

Birth defects are common, costly, and critical conditions that affect 1 in every 33 babies in the United States each year¹.

This report focuses on data from the Birth Information Network (BIN), a statewide data source for birth defects and other congenital conditions in Vermont. The following data are for births to Vermont resident mothers from 2018 through 2022. In addition to a set list of structural and chromosomal conditions, which are generally cited as being birth defects, the BIN also monitors other types of congenital conditions.

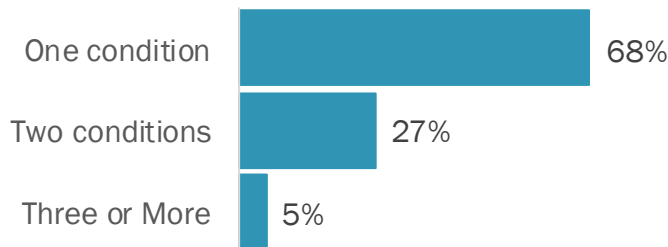
Prevalence

Of the 26,610 infants born to Vermont residents from 2018 through 2022, 1,049 (4%) had one or more conditions monitored by the BIN.

- Structural and chromosomal birth defects were the most common type (726 infants, 2.7% of births).
- Very low birthweight was the second most predominant (268, 1% of births)

Of the 726 infants born with a birth defect from 2018–2022, 232 (32%) had more than one birth defect

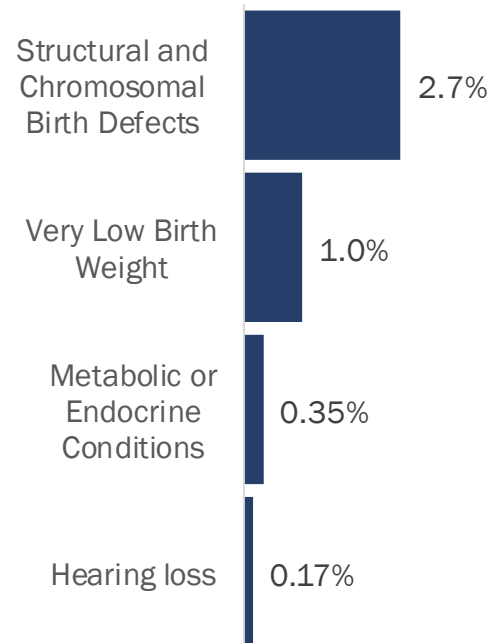
A third of infants have more than one birth defect.



KEY POINTS

- **4% of births to Vermont mothers had one or more conditions monitored by the BIN.**
- **Cardiovascular conditions were the most common group of structural defects.**
- **Atrial septal defect was the most common condition.**

Percent of Vermont resident births with one or more birth defects

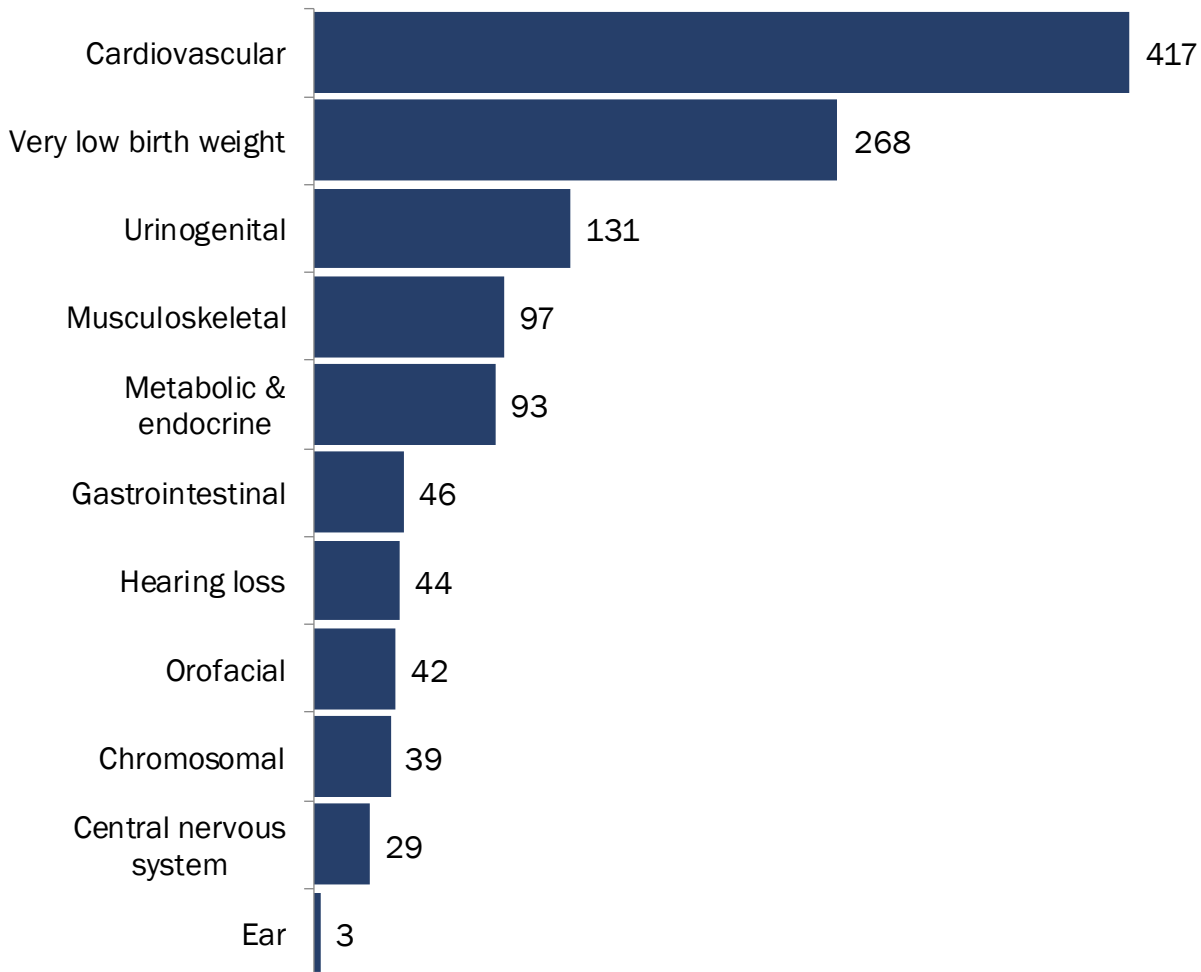


In addition to monitoring live births to Vermont resident mothers, the BIN also collects information data on fetal deaths. There were four fetal deaths with a total of eleven BIN between 2018 and 2022. Data on those conditions are included in the statistics on the following pages.

Conditions

1. 417 infants in Vermont were born with cardiovascular conditions, this is the most prevalent condition group.
2. Atrial septal defect was the most prevalent single condition (322 infants).
3. The second most likely condition was very low birth weight (268 infants).

Conditions by Group



The following tables show the frequency and prevalence of birth defects among Vermont infants from 2018-2022. Notes to consider while reviewing the data tables:

- Vermont’s small population. About 5,300 live births occur each year, making the number of cases of rare conditions small. This also makes it hard to determine if any increases or decreases are random or part of a trend.
- Mucopolysaccharidosis Type I (MPS I), Pompe Disease, and X-linked Adrenoleukodystrophy (X-ALD) are conditions that clinically present differently depending on the time of onset. Regardless, the counts for these conditions are reported here combined regardless of onset time.
- Hypospadias is a condition of the male genitalia, so it’s presented using male birth data.
- Only conditions with cases between 2018-2022 are included in these tables. There are 20 other conditions monitored by the BIN, that did not appear throughout this time frame and are not reported here.

Central Nervous System Conditions in Vermont Births, 2018-2022

Condition	Case Per Births in VT	Number of Cases in VT
Anencephalus	1 in 26610	1
Encephalocele	1 in 26610	1
Holoprosencephaly	1 in 26610	1
Microcephaly	1 in 1267	21
Spina bifida without anencephalus	1 in 5322	5

Eye Conditions in Vermont Births, 2018-2022

Condition	Case Per Births in VT	Number of Cases in VT
Anophthalmia/micropthalmia	1 in 13305	2
Congenital cataract	1 in 2218	12

Ear Conditions in Vermont Births, 2018-2022

Condition	Case Per Births in VT	Number of Cases in VT
Anotia / microtia	1 in 8870	3

Cardiac Conditions in Vermont Births, 2018-2022

Condition	Case Per Births in VT	Number of Cases in VT
Aortic valve stenosis	1 in 1901	14
Atrial septal defect	1 in 83	322
Coarctation of aorta	1 in 2218	12
Common truncus	1 in 26610	1
Double outlet right ventricle	1 in 8870	3
Ebstein's anomaly	1 in 8870	3
Endocardial cushion defect	1 in 3326	8
Hypoplastic left heart syndrome	1 in 3801	7
Pulmonary valve atresia and stenosis	1 in 682	39
Single ventricle	1 in 26610	1
Tetralogy of Fallot	1 in 2218	12
Total anomalous pulmonary venous connection	1 in 26610	1
Transposition of great arteries	1 in 3326	8
Tricuspid valve atresia and stenosis	1 in 8870	3
Ventricular septal defect	1 in 152	175

Orofacial Conditions in Vermont Births, 2018-2022

Condition	Case Per Births in VT	Number of Cases in VT
Choanal atresia	1 in 13305	2
Cleft lip alone	1 in 2218	12
Cleft lip with cleft palate	1 in 2218	12
Cleft palate without cleft lip	1 in 1565	17

Gastrointestinal Conditions in Vermont Births, 2018-2022

Condition	Case Per Births in VT	Number of Cases in VT
Biliary atresia	1 in 26610	1
Esophageal atresia / tracheoesophageal fistula	1 in 8870	3
Rectal and large intestinal atresia / stenosis	1 in 887	30
Small intestinal atresia /stenosis	1 in 1663	16

Urinogenital Conditions in Vermont Births, 2018-2022

Condition	Case Per Births in VT	Number of Cases in VT
Bladder extrophy	1 in 13305	2
Congenital posterior urethral valves	1 in 5322	5
Hypospadias	1 in 240	111
Renal agenesis / hypoplasia	1 in 2047	13

Musculoskeletal Conditions in Vermont Births, 2018-2022

Condition	Case Per Births in VT	Number of Cases in VT
Clubfoot	1 in 502	53
Craniosynostosis	1 in 1401	19
Diaphragmatic hernia	1 in 3801	7
Gastroschisis	1 in 3326	8
Omphalocele	1 in 8870	3
Limb deficiencies (reduction defects)	1 in 2957	9

Chromosomal Conditions in Vermont Births, 2018-2022

Condition	Case Per Births in VT	Number of Cases in VT
Deletion 22q11.2	1 in 8870	3
Down syndrome	1 in 887	30
Trisomy 13 (Patau's syndrome)	1 in 26610	1
Trisomy 18 (Edwards' syndrome)	1 in 8870	3
Turner Syndrome	1 in 13305	2

Metabolic & Endocrine Conditions in Vermont Births, 2018-2022

Condition	Case Per Births in VT	Number of Cases in VT
Biotinidase deficiency (BIOT)	1 in 26610	1
Congenital hypothyroidism (HYPOTH)	1 in 422	63
Cystic fibrosis (CF)	1 in 2218	12
Hb S/Beta-thalassemia (Hb S/Th or Hb S/A)	1 in 26610	1
Medium-chain acyl-CoA dehydrogenase deficiency (MCAD)	1 in 6653	4
Mucopolysaccharidosis Type I (MPS I)	1 in 26610	1
Phenylketonuria (PKU)	1 in 8870	3
Pompe Disease	1 in 6653	4
Sickle cell disease and other hemoglobinopathies	1 in 8870	3
X-linked Adrenoleukodystrophy (X-ALD)	1 in 26610	1

Other Conditions in Vermont Births, 2018-2022

Condition	Case Per Births in VT	Number of Cases in VT
Hearing loss	1 in 605	44
Very low birth weight (<1500 g)	1 in 99	268

Key Takeaways

On average, 4% of infants born to Vermont residents have at least one of the conditions monitored by the BIN. Structural and chromosomal birth defects were the most common type of condition in the BIN, with cardiac conditions being the most common grouping.

In the future, more detailed analysis will be done on the conditions monitored by the BIN as well as the activities of the BIN.

References:

ⁱ About birth defects. (2024, May 16). Birth Defects. <https://www.cdc.gov/birth-defects/about/index.html>

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