity, Illnesses/conditions, Prenatal care, Prenatal diagnostic information, Pregnancy/delivery complications, Family history

**Father:** Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.)

**Data Collection Methods and Storage**

**Data Collection:** Electronic file/report filled out by staff at facility (laptop, web-based, etc.)

**Database collection and storage:** Access, InfoPath/SharePoint stored in SQL

**Data Analysis**

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

**Quality assurance:** Validity checks, Re-abstraction of cases, Double-checking of assigned codes, Comparison/verification between multiple data sources, Data/hospital audits, Clinical review, Timeliness

**Data use and analysis:** Routine statistical monitoring, Public health program evaluation, Baseline rates, Rates by demographic and other variables, Monitoring outbreaks and cluster investigations, Time trends, Time-space cluster analyses, Observed vs. expected analyses, Epidemiologic studies (using only program data), Identification of potential cases for other epidemiologic studies, Needs assessment, Referral, Grant proposals, Education/public awareness, Prevention projects

**System integration**

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

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

**Funding**

**Funding source:** 24% General state funds, 47% MCH funds, 25% CDC grant, 4% Inter Agency Transfer

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

**Surveillance reports on file:** Louisiana Morbidity Report, May-June 2009, Vol 20, No 3; Results from 2006-2008 Birth Defects Surveillance System; 2013 Annual NBDPN Data Report; Presentations of analysis using 2006-2008 data concerning ASD Reporting; Cleft Lip/Palate and Hearing Loss; and Age and Racial Disparities

**Additional information on file:** Advisory Board Documentation <http://www.prd.doh.louisiana.gov/boardsandcommissions/viewBoard.cfm?board=192>

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**Maine***Maine CDC Birth Defects Program (MBDP)*

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

**Partner:** Hospitals, Environmental Agencies/Organizations, Advocacy Groups, Universities, Community Nursing Services, Early Childhood Prevention Programs, March of Dimes, other New England birth defects programs

**Program status:** Currently collecting data

**Start Year:** 1999

**Earliest year of available data:** 2003

**Organizational location:** Department of Health (Division of Population Health/Maternal and Child Health Unit/CSHN)

**Population covered annually:** 12,593

**Statewide:** Yes

**Current legislation or rule:** 22 MRSA c. 1687

**Legislation year enacted:** 1999

**Case Definition**

**Outcomes covered:** Selected major birth defects: NTD, clefts, gastroschisis, omphalocele, trisomy 21, reduction deformities of upper and lower limb, hypospadias and major heart defects

**Pregnancy outcome:** Livebirths (All gestational ages and birth weights), Fetal deaths - stillbirths, spontaneous abortions, etc. (20 weeks gestation and greater, Prenatally diagnosed at any gestation), Elective terminations (Prenatally diagnosed at any gestation)

**Age:** Through age one

**Residence:** All in-state births to Maine residents

**Surveillance Methods**

**Case ascertainment:** Passive case ascertainment with active case confirmation

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

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

**Delivery Hospitals:** Disease index or discharge index, Discharge summaries, Obstetrics logs (i.e., labor & delivery), Regular nursery logs, ICU/NICU logs or charts, Pediatric logs, Postmortem/pathology logs, Surgery logs, Specialty outpatient clinics

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

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

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

**Case Ascertainment**

**Conditions warranting chart review in the newborn period:** Any chart with selected defects or medical conditions (i.e. abnormal facies, congenital heart disease), Any birth certificate with a birth defect box checked, All stillborn infants, All neonatal deaths, All infants in NICU or special care nursery, All prenatal diagnosed or suspected cases

**Conditions warranting chart review beyond the newborn period:** Cardiovascular condition, All infant deaths (excluding prematurity), Any infant with a codable defect

**Coding:** ICD-9-CM

**Data Collected**

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

**Mother:** Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Gravidity/parity, Illnesses/conditions, Prenatal care, Prenatal diagnostic information, Pregnancy/delivery complications, Family history

**Data Collection Methods and Storage**

**Data Collection:** Printed abstract/report filled out by staff, Printed abstract/report submitted by other 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 collection and storage:** Oracle, Microsoft SQL Server

**Data Analysis**

**Data analysis software:** SAS, Stat-exact

**Quality assurance:** Validity checks, Re-abstraction of cases, Double-checking of assigned codes, Comparison/verification between multiple data sources, Data/hospital audits, Clinical review, Timeliness

**Data use and analysis:** Routine statistical monitoring, Public health program evaluation, Baseline rates, Rates by demographic and other variables, Epidemiologic studies (using only program data), Identification of potential cases for other epidemiologic studies, Needs assessment, Service delivery, Referral, Grant proposals, Education/public awareness, Prevention projects

**System integration**

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

**System integration:** Newborn Hearing/ Newborn Bloodspot Screening Programs

**Funding**

**Funding source:** 100% MCH funds

**Other**

**Web site:** [http://www.maine.gov/dhhs/boh/cshn/birth\\_defects/index.html](http://www.maine.gov/dhhs/boh/cshn/birth_defects/index.html)

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**Maryland***Maryland Birth Defects Reporting and Information System (BDRIS)*

**Purpose:** Surveillance, Referral to Services

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

**Program status:** Currently collecting data

**Start Year:** 1983

**Earliest year of available data:** 1984

**Organizational location:** Department of Health (Epidemiology/Environment), Department of Health (Prevention and Health Promotion Administration)

**Population covered annually:** 75,000

**Statewide:** Yes

**Current legislation or rule:** Health-General Article, Section 18-206; Annotated Code of Maryland

**Legislation year enacted:** 1982

**Case Definition**

**Outcomes covered:** Selected birth defects - anencephaly, spina bifida, hydrocephaly, cleft lip, cleft palate, esophageal atresia/stenosis, rectal/anal atresia, hypospadias, reduction deformity - upper or lower limb, congenital hip dislocation, and Down syndrome until 2009, then all significant birth defects

**Pregnancy outcome:** Livebirths(All gestational ages and birth weights,, Fetal deaths - stillbirths, spontaneous abortions, etc. (20 weeks gestation and greater, or  $\geq$ 500 grams weight; reports accepted on fetal deaths <500 grams or <20 weeks gestation if sent to us.), Elective terminations (Reports accepted on terminations <500 grams or <20 weeks gestation if sent to us.BDRIS has no specific legal authority to collect information on terminations. Maryland does not require that any certificate be filed with Vital Records for a termination)

**Age:** Newborn

**Residence:** All in-state births

**Surveillance Methods**

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

**Other state based registries:** Programs for children with special needs, Newborn hearing screening program, Newborn metabolic screening program, Sickle Cell Disease, Critical Congenital Heart Defect follow Up Program

**Delivery Hospitals:** Primary source: sentinel birth defects hospital report form; electronic reporting began 5/1/13

**Other sources:** Midwifery facilities

**Case Ascertainment**

**Conditions warranting chart review in the newborn period:** All fetal death certificates

**Coding:** ICD-9-CM

**Data Collected**

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

**Data Collection Methods and Storage**

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

**Database collection and storage:** Access, Mainframe, Visual dBASE, SAS, ASCII files; as of 5/1/13 data stored on vendor server

**Data Analysis**

**Data analysis software:** SAS, Access

**Quality assurance:** Validity checks, Double-checking of assigned codes, Comparison/verification between multiple data sources

**Data use and analysis:** Routine statistical monitoring, Public health program evaluation, Baseline rates, Rates by demographic and other variables, Service delivery, Referral, Grant proposals, Education/public awareness

**System integration**

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

**Funding**

**Funding source:** 100% General state funds

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

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

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**Massachusetts***Massachusetts Birth Defects Monitoring Program (MBDMP)*

**Purpose:** Surveillance, Research, Public health program evaluation, assist community health assessments

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

**Program status:** Currently collecting data

**Start Year:** 1997

**Earliest year of available data:** 1999

**Organizational location:** Department of Health (Maternal and Child Health)

**Population covered annually:** 73,000

**Statewide:** Yes

**Current legislation or rule:** Massachusetts General Laws, Chapter 111, Section 67E in 1963. In 2002 Massachusetts Legislature amended this statute, expanding the birth defects monitoring program. In 2009 regulations for a Congenital Anomalies Registry, 105 CMR 302.000, were promulgated.

**Legislation year enacted:** 1963 (amended 2002, regulations 2009)

**Case Definition**

**Pregnancy outcome:** Livebirths (All gestational ages and birth weights), Fetal deaths - stillbirths, spontaneous abortions, etc. ( $\geq 20$  wks gestation or  $\geq 350$  grams), Other pregnancy losses (elective or spontaneous, all gestational ages and weights)

**Age:** 1 year

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

**Surveillance Methods**

**Case ascertainment:** Active Case Finding

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

**Delivery Hospitals:** Disease index or discharge index, Obstetrics logs (i.e., labor & delivery), Regular nursery logs, ICU/NICU logs or charts, Postmortem/pathology logs, Specialty outpatient clinics

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

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

**Case Ascertainment**

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

**Conditions warranting chart review beyond the newborn period:** All infant deaths (excluding prematurity), Any infant with a codable defect

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

**Data Collected**

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

measurements (weight, gestation, Apgars, etc.), Tests and procedures, Infant complications, Birth defect diagnostic information

**Mother:** Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Gravidity/parity, Illnesses/conditions, Prenatal care, Prenatal diagnostic information, Pregnancy/delivery complications, Family history

**Father:** Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Family history

**Data Collection Methods and Storage**

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

**Database collection and storage:** Access

**Data Analysis**

**Data analysis software:** SAS

**Quality assurance:** Validity checks, Double-checking of assigned codes, Comparison/verification between multiple data sources, Clinical review, Timeliness

**Data use and analysis:** Routine statistical monitoring, Public health program evaluation, Baseline rates, Rates by demographic and other variables, Monitoring outbreaks and cluster investigations, Observed vs. expected analyses, Epidemiologic studies (using only program data), Identification of potential cases for other epidemiologic studies, Grant proposals, Education/public awareness

**System integration**

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

**Funding**

**Funding source:** 25% General state funds, 75% MCH funds

**Web site:** [www.mass.gov/dph/birthdefects](http://www.mass.gov/dph/birthdefects)

**Surveillance reports on file:** Annual or bi-annual reports, 1999 through 2010

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

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

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

**Program status:** Currently collecting data

**Start Year:** 1992

**Earliest year of available data:** 1992

**Organizational location:** Department of Health (Vital Statistics)

**Population covered annually:** 112,000

**Statewide:** Yes

**Current legislation or rule:** Public Act 236 of 1988

**Legislation year enacted:** 1988

**Case Definition**

**Outcomes covered:** Congenital anomalies, certain infectious diseases, conditions caused by maternal exposures and other diseases of major organ systems

**Pregnancy outcome:** Livebirths (All gestational ages and birth weights), Fetal deaths - stillbirths, spontaneous abortions, etc. (20 weeks or >400 grams)

**Age:** Up to two years after delivery except that reporting to age 12 for FASD beginning in 2013

**Residence:** Michigan births regardless of residence, out of state births diagnosed or treated in Michigan regardless of residence

**Surveillance Methods**

**Case ascertainment:** Passive case-finding without case confirmation

**Vital Records:** Birth certificates, Death certificates, Matched birth/death file, Fetal death certificates, Fetal deaths since 2004 only

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

**Delivery Hospitals:** Disease index or discharge index

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

**Third party payers:** Medicaid databases

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

**Case Ascertainment**

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

**Conditions warranting chart review beyond the newborn period:** Facial dysmorphism or abnormal facies, Failure to thrive, CNS condition (e.g. seizure), GI condition (e.g. intestinal blockage), GU condition (e.g. recurrent infections), Cardiovascular condition, All infant deaths (excluding prematurity), Childhood deaths between 1 and 6, Ocular conditions, Auditory/hearing conditions, Any infant with a codable defect  
**Coding:** ICD-9-CM

**Data Collected**

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

**Mother:** Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Gravidity/parity, Illnesses/conditions, Prenatal care, Prenatal diagnostic information, Pregnancy/delivery complications

**Father:** Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.)

**Data Collection Methods and Storage**

**Data Collection:** Printed abstract/report filled out by staff, Printed abstract/report submitted by other 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 collection and storage:** FoxPro

**Data Analysis**

**Data analysis software:** SPSS, SAS, Access, Fox-pro, Excel

**Quality assurance:** Validity checks, Re-abstraction of cases, Double-checking of assigned codes, Comparison/verification between multiple data sources, Data/hospital audits, Timeliness

**Data use and analysis:** Routine statistical monitoring, Public health program evaluation, Baseline rates, Rates by demographic and other variables, Monitoring outbreaks and cluster investigations, Time trends, Observed vs. expected analyses, Epidemiologic studies (using only program data), Identification of potential cases for other epidemiologic studies, Needs assessment, Service delivery, Referral, Grant proposals, Education/public awareness

**System integration**

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

**System integration:** No, data from vital records and other sources are extracted and loaded into registry as opposed to truly integrated database structures.

**Funding**

**Funding source:** 10% CDC grant, 90% Vital Records fees

**Web site:** [http://www.michigan.gov/mdch/0,1607,7-132-2944\\_4670---,00.html](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, Targeted prevention to higher risk populations.

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

**Program status:** Currently collecting data

**Start Year:** 2005

**Earliest year of available data:** 2006

**Organizational location:** Department of Health (Maternal and Child Health)

**Population covered annually:** 70,000

**Statewide:** No, currently covering about 85% of live births in MN. Statewide surveillance is expected to be completed by the end of 2014. Coverage is complete for smaller regions of the state. Prevalence estimates from 2006-2010 are available for the two largest counties in Minnesota, Hennepin and Ramsey counties, which account for just over 40% of MN births. For 2011 births, coverage expanded to complete in the 7-county metro area.

**Current legislation or rule:** MS 144.2215-2219

**Legislation year enacted:** 2004

**Case Definition**

**Outcomes covered:** Major structural and genetic defects diagnosed up to 1 year of age identified by CDC and NBDPN.

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

**Age:** Up to 1 year after delivery

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

**Surveillance Methods**

**Case ascertainment:** Active Case Finding

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

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

**Delivery Hospitals:** Disease index or discharge index, Discharge summaries, Specialty outpatient clinics

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

**Third party payers:** Medicaid databases, In 2014, All-Payer Claims Database will become available.

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

**Case Ascertainment**

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

**Coding:** CDC coding system based on BPA

**Data Collected**

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

**Mother:** Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Gravidity/parity, Illnesses/conditions, Prenatal care, Prenatal diagnostic information, Pregnancy/delivery complications, Family history

**Father:** Identification information (name, address, date-of-birth, etc.), Family history

**Data Collection Methods and Storage**

**Data Collection:** Electronic file/report filled out by staff at facility (laptop, web-based, etc.), Electronic file/report submitted by other agencies (hospitals, etc.), Remote access to medical records in two hospitals

**Database collection and storage:** Web-based department-wide integrated disease surveillance database. Maven platform by Consilience Software.

**Data Analysis**

**Data analysis software:** SAS

**Quality assurance:** Validity checks, Re-abstraction of cases, Double-checking of assigned codes, Comparison/verification between multiple data sources, Data/hospital audits, Clinical review, Timeliness

**Data use and analysis:** Routine statistical monitoring, Public health program evaluation, Baseline rates, Rates by demographic and other variables, Identification of potential cases for other epidemiologic studies, Needs assessment, Referral, Education/public awareness, Prevention projects, Collaboration with Environmental Public Health Tracking Program

**System integration**

**System links:** Link to other state registries/databases, Link case finding data to final birth file, Sharing of confirmed cases with key contacts at local public health agencies for service referral. LPH staff can log on to our the birth defects database to view relevant case information. In 2012, LPH began entering follow up and service/program updates

**System integration:** The Birth Defects Information System (BDIS) is integrated with Newborn Hearing program and Heritable Conditions. The databases share a model on the same platform, but they are managed separately. (This platform, Maven by Consilience Software, is also used by many infectious disease surveillance systems in MN and access is limited by disease/user role.) Additional integration with the Newborn Screening program will take place in 2014 as universal newborn CCHD screening is implemented.

**Funding**

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

**Other**

**Web site:**

<http://www.health.state.mn.us/divs/cfh/program/cyshn/bdmainintro.cfm>

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**Mississippi***Mississippi Birth Defects Surveillance Registry*

**Purpose:** Surveillance

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

**Program status:** Currently collecting data

**Start Year:** 2000

**Earliest year of available data:** 2000

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

**Population covered annually:** 40,000

**Statewide:** Yes

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

**Legislation year enacted:** 1997

**Case Definition**

**Outcomes covered:** The infant/fetus must have a reportable structural defect, newborn screening disorder, functional or metabolic disorder, genetically determined or a defect resulting from an environmental influence during embryonic or fetal life.

**Pregnancy outcome:** Fetal deaths - stillbirths, spontaneous abortions, etc. (20 weeks gestation and greater)

**Age:** Birth to 21 years

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

**Surveillance Methods**

**Case ascertainment:** Passive case-finding without case confirmation

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

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

**Delivery Hospitals:** Disease index or discharge index, Discharge summaries

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

**Other specialty facilities:** Genetic counseling/clinic genetic facilities

**Other sources:** Physician reports

**Case Ascertainment**

**Coding:** ICD-9-CM

**Data Collected**

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

measurements (weight, gestation, Apgars, etc.), Birth defect diagnostic information

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

**Data Collection Methods and Storage**

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

**Database collection and storage:** Access, New web based program

**Data Analysis**

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

**Quality assurance:** Validity checks, Double-checking of assigned codes, Timeliness

**Data use and analysis:** Routine statistical monitoring, Public health program evaluation, Baseline rates, Rates by demographic and other variables

**System integration**

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

**Funding**

**Funding source:** 100% Genetic screening revenues

**Other**

**Web site:** www.HealthyMS.com

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**Missouri***Missouri Birth Defects Surveillance System*

**Purpose:** Surveillance, Research

**Partner:** Environmental Agencies/Organizations, Legislators

**Program status:** Currently collecting data

**Start Year:** 1985

**Earliest year of available data:** 1980

**Organizational location:** Department of Health (Vital Statistics)

**Population covered annually:** 79,000

**Statewide:** Yes

**Case Definition**

**Outcomes covered:** ICD-9 codes 740-759, plus genetic, metabolic, and other disorders

**Pregnancy outcome:** Livebirths (All gestational ages and birth weights), Fetal deaths - stillbirths, spontaneous abortions, etc. (20 weeks gestation and greater, Fetal death certificates are only source of data)

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

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

**Surveillance Methods**

**Case ascertainment:** Population-based

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

**Delivery Hospitals:** Discharge summaries

**Pediatric & tertiary care hospitals:** Discharge summaries, Specialty outpatient clinics

**Case Ascertainment**

**Coding:** ICD-9-CM, ICD-10

**Data Collected**

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

**Mother:** Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Gravidity/parity, Prenatal care, Pregnancy/delivery complications, Family history

**Father:** Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.)

**Data Collection Methods and Storage**

**Data Collection:** Electronic file/report filled out by staff at facility (laptop, web-based, etc.), Electronic file/report submitted by other agencies (hospitals, etc.)

**Database collection and storage:** SAS

**Data Analysis**

**Data analysis software:** SAS

**Quality assurance:** Validity checks, Double-checking of assigned codes, Comparison/verification between multiple data sources

**Data use and analysis:** Routine statistical monitoring, Baseline rates, Rates by demographic and other variables, Time trends, Education/public awareness

**System integration**

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

**Funding**

**Funding source:** 100% MCH funds

**Web site:** <http://health.mo.gov/data/birthdefectsregistry/index.php>

**Surveillance reports on file:** MO Birth Defects Report 1996-2000

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**Montana***Montana Birth Outcomes Monitoring System (MBOMS)*

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

**Partner:** Private practice physicians

**Program status:** No surveillance program

**Start Year:** 1999

**Earliest year of available data:** 2000

**Organizational location:** Department of Health (Maternal and Child Health)

**Population covered annually:** 12,000

**Statewide:** Yes

**Current legislation or rule:** None

**Case Definition**

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

**Pregnancy outcome:** All gestational ages

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

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**Nebraska***Nebraska Birth Defect Registry***Purpose:** Surveillance, Research**Partner:** Hospitals, Universities, Early Childhood Prevention Programs, Vital Statistics, Maternal Child Health**Program status:** Currently collecting data**Start Year:** 1972**Earliest year of available data:** 1973**Organizational location:** Department of Health (Office of Epidemiology and Informatics)**Population covered annually:** 26000**Statewide:** Yes**Current legislation or rule:** Laws 1972, LB 1203, §1, §2, §3, §4 (alternate citation: Public Health & Welfare [Codes] §71-645, §71-646, §71-647, §71-648, §71-649)**Legislation year enacted:** 1972**Case Definition****Pregnancy outcome:** Livebirths ( $\geq 20$  weeks,  $\geq 500$  grams), Fetal deaths - stillbirths, spontaneous abortions, etc. ( $\geq 20$  weeks,  $\geq 500$  grams)**Age:** Up to one year after delivery**Residence:** In state birth to state resident, out of state births to state residents when Out State Jurisdiction allows use of data**Surveillance Methods****Case ascertainment:** Passive case-finding without case confirmation**Vital Records:** Birth certificates, Death certificates, Fetal death certificates**Delivery Hospitals:** Disease index or discharge index, Discharge summaries, Obstetrics logs (i.e., labor & delivery), Regular nursery logs, ICU/NICU logs or charts, Pediatric logs**Pediatric & tertiary care hospitals:** Disease index or discharge index, Discharge summaries, ICU/NICU logs or charts, Specialty outpatient clinics**Other specialty facilities:** Genetic counseling/clinic genetic facilities**Other sources:** Midwifery facilities, Physician reports**Case Ascertainment****Conditions warranting chart review in the newborn period:** Any chart with an ICD-9-CM code 740-759, Any birth certificate with a birth defect box checked**Coding:** CDC coding system based on BPA**Data Collected****Infant/fetus:** Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Birth measurements (weight, gestation, Apgars, etc.), Birth defect diagnostic information**Mother:** Identification information (name, address, date-of-birth, etc.),

Demographic information (race/ethnicity, sex, etc.), Gravidity/parity

**Father:** Identification information (name, address, date-of-birth, etc.),

Demographic information (race/ethnicity, sex, etc.)

**Data Collection Methods and Storage****Data Collection:** Electronic file/report filled out by staff at facility (laptop, web-based, etc.), Electronic file/report submitted by other agencies (hospitals, etc.)**Database collection and storage:** SQL**Data Analysis****Data analysis software:** SAS, Reports from Netsmart**Quality assurance:** Validity checks, Double-checking of assigned codes, Comparison/verification between multiple data sources, Timeliness**Data use and analysis:** Routine statistical monitoring, Baseline rates, Rates by demographic and other variables, Time trends, Grant proposals**System integration****System links:** Link to other state registries/databases**System integration:** Births, deaths, and fetal deaths**Funding****Funding source:** 100% MCH funds**Other****Web site:**[http://dhhs.ne.gov/publichealth/Pages/vitalrecords\\_partners.aspx](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)**Contacts****Michelle Hood****NE Department of Health & Human Services****220 S 17th St****Lincoln, NE 68509****Phone: 402-471-0147****Fax: 402-471-9728****E-mail: [Michelle.Hood@nebraska.gov](mailto:Michelle.Hood@nebraska.gov)**

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**Nevada***Nevada Birth Outcomes Monitoring System (NBOMS)*

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

**Partner:** Hospitals, Early Childhood Prevention Programs, Legislators, Bureau of Child, Family, & Community Wellness

**Program status:** Currently collecting data

**Start Year:** 2000

**Earliest year of available data:** 2005

**Organizational location:** Department of Health (Maternal and Child Health), State Health Division, Office of Health Statistics and Surveillance, Bureau of Health Statistics, Planning, Epidemiology and Response

**Population covered annually:** 35,000

**Statewide:** Yes

**Current legislation or rule:** NRS 442.300 - 442.330 - Birth Defects Registry Legislation \*\*\* Regulation = NAC 442

**Legislation year enacted:** 1999

**Case Definition**

**Outcomes covered:** Major birth defects and genetic diseases

**Pregnancy outcome:** Livebirths (20 weeks of gestation and greater with all birth weights), Fetal deaths - stillbirths, spontaneous abortions, etc. (20 weeks gestation and greater), Elective terminations (20 weeks gestation and greater)

**Age:** Birth to 7 years of age

**Residence:** In-state births

**Surveillance Methods**

**Case ascertainment:** Combination of active & passive, Population-based, Hospital-based

**Vital Records:** Birth certificates, Death certificates, Matched birth/death file, Fetal death certificates, hospital medical records, diagnostic/laboratory reports

**Other state based registries:** Newborn hearing screening program, Newborn metabolic screening program, Cancer registry, AIDS/HIV registry

**Delivery Hospitals:** Disease index or discharge index, Discharge summaries, Obstetrics logs (i.e., labor & delivery), Pediatric logs, Postmortem/pathology logs, Surgery logs, Cardiac catheterization laboratories, Specialty outpatient clinics

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

**Other specialty facilities:** Genetic counseling/clinic genetic facilities

**Other sources:** Physician reports

**Case Ascertainment**

**Conditions warranting chart review in the newborn period:** Any chart with an ICD-9-CM code 740-759, Any chart with a selected list of ICD-9-CM codes outside 740-759, Any birth certificate with a birth defect box checked

**Conditions warranting chart review beyond the newborn period:** Facial dysmorphism or abnormal facies, Failure to thrive, Developmental delay, CNS condition (e.g. seizure), GI condition (e.g. intestinal blockage), GU condition (e.g. recurrent infections), Cardiovascular condition, Any infant with a codable defect

**Coding:** ICD-9-CM

**Data Collected**

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

**Mother:** Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Illnesses/conditions, Prenatal care, Prenatal diagnostic information, Pregnancy/delivery complications, Family history

**Father:** Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Illnesses/conditions, Family history

**Data Collection Methods and Storage**

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

**Database collection and storage:** Access

**Data Analysis**

**Data analysis software:** Access

**Quality assurance:** Double-checking of assigned codes, Comparison/verification between multiple data sources, Data/hospital audits, Timeliness

**Data use and analysis:** Routine statistical monitoring, Public health program evaluation, Baseline rates, Rates by demographic and other variables, Monitoring outbreaks and cluster investigations, Time trends, Epidemiologic studies (using only program data), Identification of potential cases for other epidemiologic studies, Needs assessment, Service delivery, Referral, Grant proposals, Education/public awareness, Prevention projects

**System integration**

**System links:** Link to other state registries/databases, Birth registry data is manually linked to birth defect data, but the actual databases are not linked.

**System integration:** No

**Other**

**Surveillance reports on file:**

[Http://health.nv.gov/PUBLICATIONS/OHSS/2009\\_NBOMS\\_Annual\\_Report.pdf](http://health.nv.gov/PUBLICATIONS/OHSS/2009_NBOMS_Annual_Report.pdf)

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**New Hampshire***New Hampshire Birth Conditions Program (NHBCP)*

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

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

**Program status:** Currently collecting data

**Start Year:** 2003

**Earliest year of available data:** 2003

**Organizational location:** University, Department of Health (Geisel School of Medicine at Dartmouth, Bureau of Special Medical Services, Bureau of Nutrition and Health Promotion, Department of Environmental Services Bureau of Environmental Health)

**Population covered annually:** 12,500

**Statewide:** Yes

**Current legislation or rule:** RSA 141:J, NH Administrative Rules He-P 3012

**Legislation year enacted:** 2008

**Case Definition**

**Outcomes covered:** All major birth defects and genetic diseases recommended by the CDC/NBDPN

**Pregnancy outcome:** Livebirths (All gestational ages and birth weights), Fetal deaths - stillbirths, spontaneous abortions, etc. (All gestational ages), Elective terminations (All gestational ages)

**Age:** Currently collecting birth to age 2

**Residence:** All New Hampshire residents, those born in-state as well as out of state

**Surveillance Methods**

**Case ascertainment:** Active Case Finding, population based

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

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

**Delivery Hospitals:** Discharge summaries, Postmortem/pathology logs

**Pediatric & tertiary care hospitals:** Discharge summaries, Postmortem/pathology logs, Specialty outpatient clinics

**Case Ascertainment**

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

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

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

**Data Collected**

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

**Mother:** Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Gravidity/parity, Illnesses/conditions, Prenatal care, Prenatal diagnostic information, Pregnancy/delivery complications, Family history

**Father:** Identification information (name, address, date-of-birth, etc.)

**Data Collection Methods and Storage**

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

**Database collection and storage:** Oracle, AURIS, a web-based reporting system currently utilized by the NH DHHS Newborn Hearing Screening Program, has added a module to the currently operating system to meet the birth defects tracking requirements.

**Data Analysis**

**Data analysis software:** SPSS, Excel

**Quality assurance:** Validity checks, Re-abstraction of cases, Double-checking of assigned codes, Comparison/verification between multiple data sources, Clinical review

**Data use and analysis:** Routine statistical monitoring, Public health program evaluation, Baseline rates, Rates by demographic and other variables, Observed vs. expected analyses, Epidemiologic studies (using only program data), Service delivery, Grant proposals, Education/public awareness, Prevention projects

**System integration**

**System links:** Link to other state registries/databases

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

**Funding**

**Funding source:** 100% CDC grant

**Web site:** www.nhbcp.org

**Surveillance reports on file:** State and county data reports

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

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

**Partner:** Local Health Departments, Hospitals, Environmental Agencies/Organizations, Advocacy Groups, Universities, Community Nursing Services, Early Childhood Prevention Programs, Legislators, Neurodevelopmental Centers; Federally Qualified Health Care Centers; State Parent Advocacy Network

**Program status:** Currently collecting data

**Start Year:** 1928

**Earliest year of available data:** 1985

**Organizational location:** Department of Health (Special Child Health and Early Intervention Services)

**Population covered annually:** 105,000

**Statewide:** Yes

**Current legislation or rule:** NJSA 26:8-40.2 et seq., NJAC 8:20 - Amended: 1990, 1991, 1992, 2005, Readopted: 2010, Rule Amendments Adopted: 2009; Readopted: 2010

**Legislation year enacted:** 1983

**Case Definition**

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

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

**Age:** Mandated reporting of birth defects diagnosed through age 5, voluntary reporting of birth defects diagnosed > age 6 and all children diagnosed with Special Needs conditions who are ≤22 years

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

**Surveillance Methods**

**Case ascertainment:** combination of active & passive, Population-based

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

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

**Delivery Hospitals:** Disease index or discharge index, Discharge summaries, Obstetrics logs (i.e., labor & delivery), Regular nursery logs, ICU/NICU logs or charts, Pediatric logs, Postmortem/pathology logs, Specialty outpatient clinics, Quality assurance chart reviews for 3 month period

**Pediatric & tertiary care hospitals:** Disease index or discharge index, Discharge summaries, ICU/NICU logs or charts, Pediatric logs, Postmortem/pathology logs, Laboratory logs, Specialty outpatient clinics, Quality assurance visit consisting of chart review of 3 month period

**Third party payers:** Universal billing database for quality assurance

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

**Other sources:** Midwifery facilities, Physician reports, Special Child Health Services county-based Case Management Units, parents, medical examiners, Autism diagnosticians and treatment centers

**Case Ascertainment**

**Conditions warranting chart review in the newborn period:** Any chart with an ICD-9-CM code 740-759, Any chart with a selected list of ICD-9-CM codes outside 740-759, All neonatal deaths, All death certificates for < 3 years of age

**Conditions warranting chart review beyond the newborn period:** Facial dysmorphism or abnormal facies, GI condition (e.g. intestinal blockage), GU condition (e.g. recurrent infections), Cardiovascular condition, All infant

deaths (excluding prematurity), Ocular conditions, Any infant with a codable defect

**Coding:** ICD-9-CM

**Data Collected**

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

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

**Father:** Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.)

**Data Collection Methods and Storage**

**Data Collection:** Printed abstract/report filled out by staff, Printed abstract/report submitted by other 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 collection and storage:** Mainframe, SAS; SQL

**Data Analysis**

**Data analysis software:** SAS, Access

**Quality assurance:** Validity checks, Double-checking of assigned codes, Comparison/verification between multiple data sources, Data/hospital audits, Clinical review, Timeliness, Merge with birth/death certificates

**Data use and analysis:** Routine statistical monitoring, Public health program evaluation, Baseline rates, Rates by demographic and other variables, Monitoring outbreaks and cluster investigations, Epidemiologic studies (using only program data), Identification of potential cases for other epidemiologic studies, Needs assessment, Service delivery, Referral, Grant proposals, Education/public awareness, Prevention projects

**System integration**

**System links:** Link to other state registries/databases, Link case finding data to final birth file, link to hearing screening registry

**System integration:** Autism Registry is fully integrated. Newborns having failed Pulse Oximetry Screening are integrated with Registry. Newborn hearing screening registry provides direct report to the SCHS Registry. Metabolic screening program provides direct report to SCHS Registry. Autism Registry is included in the Registry. Special Child Health Services county-based Case Management Referral System is included in the Registry.

**Funding**

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

**Other**

**Web site:** <http://www.state.nj.us/health/fhs/sch/schr.shtml>

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

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

**Partner:** Hospitals, Environmental Agencies/Organizations, Universities, Legislators, Private providers

**Program status:** Currently collecting data

**Start Year:** 1995

**Earliest year of available data:** 1995

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

**Population covered annually:** 28,000

**Statewide:** Yes

**Current legislation or rule:** In January 2000, birth defects became a reportable condition. These conditions must be reported to the New Mexico Department of Health's Epidemiology and Response Division. Specifically, the conditions must be reported to the Environmental Health Epidemiology Bureau.

**Legislation year enacted:** 2000

**Case Definition**

**Outcomes covered:** 740.0-760.01, with emphasis on 12 birth defects that are nationally consistent data and measures for the Environmental Public Health Tracking Program.

**Pregnancy outcome:** Livebirths (All gestational ages and birth weights), Fetal deaths - stillbirths, spontaneous abortions, etc. (All gestational ages), Elective terminations (All gestational ages)

**Age:** Birth through age 4

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

**Surveillance Methods**

**Case ascertainment:** Passive case-finding with case confirmation

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

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

**Delivery Hospitals:** Disease index or discharge index

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

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

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

**Other sources:** Physician reports

**Case Ascertainment**

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

**Conditions warranting chart review beyond the newborn period:** Cardiovascular condition

**Coding:** CDC coding system based on BPA, ICD-9-CM, ICD-10 for deaths

**Data Collected**

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

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

**Father:** Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.)

**Data Collection Methods and Storage**

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

**Database collection and storage:** Stata, version 12.1

**Data Analysis**

**Data analysis software:** Stata version 12.1

**Quality assurance:** Validity checks, Double-checking of assigned codes, Comparison/verification between multiple data sources

**Data use and analysis:** Routine statistical monitoring, Public health program evaluation, Rates by demographic and other variables, Grant proposals, Education/public awareness, Prevention projects

**System integration**

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

**Funding**

**Funding source:** 100% CDC grant

**Other**

**Web site:**

[https://nmtracking.org/en/health\\_effects/birthdefects/about\\_birthdefects/](https://nmtracking.org/en/health_effects/birthdefects/about_birthdefects/)

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**New York***New York State Congenital Malformations Registry (CMR)*

**Purpose:** Surveillance, Research, Referral to Services, Referral to Prevention/Intervention Services, Community outreach and education  
**Partner:** Hospitals, Advocacy Groups, Universities, Early Childhood Prevention Programs

**Program status:** Currently collecting data

**Start Year:** 1982

**Earliest year of available data:** 1983

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

**Population covered annually:** 250,000

**Statewide:** Yes

**Current legislation or rule:** Public Health Law Article 2, Title II, Section 225(5)(t) and Article 2, Title I, Section 206(1)(j): Codes, Rules and Regulations, Chapter 1, State Sanitary Code, Part 22.3

**Legislation year enacted:** 1982

**Case Definition**

**Outcomes covered:** Any major structural, functional or biochemical abnormality determined genetically or induced during gestation. A detailed list is available upon request.

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

**Age:** 2 years

**Residence:** In-state and out-of-state births to state residents; in-state births to non-residents; all children born in or residing in New York, up to age 2

**Surveillance Methods**

**Case ascertainment:** Combination of active and passive case ascertainment; population-based

**Other state based registries:** NYS Dept. of Health statewide hospital discharge database

**Delivery Hospitals:** Disease index or discharge index, Discharge summaries, Obstetrics logs (i.e., labor & delivery), Regular nursery logs, ICU/NICU logs or charts, Pediatric logs, Postmortem/pathology logs, Surgery logs, Cardiac catheterization laboratories, Specialty outpatient clinics, In regions where active surveillance is conducted.

**Pediatric & tertiary care hospitals:** Disease index or discharge index, Discharge summaries, ICU/NICU logs or charts, Pediatric logs, Postmortem/pathology logs, Surgery logs, Laboratory logs, Cardiac catheterization laboratories, Specialty outpatient clinics in regions where active surveillance is conducted.

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

**Other sources:** Physician reports

**Case Ascertainment**

**Conditions warranting chart review in the newborn period:** Any chart with an ICD-9-CM code 740-759, Any chart with a selected list of ICD-9-CM codes outside 740-759, All stillborn infants

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

**Coding:** CDC coding system based on BPA, ICD-9-CM prior to 1992

**Data Collected**

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

measurements (weight, gestation, Apgars, etc.), Tests and procedures, Birth defect diagnostic information

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

**Father:** Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.)

**Data Collection Methods and Storage**

**Data Collection:** Electronic file/report submitted by other agencies (hospitals, etc.)

**Database collection and storage:** Access, Oracle, Sybase

**Data Analysis**

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

**Quality assurance:** Validity checks, Double-checking of assigned codes, Comparison/verification between multiple data sources, Data/hospital audits, Timeliness

**Data use and analysis:** Routine statistical monitoring, Baseline rates, Rates by demographic and other variables, Monitoring outbreaks and cluster investigations, Time trends, Time-space cluster analyses, Capture-recapture analyses, Observed vs. expected analyses, Epidemiologic studies (using only program data), Identification of potential cases for other epidemiologic studies, Needs assessment, Service delivery, Referral, Grant proposals, Education/public awareness, Prevention projects

**System integration**

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

**Funding**

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

**Other**

**Web site:**

<http://www.health.ny.gov/birthdefects>

**Surveillance reports on file:** Reports for 1983 - 2008 births

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**North Carolina***N.C. Birth Defects Monitoring Program (NCBDMP)*

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

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

**Program status:** Currently collecting data

**Start Year:** 1987

**Earliest year of available data:** 1989

**Organizational location:** Department of Health (State Center for Health Statistics)

**Population covered annually:** 120,000

**Statewide:** Yes

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

**Legislation year enacted:** 1995

**Case Definition**

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

**Age:** 1 year

**Residence:** NC resident births, including out of state deliveries

**Surveillance Methods**

**Case ascertainment:** Active Case Finding

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

**Delivery Hospitals:** Disease index or discharge index, Discharge summaries, Obstetrics logs (i.e., labor & delivery), ICU/NICU logs or charts, Postmortem/pathology logs, Surgery logs, Specialty outpatient clinics

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

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

**Case Ascertainment**

**Conditions warranting chart review in the newborn period:** Any chart with an ICD-9-CM code 740-759, Any chart with a selected list of ICD-9-CM codes outside 740-759, Any chart with selected procedure codes, Any birth certificate with a birth defect box checked, All stillborn infants, All prenatal diagnosed or suspected cases

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

**Coding:** CDC coding system based on BPA

**Data Collected**

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

**Mother:** Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Gravidity/parity, Illnesses/conditions, Prenatal care, Prenatal diagnostic information, Pregnancy/delivery complications, Family history

**Father:** Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.)

**Data Collection Methods and Storage**

**Data Collection:** Printed abstract/report submitted by other 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 collection and storage:** Access

**Data Analysis**

**Data analysis software:** SAS, Access

**Quality assurance:** Validity checks, Re-abstraction of cases, Double-checking of assigned codes, Clinical review, Timeliness

**Data use and analysis:** Routine statistical monitoring, Public health program evaluation, Baseline rates, Rates by demographic and other variables, Monitoring outbreaks and cluster investigations, Time trends, Time-space cluster analyses, Capture-recapture analyses, Epidemiologic studies (using only program data), Identification of potential cases for other epidemiologic studies, Needs assessment, Grant proposals, Education/public awareness, Prevention projects

**System integration**

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

**Funding**

**Funding source:** 90% General state funds, 10% MCH funds

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

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

**Purpose:** Surveillance

**Partner:** Advocacy Groups, Universities, The North Dakota Department of Human Services

**Program status:** Currently collecting data

**Start Year:** 2002

**Earliest year of available data:** 1994

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

**Population covered annually:** 10,591

**Statewide:** Yes

**Current legislation or rule:** North Dakota Century Code: 1. 23-41-04. Birth report of child with special health care needs made to department. Within three days after the birth in this state of a child born with a visible congenital deformity, the licensed maternity hospital or home in which the child was born, or the legally qualified physician or other person in attendance at the birth of the child outside of a maternity hospital, shall furnish the department a report concerning the child with the information required by the department. 2. 23-41-05. Birth report of child with special health care needs - Use - Confidential. The information contained in the report furnished to the department under section 23-39-04 concerning a child with a visible congenital deformity may be used by the department for the care and treatment of the child pursuant to this chapter. The report is confidential and is solely for the use of the department in the performance of its duties. The report is not open to public inspection nor considered a public record.

**Legislation year enacted:** 1941

**Case Definition**

**Pregnancy outcome:** Fetal deaths - stillbirths, spontaneous abortions, etc. (20 weeks gestation and greater)

**Age:** 12 months or within the year of birth.

**Residence:** In-state birth/s to state resident.

**Surveillance Methods**

**Case ascertainment:** Passive case-finding without case confirmation

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

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

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

**Third party payers:** Medicaid databases

**Other specialty facilities:** Genetic counseling/clinic genetic facilities

**Other sources:** Physician reports

**Case Ascertainment**

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

**Coding:** ICD-9-CM, ICD-10-CM

**Data Collected**

**Infant/fetus:** Demographic information (race/ethnicity, sex, etc.), Birth measurements (weight, gestation, Apgars, etc.), Tests and procedures, Birth defect diagnostic information

**Mother:** Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Gravidity/parity, Illnesses/conditions, Prenatal care, Prenatal diagnostic information, Pregnancy/delivery complications, Family history

**Father:** Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.)

**Data Collection Methods and Storage**

**Data Collection:** Electronic file/report filled out by staff at facility (laptop, web-based, etc.), Electronic file/report submitted by other agencies (hospitals, etc.)

**Database collection and storage:** Access, Mainframe, Excel and SPSS

**Data Analysis**

**Data analysis software:** SPSS, Access

**Quality assurance:** Validity checks, Double-checking of assigned codes, Comparison/verification between multiple data sources, Clinical review

**Data use and analysis:** Routine statistical monitoring, Baseline rates, Rates by demographic and other variables, Monitoring outbreaks and cluster investigations, Time trends, Time-space cluster analyses, Epidemiologic studies (using only program data), Needs assessment, Service delivery, Referral, Grant proposals, Education/public awareness

**System integration**

**System integration:** No

**Funding**

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

**Other**

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

**Surveillance reports on file:** North Dakota Birth Defects Monitoring System Summary Report 2001-2005 North Dakota Birth Defects Monitoring System Summary Report 1995-1999

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**Ohio***Ohio Connections for Children with Special Needs (OCCSN)*

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

**Partner:** Local Health Departments, Hospitals, Environmental Agencies/Organizations, Advocacy Groups, Universities, Early Childhood Prevention Programs, State Child Fatality Review Program; Ohio Collaborative to Prevent Infant Mortality

**Program status:** Currently collecting data

**Start Year:** 2006

**Earliest year of available data:** 2008

**Organizational location:** Department of Health (Maternal and Child Health)

**Population covered annually:** 140,000

**Statewide:** Yes

**Current legislation or rule:** Ohio Revised Code (ORC) 3705.30-3705.36 authorizes the department to implement a statewide birth defects information system and mandates hospital reporting (2000). Ohio Administrative Code (OAC) 3701-57-01 to 3701-57-04 specifies conditions to be reported and methods for reporting (2010).

**Legislation year enacted:** 2000

**Case Definition**

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

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

**Age:** Up to 5 years of age

**Residence:** Ohio resident children up to 5 years of age

**Surveillance Methods**

**Case ascertainment:** Passive case-finding with case confirmation, Passive case-finding without case confirmation, Passive case-finding with case confirmation for certain disorders

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

**Other state based registries:** Programs for children with special needs, Newborn metabolic screening program, Genetics data system

**Delivery Hospitals:** Hospital medical records and billing records

**Pediatric & tertiary care hospitals:** Hospital medical records and billing records

**Other sources:** Genetics Clinic Data within some hospitals

**Case Ascertainment**

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

**Coding:** ICD-9-CM

**Data Collected**

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

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

**Father:** Identification information (name, address, date-of-birth, etc.)

**Data Collection Methods and Storage**

**Data Collection:** Electronic file/report submitted by other agencies (hospitals, etc.), Hospital reporters upload CSV flat file to secure website for integration. Small volume hospitals can manually key data into user interface on secure internet site

**Database collection and storage:** SQL server. External system data methods and storage: ODBC connection with SAS. SAS import of other data sets and merge export of cohort line lists to MS Excel for follow-up.

**Data Analysis**

**Data analysis software:** SAS, MS Excel, FRIL

**Quality assurance:** Validity checks, Comparison/verification between multiple data sources, Clinical review, Timeliness

**Data use and analysis:** Routine statistical monitoring, Public health program evaluation, Observed vs. expected analyses, Referral, Grant proposals, Education/public awareness

**System integration**

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

**Funding**

**Funding source:** 100% CDC grant

**Other**

**Web site:**

<http://www.odh.ohio.gov/odhprograms/cmh/bdefects/birthdefects1.aspx>

**Surveillance reports on file:** 2012 Annual Report

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**Oklahoma***Oklahoma Birth Defect Registry (OBDR)*

**Purpose:** Surveillance, Research, Referral to Services, Referral to Prevention/Intervention Services, Data used to educate public in the Oklahoma initiative to reduce Infant Mortality

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

**Program status:** Currently collecting data

**Start Year:** 1992

**Organizational location:** Department of Health (Screening and Special Services)

**Population covered annually:** 52,000

**Statewide:** Yes

**Current legislation or rule:** 63 - 1-550.2

**Legislation year enacted:** 1992

**Case Definition**

**Pregnancy outcome:** Livebirths (All gestational ages and birth weights), Fetal deaths - stillbirths, spontaneous abortions, etc. (All gestational ages), Elective terminations (All gestational ages)

**Age:** 3 years after delivery

**Residence:** Oklahoma

**Surveillance Methods**

**Case ascertainment:** Active Case Finding

**Vital Records:** Medical Examiner's autopsy reports

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

**Delivery Hospitals:** Discharge summaries, Obstetrics logs (i.e., labor & delivery), Specialty outpatient clinics

**Pediatric & tertiary care hospitals:** Discharge summaries, Specialty outpatient clinics

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

**Other sources:** MFM/Neonatology Case Conference

**Case Ascertainment**

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

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

**Coding:** CDC coding system based on BPA

**Data Collected**

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

**Mother:** Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Gravidity/parity, Illnesses/conditions, Prenatal care, Prenatal diagnostic information, Pregnancy/delivery complications, Family history

**Father:** Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.)

**Data Collection Methods and Storage**

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

**Database collection and storage:** Access

**Data Analysis**

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

**Quality assurance:** Validity checks, Re-abstraction of cases, Double-checking of assigned codes, Comparison/verification between multiple data sources, Clinical review, Timeliness

**Data use and analysis:** Routine statistical monitoring, Public health program evaluation, Baseline rates, Needs assessment, Service delivery, Referral, Education/public awareness, Prevention projects

**Funding**

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

**Other**

**Web site:**

[http://www.ok.gov/health/Child\\_and\\_Family\\_Health/Screening\\_and\\_Special\\_Services/Oklahoma\\_Birth\\_Defects\\_Registry/](http://www.ok.gov/health/Child_and_Family_Health/Screening_and_Special_Services/Oklahoma_Birth_Defects_Registry/)

**Surveillance reports on file:** Yes

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**Oregon***Oregon Birth Anomalies Registry (BAR)*

**Purpose:** Surveillance

**Partner:** Hospitals, Environmental Agencies/Organizations, Advocacy Groups, Universities

**Program status:** Currently collecting data

**Start Year:** 2013

**Earliest year of available data:** 2008

**Organizational location:** Department of Health (Maternal and Child Health)

**Population covered annually:** 45,000

**Statewide:** Yes

**Current legislation or rule:** None

**Case Definition**

**Outcomes covered:** EPHT-12

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

**Age:** 5 years

**Residence:** In-state birth to state resident

**Surveillance Methods**

**Case ascertainment:** Link birth certificate to full hospital discharge dataset and to Medicaid claims

**Vital Records:** Birth certificates

**Third party payers:** Medicaid databases

**Other sources:** Full hospital discharge database

**Case Ascertainment**

**Coding:** ICD-9-CM

**Data Collected**

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

**Mother:** Demographic information (race/ethnicity, sex, etc.)

**Data Collection Methods and Storage**

**Data Collection:** Case data entirely from linkage of existing records.

**Database collection and storage:** Access, SQL server, SPSS, Mainframe

**Data Analysis**

**Data analysis software:** SPSS

**Quality assurance:** Validity checks, Comparison/verification between multiple data sources

**Data use and analysis:** Baseline rates

**Funding**

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

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**Pennsylvania***Pennsylvania Birth Defects Surveillance Database (BDSS)*

**Program status:** No surveillance program

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**Puerto Rico***Puerto Rico Birth Defects Surveillance and Prevention System (PRBDSS)*

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

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

**Program status:** Currently collecting data

**Start Year:** 1995

**Earliest year of available data:** 1995

**Organizational location:** Department of Health (Services for Children with Special Medical Needs Division)

**Population covered annually:** 40,000

**Statewide:** Yes

**Current legislation or rule:** Law #351

**Legislation year enacted:** September 16, 2004

**Case Definition**

**Outcomes covered:** Selected birth defects covered: Neural Tube defects, cleft lip and/or cleft palate, anotia, microtia, anophthalmia, microphthalmia, limb defects, talipes equinovarus, gastrochisis, omphalocele, Trisomy 13, 18 and 21, Truner's syndrome, 22q11.2 deletion syndrome, Albinism, Jarcho-Levin syndrome, major congenital heart defects, ambiguous genitalia, Hypospadias, and bladder extrophy.

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

**Age:** Up to 6 years after delivery

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

**Surveillance Methods**

**Case ascertainment:** Active Case Finding

**Vital Records:** Birth certificates, Death certificates

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

**Delivery Hospitals:** Discharge summaries, Obstetrics logs (i.e., labor & delivery), Regular nursery logs, ICU/NICU logs or charts, Pediatric logs, Postmortem/pathology logs, Specialty outpatient clinics

**Pediatric & tertiary care hospitals:** Discharge summaries, ICU/NICU logs or charts, Pediatric logs, Postmortem/pathology logs

**Third party payers:** Medicaid databases, Health Maintenance organizations (HMOs)

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

**Other sources:** Physician reports

**Case Ascertainment**

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

**Conditions warranting chart review beyond the newborn period:** Facial dysmorphism or abnormal facies, Cardiovascular condition

**Coding:** ICD-9-CM

**Data Collected**

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

**Mother:** Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Gravidity/parity, Prenatal care, Prenatal diagnostic information

**Father:** Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.)

**Data Collection Methods and Storage**

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

**Database collection and storage:** Access

**Data Analysis**

**Data analysis software:** SPSS, Access

**Quality assurance:** Validity checks, Re-abstraction of cases, Double-checking of assigned codes, Comparison/verification between multiple data sources, Clinical review, Timeliness

**Data use and analysis:** Routine statistical monitoring, Baseline rates, Rates by demographic and other variables, Monitoring outbreaks and cluster investigations, Time trends, Service delivery, Referral, Grant proposals, Education/public awareness, Prevention projects

**Funding**

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

**Other**

**Web site:**

<http://www.salud.gov.pr/Programas/CampanaAcidoFolico/Pages/default.aspx>

**Surveillance reports on file:** Puerto Rico Birth Defects Annual Report 2012 and 2010

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**Rhode Island***Rhode Island Birth Defects Surveillance Program*

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

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

**Program status:** Currently collecting data

**Start Year:** 2000

**Earliest year of available data:** 2002

**Organizational location:** Department of Health (Center for Health Data and Analysis)

**Population covered annually:** 11,000

**Statewide:** Yes

**Current legislation or rule:** Title 23, Chapter 13.3 of Rhode Island General Laws requires the development of a birth defects surveillance, reporting, and information system that will a) describe the occurrence of birth defects in children up to age five; b) detect trends of morbidity and mortality; and c) identify newborns and children with birth defects to intervene on a timely basis for treatment.

**Legislation year enacted:** 2003

**Case Definition**

**Outcomes covered:** All birth defects and genetic diseases

**Pregnancy outcome:** Livebirths (All gestational ages and birth weights), Fetal Deaths/Fetal deaths - stillbirths, spontaneous abortions, etc. (20 weeks gestation and greater), Elective terminations (20 weeks gestation and greater)

**Age:** 4 years

**Residence:** RI maternal residence

**Surveillance Methods**

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

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

**Other state based registries:** Programs for children with special needs, Newborn hearing screening program, Newborn metabolic screening program, RI has an integrated child health information system called KIDSNET, which links data from 9 programs including: Newborn Developmental Risk Screening, Universal Newborn Hearing, Early Intervention, WIC, and home visiting

**Delivery Hospitals:** Discharge summaries

**Pediatric & tertiary care hospitals:** Discharge summaries, Specialty outpatient clinics

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

**Other sources:** Physician Reports

**Case Ascertainment**

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

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

**Coding:** ICD-9-CM

**Data Collected**

**Infant/fetus:** Identification information (name, address, date-of-birth, etc.), Birth measurements (weight, gestation, Apgars, etc.), Tests and procedures, Infant complications, Birth defect diagnostic information

**Mother:** Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Gravidity/parity, Illnesses/conditions, Prenatal care, Prenatal diagnostic information, Pregnancy/delivery complications, Family history

**Data Collection Methods and Storage**

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

**Database collection and storage:** Access, Oracle

**Data Analysis**

**Data analysis software:** SAS, Access

**Quality assurance:** Validity checks, Re-abstraction of cases, Double-checking of assigned codes, Comparison/verification between multiple data sources, Data/hospital audits, Timeliness

**Data use and analysis:** Routine statistical monitoring, Public health program evaluation, Baseline rates, Rates by demographic and other variables, Monitoring outbreaks and cluster investigations, Time trends, Epidemiologic studies (using only program data), Needs assessment, Service delivery, Referral, Grant proposals, Education/public awareness, Prevention projects

**System integration**

**System links:** Link to other state registries/databases, KIDSNET, hospital discharge data

**System integration:** Integrated into KIDSNET for web-based provider reporting

**Funding**

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

**Other**

**Web site:** [www.health.ri.gov/programs/birthdefects](http://www.health.ri.gov/programs/birthdefects)

**Surveillance reports on file:** 2012 Rhode Island Birth Defects Data Book

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**South Carolina***South Carolina Birth Defects Program (SCBDP)*

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

**Partner:** Local Health Departments, Hospitals, Environmental Agencies/Organizations, Advocacy Groups, Universities, Greenwood Genetics Center (GGC)

**Program status:** Currently collecting data

**Organizational location:** Department of Health (Maternal and Child Health)

**Population covered annually:** 57,100

**Statewide:** Yes

**Current legislation or rule:** A281, R308, H4115

**Legislation year enacted:** 2004

**Case Definition**

**Outcomes covered:** Central nervous system defects, eye and ear defects, cardiovascular defects, orofacial defects, gastrointestinal defects, genitourinary defects, musculoskeletal defects, and chromosomal defects

**Pregnancy outcome:** Livebirths (All gestational ages and birth weights), Fetal deaths - stillbirths, spontaneous abortions, etc. (All gestational ages), Elective terminations (All gestational ages)

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

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

**Surveillance Methods**

**Case ascertainment:** Active Case Finding

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

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

**Delivery Hospitals:** Disease index or discharge index, Discharge summaries, Postmortem/pathology logs

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

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

**Other sources:** Physician reports

**Case Ascertainment**

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

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

**Coding:** ICD-9-CM

**Data Collected**

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

**Mother:** Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Gravidity/parity, Illnesses/conditions, Prenatal care, Prenatal diagnostic information, Pregnancy/delivery complications

**Data Collection Methods and Storage**

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

**Database collection and storage:** Access, SQL Server

**Data Analysis**

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

**Quality assurance:** Validity checks, Re-abstraction of cases, Double-checking of assigned codes, Comparison/verification between multiple data sources, Clinical review

**Data use and analysis:** Routine statistical monitoring, Baseline rates, Rates by demographic and other variables, Time trends, Time-space cluster analyses, Needs assessment, Referral, Grant proposals, Education/public awareness, Prevention projects

**System integration**

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

**System integration:** SCBDP data is integrated with SC Vital Records.

**Funding**

**Funding source:** 100% General state funds

**Other**

**Web site:**

<http://www.scdhec.gov/Health/FamilyPlanning/DataStatistics/PregnancyB abyHealth/BirthDefects/>

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**South Dakota**

*Program status:* No surveillance program

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**Tennessee***Tennessee Birth Defects Registry (TBDR)*

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

**Partner:** Local Health Departments, Hospitals, Universities, Early Childhood Prevention Programs, Legislators

**Program status:** Currently collecting data

**Start Year:** 2000

**Earliest year of available data:** 1999

**Population covered annually:** 85,000

**Statewide:** Yes

**Current legislation or rule:** TCA 68-5-506

**Legislation year enacted:** 2000

**Case Definition**

**Outcomes covered:** 45 major structural birth defects

**Pregnancy outcome:** Livebirths (All gestational ages and birth weights), Fetal deaths - stillbirths, spontaneous abortions, etc. (Prior to July 1st 2010:  $\geq 500$  grams, or in the absence of weight,  $\geq 22$  completed weeks of gestation; July 1st 2010 and later:  $\geq 350$  grams, or in the absence of weight,  $\geq 20$  completed weeks of gestation)

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

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

**Surveillance Methods**

**Case ascertainment:** population-based

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

**Other state based registries:** Newborn metabolic screening program, Hospital Discharge Data System

**Delivery Hospitals:** Disease index or discharge index, Discharge summaries, Obstetrics logs (i.e., labor & delivery), Regular nursery logs, ICU/NICU logs or charts, Pediatric logs, Postmortem/pathology logs, Surgery logs, Cardiac catheterization laboratories, Specialty outpatient clinics

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

**Other sources:** Midwifery facilities

**Case Ascertainment**

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

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

**Coding:** ICD-9-CM

**Data Collected**

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

measurements (weight, gestation, Apgars, etc.), Tests and procedures, Infant complications, Birth defect diagnostic information

**Mother:** Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Gravidity/parity, Illnesses/conditions, Prenatal care, Prenatal diagnostic information, Pregnancy/delivery complications, Family history

**Father:** Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.)

**Data Collection Methods and Storage**

**Data Collection:** Electronic file/report filled out by staff at facility (laptop, web-based, etc.), Electronic file/report submitted by other agencies (hospitals, etc.)

**Database collection and storage:** Access, SQL and SAS

**Data Analysis**

**Data analysis software:** SAS, Arc-GIS

**Quality assurance:** Validity checks, Re-abstraction of cases, Double-checking of assigned codes, Comparison/verification between multiple data sources, Data/hospital audits

**Data use and analysis:** Routine statistical monitoring, Baseline rates, Rates by demographic and other variables, Time trends, Epidemiologic studies (using only program data), Identification of potential cases for other epidemiologic studies, Needs assessment, Education/public awareness

**System integration**

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

**Funding**

**Funding source:** 100% General state funds

**Web site:** <http://hit.state.tn.us/Reports.aspx>

**Surveillance reports on file:** Tennessee Birth Defects Registry 2006-2010

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**Texas***Texas Birth Defects Epidemiology and Surveillance Branch (TBDES)*

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

**Partner:** Hospitals, Environmental Agencies/Organizations, Advocacy Groups, Universities, Legislators, Researchers (NBDPN, NBDPS, ICBDSR)

**Program status:** Currently collecting data

**Start Year:** 1994

**Earliest year of available data:** 1996

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

**Population covered annually:** 377,274 in 2011

**Statewide:** Yes

**Current legislation or rule:** Health and Safety Code, Title 2, Subtitle D, Section 1, Chapter 87

**Legislation year enacted:** 1993

**Case Definition**

**Outcomes covered:** All major structural birth defects and fetal alcohol syndrome

**Pregnancy outcome:** Livebirths (All gestational ages and birth weights), Fetal deaths - stillbirths, spontaneous abortions, etc. (All gestational ages), Elective terminations (All gestational ages)

**Age:** Up to one year after delivery and up to 6 years for FAS, special studies and childhood genetic disorders diagnosed after infancy.

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

**Surveillance Methods**

**Case ascertainment:** Active Case-finding, Population-based

**Vital Records:** Fetal death certificates for delivery year 2009 to present

**Delivery Hospitals:** Disease index or discharge index, Discharge summaries, Obstetrics logs (i.e., labor & delivery), Regular nursery logs, ICU/NICU logs or charts, Pediatric logs, Postmortem/pathology logs, Surgery logs, Cardiac catheterization laboratories, Specialty outpatient clinics, Genetics, stillbirths and radiology logs

**Pediatric & tertiary care hospitals:** Disease index or discharge index, Discharge summaries, ICU/NICU logs or charts, Pediatric logs, Postmortem/pathology logs, Surgery logs, Laboratory logs, Cardiac catheterization laboratories, Specialty outpatient clinics, Genetics, stillbirths and radiology logs

**Other sources:** Midwifery facilities, Licensed birthing centers

**Case Ascertainment**

**Conditions warranting chart review in the newborn period:** Any chart with an ICD-9-CM code 740-759, Any chart with a selected list of ICD-9-CM codes outside 740-759, Any chart with selected defects or medical conditions (i.e. abnormal facies, congenital heart disease), Infants with low birth weight or low gestation (<34 weeks GA ), All stillborn infants

**Conditions warranting chart review beyond the newborn period:** CNS condition (e.g. seizure), GI condition (e.g. intestinal blockage), GU condition (e.g. recurrent infections), Cardiovascular condition, Any infant with a codable defect

**Coding:** CDC coding system based on BPA

**Data Collected**

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

measurements (weight, gestation, Apgars, etc.), Tests and procedures, Infant complications, Birth defect diagnostic information

**Mother:** Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Gravidity/parity, Illnesses/conditions, Prenatal care, Prenatal diagnostic information, Pregnancy/delivery complications, Family history

**Father:** Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Family history

**Data Collection Methods and Storage**

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

**Database collection and storage:** Oracle

**Data Analysis**

**Data analysis software:** SAS, Access

**Quality assurance:** Validity checks, Re-abstraction of cases, Double-checking of assigned codes, Clinical review, Timeliness, Re-casefinding, re-review of medical records

**Data use and analysis:** Routine statistical monitoring, Public health program evaluation, Baseline rates, Rates by demographic and other variables, Monitoring outbreaks and cluster investigations, Time trends, Time-space cluster analyses, Observed vs. expected analyses, Epidemiologic studies (using only program data), Identification of potential cases for other epidemiologic studies, Referral, Grant proposals, Education/public awareness, Prevention projects

**System integration**

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

**Funding**

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

**Other**

**Web site:** [www.dshs.state.tx.us/birthdefects/](http://www.dshs.state.tx.us/birthdefects/)

**Surveillance reports on file:** See website for publication and surveillance reports

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**Utah***Utah Birth Defect Network (UBDN)*

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

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

**Program status:** Currently collecting data

**Start Year:** 1994

**Earliest year of available data:** 1994

**Organizational location:** Department of Health (CSHCN)

**Population covered annually:** 55,000

**Statewide:** Yes

**Current legislation or rule:** Birth Defect Rule (R398-5)

**Legislation year enacted:** 1999

**Case Definition**

**Outcomes covered:** Major structural and selected genetic disorders

**Pregnancy outcome:** Livebirths (All gestational ages and birth weights), Fetal deaths - stillbirths, spontaneous abortions, etc. (All gestational ages), Elective terminations (All gestational ages)

**Age:** 2 years based on mandatory reporting

**Residence:** Maternal residence in Utah at time of delivery

**Surveillance Methods**

**Case ascertainment:** Combination of active and passive case ascertainment; population-based

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

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

**Delivery Hospitals:** Disease index or discharge index, Discharge summaries, Obstetrics logs (i.e., labor & delivery), Regular nursery logs, ICU/NICU logs or charts, Postmortem/pathology logs, Specialty outpatient clinics, Champions report live births delivered at their respective hospitals

**Pediatric & tertiary care hospitals:** Disease index or discharge index, Discharge summaries, ICU/NICU logs or charts, Postmortem/pathology logs, Surgery logs, Cardiac catheterization laboratories, Specialty outpatient clinics

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

**Other sources:** Midwifery facilities, Physician reports, Lay midwives

**Case Ascertainment**

**Conditions warranting chart review in the newborn period:** Any chart with an ICD-9-CM code 740-759, Any chart with a selected list of ICD-9-CM codes outside 740-759, Any chart with a CDC/BPA code, Any chart with selected defects or medical conditions (i.e. abnormal facies, congenital heart disease), Any birth, death or fetal death certificate with a birth defect box checked, All stillborn infants, All neonatal deaths, All infants in NICU or special care nursery, All prenatal diagnosed or suspected cases, All fetal death certificates, NICU reports, infant deaths are reviewed

**Conditions warranting chart review beyond the newborn period:** Facial dysmorphism or abnormal facies, Failure to thrive, Cardiovascular condition, All infant deaths (excluding prematurity), Childhood deaths between 1 and 6, Any infant with a codable defect

**Coding:** CDC coding system based on BPA

**Data Collected**

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

**Mother:** Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Gravidity/parity, Illnesses/conditions, Prenatal care, Prenatal diagnostic information, Pregnancy/delivery complications, Family history

**Father:** Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Illnesses/conditions, Family history

**Data Collection Methods and Storage**

**Data Collection:** Printed abstract/report filled out by staff, Printed abstract/report submitted by other 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 collection and storage:** Access

**Data Analysis**

**Data analysis software:** SAS, Access

**Quality assurance:** Validity checks, Double-checking of assigned codes, Comparison/verification between multiple data sources, Clinical review, Timeliness, Logical checks, duplicate check in tracking and surveillance module, case record form checked for completeness, timeliness through system, manual review of subset of surveillance module case data compared to case record form

**Data use and analysis:** Routine statistical monitoring, Public health program evaluation, Baseline rates, Rates by demographic and other variables, Time trends, Epidemiologic studies (using only program data), Identification of potential cases for other epidemiologic studies, Referral, Grant proposals, Education/public awareness, Prevention projects, Oral Facial Cleft Case-Control Study, UT Center for Birth Defects Research and Prevention, International Clearinghouse for Birth Defects, Local studies

**System integration**

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

**Funding**

**Funding source:** 100% MCH funds

**Other**

**Web site:** <http://www.health.utah.gov/birthdefect>

**Surveillance reports on file:** [Http://ibis.health.utah.gov](http://ibis.health.utah.gov)

**Additional information on file:** Scientific Collaboration Protocol

**Comments:** IBIS indicators for specific birth defects are online.

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**Vermont***Birth Information Network (BIN)*

**Purpose:** Surveillance, Referral to Services

**Partner:** Hospitals, Environmental Agencies/Organizations, Advocacy Groups, Universities, Early Childhood Prevention Programs, Hospital Association

**Program status:** Currently collecting data

**Start Year:** 2006

**Earliest year of available data:** 2006

**Organizational location:** Department of Health (Division of Health Surveillance / Statistics)

**Population covered annually:** 6,200

**Statewide:** Yes

**Current legislation or rule:** Act 32 (TITLE 18 VSA §5087)

**Legislation year enacted:** 2003

**Case Definition**

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

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

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

**Surveillance Methods**

**Case ascertainment:** Passive case-finding with case confirmation

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

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

**Delivery Hospitals:** Discharge summaries, Specialty outpatient clinics

**Pediatric & tertiary care hospitals:** Discharge summaries, Specialty outpatient clinics

**Third party payers:** Medicaid databases, Multi-payer claims database

**Other specialty facilities:** Cytogenetic laboratories

**Other sources:** Physician reports, Autopsy reports

**Case Ascertainment**

**Conditions warranting chart review in the newborn period:** Any chart with selected procedure codes, Any chart with selected defects or medical conditions (i.e. abnormal facies, congenital heart disease), Any birth certificate with a birth defect box checked

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

**Coding:** ICD-9-CM

**Data Collected**

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

**Mother:** Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Gravidity/parity, Illnesses/conditions, Prenatal care, Pregnancy/delivery complications, Family history

**Father:** Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.)

**Data Collection Methods and Storage**

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

**Database collection and storage:** Access

**Data Analysis**

**Data analysis software:** SPSS, Access, Excel

**Quality assurance:** Comparison/verification between multiple data sources, Data/hospital audits, Clinical review, Timeliness

**Data use and analysis:** Routine statistical monitoring, Public health program evaluation, Baseline rates, Rates by demographic and other variables, Monitoring outbreaks and cluster investigations, Observed vs. expected analyses, Referral, Grant proposals, Education/public awareness

**System integration**

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

**Funding**

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

**Other**

**Web site:** [http://healthvermont.gov/tracking/health\\_birthdefects.aspx](http://healthvermont.gov/tracking/health_birthdefects.aspx)

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**Virginia***Virginia Congenital Anomalies and Reporting Education System (VaCARES)*

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

**Partner:** Local Health Departments

**Program status:** Currently collecting data

**Start Year:** 1985

**Earliest year of available data:** 2004

**Organizational location:** Department of Health (Family Health Services)

**Population covered annually:** 101,000

**Statewide:** Yes

**Current legislation or rule:** Code of Virginia, § 32.1-69.1

**Legislation year enacted:** 1985

**Case Definition**

**Outcomes covered:** Major and non-major birth defects

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

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

**Residence:** Any diagnoses occurring in-state

**Surveillance Methods**

**Case ascertainment:** Passive case-finding without case confirmation

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

**Delivery Hospitals:** Discharge summaries

**Pediatric & tertiary care hospitals:** Discharge summaries

**Other specialty facilities:** Genetic counseling/clinic genetic facilities

**Case Ascertainment**

**Conditions warranting chart review in the newborn period:** Any chart with selected defects or medical conditions (i.e. congenital heart disease)

**Coding:** ICD-9-CM

**Data Collected**

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

**Mother:** Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Gravity/parity, Illnesses/conditions, Prenatal care, Pregnancy/delivery complications

**Father:** Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.)

**Data Collection Methods and Storage**

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

**Database collection and storage:** Oracle, Web-based reporting system is linked to electronic birth certificate and populates Oracle data tables

**Data Analysis**

**Data analysis software:** SAS

**Quality assurance:** Validity checks

**Data use and analysis:** Public health program evaluation, Rates by demographic and other variables, Monitoring outbreaks and cluster investigations, Time trends, Needs assessment, Referral, Grant proposals, Education/public awareness

**System integration**

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

**System integration:** VaCARES is part of the Virginia Vital Events Screening and Tracking System, which also houses electronic birth certificate reporting and the Virginia Early Hearing Detection and Intervention tracking.

**Funding**

**Funding source:** 70% MCH funds, 30% Genetic screening revenues

**Web site:**

<http://www.vdh.virginia.gov/ofhs/childandfamily/childhealth/gns/vacares.htm>

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**Washington***Washington State Birth Defects Surveillance System (BDSS)*

**Purpose:** Surveillance

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

**Program status:** Currently collecting data

**Earliest year of available data:** 1987

**Organizational location:** Department of Health (Office of Healthy Communities)

**Population covered annually:** 86,000

**Statewide:** Yes

**Current legislation or rule:** Notifiable Conditions: WAC 246-01

**Legislation year enacted:** 2000

**Case Definition**

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

**Age:** We ascertain cases through 1 year of age for structural defects and to age 10 for FAS/FAE, Cerebral Palsy and Autism

**Residence:** Resident births; children born, diagnosed, or treated in-state

**Surveillance Methods**

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

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

**Delivery Hospitals:** Disease index or discharge index

**Pediatric & tertiary care hospitals:** Disease index or discharge index

**Other sources:** University-based FAS/FAE and Autism specialty centers

**Case Ascertainment**

**Coding:** ICD-9-CM, FAS/FAE coding scheme will be utilized in data collection and case description for FAS/FAE cases

**Data Collected**

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

**Mother:** Identification information (name, address, date-of-birth, etc.)

**Father:** Identification information (name, address, date-of-birth, etc.)

**Data Collection Methods and Storage**

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

**Database collection and storage:** Web-based SQL server

**Data Analysis**

**Data analysis software:** SAS, Stata

**Quality assurance:** Validity checks, Comparison/verification between multiple data sources

**Data use and analysis:** Routine statistical monitoring, Baseline rates, Monitoring outbreaks and cluster investigations, Time trends, Observed vs. expected analyses, Education/public awareness

**System integration**

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

**Funding**

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

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**West Virginia***West Virginia Birth Defects Surveillance System*

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

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

**Program status:** Currently collecting data

**Start Year:** 1989

**Earliest year of available data:** 1989

**Organizational location:** Department of Health (Maternal and Child Health)

**Population covered annually:** 21,000

**Statewide:** Yes

**Current legislation or rule:** WV State Code 16-5-12a

**Legislation year enacted:** 1991; updated 2002

**Case Definition**

**Outcomes covered:** ICD-9-CM codes 740-759, 760, 764, 765, 766

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

**Age:** 0-6 years

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

**Surveillance Methods**

**Case ascertainment:** Passive case-finding without case confirmation

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

**Other state based registries:** Programs for children with special needs, Newborn hearing screening program, Newborn metabolic screening program, Infant Mortality Review Team

**Delivery Hospitals:** Discharge summaries

**Pediatric & tertiary care hospitals:** Discharge summaries

**Other sources:** Pediatric referrals of children not identified on birth certificate

**Case Ascertainment**

**Conditions warranting chart review in the newborn period:** Any chart with an ICD-9-CM code 740-759, Any chart with a selected list of ICD-9-CM codes outside 740-759, Any chart with selected defects or medical conditions (i.e. abnormal facies, congenital heart disease), Any birth certificate with a birth defect box checked, Infants with low birth weight or low gestation (<2500 grams or <37 weeks), All stillborn infants, All neonatal deaths, All elective abortions, All infants in NICU or special care nursery

**Conditions warranting chart review beyond the newborn period:** Facial dysmorphism or abnormal facies, Failure to thrive, Developmental delay, CNS condition (e.g. seizure), GI condition (e.g. intestinal blockage), GU condition (e.g. recurrent infections), Cardiovascular condition, All infant deaths (excluding prematurity), Childhood deaths between 1 and 6, Ocular conditions, Auditory/hearing conditions, Any infant with a codable defect/codable defect

**Coding:** ICD-9-CM

**Data Collected**

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

**Mother:** Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Gravidity/parity, Prenatal care, Prenatal diagnostic information, Family history

**Father:** Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Family history

**Data Collection Methods and Storage**

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

**Database collection and storage:** Access

**Data Analysis**

**Data analysis software:** Access

**Quality assurance:** Comparison/verification between multiple data sources, Timeliness

**Data use and analysis:** Routine statistical monitoring, Baseline rates, Rates by demographic and other variables, Time trends, Epidemiologic studies (using only program data), Needs assessment, Service delivery, Referral, Grant proposals, Education/public awareness, Prevention projects

**System integration**

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

**Funding**

**Funding source:** 100% MCH funds

**Other**

**Web site:** <http://wvdhhr.org/omcfh>

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**Wisconsin***Wisconsin Birth Defect Prevention and Surveillance System (WBDPSS)*

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

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

**Program status:** Currently collecting data

**Start Year:** 2004

**Earliest year of available data:** 2005

**Organizational location:** Division of Public Health Services

**Statewide:** Yes

**Current legislation or rule:** State statute 253.12 Birth defect prevention and surveillance system. Enacted December 2000. Department of Health Services rules, Chapter DHS 116 Wisconsin Birth Defect Prevention and Surveillance System. Enacted April 2003.

**Legislation year enacted:** 2000

**Case Definition**

**Outcomes covered:** A list of 87 specific birth defects are collected. The list may be viewed on our website at <http://www.dhs.wisconsin.gov/health/children/birthdefects/index.htm>. It is an appendix to the reporting form DPH 40054. The list was developed by the Scientific Committee of the Council on Birth Defect Prevention and Surveillance and is included as an appendix in the rules.

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

**Age:** Up to 2 years after delivery

**Residence:** All children born in and/or receiving services in the state

**Surveillance Methods**

**Case ascertainment:** Passive case-finding without case confirmation, Work with reporters who report batches from EMRs to assure reporting quality

**Vital Records:** Matched birth/death file, compare registry reports to vital records periodically for selected birth defects

**Case Ascertainment**

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

**Data Collected**

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

measurements (weight, gestation, Apgars, etc.), Birth defect diagnostic information

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

**Father:** Identification information (name, address, date-of-birth, etc.)

**Data Collection Methods and Storage**

**Data Collection:** Printed abstract/report submitted by other 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.), Can submit one report on the website or upload multiple reports. A paper form is also available that is entered by state birth defects staff.

**Database collection and storage:** Oracle

**Data Analysis**

**Data analysis software:** SAS

**Quality assurance:** Validity checks, Comparison/verification between multiple data sources

**Data use and analysis:** Routine statistical monitoring, Referral, Grant proposals, Prevention projects

**Funding**

**Funding source:** 70% Service fees, 30% Other federal funding (non-CDC grants)

**Web site:**

<http://www.dhs.wisconsin.gov/health/children/birthdefects/index.htm>

**Surveillance reports on file:** Posted on the website

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**Wyoming**

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

**Comments:** Wyoming plans to use SSDI funds to compile a Birth Defects Surveillance plan

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**Department of Defense***United States Department of Defense (DoD) Birth and Infant Health Registry***Purpose:** Surveillance, Research**Partner:** Hospitals, Universities, Other DoD Programs**Program status:** Currently collecting data**Start Year:** 1998**Earliest year of available data:** 1998**Organizational location:** Deployment Health Research Department, Naval Health Research Center**Population covered annually:** Approximately 100,000 per year**Statewide:** No, National/Worldwide; includes all DoD beneficiaries**Current legislation or rule:** Assistant Secretary of Defense, Health Affairs Policy Memorandum**Legislation year enacted:** 1998**Case Definition****Outcomes covered:** Outcomes include those birth defects listed in the case definition of the National Birth Defects Prevention Network. For a birth defect to be represented, the diagnosis must appear at least once in an inpatient record, or at least twice on two separate dates for outpatient encounters. Same sex multiples are excluded from analysis.**Pregnancy outcome:** Livebirths (All gestational ages and birth weights)**Age:** Birth up to one year after delivery**Residence:** Worldwide; any birth to a US military beneficiary**Surveillance Methods****Case ascertainment:** Active Case Finding, Passive case-finding with case confirmation, Passive case-finding without case confirmation, Electronic diagnostic codes from all inpatient and outpatient healthcare encounters of US military beneficiaries**Delivery Hospitals:** Disease index or discharge index, Discharge summaries, Specialty outpatient clinics, All inpatient and outpatient encounters are captured in standardized DoD data**Pediatric & tertiary care hospitals:** Disease index or discharge index, Discharge summaries, Specialty outpatient clinics, All inpatient and outpatient encounters are captured in standardized DoD data**Third party payers:** All inpatient and outpatient encounters are captured in standardized DoD data**Other sources:** Validation of standardized electronic data performed by active case ascertainment and chart review of a random sample of births from military facilities**Case Ascertainment****Conditions warranting chart review in the newborn period:** Any chart with an ICD-9-CM code 740-759, Any chart with a selected list of ICD-9-CM codes outside 740-759, Validation of standardized electronic data performed by active case ascertainment and chart review of a random sample of births from military healthcare facilities**Conditions warranting chart review beyond the newborn period:** Any infant with a codable defect**Coding:** ICD-9-CM**Data Collected****Infant/fetus:** Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Birth measurements (weight, gestation, Apgars, etc.), Tests and procedures, Infant complications, Birth defect diagnostic information**Mother:** Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Illnesses/conditions, Prenatal care, Prenatal diagnostic information, Pregnancy/delivery complications**Father:** Identification information (name, address, date-of-birth, etc.), Demographic information (race/ethnicity, sex, etc.), Illnesses/conditions**Data Collection Methods and Storage****Data Collection:** Electronic file/report submitted by other agencies (hospitals, etc.)**Database collection and storage:** Access, SAS**Data Analysis****Data analysis software:** SAS**Quality assurance:** Validity checks, Re-abstraction of cases, Double-checking of assigned codes, Comparison/verification between multiple data sources, Clinical review**Data use and analysis:** Routine statistical monitoring, Baseline rates, Rates by demographic and other variables, Monitoring outbreaks and cluster investigations, Time trends, Observed vs. expected analyses, Epidemiologic studies (using only program data), Identification of potential cases for other epidemiologic studies, Grant proposals, Prevention projects, Monitor birth defect outcomes following specific parental or gestational exposures of concern**System integration****System links:** DoD databases**System integration:** DoD databases**Funding****Funding source:** 100% Other federal funding (non-CDC grants)**Other****Web site:** <http://www.med.navy.mil/sites/nhr>**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  
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