

Birth Defects Surveillance Data from Selected States, 1989–1998

On the following pages, birth defects surveillance data are presented for 30 states. Similar to previous reports published by the National Birth Defects Prevention Network (NBDPN '97, '00), these data are presented as counts and rates for specific birth defects. Unlike the previous reports, birth defects surveillance data derived only from vital records—birth and fetal death certificates—are not included.

In the current report, state surveillance programs were requested to provide birth defects data for the time period January 1, 1989 through December 31, 1998. Each program was asked to provide data on 45 specific birth defects as detailed in Appendix A on pages 174 to 175. For all defects requested, data were to be stratified by race and, for certain defects (trisomy 13, 18 and 21) by maternal age. To obtain counts, state programs were asked to identify the occurrence of each specific defect for all live births, stillbirths and terminations. To calculate rates, programs were asked to provide data on the number of live births for each calendar year requested.

As in previous reports, an attempt was made to standardize both the request and presentation of state surveillance data; however, differences in the way programs collect and report birth defects data are reflected in the accompanying tables. These differences may be referenced in the program directories on pages 47 to 116, and their impact on a state's data presentation are listed as footnotes at the end of each table. In particu-

lar, some programs were unable to provide data for each of the years included in the report. Others varied in their ability to report counts and rates by race and maternal age. In addition, a few programs were unable either to provide data for each specific defect requested or to differentiate between confirmed and possible diagnoses for a given defect due to differences in the coding systems (i.e., ICD-9-CM vs. CDC/BPA) used to classify birth defects.

Due to the differences in surveillance methodology that exist among states, the current report does not provide rates for all states combined. Likewise, the ability to present a more detailed breakdown of counts and rates by racial groups was constrained. For a more detailed presentation of birth defects surveillance data by race, where provided, the reader is encouraged to visit the NBDPN web site (<http://www.nbdpn.org/NBDPN>).

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LITERATURE CITED

- National Birth Defects Prevention Network (NBDPN). 1997. Congenital malformations surveillance report. *Teratology* 56(1/2):115–175.
- National Birth Defects Prevention Network (NBDPN). 2000. Congenital malformations surveillance report. *Teratology* 61(1):86–158.

Birth Defects Counts and Rates

Rates per 10,000 Live Births

Alabama	1998	
	Counts	Rates
Anencephalus	4	4.96
Aniridia	2	2.48
Anophthalmia/ microphthalmia	5	6.20
Anotia/microtia	2	2.48
Atrial septal defect	12	14.88
Bladder exstrophy	1	1.24
Choanal atresia	1	1.24
Cleft lip with and without cleft palate	8	9.92
Cleft palate without cleft lip	7	8.68
Coarctation of aorta	3	3.72
Common truncus	1	1.24
Congenital cataract	2	2.48
Congenital hip dislocation ¹	1	1.24
Diaphragmatic hernia	5	6.20
Down syndrome	7	8.68
Encephalocele	2	2.48
Endocardial cushion defect	8	9.92
Esophageal atresia/ tracheoesophageal fistula	2	2.48
Gastroschisis	6	7.44
Hirschsprung's disease (congenital megacolon)	1	1.24
Hydrocephalus without Spina Bifida	9	11.16
Hypospadias and Epispadias ²	8	9.92
Microcephalus	8	9.92
Obstructive genitourinary defect	17	21.08
Omphalocele	1	1.24
Pulmonary valve atresia and stenosis	5	6.20
Pyloric stenosis	12	14.88
Rectal and large intestinal atresia/stenosis	3	3.72
Reduction deformity, lower limbs	1	1.24
Reduction deformity, upper limbs	3	3.72
Renal agenesis/hypoplasia	7	8.68
Spina bifida without anencephalus	8	9.92
Tetralogy of Fallot	4	4.96
Transposition of great arteries	7	8.68
Tricuspid valve atresia and stenosis	4	4.96
Trisomy 13	4	4.96
Trisomy 18	2	2.48

Alabama

1998

	Counts	Rates
Ventricular septal defect	13	16.12
Total Live Births	8,063	

¹ Isolated congenital hip dislocation not reported.

² Isolated 1st degree hypospadias not reported.

Trisomy Counts and Rates by Maternal Age

Rates per 10,000 Live Births

Alabama

1998

	<35	35 and >	Total
Down syndrome	2	5	7
	2.73	66.76	8.68
Trisomy 13	4		4
	5.47		4.96
Trisomy 18	2		2
	2.73		2.48
Total Live Births	7,314	749	8,063

General Notes:

- Live births, still births, miscarriages, and elective abs at any gestational age are included for all cases.
- Registry is currently (2001) expanding to cover up to 30 counties of south Alabama.

Birth Defects Counts and Rates

Rates per 10,000 Live Births

Alaska	1996	
	Counts	Rates
Amniotic bands	0	0.00
Anencephalus	2	1.99
Aniridia	0	0.00
Anophthalmia/ microphthalmia	1	1.00
Anotia/microtia	2	1.99
Aortic valve stenosis	2	1.99
Atrial septal defect	45	44.82
Biliary atresia	1	1.00
Bladder exstrophy	0	0.00
Choanal atresia	1	1.00
Cleft lip with and without cleft palate	6	5.98
Cleft palate without cleft lip	6	5.98
Coarctation of aorta	4	3.98
Common truncus	2	1.99
Congenital cataract	2	1.99
Congenital hip dislocation	24	23.90
Diaphragmatic hernia	0	0.00
Down syndrome	13	12.95
Ebstein's anomaly	0	0.00
Encephalocele	1	1.00
Endocardial cushion defect	3	2.99
Esophageal atresia/ tracheoesophageal fistula	1	1.00
Gastroschisis	4	3.98
Hirschsprung's disease (congenital megacolon)	13	12.95
Hydrocephalus without Spina Bifida	3	2.99
Hypoplastic left heart syndrome	0	0.00
Hypospadias and Epispadias	31	30.87
Microcephalus	11	10.96
Obstructive genitourinary defect	14	13.94
Omphalocele	0	0.00
Patent ductus arteriosus	59	58.76
Pulmonary valve atresia and stenosis	11	10.96
Pyloric stenosis	22	21.91
Rectal and large intestinal atresia/stenosis	7	6.97
Reduction deformity, lower limbs	2	1.99
Reduction deformity, upper limbs	1	1.00
Renal agenesis/hypoplasia	2	1.99
Spina bifida without anencephalus	1	1.00

Alaska**1996**

	Counts	Rates
Tetralogy of Fallot	2	1.99
Transposition of great arteries	1	1.00
Trisomy 13	0	0.00
Trisomy 18	1	1.00
Ventricular septal defect	56	55.77
Total Live Births	10,041	

Birth Defects Counts and Rates

Rates per 10,000 Live Births

Arizona	1989-1992		1995	
	Counts	Rates	Counts	Rates
Amniotic bands	40	1.47	12	1.66
Anencephalus	76	2.79	18	2.49
Aniridia	4	0.15	2	0.28
Anophthalmia/ microphthalmia	109	4.00	25	3.45
Anotia/microtia	85	3.12	25	3.45
Aortic valve stenosis	84	3.08	30	4.14
Atrial septal defect	438	16.06	83	11.47
Biliary atresia	19	0.70	3	0.41
Bladder exstrophy	8	0.29	3	0.41
Choanal atresia	33	1.21	14	1.93
Cleft lip with and without cleft palate	341	12.51	94	12.99
Cleft palate without cleft lip	161	5.90	50	6.91
Coarctation of aorta	124	4.55	40	5.53
Common truncus	24	0.88	3	0.41
Congenital cataract	61	2.24	14	1.93
Congenital hip dislocation	365	13.39	83	11.47
Diaphragmatic hernia	42	1.54	6	0.83
Down syndrome	309	11.33	90	12.43
Ebstein's anomaly	29	1.06	6	0.83
Encephalocele	34	1.25	7	0.97
Endocardial cushion defect	103	3.78	34	4.70
Esophageal atresia/ tracheoesophageal fistula	67	2.46	18	2.49
Fetal alcohol syndrome	83	3.04	27	3.73
Gastroschisis	103	3.78	27	3.73
Hirschsprung's disease (congenital megacolon)	40	1.47	16	2.21
Hydrocephalus without Spina Bifida	185	6.79	42	5.80
Hypoplastic left heart syndrome	59	2.16	10	1.38
Hypospadias and Epispadias	657	24.10	180	24.87
Microcephalus	437	16.03	81	11.19
Obstructive genitourinary defect	367	13.46	109	15.06
Omphalocele	62	2.27	14	1.93
Pulmonary valve atresia and stenosis	226	8.29	69	9.53
Pyloric stenosis	523	19.18	148	20.45
Rectal and large intestinal atresia/stenosis	145	5.32	42	5.80
Reduction deformity, lower limbs	86	3.15	14	1.93
Reduction deformity, upper limbs	176	6.45	33	4.56
Renal agenesis/hypoplasia	145	5.32	39	5.39
Spina bifida without anencephalus	144	5.28	34	4.70

Arizona	1989-1992		1995	
	Counts	Rates	Counts	Rates
Tetralogy of Fallot	105	3.85	29	4.01
Transposition of great arteries	112	4.11	33	4.56
Tricuspid valve atresia and stenosis	31	1.14	10	1.38
Trisomy 13	36	1.32	8	1.11
Trisomy 18	49	1.80	18	2.49
Ventricular septal defect	513	18.81	141	19.48
Total Live Births	272,657		72,386	

Trisomy Counts and Rates by Maternal Age

Rates per 10,000 Live Births

Arizona	1989-1992			1995		
	<35	35 and >	Total	<35	35 and >	Total
Down syndrome	209	100	309	62	28	90
	8.35	44.85	11.33	9.53	38.12	12.43
Trisomy 13	27	9	36	6	2	8
	1.08	4.04	1.32	0.92	2.72	1.11
Trisomy 18	40	9	49	12	6	18
	1.60	4.04	1.80	1.85	8.17	2.49
Total Live Births	250,247	22,297	272,657	65,029	7,345	72,386

General Notes:

- All birth defects counts include both liveborn and stillborn births to Arizona residents in Arizona.
- Arizona Birth Defects Monitoring Program (ABDMP) changed its case definition to include only the 44 major defects and genetic diseases. This case definition was effective starting with the collection of 1992 births and fetal deaths.

Birth Defects Counts and Rates

Rates per 10,000 Live Births

Arkansas	1993-1997		1998	
	Counts	Rates	Counts	Rates
Amniotic bands	34	1.92	9	2.44
Anencephalus	75	4.24	13	3.53
Aniridia	5	0.28	0	0.00
Anophthalmia/ microphthalmia	81	4.58	10	2.72
Anotia/microtia	31	1.75	4	1.09
Aortic valve stenosis	83	4.69	19	5.16
Atrial septal defect	725	40.95	147	39.91
Biliary atresia	18	1.02	3	0.81
Bladder exstrophy	7	0.40	1	0.27
Choanal atresia	30	1.69	3	0.81
Cleft lip with and without cleft palate	222	12.54	43	11.67
Cleft palate without cleft lip	141	7.96	30	8.15
Coarctation of aorta	94	5.31	18	4.89
Common truncus	9	0.51	8	2.17
Congenital cataract	91	5.14	4	1.09
Congenital hip dislocation	209	11.81	27	7.33
Diaphragmatic hernia	71	4.01	10	2.72
Down syndrome	212	11.97	46	12.49
Ebstein's anomaly	14	0.79	5	1.36
Encephalocele	47	2.65	3	0.81
Endocardial cushion defect	93	5.25	17	4.62
Esophageal atresia/ tracheoesophageal fistula	38	2.15	9	2.44
Gastroschisis	80	4.52	19	5.16
Hirschsprung's disease (congenital megacolon)	32	1.81	5	1.36
Hydrocephalus without Spina Bifida	185	10.45	20	5.43
Hypoplastic left heart syndrome	46	2.60	7	1.90
Hypospadias and Epispadias	374	21.13	58	15.75
Microcephalus	461	26.04	24	6.52
Obstructive genitourinary defect	353	19.94	46	12.49
Omphalocele	52	2.94	9	2.44
Patent ductus arteriosus	609	34.40	129	35.02
Pulmonary valve atresia and stenosis	231	13.05	27	7.33
Pyloric stenosis	361	20.39	61	16.56
Rectal and large intestinal atresia/stenosis	84	4.74	30	8.15
Reduction deformity, lower limbs	40	2.26	5	1.36
Reduction deformity, upper limbs	69	3.90	21	5.70
Renal agenesis/hypoplasia	119	6.72	20	5.43
Spina bifida without anencephalus	145	8.19	25	6.79
Tetralogy of Fallot	67	3.78	12	3.26

Arkansas	1993-1997		1998	
	Counts	Rates	Counts	Rates
Transposition of great arteries	107	6.04	18	4.89
Tricuspid valve atresia and stenosis	29	1.64	5	1.36
Trisomy 13	22	1.24	3	0.81
Trisomy 18	25	1.41	5	1.36
Ventricular septal defect	880	49.71	170	46.16
Total Live Births	177,036		36,831	

Trisomy Counts and Rates by Maternal Age

Rates per 10,000 Live Births

Arkansas	1993-1997			1998		
	<35	35 and >	Total	<35	35 and >	Total
Down syndrome	126 7.61	66 57.29	192 10.85	33 9.67	12 44.36	45 12.22
Trisomy 13	17 1.03	3 2.60	20 1.13	3 0.88	0 0.00	3 0.81
Trisomy 18	18 1.09	6 5.21	24 1.36	2 0.59	3 11.09	5 1.36
Total Live Births	165,516	11,520	177,036	34,116	2,705	36,831

General Notes:

- Prior to 1993, coverage of the birth defects surveillance was not statewide and counties covered varied for each year. Due to this incomplete and variable coverage, state data are reported from 1993 and forward.

Birth Defects Counts and Rates

Rates per 10,000 Live Births

California	1989-1996		1997	
	Counts	Rates	Counts	Rates
Amniotic bands	376	1.66	28	1.11
Anencephalus	891	3.93	78	3.10
Aniridia	327	1.44	15	0.60
Anophthalmia/ microphthalmia	679	2.99	49	1.95
Anotia/microtia	605	2.67	82	3.26
Aortic valve stenosis	468	2.06	57	2.26
Biliary atresia	192	0.85	20	0.79
Bladder exstrophy	56	0.25	3	0.12
Choanal atresia	319	1.41	18	0.72
Cleft lip with and without cleft palate	2,470	10.89	249	9.89
Cleft palate without cleft lip	1,488	6.56	141	5.60
Coarctation of aorta	906	3.99	112	4.45
Common truncus	201	0.89	23	0.91
Congenital cataract	399	1.76	45	1.79
Diaphragmatic hernia	636	2.80	59	2.34
Down syndrome	2,805	12.36	309	12.27
Encephalocele	247	1.09	19	0.75
Endocardial cushion defect	848	3.74	101	4.01
Esophageal atresia/ tracheoesophageal fistula	561	2.47	55	2.18
Fetal alcohol syndrome	242	1.07	11	0.44
Gastroschisis	562	2.48	79	3.14
Hirschsprung's disease (congenital megacolon)	327	1.44	38	1.51
Hydrocephalus without Spina Bifida	1,562	6.89	113	4.49
Hypoplastic left heart syndrome	411	1.81	54	2.15
Hypospadias and Epispadias	2,937	12.95	270	10.73
Obstructive genitourinary defect	3,284	14.48	306	12.16
Omphalocele	413	1.82	37	1.47
Pyloric stenosis	3,682	16.23	448	17.80
Rectal and large intestinal atresia/stenosis	862	3.80	78	3.10
Reduction deformity, lower limbs	371	1.64	24	0.95
Reduction deformity, upper limbs	817	3.60	73	2.90
Spina bifida without anencephalus	949	4.18	95	3.77
Tetralogy of Fallot	775	3.42	78	3.10
Transposition of great arteries	974	4.29	95	3.77
Trisomy 13	225	0.99	24	0.95
Trisomy 18	434	1.91	51	2.03
Ventricular septal defect	3,786	16.69	428	17.00
Total Live Births	2,268,664		251,735	

Trisomy Counts and Rates by Maternal Age

Rates per 10,000 Live Births

California	1989-1996			1997		
	<35	35 and >	Total	<35	35 and >	Total
Down syndrome	1,750	961	2,804	181	124	425
	8.75	35.91	12.36	8.38	34.61	16.88
Trisomy 13	170	41	225	18	8	50
	0.85	1.53	0.99	0.83	2.23	1.99
Trisomy 18	259	151	433	26	22	100
	1.29	5.64	1.91	1.20	6.14	3.97
Total Live Births	2,000,242	267,610	2,268,664	215,869	35,823	251,735

General Notes:

- California uses 6 digit BPA codes, with the 6th digit being the laterality code.
- For these conditions, classification is based on BPA codes as well as confirmation and specialist codes. The BPA codes are noted where they vary from the codes listed in the Appendix: Microphthalmia, Anotia/microtia (744.001, 744.002, 744.010-744.019, 744.210-744.219, 744.231, 744.232, 744.285), Common truncus (745.094), Transposition of the great arteries, Tetralogy of Fallot (745.200-745.219), Ventral septal defect (745.400-745.499), Endocardial cushion, Aortic valve stenosis, Hypoplastic left heart, Coarctation of the aorta, Rectal atresia, Trisomy 13, Down's syndrome, Trisomy 18.
- For these conditions the BPA codes are different than those noted in the Appendix: Aniridea (743.420-743.449), Esophageal atresia/TEF (750.300-750.329), Hirschprung's (751.300-751.339), Diaphragmatic hernia (756.600-756.617).
- Hypospadias is included when diagnosed to the 2nd or 3rd degree. First degree hypospadias is included only when in combination with another registry condition.

Birth Defects Counts and Rates

Rates per 10,000 Live Births

Colorado	1989-1997		1998	
	Counts	Rates	Counts	Rates
Anencephalus	74	1.51	7	1.18
Anophthalmia/ microphthalmia	76	1.55	8	1.34
Anotia/microtia	98	2.00	6	1.01
Aortic valve stenosis	131	2.68	20	3.36
Atrial septal defect	1,821	37.23	290	48.70
Biliary atresia	60	1.23	10	1.68
Bladder exstrophy	15	0.31	3	0.50
Choanal atresia	94	1.92	8	1.34
Cleft lip with and without cleft palate	586	11.98	72	12.09
Cleft palate without cleft lip	339	6.93	49	8.23
Coarctation of aorta	385	7.87	54	9.07
Common truncus	71	1.45	6	1.01
Congenital cataract	114	2.33	17	2.85
Congenital hip dislocation	991	20.26	109	18.30
Diaphragmatic hernia	183	3.74	37	6.21
Down syndrome	587	12.00	94	15.79
Ebstein's anomaly	42	0.86	7	1.18
Encephalocele	57	1.17	7	1.18
Endocardial cushion defect	193	3.95	22	3.69
Esophageal atresia/ tracheoesophageal fistula	226	4.62	36	6.05
Fetal alcohol syndrome	541	11.06	16	2.69
Gastroschisis	46	0.94	9	1.51
Hirschsprung's disease (congenital megacolon)	145	2.96	12	2.02
Hydrocephalus without Spina Bifida	434	8.87	58	9.74
Hypoplastic left heart syndrome	145	2.96	15	2.52
Hypospadias and Epispadias	492	10.06	260	43.66
Microcephalus	342	6.99	25	4.20
Obstructive genitourinary defect	1,062	21.71	171	28.72
Omphalocele	21	0.43	5	0.84
Patent ductus arteriosus	1,480	30.26	365	61.29
Pulmonary valve atresia and stenosis	576	11.78	84	14.11
Pyloric stenosis	902	18.44	109	18.30
Rectal and large intestinal atresia/stenosis	288	5.89	36	6.05
Reduction deformity, lower limbs	123	2.51	13	2.18
Reduction deformity, upper limbs	226	4.62	25	4.20
Renal agenesis/hypoplasia	215	4.40	22	3.69
Spina bifida without anencephalus	175	3.58	26	4.37
Tetralogy of Fallot	184	3.76	24	4.03

Colorado	1989-1997		1998	
	Counts	Rates	Counts	Rates
Transposition of great arteries	175	3.58	29	4.87
Tricuspid valve atresia and stenosis	82	1.68	10	1.68
Trisomy 13	66	1.35	9	1.51
Trisomy 18	107	2.19	26	4.37
Ventricular septal defect	1,844	37.70	249	41.81
Total Live Births	489,156		59,550	

Trisomy Counts and Rates by Maternal Age

Rates per 10,000 Live Births

Colorado	1989-1997			1998		
	<35	35 and >	Total	<35	35 and >	Total
Down syndrome	365 8.50	179 29.98	587 12.00	44 8.62	20 23.50	94 15.79
Trisomy 13	48 1.12	8 1.34	66 1.35	6 1.18	0 0.00	9 1.51
Trisomy 18	68 1.58	19 3.18	107 2.19	15 2.94	5 5.87	26 4.37
Total Live Births	429,318	59,708	489,156	51,016	8,512	59,550

Birth Defects Counts and Rates

Rates per 10,000 Live Births

Connecticut	1993-1996		1997	
	Counts	Rates	Counts	Rates
Anencephalus	18	0.99	5	1.16
Aniridia	1	0.06	1	0.23
Anophthalmia/ microphthalmia	21	1.16	3	0.70
Anotia/microtia	6	0.33	9	2.09
Aortic valve stenosis	30	1.65	7	1.63
Atrial septal defect	410	22.62	129	29.97
Biliary atresia	16	0.88	2	0.46
Bladder exstrophy	3	0.17	3	0.70
Choanal atresia	31	1.71	6	1.39
Cleft lip with and without cleft palate	134	7.39	39	9.06
Cleft palate without cleft lip	126	6.95	22	5.11
Coarctation of aorta	95	5.24	15	3.48
Common truncus	12	0.66	3	0.70
Congenital cataract	37	2.04	6	1.39
Congenital hip dislocation	268	14.78	53	12.31
Diaphragmatic hernia	54	2.98	8	1.86
Down syndrome	214	11.80	42	9.76
Ebstein's anomaly	17	0.94	1	0.23
Encephalocele	19	1.05	1	0.23
Endocardial cushion defect	67	3.70	11	2.56
Esophageal atresia/ tracheosophageal fistula	51	2.81	16	3.72
Fetal alcohol syndrome	96	5.30	11	2.56
Hirschsprung's disease (congenital megacolon)	38	2.10	8	1.86
Hydrocephalus without Spina Bifida	134	7.39	21	4.88
Hypoplastic left heart syndrome	33	1.82	15	3.48
Hypospadias and Epispadias	625	34.48	142	32.99
Microcephalus	82	4.52	17	3.95
Obstructive genitourinary defect	321	17.71	87	20.21
Patent ductus arteriosus ¹	547	30.17	168	39.03
Pulmonary artery anomalies	158	8.72	64	14.87
Pulmonary valve atresia and stenosis	145	8.00	26	6.04
Pyloric stenosis	389	21.46	48	11.15
Rectal and large intestinal atresia/stenosis	73	4.03	16	3.72
Reduction deformity, lower limbs	20	1.10	6	1.39
Reduction deformity, upper limbs	52	2.87	4	0.93
Renal agenesis/hypoplasia	61	3.36	18	4.18
Spina bifida without anencephalus	62	3.42	12	2.79
Tetralogy of Fallot	92	5.07	23	5.34

Connecticut

	1993-1996		1997	
	Counts	Rates	Counts	Rates
Transposition of great arteries	81	4.47	24	5.58
Tricuspid valve atresia and stenosis	16	0.88	2	0.46
Trisomy 13	24	1.32	7	1.63
Trisomy 18	18	0.99	5	1.16
Ventricular septal defect	610	33.65	170	39.49
Total Live Births	181,283		43,048	

¹ Birth Weight >or= 2500 grams

Trisomy Counts and Rates by Maternal Age

Rates per 10,000 Live Births

Connecticut

	1993-1996			1997		
	<35	35 and >	Total	<35	35 and >	Total
Down syndrome	124	90	214	20	22	42
	8.15	30.90	11.80	5.70	27.56	9.76
Trisomy 13	18	6	24	5	2	7
	1.18	2.06	1.32	1.43	2.51	1.63
Trisomy 18	11	7	18	4	1	5
	0.72	2.40	0.99	1.14	1.25	1.16
Total Live Births	152,152	29,122	181,283	35,064	7,984	43,048

Birth Defects Counts and Rates

Rates per 10,000 Live Births

Florida	1996		1997	
	Counts	Rates	Counts	Rates
Anencephalus	13	0.69	5	0.26
Aniridia	0	0.00	3	0.16
Anophthalmia/ microphthalmia	20	1.06	24	1.25
Anotia/microtia	9	0.48	9	0.47
Aortic valve stenosis	19	1.00	30	1.56
Atrial septal defect	798	42.19	1,134	59.06
Biliary atresia	8	0.42	21	1.09
Bladder exstrophy	10	0.53	5	0.26
Choanal atresia	21	1.11	32	1.67
Cleft lip with and without cleft palate	170	8.99	167	8.70
Cleft palate without cleft lip	128	6.77	137	7.14
Coarctation of aorta	46	2.43	92	4.79
Common truncus	18	0.95	19	0.99
Congenital cataract	15	0.79	21	1.09
Congenital hip dislocation	295	15.60	260	13.54
Diaphragmatic hernia	47	2.49	48	2.50
Down syndrome	213	11.26	207	10.78
Ebstein's anomaly	9	0.48	9	0.47
Encephalocele	14	0.74	14	0.73
Endocardial cushion defect	48	2.54	66	3.44
Esophageal atresia/ tracheoesophageal fistula	36	1.90	54	2.81
Fetal alcohol syndrome	70	3.70	75	3.91
Hirschsprung's disease (congenital megacolon)	35	1.85	45	2.34
Hydrocephalus without Spina Bifida	118	6.24	136	7.08
Hypoplastic left heart syndrome	34	1.80	40	2.08
Hypospadias and Epispadias	676	35.74	614	31.98
Microcephalus	118	6.24	145	7.55
Obstructive genitourinary defect	350	18.51	458	23.85
Pulmonary valve atresia and stenosis	178	9.41	225	11.72
Pyloric stenosis			342	17.81
Rectal and large intestinal atresia/stenosis	51	2.70	87	4.53
Reduction deformity, lower limbs	22	1.16	27	1.41
Reduction deformity, upper limbs	41	2.17	46	2.40
Renal agenesis/hypoplasia	59	3.12	70	3.65
Spina bifida without anencephalus	105	5.55	80	4.17
Tetralogy of Fallot	52	2.75	89	4.64
Transposition of great arteries	45	2.38	68	3.54
Tricuspid valve atresia and stenosis	22	1.16	27	1.41

Florida	1996		1997	
	Counts	Rates	Counts	Rates
Trisomy 13	17	0.90	20	1.04
Trisomy 18	16	0.85	23	1.20
Ventricular septal defect ¹	706	37.33	845	44.01
Total Live Births	189,134		191,994	

¹ Our only information is the ICD-9 code.

Trisomy Counts and Rates by Maternal Age

Rates per 10,000 Live Births

Florida	1996			1997		
	<35	35 and >	Total	<35	35 and >	Total
Down syndrome	148 8.99	65 26.67	213 11.26	126 7.56	81 31.98	207 10.78
Trisomy 13	13 0.79	4 1.64	17 0.90	16 0.96	4 1.58	20 1.04
Trisomy 18	10 0.61	6 2.46	16 0.85	11 0.66	12 4.74	23 1.20
Total Live Births	164,695	24,368	189,134	166,639	25,325	191,994

General Notes:

- Significant change from 1996 to 1997: In 1996 our hospital discharge data lacked Mother's SSN so we were unable to link post-birth hospitalizations and outpatient surgeries. We relied on a linkage of the birth hospitalizations to birth certificate data performed by an outside agency as well. In 1997 the hospital data gained Mother's SSN and we performed all linkages ourselves.
- Presently our only source of diagnosis information is via passive surveillance and our information is in the form of ICD-9 codes.
- We do not currently have enough information on fetal deaths (i.e. stillbirths/terminations) to include these in our registry.

Birth Defects Counts and Rates

Rates per 10,000 Live Births

Georgia	1989-1997		1998	
	Counts	Rates	Counts	Rates
Amniotic bands	62	1.74	4	0.89
Anencephalus	102	2.86	18	4.01
Aniridia	7	0.20	0	0.00
Anophthalmia/ microphthalmia	125	3.51	10	2.23
Anotia/microtia	53	1.49	6	1.34
Aortic valve stenosis	95	2.67	8	1.78
Atrial septal defect	721	20.23	119	26.48
Biliary atresia	33	0.93	2	0.45
Bladder exstrophy	8	0.22	2	0.45
Choanal atresia	56	1.57	6	1.34
Cleft lip with and without cleft palate	323	9.07	49	10.91
Cleft palate without cleft lip	196	5.50	28	6.23
Coarctation of aorta	182	5.11	26	5.79
Common truncus	28	0.79	4	0.89
Congenital cataract	71	1.99	6	1.34
Congenital hip dislocation	323	9.07	32	7.12
Diaphragmatic hernia	81	2.27	8	1.78
Down syndrome	400	11.23	57	12.69
Ebstein's anomaly	29	0.81	2	0.45
Encephalocele	58	1.63	5	1.11
Endocardial cushion defect	156	4.38	19	4.23
Esophageal atresia/ tracheoesophageal fistula	84	2.36	4	0.89
Fetal alcohol syndrome	86	2.41	11	2.45
Gastroschisis	82	2.30	9	2.00
Hirschsprung's disease (congenital megacolon)	79	2.22	9	2.00
Hydrocephalus without Spina Bifida	264	7.41	39	8.68
Hypoplastic left heart syndrome	104	2.92	15	3.34
Hypospadias and Epispadias	1,247	35.00	129	28.71
Microcephalus	223	6.26	43	9.57
Obstructive genitourinary defect	558	15.66	112	24.93
Omphalocele	88	2.47	11	2.45
Patent ductus arteriosus	1,152	32.33	160	35.61
Pulmonary valve atresia and stenosis	190	5.33	25	5.56
Pyloric stenosis	504	14.14	54	12.02
Rectal and large intestinal atresia/stenosis	133	3.73	21	4.67
Reduction deformity, lower limbs	69	1.94	7	1.56
Reduction deformity, upper limbs	136	3.82	18	4.01

Georgia	1989-1997		1998	
	Counts	Rates	Counts	Rates
Renal agenesis/hypoplasia	150	4.21	15	3.34
Spina bifida without anencephalus	168	4.71	24	5.34
Tetralogy of Fallot	146	4.10	19	4.23
Transposition of great arteries	171	4.80	20	4.45
Tricuspid valve atresia and stenosis	51	1.43	10	2.23
Trisomy 13	44	1.23	6	1.34
Trisomy 18	77	2.16	12	2.67
Ventricular septal defect	1,077	30.23	158	35.16
Total Live Births	356,314		44,933	

Trisomy Counts and Rates by Maternal Age

Rates per 10,000 Live Births

Georgia	1989-1997			1998		
	<35	35 and >	Total	<35	35 and >	Total
Down syndrome	275	123	400	28	29	57
	8.79	28.47	11.23	7.38	41.71	12.69
Trisomy 13	36	8	44	5	1	6
	1.15	1.85	1.23	1.32	1.44	1.34
Trisomy 18	51	26	77	9	3	12
	1.63	6.02	2.16	2.37	4.31	2.67
Total Live Births	312,966	43,210	356,314	37,965	6,953	44,933

Birth Defects Counts and Rates

Rates per 10,000 Live Births

Hawaii	1989-1997		1998	
	Counts	Rates	Counts	Rates
Amniotic bands	33	1.90	5	2.85
Anencephalus	69	3.98	6	3.42
Aniridia	0	0.00	2	1.14
Anophthalmia/ microphthalmia	67	3.86	3	1.71
Anotia/microtia	78	4.50	9	5.12
Aortic valve stenosis	24	1.38	0	0.00
Atrial septal defect	400	23.06	36	20.50
Biliary atresia	21	1.21	0	0.00
Bladder exstrophy	4	0.23	2	1.14
Choanal atresia	25	1.44	1	0.57
Cleft lip with and without cleft palate	232	13.37	21	11.96
Cleft palate without cleft lip	130	7.49	15	8.54
Coarctation of aorta	48	2.77	4	2.28
Common truncus	12	0.69	4	2.28
Congenital cataract	24	1.38	1	0.57
Congenital hip dislocation	191	11.01	9	5.12
Diaphragmatic hernia	44	2.54	3	1.71
Down syndrome	279	16.08	23	13.10
Ebstein's anomaly	6	0.35	2	1.14
Encephalocele	43	2.48	4	2.28
Endocardial cushion defect	39	2.25	2	1.14
Esophageal atresia/ tracheoesophageal fistula	36	2.08	2	1.14
Fetal alcohol syndrome	52	3.00	0	0.00
Gastroschisis	64	3.69	8	4.56
Hirschsprung's disease (congenital megacolon)	33	1.90	6	3.42
Hydrocephalus without Spina Bifida	202	11.64	11	6.26
Hypoplastic left heart syndrome	30	1.73	2	1.14
Hypospadias and Epispadias	464	26.74	43	24.49
Microcephalus	192	11.07	8	4.56
Obstructive genitourinary defect	269	15.51	26	14.81
Omphalocele	57	3.29	7	3.99
Patent ductus arteriosus	1,047	60.35	128	72.89
Pulmonary valve atresia and stenosis	76	4.38	2	1.14
Pyloric stenosis	161	9.28	5	2.85
Rectal and large intestinal atresia/stenosis	93	5.36	4	2.28
Reduction deformity, lower limbs	22	1.27	6	3.42
Reduction deformity, upper limbs	61	3.52	10	5.69
Renal agenesis/hypoplasia	87	5.01	6	3.42

Hawaii	1989-1997		1998	
	Counts	Rates	Counts	Rates
Spina bifida without anencephalus	90	5.19	3	1.71
Tetralogy of Fallot	79	4.55	4	2.28
Transposition of great arteries	78	4.50	7	3.99
Tricuspid valve atresia and stenosis	29	1.67	3	1.71
Trisomy 13	46	2.65	2	1.14
Trisomy 18	104	5.99	4	2.28
Ventricular septal defect	755	43.52	63	35.87
Total Live Births	173,492		17,561	

Trisomy Counts and Rates by Maternal Age

Rates per 10,000 Live Births

Hawaii	1989-1997			1998		
	<35	35 and >	Total	<35	35 and >	Total
Down syndrome	133 8.83	146 64.55	279 16.08	7 4.74	16 57.22	23 13.10
Trisomy 13	24 1.59	22 9.73	46 2.65	1 0.68	1 3.58	2 1.14
Trisomy 18	53 3.52	51 22.55	104 5.99	1 0.68	3 10.73	4 2.28
Total Live Births	150,583	22,618	173,492	14,762	2,796	17,561

Birth Defects Counts and Rates

Rates per 10,000 Live Births

Illinois	1989-1997		1998	
	Counts	Rates	Counts	Rates
Anencephalus	311	1.83	32	1.75
Aniridia	5	0.03	0	0.00
Anophthalmia/ microphthalmia	167	0.98	9	0.49
Anotia/microtia	49	0.29	6	0.33
Aortic valve stenosis	94	0.55	7	0.38
Atrial septal defect	2,046	12.03	282	15.45
Biliary atresia	42	0.25	3	0.16
Bladder exstrophy	48	0.28	8	0.44
Choanal atresia	153	0.90	19	1.04
Cleft lip with and without cleft palate	1,106	6.51	93	5.10
Cleft palate without cleft lip	608	3.58	66	3.62
Coarctation of aorta	292	1.72	34	1.86
Common truncus	68	0.40	10	0.55
Congenital cataract	102	0.60	7	0.38
Congenital hip dislocation	435	2.56	13	0.71
Diaphragmatic hernia	423	2.49	50	2.74
Down syndrome	1,616	9.51	171	9.37
Ebstein's anomaly	46	0.27	6	0.33
Encephalocele	110	0.65	12	0.66
Endocardial cushion defect	244	1.44	37	2.03
Esophageal atresia/ tracheoesophageal fistula	423	2.49	40	2.19
Fetal alcohol syndrome	633	3.72	32	1.75
Hirschsprung's disease (congenital megacolon)	205	1.21	24	1.32
Hydrocephalus without Spina Bifida	1,016	5.98	107	5.86
Hypoplastic left heart syndrome	234	1.38	20	1.10
Hypospadias and Epispadias	2,487	14.63	235	12.88
Microcephalus	527	3.10	49	2.68
Obstructive genitourinary defect	1,198	7.05	136	7.45
Patent ductus arteriosus	6,590	38.76	612	33.53
Pulmonary valve atresia and stenosis	323	1.90	46	2.52
Pyloric stenosis	330	1.94	10	0.55
Rectal and large intestinal atresia/stenosis	445	2.62	61	3.34
Reduction deformity, lower limbs	150	0.88	8	0.44
Reduction deformity, upper limbs	284	1.67	15	0.82
Renal agenesis/hypoplasia	338	1.99	29	1.59
Spina bifida without anencephalus	554	3.26	51	2.79
Tetralogy of Fallot	350	2.06	46	2.52

Illinois

	1989-1997		1998	
	Counts	Rates	Counts	Rates
Transposition of great arteries	372	2.19	38	2.08
Tricuspid valve atresia and stenosis	77	0.45	10	0.55
Trisomy 13	168	0.99	16	0.88
Trisomy 18	262	1.54	26	1.42
Ventricular septal defect	3,031	17.83	315	17.26
Total Live Births	1,700,155		182,503	

Birth Defects Counts and Rates

Rates per 10,000 Live Births

Iowa	1989-1997		1998	
	Counts	Rates	Counts	Rates
Amniotic bands	23	0.67	5	1.34
Anencephalus	122	3.58	10	2.68
Aniridia	6	0.18	0	0.00
Anophthalmia/ microphthalmia	64	1.88	9	2.42
Anotia/microtia	112	3.28	19	5.10
Aortic valve stenosis	82	2.40	20	5.37
Atrial septal defect	635	18.62	86	23.08
Biliary atresia	18	0.53	1	0.27
Bladder exstrophy	14	0.41	3	0.81
Choanal atresia	75	2.20	10	2.68
Cleft lip with and without cleft palate	461	13.52	42	11.27
Cleft palate without cleft lip	279	8.18	28	7.51
Coarctation of aorta	170	4.98	23	6.17
Common truncus	40	1.17	4	1.07
Congenital cataract	94	2.76	13	3.49
Congenital hip dislocation	384	11.26	30	8.05
Diaphragmatic hernia	77	2.26	10	2.68
Down syndrome	391	11.46	45	12.08
Ebstein's anomaly	17	0.50	2	0.54
Encephalocele	42	1.23	6	1.61
Endocardial cushion defect	132	3.87	19	5.10
Esophageal atresia/ tracheoesophageal fistula	102	2.99	10	2.68
Fetal alcohol syndrome	14	0.41	0	0.00
Gastroschisis	89	2.61	19	5.10
Hirschsprung's disease (congenital megacolon)	56	1.64	5	1.34
Hydrocephalus without Spina Bifida	293	8.59	30	8.05
Hypoplastic left heart syndrome	99	2.90	17	4.56
Hypospadias and Epispadias	1,059	31.05	108	28.98
Microcephalus	241	7.07	28	7.51
Obstructive genitourinary defect	402	11.79	60	16.10
Omphalocele	82	2.40	9	2.42
Patent ductus arteriosus	922	27.03	155	41.60
Pulmonary valve atresia and stenosis	182	5.34	42	11.27
Pyloric stenosis	625	18.33	115	30.86
Rectal and large intestinal atresia/stenosis	177	5.19	19	5.10
Reduction deformity, lower limbs	60	1.76	10	2.68
Reduction deformity, upper limbs	146	4.28	20	5.37
Renal agenesis/hypoplasia	186	5.45	16	4.29

Iowa	1989-1997		1998	
	Counts	Rates	Counts	Rates
Spina bifida without anencephalus	190	5.57	17	4.56
Tetralogy of Fallot	99	2.90	11	2.95
Transposition of great arteries	157	4.60	19	5.10
Tricuspid valve atresia and stenosis	47	1.38	3	0.81
Trisomy 13	30	0.88	4	1.07
Trisomy 18	60	1.76	9	2.42
Ventricular septal defect	1,123	32.93	157	42.13
Total Live Births	341,052		37,262	

Trisomy Counts and Rates by Maternal Age

Rates per 10,000 Live Births

Iowa	1989-1997			1998		
	<35	35 and >	Total	<35	35 and >	Total
Down syndrome	271 8.70	102 34.64	391 11.46	28 8.39	17 43.77	45 12.08
Trisomy 13	24 0.77	5 1.70	30 0.88	3 0.90	1 2.57	4 1.07
Trisomy 18	34 1.09	24 8.15	60 1.76	8 2.40	1 2.57	9 2.42
Total Live Births	311,574	29,447	341,052	33,375	3,884	37,262

Birth Defects Counts and Rates

Rates per 10,000 Live Births

Maryland	1989-1997		1998	
	Counts	Rates	Counts	Rates
Anencephalus	122	1.94	19	2.82
Cleft lip with and without cleft palate	437	6.95	52	7.72
Cleft palate without cleft lip	236	3.75	28	4.16
Congenital hip dislocation	148	2.35	26	3.86
Down syndrome	570	9.06	78	11.58
Esophageal atresia/ tracheosophageal fistula	81	1.29	5	0.74
Hydrocephalus without Spina Bifida	147	2.34	24	3.56
Hypospadias and Epispadias	1,034	16.44	157	23.30
Rectal and large intestinal atresia/stenosis	135	2.15	17	2.52
Reduction deformity, lower limbs	118	1.88	13	1.93
Reduction deformity, upper limbs	170	2.70	18	2.67
Spina bifida without anencephalus ¹	195	3.10	34	5.05
Total Live Births	629,125		67,385	

¹ For all years, our definition includes all spina bifida cases.

Trisomy Counts and Rates by Maternal Age

Rates per 10,000 Live Births

Maryland	1989-1997			1998		
	<35	35 and >	Total	<35	35 and >	Total
Down syndrome	385	179	570	47	31	78
	6.96	23.69	9.06	8.30	28.80	11.58
Total Live Births	553,107	75,549	629,125	56,601	10,765	67,385

Birth Defects Counts and Rates

Rates per 10,000 Live Births

Massachusetts	1998	
	Counts	Rates
Amniotic bands	7	0.86
Anencephalus	6	0.74
Aniridia	1	0.12
Anophthalmia/ microphthalmia	8	0.98
Anotia/microtia	11	1.35
Aortic valve stenosis	10	1.23
Atrial septal defect	96	11.79
Biliary atresia	2	0.25
Bladder exstrophy	2	0.25
Choanal atresia	3	0.37
Cleft lip with and without cleft palate ¹	68	8.35
Cleft palate without cleft lip	55	6.76
Coarctation of aorta	23	2.83
Common truncus	1	0.12
Congenital cataract	10	1.23
Diaphragmatic hernia	13	1.60
Down syndrome	68	8.35
Ebstein's anomaly	9	1.11
Encephalocele	2	0.25
Endocardial cushion defect	29	3.56
Esophageal atresia/ tracheoesophageal fistula	15	1.84
Gastroschisis	15	1.84
Hirschsprung's disease (congenital megacolon)	11	1.35
Hydrocephalus without Spina Bifida	24	2.95
Hypoplastic left heart syndrome	13	1.60
Hypospadias and Epispadias ²	48	5.90
Microcephalus ³	21	2.58
Obstructive genitourinary defect ⁴	92	11.30
Omphalocele	11	1.35
Patent ductus arteriosus ⁵	117	14.37
Pulmonary valve atresia and stenosis	20	2.46
Rectal and large intestinal atresia/stenosis	17	2.09
Reduction deformity, lower limbs	15	1.84
Reduction deformity, upper limbs	16	1.97
Renal agenesis/hypoplasia ⁶	9	1.11
Spina bifida without anencephalus	11	1.35
Tetralogy of Fallot	22	2.70
Transposition of great arteries	24	2.95

S144 BIRTH DEFECTS DATA

Massachusetts

	1998	
	Counts	Rates
Tricuspid valve atresia and stenosis	3	0.37
Trisomy 13	4	0.49
Trisomy 18	6	0.74
Ventricular septal defect ⁷	114	14.00
Total Live Births	81,406	

¹ Excludes bifid uvula, cleft gum.

² Excludes 1st degree hypospadias and epispadias.

³ Defined as head circumference 2 std below normal.

⁴ Excludes isolated diagnosis without surgical intervention and secondary diagnosis without postnatal confirmation.

⁵ Excludes GA < 36 wks and if persists for less than 5 days.

⁶ Excludes isolated renal agenesis/hypoplasia.

⁷ Excludes isolated muscular VSDs.

Trisomy Counts and Rates by Maternal Age

Rates per 10,000 Live Births

Massachusetts

	1998		
	<35	35 and >	Total
Down syndrome	29	39	68
	4.46	23.90	8.35
Trisomy 13	3	1	4
	0.46	0.61	0.49
Trisomy 18	4	2	6
	0.61	1.23	0.74
Total Live Births	65,082	16,321	81,406

General Notes:

- Birth defect data are for births 10/1/98 through 9/30/99 while total live births are for 1/1/98 through 12/31/98. Total live births for 1999 are not available, but there has been little change in this figure year to year. Birth defect counts include live births and still births. (Still births N=30). Total includes unknown race (birth defects table) and unknown Maternal age (trisomy table). All heart anomalies are postnatally confirmed (e.g. by echo, cath, autopsy). All anomalies verified by medical record review.

Birth Defects Counts and Rates

Rates per 10,000 Live Births

Michigan	1992-1996		1997	
	Counts	Rates	Counts	Rates
Anencephalus	68	0.99	13	0.98
Aniridia	9	0.13	2	0.15
Anophthalmia/ microphthalmia	109	1.59	21	1.58
Anotia/microtia	46	0.67	9	0.68
Aortic valve stenosis	145	2.11	26	1.96
Atrial septal defect	3,055	44.55	731	55.00
Biliary atresia	103	1.50	13	0.98
Bladder exstrophy	31	0.45	5	0.38
Choanal atresia	93	1.36	17	1.28
Cleft lip with and without cleft palate	657	9.58	144	10.83
Cleft palate without cleft lip	390	5.69	79	5.94
Coarctation of aorta	350	5.10	82	6.17
Common truncus	73	1.06	25	1.88
Congenital cataract	140	2.04	23	1.73
Congenital hip dislocation	1,129	16.47	170	12.79
Diaphragmatic hernia	205	2.99	41	3.08
Down syndrome	777	11.33	144	10.83
Ebstein's anomaly	47	0.69	14	1.05
Encephalocele	84	1.23	10	0.75
Endocardial cushion defect	299	4.36	77	5.79
Esophageal atresia/ tracheosophageal fistula	289	4.21	50	3.76
Fetal alcohol syndrome	197	2.87	22	1.66
Hirschsprung's disease (congenital megacolon)	235	3.43	37	2.78
Hydrocephalus without Spina Bifida	611	8.91	112	8.43
Hypoplastic left heart syndrome	277	4.04	87	6.55
Hypospadias and Epispadias	260	3.79	360	27.08
Microcephalus	503	7.34	87	6.55
Obstructive genitourinary defect	1,077	15.71	222	16.70
Patent ductus arteriosus	3,040	44.34	563	42.36
Pulmonary valve atresia and stenosis	743	10.84	152	11.44
Pyloric stenosis	1,260	18.38	254	19.11
Rectal and large intestinal atresia/stenosis	320	4.67	54	4.06
Reduction deformity, lower limbs	103	1.50	14	1.05
Reduction deformity, upper limbs	188	2.74	34	2.56
Renal agenesis/hypoplasia	331	4.83	66	4.97
Spina bifida without anencephalus	301	4.39	53	3.99
Tetralogy of Fallot	418	6.10	92	6.92
Transposition of great arteries	346	5.05	95	7.15

S146 BIRTH DEFECTS DATA

Michigan	1992-1996		1997	
	Counts	Rates	Counts	Rates
Tricuspid valve atresia and stenosis	88	1.28	22	1.66
Trisomy 13	77	1.12	14	1.05
Trisomy 18	79	1.15	12	0.90
Ventricular septal defect	2,901	42.31	556	41.83
Total Live Births	685,681		132,921	

Birth Defects Counts and Rates

Rates per 10,000 Live Births

Missouri	1989-1997		1998	
	Counts	Rates	Counts	Rates
Anencephalus ¹	142	2.09	13	1.73
Aniridia			4	0.53
Anophthalmia/ microphthalmia	79	1.16	18	2.39
Anotia/microtia	7	0.10	5	0.66
Aortic valve stenosis	117	1.72	13	1.73
Atrial septal defect	2,808	41.28	563	74.83
Biliary atresia	5	0.07	8	1.06
Bladder exstrophy	25	0.37	4	0.53
Choanal atresia	114	1.68	21	2.79
Cleft lip with and without cleft palate	712	10.47	72	9.57
Cleft palate without cleft lip	428	6.29	45	5.98
Coarctation of aorta	54	0.79	50	6.65
Common truncus	67	0.98	8	1.06
Congenital cataract	33	0.49	20	2.66
Diaphragmatic hernia	257	3.78	34	4.52
Down syndrome	838	12.32	114	15.15
Ebstein's anomaly	39	0.57	4	0.53
Encephalocele	99	1.46	11	1.46
Endocardial cushion defect	213	3.13	39	5.18
Fetal alcohol syndrome	89	1.31	14	1.86
Hydrocephalus without Spina Bifida	560	8.23	74	9.84
Hypoplastic left heart syndrome	203	2.98	23	3.06
Hypospadias and Epispadias			281	37.35
Microcephalus	411	6.04	54	7.18
Obstructive genitourinary defect	972	14.29	153	20.33
Patent ductus arteriosus	2,326	34.19	404	53.69
Pulmonary valve atresia and stenosis	191	2.81	107	14.22
Pyloric stenosis	1,152	16.93	249	33.09
Reduction deformity, lower limbs	99	1.46	14	1.86
Reduction deformity, upper limbs	219	3.22	27	3.59
Renal agenesis/hypoplasia	295	4.34	45	5.98
Spina bifida without anencephalus	411	6.04	35	4.65
Tetralogy of Fallot	274	4.03	41	5.45
Transposition of great arteries	251	3.69	27	3.59
Tricuspid valve atresia and stenosis	63	0.93	14	1.86
Trisomy 13	62	0.91	14	1.86
Trisomy 18	129	1.90	18	2.39

S148 BIRTH DEFECTS DATA

Missouri	1989-1997		1998	
	Counts	Rates	Counts	Rates
Ventricular septal defect	2,413	35.47	365	48.51
Total Live Births	680,258		75,241	

¹ live births and fetal deaths

Trisomy Counts and Rates by Maternal Age

Rates per 10,000 Live Births

Missouri	1989-1997			1998		
	<35	35 and >	Total	<35	35 and >	Total
Down syndrome	575	263	838	67	47	114
	9.26	44.64	12.32	9.99	57.66	15.15
Trisomy 13	50	12	62	11	3	14
	0.80	2.04	0.91	1.64	3.68	1.86
Trisomy 18	91	37	129	18	0	18
	1.47	6.28	1.90	2.68	0.00	2.39
Total Live Births	621,119	58,911	680,258	67,078	8,151	75,241

Birth Defects Counts and Rates

Rates per 10,000 Live Births

New Jersey	1990-1997		1998	
	Counts	Rates	Counts	Rates
Amniotic bands	59	0.63	3	0.26
Anencephalus	48	0.51	4	0.35
Aniridia	8	0.09	1	0.09
Anophthalmia/ microphthalmia	93	0.99	6	0.53
Anotia/microtia	75	0.80	6	0.53
Aortic valve stenosis	119	1.26	8	0.70
Atrial septal defect	3,538	37.49	908	79.94
Biliary atresia	67	0.71	6	0.53
Bladder exstrophy	14	0.15	4	0.35
Choanal atresia	130	1.38	17	1.50
Cleft lip with and without cleft palate	674	7.14	91	8.01
Cleft palate without cleft lip	591	6.26	63	5.55
Coarctation of aorta	306	3.24	45	3.96
Common truncus	56	0.59	9	0.79
Congenital cataract	117	1.24	11	0.97
Congenital hip dislocation	1,052	11.15	106	9.33
Diaphragmatic hernia	137	1.45	25	2.20
Down syndrome	1,063	11.26	125	11.00
Ebstein's anomaly	42	0.45	6	0.53
Encephalocele	55	0.58	3	0.26
Endocardial cushion defect	291	3.08	34	2.99
Esophageal atresia/ tracheoesophageal fistula	237	2.51	25	2.20
Fetal alcohol syndrome	120	1.27	7	0.62
Gastroschisis	103	1.09	27	2.38
Hirschsprung's disease (congenital megacolon)	137	1.45	11	0.97
Hydrocephalus without Spina Bifida	432	4.58	52	4.58
Hypoplastic left heart syndrome	210	2.23	22	1.94
Hypospadias and Epispadias	3,233	34.26	379	33.37
Microcephalus	813	8.62	52	4.58
Obstructive genitourinary defect	1,266	13.41	273	24.03
Omphalocele	137	1.45	1	0.09
Patent ductus arteriosus ¹	2,802	29.69	586	51.59
Pulmonary valve atresia and stenosis	587	6.22	108	9.51
Pyloric stenosis	1,137	12.05	209	18.40
Rectal and large intestinal atresia/stenosis	352	3.73	46	4.05
Reduction deformity, lower limbs	138	1.46	15	1.32
Reduction deformity, upper limbs	264	2.80	39	3.43
Renal agenesis/hypoplasia	264	2.80	30	2.64

S150 BIRTH DEFECTS DATA

New Jersey	1990-1997		1998	
	Counts	Rates	Counts	Rates
Spina bifida without anencephalus	261	2.77	29	2.55
Tetralogy of Fallot	343	3.63	49	4.31
Transposition of great arteries	332	3.52	46	4.05
Tricuspid valve atresia and stenosis	123	1.30	13	1.14
Trisomy 13	74	0.78	6	0.53
Trisomy 18	88	0.93	12	1.06
Ventricular septal defect	3,671	38.90	538	47.36
Total Live Births	943,757		113,587	

¹ Only includes birthweight > 2500 grams.

Trisomy Counts and Rates by Maternal Age

Rates per 10,000 Live Births

New Jersey	1990-1997			1998		
	<35	35 and >	Total	<35	35 and >	Total
Down syndrome	679	342	1,063	66	52	125
	8.50	23.87	11.26	7.21	23.61	11.00
Trisomy 13	56	18	74	4	2	6
	0.70	1.26	0.78	0.44	0.91	0.53
Trisomy 18	57	30	88	8	4	12
	0.71	2.09	0.93	0.87	1.82	1.06
Total Live Births	798,569	143,297	943,757	91,536	22,029	113,587

Birth Defects Counts and Rates

Rates per 10,000 Live Births

New Mexico	1995-1997		1998	
	Counts	Rates	Counts	Rates
Anencephalus	21	2.59	5	1.81
Anophthalmia/ microphthalmia	3	0.37	2	0.72
Anotia/microtia	12	1.48	4	1.45
Aortic valve stenosis	2	0.25	1	0.36
Atrial septal defect	156	19.25	85	30.79
Cleft lip with and without cleft palate	153	18.88	36	13.04
Cleft palate without cleft lip	29	3.58	5	1.81
Coarctation of aorta	27	3.33	7	2.54
Congenital hip dislocation	276	34.06	84	30.42
Diaphragmatic hernia	14	1.73	15	5.43
Down syndrome	89	10.98	20	7.24
Ebstein's anomaly	6	0.74	1	0.36
Encephalocele	3	0.37	2	0.72
Endocardial cushion defect	11	1.36	5	1.81
Esophageal atresia/ tracheoesophageal fistula	12	1.48	4	1.45
Fetal alcohol syndrome	23	2.84	1	0.36
Hirschsprung's disease (congenital megacolon)	14	1.73	4	1.45
Hydrocephalus without Spina Bifida	62	7.65	17	6.16
Hypospadias and Epispadias	81	10.00	25	9.05
Microcephalus	107	13.20	7	2.54
Obstructive genitourinary defect	34	4.20	9	3.26
Patent ductus arteriosus	44	5.43	100	36.22
Pulmonary valve atresia and stenosis	53	6.54	10	3.62
Pyloric stenosis	12	1.48	17	6.16
Rectal and large intestinal atresia/stenosis	26	3.21	12	4.35
Reduction deformity, upper limbs	25	3.09	4	1.45
Spina bifida without anencephalus	43	5.31	13	4.71
Tetralogy of Fallot	37	4.57	12	4.35
Transposition of great arteries	17	2.10	9	3.26
Tricuspid valve atresia and stenosis			2	0.72
Trisomy 18	6	0.74	8	2.90
Ventricular septal defect	349	43.07	145	52.52
Total Live Births	81,032		27,610	

Trisomy Counts and Rates by Maternal Age

Rates per 10,000 Live Births

New Mexico	1995-1997			1998		
	<35	35 and >	Total	<35	35 and >	Total
Down syndrome	75 15.45	13 23.64	89 10.98	12	8	20 7.24
Trisomy 18	5 1.03	1 1.82	6 0.74	4	4	8 2.90
Total Live Births	48,558	5,499	81,032			27,610

General Notes:

- New Mexico does active surveillance for neural tube defects and orofacial clefts, but not for other diagnoses.

Birth Defects Counts and Rates

Rates per 10,000 Live Births

New York	1989-1996		1997	
	Counts	Rates	Counts	Rates
Amniotic bands	65	0.29	9	0.35
Anencephalus	149	0.66	11	0.43
Aniridia	15	0.07	5	0.19
Anophthalmia/ microphthalmia	297	1.31	29	1.13
Anotia/microtia	192	0.85	27	1.05
Aortic valve stenosis	363	1.60	39	1.52
Atrial septal defect	4,195	18.54	758	29.50
Biliary atresia	208	0.92	21	0.82
Bladder exstrophy	67	0.30	2	0.08
Choanal atresia	399	1.76	45	1.75
Cleft lip with and without cleft palate	1,631	7.21	185	7.20
Cleft palate without cleft lip	1,295	5.72	166	6.46
Coarctation of aorta	813	3.59	96	3.74
Common truncus	180	0.80	20	0.78
Congenital cataract	361	1.60	37	1.44
Congenital hip dislocation	3,275	14.47	341	13.27
Diaphragmatic hernia	475	2.10	33	1.28
Down syndrome	2,199	9.72	248	9.65
Ebstein's anomaly	89	0.39	16	0.62
Encephalocele	209	0.92	20	0.78
Endocardial cushion defect	793	3.50	87	3.39
Esophageal atresia/ tracheoesophageal fistula	528	2.33	56	2.18
Fetal alcohol syndrome	397	1.75	33	1.28
Gastroschisis	180	0.80	35	1.36
Hirschsprung's disease (congenital megacolon)	427	1.89	41	1.60
Hydrocephalus without Spina Bifida	1,803	7.97	181	7.04
Hypoplastic left heart syndrome	426	1.88	51	1.98
Hypospadias and Epispadias	7,241	32.00	828	32.22
Microcephalus	1,325	5.85	132	5.14
Obstructive genitourinary defect	3,999	17.67	566	22.03
Omphalocele	186	0.82	37	1.44
Patent ductus arteriosus	1,243	5.49	51	1.98
Pulmonary valve atresia and stenosis	2,027	8.96	223	8.68
Pyloric stenosis	3,381	14.94	471	18.33
Rectal and large intestinal atresia/stenosis	880	3.89	98	3.81
Reduction deformity, lower limbs	341	1.51	33	1.28
Reduction deformity, upper limbs	652	2.88	61	2.37
Renal agenesis/hypoplasia	635	2.81	83	3.23

S154 BIRTH DEFECTS DATA

New York	1989-1996		1997	
	Counts	Rates	Counts	Rates
Spina bifida without anencephalus	723	3.19	67	2.61
Tetralogy of Fallot	1,009	4.46	100	3.89
Transposition of great arteries	919	4.06	96	3.74
Tricuspid valve atresia and stenosis	262	1.16	35	1.36
Trisomy 13	167	0.74	26	1.01
Trisomy 18	119	0.53	1	0.04
Ventricular septal defect	7,606	33.61	952	37.05
Total Live Births	2,263,028		256,960	

Trisomy Counts and Rates by Maternal Age

Rates per 10,000 Live Births

New York	1989-1996			1997		
	<35	35 and >	Total	<35	35 and >	Total
Down syndrome	1,409 7.19	788 26.11	2,199 9.72	138 6.45	109 25.28	248 9.65
Trisomy 13	127 0.65	40 1.33	167 0.74	18 0.84	8 1.86	26 1.01
Trisomy 18	85 0.43	34 1.13	119 0.53	1 0.05	0 0.00	1 0.04
Total Live Births	1,959,138	301,852	2,263,028	213,789	43,121	256,960

Birth Defects Counts and Rates

Rates per 10,000 Live Births

North Carolina	1989-1997 (exclude 1994)		1998	
	Counts	Rates	Counts	Rates
Anencephalus	201	2.43	24	2.15
Aniridia	83	1.00	15	1.34
Anophthalmia/ microphthalmia	71	0.86	13	1.16
Anotia/microtia	355	4.29	76	6.81
Aortic valve stenosis	108	1.31	25	2.24
Atrial septal defect	1,359	16.43	360	32.25
Biliary atresia	130	1.57	18	1.61
Bladder exstrophy	40	0.48	3	0.27
Choanal atresia	117	1.41	21	1.88
Cleft lip with and without cleft palate	651	7.87	105	9.41
Cleft palate without cleft lip	394	4.76	74	6.63
Coarctation of aorta	312	3.77	61	5.46
Common truncus	44	0.53	12	1.07
Congenital cataract	109	1.32	21	1.88
Congenital hip dislocation	1,541	18.63	151	13.53
Diaphragmatic hernia	297	3.59	35	3.14
Down syndrome	862	10.42	130	11.65
Ebstein's anomaly	38	0.46	3	0.27
Encephalocele	111	1.34	14	1.25
Endocardial cushion defect	166	2.01	38	3.40
Esophageal atresia/ tracheoesophageal fistula	276	3.34	32	2.87
Hirschsprung's disease (congenital megacolon)	143	1.73	31	2.78
Hydrocephalus without Spina Bifida	761	9.20	111	9.94
Hypoplastic left heart syndrome	212	2.56	28	2.51
Hypospadias and Epispadias	2,953	35.71	559	50.08
Microcephalus	358	4.33	57	5.11
Obstructive genitourinary defect	889	10.75	208	18.63
Patent ductus arteriosus	1,842	22.27	395	35.38
Pulmonary artery anomalies	478	5.78	151	13.53
Pulmonary valve atresia and stenosis	743	8.98	126	11.29
Pyloric stenosis	1,025	12.39	228	20.42
Rectal and large intestinal atresia/stenosis	361	4.37	58	5.20
Reduction deformity, lower limbs	103	1.25	26	2.33
Reduction deformity, upper limbs	229	2.77	34	3.05
Renal agenesis/hypoplasia	284	3.43	51	4.57
Spina bifida without anencephalus	440	5.32	57	5.11
Tetralogy of Fallot	300	3.63	60	5.37

S156 BIRTH DEFECTS DATA

North Carolina	1989-1997 (exclude 1994)		1998	
	Counts	Rates	Counts	Rates
Transposition of great arteries	277	3.35	56	5.02
Tricuspid valve atresia and stenosis	56	0.68	12	1.07
Trisomy 13	116	1.40	15	1.34
Trisomy 18	156	1.89	22	1.97
Ventricular septal defect	2,102	25.42	443	39.68
Total Live Births	827,029		111,631	

Trisomy Counts and Rates by Maternal Age

Rates per 10,000 Live Births

North Carolina	1989-1996 (exclude 1994)			1997		
	<35	35 and >	Total	<35	35 and >	Total
Down syndrome	547 8.24	185 33.00	732 10.17	89 9.27	40 36.49	129 12.06
Trisomy 13	84 1.27	16 2.85	100 1.39	15 1.56	1 0.91	16 1.50
Trisomy 18	94 1.42	37 6.60	131 1.82	18 1.88	7 6.39	25 2.34
Total Live Births	663,444	56,054	719,498	95,985	10,963	106,948

Birth Defects Counts and Rates

Rates per 10,000 Live Births

Oklahoma	1994-1997		1998	
	Counts	Rates	Counts	Rates
Amniotic bands	32	1.73	5	1.01
Anencephalus	63	3.40	8	1.62
Aniridia	4	0.22	1	0.20
Anophthalmia/ microphthalmia	39	2.11	7	1.42
Anotia/microtia	30	1.62	2	0.41
Aortic valve stenosis	56	3.02	13	2.63
Atrial septal defect	957	51.66	199	40.32
Biliary atresia	15	0.81	5	1.01
Bladder exstrophy	7	0.38	4	0.81
Choanal atresia	43	2.32	9	1.82
Cleft lip with and without cleft palate	231	12.47	56	11.35
Cleft palate without cleft lip	129	6.96	29	5.88
Coarctation of aorta	72	3.89	17	3.44
Common truncus	22	1.19	1	0.20
Congenital cataract	52	2.81	4	0.81
Congenital hip dislocation	185	9.99	49	9.93
Diaphragmatic hernia	58	3.13	17	3.44
Down syndrome	223	12.04	59	11.95
Ebstein's anomaly	18	0.97	2	0.41
Encephalocele	33	1.78	4	0.81
Endocardial cushion defect	71	3.83	12	2.43
Esophageal atresia/ tracheoesophageal fistula	58	3.13	13	2.63
Fetal alcohol syndrome	11	0.59	3	0.61
Gastroschisis	66	3.56	21	4.25
Hirschsprung's disease (congenital megacolon)	39	2.11	13	2.63
Hydrocephalus without Spina Bifida	178	9.61	31	6.28
Hypoplastic left heart syndrome	44	2.38	11	2.23
Hypospadias and Epispadias	550	29.69	122	24.72
Microcephalus	190	10.26	36	7.29
Obstructive genitourinary defect	245	13.22	84	17.02
Omphalocele	47	2.54	15	3.04
Pulmonary valve atresia and stenosis	141	7.61	24	4.86
Pyloric stenosis	385	20.78	111	22.49
Rectal and large intestinal atresia/stenosis	166	8.96	32	6.48
Reduction deformity, lower limbs	35	1.89	6	1.22
Reduction deformity, upper limbs	67	3.62	16	3.24
Renal agenesis/hypoplasia	105	5.67	19	3.85
Spina bifida without anencephalus	123	6.64	22	4.46

S158 BIRTH DEFECTS DATA

Oklahoma	1994-1997		1998	
	Counts	Rates	Counts	Rates
Tetralogy of Fallot	68	3.67	25	5.07
Transposition of great arteries	83	4.48	26	5.27
Tricuspid valve atresia and stenosis	16	0.86	4	0.81
Trisomy 13	25	1.35	7	1.42
Trisomy 18	29	1.57	11	2.23
Ventricular septal defect	878	47.39	177	35.86
Total Live Births	185,262		49,354	

Trisomy Counts and Rates by Maternal Age

Rates per 10,000 Live Births

Oklahoma	1994-1997			1998		
	<35	35 and >	Total	<35	35 and >	Total
Down syndrome	161 9.45	56 38.98	223 12.04	37 8.19	22 54.13	59 11.95
Trisomy 13	19 1.11	6 4.18	25 1.35	6 1.33	1 2.46	7 1.42
Trisomy 18	21 1.23	8 5.57	29 1.57	7 1.55	4 9.84	11 2.23
Total Live Births	170,404	14,368	185,262	45,151	4,064	49,354

Birth Defects Counts and Rates

Rates per 10,000 Live Births

Puerto Rico	1995-1997		1998	
	Counts	Rates	Counts	Rates
Anencephalus	69	3.62	14	2.32
Encephalocele	19	1.00	3	0.50
Spina bifida without anencephalus	167	8.75	39	6.46
Total Live Births	190,780		60,406	

Birth Defects Counts and Rates

Rates per 10,000 Live Births

Rhode Island	1989-1996		1997	
	Counts	Rates	Counts	Rates
Anencephalus	4	0.38	0	0.00
Aniridia	1	0.10	0	0.00
Anophthalmia/ microphthalmia	5	0.48	2	1.75
Anotia/microtia	4	0.38	0	0.00
Aortic valve stenosis	6	0.57	2	1.75
Atrial septal defect	319	30.39	62	54.21
Biliary atresia	0	0.00	0	0.00
Bladder exstrophy	3	0.29	0	0.00
Choanal atresia	3	0.29	0	0.00
Cleft lip with and without cleft palate	74	7.05	13	11.37
Cleft palate without cleft lip	56	5.34	5	4.37
Coarctation of aorta	15	1.43	1	0.87
Common truncus	7	0.67	0	0.00
Congenital cataract	12	1.14	1	0.87
Congenital hip dislocation	155	14.77	18	15.74
Diaphragmatic hernia	19	1.81	4	3.50
Down syndrome	99	9.43	10	8.74
Ebstein's anomaly	6	0.57	0	0.00
Encephalocele	5	0.48	0	0.00
Endocardial cushion defect	17	1.62	2	1.75
Esophageal atresia/ tracheoesophageal fistula	20	1.91	2	1.75
Fetal alcohol syndrome	36	3.43	0	0.00
Gastroschisis	0	0.00		
Hirschsprung's disease (congenital megacolon)	5	0.48	0	0.00
Hydrocephalus without Spina Bifida	31	2.95	3	2.62
Hypoplastic left heart syndrome	6	0.57	0	0.00
Hypospadias and Epispadias	6	0.57	47	41.09
Microcephalus	20	1.91	3	2.62
Obstructive genitourinary defect	157	14.96	29	25.36
Omphalocele	0	0.00		
Patent ductus arteriosus ¹	560	53.35	101	88.31
Pulmonary valve atresia and stenosis	107	10.19	23	20.11
Pyloric stenosis	5	0.48	2	1.75
Rectal and large intestinal atresia/stenosis	29	2.76	4	3.50
Reduction deformity, lower limbs	12	1.14	1	0.87
Reduction deformity, upper limbs	25	2.38	0	0.00
Renal agenesis/hypoplasia	18	1.71	2	1.75
Spina bifida without anencephalus	27	2.57	4	3.50

Rhode Island	1989-1996		1997	
	Counts	Rates	Counts	Rates
Tetralogy of Fallot	34	3.24	4	3.50
Transposition of great arteries	15	1.43	0	0.00
Tricuspid valve atresia and stenosis	5	0.48	2	1.75
Trisomy 13	10	0.95	0	0.00
Trisomy 18	9	0.86	0	0.00
Ventricular septal defect	409	38.97	59	51.59
Total Live Births	104,959		11,437	

¹ Unable to exclude birth weights

General Notes:

- Data for defect comes from hospital discharge database. Also, births for RI residents that occurred out-of-state would not be included in this database.
- Only five (5) records in the stillbirth file [fetal deaths] were coded 'anencephalus'. In the induced file, all terminations are coded '7796'.
- Due to coding error, all births from one hospital are excluded for the years 1993-1997. (About 500-580 births a year are missing.)
- Since infant's and mother's records are not linked unable to provide data for trisomies by maternal age. Did not use data from vital (the birth file) since the birth file produced different numbers.

Birth Defects Counts and Rates

Rates per 10,000 Live Births

South Carolina	1995-1997		1998	
	Counts	Rates	Counts	Rates
Anencephalus	87	5.64	13	2.41
Encephalocele	28	1.82	12	2.23
Spina bifida without anencephalus	82	5.32	23	4.27
Total Live Births	154,223		53,833	

Birth Defects Counts and Rates

Rates per 10,000 Live Births

Tennessee	1991-1992		1993	
	Counts	Rates	Counts	Rates
Anencephalus	32	2.16	14	1.92
Aniridia	2	0.14	0	0.00
Anophthalmia/ microphthalmia	8	0.54	5	0.69
Anotia/microtia	8	0.54	6	0.82
Aortic valve stenosis	16	1.08	13	1.78
Atrial septal defect	188	12.71	78	10.70
Biliary atresia	4	0.27	4	0.55
Bladder exstrophy	1	0.07	3	0.41
Choanal atresia	10	0.68	3	0.41
Cleft lip with and without cleft palate	113	7.64	56	7.68
Cleft palate without cleft lip	44	2.97	22	3.02
Coarctation of aorta	40	2.70	14	1.92
Common truncus	6	0.41	2	0.27
Congenital cataract	12	0.81	3	0.41
Congenital hip dislocation	69	4.66	27	3.70
Diaphragmatic hernia	27	1.82	14	1.92
Down syndrome	79	5.34	38	5.21
Ebstein's anomaly	4	0.27	1	0.14
Encephalocele	13	0.88	5	0.69
Endocardial cushion defect	17	1.15	8	1.10
Esophageal atresia/ tracheoesophageal fistula	32	2.16	16	2.19
Fetal alcohol syndrome	17	1.15	15	2.06
Gastroschisis	89	6.02	42	5.76
Hirschsprung's disease (congenital megacolon)	19	1.28	11	1.51
Hydrocephalus without Spina Bifida	121	8.18	45	6.17
Hypoplastic left heart syndrome	44	2.97	19	2.61
Hypospadias and Epispadias	219	14.80	109	14.95
Microcephalus	45	3.04	21	2.88
Obstructive genitourinary defect	151	10.21	89	12.20
Omphalocele	89	6.02	42	5.76
Patent ductus arteriosus	530	35.82	306	41.96
Pulmonary artery anomalies	79	5.34	25	3.43
Pulmonary valve atresia and stenosis	92	6.22	62	8.50
Pyloric stenosis	182	12.30	75	10.28
Rectal and large intestinal atresia/stenosis	69	4.66	28	3.84
Reduction deformity, lower limbs	28	1.89	6	0.82
Reduction deformity, upper limbs	42	2.84	17	2.33
Renal agenesis/hypoplasia	51	3.45	20	2.74

S164 BIRTH DEFECTS DATA

Tennessee	1991-1992		1993	
	Counts	Rates	Counts	Rates
Spina bifida without anencephalus	55	3.72	23	3.15
Tetralogy of Fallot	27	1.82	12	1.65
Transposition of great arteries	42	2.84	19	2.61
Tricuspid valve atresia and stenosis	7	0.47	4	0.55
Trisomy 13	15	1.01	14	1.92
Trisomy 18	27	1.82	8	1.10
Ventricular septal defect	232	15.68	101	13.85
Total Live Births	147,952		72,923	

Trisomy Counts and Rates by Maternal Age

Rates per 10,000 Live Births

Tennessee	1991-1992			1993		
	<35	35 and >	Total	<35	35 and >	Total
Down syndrome	58	21	79	30	8	38
	4.21	20.69	5.34	4.44	14.91	5.21
Trisomy 13	15	0	15	12	2	14
	1.09	0.00	1.01	1.78	3.73	1.92
Trisomy 18	19	8	27	7	1	8
	1.38	7.88	1.82	1.04	1.86	1.10
Total Live Births	137,783	10,148	147,952	67,537	5,364	72,923

General Notes:

- Tennessee's Birth Defects Registry lasted from 1991 to 1993 and covered the entire state. For the year 2000, we have a new registry pilot project that covers one region of the state.

Birth Defects Counts and Rates

Rates per 10,000 Live Births

Texas	1995-1996		1997	
	Counts	Rates	Counts	Rates
Amniotic bands	11	0.49	16	0.86
Anencephalus	95	4.20	61	3.26
Aniridia	1	0.04	1	0.05
Anophthalmia/ microphthalmia	25	1.11	60	3.21
Anotia/microtia	32	1.42	52	2.78
Aortic valve stenosis	25	1.11	44	2.35
Atrial septal defect	522	23.10	899	48.06
Biliary atresia	7	0.31	10	0.53
Bladder exstrophy	2	0.09	3	0.16
Choanal atresia	11	0.49	25	1.34
Cleft lip with and without cleft palate	214	9.47	233	12.46
Cleft palate without cleft lip	132	5.84	116	6.20
Coarctation of aorta	60	2.66	85	4.54
Common truncus	3	0.13	16	0.86
Congenital cataract	11	0.49	20	1.07
Congenital hip dislocation	72	3.19	97	5.19
Diaphragmatic hernia	55	2.43	38	2.03
Down syndrome	284	12.57	243	12.99
Ebstein's anomaly	1	0.04	12	0.64
Encephalocele	37	1.64	17	0.91
Endocardial cushion defect	40	1.77	62	3.31
Esophageal atresia/ tracheoesophageal fistula	44	1.95	47	2.51
Fetal alcohol syndrome	1	0.04	1	0.05
Gastroschisis	76	3.36	71	3.80
Hirschsprung's disease (congenital megacolon)	22	0.97	17	0.91
Hydrocephalus without Spina Bifida	131	5.80	151	8.07
Hypoplastic left heart syndrome	48	2.12	45	2.41
Hypospadias and Epispadias	260	11.51	458	24.48
Microcephalus	110	4.87	106	5.67
Obstructive genitourinary defect	177	7.83	327	17.48
Omphalocele	45	1.99	47	2.51
Patent ductus arteriosus	460	20.36	858	45.87
Pulmonary valve atresia and stenosis	67	2.96	76	4.06
Pyloric stenosis	129	5.71	351	18.76
Rectal and large intestinal atresia/stenosis	101	4.47	79	4.22
Reduction deformity, lower limbs	31	1.37	22	1.18
Reduction deformity, upper limbs	68	3.01	79	4.22
Renal agenesis/hypoplasia	99	4.38	96	5.13

S166 BIRTH DEFECTS DATA

Texas	1995-1996		1997	
	Counts	Rates	Counts	Rates
Spina bifida without anencephalus	121	5.35	86	4.60
Tetralogy of Fallot	53	2.35	58	3.10
Transposition of great arteries	100	4.43	93	4.97
Tricuspid valve atresia and stenosis	32	1.42	40	2.14
Trisomy 13	20	0.89	21	1.12
Trisomy 18	63	2.79	52	2.78
Ventricular septal defect	528	23.36	784	41.91
Total Live Births	225,986		187,060	

Trisomy Counts and Rates by Maternal Age

Rates per 10,000 Live Births

Texas	1995-1996			1997		
	<35	35 and >	Total	<35	35 and >	Total
Down syndrome	174	110	284	153	90	243
	8.55	49.14	12.57	9.07	49.29	12.99
Trisomy 13	16	4	20	14	7	21
	0.79	1.79	0.89	0.83	3.83	1.12
Trisomy 18	39	24	63	30	22	52
	1.92	10.72	2.79	1.78	12.05	2.78
Total Live Births	203,572	22,384	225,986	168,767	18,259	187,060

Birth Defects Counts and Rates

Rates per 10,000 Live Births

Utah	1994-1997		1998	
	Counts	Rates	Counts	Rates
Anencephalus	38	2.33	8	1.77
Aortic valve stenosis	17	1.04	13	2.88
Cleft lip with and without cleft palate	189	11.60	59	13.07
Cleft palate without cleft lip	88	5.40	46	10.19
Coarctation of aorta	31	1.90	40	8.86
Common truncus	6	0.37	2	0.44
Down syndrome	203	12.46	52	11.52
Encephalocele	18	1.11	1	0.22
Gastroschisis	23	1.41	22	4.88
Hypoplastic left heart syndrome	15	0.92	16	3.55
Omphalocele	14	0.86	9	1.99
Pulmonary valve atresia and stenosis	8	0.49	0	0.00
Reduction deformity, lower limbs	10	0.61	8	1.77
Reduction deformity, upper limbs	20	1.23	22	4.88
Spina bifida without anencephalus	63	3.87	18	3.99
Tetralogy of Fallot	22	1.35	11	2.44
Transposition of great arteries	6	0.37	15	3.32
Trisomy 13	20	1.23	3	0.66
Trisomy 18	49	3.01	15	3.32
Total Live Births	162,892		45,128	

Trisomy Counts and Rates by Maternal Age

Rates per 10,000 Live Births

Utah	1995-1997			1998		
	<35	35 and >	Total	<35	35 and >	Total
Down syndrome	118	85	203	32	20	52
	10.41	75.81	16.29	7.84	46.37	11.52
Trisomy 13	15	5	20	3	0	3
	1.32	4.46	1.60	0.74	0.00	0.66
Trisomy 18	31	18	49	7	8	15
	2.73	16.05	3.93	1.72	18.55	3.32
Total Live Births	113,350	11,212	124,621	40,806	4,313	45,128

Birth Defects Counts and Rates

Rates per 10,000 Live Births

Virginia	1989-1997		1998	
	Counts	Rates	Counts	Rates
Anencephalus	96	1.13	3	0.32
Aniridia	3	0.04	0	0.00
Anophthalmia/ microphthalmia	51	0.60	5	0.53
Anotia/microtia	28	0.33	3	0.32
Aortic valve stenosis	87	1.02	5	0.53
Atrial septal defect	1,425	16.71	212	22.53
Biliary atresia	41	0.48	3	0.32
Bladder exstrophy	26	0.30	1	0.11
Choanal atresia	77	0.90	11	1.17
Cleft lip with and without cleft palate	546	6.40	41	4.36
Cleft palate without cleft lip	419	4.91	44	4.68
Coarctation of aorta	276	3.24	24	2.55
Common truncus	53	0.62	5	0.53
Congenital cataract	77	0.90	5	0.53
Congenital hip dislocation	834	9.78	61	6.48
Diaphragmatic hernia	221	2.59	14	1.49
Down syndrome	745	8.74	79	8.39
Ebstein's anomaly	38	0.45	5	0.53
Encephalocele	49	0.57	2	0.21
Endocardial cushion defect	168	1.97	24	2.55
Esophageal atresia/ tracheoesophageal fistula	149	1.75	12	1.28
Fetal alcohol syndrome	84	0.99	12	1.28
Hirschsprung's disease (congenital megacolon)	110	1.29	18	1.91
Hydrocephalus without Spina Bifida	430	5.04	33	3.51
Hypoplastic left heart syndrome	140	1.64	12	1.28
Hypospadias and Epispadias	1,825	21.40	9	0.96
Microcephalus	288	3.38	18	1.91
Obstructive genitourinary defect	553	6.49	9	0.96
Patent ductus arteriosus	3,877	45.47	411	43.67
Pulmonary artery anomalies	571	6.70	136	14.45
Pulmonary valve atresia and stenosis	835	9.79	51	5.42
Pyloric stenosis	796	9.34	81	8.61
Rectal and large intestinal atresia/stenosis	252	2.96	31	3.29
Reduction deformity, lower limbs	72	0.84	16	1.70
Reduction deformity, upper limbs	136	1.59	16	1.70
Renal agenesis/hypoplasia	212	2.49	26	2.76
Spina bifida without anencephalus	369	4.33	29	3.08
Tetralogy of Fallot	275	3.23	36	3.83

Virginia	1989-1997		1998	
	Counts	Rates	Counts	Rates
Transposition of great arteries	247	2.90	23	2.44
Tricuspid valve atresia and stenosis	61	0.72	10	1.06
Trisomy 13	53	0.62	4	0.43
Trisomy 18	59	0.69	12	1.28
Ventricular septal defect	1,990	23.34	211	22.42
Total Live Births	852,678		94,114	

Trisomy Counts and Rates by Maternal Age

Rates per 10,000 Live Births

Virginia	1989-1997			1998		
	<35	35 and >	Total	<35	35 and >	Total
Down syndrome	501 6.63	244 25.14	745 8.74	45 5.63	34 24.47	79 8.39
Trisomy 13	44 0.58	9 0.93	53 0.62	4 0.50	0 0.00	4 0.43
Trisomy 18	45 0.60	14 1.44	59 0.69	3 0.38	9 6.48	12 1.28
Total Live Births	755,113	97,060	852,678	79,958	13,892	94,114

General Notes:

- 1998 data may not be complete.

Birth Defects Counts and Rates

Rates per 10,000 Live Births

Washington	1989		1990	
	Counts	Rates	Counts	Rates
Amniotic bands	13	1.80	11	1.44
Anencephalus	6	0.83	19	2.49
Aniridia	0	0.00	0	0.00
Anophthalmia/ microphthalmia	11	1.52	10	1.31
Anotia/microtia	9	1.24	9	1.18
Aortic valve stenosis	31	4.28	23	3.02
Atrial septal defect	83	11.47	85	11.16
Biliary atresia	5	0.69	12	1.58
Bladder exstrophy	1	0.14	2	0.26
Choanal atresia	27	3.73	19	2.49
Cleft lip with and without cleft palate	97	13.40	83	10.90
Cleft palate without cleft lip	63	8.71	69	9.06
Coarctation of aorta	44	6.08	44	5.78
Common truncus	6	0.83	7	0.92
Congenital cataract	33	4.56	35	4.59
Congenital hip dislocation	266	36.76	261	34.26
Diaphragmatic hernia	23	3.18	23	3.02
Down syndrome	80	11.05	80	10.50
Ebstein's anomaly	10	1.38	8	1.05
Encephalocele	6	0.83	5	0.66
Endocardial cushion defect	40	5.53	40	5.25
Esophageal atresia/ tracheoesophageal fistula	23	3.18	17	2.23
Fetal alcohol syndrome	22	3.04	12	1.58
Gastroschisis	18	2.49	21	2.76
Hirschsprung's disease (congenital megacolon)	20	2.76	14	1.84
Hydrocephalus without Spina Bifida	133	18.38	117	15.36
Hypoplastic left heart syndrome	23	3.18	17	2.23
Hypospadias and Epispadias	264	36.48	250	32.82
Microcephalus	121	16.72	95	12.47
Obstructive genitourinary defect	138	19.07	152	19.95
Omphalocele	22	3.04	15	1.97
Patent ductus arteriosus ¹	150	20.73	166	21.79
Pulmonary valve atresia and stenosis	54	7.46	63	8.27
Pyloric stenosis	145	20.04	130	17.07
Rectal and large intestinal atresia/stenosis	39	5.39	42	5.51
Reduction deformity, lower limbs	18	2.49	25	3.28
Reduction deformity, upper limbs	42	5.80	35	4.59
Renal agenesis/hypoplasia	45	6.22	46	6.04

Washington

	1989		1990	
	Counts	Rates	Counts	Rates
Spina bifida without anencephalus	29	4.01	31	4.07
Tetralogy of Fallot	37	5.11	35	4.59
Transposition of great arteries	44	6.08	42	5.51
Tricuspid valve atresia and stenosis	15	2.07	14	1.84
Trisomy 13	7	0.97	4	0.53
Trisomy 18	16	2.21	15	1.97
Ventricular septal defect	154	21.28	144	18.90
Total Live Births	72,366		76,172	

¹ unkown weight -white:21;black3;asian6;native american:2;hispanic:3; other:15

Trisomy Counts and Rates by Maternal Age

Rates per 10,000 Live Births

Washington

	1989			1990		
	<35	35 and >	Total	<35	35 and >	Total
Down syndrome	52 7.60	19 27.02	80 10.61	47 6.56	9 11.54	80 10.07
Trisomy 13	6 0.88	1 1.42	7 0.93	3 0.42	0 0.00	4 0.50
Trisomy 18	9 1.32	4 5.69	16 2.12	10 1.40	1 1.28	15 1.89
Total Live Births	68,398	7,033	75,431	71,618	7,798	79,416

Birth Defects Counts and Rates

Rates per 10,000 Live Births

Wisconsin	1989-1997		1998	
	Counts	Rates	Counts	Rates
Anencephalus	48	0.77	9	1.34
Aniridia	2	0.03	0	0.00
Anophthalmia/ microphthalmia	17	0.27	3	0.45
Anotia/microtia	25	0.40	3	0.45
Aortic valve stenosis	67	1.07	3	0.45
Atrial septal defect	797	12.72	144	21.37
Biliary atresia	5	0.08	1	0.15
Bladder exstrophy	15	0.24	4	0.59
Choanal atresia	74	1.18	11	1.63
Cleft lip with and without cleft palate	529	8.45	52	7.72
Cleft palate without cleft lip	369	5.89	45	6.68
Coarctation of aorta	73	1.17	8	1.19
Common truncus	21	0.34	3	0.45
Congenital cataract	52	0.83	10	1.48
Congenital hip dislocation	1,454	23.21	134	19.89
Diaphragmatic hernia	150	2.39	9	1.34
Down syndrome	597	9.53	62	9.20
Ebstein's anomaly	13	0.21	2	0.30
Encephalocele	34	0.54	6	0.89
Endocardial cushion defect	83	1.33	7	1.04
Esophageal atresia/ tracheoesophageal fistula	114	1.82	12	1.78
Fetal alcohol syndrome	169	2.70	8	1.19
Gastroschisis	39	0.62	34	5.05
Hirschsprung's disease (congenital megacolon)	38	0.61	5	0.74
Hydrocephalus without Spina Bifida	247	3.94	22	3.27
Hypoplastic left heart syndrome	54	0.86	13	1.93
Hypospadias and Epispadias ¹	2,066	32.98	278	41.26
Microcephalus	156	2.49	10	1.48
Obstructive genitourinary defect	509	8.13		
Patent ductus arteriosus ²	1,848	29.50	273	40.52
Pulmonary valve atresia and stenosis	250	3.99	35	5.19
Pyloric stenosis	12	0.19	3	0.45
Rectal and large intestinal atresia/stenosis	206	3.29	28	4.16
Reduction deformity, lower limbs	90	1.44	9	1.34
Reduction deformity, upper limbs	155	2.47	22	3.27
Renal agenesis/hypoplasia	125	2.00	19	2.82
Spina bifida without anencephalus	214	3.42	19	2.82
Tetralogy of Fallot	110	1.76	13	1.93

Wisconsin	1989-1997		1998	
	Counts	Rates	Counts	Rates
Transposition of great arteries	84	1.34	9	1.34
Tricuspid valve atresia and stenosis	19	0.30	3	0.45
Trisomy 13	39	0.62	7	1.04
Trisomy 18	69	1.10	6	0.89
Ventricular septal defect	1,055	16.84	147	21.82
Total Live Births	626,385		67,379	

¹7526 used instead of 5 digits for continuity across year. In early years, 5th digit usually excluded.

²Does not exclude birth weight <2500 grams.

Trisomy Counts and Rates by Maternal Age

Rates per 10,000 Live Births

Wisconsin	1989-1997			1998		
	<35	35 and >	Total	<35	35 and >	Total
Down syndrome	431	166	597	31	31	62
	7.65	26.33	9.53	5.28	35.89	9.20
Trisomy 13	29	13	42	5	2	7
	0.51	2.06	0.67	0.85	2.32	1.04
Trisomy 18	43	26	69	4	2	6
	0.76	4.12	1.10	0.68	2.32	0.89
Total Live Births	563,296	63,041	626,385	58,737	8,637	67,379

General Notes:

- All data reported are based on hospital discharge diagnoses.