Texas Birth Defects Registry Annual Report

Birth Defects Among 1999–2021 Deliveries

Birth Defects Epidemiology and Surveillance Branch
Texas Department of State Health Services
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TEXAS Health and Human Services | Texas Department of State Health Services

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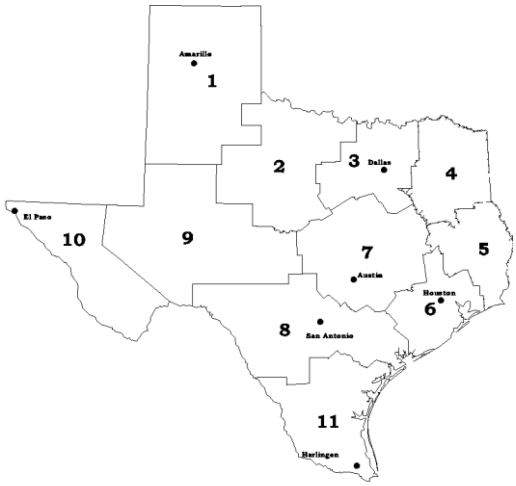
Texas Birth Defects Registry (TBDR) Annual Report
Birth Defects Among 1999–2021 Deliveries
Methods

Scope of this Report

This report presents information on selected birth defects among deliveries during 1999 through 2021 to women who were residents of Texas at the time of delivery.



Case Definition

To be included as a case in the Texas Birth Defects Registry, all of the following criteria must be met:

- The mother's residence at the time of delivery must be in an area covered by the registry. During 1999–2021, the registry covered the entire state of Texas.
- The infant or fetus must have a structural birth defect or developmental disability monitored by the registry.
- The defect must be diagnosed prenatally or within one year after delivery. This is extended to six years of age for special cases, currently only for fetal alcohol syndrome.

The current case definition includes all pregnancy outcomes (live births, spontaneous fetal deaths, and induced pregnancy terminations) at all lengths of gestation. Prior to April 5, 2001, when the current case definition was adopted, the registry did not collect information on birth defects among fetal deaths before 20 weeks of gestation. Most 1999 and much of year 2000 surveillance activities were completed at the time this case definition went into effect. As a result, data in the Texas Birth Defects Registry for deliveries before 2001 include only a very small number of fetal deaths before 20 weeks of gestation.

Data Collection

The Texas Birth Defects Registry uses active surveillance. This means it does not require reporting by hospitals or medical professionals. Instead, trained program staff members regularly visit medical facilities where they have the authority to review logs, hospital discharge lists, and other records. From this review, a list of potential cases is created. Starting with deliveries during 2009, we began to also use Texas fetal death certificates with a congenital anomaly as the underlying cause or as a contributing of death (codes Q00.0 through Q99.9, International Classification of Diseases, Tenth Revision (ICD-10)) or with a congenital anomaly reported on the certificate to identify potential cases. Due to increasing workloads in 2010 we discontinued abstracting the maternal medical records. This impacts maternal information from delivery year 2009 to present. Program staff then review medical charts for each potential case identified. If the infant or fetus has a birth defect covered by the registry, detailed demographic and diagnostic information is abstracted. That information is entered into the computer and submitted for processing into the registry. Quality control procedures for finding cases, abstracting information, and coding birth defects help ensure completeness and accuracy.

Records in the birth defects registry were matched to birth certificates and fetal death certificates filed with the Vital Statistics Section of the Texas Department of State Health Services. When a record in the birth defects registry matched a birth or fetal death certificate, and information was not missing from the matching certificate, the analysis for this report used demographic data from the birth or fetal death certificate for the following: date of delivery, mother's date of birth, mother's race/ethnicity, and mother's county of residence at the time of delivery. Information on the sex of the infant or fetus was handled a bit differently. We used the sex reported on the matching birth or fetal death certificate unless information abstracted from medical records indicated the sex was ambiguous, in which case we used the information from medical records. When a registry record did not match a birth or fetal death certificate, or when information was missing from the certificate, then this report used demographic data abstracted from medical records.

Regardless of the source of demographic information for this report, all diagnostic information was abstracted from medical records.

Data Analysis

Results are presented for 50 selected types of birth defects among deliveries during 1999 through 2021, regardless of whether the birth defect occurred alone or together with others. Appendix B lists the modified BPA codes used to define these birth defects, and Appendix C provides a glossary of birth defects and related terms.

Severe microcephaly, one of the types of birth defects presented in this report, is defined as a diagnosis of microcephaly, small head, or small brain, plus a head circumference measurement at birth that is less than the third percentile for sex and gestational age, based on the International Fetal and Newborn Growth Consortium size-at-birth standards (1).

Because an infant or fetus often has more than one birth defect, and not all monitored birth defects are included in these analyses, it is not meaningful to sum all diagnostic categories in the tables to obtain the total number of children with birth defects. In the data tables, totals are shown in the line labeled, "Infants and fetuses with regular reportable birth defects."

Tables include the number of cases found, the estimated prevalence per 10,000 live births, and the 95% confidence interval for the prevalence. A case is an infant or fetus with the specified birth defect. Birth prevalence was calculated as follows:

$$\frac{\text{number of birth defect cases in an area and time period}}{\text{number of live births in the same area and time period}} \times 10{,}000$$

The denominators used in calculating prevalence are shown in Appendix A.

The prevalence is an estimate of the true prevalence, which can never be known with certainty. The 95% confidence interval contains the true prevalence of a birth defect 95% of the time. A wide interval indicates the uncertainty stemming from small numbers. This report displays 95% confidence intervals based on the Poisson distribution when there are 100 or fewer cases and based on the normal distribution when there are more than 100 cases.

We used Poisson regression to identify birth defects with statistically significant differences in prevalence between maternal age groups, maternal race/ethnic groups, and between males and females. These birth defects are marked with an asterisk in Tables 3, 4, and 5.

Another simpler approach to determine whether the prevalence of a particular birth defect differs between groups, for example, between males and females, is to examine the 95% confidence intervals for each group's prevalence. If the 95% confidence interval for the prevalence among males does not overlap with the 95% confidence interval for females, we consider the prevalence values to be statistically significantly different. However, this method is more conservative and has less power than Poisson regression and will usually identify fewer significant differences between groups than Poisson regression.

Changes Affecting Analysis

Starting with the 1999–2017 Annual Report, the following changes were made to the types of birth defects shown:

- Added a category for "double outlet right ventricle." In reports published prior to the 1999-2017 Annual Report, diagnoses of double outlet right ventricle were included in the category "transposition of the great vessels."
- Removed diagnoses of double outlet right ventricle from the category "transposition of the great vessels." As a result, the prevalence of transposition of the great vessels is lower than in reports prior to the 1999-2017 Annual Report.
- Changed the category "congenital hip dislocation" to "congenital hip dislocation without hip dysplasia" to correspond with changes we made in how we collect information on birth defects of the hip. Our surveillance staff no longer list congenital hip dislocation if the infant also has hip dysplasia (these children are listed as having hip dysplasia, a condition not shown in this report). As a result, the prevalence of "congenital hip dislocation without hip dysplasia" is lower than the prevalence of "congenital hip dislocation" in reports prior to the 1999-2017 Annual Report.
- Changed the category "infants and fetuses with any monitored birth defect" to "infants and fetuses with regular reportable birth defects." A small number of the birth defect diagnoses we monitor are designated as "conditional inclusion" birth defects; the rest are called "regular reportable" defects. Conditional inclusion defects are only collected if the infant or fetus also has a regular reportable birth defect. Occasionally, a birth defect diagnosis is changed from being a regular reportable defect to a conditional inclusion. For example, we changed the diagnosis plagiocephaly from a regular reportable birth defect to a conditional inclusion defect. The new category "infants and fetuses with regular reportable birth defects" counts the number of infants and fetuses with one or more of the regular reportable birth defect diagnoses. As such, it will be responsive to changes when diagnoses change from regular reportable to conditional inclusion. As a result, the prevalence of "infants and fetuses with regular reportable birth defects" is slightly lower than the prevalence of "infants and fetuses with any monitored birth defect" in reports prior to the 1999-2017 Annual Report.

In 2021 and 2023, the TBDR changed methodology and procedures for the collection of patent ductus arteriosus. This change has impacted prevalence estimates for this defect. As a result, the prevalence of this defect has decreased over recent years.

Beginning in 2024, the TBDR discontinued reporting of epispadias in its annual report. This defect is still collected but data for this defect is no longer included in the annual report.

Limitations of these Data

These data are subject to several limitations. First, the registry only includes birth defects diagnosed within one year after delivery (except for fetal alcohol syndrome), so birth defects detected after the first birthday and diagnoses that are refined after the first birthday are not in the registry. Second, we do not capture diagnoses that are made outside of Texas or in Texas facilities that our staff does not access at this time, such as prenatal diagnostic facilities, private physicians' offices, and military facilities. Third, data are collected from medical records and as such are subject to differences in clinical practice.

Acknowledgements

The Department of State Health Services continues to work on behalf of children and families affected by birth defects in Texas and recognizes the critical contributions of families who have participated in research that one day will eliminate these conditions. We further acknowledge the dedicated efforts of the birth defects surveillance staff, who collect information on birth defects across the state.

The work of the Texas Birth Defects Epidemiology and Surveillance Branch is supported by Maternal and Child Health Block Grant funding from the Texas Department of State Health Services. Activities have also been supported in part by the following Cooperative Agreements from the Centers for Disease Control and Prevention: NU50DD004942 from February 1, 2016, through January 31, 2022; NU50DD000036 from August 1, 2016, through July 31, 2018; and NU50DD000102 beginning May 1, 2021.

Reference

1. INTERGROWTH-21st (the International Fetal and Newborn Growth Consortium for the 21st Century) international standards for newborn weight, length, and head circumference by gestational age and sex. Available at: https://intergrowth21.tghn.org/articles/international-standards-newborn-weight-length-and-head-circumference-gestational-age-and-sex-newborn-cross-sectional-study-inte/.

Texas Birth Defects Registry (TBDR) Annual Report
Table 1. Overall Prevalence of Selected Birth Defects, Texas, 1999–2021

Birth Defect (Body System)	Cases (count)	Prevalence (rate)	Confidence Interval (95% for Prevalence)
Central Nervous System			
Anencephaly	2,168	2.46	2.35 – 2.56
Spina bifida (without anencephaly)	3,275	3.71	3.59 – 3.84
Encephalocele	854	0.97	0.90 – 1.03
Microcephaly, severe (head circ. <3rd percentile)	4,572	5.18	5.03 – 5.33
Holoprosencephaly	920	1.04	0.98 – 1.11
Hydrocephaly (without spina bifida)	7,174	8.14	7.95 – 8.32
Eye and Ear			
Anophthalmia	256	0.29	0.25 – 0.33
Microphthalmia	2,391	2.71	2.60 – 2.82
Cataract	1,722	1.95	1.86 – 2.04
Anotia or microtia	3,183	3.61	3.48 – 3.73
Cardiac and Circulatory			
Common truncus	672	0.76	0.70 – 0.82
Transposition of the great vessels	2,939	3.33	3.21 – 3.45
Double outlet right ventricle	2,047	2.32	2.22 – 2.42
Tetralogy of Fallot	3,485	3.95	3.82 – 4.08
Ventricular septal defect	54,425	61.72	61.20 – 62.24
Atrial septal defect	63,768	72.31	71.75 – 72.87
Atrioventricular septal defect (endocardial cushion defect)	3,851	4.37	4.23 – 4.50
Pulmonary valve atresia or stenosis	8,809	9.99	9.78 – 10.20
Tricuspid valve atresia or stenosis	1,685	1.91	1.82 – 2.00
Ebstein anomaly	676	0.77	0.71 – 0.82
Aortic valve stenosis	2,130	2.42	2.31 – 2.52
Hypoplastic left heart syndrome	1,963	2.23	2.13 – 2.32
Patent ductus arteriosus	50,326	57.07	56.57 – 57.57
Coarctation of the aorta	4,694	5.32	5.17 – 5.48
Respiratory			
Choanal atresia or stenosis	1,141	1.29	1.22 – 1.37
Agenesis, aplasia, or hypoplasia of the lung	2,589	2.94	2.82 – 3.05
Oral Clefts			
Cleft palate alone (without cleft lip)	5,251	5.95	5.79 – 6.12
Cleft lip (with or without cleft palate)	9,475	10.74	10.53 – 10.96
Gastrointestinal			
Tracheoesophageal fistula/esophageal atresia	1,944	2.20	2.11 – 2.30
Pyloric stenosis	14,006	15.88	15.62 – 16.15
Stenosis or atresia of the small intestine	3,032	3.44	3.32 – 3.56
Stenosis or atresia of large intestine, rectum, anal canal	4,702	5.33	5.18 – 5.48
Hirschsprung disease	1,268	1.44	1.36 – 1.52
Biliary atresia	623	0.71	0.65 – 0.76
Genitourinary			
Hypospadias (among males)	28,116	62.38	61.65 – 63.11
Renal agenesis or dysgenesis	5,782	6.56	6.39 – 6.73
Bladder exstrophy	155	0.18	0.15 – 0.20

Birth Defect (Body System)	Cases (count)	Prevalence (rate)	Confidence Interval (95% for Prevalence)
Musculoskeletal			
Congenital hip dislocation (without hip dysplasia)	2,174	2.47	2.36 – 2.57
Talipes equinovarus (clubfoot)	14,784	16.76	16.49 – 17.03
Reduction defects of the upper limbs	3,657	4.15	4.01 – 4.28
Reduction defects of the lower limbs	1,744	1.98	1.88 – 2.07
Craniosynostosis	4,989	5.66	5.50 – 5.81
Achondroplasia	322	0.37	0.33 – 0.41
Diaphragmatic hernia	2,489	2.82	2.71 – 2.93
Omphalocele	1,910	2.17	2.07 – 2.26
Gastroschisis	4,484	5.08	4.94 – 5.23
Chromosomal			
Trisomy 21 (Down syndrome)	12,274	13.92	13.67 – 14.16
Trisomy 13 (Patau syndrome)	1,011	1.15	1.08 – 1.22
Trisomy 18 (Edwards syndrome)	2,200	2.49	2.39 – 2.60
Infants & fetuses with regular reportable birth defects	447,222	507.14	505.65 – 508.63

Prevalence (rate) is expressed as the number of cases per 10,000 live births.

Please see the Methods section of the Annual Report for additional information:
https://www.dshs.texas.gov/sites/default/files/birthdefects/annualreport/1999-2021-TBDR-Methods.pdf

Prepared by: Texas Birth Defects Registry, Birth Defects Epidemiology and Surveillance Branch, Texas Department of State Health Services, October 2024.

Texas Birth Defects Registry (TBDR) Annual Report
Table 2. Prevalence of Selected Birth Defects by Year, Texas, 1999–2021

Birth Defect (Body System)	Year	Cases (count)	Prevalence (rate)	Confidence Interval (95% for Prevalence)
Central Nervous System				
Anencephaly	1999	123	3.52	2.90 – 4.15
	2000	100	2.75	2.24 – 3.35
	2001	94	2.57	2.08 – 3.15
	2002	98	2.63	2.14 – 3.21
	2003	98	2.60	2.11 – 3.16
	2004	87	2.28	1.83 – 2.81
	2005	85	2.20	1.76 – 2.73
	2006	90	2.25	1.81 – 2.77
	2007	93	2.28	1.84 – 2.80
	2008	106	2.62	2.12 – 3.11
	2009	122	3.04	2.50 – 3.58
	2010	108	2.80	2.27 – 3.33
	2011	98	2.60	2.11 – 3.17
	2012	109	2.85	2.32 – 3.39
	2013	89	2.30	1.85 – 2.83
	2014	84	2.10	1.68 – 2.60
	2015	81	2.01	1.59 – 2.50
	2016	103	2.59	2.09 – 3.10
	2017	90	2.36	1.90 – 2.90
	2018	93	2.47	1.99 – 3.03
	2019	84	2.22	1.77 – 2.75
	2020	71	1.93	1.51 – 2.43
	2021	62	1.66	1.27 – 2.13
Spina bifida (without anencephaly)	1999	148	4.24	3.56 – 4.92
	2000	137	3.77	3.14 – 4.40
	2001	123	3.37	2.77 – 3.96
	2002	112	3.01	2.45 – 3.56
	2003	123	3.26	2.68 – 3.84
	2004	173	4.54	3.86 – 5.21
	2005	141	3.66	3.05 – 4.26
	2006	136	3.41	2.83 – 3.98
	2007	154	3.78	3.18 – 4.38
	2008	143	3.53	2.95 – 4.11
	2009	152	3.78	3.18 – 4.39
	2010	160	4.15	3.51 – 4.79
	2011	161	4.27	3.61 – 4.93
	2012	159	4.16	3.51 – 4.80
	2013	148	3.82	3.21 – 4.44
	2014	146	3.65	3.06 – 4.25

Birth Defect (Body System)	Year	Cases (count)	Prevalence (rate)	Confidence Interval (95% for Prevalence)
	2015	136	3.37	2.80 – 3.94
	2016	161	4.06	3.43 – 4.68
	2017	132	3.46	2.87 – 4.05
	2018	135	3.59	2.98 – 4.19
	2019	127	3.36	2.78 – 3.95
	2020	131	3.56	2.95 – 4.17
	2021	137	3.67	3.05 – 4.28
Encephalocele	1999	33	0.95	0.65 – 1.33
	2000	39	1.07	0.76 – 1.47
	2001	34	0.93	0.64 – 1.30
	2002	28	0.75	0.50 – 1.09
	2003	33	0.87	0.60 – 1.23
	2004	23	0.60	0.38 – 0.90
	2005	32	0.83	0.57 – 1.17
	2006	39	0.98	0.69 – 1.34
	2007	42	1.03	0.74 – 1.39
	2008	41	1.01	0.73 – 1.37
	2009	38	0.95	0.67 – 1.30
	2010	41	1.06	0.76 – 1.44
	2011	41	1.09	0.78 – 1.47
	2012	46	1.20	0.88 – 1.60
	2013	37	0.96	0.67 – 1.32
	2014	32	0.80	0.55 – 1.13
	2015	36	0.89	0.62 – 1.24
	2016	40	1.01	0.72 – 1.37
	2017	35	0.92	0.64 – 1.27
	2018	43	1.14	0.83 – 1.54
	2019	45	1.19	0.87 – 1.59
	2020	36	0.98	0.68 – 1.35
	2021	40	1.07	0.76 – 1.46
Microcephaly, severe (head circumference <3rd percentile)	1999	94	2.69	2.18 – 3.29
	2000	118	3.25	2.66 – 3.83
	2001	92	2.52	2.03 – 3.09
	2002	119	3.20	2.62 – 3.77
	2003	104	2.76	2.23 – 3.29
	2004	131	3.43	2.85 – 4.02
	2005	153	3.97	3.34 – 4.60
	2006	152	3.81	3.20 – 4.41
	2007	140	3.44	2.87 – 4.01
	2008	177	4.37	3.72 – 5.01
	2009	180	4.48	3.83 – 5.14
	2010	197	5.11	4.39 – 5.82
	2011	178	4.72	4.02 – 5.41

Birth Defect (Body System)	Year	Cases (count)	Prevalence (rate)	Confidence Interval (95% for Prevalence)
	2012	218	5.70	4.94 – 6.46
	2013	234	6.04	5.27 – 6.82
	2014	217	5.43	4.71 – 6.15
	2015	244	6.05	5.29 – 6.81
	2016	310	7.81	6.94 – 8.68
	2017	246	6.44	5.64 – 7.25
	2018	305	8.10	7.19 – 9.01
	2019	322	8.53	7.59 – 9.46
	2020	357	9.69	8.69 – 10.70
	2021	284	7.60	6.72 – 8.48
Holoprosencephaly	1999	41	1.17	0.84 – 1.59
	2000	38	1.05	0.74 – 1.44
	2001	46	1.26	0.92 – 1.68
	2002	51	1.37	1.02 – 1.80
	2003	45	1.19	0.87 – 1.60
	2004	37	0.97	0.68 – 1.34
	2005	41	1.06	0.76 – 1.44
	2006	46	1.15	0.84 – 1.54
	2007	54	1.33	1.00 – 1.73
	2008	38	0.94	0.66 – 1.29
	2009	31	0.77	0.52 – 1.10
	2010	36	0.93	0.65 – 1.29
	2011	35	0.93	0.65 – 1.29
	2012	43	1.12	0.81 – 1.51
	2013	37	0.96	0.67 – 1.32
	2014	41	1.03	0.74 – 1.39
	2015	37	0.92	0.65 – 1.26
	2016	38	0.96	0.68 – 1.31
	2017	32	0.84	0.57 – 1.18
	2018	44	1.17	0.85 – 1.57
	2019	36	0.95	0.67 – 1.32
	2020	39	1.06	0.75 – 1.45
	2021	34	0.91	0.63 – 1.27
Hydrocephaly (without spina bifida)	1999	295	8.45	7.48 – 9.41
	2000	264	7.27	6.39 – 8.14
	2001	234	6.41	5.59 – 7.23
	2002	251	6.74	5.91 – 7.57
	2003	249	6.60	5.78 – 7.42
	2004	265	6.95	6.11 – 7.78
	2005	234	6.07	5.29 – 6.85
	2006	270	6.76	5.96 – 7.57
	2007	309	7.58	6.74 – 8.43
	2008	296	7.30	6.47 – 8.14

Birth Defect (Body System)	Year	Cases (count)	Prevalence (rate)	Confidence Interval (95% for Prevalence)
	2009	302	7.52	6.67 – 8.37
	2010	298	7.73	6.85 – 8.60
	2011	311	8.24	7.33 – 9.16
	2012	339	8.86	7.92 – 9.81
	2013	330	8.52	7.60 – 9.44
	2014	360	9.01	8.08 – 9.94
	2015	338	8.38	7.48 – 9.27
	2016	376	9.47	8.51 – 10.43
	2017	388	10.16	9.15 – 11.17
	2018	368	9.77	8.78 – 10.77
	2019	356	9.43	8.45 – 10.40
	2020	371	10.07	9.05 – 11.10
	2021	370	9.90	8.89 – 10.91
Eye and Ear				
Anophthalmia	1999	12	0.34	0.18 – 0.60
	2000	11	0.30	0.15 – 0.54
	2001	12	0.33	0.17 – 0.57
	2002	11	0.30	0.15 – 0.53
	2003	12	0.32	0.16 – 0.56
	2004	10	0.26	0.13 – 0.48
	2005	14	0.36	0.20 – 0.61
	2006	17	0.43	0.25 – 0.68
	2007	13	0.32	0.17 – 0.55
	2008	9	0.22	0.10 – 0.42
	2009	13	0.32	0.17 – 0.55
	2010	13	0.34	0.18 – 0.58
	2011	19	0.50	0.30 – 0.79
	2012	7	0.18	0.07 – 0.38
	2013	10	0.26	0.12 – 0.48
	2014	6	0.15	0.06 – 0.33
	2015	8	0.20	0.09 – 0.39
	2016	9	0.23	0.10 – 0.43
	2017	8	0.21	0.09 – 0.41
	2018	11	0.29	0.15 – 0.52
	2019	9	0.24	0.11 – 0.45
	2020	12	0.33	0.17 – 0.57
	2021	10	0.27	0.13 – 0.49
Microphthalmia	1999	85	2.43	1.94 – 3.01
	2000	91	2.50	2.02 – 3.08
	2001	89	2.44	1.96 – 3.00
	2002	106	2.85	2.30 – 3.39
	2003	102	2.70	2.18 – 3.23
	2004	100	2.62	2.13 – 3.19

Birth Defect (Body System)	Year	Cases (count)	Prevalence (rate)	Confidence Interval (95% for Prevalence)
	2005	105	2.72	2.20 – 3.24
	2006	120	3.01	2.47 – 3.54
	2007	131	3.22	2.66 – 3.77
	2008	120	2.96	2.43 – 3.49
	2009	104	2.59	2.09 – 3.09
	2010	115	2.98	2.44 – 3.53
	2011	119	3.15	2.59 – 3.72
	2012	100	2.61	2.13 – 3.18
	2013	101	2.61	2.10 – 3.12
	2014	101	2.53	2.04 – 3.02
	2015	94	2.33	1.88 – 2.85
	2016	117	2.95	2.41 – 3.48
	2017	101	2.64	2.13 – 3.16
	2018	103	2.74	2.21 – 3.26
	2019	109	2.89	2.34 – 3.43
	2020	98	2.66	2.16 – 3.24
	2021	80	2.14	1.70 – 2.66
Cataract	1999	42	1.20	0.87 – 1.63
	2000	63	1.73	1.33 – 2.22
	2001	54	1.48	1.11 – 1.93
	2002	75	2.01	1.58 – 2.52
	2003	65	1.72	1.33 – 2.20
	2004	72	1.89	1.48 – 2.38
	2005	78	2.02	1.60 – 2.52
	2006	81	2.03	1.61 – 2.52
	2007	93	2.28	1.84 – 2.80
	2008	73	1.80	1.41 – 2.26
	2009	75	1.87	1.47 – 2.34
	2010	80	2.07	1.64 – 2.58
	2011	85	2.25	1.80 – 2.79
	2012	63	1.65	1.27 – 2.11
	2013	64	1.65	1.27 – 2.11
	2014	76	1.90	1.50 – 2.38
	2015	78	1.93	1.53 – 2.41
	2016	99	2.49	2.03 – 3.04
	2017	80	2.09	1.66 – 2.61
	2018	83	2.20	1.76 – 2.73
	2019	80	2.12	1.68 – 2.64
	2020	71	1.93	1.51 – 2.43
	2021	92	2.46	1.98 – 3.02
Anotia or microtia	1999	100	2.86	2.33 – 3.48
	2000	101	2.78	2.24 – 3.32
	2001	106	2.90	2.35 – 3.46

Birth Defect (Body System)	Year	Cases (count)	Prevalence (rate)	Confidence Interval (95% for Prevalence)
	2002	107	2.87	2.33 – 3.42
	2003	102	2.70	2.18 – 3.23
	2004	130	3.41	2.82 – 3.99
	2005	116	3.01	2.46 – 3.56
	2006	134	3.36	2.79 – 3.92
	2007	126	3.09	2.55 – 3.63
	2008	164	4.05	3.43 – 4.67
	2009	138	3.44	2.86 – 4.01
	2010	143	3.71	3.10 – 4.31
	2011	136	3.60	3.00 – 4.21
	2012	128	3.35	2.77 – 3.93
	2013	139	3.59	2.99 – 4.19
	2014	147	3.68	3.08 – 4.27
	2015	161	3.99	3.37 – 4.61
	2016	171	4.31	3.66 – 4.95
	2017	155	4.06	3.42 – 4.70
	2018	161	4.28	3.62 – 4.94
	2019	166	4.39	3.73 – 5.06
	2020	173	4.70	4.00 – 5.40
	2021	179	4.79	4.09 – 5.49
Cardiac and Circulatory				
Common truncus	1999	17	0.49	0.28 – 0.78
	2000	27	0.74	0.49 – 1.08
	2001	26	0.71	0.47 – 1.04
	2002	29	0.78	0.52 – 1.12
	2003	28	0.74	0.49 – 1.07
	2004	31	0.81	0.55 – 1.15
	2005	24	0.62	0.40 – 0.93
	2006	28	0.70	0.47 – 1.01
	2007	29	0.71	0.48 – 1.02
	2008	44	1.09	0.79 – 1.46
	2009	24	0.60	0.38 – 0.89
	2010	31	0.80	0.55 – 1.14
	2011	30	0.80	0.54 – 1.14
	2012	39	1.02	0.73 – 1.39
	2013	34	0.88	0.61 – 1.23
	2014	31	0.78	0.53 – 1.10
	2015	30	0.74	0.50 – 1.06
	2016	30	0.76	0.51 – 1.08
	2017	24	0.63	0.40 – 0.94
	2018	34	0.90	0.63 – 1.26
	2019	28	0.74	0.49 – 1.07
	2020	28	0.76	0.51 – 1.10

Birth Defect (Body System)	Year	Cases (count)	Prevalence (rate)	Confidence Interval (95% for Prevalence)
	2021	26	0.70	0.45 – 1.02
Transposition of the great vessels	1999	132	3.78	3.14 – 4.43
	2000	118	3.25	2.66 – 3.83
	2001	138	3.78	3.15 – 4.41
	2002	103	2.77	2.23 – 3.30
	2003	131	3.47	2.88 – 4.07
	2004	128	3.36	2.77 – 3.94
	2005	123	3.19	2.63 – 3.75
	2006	149	3.73	3.13 – 4.33
	2007	147	3.61	3.02 – 4.19
	2008	151	3.73	3.13 – 4.32
	2009	148	3.69	3.09 – 4.28
	2010	150	3.89	3.27 – 4.51
	2011	125	3.31	2.73 – 3.89
	2012	124	3.24	2.67 – 3.81
	2013	150	3.87	3.25 – 4.49
	2014	142	3.55	2.97 – 4.14
	2015	127	3.15	2.60 – 3.70
	2016	117	2.95	2.41 – 3.48
	2017	103	2.70	2.18 – 3.22
	2018	119	3.16	2.59 – 3.73
	2019	105	2.78	2.25 – 3.31
	2020	112	3.04	2.48 – 3.60
	2021	97	2.60	2.10 – 3.17
Double outlet right ventricle	1999	65	1.86	1.44 – 2.37
	2000	58	1.60	1.21 – 2.06
	2001	82	2.25	1.79 – 2.79
	2002	74	1.99	1.56 – 2.49
	2003	78	2.07	1.63 – 2.58
	2004	76	1.99	1.57 – 2.49
	2005	76	1.97	1.55 – 2.47
	2006	74	1.85	1.46 – 2.33
	2007	86	2.11	1.69 – 2.61
	2008	102	2.52	2.03 – 3.01
	2009	107	2.66	2.16 – 3.17
	2010	81	2.10	1.67 – 2.61
	2011	91	2.41	1.94 – 2.96
	2012	85	2.22	1.78 – 2.75
	2013	120	3.10	2.55 – 3.65
	2014	98	2.45	1.99 – 2.99
	2015	90	2.23	1.79 – 2.74
	2016	103	2.59	2.09 – 3.10
	2017	85	2.23	1.78 – 2.75

Birth Defect (Body System)	Year	Cases (count)	Prevalence (rate)	Confidence Interval (95% for Prevalence)
	2018	97	2.58	2.09 – 3.14
	2019	112	2.97	2.42 – 3.51
	2020	108	2.93	2.38 – 3.49
	2021	99	2.65	2.15 – 3.23
Tetralogy of Fallot	1999	110	3.15	2.56 – 3.74
	2000	104	2.86	2.31 – 3.41
	2001	127	3.48	2.87 – 4.08
	2002	132	3.54	2.94 – 4.15
	2003	144	3.82	3.19 – 4.44
	2004	110	2.88	2.34 – 3.42
	2005	152	3.94	3.32 – 4.57
	2006	152	3.81	3.20 – 4.41
	2007	136	3.34	2.78 – 3.90
	2008	180	4.44	3.79 – 5.09
	2009	149	3.71	3.11 – 4.31
	2010	141	3.66	3.05 – 4.26
	2011	164	4.35	3.68 – 5.01
	2012	179	4.68	3.99 – 5.37
	2013	155	4.00	3.37 – 4.63
	2014	183	4.58	3.92 – 5.24
	2015	173	4.29	3.65 – 4.93
	2016	198	4.99	4.29 – 5.68
	2017	161	4.22	3.56 – 4.87
	2018	173	4.59	3.91 – 5.28
	2019	170	4.50	3.82 – 5.18
	2020	144	3.91	3.27 – 4.55
	2021	148	3.96	3.32 – 4.60
Ventricular septal defect	1999	1,425	40.81	38.69 – 42.93
	2000	1,558	42.88	40.75 – 45.01
	2001	1,673	45.82	43.63 – 48.02
	2002	1,824	48.98	46.74 – 51.23
	2003	1,848	48.97	46.74 – 51.20
	2004	1,969	51.62	49.34 – 53.90
	2005	2,205	57.19	54.81 – 59.58
	2006	2,275	56.97	54.63 – 59.31
	2007	2,485	60.99	58.59 – 63.39
	2008	2,624	64.75	62.27 – 67.23
	2009	2,708	67.43	64.89 – 69.97
	2010	2,609	67.64	65.04 – 70.23
	2011	2,551	67.62	64.99 – 70.24
	2012	2,519	65.87	63.29 – 68.44
	2013	2,514	64.94	62.40 – 67.48
	2014	2,629	65.81	63.29 – 68.33

Birth Defect (Body System)	Year	Cases (count)	Prevalence (rate)	Confidence Interval (95% for Prevalence)
	2015	2,785	69.03	66.47 – 71.60
	2016	2,711	68.29	65.72 – 70.86
	2017	2,672	69.97	67.32 – 72.62
	2018	2,682	71.23	68.54 – 73.93
	2019	2,642	69.95	67.28 – 72.62
	2020	2,651	71.98	69.24 – 74.72
	2021	2,866	76.69	73.88 – 79.50
Atrial septal defect	1999	1,377	39.44	37.35 – 41.52
	2000	1,424	39.19	37.16 – 41.23
	2001	1,523	41.72	39.62 – 43.81
	2002	1,621	43.53	41.41 – 45.65
	2003	1,809	47.94	45.73 – 50.15
	2004	2,135	55.97	53.60 – 58.35
	2005	2,500	64.84	62.30 – 67.39
	2006	2,469	61.83	59.39 – 64.27
	2007	2,463	60.45	58.06 – 62.84
	2008	2,808	69.29	66.73 – 71.85
	2009	2,707	67.41	64.87 – 69.94
	2010	2,962	76.79	74.02 – 79.55
	2011	3,259	86.38	83.42 – 89.35
	2012	3,223	84.28	81.37 – 87.18
	2013	3,247	83.88	80.99 – 86.76
	2014	3,432	85.91	83.04 – 88.79
	2015	3,655	90.60	87.66 – 93.53
	2016	3,716	93.60	90.59 – 96.61
	2017	3,350	87.72	84.75 – 90.70
	2018	3,326	88.34	85.34 – 91.34
	2019	3,404	90.12	87.09 – 93.15
	2020	3,597	97.66	94.47 – 100.85
	2021	3,761	100.64	97.42 – 103.86
Atrioventricular septal defect (endocardial cushion defect)	1999	138	3.95	3.29 – 4.61
	2000	152	4.18	3.52 – 4.85
	2001	159	4.36	3.68 – 5.03
	2002	151	4.06	3.41 – 4.70
	2003	145	3.84	3.22 – 4.47
	2004	152	3.98	3.35 – 4.62
	2005	155	4.02	3.39 – 4.65
	2006	181	4.53	3.87 – 5.19
	2007	157	3.85	3.25 – 4.46
	2008	198	4.89	4.21 – 5.57
	2009	184	4.58	3.92 – 5.24
	2010	167	4.33	3.67 – 4.99
	2011	163	4.32	3.66 – 4.98

Birth Defect (Body System)	Year	Cases (count)	Prevalence (rate)	Confidence Interval (95% for Prevalence)
	2012	166	4.34	3.68 – 5.00
	2013	191	4.93	4.23 – 5.63
	2014	187	4.68	4.01 – 5.35
	2015	184	4.56	3.90 – 5.22
	2016	182	4.58	3.92 – 5.25
	2017	185	4.84	4.15 – 5.54
	2018	168	4.46	3.79 – 5.14
	2019	152	4.02	3.38 – 4.66
	2020	163	4.43	3.75 – 5.10
	2021	171	4.58	3.89 – 5.26
Pulmonary valve atresia or stenosis	1999	219	6.27	5.44 – 7.10
	2000	233	6.41	5.59 – 7.24
	2001	270	7.40	6.51 – 8.28
	2002	248	6.66	5.83 – 7.49
	2003	319	8.45	7.53 – 9.38
	2004	344	9.02	8.07 – 9.97
	2005	345	8.95	8.00 – 9.89
	2006	346	8.66	7.75 – 9.58
	2007	402	9.87	8.90 – 10.83
	2008	466	11.50	10.46 – 12.54
	2009	416	10.36	9.36 – 11.35
	2010	428	11.10	10.04 – 12.15
	2011	462	12.25	11.13 – 13.36
	2012	435	11.37	10.31 – 12.44
	2013	408	10.54	9.52 – 11.56
	2014	428	10.71	9.70 – 11.73
	2015	397	9.84	8.87 – 10.81
	2016	424	10.68	9.66 – 11.70
	2017	444	11.63	10.55 – 12.71
	2018	449	11.93	10.82 – 13.03
	2019	413	10.93	9.88 – 11.99
	2020	453	12.30	11.17 – 13.43
	2021	460	12.31	11.18 – 13.43
Tricuspid valve atresia or stenosis	1999	58	1.66	1.26 – 2.15
	2000	41	1.13	0.81 – 1.53
	2001	57	1.56	1.18 – 2.02
	2002	55	1.48	1.11 – 1.92
	2003	65	1.72	1.33 – 2.20
	2004	68	1.78	1.38 – 2.26
	2005	60	1.56	1.19 – 2.00
	2006	73	1.83	1.43 – 2.30
	2007	73	1.79	1.40 – 2.25
	2008	68	1.68	1.30 – 2.13

Birth Defect (Body System)	Year	Cases (count)	Prevalence (rate)	Confidence Interval (95% for Prevalence)
	2009	64	1.59	1.23 – 2.04
	2010	79	2.05	1.62 – 2.55
	2011	75	1.99	1.56 – 2.49
	2012	64	1.67	1.29 – 2.14
	2013	78	2.01	1.59 – 2.51
	2014	88	2.20	1.77 – 2.71
	2015	84	2.08	1.66 – 2.58
	2016	72	1.81	1.42 – 2.28
	2017	106	2.78	2.25 – 3.30
	2018	95	2.52	2.04 – 3.08
	2019	73	1.93	1.51 – 2.43
	2020	95	2.58	2.09 – 3.15
	2021	94	2.52	2.03 – 3.08
Ebstein anomaly	1999	24	0.69	0.44 – 1.02
	2000	27	0.74	0.49 – 1.08
	2001	19	0.52	0.31 – 0.81
	2002	23	0.62	0.39 – 0.93
	2003	31	0.82	0.56 – 1.17
	2004	41	1.07	0.77 – 1.46
	2005	23	0.60	0.38 – 0.90
	2006	25	0.63	0.41 – 0.92
	2007	24	0.59	0.38 – 0.88
	2008	29	0.72	0.48 – 1.03
	2009	23	0.57	0.36 – 0.86
	2010	30	0.78	0.52 – 1.11
	2011	31	0.82	0.56 – 1.17
	2012	29	0.76	0.51 – 1.09
	2013	33	0.85	0.59 – 1.20
	2014	34	0.85	0.59 – 1.19
	2015	28	0.69	0.46 – 1.00
	2016	22	0.55	0.35 – 0.84
	2017	39	1.02	0.73 – 1.40
	2018	39	1.04	0.74 – 1.42
	2019	39	1.03	0.73 – 1.41
	2020	26	0.71	0.46 – 1.03
	2021	37	0.99	0.70 – 1.36
Aortic valve stenosis	1999	85	2.43	1.94 – 3.01
	2000	77	2.12	1.67 – 2.65
	2001	84	2.30	1.84 – 2.85
	2002	90	2.42	1.94 – 2.97
	2003	95	2.52	2.04 – 3.08
	2004	99	2.60	2.11 – 3.16
	2005	76	1.97	1.55 – 2.47

Birth Defect (Body System)	Year	Cases (count)	Prevalence (rate)	Confidence Interval (95% for Prevalence)
	2006	92	2.30	1.86 – 2.83
	2007	89	2.18	1.75 – 2.69
	2008	110	2.71	2.21 – 3.22
	2009	97	2.42	1.96 – 2.95
	2010	104	2.70	2.18 – 3.21
	2011	110	2.92	2.37 – 3.46
	2012	111	2.90	2.36 – 3.44
	2013	85	2.20	1.75 – 2.72
	2014	101	2.53	2.04 – 3.02
	2015	97	2.40	1.95 – 2.93
	2016	83	2.09	1.67 – 2.59
	2017	70	1.83	1.43 – 2.32
	2018	103	2.74	2.21 – 3.26
	2019	92	2.44	1.96 – 2.99
	2020	80	2.17	1.72 – 2.70
	2021	100	2.68	2.18 – 3.25
Hypoplastic left heart syndrome	1999	66	1.89	1.46 – 2.40
	2000	81	2.23	1.77 – 2.77
	2001	67	1.84	1.42 – 2.33
	2002	90	2.42	1.94 – 2.97
	2003	74	1.96	1.54 – 2.46
	2004	83	2.18	1.73 – 2.70
	2005	77	2.00	1.58 – 2.50
	2006	87	2.18	1.75 – 2.69
	2007	80	1.96	1.56 – 2.44
	2008	89	2.20	1.76 – 2.70
	2009	86	2.14	1.71 – 2.64
	2010	93	2.41	1.95 – 2.95
	2011	86	2.28	1.82 – 2.82
	2012	104	2.72	2.20 – 3.24
	2013	99	2.56	2.08 – 3.11
	2014	89	2.23	1.79 – 2.74
	2015	107	2.65	2.15 – 3.15
	2016	93	2.34	1.89 – 2.87
	2017	84	2.20	1.75 – 2.72
	2018	91	2.42	1.95 – 2.97
	2019	96	2.54	2.06 – 3.10
	2020	75	2.04	1.60 – 2.55
	2021	66	1.77	1.37 – 2.25
Patent ductus arteriosus	1999	1,509	43.22	41.04 – 45.40
	2000	1,498	41.23	39.14 – 43.32
	2001	1,605	43.96	41.81 – 46.11
	2002	1,641	44.07	41.94 – 46.20

Birth Defect (Body System)	Year	Cases (count)	Prevalence (rate)	Confidence Interval (95% for Prevalence)
	2003	1,799	47.67	45.47 – 49.87
	2004	2,048	53.69	51.37 – 56.02
	2005	2,011	52.16	49.88 – 54.44
	2006	2,182	54.64	52.35 – 56.94
	2007	2,141	52.55	50.32 – 54.77
	2008	2,513	62.01	59.59 – 64.44
	2009	2,663	66.31	63.79 – 68.83
	2010	2,688	69.68	67.05 – 72.32
	2011	2,686	71.19	68.50 – 73.89
	2012	2,706	70.76	68.09 – 73.42
	2013	2,862	73.93	71.22 – 76.64
	2014	2,886	72.24	69.61 – 74.88
	2015	2,947	73.05	70.41 – 75.68
	2016	2,854	71.89	69.25 – 74.53
	2017	2,515	65.86	63.29 – 68.43
	2018	2,377	63.13	60.60 – 65.67
	2019	2,023	53.56	51.23 – 55.89
	2020	1,124	30.52	28.73 – 32.30
	2021	1,048	28.04	26.35 – 29.74
Coarctation of the aorta	1999	152	4.35	3.66 – 5.05
	2000	147	4.05	3.39 – 4.70
	2001	154	4.22	3.55 – 4.88
	2002	195	5.24	4.50 – 5.97
	2003	196	5.19	4.47 – 5.92
	2004	179	4.69	4.01 – 5.38
	2005	201	5.21	4.49 – 5.93
	2006	223	5.58	4.85 – 6.32
	2007	193	4.74	4.07 – 5.41
	2008	210	5.18	4.48 – 5.88
	2009	205	5.10	4.41 – 5.80
	2010	211	5.47	4.73 – 6.21
	2011	210	5.57	4.81 – 6.32
	2012	219	5.73	4.97 – 6.48
	2013	233	6.02	5.25 – 6.79
	2014	239	5.98	5.22 – 6.74
	2015	193	4.78	4.11 – 5.46
	2016	215	5.42	4.69 – 6.14
	2017	226	5.92	5.15 – 6.69
	2018	251	6.67	5.84 – 7.49
	2019	213	5.64	4.88 – 6.40
	2020	203	5.51	4.75 – 6.27
	2021	226	6.05	5.26 – 6.84

Birth Defect (Body System)	Year	Cases (count)	Prevalence (rate)	Confidence Interval (95% for Prevalence)
Respiratory				
Choanal atresia or stenosis	1999	43	1.23	0.89 – 1.66
	2000	48	1.32	0.97 – 1.75
	2001	42	1.15	0.83 – 1.55
	2002	45	1.21	0.88 – 1.62
	2003	38	1.01	0.71 – 1.38
	2004	32	0.84	0.57 – 1.18
	2005	43	1.12	0.81 – 1.50
	2006	59	1.48	1.12 – 1.91
	2007	44	1.08	0.78 – 1.45
	2008	55	1.36	1.02 – 1.77
	2009	56	1.39	1.05 – 1.81
	2010	50	1.30	0.96 – 1.71
	2011	52	1.38	1.03 – 1.81
	2012	51	1.33	0.99 – 1.75
	2013	55	1.42	1.07 – 1.85
	2014	63	1.58	1.21 – 2.02
	2015	58	1.44	1.09 – 1.86
	2016	33	0.83	0.57 – 1.17
	2017	60	1.57	1.20 – 2.02
	2018	43	1.14	0.83 – 1.54
	2019	57	1.51	1.14 – 1.96
	2020	49	1.33	0.98 – 1.76
	2021	65	1.74	1.34 – 2.22
Agenesis, aplasia, or hypoplasia of the lung	1999	186	5.33	4.56 – 6.09
	2000	156	4.29	3.62 – 4.97
	2001	157	4.30	3.63 – 4.97
	2002	135	3.63	3.01 – 4.24
	2003	122	3.23	2.66 – 3.81
	2004	99	2.60	2.11 – 3.16
	2005	110	2.85	2.32 – 3.39
	2006	110	2.75	2.24 – 3.27
	2007	104	2.55	2.06 – 3.04
	2008	94	2.32	1.87 – 2.84
	2009	115	2.86	2.34 – 3.39
	2010	114	2.96	2.41 – 3.50
	2011	105	2.78	2.25 – 3.32
	2012	90	2.35	1.89 – 2.89
	2013	117	3.02	2.47 – 3.57
	2014	103	2.58	2.08 – 3.08
	2015	116	2.88	2.35 – 3.40
	2016	114	2.87	2.34 – 3.40
	2017	110	2.88	2.34 – 3.42

Birth Defect (Body System)	Year	Cases (count)	Prevalence (rate)	Confidence Interval (95% for Prevalence)
	2018	103	2.74	2.21 – 3.26
	2019	76	2.01	1.59 – 2.52
	2020	79	2.14	1.70 – 2.67
	2021	74	1.98	1.55 – 2.49
Oral Clefts				
Cleft palate alone (without cleft lip)	1999	213	6.10	5.28 – 6.92
	2000	227	6.25	5.44 – 7.06
	2001	216	5.92	5.13 – 6.71
	2002	196	5.26	4.53 – 6.00
	2003	202	5.35	4.61 – 6.09
	2004	210	5.51	4.76 – 6.25
	2005	254	6.59	5.78 – 7.40
	2006	222	5.56	4.83 – 6.29
	2007	239	5.87	5.12 – 6.61
	2008	264	6.51	5.73 – 7.30
	2009	257	6.40	5.62 – 7.18
	2010	271	7.03	6.19 – 7.86
	2011	211	5.59	4.84 – 6.35
	2012	197	5.15	4.43 – 5.87
	2013	238	6.15	5.37 – 6.93
	2014	221	5.53	4.80 – 6.26
	2015	243	6.02	5.27 – 6.78
	2016	227	5.72	4.97 – 6.46
	2017	226	5.92	5.15 – 6.69
	2018	251	6.67	5.84 – 7.49
	2019	213	5.64	4.88 – 6.40
	2020	217	5.89	5.11 – 6.68
	2021	236	6.32	5.51 – 7.12
Cleft lip (with or without cleft palate)	1999	372	10.65	9.57 – 11.74
	2000	401	11.04	9.96 – 12.12
	2001	401	10.98	9.91 – 12.06
	2002	389	10.45	9.41 – 11.48
	2003	390	10.33	9.31 – 11.36
	2004	452	11.85	10.76 – 12.94
	2005	430	11.15	10.10 – 12.21
	2006	447	11.19	10.16 – 12.23
	2007	434	10.65	9.65 – 11.65
	2008	441	10.88	9.87 – 11.90
	2009	378	9.41	8.46 – 10.36
	2010	394	10.21	9.21 – 11.22
	2011	454	12.03	10.93 – 13.14
	2012	409	10.69	9.66 – 11.73
	2013	388	10.02	9.03 – 11.02

Birth Defect (Body System)	Year	Cases (count)	Prevalence (rate)	Confidence Interval (95% for Prevalence)
	2014	437	10.94	9.91 – 11.96
	2015	445	11.03	10.01 – 12.06
	2016	413	10.40	9.40 – 11.41
	2017	375	9.82	8.83 – 10.81
	2018	455	12.08	10.97 – 13.20
	2019	388	10.27	9.25 – 11.29
	2020	382	10.37	9.33 – 11.41
	2021	400	10.70	9.65 – 11.75
Gastrointestinal				
Tracheoesophageal fistula/ esophageal atresia	1999	78	2.23	1.77 – 2.79
	2000	72	1.98	1.55 – 2.50
	2001	72	1.97	1.54 – 2.48
	2002	86	2.31	1.85 – 2.85
	2003	78	2.07	1.63 – 2.58
	2004	66	1.73	1.34 – 2.20
	2005	79	2.05	1.62 – 2.55
	2006	81	2.03	1.61 – 2.52
	2007	88	2.16	1.73 – 2.66
	2008	78	1.92	1.52 – 2.40
	2009	89	2.22	1.78 – 2.73
	2010	76	1.97	1.55 – 2.47
	2011	89	2.36	1.89 – 2.90
	2012	93	2.43	1.96 – 2.98
	2013	99	2.56	2.08 – 3.11
	2014	90	2.25	1.81 – 2.77
	2015	89	2.21	1.77 – 2.71
	2016	97	2.44	1.98 – 2.98
	2017	89	2.33	1.87 – 2.87
	2018	78	2.07	1.64 – 2.59
	2019	86	2.28	1.82 – 2.81
	2020	94	2.55	2.06 – 3.12
	2021	97	2.60	2.10 – 3.17
Pyloric stenosis	1999	644	18.44	17.02 – 19.87
	2000	752	20.70	19.22 – 22.18
	2001	719	19.69	18.25 – 21.13
	2002	645	17.32	15.98 – 18.66
	2003	585	15.50	14.25 – 16.76
	2004	777	20.37	18.94 – 21.80
	2005	693	17.97	16.64 – 19.31
	2006	980	24.54	23.01 – 26.08
	2007	917	22.51	21.05 – 23.96
	2008	715	17.64	16.35 – 18.94
	2009	630	15.69	14.46 – 16.91

Birth Defect (Body System)	Year	Cases (count)	Prevalence (rate)	Confidence Interval (95% for Prevalence)
	2010	576	14.93	13.71 – 16.15
	2011	543	14.39	13.18 – 15.60
	2012	449	11.74	10.65 – 12.83
	2013	460	11.88	10.80 – 12.97
	2014	538	13.47	12.33 – 14.61
	2015	499	12.37	11.28 – 13.45
	2016	543	13.68	12.53 – 14.83
	2017	422	11.05	10.00 – 12.11
	2018	553	14.69	13.46 – 15.91
	2019	502	13.29	12.13 – 14.45
	2020	449	12.19	11.06 – 13.32
	2021	415	11.10	10.04 – 12.17
Stenosis or atresia of the small intestine	1999	92	2.63	2.12 – 3.23
	2000	114	3.14	2.56 – 3.71
	2001	130	3.56	2.95 – 4.17
	2002	111	2.98	2.43 – 3.54
	2003	96	2.54	2.06 – 3.11
	2004	126	3.30	2.73 – 3.88
	2005	113	2.93	2.39 – 3.47
	2006	132	3.31	2.74 – 3.87
	2007	152	3.73	3.14 – 4.32
	2008	147	3.63	3.04 – 4.21
	2009	139	3.46	2.89 – 4.04
	2010	146	3.78	3.17 – 4.40
	2011	129	3.42	2.83 – 4.01
	2012	125	3.27	2.70 – 3.84
	2013	138	3.56	2.97 – 4.16
	2014	145	3.63	3.04 – 4.22
	2015	149	3.69	3.10 – 4.29
	2016	129	3.25	2.69 – 3.81
	2017	150	3.93	3.30 – 4.56
	2018	151	4.01	3.37 – 4.65
	2019	142	3.76	3.14 – 4.38
	2020	120	3.26	2.68 – 3.84
	2021	156	4.17	3.52 – 4.83
Stenosis or atresia of large intestine, rectum, or anal canal	1999	192	5.50	4.72 – 6.28
	2000	164	4.51	3.82 – 5.20
	2001	191	5.23	4.49 – 5.97
	2002	201	5.40	4.65 – 6.14
	2003	212	5.62	4.86 – 6.37
	2004	192	5.03	4.32 – 5.75
	2005	213	5.52	4.78 – 6.27
	2006	210	5.26	4.55 – 5.97

Birth Defect (Body System)	Year	Cases (count)	Prevalence (rate)	Confidence Interval (95% for Prevalence)
	2007	213	5.23	4.53 – 5.93
	2008	221	5.45	4.73 – 6.17
	2009	222	5.53	4.80 – 6.26
	2010	201	5.21	4.49 – 5.93
	2011	209	5.54	4.79 – 6.29
	2012	201	5.26	4.53 – 5.98
	2013	210	5.42	4.69 – 6.16
	2014	218	5.46	4.73 – 6.18
	2015	199	4.93	4.25 – 5.62
	2016	211	5.31	4.60 – 6.03
	2017	208	5.45	4.71 – 6.19
	2018	213	5.66	4.90 – 6.42
	2019	200	5.30	4.56 – 6.03
	2020	196	5.32	4.58 – 6.07
	2021	205	5.49	4.73 – 6.24
Hirschsprung disease	1999	39	1.12	0.79 – 1.53
	2000	47	1.29	0.95 – 1.72
	2001	42	1.15	0.83 – 1.55
	2002	44	1.18	0.86 – 1.59
	2003	44	1.17	0.85 – 1.57
	2004	52	1.36	1.02 – 1.79
	2005	57	1.48	1.12 – 1.92
	2006	48	1.20	0.89 – 1.59
	2007	67	1.64	1.27 – 2.09
	2008	63	1.55	1.19 – 1.99
	2009	50	1.25	0.92 – 1.64
	2010	56	1.45	1.10 – 1.89
	2011	62	1.64	1.26 – 2.11
	2012	55	1.44	1.08 – 1.87
	2013	59	1.52	1.16 – 1.97
	2014	57	1.43	1.08 – 1.85
	2015	74	1.83	1.44 – 2.30
	2016	71	1.79	1.40 – 2.26
	2017	51	1.34	0.99 – 1.76
	2018	62	1.65	1.26 – 2.11
	2019	58	1.54	1.17 – 1.99
	2020	57	1.55	1.17 – 2.01
	2021	53	1.42	1.06 – 1.86
Biliary atresia	1999	27	0.77	0.51 – 1.13
	2000	28	0.77	0.51 – 1.11
	2001	24	0.66	0.42 – 0.98
	2002	24	0.64	0.41 – 0.96
	2003	31	0.82	0.56 – 1.17

Birth Defect (Body System)	Year	Cases (count)	Prevalence (rate)	Confidence Interval (95% for Prevalence)
	2004	28	0.73	0.49 – 1.06
	2005	26	0.67	0.44 – 0.99
	2006	33	0.83	0.57 – 1.16
	2007	30	0.74	0.50 – 1.05
	2008	26	0.64	0.42 – 0.94
	2009	33	0.82	0.57 – 1.15
	2010	27	0.70	0.46 – 1.02
	2011	30	0.80	0.54 – 1.14
	2012	25	0.65	0.42 – 0.96
	2013	23	0.59	0.38 – 0.89
	2014	21	0.53	0.33 – 0.80
	2015	33	0.82	0.56 – 1.15
	2016	29	0.73	0.49 – 1.05
	2017	31	0.81	0.55 – 1.15
	2018	22	0.58	0.37 – 0.88
	2019	24	0.64	0.41 – 0.95
	2020	29	0.79	0.53 – 1.13
	2021	19	0.51	0.31 – 0.79
Genitourinary				
Hypospadias (among males)	1999	1,018	57.05	53.54 – 60.55
	2000	1,032	55.61	52.21 – 59.00
	2001	979	52.42	49.13 – 55.70
	2002	987	51.90	48.67 – 55.14
	2003	1,009	52.39	49.16 – 55.63
	2004	1,041	53.38	50.14 – 56.62
	2005	1,131	57.27	53.93 – 60.61
	2006	1,102	54.01	50.82 – 57.20
	2007	1,147	55.09	51.90 – 58.27
	2008	1,210	58.31	55.03 – 61.60
	2009	1,272	62.09	58.67 – 65.50
	2010	1,259	63.94	60.41 – 67.47
	2011	1,230	63.81	60.24 – 67.37
	2012	1,238	63.32	59.79 – 66.84
	2013	1,362	68.75	65.10 – 72.40
	2014	1,484	72.57	68.87 – 76.26
	2015	1,400	67.97	64.41 – 71.53
	2016	1,511	74.50	70.75 – 78.26
	2017	1,421	72.92	69.13 – 76.71
	2018	1,461	76.00	72.10 – 79.90
	2019	1,267	65.64	62.02 – 69.25
	2020	1,240	65.76	62.10 – 69.43
	2021	1,315	68.83	65.11 – 72.55

Birth Defect (Body System)	Year	Cases (count)	Prevalence (rate)	Confidence Interval (95% for Prevalence)
Renal agenesis or dysgenesis	1999	200	5.73	4.93 – 6.52
	2000	177	4.87	4.15 – 5.59
	2001	193	5.29	4.54 – 6.03
	2002	181	4.86	4.15 – 5.57
	2003	222	5.88	5.11 – 6.66
	2004	212	5.56	4.81 – 6.31
	2005	189	4.90	4.20 – 5.60
	2006	240	6.01	5.25 – 6.77
	2007	247	6.06	5.31 – 6.82
	2008	241	5.95	5.20 – 6.70
	2009	260	6.47	5.69 – 7.26
	2010	263	6.82	5.99 – 7.64
	2011	262	6.94	6.10 – 7.79
	2012	241	6.30	5.51 – 7.10
	2013	286	7.39	6.53 – 8.24
	2014	264	6.61	5.81 – 7.41
	2015	256	6.35	5.57 – 7.12
	2016	283	7.13	6.30 – 7.96
	2017	292	7.65	6.77 – 8.52
	2018	313	8.31	7.39 – 9.23
	2019	348	9.21	8.25 – 10.18
	2020	299	8.12	7.20 – 9.04
	2021	313	8.38	7.45 – 9.30
Bladder exstrophy	1999	4	0.11	0.03 – 0.29
	2000	11	0.30	0.15 – 0.54
	2001	5	0.14	0.04 – 0.32
	2002	12	0.32	0.17 – 0.56
	2003	11	0.29	0.15 – 0.52
	2004	10	0.26	0.13 – 0.48
	2005	3	0.08	0.02 – 0.23
	2006	6	0.15	0.06 – 0.33
	2007	7	0.17	0.07 – 0.35
	2008	8	0.20	0.09 – 0.39
	2009	5	0.12	0.04 – 0.29
	2010	9	0.23	0.11 – 0.44
	2011	6	0.16	0.06 – 0.35
	2012	7	0.18	0.07 – 0.38
	2013	11	0.28	0.14 – 0.51
	2014	5	0.13	0.04 – 0.29
	2015	7	0.17	0.07 – 0.36
	2016	2	0.05	0.01 – 0.18
	2017	3	0.08	0.02 – 0.23
	2018	3	0.08	0.02 – 0.23

Birth Defect (Body System)	Year	Cases (count)	Prevalence (rate)	Confidence Interval (95% for Prevalence)
	2019	9	0.24	0.11 – 0.45
	2020	4	0.11	0.03 – 0.28
	2021	7	0.19	0.08 – 0.39
Musculoskeletal				
Congenital hip dislocation (without hip dysplasia)	1999	169	4.84	4.11 – 5.57
	2000	149	4.10	3.44 – 4.76
	2001	127	3.48	2.87 – 4.08
	2002	110	2.95	2.40 – 3.51
	2003	124	3.29	2.71 – 3.86
	2004	113	2.96	2.42 – 3.51
	2005	107	2.78	2.25 – 3.30
	2006	107	2.68	2.17 – 3.19
	2007	115	2.82	2.31 – 3.34
	2008	96	2.37	1.92 – 2.89
	2009	108	2.69	2.18 – 3.20
	2010	111	2.88	2.34 – 3.41
	2011	76	2.01	1.59 – 2.52
	2012	71	1.86	1.45 – 2.34
	2013	88	2.27	1.82 – 2.80
	2014	74	1.85	1.45 – 2.33
	2015	80	1.98	1.57 – 2.47
	2016	75	1.89	1.49 – 2.37
	2017	76	1.99	1.57 – 2.49
	2018	54	1.43	1.08 – 1.87
	2019	47	1.24	0.91 – 1.65
	2020	45	1.22	0.89 – 1.63
	2021	52	1.39	1.04 – 1.82
Talipes equinovarus (clubfoot)	1999	499	14.29	13.04 – 15.55
	2000	519	14.28	13.06 – 15.51
	2001	536	14.68	13.44 – 15.92
	2002	572	15.36	14.10 – 16.62
	2003	574	15.21	13.97 – 16.45
	2004	583	15.28	14.04 – 16.52
	2005	553	14.34	13.15 – 15.54
	2006	580	14.53	13.34 – 15.71
	2007	626	15.36	14.16 – 16.57
	2008	620	15.30	14.10 – 16.50
	2009	646	16.09	14.85 – 17.33
	2010	644	16.69	15.41 – 17.98
	2011	643	17.04	15.73 – 18.36
	2012	653	17.07	15.77 – 18.38
	2013	646	16.69	15.40 – 17.97
	2014	736	18.42	17.09 – 19.75

Birth Defect (Body System)	Year	Cases (count)	Prevalence (rate)	Confidence Interval (95% for Prevalence)
	2015	699	17.33	16.04 – 18.61
	2016	766	19.29	17.93 – 20.66
	2017	749	19.61	18.21 – 21.02
	2018	743	19.73	18.32 – 21.15
	2019	730	19.33	17.92 – 20.73
	2020	696	18.90	17.49 – 20.30
	2021	771	20.63	19.17 – 22.09
Reduction defects of the upper limbs	1999	141	4.04	3.37 – 4.70
	2000	157	4.32	3.65 – 5.00
	2001	148	4.05	3.40 – 4.71
	2002	148	3.97	3.33 – 4.61
	2003	151	4.00	3.36 – 4.64
	2004	149	3.91	3.28 – 4.53
	2005	156	4.05	3.41 – 4.68
	2006	164	4.11	3.48 – 4.74
	2007	167	4.10	3.48 – 4.72
	2008	169	4.17	3.54 – 4.80
	2009	168	4.18	3.55 – 4.82
	2010	194	5.03	4.32 – 5.74
	2011	183	4.85	4.15 – 5.55
	2012	140	3.66	3.05 – 4.27
	2013	161	4.16	3.52 – 4.80
	2014	153	3.83	3.22 – 4.44
	2015	176	4.36	3.72 – 5.01
	2016	164	4.13	3.50 – 4.76
	2017	146	3.82	3.20 – 4.44
	2018	161	4.28	3.62 – 4.94
	2019	158	4.18	3.53 – 4.84
	2020	150	4.07	3.42 – 4.72
	2021	153	4.09	3.45 – 4.74
Reduction defects of the lower limbs	1999	81	2.32	1.84 – 2.88
	2000	55	1.51	1.14 – 1.97
	2001	79	2.16	1.71 – 2.70
	2002	63	1.69	1.30 – 2.16
	2003	75	1.99	1.56 – 2.49
	2004	64	1.68	1.29 – 2.14
	2005	83	2.15	1.71 – 2.67
	2006	72	1.80	1.41 – 2.27
	2007	89	2.18	1.75 – 2.69
	2008	83	2.05	1.63 – 2.54
	2009	75	1.87	1.47 – 2.34
	2010	84	2.18	1.74 – 2.70
	2011	79	2.09	1.66 – 2.61

Birth Defect (Body System)	Year	Cases (count)	Prevalence (rate)	Confidence Interval (95% for Prevalence)
	2012	84	2.20	1.75 – 2.72
	2013	65	1.68	1.30 – 2.14
	2014	81	2.03	1.61 – 2.52
	2015	82	2.03	1.62 – 2.52
	2016	69	1.74	1.35 – 2.20
	2017	78	2.04	1.61 – 2.55
	2018	56	1.49	1.12 – 1.93
	2019	86	2.28	1.82 – 2.81
	2020	75	2.04	1.60 – 2.55
	2021	86	2.30	1.84 – 2.84
Craniosynostosis	1999	141	4.04	3.37 – 4.70
	2000	165	4.54	3.85 – 5.23
	2001	139	3.81	3.17 – 4.44
	2002	173	4.65	3.95 – 5.34
	2003	168	4.45	3.78 – 5.13
	2004	172	4.51	3.84 – 5.18
	2005	159	4.12	3.48 – 4.77
	2006	180	4.51	3.85 – 5.17
	2007	217	5.33	4.62 – 6.03
	2008	213	5.26	4.55 – 5.96
	2009	208	5.18	4.48 – 5.88
	2010	258	6.69	5.87 – 7.50
	2011	231	6.12	5.33 – 6.91
	2012	273	7.14	6.29 – 7.99
	2013	226	5.84	5.08 – 6.60
	2014	248	6.21	5.44 – 6.98
	2015	254	6.30	5.52 – 7.07
	2016	236	5.94	5.19 – 6.70
	2017	250	6.55	5.74 – 7.36
	2018	284	7.54	6.67 – 8.42
	2019	270	7.15	6.30 – 8.00
	2020	251	6.81	5.97 – 7.66
	2021	273	7.31	6.44 – 8.17
Achondroplasia	1999	12	0.34	0.18 – 0.60
	2000	10	0.28	0.13 – 0.51
	2001	13	0.36	0.19 – 0.61
	2002	10	0.27	0.13 – 0.49
	2003	11	0.29	0.15 – 0.52
	2004	9	0.24	0.11 – 0.45
	2005	10	0.26	0.12 – 0.48
	2006	9	0.23	0.10 – 0.43
	2007	19	0.47	0.28 – 0.73
	2008	12	0.30	0.15 – 0.52

Birth Defect (Body System)	Year	Cases (count)	Prevalence (rate)	Confidence Interval (95% for Prevalence)
	2009	16	0.40	0.23 – 0.65
	2010	13	0.34	0.18 – 0.58
	2011	11	0.29	0.15 – 0.52
	2012	15	0.39	0.22 – 0.65
	2013	16	0.41	0.24 – 0.67
	2014	13	0.33	0.17 – 0.56
	2015	17	0.42	0.25 – 0.67
	2016	23	0.58	0.37 – 0.87
	2017	14	0.37	0.20 – 0.62
	2018	24	0.64	0.41 – 0.95
	2019	13	0.34	0.18 – 0.59
	2020	17	0.46	0.27 – 0.74
	2021	15	0.40	0.22 – 0.66
Diaphragmatic hernia	1999	112	3.21	2.61 – 3.80
	2000	99	2.72	2.21 – 3.32
	2001	83	2.27	1.81 – 2.82
	2002	95	2.55	2.06 – 3.12
	2003	108	2.86	2.32 – 3.40
	2004	100	2.62	2.13 – 3.19
	2005	97	2.52	2.04 – 3.07
	2006	116	2.91	2.38 – 3.43
	2007	128	3.14	2.60 – 3.69
	2008	115	2.84	2.32 – 3.36
	2009	107	2.66	2.16 – 3.17
	2010	121	3.14	2.58 – 3.70
	2011	100	2.65	2.16 – 3.22
	2012	107	2.80	2.27 – 3.33
	2013	121	3.13	2.57 – 3.68
	2014	110	2.75	2.24 – 3.27
	2015	97	2.40	1.95 – 2.93
	2016	105	2.64	2.14 – 3.15
	2017	121	3.17	2.60 – 3.73
	2018	107	2.84	2.30 – 3.38
	2019	93	2.46	1.99 – 3.02
	2020	117	3.18	2.60 – 3.75
	2021	130	3.48	2.88 – 4.08
Omphalocele	1999	78	2.23	1.77 – 2.79
	2000	83	2.28	1.82 – 2.83
	2001	85	2.33	1.86 – 2.88
	2002	77	2.07	1.63 – 2.58
	2003	73	1.93	1.52 – 2.43
	2004	83	2.18	1.73 – 2.70
	2005	73	1.89	1.48 – 2.38

Birth Defect (Body System)	Year	Cases (count)	Prevalence (rate)	Confidence Interval (95% for Prevalence)
	2006	86	2.15	1.72 – 2.66
	2007	80	1.96	1.56 – 2.44
	2008	79	1.95	1.54 – 2.43
	2009	90	2.24	1.80 – 2.75
	2010	79	2.05	1.62 – 2.55
	2011	69	1.83	1.42 – 2.31
	2012	87	2.27	1.82 – 2.81
	2013	85	2.20	1.75 – 2.72
	2014	86	2.15	1.72 – 2.66
	2015	96	2.38	1.93 – 2.91
	2016	86	2.17	1.73 – 2.68
	2017	94	2.46	1.99 – 3.01
	2018	84	2.23	1.78 – 2.76
	2019	82	2.17	1.73 – 2.69
	2020	86	2.33	1.87 – 2.88
	2021	89	2.38	1.91 – 2.93
Gastroschisis	1999	137	3.92	3.27 – 4.58
	2000	143	3.94	3.29 – 4.58
	2001	148	4.05	3.40 – 4.71
	2002	149	4.00	3.36 – 4.64
	2003	173	4.58	3.90 – 5.27
	2004	165	4.33	3.67 – 4.99
	2005	208	5.40	4.66 – 6.13
	2006	204	5.11	4.41 – 5.81
	2007	257	6.31	5.54 – 7.08
	2008	250	6.17	5.40 – 6.93
	2009	242	6.03	5.27 – 6.79
	2010	255	6.61	5.80 – 7.42
	2011	216	5.73	4.96 – 6.49
	2012	224	5.86	5.09 – 6.62
	2013	220	5.68	4.93 – 6.43
	2014	232	5.81	5.06 – 6.55
	2015	231	5.73	4.99 – 6.46
	2016	188	4.74	4.06 – 5.41
	2017	176	4.61	3.93 – 5.29
	2018	182	4.83	4.13 – 5.54
	2019	172	4.55	3.87 – 5.23
	2020	144	3.91	3.27 – 4.55
	2021	168	4.50	3.82 – 5.18
Chromosomal				
Trisomy 21 (Down syndrome)	1999	426	12.20	11.04 – 13.36
	2000	476	13.10	11.92 – 14.28
	2001	494	13.53	12.34 – 14.72

Birth Defect (Body System)	Year	Cases (count)	Prevalence (rate)	Confidence Interval (95% for Prevalence)
	2002	455	12.22	11.10 – 13.34
	2003	457	12.11	11.00 – 13.22
	2004	513	13.45	12.29 – 14.61
	2005	482	12.50	11.39 – 13.62
	2006	559	14.00	12.84 – 15.16
	2007	551	13.52	12.39 – 14.65
	2008	544	13.42	12.30 – 14.55
	2009	556	13.84	12.69 – 15.00
	2010	580	15.04	13.81 – 16.26
	2011	553	14.66	13.44 – 15.88
	2012	571	14.93	13.71 – 16.16
	2013	551	14.23	13.05 – 15.42
	2014	561	14.04	12.88 – 15.21
	2015	524	12.99	11.88 – 14.10
	2016	574	14.46	13.28 – 15.64
	2017	552	14.45	13.25 – 15.66
	2018	587	15.59	14.33 – 16.85
	2019	576	15.25	14.00 – 16.50
	2020	555	15.07	13.81 – 16.32
	2021	577	15.44	14.18 – 16.70
Trisomy 13 (Patau syndrome)	1999	43	1.23	0.89 – 1.66
	2000	51	1.40	1.05 – 1.85
	2001	42	1.15	0.83 – 1.55
	2002	43	1.15	0.84 – 1.56
	2003	42	1.11	0.80 – 1.50
	2004	46	1.21	0.88 – 1.61
	2005	34	0.88	0.61 – 1.23
	2006	42	1.05	0.76 – 1.42
	2007	51	1.25	0.93 – 1.65
	2008	45	1.11	0.81 – 1.49
	2009	53	1.32	0.99 – 1.73
	2010	59	1.53	1.16 – 1.97
	2011	43	1.14	0.82 – 1.54
	2012	53	1.39	1.04 – 1.81
	2013	43	1.11	0.80 – 1.50
	2014	45	1.13	0.82 – 1.51
	2015	38	0.94	0.67 – 1.29
	2016	51	1.28	0.96 – 1.69
	2017	41	1.07	0.77 – 1.46
	2018	39	1.04	0.74 – 1.42
	2019	28	0.74	0.49 – 1.07
	2020	38	1.03	0.73 – 1.42
	2021	41	1.10	0.79 – 1.49

Birth Defect (Body System)	Year	Cases (count)	Prevalence (rate)	Confidence Interval (95% for Prevalence)
Trisomy 18 (Edwards syndrome)	1999	84	2.41	1.92 – 2.98
	2000	78	2.15	1.70 – 2.68
	2001	82	2.25	1.79 – 2.79
	2002	82	2.20	1.75 – 2.73
	2003	80	2.12	1.68 – 2.64
	2004	97	2.54	2.06 – 3.10
	2005	96	2.49	2.02 – 3.04
	2006	110	2.75	2.24 – 3.27
	2007	101	2.48	2.00 – 2.96
	2008	120	2.96	2.43 – 3.49
	2009	120	2.99	2.45 – 3.52
	2010	99	2.57	2.09 – 3.12
	2011	109	2.89	2.35 – 3.43
	2012	112	2.93	2.39 – 3.47
	2013	95	2.45	1.99 – 3.00
	2014	116	2.90	2.38 – 3.43
	2015	87	2.16	1.73 – 2.66
	2016	107	2.70	2.18 – 3.21
	2017	84	2.20	1.75 – 2.72
	2018	85	2.26	1.80 – 2.79
	2019	90	2.38	1.92 – 2.93
	2020	90	2.44	1.96 – 3.00
	2021	76	2.03	1.60 – 2.55
Infants and fetuses with regular reportable birth defects	1999	11,504	329.48	323.46 – 335.50
	2000	12,442	342.45	336.43 – 348.47
	2001	12,382	339.15	333.17 – 345.12
	2002	13,125	352.47	346.44 – 358.50
	2003	13,876	367.70	361.58 – 373.82
	2004	15,202	398.54	392.21 – 404.88
	2005	16,002	415.06	408.63 – 421.49
	2006	16,702	418.27	411.93 – 424.62
	2007	17,465	428.64	422.28 – 435.00
	2008	18,285	451.21	444.67 – 457.75
	2009	19,105	475.72	468.98 – 482.47
	2010	19,708	510.91	503.77 – 518.04
	2011	19,775	524.15	516.85 – 531.46
	2012	20,339	531.82	524.52 – 539.13
	2013	21,459	554.34	546.92 – 561.76
	2014	22,569	564.96	557.59 – 572.33
	2015	23,220	575.55	568.15 – 582.95
	2016	25,556	643.73	635.84 – 651.62
	2017	24,209	633.95	625.96 – 641.94
	2018	25,527	678.00	669.68 – 686.31

Birth Defect (Body System)	Year	Cases (count)	Prevalence (rate)	Confidence Interval (95% for Prevalence)
	2019	25,314	670.20	661.94 – 678.45
	2020	26,023	706.54	697.95 – 715.12
	2021	27,433	734.08	725.39 – 742.77

Prevalence (rate) is expressed as the number of cases per 10,000 live births.

Please see the Methods section of the Annual Report for additional information:
https://www.dshs.texas.gov/sites/default/files/birthdefects/annualreport/1999-2021-TBDR-Methods.pdf

Prepared by: Texas Birth Defects Registry, Birth Defects Epidemiology and Surveillance Branch, Texas Department of State Health Services, October 2024.

Texas Birth Defects Registry (TBDR) Annual Report
Table 2B. Prevalence of Selected Birth Defects by 5-Year Period, Texas, 2002–2021

Birth Defect (Body System)	5-Year Period	Cases (count)	Prevalence (rate)	Confidence Interval (95% for Prevalence)
Central Nervous System				
Anencephaly	2002-2006	458	2.39	2.17 – 2.61
	2007-2011	527	2.67	2.44 – 2.89
	2012-2016	466	2.37	2.15 – 2.58
	2017-2021	400	2.13	1.92 – 2.34
Spina bifida (without anencephaly)	2002-2006	685	3.58	3.31 – 3.84
	2007-2011	770	3.89	3.62 – 4.17
	2012-2016	750	3.81	3.54 – 4.08
	2017-2021	662	3.52	3.26 – 3.79
Encephalocele	2002-2006	155	0.81	0.68 – 0.94
	2007-2011	203	1.03	0.89 – 1.17
	2012-2016	191	0.97	0.83 – 1.11
	2017-2021	199	1.06	0.91 – 1.21
Microcephaly, severe (head circumference <3rd percentile)	2002-2006	659	3.44	3.18 – 3.70
	2007-2011	872	4.41	4.12 – 4.70
	2012-2016	1,223	6.21	5.86 – 6.56
	2017-2021	1,514	8.06	7.66 – 8.47
Holoprosencephaly	2002-2006	220	1.15	1.00 – 1.30
	2007-2011	194	0.98	0.84 – 1.12
	2012-2016	196	1.00	0.86 – 1.13
	2017-2021	185	0.99	0.84 – 1.13
Hydrocephaly (without spina bifida)	2002-2006	1,269	6.62	6.26 – 6.99
	2007-2011	1,516	7.67	7.28 – 8.05
	2012-2016	1,743	8.85	8.43 – 9.27
	2017-2021	1,853	9.87	9.42 – 10.32
Eye and Ear				
Anophthalmia	2002-2006	64	0.33	0.26 – 0.43
	2007-2011	67	0.34	0.26 – 0.43
	2012-2016	40	0.20	0.15 – 0.28
	2017-2021	50	0.27	0.20 – 0.35
Microphthalmia	2002-2006	533	2.78	2.55 – 3.02
	2007-2011	589	2.98	2.74 – 3.22
	2012-2016	513	2.60	2.38 – 2.83
	2017-2021	491	2.61	2.38 – 2.85
Cataract	2002-2006	371	1.94	1.74 – 2.13
	2007-2011	406	2.05	1.85 – 2.25
	2012-2016	380	1.93	1.74 – 2.12
	2017-2021	406	2.16	1.95 – 2.37

Birth Defect (Body System)	5-Year Period	Cases (count)	Prevalence (rate)	Confidence Interval (95% for Prevalence)
Anotia or microtia	2002-2006	589	3.07	2.83 – 3.32
	2007-2011	707	3.58	3.31 – 3.84
	2012-2016	746	3.79	3.52 – 4.06
	2017-2021	834	4.44	4.14 – 4.74
Cardiac and Circulatory				
Common truncus	2002-2006	140	0.73	0.61 – 0.85
	2007-2011	158	0.80	0.67 – 0.92
	2012-2016	164	0.83	0.71 – 0.96
	2017-2021	140	0.75	0.62 – 0.87
Transposition of the great vessels	2002-2006	634	3.31	3.05 – 3.57
	2007-2011	721	3.65	3.38 – 3.91
	2012-2016	660	3.35	3.10 – 3.61
	2017-2021	536	2.85	2.61 – 3.10
Double outlet right ventricle	2002-2006	378	1.97	1.77 – 2.17
	2007-2011	467	2.36	2.15 – 2.58
	2012-2016	496	2.52	2.30 – 2.74
	2017-2021	501	2.67	2.43 – 2.90
Tetralogy of Fallot	2002-2006	690	3.60	3.33 – 3.87
	2007-2011	770	3.89	3.62 – 4.17
	2012-2016	888	4.51	4.21 – 4.81
	2017-2021	796	4.24	3.94 – 4.53
Ventricular septal defect	2002-2006	10,121	52.82	51.79 – 53.85
	2007-2011	12,977	65.63	64.50 – 66.76
	2012-2016	13,158	66.81	65.67 – 67.95
	2017-2021	13,513	71.95	70.74 – 73.16
Atrial septal defect	2002-2006	10,534	54.98	53.93 – 56.03
	2007-2011	14,199	71.81	70.63 – 72.99
	2012-2016	17,273	87.70	86.40 – 89.01
	2017-2021	17,438	92.85	91.47 – 94.23
Atrioventricular septal defect (endocardial cushion defect)	2002-2006	784	4.09	3.81 – 4.38
	2007-2011	869	4.39	4.10 – 4.69
	2012-2016	910	4.62	4.32 – 4.92
	2017-2021	839	4.47	4.16 – 4.77
Pulmonary valve atresia or stenosis	2002-2006	1,602	8.36	7.95 – 8.77
	2007-2011	2,174	10.99	10.53 – 11.46
	2012-2016	2,092	10.62	10.17 – 11.08
	2017-2021	2,219	11.82	11.32 – 12.31
Tricuspid valve atresia or stenosis	2002-2006	321	1.68	1.49 – 1.86
	2007-2011	359	1.82	1.63 – 2.00
	2012-2016	386	1.96	1.76 – 2.16
	2017-2021	463	2.47	2.24 – 2.69

Birth Defect (Body System)	5-Year Period	Cases (count)	Prevalence (rate)	Confidence Interval (95% for Prevalence)
Ebstein anomaly	2002-2006	143	0.75	0.62 – 0.87
	2007-2011	137	0.69	0.58 – 0.81
	2012-2016	146	0.74	0.62 – 0.86
	2017-2021	180	0.96	0.82 – 1.10
Aortic valve stenosis	2002-2006	452	2.36	2.14 – 2.58
	2007-2011	510	2.58	2.36 – 2.80
	2012-2016	477	2.42	2.20 – 2.64
	2017-2021	445	2.37	2.15 – 2.59
Hypoplastic left heart syndrome	2002-2006	411	2.15	1.94 – 2.35
	2007-2011	434	2.19	1.99 – 2.40
	2012-2016	492	2.50	2.28 – 2.72
	2017-2021	412	2.19	1.98 – 2.41
Patent ductus arteriosus	2002-2006	9,681	50.53	49.52 – 51.53
	2007-2011	12,691	64.18	63.07 – 65.30
	2012-2016	14,255	72.38	71.19 – 73.57
	2017-2021	9,087	48.38	47.39 – 49.38
Coarctation of the aorta	2002-2006	994	5.19	4.87 – 5.51
	2007-2011	1,029	5.20	4.89 – 5.52
	2012-2016	1,099	5.58	5.25 – 5.91
	2017-2021	1,119	5.96	5.61 – 6.31
Respiratory				
Choanal atresia or stenosis	2002-2006	217	1.13	0.98 – 1.28
	2007-2011	257	1.30	1.14 – 1.46
	2012-2016	260	1.32	1.16 – 1.48
	2017-2021	274	1.46	1.29 – 1.63
Agenesis, aplasia, or hypoplasia of the lung	2002-2006	576	3.01	2.76 – 3.25
	2007-2011	532	2.69	2.46 – 2.92
	2012-2016	540	2.74	2.51 – 2.97
	2017-2021	442	2.35	2.13 – 2.57
Oral Clefts				
Cleft palate alone (without cleft lip)	2002-2006	1,084	5.66	5.32 – 5.99
	2007-2011	1,242	6.28	5.93 – 6.63
	2012-2016	1,126	5.72	5.38 – 6.05
	2017-2021	1,143	6.09	5.73 – 6.44
Cleft lip (with or without cleft palate)	2002-2006	2,108	11.00	10.53 – 11.47
	2007-2011	2,101	10.63	10.17 – 11.08
	2012-2016	2,092	10.62	10.17 – 11.08
	2017-2021	2,000	10.65	10.18 – 11.12
Gastrointestinal				
Tracheoesophageal fistula/ esophageal atresia	2002-2006	390	2.04	1.83 – 2.24
	2007-2011	420	2.12	1.92 – 2.33
	2012-2016	468	2.38	2.16 – 2.59
	2017-2021	444	2.36	2.14 – 2.58

Birth Defect (Body System)	5-Year Period	Cases (count)	Prevalence (rate)	Confidence Interval (95% for Prevalence)
Pyloric stenosis	2002-2006	3,680	19.21	18.59 – 19.83
	2007-2011	3,381	17.10	16.52 – 17.68
	2012-2016	2,489	12.64	12.14 – 13.13
	2017-2021	2,341	12.46	11.96 – 12.97
Stenosis or atresia of the small intestine	2002-2006	578	3.02	2.77 – 3.26
	2007-2011	713	3.61	3.34 – 3.87
	2012-2016	686	3.48	3.22 – 3.74
	2017-2021	719	3.83	3.55 – 4.11
Stenosis or atresia of large intestine, rectum, or anal canal	2002-2006	1,028	5.37	5.04 – 5.69
	2007-2011	1,066	5.39	5.07 – 5.71
	2012-2016	1,039	5.28	4.95 – 5.60
	2017-2021	1,022	5.44	5.11 – 5.78
Hirschsprung disease	2002-2006	245	1.28	1.12 – 1.44
	2007-2011	298	1.51	1.34 – 1.68
	2012-2016	316	1.60	1.43 – 1.78
	2017-2021	281	1.50	1.32 – 1.67
Biliary atresia	2002-2006	142	0.74	0.62 – 0.86
	2007-2011	146	0.74	0.62 – 0.86
	2012-2016	131	0.67	0.55 – 0.78
	2017-2021	125	0.67	0.55 – 0.78
Genitourinary				
Hypospadias (among males)	2002-2006	5,270	53.81	52.36 – 55.27
	2007-2011	6,118	60.56	59.04 – 62.08
	2012-2016	6,995	69.47	67.84 – 71.10
	2017-2021	6,704	69.85	68.18 – 71.52
Renal agenesis or dysgenesis	2002-2006	1,044	5.45	5.12 – 5.78
	2007-2011	1,273	6.44	6.08 – 6.79
	2012-2016	1,330	6.75	6.39 – 7.12
	2017-2021	1,565	8.33	7.92 – 8.75
Bladder exstrophy	2002-2006	42	0.22	0.16 – 0.30
	2007-2011	35	0.18	0.12 – 0.25
	2012-2016	32	0.16	0.11 – 0.23
	2017-2021	26	0.14	0.09 – 0.20
Musculoskeletal				
Congenital hip dislocation (without hip dysplasia)	2002-2006	561	2.93	2.69 – 3.17
	2007-2011	506	2.56	2.34 – 2.78
	2012-2016	388	1.97	1.77 – 2.17
	2017-2021	274	1.46	1.29 – 1.63

Birth Defect (Body System)	5-Year Period	Cases (count)	Prevalence (rate)	Confidence Interval (95% for Prevalence)
Talipes equinovarus (clubfoot)	2002-2006	2,862	14.94	14.39 – 15.48
	2007-2011	3,179	16.08	15.52 – 16.64
	2012-2016	3,500	17.77	17.18 – 18.36
	2017-2021	3,689	19.64	19.01 – 20.28
Reduction defects of the upper limbs	2002-2006	768	4.01	3.72 – 4.29
	2007-2011	881	4.46	4.16 – 4.75
	2012-2016	794	4.03	3.75 – 4.31
	2017-2021	768	4.09	3.80 – 4.38
Reduction defects of the lower limbs	2002-2006	357	1.86	1.67 – 2.06
	2007-2011	410	2.07	1.87 – 2.27
	2012-2016	381	1.93	1.74 – 2.13
	2017-2021	381	2.03	1.82 – 2.23
Craniosynostosis	2002-2006	852	4.45	4.15 – 4.75
	2007-2011	1,127	5.70	5.37 – 6.03
	2012-2016	1,237	6.28	5.93 – 6.63
	2017-2021	1,328	7.07	6.69 – 7.45
Achondroplasia	2002-2006	49	0.26	0.19 – 0.34
	2007-2011	71	0.36	0.28 – 0.45
	2012-2016	84	0.43	0.34 – 0.53
	2017-2021	83	0.44	0.35 – 0.55
Diaphragmatic hernia	2002-2006	516	2.69	2.46 – 2.93
	2007-2011	571	2.89	2.65 – 3.12
	2012-2016	540	2.74	2.51 – 2.97
	2017-2021	568	3.02	2.78 – 3.27
Omphalocele	2002-2006	392	2.05	1.84 – 2.25
	2007-2011	397	2.01	1.81 – 2.21
	2012-2016	440	2.23	2.03 – 2.44
	2017-2021	435	2.32	2.10 – 2.53
Gastroschisis	2002-2006	899	4.69	4.39 – 5.00
	2007-2011	1,220	6.17	5.82 – 6.52
	2012-2016	1,095	5.56	5.23 – 5.89
	2017-2021	842	4.48	4.18 – 4.79
Chromosomal				
Trisomy 21 (Down syndrome)	2002-2006	2,466	12.87	12.36 – 13.38
	2007-2011	2,784	14.08	13.56 – 14.60
	2012-2016	2,781	14.12	13.60 – 14.65
	2017-2021	2,847	15.16	14.60 – 15.72
Trisomy 13 (Patau syndrome)	2002-2006	207	1.08	0.93 – 1.23
	2007-2011	251	1.27	1.11 – 1.43
	2012-2016	230	1.17	1.02 – 1.32
	2017-2021	187	1.00	0.85 – 1.14

Birth Defect (Body System)	5-Year Period	Cases (count)	Prevalence (rate)	Confidence Interval (95% for Prevalence)
Trisomy 18 (Edwards syndrome)	2002-2006	465	2.43	2.21 – 2.65
	2007-2011	549	2.78	2.54 – 3.01
	2012-2016	517	2.63	2.40 – 2.85
	2017-2021	425	2.26	2.05 – 2.48
Infants and fetuses with regular reportable birth defects	2002-2006	74,907	390.95	388.15 – 393.75
	2007-2011	94,338	477.10	474.06 – 480.15
	2012-2016	113,143	574.49	571.14 – 577.83
	2017-2021	128,506	684.23	680.49 – 687.97

Prevalence (rate) is expressed as the number of cases per 10,000 live births.

Please see the Methods section of the Annual Report for additional information:
https://www.dshs.texas.gov/sites/default/files/birthdefects/annualreport/1999-2021-TBDR-Methods.pdf

Prepared by: Texas Birth Defects Registry, Birth Defects Epidemiology and Surveillance Branch, Texas Department of State Health Services, October 2024.

Texas Birth Defects Registry (TBDR) Annual Report
Table 3. Prevalence of Selected Birth Defects by Mother's Age, Texas, 1999–2021

Birth Defect (Body System)	Mother's Age (at delivery)	Cases (count)	Prevalence (rate)	Confidence Interval (95% for Prevalence)
Central Nervous System				
Anencephaly*	<20 years	310	3.16	2.80 – 3.51
	20-24 years	589	2.59	2.38 – 2.80
	25-29 years	610	2.50	2.30 – 2.69
	30-34 years	429	2.16	1.96 – 2.37
	35-39 years	179	1.92	1.64 – 2.21
	40+ years	51	2.49	1.86 – 3.28
Spina bifida (without anencephaly)*	<20 years	330	3.36	3.00 – 3.72
	20-24 years	823	3.62	3.38 – 3.87
	25-29 years	906	3.71	3.47 – 3.95
	30-34 years	744	3.75	3.48 – 4.02
	35-39 years	371	3.99	3.58 – 4.39
	40+ years	101	4.94	3.98 – 5.90
Encephalocele*	<20 years	120	1.22	1.00 – 1.44
	20-24 years	230	1.01	0.88 – 1.14
	25-29 years	213	0.87	0.75 – 0.99
	30-34 years	160	0.81	0.68 – 0.93
	35-39 years	101	1.09	0.87 – 1.30
	40+ years	30	1.47	0.99 – 2.09
Microcephaly, severe (head circumference <3rd percentile)*	<20 years	648	6.60	6.09 – 7.10
	20-24 years	1,272	5.60	5.29 – 5.91
	25-29 years	1,123	4.59	4.33 – 4.86
	30-34 years	869	4.38	4.09 – 4.67
	35-39 years	493	5.30	4.83 – 5.77
	40+ years	165	8.07	6.84 – 9.30
Holoprosencephaly*	<20 years	119	1.21	0.99 – 1.43
	20-24 years	215	0.95	0.82 – 1.07
	25-29 years	231	0.95	0.82 – 1.07
	30-34 years	197	0.99	0.85 – 1.13
	35-39 years	119	1.28	1.05 – 1.51
	40+ years	39	1.91	1.36 – 2.61
Hydrocephaly (without spina bifida)*	<20 years	890	9.06	8.46 – 9.65
	20-24 years	1,743	7.68	7.32 – 8.04
	25-29 years	1,871	7.65	7.31 – 8.00
	30-34 years	1,541	7.76	7.37 – 8.15
	35-39 years	858	9.22	8.60 – 9.84
	40+ years	270	13.20	11.63 – 14.78
Eye and Ear				
Anophthalmia*	<20 years	53	0.54	0.40 – 0.71
	20-24 years	56	0.25	0.19 – 0.32
	25-29 years	63	0.26	0.20 – 0.33
	30-34 years	44	0.22	0.16 – 0.30
	35-39 years	27	0.29	0.19 – 0.42
	40+ years	13	0.64	0.34 – 1.09

Birth Defect (Body System)	Mother's Age (at delivery)	Cases (count)	Prevalence (rate)	Confidence Interval (95% for Prevalence)
Microphthalmia*	<20 years	239	2.43	2.12 – 2.74
	20-24 years	532	2.34	2.14 – 2.54
	25-29 years	578	2.36	2.17 – 2.56
	30-34 years	524	2.64	2.41 – 2.87
	35-39 years	343	3.69	3.30 – 4.08
	40+ years	173	8.46	7.20 – 9.72
Cataract*	<20 years	173	1.76	1.50 – 2.02
	20-24 years	419	1.85	1.67 – 2.02
	25-29 years	472	1.93	1.76 – 2.11
	30-34 years	371	1.87	1.68 – 2.06
	35-39 years	213	2.29	1.98 – 2.60
	40+ years	74	3.62	2.84 – 4.54
Anotia or microtia*	<20 years	297	3.02	2.68 – 3.37
	20-24 years	770	3.39	3.15 – 3.63
	25-29 years	832	3.40	3.17 – 3.64
	30-34 years	768	3.87	3.59 – 4.14
	35-39 years	397	4.27	3.85 – 4.69
	40+ years	118	5.77	4.73 – 6.81
Cardiac and Circulatory				
Common truncus*	<20 years	64	0.65	0.50 – 0.83
	20-24 years	163	0.72	0.61 – 0.83
	25-29 years	167	0.68	0.58 – 0.79
	30-34 years	171	0.86	0.73 – 0.99
	35-39 years	84	0.90	0.72 – 1.12
	40+ years	23	1.12	0.71 – 1.69
Transposition of the great vessels*	<20 years	286	2.91	2.57 – 3.25
	20-24 years	680	2.99	2.77 – 3.22
	25-29 years	833	3.41	3.18 – 3.64
	30-34 years	702	3.54	3.27 – 3.80
	35-39 years	343	3.69	3.30 – 4.08
	40+ years	95	4.64	3.76 – 5.68
Double outlet right ventricle*	<20 years	212	2.16	1.87 – 2.45
	20-24 years	463	2.04	1.85 – 2.22
	25-29 years	556	2.27	2.09 – 2.46
	30-34 years	428	2.16	1.95 – 2.36
	35-39 years	278	2.99	2.64 – 3.34
	40+ years	109	5.33	4.33 – 6.33
Tetralogy of Fallot*	<20 years	326	3.32	2.96 – 3.68
	20-24 years	781	3.44	3.20 – 3.68
	25-29 years	877	3.59	3.35 – 3.83
	30-34 years	808	4.07	3.79 – 4.35
	35-39 years	504	5.42	4.94 – 5.89
	40+ years	189	9.24	7.92 – 10.56

Birth Defect (Body System)	Mother's Age (at delivery)	Cases (count)	Prevalence (rate)	Confidence Interval (95% for Prevalence)
Ventricular septal defect*	<20 years	5,287	53.81	52.36 – 55.26
	20-24 years	12,697	55.92	54.95 – 56.89
	25-29 years	14,101	57.69	56.74 – 58.64
	30-34 years	12,486	62.88	61.78 – 63.99
	35-39 years	7,437	79.93	78.12 – 81.75
	40+ years	2,415	118.08	113.37 – 122.79
Atrial septal defect*	<20 years	6,430	65.45	63.85 – 67.05
	20-24 years	15,393	67.79	66.72 – 68.86
	25-29 years	16,652	68.13	67.09 – 69.16
	30-34 years	13,915	70.08	68.92 – 71.25
	35-39 years	8,418	90.48	88.54 – 92.41
	40+ years	2,953	144.38	139.18 – 149.59
Atrioventricular septal defect (endocardial cushion defect)*	<20 years	327	3.33	2.97 – 3.69
	20-24 years	755	3.33	3.09 – 3.56
	25-29 years	852	3.49	3.25 – 3.72
	30-34 years	840	4.23	3.94 – 4.52
	35-39 years	687	7.38	6.83 – 7.94
	40+ years	390	19.07	17.18 – 20.96
Pulmonary valve atresia or stenosis*	<20 years	896	9.12	8.52 – 9.72
	20-24 years	2,152	9.48	9.08 – 9.88
	25-29 years	2,259	9.24	8.86 – 9.62
	30-34 years	2,015	10.15	9.71 – 10.59
	35-39 years	1,124	12.08	11.37 – 12.79
	40+ years	363	17.75	15.92 – 19.57
Tricuspid valve atresia or stenosis*	<20 years	155	1.58	1.33 – 1.83
	20-24 years	430	1.89	1.71 – 2.07
	25-29 years	434	1.78	1.61 – 1.94
	30-34 years	377	1.90	1.71 – 2.09
	35-39 years	213	2.29	1.98 – 2.60
	40+ years	76	3.72	2.93 – 4.65
Ebstein anomaly*	<20 years	65	0.66	0.51 – 0.84
	20-24 years	147	0.65	0.54 – 0.75
	25-29 years	182	0.74	0.64 – 0.85
	30-34 years	167	0.84	0.71 – 0.97
	35-39 years	82	0.88	0.70 – 1.09
	40+ years	33	1.61	1.11 – 2.27
Aortic valve stenosis*	<20 years	174	1.77	1.51 – 2.03
	20-24 years	517	2.28	2.08 – 2.47
	25-29 years	582	2.38	2.19 – 2.57
	30-34 years	501	2.52	2.30 – 2.74
	35-39 years	289	3.11	2.75 – 3.46
	40+ years	67	3.28	2.54 – 4.16

Birth Defect (Body System)	Mother's Age (at delivery)	Cases (count)	Prevalence (rate)	Confidence Interval (95% for Prevalence)
Hypoplastic left heart syndrome*	<20 years	204	2.08	1.79 – 2.36
	20-24 years	486	2.14	1.95 – 2.33
	25-29 years	552	2.26	2.07 – 2.45
	30-34 years	442	2.23	2.02 – 2.43
	35-39 years	207	2.22	1.92 – 2.53
	40+ years	72	3.52	2.75 – 4.43
Patent ductus arteriosus*	<20 years	4,892	49.79	48.40 – 51.19
	20-24 years	11,545	50.84	49.92 – 51.77
	25-29 years	12,861	52.62	51.71 – 53.53
	30-34 years	11,158	56.20	55.15 – 57.24
	35-39 years	7,062	75.90	74.13 – 77.67
	40+ years	2,803	137.05	131.98 – 142.12
Coarctation of the aorta*	<20 years	462	4.70	4.27 – 5.13
	20-24 years	1,043	4.59	4.31 – 4.87
	25-29 years	1,330	5.44	5.15 – 5.73
	30-34 years	1,048	5.28	4.96 – 5.60
	35-39 years	607	6.52	6.01 – 7.04
	40+ years	204	9.97	8.61 – 11.34
Respiratory				
Choanal atresia or stenosis*	<20 years	100	1.02	0.83 – 1.24
	20-24 years	268	1.18	1.04 – 1.32
	25-29 years	286	1.17	1.03 – 1.31
	30-34 years	299	1.51	1.34 – 1.68
	35-39 years	145	1.56	1.30 – 1.81
	40+ years	42	2.05	1.48 – 2.78
Agenesis, aplasia, or hypoplasia of the lung*	<20 years	331	3.37	3.01 – 3.73
	20-24 years	685	3.02	2.79 – 3.24
	25-29 years	706	2.89	2.68 – 3.10
	30-34 years	503	2.53	2.31 – 2.75
	35-39 years	286	3.07	2.72 – 3.43
	40+ years	77	3.76	2.97 – 4.71
Oral Clefts				
Cleft palate alone (without cleft lip)*	<20 years	492	5.01	4.57 – 5.45
	20-24 years	1,298	5.72	5.41 – 6.03
	25-29 years	1,447	5.92	5.61 – 6.22
	30-34 years	1,169	5.89	5.55 – 6.22
	35-39 years	650	6.99	6.45 – 7.52
	40+ years	193	9.44	8.11 – 10.77
Cleft lip (with or without cleft palate)*	<20 years	1,152	11.73	11.05 – 12.40
	20-24 years	2,463	10.85	10.42 – 11.28
	25-29 years	2,475	10.13	9.73 – 10.52
	30-34 years	2,018	10.16	9.72 – 10.61
	35-39 years	1,028	11.05	10.37 – 11.72
	40+ years	337	16.48	14.72 – 18.24

Birth Defect (Body System)	Mother's Age (at delivery)	Cases (count)	Prevalence (rate)	Confidence Interval (95% for Prevalence)
Gastrointestinal				
Tracheoesophageal fistula/ esophageal atresia*	<20 years	221	2.25	1.95 – 2.55
	20-24 years	431	1.90	1.72 – 2.08
	25-29 years	462	1.89	1.72 – 2.06
	30-34 years	447	2.25	2.04 – 2.46
	35-39 years	270	2.90	2.56 – 3.25
	40+ years	113	5.53	4.51 – 6.54
Pyloric stenosis*	<20 years	2,183	22.22	21.29 – 23.15
	20-24 years	4,216	18.57	18.01 – 19.13
	25-29 years	3,659	14.97	14.48 – 15.45
	30-34 years	2,582	13.00	12.50 – 13.51
	35-39 years	1,152	12.38	11.67 – 13.10
	40+ years	212	10.37	8.97 – 11.76
Stenosis or atresia of the small intestine*	<20 years	418	4.25	3.85 – 4.66
	20-24 years	768	3.38	3.14 – 3.62
	25-29 years	708	2.90	2.68 – 3.11
	30-34 years	570	2.87	2.64 – 3.11
	35-39 years	393	4.22	3.81 – 4.64
	40+ years	175	8.56	7.29 – 9.82
Stenosis or atresia of large intestine, rectum, or anal canal*	<20 years	555	5.65	5.18 – 6.12
	20-24 years	1,176	5.18	4.88 – 5.48
	25-29 years	1,181	4.83	4.56 – 5.11
	30-34 years	1,018	5.13	4.81 – 5.44
	35-39 years	589	6.33	5.82 – 6.84
	40+ years	182	8.90	7.61 – 10.19
Hirschsprung disease*	<20 years	112	1.14	0.93 – 1.35
	20-24 years	336	1.48	1.32 – 1.64
	25-29 years	329	1.35	1.20 – 1.49
	30-34 years	262	1.32	1.16 – 1.48
	35-39 years	181	1.95	1.66 – 2.23
	40+ years	48	2.35	1.73 – 3.11
Biliary atresia	<20 years	71	0.72	0.56 – 0.91
	20-24 years	178	0.78	0.67 – 0.90
	25-29 years	161	0.66	0.56 – 0.76
	30-34 years	132	0.66	0.55 – 0.78
	35-39 years	63	0.68	0.52 – 0.87
	40+ years	18	0.88	0.52 – 1.39
Genitourinary				
Hypospadias (among males)*	<20 years	2,646	52.56	50.55 – 54.56
	20-24 years	6,411	55.33	53.97 – 56.68
	25-29 years	7,886	63.07	61.68 – 64.46
	30-34 years	6,949	68.52	66.91 – 70.13
	35-39 years	3,404	71.52	69.11 – 73.92
	40+ years	820	78.73	73.34 – 84.12

Birth Defect (Body System)	Mother's Age (at delivery)	Cases (count)	Prevalence (rate)	Confidence Interval (95% for Prevalence)
Renal agenesis or dysgenesis*	<20 years	561	5.71	5.24 – 6.18
	20-24 years	1,368	6.02	5.71 – 6.34
	25-29 years	1,586	6.49	6.17 – 6.81
	30-34 years	1,311	6.60	6.25 – 6.96
	35-39 years	747	8.03	7.45 – 8.60
	40+ years	205	10.02	8.65 – 11.40
Bladder exstrophy	<20 years	19	0.19	0.12 – 0.30
	20-24 years	41	0.18	0.13 – 0.24
	25-29 years	39	0.16	0.11 – 0.22
	30-34 years	35	0.18	0.12 – 0.25
	35-39 years	18	0.19	0.11 – 0.31
	40+ years	3	0.15	0.03 – 0.43
Musculoskeletal				
Congenital hip dislocation (without hip dysplasia)*	<20 years	211	2.15	1.86 – 2.44
	20-24 years	519	2.29	2.09 – 2.48
	25-29 years	561	2.30	2.11 – 2.49
	30-34 years	521	2.62	2.40 – 2.85
	35-39 years	280	3.01	2.66 – 3.36
	40+ years	81	3.96	3.15 – 4.92
Talipes equinovarus (clubfoot)*	<20 years	1,673	17.03	16.21 – 17.84
	20-24 years	3,849	16.95	16.42 – 17.49
	25-29 years	3,965	16.22	15.72 – 16.73
	30-34 years	3,162	15.92	15.37 – 16.48
	35-39 years	1,638	17.61	16.75 – 18.46
	40+ years	495	24.20	22.07 – 26.33
Reduction defects of the upper limbs*	<20 years	529	5.38	4.93 – 5.84
	20-24 years	946	4.17	3.90 – 4.43
	25-29 years	932	3.81	3.57 – 4.06
	30-34 years	773	3.89	3.62 – 4.17
	35-39 years	348	3.74	3.35 – 4.13
	40+ years	128	6.26	5.17 – 7.34
Reduction defects of the lower limbs*	<20 years	273	2.78	2.45 – 3.11
	20-24 years	452	1.99	1.81 – 2.17
	25-29 years	481	1.97	1.79 – 2.14
	30-34 years	343	1.73	1.54 – 1.91
	35-39 years	150	1.61	1.35 – 1.87
	40+ years	45	2.20	1.60 – 2.94
Craniosynostosis*	<20 years	390	3.97	3.58 – 4.36
	20-24 years	1,080	4.76	4.47 – 5.04
	25-29 years	1,383	5.66	5.36 – 5.96
	30-34 years	1,285	6.47	6.12 – 6.83
	35-39 years	671	7.21	6.67 – 7.76
	40+ years	179	8.75	7.47 – 10.03

Birth Defect (Body System)	Mother's Age (at delivery)	Cases (count)	Prevalence (rate)	Confidence Interval (95% for Prevalence)
Achondroplasia*	<20 years	15	0.15	0.09 – 0.25
	20-24 years	63	0.28	0.21 – 0.35
	25-29 years	92	0.38	0.30 – 0.46
	30-34 years	94	0.47	0.38 – 0.58
	35-39 years	40	0.43	0.31 – 0.59
	40+ years	18	0.88	0.52 – 1.39
Diaphragmatic hernia	<20 years	265	2.70	2.37 – 3.02
	20-24 years	613	2.70	2.49 – 2.91
	25-29 years	706	2.89	2.68 – 3.10
	30-34 years	539	2.71	2.49 – 2.94
	35-39 years	293	3.15	2.79 – 3.51
	40+ years	73	3.57	2.80 – 4.49
Omphalocele*	<20 years	217	2.21	1.91 – 2.50
	20-24 years	435	1.92	1.74 – 2.10
	25-29 years	469	1.92	1.75 – 2.09
	30-34 years	402	2.02	1.83 – 2.22
	35-39 years	260	2.79	2.45 – 3.13
	40+ years	127	6.21	5.13 – 7.29
Gastroschisis*	<20 years	1,591	16.19	15.40 – 16.99
	20-24 years	1,837	8.09	7.72 – 8.46
	25-29 years	717	2.93	2.72 – 3.15
	30-34 years	234	1.18	1.03 – 1.33
	35-39 years	82	0.88	0.70 – 1.09
	40+ years	22	1.08	0.67 – 1.63
Chromosomal				
Trisomy 21 (Down syndrome)*	<20 years	736	7.49	6.95 – 8.03
	20-24 years	1,569	6.91	6.57 – 7.25
	25-29 years	1,825	7.47	7.12 – 7.81
	30-34 years	2,398	12.08	11.59 – 12.56
	35-39 years	3,306	35.53	34.32 – 36.74
	40+ years	2,440	119.30	114.57 – 124.04
Trisomy 13 (Patau syndrome)*	<20 years	70	0.71	0.56 – 0.90
	20-24 years	195	0.86	0.74 – 0.98
	25-29 years	205	0.84	0.72 – 0.95
	30-34 years	214	1.08	0.93 – 1.22
	35-39 years	224	2.41	2.09 – 2.72
	40+ years	101	4.94	3.98 – 5.90

Birth Defect (Body System)	Mother's Age (at delivery)	Cases (count)	Prevalence (rate)	Confidence Interval (95% for Prevalence)
Trisomy 18 (Edwards syndrome)*	<20 years	127	1.29	1.07 – 1.52
	20-24 years	303	1.33	1.18 – 1.48
	25-29 years	335	1.37	1.22 – 1.52
	30-34 years	347	1.75	1.56 – 1.93
	35-39 years	589	6.33	5.82 – 6.84
	40+ years	499	24.40	22.26 – 26.54
Infants and fetuses with regular reportable birth defects*	<20 years	44,977	457.80	453.57 – 462.03
	20-24 years	107,085	471.61	468.78 – 474.43
	25-29 years	119,463	488.75	485.97 – 491.52
	30-34 years	103,271	520.11	516.94 – 523.28
	35-39 years	56,434	606.55	601.55 – 611.56
	40+ years	15,940	779.37	767.28 – 791.47

Prevalence (rate) is expressed as the number of cases per 10,000 live births.

*Statistically significant difference in prevalence between at least two age groups [$p<0.05$].

Please see the Methods section of the Annual Report for additional information:
https://www.dshs.texas.gov/sites/default/files/birthdefects/annualreport/1999-2021-TBDR-Methods.pdf

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Texas Birth Defects Registry (TBDR) Annual Report

Table 4. Prevalence of Selected Birth Defects by Mother's Race/Ethnicity, Texas, 1999–2021

Birth Defect (Body System)	Mother's Race/Ethnicity	Cases (count)	Prevalence (rate)	Confidence Interval (95% for Prevalence)
Central Nervous System				
Anencephaly*	Non-Hispanic (NH) White	633	2.07	1.90 – 2.23
	NH Black	177	1.75	1.49 – 2.01
	Hispanic	1,254	2.95	2.79 – 3.12
	NH Asian/Pacific Islander	62	1.66	1.27 – 2.13
	NH Am. Indian/AK Native	5	3.03	0.98 – 7.06
Spina bifida (without anencephaly)*	Non-Hispanic (NH) White	1,060	3.46	3.25 – 3.67
	NH Black	269	2.66	2.34 – 2.98
	Hispanic	1,845	4.35	4.15 – 4.55
	NH Asian/Pacific Islander	51	1.36	1.02 – 1.79
	NH Am. Indian/AK Native	6	3.63	1.33 – 7.91
Encephalocele*	Non-Hispanic (NH) White	238	0.78	0.68 – 0.88
	NH Black	127	1.26	1.04 – 1.47
	Hispanic	443	1.04	0.95 – 1.14
	NH Asian/Pacific Islander	21	0.56	0.35 – 0.86
	NH Am. Indian/AK Native	3	1.82	0.37 – 5.31
Microcephaly, severe (head circumference <3rd percentile)*	Non-Hispanic (NH) White	1,044	3.41	3.20 – 3.61
	NH Black	1,004	9.93	9.32 – 10.54
	Hispanic	2,279	5.37	5.15 – 5.59
	NH Asian/Pacific Islander	175	4.68	3.99 – 5.38
	NH Am. Indian/AK Native	11	6.66	3.32 – 11.92
Holoprosencephaly*	Non-Hispanic (NH) White	266	0.87	0.76 – 0.97
	NH Black	102	1.01	0.81 – 1.20
	Hispanic	522	1.23	1.12 – 1.34
	NH Asian/Pacific Islander	19	0.51	0.31 – 0.79
	NH Am. Indian/AK Native	5	3.03	0.98 – 7.06
Hydrocephaly (without spina bifida)*	Non-Hispanic (NH) White	2,460	8.03	7.71 – 8.34
	NH Black	967	9.56	8.96 – 10.17
	Hispanic	3,448	8.12	7.85 – 8.40
	NH Asian/Pacific Islander	204	5.46	4.71 – 6.21
	NH Am. Indian/AK Native	13	7.87	4.19 – 13.46
Eye and Ear				
Anophthalmia*	Non-Hispanic (NH) White	74	0.24	0.19 – 0.30
	NH Black	30	0.30	0.20 – 0.42
	Hispanic	148	0.35	0.29 – 0.40
	NH Asian/Pacific Islander	2	0.05	0.01 – 0.19
	NH Am. Indian/AK Native	0	0.00	0.00 – 2.23
Microphthalmia*	Non-Hispanic (NH) White	804	2.62	2.44 – 2.80
	NH Black	223	2.21	1.92 – 2.50
	Hispanic	1,251	2.95	2.78 – 3.11
	NH Asian/Pacific Islander	75	2.01	1.58 – 2.52
	NH Am. Indian/AK Native	8	4.84	2.09 – 9.54

Birth Defect (Body System)	Mother's Race/Ethnicity	Cases (count)	Prevalence (rate)	Confidence Interval (95% for Prevalence)
Cataract	Non-Hispanic (NH) White	597	1.95	1.79 – 2.10
	NH Black	233	2.30	2.01 – 2.60
	Hispanic	815	1.92	1.79 – 2.05
	NH Asian/Pacific Islander	60	1.61	1.23 – 2.07
	NH Am. Indian/AK Native	3	1.82	0.37 – 5.31
Anotia or microtia*	Non-Hispanic (NH) White	701	2.29	2.12 – 2.46
	NH Black	158	1.56	1.32 – 1.81
	Hispanic	2,181	5.14	4.92 – 5.35
	NH Asian/Pacific Islander	109	2.92	2.37 – 3.46
	NH Am. Indian/AK Native	8	4.84	2.09 – 9.54
Cardiac and Circulatory				
Common truncus*	Non-Hispanic (NH) White	196	0.64	0.55 – 0.73
	NH Black	78	0.77	0.61 – 0.96
	Hispanic	370	0.87	0.78 – 0.96
	NH Asian/Pacific Islander	20	0.54	0.33 – 0.83
	NH Am. Indian/AK Native	1	0.61	0.02 – 3.37
Transposition of the great vessels*	Non-Hispanic (NH) White	1,121	3.66	3.44 – 3.87
	NH Black	229	2.27	1.97 – 2.56
	Hispanic	1,443	3.40	3.22 – 3.58
	NH Asian/Pacific Islander	114	3.05	2.49 – 3.61
	NH Am. Indian/AK Native	6	3.63	1.33 – 7.91
Double outlet right ventricle*	Non-Hispanic (NH) White	617	2.01	1.85 – 2.17
	NH Black	245	2.42	2.12 – 2.73
	Hispanic	1,088	2.56	2.41 – 2.72
	NH Asian/Pacific Islander	72	1.93	1.51 – 2.43
	NH Am. Indian/AK Native	3	1.82	0.37 – 5.31
Tetralogy of Fallot*	Non-Hispanic (NH) White	1,181	3.85	3.63 – 4.07
	NH Black	466	4.61	4.19 – 5.03
	Hispanic	1,614	3.80	3.62 – 3.99
	NH Asian/Pacific Islander	165	4.42	3.74 – 5.09
	NH Am. Indian/AK Native	6	3.63	1.33 – 7.91
Ventricular septal defect*	Non-Hispanic (NH) White	17,007	55.49	54.66 – 56.33
	NH Black	4,953	48.99	47.63 – 50.35
	Hispanic	29,942	70.55	69.75 – 71.35
	NH Asian/Pacific Islander	1,847	49.43	47.17 – 51.68
	NH Am. Indian/AK Native	98	59.33	48.17 – 72.30
Atrial septal defect*	Non-Hispanic (NH) White	20,404	66.58	65.66 – 67.49
	NH Black	7,696	76.12	74.42 – 77.82
	Hispanic	32,827	77.35	76.51 – 78.18
	NH Asian/Pacific Islander	2,020	54.05	51.70 – 56.41
	NH Am. Indian/AK Native	111	67.20	54.70 – 79.70
Atrioventricular septal defect (endocardial cushion defect)*	Non-Hispanic (NH) White	1,457	4.75	4.51 – 5.00
	NH Black	536	5.30	4.85 – 5.75
	Hispanic	1,703	4.01	3.82 – 4.20
	NH Asian/Pacific Islander	107	2.86	2.32 – 3.41
	NH Am. Indian/AK Native	8	4.84	2.09 – 9.54

Birth Defect (Body System)	Mother's Race/Ethnicity	Cases (count)	Prevalence (rate)	Confidence Interval (95% for Prevalence)
Pulmonary valve atresia or stenosis*	Non-Hispanic (NH) White	2,747	8.96	8.63 – 9.30
	NH Black	1,131	11.19	10.53 – 11.84
	Hispanic	4,563	10.75	10.44 – 11.06
	NH Asian/Pacific Islander	251	6.72	5.89 – 7.55
	NH Am. Indian/AK Native	22	13.32	8.35 – 20.16
Tricuspid valve atresia or stenosis*	Non-Hispanic (NH) White	535	1.75	1.60 – 1.89
	NH Black	227	2.25	1.95 – 2.54
	Hispanic	833	1.96	1.83 – 2.10
	NH Asian/Pacific Islander	71	1.90	1.48 – 2.40
	NH Am. Indian/AK Native	3	1.82	0.37 – 5.31
Ebstein anomaly*	Non-Hispanic (NH) White	231	0.75	0.66 – 0.85
	NH Black	44	0.44	0.32 – 0.58
	Hispanic	368	0.87	0.78 – 0.96
	NH Asian/Pacific Islander	28	0.75	0.50 – 1.08
	NH Am. Indian/AK Native	1	0.61	0.02 – 3.37
Aortic valve stenosis*	Non-Hispanic (NH) White	845	2.76	2.57 – 2.94
	NH Black	143	1.41	1.18 – 1.65
	Hispanic	1,062	2.50	2.35 – 2.65
	NH Asian/Pacific Islander	59	1.58	1.20 – 2.04
	NH Am. Indian/AK Native	4	2.42	0.66 – 6.20
Hypoplastic left heart syndrome*	Non-Hispanic (NH) White	780	2.55	2.37 – 2.72
	NH Black	228	2.26	1.96 – 2.55
	Hispanic	896	2.11	1.97 – 2.25
	NH Asian/Pacific Islander	39	1.04	0.74 – 1.43
	NH Am. Indian/AK Native	3	1.82	0.37 – 5.31
Patent ductus arteriosus*	Non-Hispanic (NH) White	15,639	51.03	50.23 – 51.83
	NH Black	5,569	55.08	53.64 – 56.53
	Hispanic	26,767	63.07	62.31 – 63.82
	NH Asian/Pacific Islander	1,760	47.10	44.90 – 49.30
	NH Am. Indian/AK Native	82	49.64	39.48 – 61.62
Coarctation of the aorta*	Non-Hispanic (NH) White	1,794	5.85	5.58 – 6.12
	NH Black	397	3.93	3.54 – 4.31
	Hispanic	2,317	5.46	5.24 – 5.68
	NH Asian/Pacific Islander	140	3.75	3.13 – 4.37
	NH Am. Indian/AK Native	9	5.45	2.49 – 10.34
Respiratory				
Choanal atresia or stenosis*	Non-Hispanic (NH) White	448	1.46	1.33 – 1.60
	NH Black	133	1.32	1.09 – 1.54
	Hispanic	521	1.23	1.12 – 1.33
	NH Asian/Pacific Islander	27	0.72	0.48 – 1.05
	NH Am. Indian/AK Native	1	0.61	0.02 – 3.37
Agenesis, aplasia, or hypoplasia of the lung*	Non-Hispanic (NH) White	756	2.47	2.29 – 2.64
	NH Black	335	3.31	2.96 – 3.67
	Hispanic	1,392	3.28	3.11 – 3.45
	NH Asian/Pacific Islander	73	1.95	1.53 – 2.46
	NH Am. Indian/AK Native	7	4.24	1.70 – 8.73

Birth Defect (Body System)	Mother's Race/Ethnicity	Cases (count)	Prevalence (rate)	Confidence Interval (95% for Prevalence)
Oral Clefts				
Cleft palate alone (without cleft lip)*	Non-Hispanic (NH) White	2,040	6.66	6.37 – 6.95
	NH Black	449	4.44	4.03 – 4.85
	Hispanic	2,431	5.73	5.50 – 5.96
	NH Asian/Pacific Islander	246	6.58	5.76 – 7.41
	NH Am. Indian/AK Native	12	7.26	3.75 – 12.69
Cleft lip (with or without cleft palate)*	Non-Hispanic (NH) White	3,366	10.98	10.61 – 11.35
	NH Black	737	7.29	6.76 – 7.82
	Hispanic	4,862	11.46	11.13 – 11.78
	NH Asian/Pacific Islander	364	9.74	8.74 – 10.74
	NH Am. Indian/AK Native	38	23.01	16.28 – 31.58
Gastrointestinal				
Tracheoesophageal fistula/ esophageal atresia*	Non-Hispanic (NH) White	776	2.53	2.35 – 2.71
	NH Black	194	1.92	1.65 – 2.19
	Hispanic	885	2.09	1.95 – 2.22
	NH Asian/Pacific Islander	62	1.66	1.27 – 2.13
	NH Am. Indian/AK Native	6	3.63	1.33 – 7.91
Pyloric stenosis*	Non-Hispanic (NH) White	5,440	17.75	17.28 – 18.22
	NH Black	663	6.56	6.06 – 7.06
	Hispanic	7,627	17.97	17.57 – 18.37
	NH Asian/Pacific Islander	165	4.42	3.74 – 5.09
	NH Am. Indian/AK Native	22	13.32	8.35 – 20.16
Stenosis or atresia of the small intestine*	Non-Hispanic (NH) White	1,011	3.30	3.10 – 3.50
	NH Black	352	3.48	3.12 – 3.85
	Hispanic	1,539	3.63	3.44 – 3.81
	NH Asian/Pacific Islander	90	2.41	1.94 – 2.96
	NH Am. Indian/AK Native	6	3.63	1.33 – 7.91
Stenosis or atresia of large intestine, rectum, or anal canal*	Non-Hispanic (NH) White	1,560	5.09	4.84 – 5.34
	NH Black	433	4.28	3.88 – 4.69
	Hispanic	2,474	5.83	5.60 – 6.06
	NH Asian/Pacific Islander	165	4.42	3.74 – 5.09
	NH Am. Indian/AK Native	10	6.05	2.90 – 11.13
Hirschsprung disease*	Non-Hispanic (NH) White	527	1.72	1.57 – 1.87
	NH Black	239	2.36	2.06 – 2.66
	Hispanic	406	0.96	0.86 – 1.05
	NH Asian/Pacific Islander	71	1.90	1.48 – 2.40
	NH Am. Indian/AK Native	5	3.03	0.98 – 7.06
Biliary atresia*	Non-Hispanic (NH) White	168	0.55	0.47 – 0.63
	NH Black	95	0.94	0.76 – 1.15
	Hispanic	299	0.70	0.62 – 0.78
	NH Asian/Pacific Islander	46	1.23	0.90 – 1.64
	NH Am. Indian/AK Native	5	3.03	0.98 – 7.06

Birth Defect (Body System)	Mother's Race/Ethnicity	Cases (count)	Prevalence (rate)	Confidence Interval (95% for Prevalence)
Genitourinary				
Hypospadias (among males)*	Non-Hispanic (NH) White	13,468	85.69	84.24 – 87.14
	NH Black	3,890	75.64	73.26 – 78.02
	Hispanic	9,170	42.37	41.50 – 43.24
	NH Asian/Pacific Islander	1,163	60.36	56.89 – 63.83
	NH Am. Indian/AK Native	46	54.10	39.61 – 72.17
Renal agenesis or dysgenesis*	Non-Hispanic (NH) White	1,918	6.26	5.98 – 6.54
	NH Black	664	6.57	6.07 – 7.07
	Hispanic	2,901	6.84	6.59 – 7.08
	NH Asian/Pacific Islander	204	5.46	4.71 – 6.21
	NH Am. Indian/AK Native	13	7.87	4.19 – 13.46
Bladder exstrophy*	Non-Hispanic (NH) White	87	0.28	0.23 – 0.35
	NH Black	19	0.19	0.11 – 0.29
	Hispanic	41	0.10	0.07 – 0.13
	NH Asian/Pacific Islander	8	0.21	0.09 – 0.42
	NH Am. Indian/AK Native	0	0.00	0.00 – 2.23
Musculoskeletal				
Congenital hip dislocation (without hip dysplasia)*	Non-Hispanic (NH) White	901	2.94	2.75 – 3.13
	NH Black	136	1.35	1.12 – 1.57
	Hispanic	1,045	2.46	2.31 – 2.61
	NH Asian/Pacific Islander	70	1.87	1.46 – 2.37
	NH Am. Indian/AK Native	2	1.21	0.15 – 4.37
Talipes equinovarus (clubfoot)*	Non-Hispanic (NH) White	5,279	17.22	16.76 – 17.69
	NH Black	1,700	16.81	16.02 – 17.61
	Hispanic	7,171	16.90	16.50 – 17.29
	NH Asian/Pacific Islander	406	10.86	9.81 – 11.92
	NH Am. Indian/AK Native	42	25.43	18.33 – 34.37
Reduction defects of the upper limbs*	Non-Hispanic (NH) White	1,266	4.13	3.90 – 4.36
	NH Black	431	4.26	3.86 – 4.67
	Hispanic	1,808	4.26	4.06 – 4.46
	NH Asian/Pacific Islander	100	2.68	2.18 – 3.25
	NH Am. Indian/AK Native	17	10.29	6.00 – 16.48
Reduction defects of the lower limbs*	Non-Hispanic (NH) White	589	1.92	1.77 – 2.08
	NH Black	278	2.75	2.43 – 3.07
	Hispanic	809	1.91	1.77 – 2.04
	NH Asian/Pacific Islander	38	1.02	0.72 – 1.40
	NH Am. Indian/AK Native	4	2.42	0.66 – 6.20
Craniosynostosis*	Non-Hispanic (NH) White	2,207	7.20	6.90 – 7.50
	NH Black	257	2.54	2.23 – 2.85
	Hispanic	2,340	5.51	5.29 – 5.74
	NH Asian/Pacific Islander	127	3.40	2.81 – 3.99
	NH Am. Indian/AK Native	7	4.24	1.70 – 8.73
Achondroplasia*	Non-Hispanic (NH) White	142	0.46	0.39 – 0.54
	NH Black	37	0.37	0.26 – 0.50
	Hispanic	113	0.27	0.22 – 0.32
	NH Asian/Pacific Islander	23	0.62	0.39 – 0.92
	NH Am. Indian/AK Native	0	0.00	0.00 – 2.23

Birth Defect (Body System)	Mother's Race/Ethnicity	Cases (count)	Prevalence (rate)	Confidence Interval (95% for Prevalence)
Diaphragmatic hernia*	Non-Hispanic (NH) White	874	2.85	2.66 – 3.04
	NH Black	235	2.32	2.03 – 2.62
	Hispanic	1,271	2.99	2.83 – 3.16
	NH Asian/Pacific Islander	91	2.44	1.96 – 2.99
	NH Am. Indian/AK Native	2	1.21	0.15 – 4.37
Omphalocele*	Non-Hispanic (NH) White	691	2.25	2.09 – 2.42
	NH Black	247	2.44	2.14 – 2.75
	Hispanic	878	2.07	1.93 – 2.21
	NH Asian/Pacific Islander	61	1.63	1.25 – 2.10
	NH Am. Indian/AK Native	7	4.24	1.70 – 8.73
Gastroschisis*	Non-Hispanic (NH) White	1,542	5.03	4.78 – 5.28
	NH Black	338	3.34	2.99 – 3.70
	Hispanic	2,474	5.83	5.60 – 6.06
	NH Asian/Pacific Islander	72	1.93	1.51 – 2.43
	NH Am. Indian/AK Native	7	4.24	1.70 – 8.73
Chromosomal				
Trisomy 21 (Down syndrome)*	Non-Hispanic (NH) White	3,864	12.61	12.21 – 13.01
	NH Black	1,070	10.58	9.95 – 11.22
	Hispanic	6,757	15.92	15.54 – 16.30
	NH Asian/Pacific Islander	420	11.24	10.16 – 12.31
	NH Am. Indian/AK Native	22	13.32	8.35 – 20.16
Trisomy 13 (Patau syndrome)	Non-Hispanic (NH) White	360	1.17	1.05 – 1.30
	NH Black	135	1.34	1.11 – 1.56
	Hispanic	459	1.08	0.98 – 1.18
	NH Asian/Pacific Islander	43	1.15	0.83 – 1.55
	NH Am. Indian/AK Native	1	0.61	0.02 – 3.37
Trisomy 18 (Edwards syndrome)	Non-Hispanic (NH) White	730	2.38	2.21 – 2.55
	NH Black	277	2.74	2.42 – 3.06
	Hispanic	1,054	2.48	2.33 – 2.63
	NH Asian/Pacific Islander	95	2.54	2.06 – 3.11
	NH Am. Indian/AK Native	4	2.42	0.66 – 6.20
Infants & fetuses with regular reportable birth defects*	Non-Hispanic (NH) White	157,888	515.17	512.63 – 517.72
	NH Black	53,131	525.51	521.04 – 529.98
	Hispanic	212,189	499.95	497.82 – 502.07
	NH Asian/Pacific Islander	17,339	463.99	457.08 – 470.90
	NH Am. Indian/AK Native	811	490.98	457.19 – 524.77

Prevalence (rate) is expressed as the number of cases per 10,000 live births.

*Statistically significant difference in prevalence between at least two race/ethnicity groups [p<0.05].

Please see the Methods section of the Annual Report for additional information:
https://www.dshs.texas.gov/sites/default/files/birthdefects/annualreport/1999-2021-TBDR-Methods.pdf

Prepared by: Texas Birth Defects Registry, Birth Defects Epidemiology and Surveillance Branch, Texas Department of State Health Services, October 2024.

Texas Birth Defects Registry (TBDR) Annual Report
Table 5. Prevalence of Selected Birth Defects by Infant/Fetal Sex, Texas, 1999–2021

Birth Defect (Body System)	Sex	Cases (count)	Prevalence (rate)	Confidence Interval (95% for Prevalence)
Central Nervous System				
Anencephaly*	Male	911	2.02	1.89 – 2.15
	Female	1,080	2.50	2.36 – 2.65
Spina bifida (without anencephaly)*	Male	1,596	3.54	3.37 – 3.71
	Female	1,642	3.81	3.62 – 3.99
Encephalocele*	Male	398	0.88	0.80 – 0.97
	Female	437	1.01	0.92 – 1.11
Microcephaly, severe (head circumference <3rd percentile)*	Male	2,011	4.46	4.27 – 4.66
	Female	2,561	5.94	5.71 – 6.17
Holoprosencephaly*	Male	385	0.85	0.77 – 0.94
	Female	522	1.21	1.11 – 1.31
Hydrocephaly (without spina bifida)*	Male	4,033	8.95	8.67 – 9.22
	Female	3,120	7.24	6.98 – 7.49
Eye and Ear				
Anophthalmia	Male	113	0.25	0.20 – 0.30
	Female	134	0.31	0.26 – 0.36
Microphthalmia*	Male	1,127	2.50	2.35 – 2.65
	Female	1,260	2.92	2.76 – 3.08
Cataract	Male	876	1.94	1.81 – 2.07
	Female	846	1.96	1.83 – 2.09
Anotia or microtia*	Male	1,808	4.01	3.83 – 4.20
	Female	1,367	3.17	3.00 – 3.34
Cardiac and Circulatory				
Common truncus	Male	332	0.74	0.66 – 0.82
	Female	340	0.79	0.70 – 0.87
Transposition of the great vessels*	Male	1,921	4.26	4.07 – 4.45
	Female	1,015	2.35	2.21 – 2.50
Double outlet right ventricle*	Male	1,176	2.61	2.46 – 2.76
	Female	870	2.02	1.88 – 2.15
Tetralogy of Fallot*	Male	1,901	4.22	4.03 – 4.41
	Female	1,580	3.66	3.48 – 3.85
Ventricular septal defect*	Male	24,802	55.03	54.34 – 55.71
	Female	29,598	68.65	67.87 – 69.43
Atrial septal defect*	Male	32,073	71.16	70.38 – 71.94
	Female	31,680	73.48	72.67 – 74.29
Atrioventricular septal defect (endocardial cushion defect)*	Male	1,840	4.08	3.90 – 4.27
	Female	2,004	4.65	4.44 – 4.85
Pulmonary valve atresia or stenosis*	Male	4,059	9.01	8.73 – 9.28
	Female	4,747	11.01	10.70 – 11.32
Tricuspid valve atresia or stenosis	Male	896	1.99	1.86 – 2.12
	Female	788	1.83	1.70 – 1.96
Ebstein anomaly	Male	341	0.76	0.68 – 0.84
	Female	335	0.78	0.69 – 0.86

Birth Defect (Body System)	Sex	Cases (count)	Prevalence (rate)	Confidence Interval (95% for Prevalence)
Aortic valve stenosis*	Male	1,321	2.93	2.77 – 3.09
	Female	807	1.87	1.74 – 2.00
Hypoplastic left heart syndrome*	Male	1,191	2.64	2.49 – 2.79
	Female	767	1.78	1.65 – 1.90
Patent ductus arteriosus	Male	25,757	57.15	56.45 – 57.85
	Female	24,553	56.95	56.24 – 57.66
Coarctation of the aorta*	Male	2,736	6.07	5.84 – 6.30
	Female	1,957	4.54	4.34 – 4.74
Respiratory				
Choanal atresia or stenosis	Male	567	1.26	1.15 – 1.36
	Female	571	1.32	1.22 – 1.43
Agenesis, aplasia, or hypoplasia of the lung*	Male	1,449	3.21	3.05 – 3.38
	Female	1,117	2.59	2.44 – 2.74
Oral Clefts				
Cleft palate alone (without cleft lip)*	Male	2,348	5.21	5.00 – 5.42
	Female	2,888	6.70	6.45 – 6.94
Cleft lip (with or without cleft palate)*	Male	5,717	12.68	12.36 – 13.01
	Female	3,729	8.65	8.37 – 8.93
Gastrointestinal				
Tracheoesophageal fistula/esophageal atresia	Male	1,026	2.28	2.14 – 2.42
	Female	914	2.12	1.98 – 2.26
Pyloric stenosis*	Male	11,606	25.75	25.28 – 26.22
	Female	2,399	5.56	5.34 – 5.79
Stenosis or atresia of the small intestine*	Male	1,465	3.25	3.08 – 3.42
	Female	1,566	3.63	3.45 – 3.81
Stenosis or atresia of large intestine, rectum, or anal canal*	Male	2,563	5.69	5.47 – 5.91
	Female	2,063	4.78	4.58 – 4.99
Hirschsprung disease*	Male	969	2.15	2.01 – 2.29
	Female	298	0.69	0.61 – 0.77
Biliary atresia*	Male	258	0.57	0.50 – 0.64
	Female	365	0.85	0.76 – 0.93
Genitourinary				
Hypospadias (among males)	Male	28,118	62.39	61.66 – 63.12
	Female	0	0.00	0.00 – 0.01
Renal agenesis or dysgenesis*	Male	3,371	7.48	7.23 – 7.73
	Female	2,367	5.49	5.27 – 5.71
Bladder exstrophy	Male	79	0.18	0.14 – 0.22
	Female	72	0.17	0.13 – 0.21
Musculoskeletal				
Congenital hip dislocation (without hip dysplasia)*	Male	667	1.48	1.37 – 1.59
	Female	1,502	3.48	3.31 – 3.66
Talipes equinovarus (clubfoot)*	Male	8,999	19.97	19.55 – 20.38
	Female	5,724	13.28	12.93 – 13.62
Reduction defects of the upper limbs*	Male	1,986	4.41	4.21 – 4.60
	Female	1,635	3.79	3.61 – 3.98

Birth Defect (Body System)	Sex	Cases (count)	Prevalence (rate)	Confidence Interval (95% for Prevalence)
Reduction defects of the lower limbs*	Male	919	2.04	1.91 – 2.17
	Female	789	1.83	1.70 – 1.96
Craniosynostosis*	Male	3,231	7.17	6.92 – 7.42
	Female	1,757	4.08	3.88 – 4.27
Achondroplasia	Male	157	0.35	0.29 – 0.40
	Female	165	0.38	0.32 – 0.44
Diaphragmatic hernia*	Male	1,406	3.12	2.96 – 3.28
	Female	1,076	2.50	2.35 – 2.64
Omphalocele*	Male	1,047	2.32	2.18 – 2.46
	Female	804	1.86	1.74 – 1.99
Gastroschisis	Male	2,315	5.14	4.93 – 5.35
	Female	2,136	4.95	4.74 – 5.16
Chromosomal				
Trisomy 21 (Down syndrome)*	Male	6,545	14.52	14.17 – 14.87
	Female	5,661	13.13	12.79 – 13.47
Trisomy 13 (Patau syndrome)	Male	514	1.14	1.04 – 1.24
	Female	475	1.10	1.00 – 1.20
Trisomy 18 (Edwards syndrome)*	Male	923	2.05	1.92 – 2.18
	Female	1,217	2.82	2.66 – 2.98
Infants and fetuses with regular reportable birth defects*	Male	265,696	589.51	587.27 – 591.75
	Female	180,291	418.17	416.24 – 420.10

Prevalence (rate) is expressed as the number of cases per 10,000 live births.

*Statistically significant difference in prevalence between sexes [$p<0.05$].

Please see the Methods section of the Annual Report for additional information:
https://www.dshs.texas.gov/sites/default/files/birthdefects/annualreport/1999-2021-TBDR-Methods.pdf

Prepared by: Texas Birth Defects Registry, Birth Defects Epidemiology and Surveillance Branch, Texas Department of State Health Services, October 2024.

Texas Birth Defects Registry (TBDR) Annual Report
Table 6. Pregnancy Outcome Distribution for Selected Birth Defects, Texas, 1999–2021

	Live Birth		Spontaneous Fetal Death		Induced Pregnancy Termination		Unspecified Fetal Death/Termination	
Birth Defect (Body System)	Cases	% of Total	Cases	% of Total	Cases	% of Total	Cases	% of Total
Central Nervous System								
Anencephaly	811	37.43%	691	31.89%	637	29.40%	28	1.29%
Spina bifida (without anencephaly)	2,998	91.54%	127	3.88%	145	4.43%	5	0.15%
Encephalocele	665	77.87%	89	10.42%	97	11.36%	3	0.35%
Microcephaly, severe (head circ. <3rd percentile)	4,547	99.45%	25	0.55%	0	0.00%	0	0.00%
Holoprosencephaly	786	85.44%	65	7.07%	69	7.50%	0	0.00%
Hydrocephaly (without spina bifida)	6,912	96.35%	169	2.36%	85	1.19%	8	0.11%
Eye and Ear								
Anophthalmia	194	75.78%	36	14.06%	24	9.38%	2	0.78%
Microphthalmia	2,349	98.24%	28	1.17%	13	0.54%	1	0.04%
Cataract	1,720	99.88%	2	0.12%	0	0.00%	0	0.00%
Anotia or microtia	3,121	98.05%	46	1.45%	15	0.47%	1	0.03%
Cardiac and Circulatory								
Common truncus	651	96.88%	18	2.68%	3	0.45%	0	0.00%
Transposition of the great vessels	2,912	99.08%	21	0.72%	5	0.17%	1	0.03%
Double outlet right ventricle	2,029	99.12%	15	0.73%	2	0.10%	1	0.05%
Tetralogy of Fallot	3,461	99.31%	22	0.63%	2	0.06%	0	0.00%
Ventricular septal defect	54,249	99.68%	119	0.22%	52	0.10%	5	0.01%
Atrial septal defect	63,678	99.86%	76	0.12%	13	0.02%	1	0.00%
Atrioventricular septal defect (endocardial cushion defect)	3,791	98.44%	38	0.99%	19	0.49%	3	0.08%
Pulmonary valve atresia or stenosis	8,782	99.69%	21	0.24%	6	0.07%	0	0.00%
Tricuspid valve atresia or stenosis	1,674	99.35%	9	0.53%	1	0.06%	1	0.06%
Ebstein anomaly	666	98.52%	8	1.18%	2	0.30%	0	0.00%
Aortic valve stenosis	2,115	99.30%	9	0.42%	4	0.19%	2	0.09%
Hypoplastic left heart syndrome	1,929	98.27%	23	1.17%	9	0.46%	2	0.10%
Patent ductus arteriosus	50,308	99.96%	16	0.03%	2	0.00%	0	0.00%
Coarctation of the aorta	4,652	99.11%	37	0.79%	5	0.11%	0	0.00%

Birth Defect (Body System)	Live Birth		Spontaneous Fetal Death		Induced Pregnancy Termination		Unspecified Fetal Death/Termination	
	Cases	% of Total	Cases	% of Total	Cases	% of Total	Cases	% of Total
Respiratory								
Choanal atresia or stenosis	1,122	98.34%	14	1.23%	4	0.35%	1	0.09%
Agenesis, aplasia, or hypoplasia of the lung	2,297	88.72%	190	7.34%	97	3.75%	5	0.19%
Oral Clefts								
Cleft palate alone (without cleft lip)	5,089	96.92%	115	2.19%	43	0.82%	4	0.08%
Cleft lip (with or without cleft palate)	8,855	93.46%	429	4.53%	177	1.87%	14	0.15%
Gastrointestinal								
Tracheoesophageal fistula/esophageal atresia	1,927	99.13%	15	0.77%	2	0.10%	0	0.00%
Pyloric stenosis	13,999	99.95%	6	0.04%	1	0.01%	0	0.00%
Stenosis or atresia of the small intestine	2,990	98.62%	36	1.19%	2	0.07%	4	0.13%
Stenosis or atresia of large intestine, rectum, anal canal	4,449	94.62%	172	3.66%	73	1.55%	8	0.17%
Hirschsprung disease	1,268	100.0%	0	0.00%	0	0.00%	0	0.00%
Biliary atresia	619	99.36%	3	0.48%	1	0.16%	0	0.00%
Genitourinary								
Hypospadias	28,123	99.92%	16	0.06%	8	0.03%	0	0.00%
Renal agenesis or dysgenesis	5,419	93.74%	198	3.43%	153	2.65%	11	0.19%
Bladder exstrophy	148	95.48%	5	3.23%	1	0.65%	1	0.65%
Musculoskeletal								
Congenital hip dislocation (without hip dysplasia)	2,159	99.31%	12	0.55%	2	0.09%	1	0.05%
Talipes equinovarus (clubfoot)	14,075	95.20%	496	3.36%	199	1.35%	14	0.09%
Reduction defects of the upper limbs	3,338	91.28%	220	6.02%	91	2.49%	8	0.22%
Reduction defects of the lower limbs	1,517	86.98%	154	8.83%	68	3.90%	5	0.29%
Craniosynostosis	4,982	99.86%	4	0.08%	3	0.06%	0	0.00%
Achondroplasia	318	98.76%	1	0.31%	2	0.62%	1	0.31%
Diaphragmatic hernia	2,416	97.07%	47	1.89%	23	0.92%	3	0.12%
Omphalocele	1,463	76.60%	302	15.81%	135	7.07%	10	0.52%
Gastroschisis	4,111	91.68%	302	6.74%	65	1.45%	6	0.13%

Birth Defect (Body System)	Live Birth		Spontaneous Fetal Death		Induced Pregnancy Termination		Unspecified Fetal Death/Termination	
	Cases	% of Total	Cases	% of Total	Cases	% of Total	Cases	% of Total
Chromosomal								
Trisomy 21 (Down syndrome)	11,572	94.29%	380	3.10%	303	2.47%	18	0.15%
Trisomy 13 (Patau syndrome)	673	66.57%	190	18.79%	143	14.14%	5	0.49%
Trisomy 18 (Edwards syndrome)	1,234	56.12%	558	25.38%	389	17.69%	18	0.82%
Infants & fetuses with regular reportable birth defects	436,600	97.63%	7,212	1.61%	3,169	0.71%	233	0.05%

Please see the Methods section of the Annual Report for additional information: https://www.dshs.texas.gov/sites/default/files/birthdefects/annualreport/1999-2021-TBDR-Methods.pdf

Prepared by: Texas Birth Defects Registry, Birth Defects Epidemiology and Surveillance Branch, Texas Department of State Health Services, October 2024.

Texas Birth Defects Registry (TBDR) Annual Report
Table R1. Prevalence of Selected Birth Defects, Region 1, 1999–2021

Birth Defect (Body System)	Cases (count)	Prevalence (rate)	Confidence Interval (95% for Prevalence)
Central Nervous System			
Anencephaly	56	1.97	1.49 – 2.56
Spina bifida (without anencephaly)	99	3.49	2.84 – 4.25
Encephalocele	29	1.02	0.68 – 1.47
Microcephaly, severe (head circ. <3rd percentile)	101	3.56	2.86 – 4.25
Holoprosencephaly	40	1.41	1.01 – 1.92
Hydrocephaly (without spina bifida)	237	8.35	7.29 – 9.41
Eye and Ear			
Anophthalmia	8	0.28	0.12 – 0.56
Microphthalmia	73	2.57	2.02 – 3.23
Cataract	46	1.62	1.19 – 2.16
Anotia or microtia	105	3.70	2.99 – 4.41
Cardiac and Circulatory			
Common truncus	20	0.70	0.43 – 1.09
Transposition of the great vessels	90	3.17	2.55 – 3.90
Double outlet right ventricle	66	2.33	1.80 – 2.96
Tetralogy of Fallot	110	3.88	3.15 – 4.60
Ventricular septal defect	1,690	59.55	56.71 – 62.39
Atrial septal defect	2,815	99.19	95.53 – 102.86
Atrioventricular septal defect (endocardial cushion defect)	138	4.86	4.05 – 5.67
Pulmonary valve atresia or stenosis	210	7.40	6.40 – 8.40
Tricuspid valve atresia or stenosis	69	2.43	1.89 – 3.08
Ebstein anomaly	22	0.78	0.49 – 1.17
Aortic valve stenosis	57	2.01	1.52 – 2.60
Hypoplastic left heart syndrome	70	2.47	1.92 – 3.12
Patent ductus arteriosus	1,982	69.84	66.77 – 72.92
Coarctation of the aorta	196	6.91	5.94 – 7.87
Respiratory			
Choanal atresia or stenosis	35	1.23	0.86 – 1.72
Agenesis, aplasia, or hypoplasia of the lung	58	2.04	1.55 – 2.64
Oral Clefts			
Cleft palate alone (without cleft lip)	172	6.06	5.16 – 6.97
Cleft lip (with or without cleft palate)	384	13.53	12.18 – 14.88
Gastrointestinal			
Tracheoesophageal fistula/esophageal atresia	69	2.43	1.89 – 3.08
Pyloric stenosis	479	16.88	15.37 – 18.39
Stenosis or atresia of the small intestine	103	3.63	2.93 – 4.33
Stenosis or atresia of large intestine, rectum, anal canal	158	5.57	4.70 – 6.44
Hirschsprung disease	38	1.34	0.95 – 1.84
Biliary atresia	22	0.78	0.49 – 1.17
Genitourinary			
Hypospadias (among males)	822	56.74	52.86 – 60.62
Renal agenesis or dysgenesis	209	7.36	6.37 – 8.36
Bladder exstrophy	1	0.04	0.00 – 0.20

Birth Defect (Body System)	Cases (count)	Prevalence (rate)	Confidence Interval (95% for Prevalence)
Musculoskeletal			
Congenital hip dislocation (without hip dysplasia)	64	2.26	1.74 – 2.88
Talipes equinovarus (clubfoot)	628	22.13	20.40 – 23.86
Reduction defects of the upper limbs	130	4.58	3.79 – 5.37
Reduction defects of the lower limbs	72	2.54	1.99 – 3.20
Craniosynostosis	199	7.01	6.04 – 7.99
Achondroplasia	14	0.49	0.27 – 0.83
Diaphragmatic hernia	86	3.03	2.42 – 3.74
Omphalocele	43	1.52	1.10 – 2.04
Gastroschisis	182	6.41	5.48 – 7.34
Chromosomal			
Trisomy 21 (Down syndrome)	340	11.98	10.71 – 13.25
Trisomy 13 (Patau syndrome)	33	1.16	0.80 – 1.63
Trisomy 18 (Edwards syndrome)	57	2.01	1.52 – 2.60
Infants & fetuses with regular reportable birth defects	14,107	497.09	488.89 – 505.30

Prevalence (rate) is expressed as the number of cases per 10,000 live births.

Please see the Methods section of the Annual Report for additional information:
https://www.dshs.texas.gov/sites/default/files/birthdefects/annualreport/1999-2021-TBDR-Methods.pdf

Prepared by: Texas Birth Defects Registry, Birth Defects Epidemiology and Surveillance Branch, Texas Department of State Health Services, October 2024.

Texas Birth Defects Registry (TBDR) Annual Report
Table R2. Prevalence of Selected Birth Defects, Region 2, 1999–2021

Birth Defect (Body System)	Cases (count)	Prevalence (rate)	Confidence Interval (95% for Prevalence)
Central Nervous System			
Anencephaly	44	2.69	1.96 – 3.62
Spina bifida (without anencephaly)	80	4.90	3.88 – 6.09
Encephalocele	16	0.98	0.56 – 1.59
Microcephaly, severe (head circ. <3rd percentile)	52	3.18	2.38 – 4.17
Holoprosencephaly	15	0.92	0.51 – 1.51
Hydrocephaly (without spina bifida)	126	7.71	6.37 – 9.06
Eye and Ear			
Anophthalmia	2	0.12	0.01 – 0.44
Microphthalmia	43	2.63	1.90 – 3.55
Cataract	29	1.78	1.19 – 2.55
Anotia or microtia	51	3.12	2.32 – 4.10
Cardiac and Circulatory			
Common truncus	14	0.86	0.47 – 1.44
Transposition of the great vessels	61	3.73	2.86 – 4.80
Double outlet right ventricle	37	2.26	1.59 – 3.12
Tetralogy of Fallot	53	3.24	2.43 – 4.24
Ventricular septal defect	929	56.87	53.21 – 60.52
Atrial septal defect	1,498	91.69	87.05 – 96.34
Atrioventricular septal defect (endocardial cushion defect)	67	4.10	3.18 – 5.21
Pulmonary valve atresia or stenosis	158	9.67	8.16 – 11.18
Tricuspid valve atresia or stenosis	34	2.08	1.44 – 2.91
Ebstein anomaly	11	0.67	0.34 – 1.20
Aortic valve stenosis	43	2.63	1.90 – 3.55
Hypoplastic left heart syndrome	50	3.06	2.27 – 4.03
Patent ductus arteriosus	835	51.11	47.64 – 54.58
Coarctation of the aorta	87	5.33	4.27 – 6.57
Respiratory			
Choanal atresia or stenosis	16	0.98	0.56 – 1.59
Agenesis, aplasia, or hypoplasia of the lung	28	1.71	1.14 – 2.48
Oral Clefts			
Cleft palate alone (without cleft lip)	119	7.28	5.98 – 8.59
Cleft lip (with or without cleft palate)	220	13.47	11.69 – 15.25
Gastrointestinal			
Tracheoesophageal fistula/esophageal atresia	41	2.51	1.80 – 3.40
Pyloric stenosis	345	21.12	18.89 – 23.35
Stenosis or atresia of the small intestine	66	4.04	3.12 – 5.14
Stenosis or atresia of large intestine, rectum, anal canal	94	5.75	4.65 – 7.04
Hirschsprung disease	28	1.71	1.14 – 2.48
Biliary atresia	11	0.67	0.34 – 1.20
Genitourinary			
Hypospadias (among males)	8	0.49	0.21 – 0.96
Renal agenesis or dysgenesis	74	4.53	3.56 – 5.69
Bladder exstrophy	3	0.18	0.04 – 0.54

Birth Defect (Body System)	Cases (count)	Prevalence (rate)	Confidence Interval (95% for Prevalence)
Musculoskeletal			
Congenital hip dislocation (without hip dysplasia)	37	2.26	1.59 – 3.12
Talipes equinovarus (clubfoot)	302	18.49	16.40 – 20.57
Reduction defects of the upper limbs	70	4.28	3.34 – 5.41
Reduction defects of the lower limbs	24	1.47	0.94 – 2.19
Craniosynostosis	122	7.47	6.14 – 8.79
Achondroplasia	9	0.55	0.25 – 1.05
Diaphragmatic hernia	51	3.12	2.32 – 4.10
Omphalocele	32	1.96	1.34 – 2.77
Gastroschisis	113	6.92	5.64 – 8.19
Chromosomal			
Trisomy 21 (Down syndrome)	204	12.49	10.77 – 14.20
Trisomy 13 (Patau syndrome)	17	1.04	0.61 – 1.67
Trisomy 18 (Edwards syndrome)	28	1.71	1.14 – 2.48
Infants & fetuses with regular reportable birth defects	7,224	442.19	431.99 – 452.39

Prevalence (rate) is expressed as the number of cases per 10,000 live births.

Please see the Methods section of the Annual Report for additional information:
https://www.dshs.texas.gov/sites/default/files/birthdefects/annualreport/1999-2021-TBDR-Methods.pdf

Prepared by: Texas Birth Defects Registry, Birth Defects Epidemiology and Surveillance Branch, Texas Department of State Health Services, October 2024.

Texas Birth Defects Registry (TBDR) Annual Report
Table R3. Prevalence of Selected Birth Defects, Region 3, 1999–2021

Birth Defect (Body System)	Cases (count)	Prevalence (rate)	Confidence Interval (95% for Prevalence)
Central Nervous System			
Anencephaly	659	2.80	2.58 – 3.01
Spina bifida (without anencephaly)	905	3.84	3.59 – 4.09
Encephalocele	257	1.09	0.96 – 1.22
Microcephaly, severe (head circ. <3rd percentile)	1,775	7.54	7.19 – 7.89
Holoprosencephaly	245	1.04	0.91 – 1.17
Hydrocephaly (without spina bifida)	2,047	8.69	8.32 – 9.07
Eye and Ear			
Anophthalmia	79	0.34	0.27 – 0.42
Microphthalmia	661	2.81	2.59 – 3.02
Cataract	683	2.90	2.68 – 3.12
Anotia or microtia	885	3.76	3.51 – 4.01
Cardiac and Circulatory			
Common truncus	153	0.65	0.55 – 0.75
Transposition of the great vessels	810	3.44	3.20 – 3.68
Double outlet right ventricle	574	2.44	2.24 – 2.64
Tetralogy of Fallot	915	3.89	3.63 – 4.14
Ventricular septal defect	14,420	61.23	60.23 – 62.23
Atrial septal defect	16,123	68.46	67.41 – 69.52
Atrioventricular septal defect (endocardial cushion defect)	1,139	4.84	4.56 – 5.12
Pulmonary valve atresia or stenosis	2,598	11.03	10.61 – 11.46
Tricuspid valve atresia or stenosis	452	1.92	1.74 – 2.10
Ebstein anomaly	144	0.61	0.51 – 0.71
Aortic valve stenosis	541	2.30	2.10 – 2.49
Hypoplastic left heart syndrome	580	2.46	2.26 – 2.66
Patent ductus arteriosus	13,128	55.75	54.79 – 56.70
Coarctation of the aorta	1,180	5.01	4.72 – 5.30
Respiratory			
Choanal atresia or stenosis	361	1.53	1.37 – 1.69
Agenesis, aplasia, or hypoplasia of the lung	635	2.70	2.49 – 2.91
Oral Clefts			
Cleft palate alone (without cleft lip)	1,505	6.39	6.07 – 6.71
Cleft lip (with or without cleft palate)	2,551	10.83	10.41 – 11.25
Gastrointestinal			
Tracheoesophageal fistula/esophageal atresia	560	2.38	2.18 – 2.57
Pyloric stenosis	3,690	15.67	15.16 – 16.17
Stenosis or atresia of the small intestine	860	3.65	3.41 – 3.90
Stenosis or atresia of large intestine, rectum, anal canal	1,183	5.02	4.74 – 5.31
Hirschsprung disease	368	1.56	1.40 – 1.72
Biliary atresia	172	0.73	0.62 – 0.84
Genitourinary			
Hypospadias (among males)	8,453	70.13	68.63 – 71.62
Renal agenesis or dysgenesis	1,586	6.73	6.40 – 7.07
Bladder exstrophy	47	0.20	0.15 – 0.27

Birth Defect (Body System)	Cases (count)	Prevalence (rate)	Confidence Interval (95% for Prevalence)
Musculoskeletal			
Congenital hip dislocation (without hip dysplasia)	632	2.68	2.47 – 2.89
Talipes equinovarus (clubfoot)	4,033	17.13	16.60 – 17.65
Reduction defects of the upper limbs	1,085	4.61	4.33 – 4.88
Reduction defects of the lower limbs	490	2.08	1.90 – 2.26
Craniosynostosis	1,505	6.39	6.07 – 6.71
Achondroplasia	93	0.39	0.32 – 0.48
Diaphragmatic hernia	670	2.85	2.63 – 3.06
Omphalocele	583	2.48	2.27 – 2.68
Gastroschisis	1,060	4.50	4.23 – 4.77
Chromosomal			
Trisomy 21 (Down syndrome)	3,611	15.33	14.83 – 15.83
Trisomy 13 (Patau syndrome)	314	1.33	1.19 – 1.48
Trisomy 18 (Edwards syndrome)	714	3.03	2.81 – 3.25
Infants & fetuses with regular reportable birth defects	137,929	585.70	582.61 – 588.79

Prevalence (rate) is expressed as the number of cases per 10,000 live births.

Please see the Methods section of the Annual Report for additional information:
https://www.dshs.texas.gov/sites/default/files/birthdefects/annualreport/1999-2021-TBDR-Methods.pdf

Prepared by: Texas Birth Defects Registry, Birth Defects Epidemiology and Surveillance Branch, Texas Department of State Health Services, October 2024.

Texas Birth Defects Registry (TBDR) Annual Report
Table R4. Prevalence of Selected Birth Defects, Region 4, 1999–2021

Birth Defect (Body System)	Cases (count)	Prevalence (rate)	Confidence Interval (95% for Prevalence)
Central Nervous System			
Anencephaly	108	3.27	2.66 – 3.89
Spina bifida (without anencephaly)	110	3.33	2.71 – 3.96
Encephalocele	32	0.97	0.66 – 1.37
Microcephaly, severe (head circ. <3rd percentile)	134	4.06	3.37 – 4.75
Holoprosencephaly	27	0.82	0.54 – 1.19
Hydrocephaly (without spina bifida)	277	8.39	7.41 – 9.38
Eye and Ear			
Anophthalmia	6	0.18	0.07 – 0.40
Microphthalmia	77	2.33	1.84 – 2.92
Cataract	58	1.76	1.33 – 2.27
Anotia or microtia	93	2.82	2.27 – 3.45
Cardiac and Circulatory			
Common truncus	27	0.82	0.54 – 1.19
Transposition of the great vessels	108	3.27	2.66 – 3.89
Double outlet right ventricle	59	1.79	1.36 – 2.31
Tetralogy of Fallot	131	3.97	3.29 – 4.65
Ventricular septal defect	1,360	41.22	39.03 – 43.41
Atrial septal defect	1,497	45.37	43.07 – 47.67
Atrioventricular septal defect (endocardial cushion defect)	137	4.15	3.46 – 4.85
Pulmonary valve atresia or stenosis	277	8.39	7.41 – 9.38
Tricuspid valve atresia or stenosis	63	1.91	1.47 – 2.44
Ebstein anomaly	17	0.52	0.30 – 0.82
Aortic valve stenosis	59	1.79	1.36 – 2.31
Hypoplastic left heart syndrome	84	2.55	2.03 – 3.15
Patent ductus arteriosus	1,290	39.09	36.96 – 41.23
Coarctation of the aorta	156	4.73	3.99 – 5.47
Respiratory			
Choanal atresia or stenosis	54	1.64	1.23 – 2.14
Agenesis, aplasia, or hypoplasia of the lung	82	2.49	1.98 – 3.08
Oral Clefts			
Cleft palate alone (without cleft lip)	218	6.61	5.73 – 7.48
Cleft lip (with or without cleft palate)	361	10.94	9.81 – 12.07
Gastrointestinal			
Tracheoesophageal fistula/esophageal atresia	51	1.55	1.15 – 2.03
Pyloric stenosis	585	17.73	16.29 – 19.17
Stenosis or atresia of the small intestine	110	3.33	2.71 – 3.96
Stenosis or atresia of large intestine, rectum, anal canal	140	4.24	3.54 – 4.95
Hirschsprung disease	58	1.76	1.33 – 2.27
Biliary atresia	19	0.58	0.35 – 0.90
Genitourinary			
Hypospadias (among males)	22	0.67	0.42 – 1.01
Renal agenesis or dysgenesis	190	5.76	4.94 – 6.58
Bladder exstrophy	8	0.24	0.10 – 0.48

Birth Defect (Body System)	Cases (count)	Prevalence (rate)	Confidence Interval (95% for Prevalence)
Musculoskeletal			
Congenital hip dislocation (without hip dysplasia)	45	1.36	0.99 – 1.82
Talipes equinovarus (clubfoot)	550	16.67	15.28 – 18.06
Reduction defects of the upper limbs	139	4.21	3.51 – 4.91
Reduction defects of the lower limbs	84	2.55	2.03 – 3.15
Craniosynostosis	166	5.03	4.27 – 5.80
Achondroplasia	14	0.42	0.23 – 0.71
Diaphragmatic hernia	79	2.39	1.90 – 2.98
Omphalocele	65	1.97	1.52 – 2.51
Gastroschisis	166	5.03	4.27 – 5.80
Chromosomal			
Trisomy 21 (Down syndrome)	406	12.30	11.11 – 13.50
Trisomy 13 (Patau syndrome)	31	0.94	0.64 – 1.33
Trisomy 18 (Edwards syndrome)	75	2.27	1.79 – 2.85
Infants & fetuses with regular reportable birth defects	14,598	442.41	435.23 – 449.58

Prevalence (rate) is expressed as the number of cases per 10,000 live births.

Please see the Methods section of the Annual Report for additional information:
https://www.dshs.texas.gov/sites/default/files/birthdefects/annualreport/1999-2021-TBDR-Methods.pdf

Prepared by: Texas Birth Defects Registry, Birth Defects Epidemiology and Surveillance Branch, Texas Department of State Health Services, October 2024.

Texas Birth Defects Registry (TBDR) Annual Report
Table R5. Prevalence of Selected Birth Defects, Region 5, 1999–2021

Birth Defect (Body System)	Cases (count)	Prevalence (rate)	Confidence Interval (95% for Prevalence)
Central Nervous System			
Anencephaly	45	1.97	1.44 – 2.64
Spina bifida (without anencephaly)	80	3.50	2.78 – 4.36
Encephalocele	19	0.83	0.50 – 1.30
Microcephaly, severe (head circ. <3rd percentile)	71	3.11	2.43 – 3.92
Holoprosencephaly	23	1.01	0.64 – 1.51
Hydrocephaly (without spina bifida)	175	7.66	6.53 – 8.80
Eye and Ear			
Anophthalmia	11	0.48	0.24 – 0.86
Microphthalmia	45	1.97	1.44 – 2.64
Cataract	32	1.40	0.96 – 1.98
Anotia or microtia	39	1.71	1.21 – 2.33
Cardiac and Circulatory			
Common truncus	19	0.83	0.50 – 1.30
Transposition of the great vessels	75	3.28	2.58 – 4.12
Double outlet right ventricle	53	2.32	1.74 – 3.03
Tetralogy of Fallot	79	3.46	2.74 – 4.31
Ventricular septal defect	1,010	44.21	41.49 – 46.94
Atrial septal defect	1,290	56.47	53.39 – 59.55
Atrioventricular septal defect (endocardial cushion defect)	108	4.73	3.84 – 5.62
Pulmonary valve atresia or stenosis	159	6.96	5.88 – 8.04
Tricuspid valve atresia or stenosis	40	1.75	1.25 – 2.38
Ebstein anomaly	18	0.79	0.47 – 1.25
Aortic valve stenosis	40	1.75	1.25 – 2.38
Hypoplastic left heart syndrome	45	1.97	1.44 – 2.64
Patent ductus arteriosus	829	36.29	33.82 – 38.76
Coarctation of the aorta	110	4.82	3.92 – 5.72
Respiratory			
Choanal atresia or stenosis	29	1.27	0.85 – 1.82
Agenesis, aplasia, or hypoplasia of the lung	71	3.11	2.43 – 3.92
Oral Clefts			
Cleft palate alone (without cleft lip)	137	6.00	4.99 – 7.00
Cleft lip (with or without cleft palate)	230	10.07	8.77 – 11.37
Gastrointestinal			
Tracheoesophageal fistula/esophageal atresia	35	1.53	1.07 – 2.13
Pyloric stenosis	325	14.23	12.68 – 15.77
Stenosis or atresia of the small intestine	77	3.37	2.66 – 4.21
Stenosis or atresia of large intestine, rectum, anal canal	98	4.29	3.48 – 5.23
Hirschsprung disease	42	1.84	1.33 – 2.49
Biliary atresia	14	0.61	0.34 – 1.03
Genitourinary			
Hypospadias (among males)	721	61.64	57.14 – 66.14
Renal agenesis or dysgenesis	134	5.87	4.87 – 6.86
Bladder exstrophy	9	0.39	0.18 – 0.75

Birth Defect (Body System)	Cases (count)	Prevalence (rate)	Confidence Interval (95% for Prevalence)
Musculoskeletal			
Congenital hip dislocation (without hip dysplasia)	68	2.98	2.31 – 3.77
Talipes equinovarus (clubfoot)	372	16.28	14.63 – 17.94
Reduction defects of the upper limbs	89	3.90	3.13 – 4.79
Reduction defects of the lower limbs	36	1.58	1.10 – 2.18
Craniosynostosis	91	3.98	3.21 – 4.89
Achondroplasia	9	0.39	0.18 – 0.75
Diaphragmatic hernia	65	2.85	2.20 – 3.63
Omphalocele	41	1.79	1.29 – 2.43
Gastroschisis	130	5.69	4.71 – 6.67
Chromosomal			
Trisomy 21 (Down syndrome)	213	9.32	8.07 – 10.58
Trisomy 13 (Patau syndrome)	22	0.96	0.60 – 1.46
Trisomy 18 (Edwards syndrome)	27	1.18	0.78 – 1.72
Infants & fetuses with regular reportable birth defects	8,477	371.07	363.17 – 378.97

Prevalence (rate) is expressed as the number of cases per 10,000 live births.

Please see the Methods section of the Annual Report for additional information:
https://www.dshs.texas.gov/sites/default/files/birthdefects/annualreport/1999-2021-TBDR-Methods.pdf

Prepared by: Texas Birth Defects Registry, Birth Defects Epidemiology and Surveillance Branch, Texas Department of State Health Services, October 2024.

Texas Birth Defects Registry (TBDR) Annual Report
Table R6. Prevalence of Selected Birth Defects, Region 6, 1999–2021

Birth Defect (Body System)	Cases (count)	Prevalence (rate)	Confidence Interval (95% for Prevalence)
Central Nervous System			
Anencephaly	325	1.49	1.33 – 1.65
Spina bifida (without anencephaly)	730	3.35	3.11 – 3.59
Encephalocele	161	0.74	0.62 – 0.85
Microcephaly, severe (head circ. <3rd percentile)	933	4.28	4.01 – 4.56
Holoprosencephaly	163	0.75	0.63 – 0.86
Hydrocephaly (without spina bifida)	1,459	6.70	6.35 – 7.04
Eye and Ear			
Anophthalmia	47	0.22	0.16 – 0.29
Microphthalmia	515	2.36	2.16 – 2.57
Cataract	369	1.69	1.52 – 1.87
Anotia or microtia	691	3.17	2.94 – 3.41
Cardiac and Circulatory			
Common truncus	137	0.63	0.52 – 0.73
Transposition of the great vessels	712	3.27	3.03 – 3.51
Double outlet right ventricle	514	2.36	2.16 – 2.56
Tetralogy of Fallot	819	3.76	3.50 – 4.02
Ventricular septal defect	12,882	59.14	58.12 – 60.16
Atrial septal defect	14,674	67.37	66.28 – 68.46
Atrioventricular septal defect (endocardial cushion defect)	878	4.03	3.76 – 4.30
Pulmonary valve atresia or stenosis	1,741	7.99	7.62 – 8.37
Tricuspid valve atresia or stenosis	402	1.85	1.67 – 2.03
Ebstein anomaly	166	0.76	0.65 – 0.88
Aortic valve stenosis	463	2.13	1.93 – 2.32
Hypoplastic left heart syndrome	420	1.93	1.74 – 2.11
Patent ductus arteriosus	9,813	45.05	44.16 – 45.94
Coarctation of the aorta	1,027	4.72	4.43 – 5.00
Respiratory			
Choanal atresia or stenosis	239	1.10	0.96 – 1.24
Agenesis, aplasia, or hypoplasia of the lung	550	2.53	2.31 – 2.74
Oral Clefts			
Cleft palate alone (without cleft lip)	1,143	5.25	4.94 – 5.55
Cleft lip (with or without cleft palate)	1,940	8.91	8.51 – 9.30
Gastrointestinal			
Tracheoesophageal fistula/esophageal atresia	405	1.86	1.68 – 2.04
Pyloric stenosis	2,964	13.61	13.12 – 14.10
Stenosis or atresia of the small intestine	603	2.77	2.55 – 2.99
Stenosis or atresia of large intestine, rectum, anal canal	1,133	5.20	4.90 – 5.50
Hirschsprung disease	263	1.21	1.06 – 1.35
Biliary atresia	139	0.64	0.53 – 0.74
Genitourinary			
Hypospadias (among males)	7,133	64.17	62.68 – 65.65
Renal agenesis or dysgenesis	1,252	5.75	5.43 – 6.07
Bladder exstrophy	33	0.15	0.10 – 0.21

Birth Defect (Body System)	Cases (count)	Prevalence (rate)	Confidence Interval (95% for Prevalence)
Musculoskeletal			
Congenital hip dislocation (without hip dysplasia)	545	2.50	2.29 – 2.71
Talipes equinovarus (clubfoot)	3,445	15.82	15.29 – 16.34
Reduction defects of the upper limbs	707	3.25	3.01 – 3.49
Reduction defects of the lower limbs	321	1.47	1.31 – 1.63
Craniosynostosis	902	4.14	3.87 – 4.41
Achondroplasia	74	0.34	0.27 – 0.43
Diaphragmatic hernia	600	2.75	2.53 – 2.98
Omphalocele	407	1.87	1.69 – 2.05
Gastroschisis	880	4.04	3.77 – 4.31
Chromosomal			
Trisomy 21 (Down syndrome)	2,801	12.86	12.38 – 13.34
Trisomy 13 (Patau syndrome)	201	0.92	0.80 – 1.05
Trisomy 18 (Edwards syndrome)	445	2.04	1.85 – 2.23
Infants & fetuses with regular reportable birth defects	100,547	461.62	458.77 – 464.48

Prevalence (rate) is expressed as the number of cases per 10,000 live births.

Please see the Methods section of the Annual Report for additional information:
https://www.dshs.texas.gov/sites/default/files/birthdefects/annualreport/1999-2021-TBDR-Methods.pdf

Prepared by: Texas Birth Defects Registry, Birth Defects Epidemiology and Surveillance Branch, Texas Department of State Health Services, October 2024.

Texas Birth Defects Registry (TBDR) Annual Report
Table R7. Prevalence of Selected Birth Defects, Region 7, 1999–2021

Birth Defect (Body System)	Cases (count)	Prevalence (rate)	Confidence Interval (95% for Prevalence)
Central Nervous System			
Anencephaly	247	2.52	2.20 – 2.83
Spina bifida (without anencephaly)	302	3.08	2.73 – 3.42
Encephalocele	84	0.86	0.68 – 1.06
Microcephaly, severe (head circ. <3rd percentile)	410	4.18	3.77 – 4.58
Holoprosencephaly	110	1.12	0.91 – 1.33
Hydrocephaly (without spina bifida)	730	7.43	6.90 – 7.97
Eye and Ear			
Anophthalmia	19	0.19	0.12 – 0.30
Microphthalmia	325	3.31	2.95 – 3.67
Cataract	172	1.75	1.49 – 2.01
Anotia or microtia	347	3.53	3.16 – 3.91
Cardiac and Circulatory			
Common truncus	74	0.75	0.59 – 0.95
Transposition of the great vessels	294	2.99	2.65 – 3.34
Double outlet right ventricle	194	1.98	1.70 – 2.25
Tetralogy of Fallot	369	3.76	3.37 – 4.14
Ventricular septal defect	5,550	56.53	55.04 – 58.01
Atrial septal defect	3,971	40.44	39.19 – 41.70
Atrioventricular septal defect (endocardial cushion defect)	407	4.15	3.74 – 4.55
Pulmonary valve atresia or stenosis	950	9.68	9.06 – 10.29
Tricuspid valve atresia or stenosis	160	1.63	1.38 – 1.88
Ebstein anomaly	72	0.73	0.57 – 0.92
Aortic valve stenosis	246	2.51	2.19 – 2.82
Hypoplastic left heart syndrome	199	2.03	1.75 – 2.31
Patent ductus arteriosus	4,346	44.26	42.95 – 45.58
Coarctation of the aorta	473	4.82	4.38 – 5.25
Respiratory			
Choanal atresia or stenosis	123	1.25	1.03 – 1.47
Agenesis, aplasia, or hypoplasia of the lung	291	2.96	2.62 – 3.30
Oral Clefts			
Cleft palate alone (without cleft lip)	577	5.88	5.40 – 6.36
Cleft lip (with or without cleft palate)	1,022	10.41	9.77 – 11.05
Gastrointestinal			
Tracheoesophageal fistula/esophageal atresia	222	2.26	1.96 – 2.56
Pyloric stenosis	1,247	12.70	12.00 – 13.41
Stenosis or atresia of the small intestine	350	3.56	3.19 – 3.94
Stenosis or atresia of large intestine, rectum, anal canal	478	4.87	4.43 – 5.30
Hirschsprung disease	186	1.89	1.62 – 2.17
Biliary atresia	57	0.58	0.44 – 0.75
Genitourinary			
Hypospadias (among males)	3,298	65.70	63.46 – 67.95
Renal agenesis or dysgenesis	610	6.21	5.72 – 6.71
Bladder exstrophy	21	0.21	0.13 – 0.33

Birth Defect (Body System)	Cases (count)	Prevalence (rate)	Confidence Interval (95% for Prevalence)
Musculoskeletal			
Congenital hip dislocation (without hip dysplasia)	255	2.60	2.28 – 2.92
Talipes equinovarus (clubfoot)	1,382	14.08	13.33 – 14.82
Reduction defects of the upper limbs	432	4.40	3.98 – 4.81
Reduction defects of the lower limbs	208	2.12	1.83 – 2.41
Craniosynostosis	511	5.20	4.75 – 5.66
Achondroplasia	35	0.36	0.25 – 0.50
Diaphragmatic hernia	282	2.87	2.54 – 3.21
Omphalocele	201	2.05	1.76 – 2.33
Gastroschisis	515	5.25	4.79 – 5.70
Chromosomal			
Trisomy 21 (Down syndrome)	1,238	12.61	11.91 – 13.31
Trisomy 13 (Patau syndrome)	101	1.03	0.83 – 1.23
Trisomy 18 (Edwards syndrome)	256	2.61	2.29 – 2.93
Infants & fetuses with regular reportable birth defects	46,469	473.28	468.98 – 477.59

Prevalence (rate) is expressed as the number of cases per 10,000 live births.

Please see the Methods section of the Annual Report for additional information:
https://www.dshs.texas.gov/sites/default/files/birthdefects/annualreport/1999-2021-TBDR-Methods.pdf

Prepared by: Texas Birth Defects Registry, Birth Defects Epidemiology and Surveillance Branch, Texas Department of State Health Services, October 2024.

Texas Birth Defects Registry (TBDR) Annual Report
Table R8. Prevalence of Selected Birth Defects, Region 8, 1999–2021

Birth Defect (Body System)	Cases (count)	Prevalence (rate)	Confidence Interval (95% for Prevalence)
Central Nervous System			
Anencephaly	243	2.78	2.43 – 3.13
Spina bifida (without anencephaly)	359	4.10	3.68 – 4.53
Encephalocele	109	1.25	1.01 – 1.48
Microcephaly, severe (head circ. <3rd percentile)	554	6.33	5.80 – 6.86
Holoprosencephaly	101	1.15	0.93 – 1.38
Hydrocephaly (without spina bifida)	846	9.67	9.02 – 10.32
Eye and Ear			
Anophthalmia	28	0.32	0.21 – 0.46
Microphthalmia	282	3.22	2.85 – 3.60
Cataract	148	1.69	1.42 – 1.96
Anotia or microtia	397	4.54	4.09 – 4.98
Cardiac and Circulatory			
Common truncus	86	0.98	0.79 – 1.21
Transposition of the great vessels	328	3.75	3.34 – 4.15
Double outlet right ventricle	180	2.06	1.76 – 2.36
Tetralogy of Fallot	396	4.53	4.08 – 4.97
Ventricular septal defect	5,135	58.68	57.07 – 60.28
Atrial septal defect	5,692	65.04	63.35 – 66.73
Atrioventricular septal defect (endocardial cushion defect)	416	4.75	4.30 – 5.21
Pulmonary valve atresia or stenosis	891	10.18	9.51 – 10.85
Tricuspid valve atresia or stenosis	180	2.06	1.76 – 2.36
Ebstein anomaly	79	0.90	0.71 – 1.13
Aortic valve stenosis	244	2.79	2.44 – 3.14
Hypoplastic left heart syndrome	202	2.31	1.99 – 2.63
Patent ductus arteriosus	5,227	59.73	58.11 – 61.35
Coarctation of the aorta	470	5.37	4.89 – 5.86
Respiratory			
Choanal atresia or stenosis	107	1.22	0.99 – 1.45
Agenesis, aplasia, or hypoplasia of the lung	402	4.59	4.14 – 5.04
Oral Clefts			
Cleft palate alone (without cleft lip)	603	6.89	6.34 – 7.44
Cleft lip (with or without cleft palate)	1,066	12.18	11.45 – 12.91
Gastrointestinal			
Tracheoesophageal fistula/esophageal atresia	218	2.49	2.16 – 2.82
Pyloric stenosis	1,535	17.54	16.66 – 18.42
Stenosis or atresia of the small intestine	344	3.93	3.52 – 4.35
Stenosis or atresia of large intestine, rectum, anal canal	571	6.52	5.99 – 7.06
Hirschsprung disease	127	1.45	1.20 – 1.70
Biliary atresia	83	0.95	0.76 – 1.18
Genitourinary			
Hypospadias (among males)	2,693	60.28	58.00 – 62.56
Renal agenesis or dysgenesis	737	8.42	7.81 – 9.03
Bladder exstrophy	15	0.17	0.10 – 0.28

Birth Defect (Body System)	Cases (count)	Prevalence (rate)	Confidence Interval (95% for Prevalence)
Musculoskeletal			
Congenital hip dislocation (without hip dysplasia)	149	1.70	1.43 – 1.98
Talipes equinovarus (clubfoot)	1,561	17.84	16.95 – 18.72
Reduction defects of the upper limbs	425	4.86	4.39 – 5.32
Reduction defects of the lower limbs	234	2.67	2.33 – 3.02
Craniosynostosis	609	6.96	6.41 – 7.51
Achondroplasia	28	0.32	0.21 – 0.46
Diaphragmatic hernia	272	3.11	2.74 – 3.48
Omphalocele	210	2.40	2.08 – 2.72
Gastroschisis	553	6.32	5.79 – 6.85
Chromosomal			
Trisomy 21 (Down syndrome)	1,350	15.43	14.60 – 16.25
Trisomy 13 (Patau syndrome)	116	1.33	1.08 – 1.57
Trisomy 18 (Edwards syndrome)	236	2.70	2.35 – 3.04
Infants & fetuses with regular reportable birth defects	47,049	537.63	532.77 – 542.49

Prevalence (rate) is expressed as the number of cases per 10,000 live births.

Please see the Methods section of the Annual Report for additional information:
https://www.dshs.texas.gov/sites/default/files/birthdefects/annualreport/1999-2021-TBDR-Methods.pdf

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Texas Birth Defects Registry (TBDR) Annual Report
Table R9. Prevalence of Selected Birth Defects, Region 9, 1999–2021

Birth Defect (Body System)	Cases (count)	Prevalence (rate)	Confidence Interval (95% for Prevalence)
Central Nervous System			
Anencephaly	53	2.49	1.86 – 3.25
Spina bifida (without anencephaly)	69	3.24	2.52 – 4.10
Encephalocele	23	1.08	0.68 – 1.62
Microcephaly, severe (head circ. <3rd percentile)	76	3.56	2.81 – 4.46
Holoprosencephaly	30	1.41	0.95 – 2.01
Hydrocephaly (without spina bifida)	196	9.19	7.91 – 10.48
Eye and Ear			
Anophthalmia	5	0.23	0.08 – 0.55
Microphthalmia	67	3.14	2.44 – 3.99
Cataract	50	2.35	1.74 – 3.09
Anotia or microtia	71	3.33	2.60 – 4.20
Cardiac and Circulatory			
Common truncus	15	0.70	0.39 – 1.16
Transposition of the great vessels	67	3.14	2.44 – 3.99
Double outlet right ventricle	42	1.97	1.42 – 2.66
Tetralogy of Fallot	79	3.71	2.93 – 4.62
Ventricular septal defect	1,266	59.38	56.11 – 62.65
Atrial septal defect	3,252	152.53	147.29 – 157.77
Atrioventricular septal defect (endocardial cushion defect)	81	3.80	3.02 – 4.72
Pulmonary valve atresia or stenosis	216	10.13	8.78 – 11.48
Tricuspid valve atresia or stenosis	31	1.45	0.99 – 2.06
Ebstein anomaly	19	0.89	0.54 – 1.39
Aortic valve stenosis	44	2.06	1.50 – 2.77
Hypoplastic left heart syndrome	58	2.72	2.07 – 3.52
Patent ductus arteriosus	1,506	70.64	67.07 – 74.20
Coarctation of the aorta	113	5.30	4.32 – 6.28
Respiratory			
Choanal atresia or stenosis	25	1.17	0.76 – 1.73
Agenesis, aplasia, or hypoplasia of the lung	46	2.16	1.58 – 2.88
Oral Clefts			
Cleft palate alone (without cleft lip)	126	5.91	4.88 – 6.94
Cleft lip (with or without cleft palate)	280	13.13	11.59 – 14.67
Gastrointestinal			
Tracheoesophageal fistula/esophageal atresia	55	2.58	1.94 – 3.36
Pyloric stenosis	355	16.65	14.92 – 18.38
Stenosis or atresia of the small intestine	71	3.33	2.60 – 4.20
Stenosis or atresia of large intestine, rectum, anal canal	128	6.00	4.96 – 7.04
Hirschsprung disease	30	1.41	0.95 – 2.01
Biliary atresia	13	0.61	0.32 – 1.04
Genitourinary			
Hypospadias (among males)	558	51.10	46.86 – 55.34
Renal agenesis or dysgenesis	133	6.24	5.18 – 7.30
Bladder exstrophy	2	0.09	0.01 – 0.34

Birth Defect (Body System)	Cases (count)	Prevalence (rate)	Confidence Interval (95% for Prevalence)
Musculoskeletal			
Congenital hip dislocation (without hip dysplasia)	62	2.91	2.23 – 3.73
Talipes equinovarus (clubfoot)	426	19.98	18.08 – 21.88
Reduction defects of the upper limbs	92	4.32	3.48 – 5.29
Reduction defects of the lower limbs	51	2.39	1.78 – 3.15
Craniosynostosis	160	7.50	6.34 – 8.67
Achondroplasia	7	0.33	0.13 – 0.68
Diaphragmatic hernia	54	2.53	1.90 – 3.30
Omphalocele	46	2.16	1.58 – 2.88
Gastroschisis	152	7.13	6.00 – 8.26
Chromosomal			
Trisomy 21 (Down syndrome)	225	10.55	9.17 – 11.93
Trisomy 13 (Patau syndrome)	27	1.27	0.83 – 1.84
Trisomy 18 (Edwards syndrome)	44	2.06	1.50 – 2.77
Infants & fetuses with regular reportable birth defects	10,976	514.81	505.18 – 524.45

Prevalence (rate) is expressed as the number of cases per 10,000 live births.

Please see the Methods section of the Annual Report for additional information:
https://www.dshs.texas.gov/sites/default/files/birthdefects/annualreport/1999-2021-TBDR-Methods.pdf

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Texas Birth Defects Registry (TBDR) Annual Report
Table R10. Prevalence of Selected Birth Defects, Region 10, 1999–2021

Birth Defect (Body System)	Cases (count)	Prevalence (rate)	Confidence Interval (95% for Prevalence)
Central Nervous System			
Anencephaly	92	2.91	2.34 – 3.57
Spina bifida (without anencephaly)	110	3.48	2.83 – 4.13
Encephalocele	22	0.70	0.44 – 1.05
Microcephaly, severe (head circ. <3rd percentile)	129	4.08	3.37 – 4.78
Holoprosencephaly	40	1.26	0.90 – 1.72
Hydrocephaly (without spina bifida)	248	7.84	6.86 – 8.81
Eye and Ear			
Anophthalmia	4	0.13	0.03 – 0.32
Microphthalmia	88	2.78	2.23 – 3.43
Cataract	42	1.33	0.96 – 1.79
Anotia or microtia	134	4.23	3.52 – 4.95
Cardiac and Circulatory			
Common truncus	27	0.85	0.56 – 1.24
Transposition of the great vessels	68	2.15	1.67 – 2.72
Double outlet right ventricle	59	1.86	1.42 – 2.40
Tetralogy of Fallot	97	3.07	2.49 – 3.74
Ventricular septal defect	1,480	46.77	44.39 – 49.15
Atrial septal defect	1,606	50.75	48.27 – 53.23
Atrioventricular septal defect (endocardial cushion defect)	87	2.75	2.20 – 3.39
Pulmonary valve atresia or stenosis	179	5.66	4.83 – 6.49
Tricuspid valve atresia or stenosis	40	1.26	0.90 – 1.72
Ebstein anomaly	26	0.82	0.54 – 1.20
Aortic valve stenosis	77	2.43	1.92 – 3.04
Hypoplastic left heart syndrome	63	1.99	1.53 – 2.55
Patent ductus arteriosus	1,490	47.08	44.69 – 49.48
Coarctation of the aorta	153	4.83	4.07 – 5.60
Respiratory			
Choanal atresia or stenosis	25	0.79	0.51 – 1.17
Agenesis, aplasia, or hypoplasia of the lung	65	2.05	1.59 – 2.62
Oral Clefts			
Cleft palate alone (without cleft lip)	151	4.77	4.01 – 5.53
Cleft lip (with or without cleft palate)	379	11.98	10.77 – 13.18
Gastrointestinal			
Tracheoesophageal fistula/esophageal atresia	82	2.59	2.06 – 3.22
Pyloric stenosis	566	17.89	16.41 – 19.36
Stenosis or atresia of the small intestine	107	3.38	2.74 – 4.02
Stenosis or atresia of large intestine, rectum, anal canal	172	5.44	4.62 – 6.25
Hirschsprung disease	31	0.98	0.67 – 1.39
Biliary atresia	26	0.82	0.54 – 1.20
Genitourinary			
Hypospadias (among males)	702	43.55	40.33 – 46.77
Renal agenesis or dysgenesis	202	6.38	5.50 – 7.26
Bladder exstrophy	2	0.06	0.01 – 0.23

Birth Defect (Body System)	Cases (count)	Prevalence (rate)	Confidence Interval (95% for Prevalence)
Musculoskeletal			
Congenital hip dislocation (without hip dysplasia)	149	4.71	3.95 – 5.46
Talipes equinovarus (clubfoot)	531	16.78	15.35 – 18.21
Reduction defects of the upper limbs	117	3.70	3.03 – 4.37
Reduction defects of the lower limbs	64	2.02	1.56 – 2.58
Craniosynostosis	276	8.72	7.69 – 9.75
Achondroplasia	17	0.54	0.31 – 0.86
Diaphragmatic hernia	80	2.53	2.00 – 3.15
Omphalocele	61	1.93	1.47 – 2.48
Gastroschisis	177	5.59	4.77 – 6.42
Chromosomal			
Trisomy 21 (Down syndrome)	474	14.98	13.63 – 16.33
Trisomy 13 (Patau syndrome)	44	1.39	1.01 – 1.87
Trisomy 18 (Edwards syndrome)	64	2.02	1.56 – 2.58
Infants & fetuses with regular reportable birth defects	13,501	426.64	419.44 – 433.83

Prevalence (rate) is expressed as the number of cases per 10,000 live births.

Please see the Methods section of the Annual Report for additional information:
https://www.dshs.texas.gov/sites/default/files/birthdefects/annualreport/1999-2021-TBDR-Methods.pdf

Prepared by: Texas Birth Defects Registry, Birth Defects Epidemiology and Surveillance Branch, Texas Department of State Health Services, October 2024.

Texas Birth Defects Registry (TBDR) Annual Report
Table R11. Prevalence of Selected Birth Defects, Region 11, 1999–2021

Birth Defect (Body System)	Cases (count)	Prevalence (rate)	Confidence Interval (95% for Prevalence)
Central Nervous System			
Anencephaly	296	3.31	2.94 – 3.69
Spina bifida (without anencephaly)	431	4.82	4.37 – 5.28
Encephalocele	102	1.14	0.92 – 1.36
Microcephaly, severe (head circ. <3rd percentile)	337	3.77	3.37 – 4.18
Holoprosencephaly	126	1.41	1.16 – 1.66
Hydrocephaly (without spina bifida)	833	9.33	8.69 – 9.96
Eye and Ear			
Anophthalmia	47	0.53	0.39 – 0.70
Microphthalmia	215	2.41	2.09 – 2.73
Cataract	93	1.04	0.84 – 1.28
Anotia or microtia	370	4.14	3.72 – 4.56
Cardiac and Circulatory			
Common truncus	100	1.12	0.91 – 1.36
Transposition of the great vessels	326	3.65	3.25 – 4.05
Double outlet right ventricle	269	3.01	2.65 – 3.37
Tetralogy of Fallot	437	4.89	4.43 – 5.35
Ventricular septal defect	8,703	97.43	95.38 – 99.48
Atrial septal defect	11,350	127.06	124.72 – 129.40
Atrioventricular septal defect (endocardial cushion defect)	393	4.40	3.96 – 4.83
Pulmonary valve atresia or stenosis	1,430	16.01	15.18 – 16.84
Tricuspid valve atresia or stenosis	214	2.40	2.07 – 2.72
Ebstein anomaly	102	1.14	0.92 – 1.36
Aortic valve stenosis	316	3.54	3.15 – 3.93
Hypoplastic left heart syndrome	192	2.15	1.85 – 2.45
Patent ductus arteriosus	9,880	110.60	108.42 – 112.79
Coarctation of the aorta	729	8.16	7.57 – 8.75
Respiratory			
Choanal atresia or stenosis	127	1.42	1.17 – 1.67
Agenesis, aplasia, or hypoplasia of the lung	361	4.04	3.62 – 4.46
Oral Clefts			
Cleft palate alone (without cleft lip)	500	5.60	5.11 – 6.09
Cleft lip (with or without cleft palate)	1,042	11.67	10.96 – 12.37
Gastrointestinal			
Tracheoesophageal fistula/esophageal atresia	206	2.31	1.99 – 2.62
Pyloric stenosis	1,915	21.44	20.48 – 22.40
Stenosis or atresia of the small intestine	341	3.82	3.41 – 4.22
Stenosis or atresia of large intestine, rectum, anal canal	547	6.12	5.61 – 6.64
Hirschsprung disease	97	1.09	0.88 – 1.32
Biliary atresia	67	0.75	0.58 – 0.95
Genitourinary			
Hypospadias (among males)	2,057	45.06	43.12 – 47.01
Renal agenesis or dysgenesis	655	7.33	6.77 – 7.89
Bladder exstrophy	14	0.16	0.09 – 0.26

Birth Defect (Body System)	Cases (count)	Prevalence (rate)	Confidence Interval (95% for Prevalence)
Musculoskeletal			
Congenital hip dislocation (without hip dysplasia)	168	1.88	1.60 – 2.17
Talipes equinovarus (clubfoot)	1,554	17.40	16.53 – 18.26
Reduction defects of the upper limbs	371	4.15	3.73 – 4.58
Reduction defects of the lower limbs	160	1.79	1.51 – 2.07
Craniosynostosis	448	5.02	4.55 – 5.48
Achondroplasia	22	0.25	0.15 – 0.37
Diaphragmatic hernia	250	2.80	2.45 – 3.15
Omphalocele	221	2.47	2.15 – 2.80
Gastroschisis	556	6.22	5.71 – 6.74
Chromosomal			
Trisomy 21 (Down syndrome)	1,412	15.81	14.98 – 16.63
Trisomy 13 (Patau syndrome)	105	1.18	0.95 – 1.40
Trisomy 18 (Edwards syndrome)	254	2.84	2.49 – 3.19
Infants & fetuses with regular reportable birth defects	46,345	518.82	514.10 – 523.55

Prevalence (rate) is expressed as the number of cases per 10,000 live births.

Please see the Methods section of the Annual Report for additional information:
https://www.dshs.texas.gov/sites/default/files/birthdefects/annualreport/1999-2021-TBDR-Methods.pdf

Prepared by: Texas Birth Defects Registry, Birth Defects Epidemiology and Surveillance Branch, Texas Department of State Health Services, October 2024.

Texas Birth Defects Registry (TBDR) Annual Report
Appendix A. Texas Resident Live Births (Denominators), 1999–2021

Breakdown		Live Births	
		Total	Male*
Texas Resident Live Births		8,818,501	4,507,065
By Mother's Age	Less than 20 years	982,457	503,451
	20–24 years	2,270,649	1,158,716
	25–29 years	2,444,275	1,250,353
	30–34 years	1,985,570	1,014,110
	35–39 years	930,403	475,978
	40 or more years	204,523	104,150
	Unknown Age	624	307
By Mother's Race/Ethnicity	Non-Hispanic (NH) White	3,064,748	1,571,697
	NH Black	1,011,034	514,288
	Hispanic	4,244,229	2,164,363
	NH Asian/Pacific Islander	97,632	49,969
	NH American Indian/Alaskan Native	373,694	192,686
	Additional NH	16,518	8,502
	Unknown Race/Ethnicity	10,646	5,560
By Infant/Fetal Sex	Male	4,507,065	4,507,065
	Female	4,311,436	--
By Region of Mother's Residence at Delivery	Region 1	283,789	144,872
	Region 2	163,369	83,679
	Region 3	2,354,930	1,205,410
	Region 4	329,967	168,939
	Region 5	228,445	116,969
	Region 6	2,178,112	1,111,651
	Region 7	981,846	501,942
	Region 8	875,118	446,752
	Region 9	213,203	109,194
	Region 10	316,452	161,194
	Region 11	893,270	456,463

Breakdown		Live Births	
		Total	Male*
By Delivery Year	1999	349,157	178,451
	2000	363,325	185,591
	2001	365,092	186,774
	2002	372,369	190,162
	2003	377,374	192,581
	2004	381,441	195,024
	2005	385,537	197,491
	2006	399,309	204,037
	2007	407,453	208,222
	2008	405,242	207,508
	2009	401,599	204,876
	2010	385,746	196,903
	2011	377,274	192,766
	2012	382,438	195,525
	2013	387,110	198,109
	2014	399,482	204,503
	2015	403,439	205,972
	2016	396,999	202,810
	2017	381,876	194,877
	2018	376,506	192,241
	2019	377,710	193,032
	2020	368,317	188,551
	2021	373,706	191,059

*Male live births are the denominators used for calculating the prevalence of hypospadias.

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Appendix B. Modified BPA Codes Used to Define Birth Defects

Diagnoses in the TBDR are coded using a system developed and provided by the National Center on Birth Defects and Developmental Disabilities (NCBDDD) at the Centers for Disease Control and Prevention (CDC). The six-digit birth defect codes, commonly called modified BPA codes, are based on the British Pediatric Association Classification of Diseases (1979) and the International Classification of Diseases, 9th Revision, Clinical Modification (ICD-9-CM), with code modifications developed by NCBDDD and the Birth Defects Epidemiology and Surveillance Branch (BDESB) at the Texas Department of State Health Services.

The table below shows the modified BPA codes used to define the birth defects included in this report.

Birth Defect	Modified BPA Codes
Anencephaly	740.000–740.100
Spina bifida (without anencephaly)	741.000–741.990, without 740.000–740.100
Encephalocele	742.000–742.090
Microcephaly	742.100, 742.486
Holoprosencephaly	742.260
Hydrocephaly (without spina bifida)	742.300–742.380 and 742.390, without 741.000-741.990
Anophthalmia	743.000
Microphthalmia	743.100
Cataract	743.320, 743.325, 743.326
Anotia or microtia	744.010, 744.210
Common truncus	745.000–745.010
Transposition of the great vessels	745.100–745.120, 745.180, 745.190
Double outlet right ventricle	745.130–745.150
Tetralogy of Fallot	745.200, 746.840
Ventricular septal defect	745.400–745.490
Atrial septal defect	745.510–745.590
Atrioventricular septal defect (endocardial cushion defect)	745.600–745.690
Pulmonary valve atresia or stenosis	746.000–746.010
Tricuspid valve atresia or stenosis	746.100, 746.106

Birth Defect	Modified BPA Codes
Ebstein anomaly	746.200
Aortic valve stenosis	746.300
Hypoplastic left heart syndrome	746.700
Patent ductus arteriosus	747.000
Coarctation of the aorta	747.100–747.190
Choanal atresia or stenosis	748.000
Agenesis, aplasia, or hypoplasia of the lung	748.500–748.510
Cleft palate alone (without cleft lip)	749.000–749.090
Cleft lip (with or without cleft palate)	749.100–749.220
Tracheoesophageal fistula/esophageal atresia	750.300–750.350
Pyloric stenosis	750.510
Stenosis or atresia of the small intestine	751.100–751.195
Stenosis or atresia of large intestine, rectum, or anal canal	751.200–751.240
Hirschsprung disease	751.300–751.340
Biliary atresia	751.650
Hypospadias	752.600–752.607, 752.620, 752.625–752.627
Renal agenesis or dysgenesis	753.000–753.010
Bladder exstrophy	753.500
Congenital hip dislocation (without hip dysplasia)	754.300 without 755.665–755.667
Talipes equinovarus (clubfoot)	754.500, 754.730
Reduction defects of the upper limbs	755.200–755.290
Reduction defects of the lower limbs	755.300–755.390
Craniosynostosis	756.000–756.030
Achondroplasia	756.430
Diaphragmatic hernia	756.610–756.617
Omphalocele	756.700
Gastroschisis	756.710
Trisomy 21 (Down syndrome)	758.000–758.090
Trisomy 13 (Patau syndrome)	758.100–758.190
Trisomy 18 (Edwards syndrome)	758.200–758.290

Texas Birth Defects Registry (TBDR) Annual Report
Appendix C. Glossary of Birth Defects and Related Terms

Achondroplasia A genetic dysplasia of cartilage and long bones caused by mutations in the gene FGFR3. It results in disproportionate short stature with short limbs and relatively more normal trunk size. Persons affected with achondroplasia can have abnormalities of the foramen magnum potentially causing damage to the upper spinal cord. Spinal canal stenosis is a problem starting in late adolescence. There may also be lumbar lordosis, limited elbow extension and early arthritis. People with achondroplasia typically have normal intelligence.

Agenesis Absence of part(s) of the body.

Agenesis, aplasia, or hypoplasia of the lung The absence or incomplete development of a lung or lung tissue.

Anencephaly Congenital absence of the skull, with cerebral hemispheres completely missing or reduced to small masses attached to the base of the skull. Anencephaly is not compatible with life.

Aniridia The complete absence of the iris of the eye or a defect of the iris. Can be congenital or traumatically induced.

Anomalies of the tricuspid valve Includes tricuspid valve atresia or stenosis, as well as enlargement, dilation, or aneurysm of the tricuspid valve. See also *tricuspid valve atresia or stenosis*.

Anophthalmia A developmental defect characterized by complete absence of the eyes, or by the presence of vestigial eyes.

Anotia A congenital absence of one or both ears.

Aorta The large arterial trunk that carries blood from the heart to be distributed by branch arteries through the body.

Aortic valve stenosis A cardiac anomaly characterized by a narrowing or stricture of the aortic valve. This condition causes abnormal cardiac circulation and pressure in the heart during contractions. This condition can be repaired surgically in some cases.

Atresia Imperforation; absence or closure of a normal opening.

Atrial septal defect A congenital cardiac malformation in which there are one or several openings in the atrial septum (muscular and fibrous wall between the right and left atria) allowing a mixing of oxygenated and unoxygenated blood. The openings vary in size and may resolve without treatment or may require surgical treatment. Also called *ostium secundum defect.*

Atrioventricular septal defect A variety of septal defects (malformations of the walls separating the two atria and two ventricles of the heart) resulting from imperfect fusion of the endocardial cushions in the embryonic heart. Also called *endocardial cushion defect*.

Atrium One of the two upper chambers of the heart (plural atria). The right atrium receives unoxygenated blood from the body. The left atrium receives oxygenated blood from the lungs.

Biliary atresia A congenital absence or underdevelopment of one or more of the ducts in the biliary tract. Correctable surgically.

Birth prevalence

$$\frac{\text{\# of birth defect cases in an area and time period}}{\text{\# of live births in the same area and time period}} \times 10{,}000$$

Bladder exstrophy Incomplete closure of the anterior wall of the bladder and the abdominal cavity. The upper urinary tract is generally normal. Often associated with anorectal and genital malformations, and epispadias. Affected persons are at a markedly increased risk of bladder carcinoma (squamous cell). This condition is usually corrected surgically after birth.

Cataract An opacity (clouding) of the lens of the eye.

Choanal atresia or stenosis A congenital anomaly in which a bony or membranous formation blocks the passageway between the nose and the pharynx. This defect is usually repaired surgically after birth. Bilateral choanal atresia is a surgical emergency.

Cleft lip The congenital failure of the fetal components of the lip to fuse or join, forming a groove or fissure in the lip. Infants with this condition can have difficulty feeding and may use assistive devices for feeding. This condition is corrected when the infant can tolerate surgery.

Cleft palate The congenital failure of the palate to fuse properly, forming a grooved depression or fissure in the roof of the mouth. This defect varies in degree of severity. The fissure can extend into the hard and soft palate and into the nasal cavities. Infants with this condition have difficulty feeding and may use assistive devices for feeding. Surgical correction is begun as soon as possible. Children with cleft palates are at high risk for hearing problems due to ear infections.

Clubfoot See *talipes equinovarus*.

Cluster An apparently unusual concentration of a health condition in a particular area and time period.

Coarctation of the aorta Localized narrowing of the aorta. This condition causes abnormal cardiac circulation and pressure in the heart during contractions. This condition can vary from mild to severe. Surgical correction is recommended even for mild defects.

Common truncus arteriosus A congenital heart defect in which the common arterial trunk fails to divide into pulmonary artery and aorta. This is corrected surgically.

Confidence interval (95%) The interval that contains the true prevalence which we can only estimate) 95% of the time. See Methods for more explanation.

Congenital Existing at or dating from birth.

Congenital hip dislocation A congenital defect in which the head of the femur does not articulate with the acetabulum of the pelvis because of an abnormal shallowness of the acetabulum. Treatment in early infancy consists of bracing of the joint to cause a deepening of the acetabulum.

Craniosynostosis A premature ossification (closing) of the cranial sutures before birth or soon after birth. This condition is occasionally associated with other skeletal defects. If no surgical correction is made, the growth of the skull is inhibited, and the head is deformed. The eyes and the brain are often damaged.

Diaphragmatic hernia A failure of the diaphragm to form completely, leaving a hole. Abdominal organs can protrude through the hole into the chest cavity and interfere with development of the heart and lungs. Usually life-threatening and requires emergent surgery.

Double outlet right ventricle A rare critical congenital heart defect in which the pulmonary artery and the aorta — the heart's two major arteries — both connect to the right ventricle. In a normal heart, the pulmonary artery connects to the right ventricle, and the aorta connects to the left ventricle. DORV creates a problem because the right ventricle carries oxygen-poor blood, which then gets circulated in the body. The mixture has less oxygen than the baby needs so the heart has to beat faster and harder to get enough oxygen to the body. Requires surgical treatment.

Down syndrome (Trisomy 21) The chromosomal abnormality characterized by an extra copy of chromosome 21. In rare cases this syndrome is caused by translocation. The extra copy can be free-lying, or can be attached to some other chromosome, most frequently number 14. Down syndrome can occur in mosaic, so that there is a population of normal cells and a population of trisomy 21 cells. Down syndrome is characterized by moderate to severe mental retardation, sloping forehead, small ear canals, flat bridged nose, and short fingers and toes. One third of infants have congenital heart disease, and one third have duodenal atresia. (Both can be present in the same infant.) Affected people can survive to middle or old age. There is an increased incidence of Alzheimer disease in adults with Down syndrome.

Dysgenesis Impaired or faulty development of part(s) of the body.

Ebstein anomaly A congenital heart defect in which the tricuspid valve is displaced downward into the right ventricle causing abnormal patterns of cardiac circulation.

Edwards syndrome (Trisomy 18) The chromosomal abnormality characterized by an extra copy of chromosome 18. The extra chromosome can be free lying or attached to another chromosome. Trisomy 18 can occur in mosaic. Edwards syndrome is characterized by mental retardation, neonatal hepatitis, low-set ears, skull malformation, and short digits. Cardiac and renal anomalies are also common. Survival for more than a few months is rare.

Embryogenesis The development and growth of an embryo, especially the period from the second through the eighth week after conception.

Encephalocele The protrusion of the brain substance through a defect in the skull.

Endocardial cushion defect See *Atrioventricular septal defect*.

Epispadias A congenital defect in which the urinary meatus (urinary outlet) opens above (dorsal to) the normal position. The urinary sphincters are defective, so incontinence does occur. Surgical correction is aimed at correcting incontinence and permitting sexual functioning. The corresponding defect in females is rare. See also *Hypospadias.*

Esophageal stenosis or atresia A narrowing or incomplete formation of the esophagus. Usually a surgical emergency. Frequently associated with a *tracheoesophageal fistula*.

Fetal alcohol syndrome A constellation of physical abnormalities (including characteristic abnormal facial features and growth retardation), and problems of behavior and cognition in children born to mothers who drank alcohol during pregnancy.

Fistula An abnormal passage from an internal organ to the body surface or between two internal organs or structures.

Folate B vitamin necessary for red blood cell production; folate deficiency can lead to anemia and, during embryogenesis, can affect the normal development of the fetus' neural tube; found in liver, green leafy vegetables, beans, beets, broccoli, cauliflower, citrus fruits, and sweet potatoes. *See folic acid.*

Folic acid One of the B vitamins especially important for a woman to take before conception to help prevent neural tube defects in a fetus; essential for DNA synthesis and therefore the growth and division of cells; obtained from fortified foods or from a multivitamin containing at least 4mg; also found in natural sources including liver, beans, and leafy green vegetables. While folate and folic acid are both forms of water-soluble B vitamins, folic acid refers to the synthetic vitamin used in supplements, whereas folate is the form found in foods.

Gastroschisis A congenital opening of the abdominal wall with protrusion of the intestines. This condition is surgically treated. Contrast with *Omphalocele*.

Hernia A protrusion of an organ or part through connective tissue or through a wall of the cavity in which it is normally enclosed.

Hirschsprung disease The congenital absence of autonomic ganglia (nerves controlling involuntary and reflexive movement) in the muscles of the colon. This results in immobility of the intestines and may cause obstruction or stretching of the intestines. This condition is repaired surgically in early childhood by the removal of the affected portion of the intestine.

Holoprosencephaly Failure of the brain to develop into two equal halves, so there is structural abnormality of the brain. here may be associated midline facial defects including cyclopia (fusion of the eye orbits into a single cavity containing one eye) in severe cases. About half the cases are probably due to a single gene defect (the HPE gene). Frequently occurs with *Trisomy 13*.

Hydrocephaly The abnormal accumulation of fluid within the spaces of the brain.

Hyperplasia Overgrowth characterize by an increase in the number of cells of a tissue.

Hypoplasia A condition of arrested development in which an organ or part remains below the normal size or in an immature state.

Hypoplastic left heart syndrome Atresia, or marked hypoplasia, of the aortic opening or valve, with hypoplasia of the ascending aorta and defective development of the left ventricle (with mitral valve atresia). This condition can be surgically repaired in a series of three procedures over a period of one year. Transplantation is also a treatment. This condition is usually fatal in the first month of life if not treated.

Hypospadias A congenital defect in which the urinary meatus (urinary outlet) is on the underside of the penis or on the perineum (area between the genitals and the anus). The urinary sphincters are not defective, so incontinence does not occur. The condition may be surgically corrected if needed for cosmetic, urologic, or reproductive reasons. The corresponding defect in women is rare. *See also epispadias.*

Limb defects See *reduction defects*.

Meninges Membranes that cover the brain and spinal cord.

Microcephaly The congenital smallness of the head, with corresponding smallness of the brain.

Microphthalmia The congenital abnormal smallness of one or both eyes. Can occur in the presence of other ocular defects.

Microtia A small or maldeveloped external ear and atretic or stenotic external auditory canal.

Mosaic In genetics, this refers to an individual organism that has two or more kinds of genetically different cell types. he degree of abnormality depends on the type of tissue containing affected cells. Individuals may vary from near normal to full manifestation of the genetic syndrome. Can occur in any chromosome abnormality syndrome.

Neural tube defect A defect resulting from failure of the neural tube to close in the first month of pregnancy. The major conditions include anencephaly, spina bifida, and encephalocele.

Obstructive genitourinary defect Stenosis or atresia of the urinary tract at any level. Severity of the defect depends largely upon the level of the obstruction. Urine accumulates behind the obstruction and damages the organs.

Omphalocele The protrusion of an organ into the umbilicus. The defect is usually closed surgically soon after birth. Contrast with Gastroschisis.

Ostium secundum defect See *atrial septal defect.*

Patau syndrome (Trisomy 13) The chromosomal abnormality caused by an extra chromosome 13. The extra copy can be free-lying or can be attached to some other chromosome. Patau syndrome can occur in mosaic so that there is a population of normal cells and a population of trisomy 13 cells. Patau syndrome is characterized by impaired midline facial development, cleft lip and palate, polydactyly, and mental retardation. Most infants do not survive beyond 6 months of life.

Patent ductus arteriosus A blood vessel between the pulmonary artery and the aorta. This is normal in fetal life, but can cause problems after birth, particularly in premature infants. This condition causes abnormal cardiac circulation and pressure in the heart during contractions. The vast majority close spontaneously and cause no problems. Medical or surgical correction may be done. This is only an abnormality if it causes significant medical problems.

Poisson regression A type of statistical analysis based on the Poisson distribution used to compare rates of rare occurrences such as birth defects between different population groups, different areas, or different times.

Prevalence With respect to the prevalence of birth defects, see *Birth prevalence*.

Pulmonary artery anomaly Abnormality in the formation of the pulmonary artery such as stenosis or atresia. See *common truncus*.

Pulmonary valve atresia or stenosis A congenital heart condition characterized by absence or constriction of the pulmonary valve. This condition causes abnormal cardiac circulation and pressure in the heart during contractions. This condition can vary from mild to severe. Mild forms are relatively well tolerated and require no intervention. More severe forms are surgically corrected.

Pyloric stenosis A narrowing of the pyloric sphincter at the outlet of the stomach. This causes a blockage of food from the stomach into the small intestine. Usually treated surgically.

Reduction defects of the lower limbs The congenital absence of a portion of the lower limb. There are two general types of defect, transverse and longitudinal. Transverse defects appear like amputations, or like missing segments of the limb. Longitudinal defects are missing rays of the limb (for example, a missing tibia and great toe).

Reduction defects of the upper limbs The congenital absence of a portion of the upper limb. There are two general types of defect, transverse and longitudinal. Transverse defects appear like amputations, or like missing segments of the limb. Longitudinal defects are missing rays of the limb (for example, a missing radius and thumb).

Renal agenesis or dysgenesis The failure, or deviation, of embryonic development of the kidney.

Spina bifida A neural tube defect resulting from failure of the spinal neural tube to close. The spinal cord and/or meninges may or may not protrude. This usually results in damage to the spinal cord with paralysis of the involved limbs. Includes myelomeningocele (involving both spinal cord and meninges) and meningocele (involving just the meninges).

Stenosis A narrowing or constriction of the diameter of a bodily passage or orifice.

Stenosis or atresia of large intestine, rectum, and anus The absence, closure or constriction of the large intestine, rectum, or anus. Can be surgically corrected or bypassed.

Stenosis or atresia of the small intestine A narrowing or incomplete formation of the small intestine obstructing movement of food through the digestive tract.

Talipes equinovarus (Clubfoot) A development disorder of the foot and ankle that affects one (unilateral) or both (bilateral) feet. The foot is in an incorrect anatomical position, and is inclined inward, axially rotated outward, and points downward. Clubfoot is a complex disorder that is caused by genetic and environmental influences.

Tetralogy of Fallot A congenital cardiac anomaly consisting of four defects: *ventricular septal defect*, *pulmonary valve stenosis or atresia*, displacement of the aorta to the right, and hypertrophy of right ventricle. The condition is corrected surgically.

Tracheoesophageal fistula An abnormal passage between the esophagus and trachea. Leads to pneumonia. Corrected surgically. It is frequently associated with *esophageal atresia*.

Translocation The rearrangement of genetic material within the same chromosome or the transfer of a segment of one chromosome to another one. People with balanced translocations do not always manifest genetic syndromes but may be carriers of genetic syndromes and can have children with unbalanced translocations. Can occur with any chromosomal anomaly syndrome.

Transposition of the great vessels A congenital malformation in which the aorta arises from the right ventricle and the pulmonary artery from the left ventricle (opposite of normal), so that the venous return from the peripheral circulation is recirculated without being oxygenated in the lungs. Immediate surgical correction is needed. When this is not associated with other cardiac defects, and not corrected, it is fatal.

Tricuspid valve atresia or stenosis A congenital cardiac condition characterized by the absence or constriction of the tricuspid valve. The opening between the right atrium and right ventricle is absent or restricted, and normal circulation is not possible. This condition is often associated with other cardiac defects. This condition is surgically corrected depending on the severity.

Trisomy A chromosomal abnormality characterized by one more than the normal number of chromosomes. Normally, cells contain two of each chromosome. In trisomy, cells contain three copies of a specific chromosome.

Trisomy 13 (Patau syndrome) The chromosomal abnormality caused by an extra chromosome 13. The extra copy can be free-lying or can be attached to some other chromosome. Trisomy 13 can occur in mosaic so that there is a population of normal cells and a population of trisomy 13 cells. Trisomy 13 is characterized by impaired midline facial development, cleft lip and palate, polydactyly, and mental retardation. Most infants do not survive beyond 6 months of life.

Trisomy 18 (Edwards Syndrome) The chromosomal abnormality characterized by an extra copy of chromosome 18. The extra chromosome can be free lying or attached to another chromosome. Trisomy 18 can occur in mosaic so that there is a population of normal cells and a population of trisomy 18 cells. Trisomy 18 is characterized by mental retardation, neonatal hepatitis, low-set ears, skull malformation, and short digits. Cardiac and renal anomalies are also common. Survival for more than a few months is rare.

Trisomy 21 (Down Syndrome) The chromosomal abnormality characterized by an extra copy of chromosome 21. In rare cases this syndrome is caused by translocation. The extra copy can be free-lying, or can be attached to some other chromosome, most frequently number 14. Trisomy 21 can occur in mosaic, so that there is a population of normal cells and a population of trisomy 21 cells. Trisomy 21 is characterized by moderate to severe mental retardation, sloping forehead, small ear canals, flat bridged nose, and short fingers and toes. One third of infants have congenital heart disease, and one third have duodenal atresia. (Both can be present in the same infant.) Affected people can survive to middle or old age. There is an increased incidence of Alzheimer disease in adults with Trisomy 21.

Truncus arteriosus See *Common truncus*.

Ventricle One of the two lower chambers of the heart (plural ventricles). The right ventricle sends blood to the lungs, and the left ventricle passes oxygen-rich blood to the rest of the body.

Ventricular septal defect (VSD) A congenital cardiac malformation in which there are one or several openings in the ventricular septum (muscular and fibrous wall between the right and left ventricle or right and left lower chambers of the heart) allowing a mixing of oxygenated and unoxygenated blood. The openings vary in size and may resolve without treatment or require surgical treatment.

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Appendix D. Birth Defect Cluster Investigations

In addition to routine data collection, the Birth Defects Epidemiology and Surveillance Branch conducts birth defect investigations throughout Texas. When a health care professional or a member of the public reports a seemingly unusual concentration of children with a particular type of birth defect — also called a "cluster" — we initiate an investigation to determine if there is a statistically significant elevation in the number of children with the birth defect of concern. More information about birth defect clusters and investigations can be found on our website at https://www.dshs.texas.gov/texas-birth-defects-epidemiology-surveillance/birth-defects-clusters.

Since 1994, 128 birth defect clusters have been investigated, as shown below. More detailed information can be obtained by contacting the Birth Defects Epidemiology and Surveillance Branch via email at birthdefects@dshs.texas.gov or by phone at 512-776-7232.

Number	Location	County	Region	Condition(s)	Status
1994.01	Bryan	Brazos	7	all birth defects	closed
1994.02	Dallas	Dallas	3	polydactyly	closed
1994.03	El Paso	El Paso	10	gastroschisis	closed
1994.04	El Paso	El Paso	10	microphthalmia	closed
1994.05	Granbury	Hood, Somervell	3	Down syndrome	closed
1994.06	McKinney	Collin	3	ear	closed
1994.07	Parkland Hospital	Dallas	3	multiple defects	closed
1994.08	San Antonio	Bexar	8	gastroschisis	closed
1994.09	San Antonio	Bexar	8	anophthalmia	closed
1994.10	Temple area	Bell, Brazos, Falls, Limestone, McClennan	7	gastroschisis	closed
1995.01	Dallas	Dallas	3	holoprosencephaly	closed
1995.02	Dawson County	Dawson	9	spina bifida	closed
1995.03	Eagle Pass	Maverick	8	neural tube defects	closed

Number	Location	County	Region	Condition(s)	Status
1995.04	Ellis County	Ellis	3	Down syndrome	closed
1995.05	Gaines and Dawson Counties	Gaines, Dawson	9	oral clefts	closed
1995.06	Houston	Harris	6	Down syndrome	closed
1995.07	The Woodlands	Montgomery	6	anencephaly	closed
1996.01	Cameron, Willacy, and Hidalgo Counties	Cameron, Willacy, Hidalgo	11	heart	closed
1996.02	Fabens	El Paso	10	heart	closed
1996.03	Grand Prairie	Dallas	3	multiple defects	closed
1996.04	Hood County	Hood	3	chromosomal	closed
1996.05	Kingsville	Kleberg	11	multiple defects	closed
1996.06	Lewisville	Denton	3	multiple defects	closed
1996.07	Nueces County	Nueces	11	anencephaly	closed
1996.08	Pantex	Armstrong, Carson, Potter, Randall	1	all birth defects	closed
1996.09	Travis and Bastrop Counties	Travis, Bastrop	7	anophthalmia	closed
1996.10	Vidor	Orange	5	multiple defects	closed
1997.01	Brazos County	Brazos	7	hypoplastic left heart syndrome	closed
1997.02	Bryan and College Station	Brazos	7	anencephaly	closed
1997.03	Conroe	Montgomery	6	anencephaly	closed
1997.04	Dallas	Dallas	3	neural tube defects	closed
1997.05	El Paso	El Paso	10	biliary atresia	closed
1997.06	El Paso	El Paso	10	multiple defects	closed
1997.07	Kelly Air Force Base	Bexar	8	multiple defects	closed
1997.08	Ozona	Crockett	9	oral clefts	closed
1998.01	Cameron County	Cameron	11	neural tube defects	closed

Number	Location	County	Region	Condition(s)	Status
1998.02	Ellis, Dallas, Johnson, Kaufman, Navarro, and Tarrant Counties	Ellis, Dallas, Johnson, Kaufman, Navarro, Tarrant	3, 7	multiple defects	closed
1998.03	Laredo	Webb	11	neural tube defects	closed
1998.04	Port Lavaca	Calhoun	8	gastroschisis	closed
1998.05	Presidio and Brewster Counties	Presidio, Brewster	10	oral clefts	closed
1998.06	San Angelo and Ballinger	Tom Green, Runnels	2, 9	heart	closed
1998.07	Tyler	Smith	4	Down syndrome	closed
1999.01	Bastrop County	Bastrop	7	anencephaly	closed
1999.02	Cameron and Hidalgo Counties	Cameron, Hidalgo	11	esophageal atresia	closed
1999.03	Collin and Denton Counties	Collin, Denton	3	neural tube defects	closed
1999.04	El Paso County	El Paso	10	neural tube defects	closed
1999.05	El Paso	El Paso	10	trisomy 18	closed
1999.06	North Austin	Travis	7	gastroschisis and omphalocele	closed
1999.07	Corpus Christi	Nueces	11	neural tube defects	closed
1999.08	Nueces County	Nueces	11	cyclopia	closed
1999.09	Roby	Fisher	2	multiple defects	closed
1999.10	San Angelo	Tom Green	9	agenesis of the corpus callosum	closed
1999.11	West Dallas	Dallas	3	multiple defects	closed
2000.01	Bryan	Brazos	7	anencephaly	closed
2000.02	Cedar Creek	Bastrop	7	Down syndrome	closed

Number	Location	County	Region	Condition(s)	Status
2000.03	Houston area	Harris, Montgomery Chambers, Fort Bend, Angelina, Hardin, Colorado	6	spina bifida	closed
2000.04	Lindale	Smith	4	oral clefts	closed
2000.05	Shelby County	Shelby	5	anencephaly	closed
2000.06	Williamson County	Williamson	7	agenesis of the corpus callosum	closed
2000.07	Zavalla	Angelina	5	multiple defects	closed
2001.01	Cedar Park	Williamson	7	multiple defects	closed
2001.02	Corpus Christi	Nueces	11	multiple defects	closed
2001.03	Nueces, San Patricio, and Kleberg Counties (originally Corpus Christi)	Nueces, San Patricio, Kleberg	11	multiple defects (15 specific birth defects)	closed
2001.04	Dallas and Tarrant Counties	Dallas, Tarrant	3	gastroschisis	closed
2001.05	Deer Park	Harris	6	multiple defects	closed
2001.06	Grayson County	Grayson	3	ventricular septal defect	closed
2001.07	Port Neches, Groves, and Nederland	Jefferson	5	all birth defects	closed
2001.08	Houston area	Harris	6	spina bifida	closed
2001.09	Kelly Air Force Base	Bexar	8	all birth defects	closed
2001.10	Laredo	Webb	11	neural tube defects	closed
2001.11	Odessa	Ector (only)	9	microtia	closed
2001.12	Dallas	Dallas	3	anencephaly	closed
2001.13	San Antonio and El Paso	Bexar, El Paso	8, 10	Williams syndrome	closed
2001.14	Tarrant County	Tarrant	3	triploidy	closed

Number	Location	County	Region	Condition(s)	Status
2001.15	Tarrant, Dallas, Hood, and Young Counties	Tarrant, Dallas, Hood, Young	2, 3	diaphragmatic hernia	closed
2001.16	Travis and Williamson Counties	Travis, Williamson	7	gastroschisis	closed
2002.01	Houston	Harris	6	port wine stain	closed
2002.02	Duval County	Duval	11	transposition of the great vessels	closed
2002.03	Ellis County	Ellis	3	anencephaly	closed
2002.04	Garland	Dallas	3	multiple defects	closed
2002.05	Washington County	Washington	7	Dandy-Walker variant	closed
2002.06	Laredo	Webb	11	multiple defects	closed
2003.01	Bee, Cameron, Hidalgo, Jim Wells, Kleberg, Nueces, San Patricio, Starr, Webb, and Willacy Counties	Bee, Cameron, Hidalgo, Jim Wells, Kleberg, Nueces, San Patricio, Starr, Webb, Willacy	11	gastroschisis	closed
2003.02	Dallas County	Dallas	3	all birth defects	closed
2003.03	East Texas	not determined	4	reduction defects of the upper limbs	closed
2003.04	Texas	all	all	intestinal duplication	closed
2004.01	El Paso	El Paso	10	gastroschisis	closed
2004.02	Salado	Bell	7	bladder exstrophy, gastroschisis	closed
2004.03	Medical City Hospital, Dallas	not determined	3	hypoplastic left heart syndrome	closed
2004.04	Odessa	Ector	9	plagiocephaly	closed
2005.01	Brownsville	Cameron	11	pyloric stenosis	closed
2005.02	McAllen	Hidalgo	11	Down syndrome	closed

Number	Location	County	Region	Condition(s)	Status
2005.03	Lubbock	Lubbock	1	gastroschisis	closed
2005.04	Midlothian, Venus, and Cedar Hill	Ellis, Johnson, Dallas	3	all birth defects	closed
2005.05	North Texas (loosely defined)	*defined various ways, please see report*	see report	gastroschisis	closed
2006.01	Zip code 77040 in Houston	Harris	6	all birth defects	closed
2006.02	Zip codes 78238 and 78240 in Leon Valley	Bexar	8	all birth defects	closed
2007.01	Midland	Midland	9	Down syndrome	closed
2007.02	Travis, Williamson, Hays, Bastrop, and Fayette Counties	Travis, Williamson, Hays, Bastrop, Fayette	7	gastroschisis	closed
2008.01	El Paso	El Paso	10	pyloric stenosis	closed
2009.01	Midland and Ector Counties	Midland, Ector	9	anencephaly	closed
2009.02	Brownwood	Brown	2	diaphragmatic hernia	closed
2009.03	Kyle	Hays	7	anotia or microtia	closed
2010.01	Weslaco and Mercedes (Knapp Medical Center)	Hidalgo	11	microtia	closed
2010.02	UTMB Galveston	Brazoria, Fort Bend, Galveston, Harris	6	atrial septal defect	closed
2010.03	Brazos County	Brazos	7	trisomy 18	closed
2011.01	University Medical Center, Lubbock; possibly also Covenant Medical Center	*based on patients' residence counties*	1	anencephaly, gastroschisis, trisomy 18	closed
2011.02	Bexar County	Bexar	8	all birth defects	closed

Number	Location	County	Region	Condition(s)	Status
2011.03	Brownsville and Los Fresnos	Cameron	11	Down syndrome	closed
2012.01	John Peter Smith Hospital, Fort Worth	Tarrant	3	anencephaly	closed
2012.02	Huguley Memorial Hospital, south Fort Worth	Johnson, Tarrant	3	polydactyly, syndactyly	closed
2012.03	Peterson Regional Medical Center (Kerrville) and Hill Country Memorial Hospital (Fredericksburg)	Kerr, Gillespie	8	clubfoot	closed
2012.04	Ellis County	Ellis	3	Down syndrome	closed
2013.01	El Paso	El Paso	10	anencephaly	closed
2014.01	San Jacinto River Waste Pits area	Harris, possibly Chambers (area defined by Census tracts)	6	all birth defects	closed
2014.02	Amarillo area	Potter, Randall	1	clubfoot	closed
2014.03	Odessa area	*to be determined*	9	atrial septal defect	closed
2015.01	Sulphur Springs area	Hopkins, Lamar	4	gastroschisis	closed
2017.02	Corpus Christi area	Nueces, San Patricio, Kleberg	11	all birth defects	closed
2017.03	Valley Baptist Hospital	Cameron	11	upper limb defects (hypoplastic arm related to amniotic band)	closed
2017.04	Dallas, one small area within Dallas	Dallas	3	hypoplastic left heart syndrome	closed
2018.01	Cameron County	Cameron	11	anencephaly	closed
2019.01	Tarrant County	Tarrant	3	all birth defects	closed

Number	Location	County	Region	Condition(s)	Status
2019.02	Laredo	Webb	11	anencephaly	closed
2019.03	Harris County–10 Census tracts	Harris	6	all birth defects	closed
2019.04	Brownsville	Cameron	11	trisomy 18	closed
2023.01	Region 8	Not county specific	8	two-vessel cord	closed
2023.02	Regions 8 and 11	Bexar, Hidalgo	8, 11	cor triatriatum	closed

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Appendix E. Research Using Texas Birth Defects Registry Data
(n=486, as of September 2024)

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