

**Vermont**  
*Birth Information Network (BIN)*

**Purpose:** Surveillance, Referral to Services

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

**Program status:** Currently collecting data

**Start year:** 2006

**Earliest year of available data:** 2006

**Organizational location:** Department of Health (Division of Health Surveillance / Statistics)

**Population covered annually:** 6000

**Statewide:** Yes

**Current legislation or rule:** Act 32 (TITLE 18 VSA §5087)

**Legislation year enacted:** 2003

**Case Definition**

**Pregnancy outcome:** Livebirths (All gestational ages and birth weights), Fetal deaths - stillbirths, spontaneous abortions, etc. (20 week gestation and greater or a birth weight of more than 400 grams)

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

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

**Surveillance Methods**

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

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

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

**Delivery hospitals:** Discharge summaries, Specialty outpatient clinics

**Pediatric & tertiary care hospitals:** Discharge summaries, Specialty outpatient clinics

**Third party payers:** Medicaid databases, Multi-payer claims database

**Other specialty facilities:** Cytogenetic laboratories

**Other sources:** Physician reports, Autopsy reports

**Case Ascertainment**

**Conditions warranting chart review in newborn period:** Any chart with selected procedure codes, Any birth certificate with a birth defect box checked, Any chart with selected defects or medical conditions (i.e. abnormal facies, congenital heart disease), Any chart with an ICD-9-CM or ICD-10-CM code corresponding to a condition monitored by Vermont's registry.

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

**Coding:** ICD-9-CM/ICD-10-CM

**Data Collected**

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

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

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

**Data Collection Methods and Storage**

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

**Database collection and storage:** Access

**Data Analysis**

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

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

**Data use and analysis:** Routine statistical monitoring, Public health program evaluation, Baseline rates, Rates by demographic and other variables, Monitoring outbreaks and cluster investigations, Time trends, Observed vs. expected analyses, Identification of potential cases for other epidemiologic studies, Referral, Grant proposals, Education/public awareness

**System Integration**

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

**Funding**

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

**Other**

**Web site:**

<http://www.healthvermont.gov/health-statistics-vital-records/registries/birth-information-network>

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## **DATA TABLES**

**Vermont**  
**Birth Defects Counts and Prevalence 2014 - 2018 (Prevalence per 10,000 Live Births)**

Defect	Maternal Race/Ethnicity					Total*	Notes
	White, Non-Hispanic	Black, Non-Hispanic	Hispanic	Asian or Pacific Islander, Non-Hispanic	American Indian or Alaska Native, Non-Hispanic		
Anencephalus	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	1 <i>0.3</i>	
Anotia/microtia	5 <i>1.9</i>	0 <i>0.0</i>	1 <i>16.5</i>	0 <i>0.0</i>	0 <i>0.0</i>	6 <i>2.1</i>	
Aortic valve stenosis	8 <i>3.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	8 <i>2.8</i>	
Atrial septal defect	248 <i>94.4</i>	4 <i>75.8</i>	6 <i>99.2</i>	7 <i>93.7</i>	2 <i>322.6</i>	280 <i>97.0</i>	
Atrioventricular septal defect (Endocardial cushion defect)	11 <i>4.2</i>	0 <i>0.0</i>	0 <i>0.0</i>	1 <i>13.4</i>	0 <i>0.0</i>	13 <i>4.5</i>	
Bladder exstrophy	1 <i>0.4</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	1 <i>0.3</i>	
Cleft lip alone	9 <i>3.4</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	9 <i>3.1</i>	
Cleft lip with cleft palate	7 <i>2.7</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	8 <i>2.8</i>	
Cleft palate alone	13 <i>4.9</i>	0 <i>0.0</i>	1 <i>16.5</i>	2 <i>26.8</i>	0 <i>0.0</i>	16 <i>5.5</i>	
Coarctation of the aorta	10 <i>3.8</i>	0 <i>0.0</i>	0 <i>0.0</i>	1 <i>13.4</i>	0 <i>0.0</i>	13 <i>4.5</i>	
Common truncus (truncus arteriosus)	1 <i>0.4</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	1 <i>0.3</i>	
Diaphragmatic hernia	9 <i>3.4</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	13 <i>4.5</i>	
Double outlet right ventricle	3 <i>1.1</i>	0 <i>0.0</i>	0 <i>0.0</i>	1 <i>13.4</i>	0 <i>0.0</i>	6 <i>2.1</i>	
Ebstein anomaly	3 <i>1.1</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	3 <i>1.0</i>	
Encephalocele	2 <i>0.8</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	2 <i>0.7</i>	
Esophageal atresia/tracheoesophageal fistula	7 <i>2.7</i>	0 <i>0.0</i>	2 <i>33.1</i>	0 <i>0.0</i>	0 <i>0.0</i>	9 <i>3.1</i>	
Gastroschisis	14 <i>5.3</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	14 <i>4.8</i>	
Hypoplastic left heart syndrome	6 <i>2.3</i>	1 <i>18.9</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	9 <i>3.1</i>	
Hypospadias	86 <i>63.9</i>	2 <i>70.2</i>	5 <i>156.7</i>	1 <i>24.8</i>	0 <i>0.0</i>	98 <i>66.0</i>	1
Limb deficiencies (reduction defects)	11 <i>4.2</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	12 <i>4.2</i>	
Omphalocele	2 <i>0.8</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	2 <i>0.7</i>	
Pulmonary valve atresia and stenosis	41 <i>15.6</i>	1 <i>18.9</i>	0 <i>0.0</i>	1 <i>13.4</i>	0 <i>0.0</i>	46 <i>15.9</i>	
Pulmonary valve atresia	3 <i>1.1</i>	1 <i>18.9</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	7 <i>2.4</i>	
Rectal and large intestinal atresia/stenosis	17 <i>6.5</i>	1 <i>18.9</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	18 <i>6.2</i>	
Renal agenesis/hypoplasia	13 <i>4.9</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	13 <i>4.5</i>	
Small intestinal atresia/stenosis	11 <i>4.2</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	11 <i>3.8</i>	2
Spina bifida without anencephalus	5 <i>1.9</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	6 <i>2.1</i>	
Tetralogy of Fallot	6 <i>2.3</i>	1 <i>18.9</i>	1 <i>16.5</i>	0 <i>0.0</i>	0 <i>0.0</i>	10 <i>3.5</i>	
Transposition of the great arteries (TGA)	6 <i>2.3</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	10 <i>3.5</i>	
Dextro-transposition of great arteries (d-TGA)	5 <i>1.9</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	8 <i>2.8</i>	

**Vermont**  
**Birth Defects Counts and Prevalence 2014 - 2018 (Prevalence per 10,000 Live Births)**

Defect	Maternal Race/Ethnicity					Total*	Notes
	White, Non-Hispanic	Black, Non-Hispanic	Hispanic	Asian or Pacific Islander, Non-Hispanic	American Indian or Alaska Native, Non-Hispanic		
Tricuspid valve atresia and stenosis	3 <i>1.1</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	3 <i>1.0</i>	
Tricuspid valve atresia	2 <i>0.8</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	2 <i>0.7</i>	
Trisomy 13	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	1 <i>0.3</i>	
Trisomy 18	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	
Trisomy 21 (Down syndrome)	24 <i>9.1</i>	1 <i>18.9</i>	1 <i>16.5</i>	1 <i>13.4</i>	0 <i>0.0</i>	27 <i>9.3</i>	
Ventricular septal defect	154 <i>58.6</i>	3 <i>56.8</i>	1 <i>16.5</i>	8 <i>107.1</i>	0 <i>0.0</i>	176 <i>60.9</i>	
<b>Total live births</b>	<b>26,275</b>	<b>528</b>	<b>605</b>	<b>747</b>	<b>62</b>	<b>28,878</b>	<b>3</b>
<b>Male live births</b>	<b>13,455</b>	<b>285</b>	<b>319</b>	<b>404</b>	<b>31</b>	<b>14,838</b>	

**Vermont**  
**Birth Defects Counts and Prevalence 2014 - 2018 (Prevalence per 10,000 Live Births)**

Defect	Maternal Age (Years)		Total*	Notes
	Less than 35	35+		
Gastroschisis	13 <i>5.5</i>	1 <i>1.8</i>	14 <i>4.8</i>	
Trisomy 13	0 <i>0.0</i>	1 <i>1.8</i>	1 <i>0.3</i>	
Trisomy 18	0 <i>0.0</i>	0 <i>0.0</i>	0 <i>0.0</i>	
Trisomy 21 (Down syndrome)	20 <i>8.5</i>	7 <i>12.9</i>	27 <i>9.3</i>	
<b>Total live births</b>	<b>23,437</b>	<b>5,440</b>	<b>28,878</b>	<b>3</b>

**Notes**

1. Data for this condition include male and unknown gender cases only. Prevalence is calculated per 10,000 male live births.
2. Data for this condition exclude stenosis until 2016.
3. Data for total live births include unknown gender.

**General comments**

\*Data for totals include unknown and/or other.