# Birth Defects Surveillance in North Carolina

The North Carolina Birth Defects Monitoring Program (BDMP) is located in the State Center for Health Statistics (SCHS) in the North Carolina Division of Public Health. The BDMP is a statewide surveillance system that collects information on all infants in North Carolina who are born with major birth defects. A birth defect is a structural, functional, or chemical abnormality that is present at birth. The causes for about two-thirds of all birth defects are unknown, and are believed to be due to a combination of genetic and environmental factors (multifactorial causes). Some birth defects are readily preventable, such as anencephaly and spina bifida, which are severe neural tube defects affecting the brain or spinal column. Up to 70 percent of all neural tube defects can be prevented if women consume 400 micrograms of folic acid every day before conception and through the first trimester of pregnancy. This amount of folic acid is readily available in most over-the-counter daily multivitamins. It is essential for women to take folic acid every day *before* becoming pregnant, because these birth defects occur very early in pregnancy—before most women realize they are pregnant.

Data for the BDMP are collected by specially trained program staff who review and abstract clinical information from all hospitals that provide labor and delivery and pediatric services, as well as from selected specialty clinics and other facilities throughout the state. Surveillance data are obtained from more than 90 hospitals and medical facilities statewide. All identifying information collected by the BDMP is considered confidential under state law.

The purpose of the BDMP is to collect, analyze, and disseminate information related to the occurrence, prevention, and treatment of birth defects in North Carolina. This information is used to improve the health status of infants and children in North Carolina in many ways, including:

- Monitoring geographic and temporal trends of birth defects;
- Identifying populations at increased risk, and helping target those populations with public health interventions;
- Evaluating the effectiveness of interventions and services;
- Providing birth defects information to health care providers, researchers, and the public;
- Improving access to services through identification of children with special needs; and
- Engaging in research aimed at understanding the causes of birth defects and identifying potential new avenues for prevention.

There are many different types of birth defects; some are relatively common while others are quite rare. The table shows the frequency of selected types of birth defects in North Carolina. Some children have more than one birth defect and are counted in more than one category in the table. Birth defects are one of the leading causes of infant death and childhood disability. About one in every 33 infants is affected by birth defects; this amounts to approximately 3,500-4,000 infants each year in North Carolina.

For more information about the North Carolina BDMP, additional birth defects data (including data from the SCHS query system), and contact information, go to: www.schs.state.nc.us/SCHS/bdmp. The Web site also contains a link to a glossary of birth defects terms.

**Frequency of Selected Birth Defects, North Carolina, 2001–2005***

| Birth Defect Type | Number of Infants Affected | Frequency |
|---|---|---|
| **Central Nervous System** | | |
| Anencephaly | 111 | 1 in 5,370 |
| Spina bifida | 235 | 1 in 2,540 |
| Encephalocele | 59 | 1 in 10,110 |
| Hydrocephalus w/o spina bifida | 631 | 1 in 950 |
| **Heart and Circulatory System** | | |
| Atrial septal defect | 2,977 | 1 in 200 |
| Ventricular septal defect | 2,562 | 1 in 230 |
| Coarctation of aorta | 332 | 1 in 1,800 |
| Hypoplastic left heart syndrome | 164 | 1 in 3,640 |
| **Orofacial and Digestive System** | | |
| Cleft lip/palate | 863 | 1 in 690 |
| Pyloric stenosis | 1,198 | 1 in 500 |
| Obstructive genitourinary defects | 1,466 | 1 in 400 |
| **Musculoskeletal System** | | |
| Diaphragmatic hernia | 213 | 1 in 2,800 |
| Gastroschisis | 223 | 1 in 2,680 |
| **Chromosomal** | | |
| Down syndrome (Trisomy 21) | 774 | 1 in 770 |
| Trisomy 18 (Edwards syndrome) | 165 | 1 in 3,620 |
| Trisomy 13 (Patau syndrome) | 75 | 1 in 7,950 |

* Pregnancy terminations prior to 20 weeks gestation are excluded.