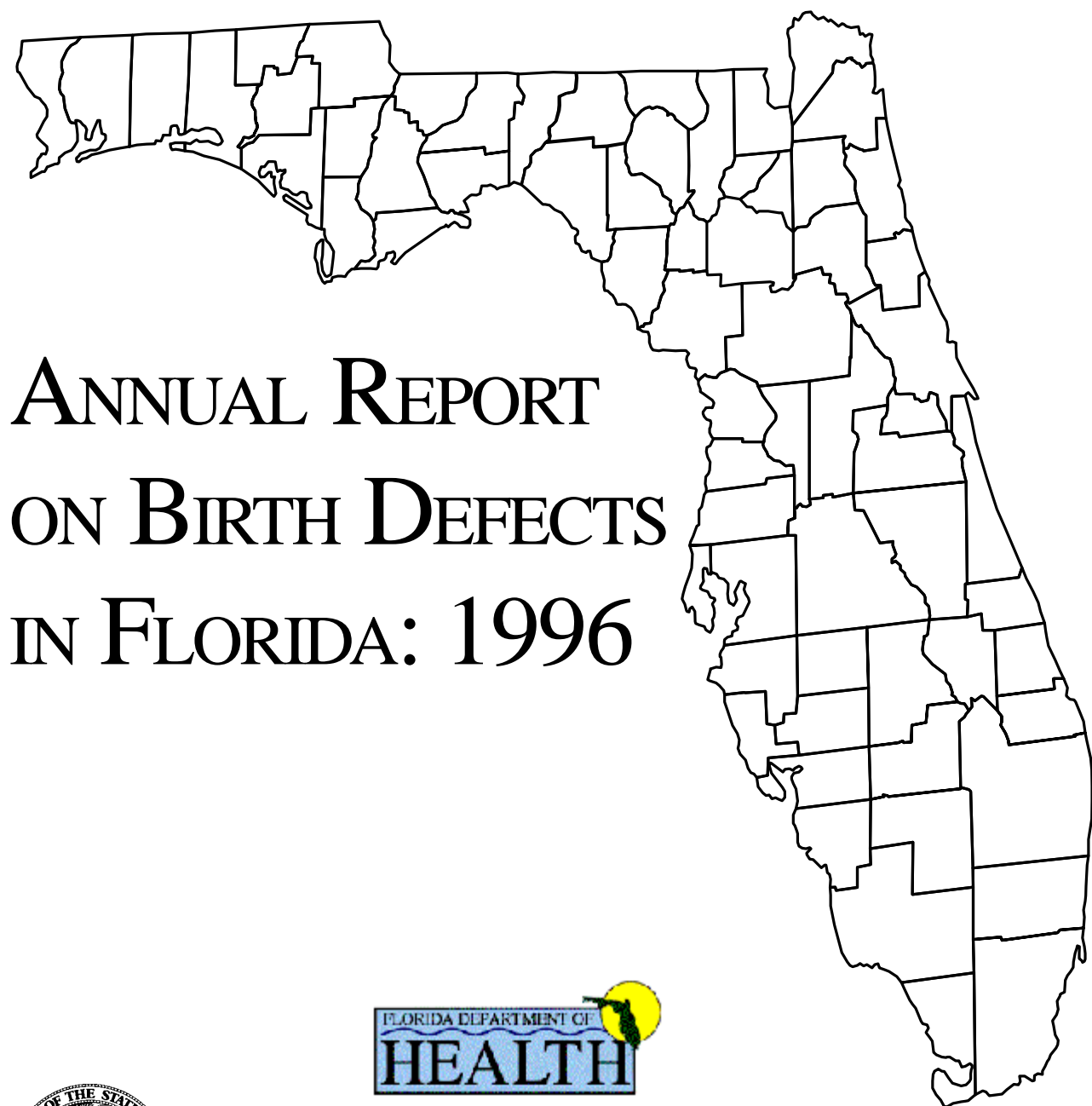


THE FLORIDA BIRTH
DEFECTS REGISTRY



ANNUAL REPORT
ON BIRTH DEFECTS
IN FLORIDA: 1996



Prepared by the Florida Birth Defects Consortium:
Florida Agricultural & Mechanical University,
University of South Florida, University of Florida

September 1999

Additional and related information is also available from the Florida Department of Health (DOH) Birth Defects Registry Web site on the Internet:

<http://www.doh.state.fl.us/fbdr>

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This first annual report contains provisional data for 1996 based on the Center for Disease Control (CDC) Birth Defects Reporting List. Ongoing efforts to identify and validate cases may result in minor adjustments to these figures. As other 1996 data sources are added to the four reported here, and the validation studies (data quality procedures) are completed, the revised 1996 data will be considered final and combined with 1997 data in next year's report expected to be released in February 2000.

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EXECUTIVE SUMMARY

Birth defects are one of the leading causes of infant mortality in Florida. They result in hundreds of millions of dollars in medical and rehabilitation costs each year, as well as tremendous emotional and financial stresses for affected families and individuals. The Florida Birth Defects Registry merges data from multiple sources to create a comprehensive listing of birth defects in the state. This report, the first from the Registry, illustrates the consequences of birth defects in Florida. It describes the causes, treatments, and prevention strategies for several types of serious birth defects. It also provides data on the frequency and rate of birth defects in Florida counties during 1996.

Cases included in this report are live births to Florida residents during 1996 with major structural malformations or genetic disorders. Data sources include vital statistics, hospital discharge data, and data from Children's Medical Services programs. The Registry is funded by a recurring general revenue appropriation to the Department of Health in the amount of \$462,000. Most of this allocation is used to contract with a University consortium responsible for daily operation of the registry. The consortium is headed by the Florida A&M University Institute of Public Health. It also includes the Florida A&M University Division of Health Information Management, the University of Florida Department of Pediatrics, and the University of South Florida Department of Pediatrics.

Much remains to be learned about the causes of birth defects. Despite recent advances in genetics and reproductive biology, nearly two thirds of birth defects are of unknown cause. One area where substantial progress has been made is in understanding the fundamental role in fetal development played by the B vitamin folic acid. Recent research has demonstrated that sufficient consumption of folic acid prior to conception and during the first trimester can reduce the incidence of neural tube defects (NTDs), major anomalies of the central nervous system, by 50 - 60 percent. Other studies suggest that folic acid may reduce certain heart defects and oral clefts. In February 1999, the Department of Health was awarded a three-year grant from the federal Centers for Disease Control and Prevention (CDC) for enhanced surveillance and prevention of NTDs. This funding will be used for public and professional education on the benefits of folic acid, targeted NTD recurrence prevention, and an evaluation study of the effect of these interventions on NTD reduction. Other types of preventable birth defects include fetal alcohol syndrome, congenital rubella, anomalies caused by certain prescription medications, and birth defects due to environmental toxins.

This report focuses on seven major categories of birth defects:

- Central Nervous System
- Chromosomal
- Cardiac
- Gastrointestinal
- Genital and Urinary

- Muscular and Skeletal
- Oral Clefts

Each category is the subject of a chapter that discusses the embryonic origin, health effects, treatments, causes, and prevention strategies for birth defects in that category. The chapters also include data and maps showing the county distribution of these conditions in Florida. In the Appendix the data is reorganized into county profiles that illustrate the relative frequency of birth defects in each county. There are also Appendices with extensive listings of resource organizations for families affected by a birth defect.

The Florida Birth Defects Registry will continue to refine its data collection and analysis methods in order to provide the most accurate information possible for public health policy, scientific research, and medical services. The Registry will also intensify its prevention and education efforts through the use of focused messages for at-risk populations, professional seminars, and the Internet. The Department of Health, and its collaborators at Florida A&M University, the University of Florida, and the University of South Florida, are dedicated to this ongoing effort to reduce birth defects in Florida.

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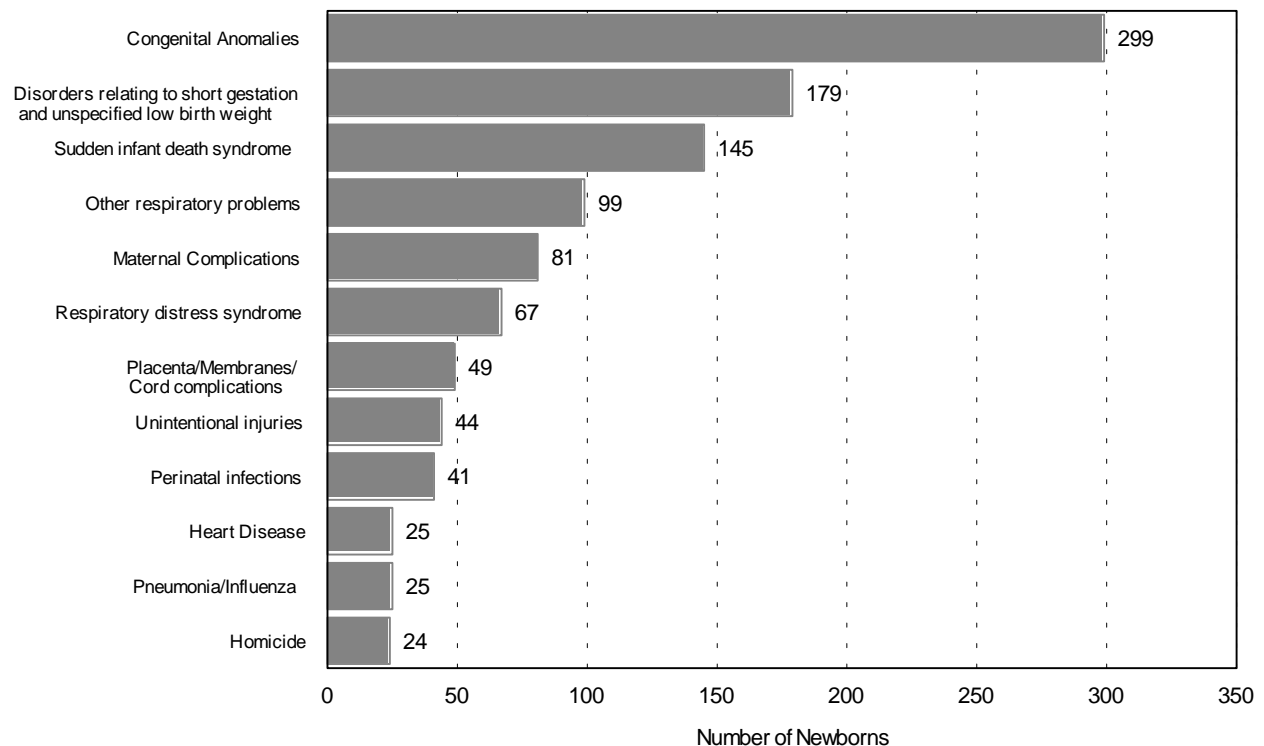
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I. INTRODUCTION

DEFINITION OF BIRTH DEFECTS

As defined by the March of Dimes Birth Defects Foundation, a birth defect is an abnormality of structure, function or metabolism, whether genetically determined or the result of environmental influence during embryonic or fetal life. A congenital defect may cause disease from the time of conception, through birth, or later in life. Birth defects vary with respect to both cause and effect. Birth defects range in severity from pigmented skin lesions to severe and lasting conditions, such as Down syndrome and heart or lung malformation. The cause of most birth defects is not presently understood, although a combination of genetic, biological, or environmental factors is considered to produce many of the conditions. While birth defects are, by definition, present at birth, they are not always recognized at birth. Some birth defects can take months or even years before they are diagnosed. Birth defects can appear individually, in combination, or as part of a recognized syndrome.

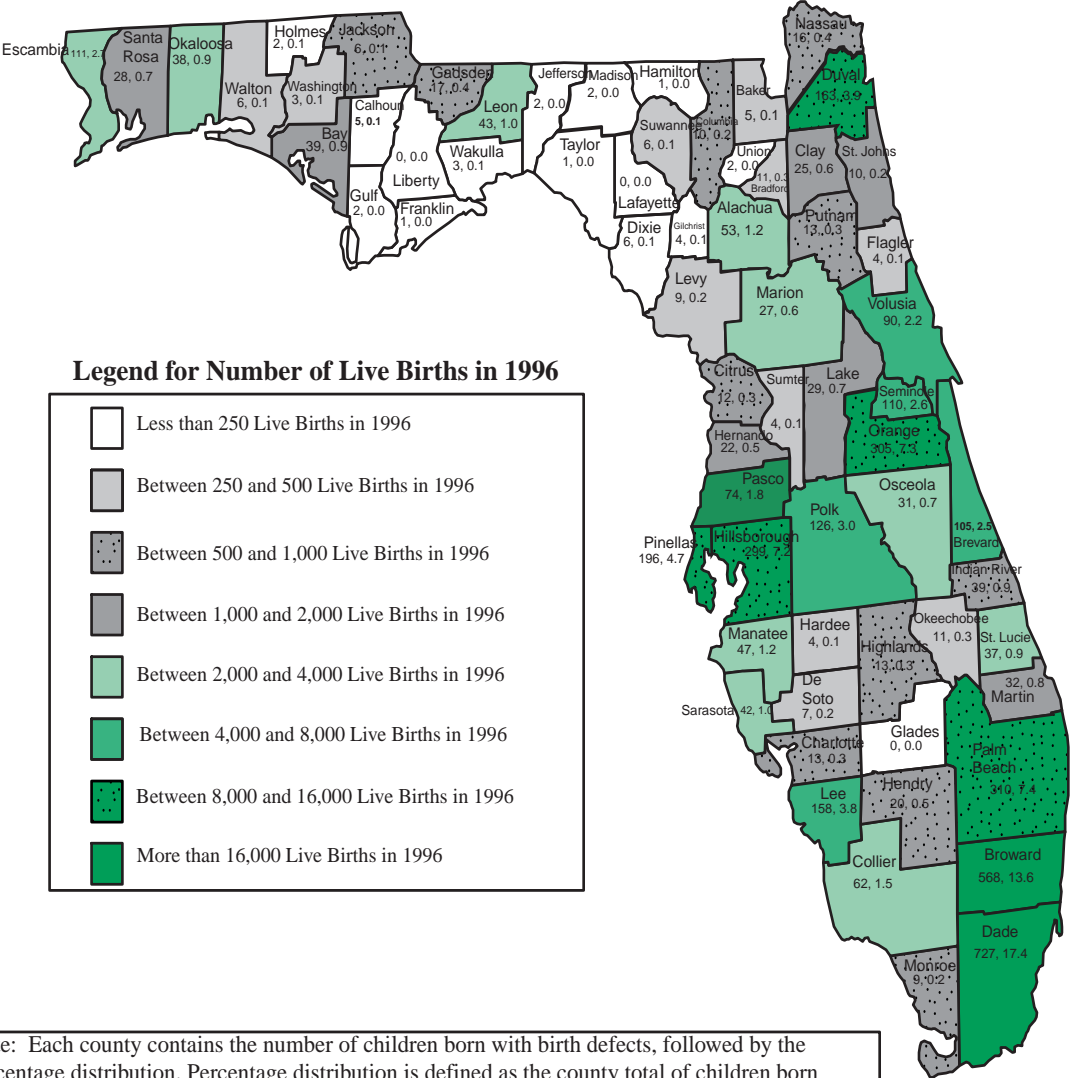
FIGURE 1 Leading Causes of Infant Mortality: Out of 1,405 infant deaths in 1996:



Source: Florida Department of Health Office of Vital Statistics, Florida Vital Statistics Annual Report 1996

FIGURE 2. Number and Percentage Distribution of Children Born with Birth Defects* in 1996 by County

| | |
|--|---------|
| Total Children Born with Birth Defects in 1996 = | 4,259 |
| Total Children Born in 1996 = | 189,134 |
| Percentage of Children Born with Birth Defects in 1996 = | 2.2% |



Note: Each county contains the number of children born with birth defects, followed by the percentage distribution. Percentage distribution is defined as the county total of children born defects divided by the statewide total of children born with birth defects.

* Based on CDC reportable birth defects from 1996 provisional data from the Florida Birth Defects Registry. A discussion of data sources, quality and limitations is included in Appendices E and F.

THE PUBLIC HEALTH IMPORTANCE OF BIRTH DEFECTS

Birth defects are one of the leading causes of infant mortality in the United States and Florida. In 1996, over 20 percent of deaths prior to age one were due to birth defects¹. An even larger percentage of stillbirths and miscarriages were caused by birth defects. Yet over 90 percent of babies born with birth defects live to celebrate their first birthday. Some of these children face long-term developmental disabilities and significant medical and rehabilitation expenses. Thousands of families in Florida are affected each year by the emotional and financial stresses of birth defects. This report, the first from the Florida Birth Defects Registry, illustrates the consequences of birth defects in Florida. It describes the causes, treatments, and prevention strategies for several types of serious birth defects. It also provides data on the frequency and rate of birth defects in Florida counties during 1996. The statistics presented in this report are intended to answer questions about the scope and extent of birth defects in the state of Florida.

The facts speak volumes. Major birth defects were diagnosed in 4,042 or 2.1 percent, of the 189,134 Florida births in 1996. As overall infant mortality has declined in recent years, the relative importance of birth defects as a cause of infant mortality has increased².

It is estimated that 25 - 30 percent of pediatric hospital admissions are for treatment of birth defects³. The estimated average lifetime medical cost for a child with spina bifida is over \$300,000, for Down's syndrome, \$500,000⁴. Individual cases can be much higher. In Florida, medical costs for the care of children with birth defects amount to hundreds of millions of dollars each year. The continuum of care required for children with birth defects includes diagnostic and treatment services, education, vocational training, and custodial care. These costs pale in comparison to the loss of years of life, creativity and earning power of individuals with handicapping conditions.

Much remains to be learned about the causes of birth defects. Despite recent advances in genetics and reproductive biology, nearly two thirds of birth defects are of unknown cause. Substantial progress has been made in understanding the fundamental role that the B vitamin folic acid plays in fetal development. Recent research has demonstrated that sufficient consumption of folic acid prior to conception and during the first trimester can reduce the incidence of major anomalies of the central nervous system, neural tube defects (NTDs), by 50 - 60 percent⁵. Other studies suggest that folic acid may reduce certain heart defects and oral clefts. Dietary sources of folate include green leafy vegetables, grains, legumes, citrus fruits, and liver. Starting in January 1998, federal law requires all enriched grain and cereal products to be fortified with folic acid. Nonetheless, many women of childbearing age do not receive enough folic acid through their diet to provide maximal protection against NTDs. Efforts to increase consumption of folic acid by women in their reproductive years, both in food and through vitamin supplements, are underway nationally and in Florida.

Other types of preventable birth defects include fetal alcohol syndrome, congenital rubella, anomalies caused by certain prescription medications, and birth defects due to environmental toxins. More than 70,000 synthetic chemicals and metals are currently in commercial use in the United States.⁶ The health effects of exposure to most of these, especially persistent low-level exposure, are unknown or incompletely studied. Animal tests have shown that even small doses of toxins administered during vulnerable periods of fetal development can lead to birth defects. Further

research is necessary to better identify the reproductive consequences of exposures to suspect chemicals so that efforts can be made to reduce occupational and environmental exposures to prospective parents.

Several trends in reproductive patterns have increased the public health importance of birth defects. One is the increase in delayed childbearing. Certain birth defects are known to increase in frequency as the age of the mother or father increases. The percent of babies born in Florida to women over 35 increased from 10.4 in 1993 to 12.5 percent in 1996⁷. This represents a 20.2 percent increase in births to women over 35. Another recent trend is the increase in multiple births, meaning more than one fetus in a single pregnancy. Monozygotic twin pregnancies and higher multiples are associated with elevated risks of birth defects. In Florida, multiple births have increased from 2.4 percent of pregnancies in 1993 to 2.6 percent in 1996. This represents a 8 percent increase in multiple births. Anecdotal reports suggest that much of this increase may be due to the use of artificial reproductive technologies. In addition, the prevalence of many birth defects varies markedly for different racial and ethnic groups. Many of the more subtle differences in risk are not well understood. Florida's highly diverse and rapidly growing population ensures that birth defects monitoring and prevention will remain significant public health issues into the next century.

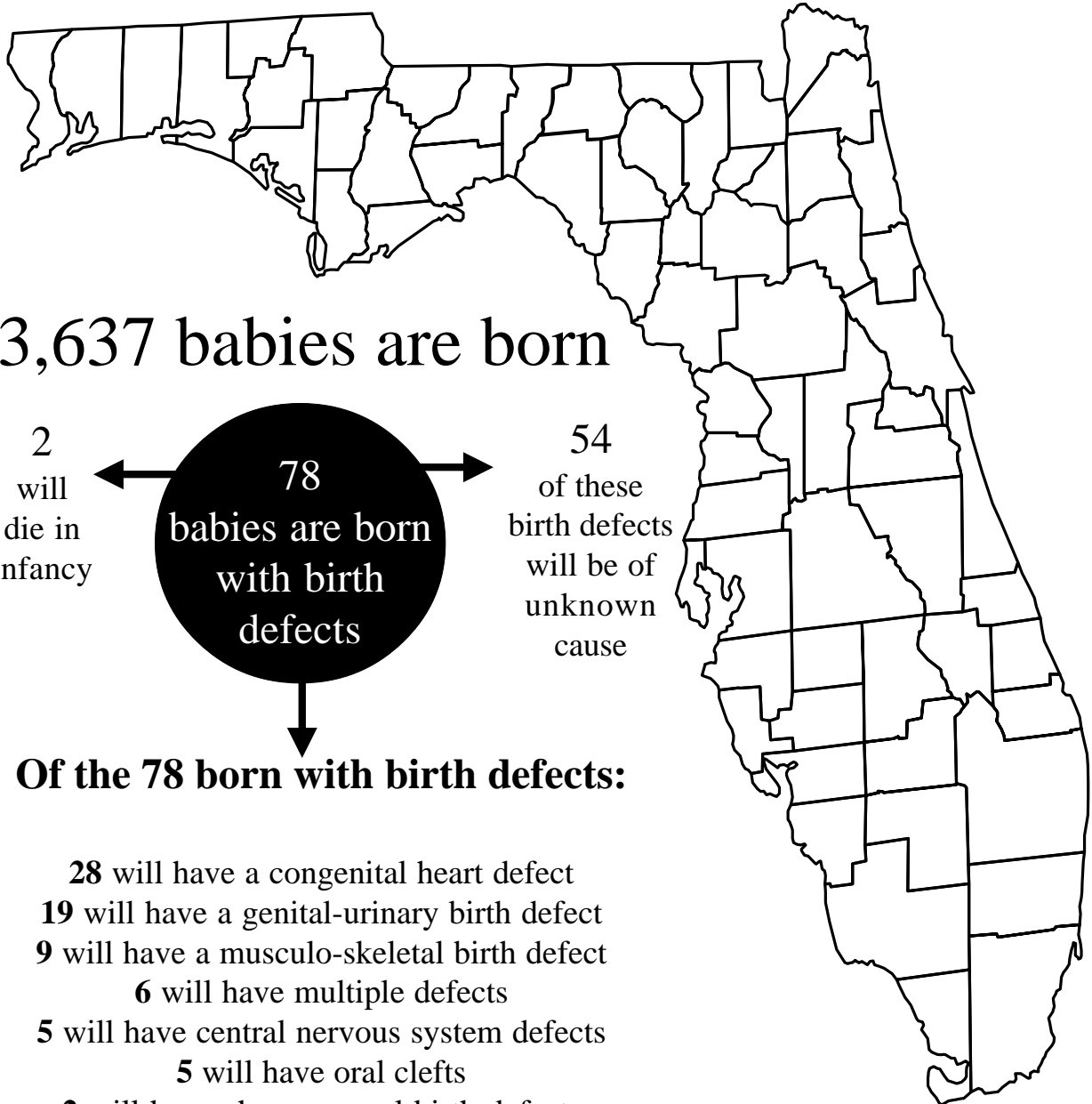
BIRTH DEFECTS SURVEILLANCE IN FLORIDA

The Florida Birth Defects Registry was created to provide a central source of information on the occurrence and prevention of birth defects in the state. Florida has never before had an ongoing program to gather comprehensive information on children affected by birth defects. Information from the Registry can be used to:

- Identify groups or individuals at elevated risk for birth defects;
- Guide the development and evaluation of prevention and early intervention programs;
- Establish prevalence of specific anomalies and monitor trends;
- Investigate environmental, genetic or behavioral causes of birth defects; and
- Study clinical and developmental outcomes in children born with birth defects.

In 1997, the Florida Legislature directed the Department of Health (DOH) to develop the Registry as a statewide, population-based, surveillance system to assess the impact of birth defects on children, families, and the health care system⁸. To design and operate the Registry, DOH turned to the state university system for

EVERY WEEK IN FLORIDA...



* Based on CDC reportable birth defects from 1996 provisional data from the Florida Birth Defects Registry. A discussion of data sources, quality and limitations is included in Appendices E and F.

expertise in the areas of epidemiology, genetics, computer systems, toxicology, biostatistics, and medical recordkeeping. University partners include the Florida Agricultural and Mechanical University (FAMU) Institute of Public Health and Division of Health Information Management; the University of Florida (UF) Department of Pediatrics; and the University of South Florida (USF) Department of Pediatrics. More information on this consortium can be found in Appendix D of this report. The Registry Consortium also formed an interdisciplinary Advisory Committee of volunteers with a range of medical, technical, and advocacy expertise. A description and membership list of the Advisory Committee is also included in Appendix D.

CASE DEFINITION FOR INCLUSION IN THIS REPORT

To be included as a case in this report, an infant must meet all of the following conditions:

- The mother's residence at the time of delivery must have been within the state of Florida
- The child must have had a condition covered by the Registry
- The defect must have been diagnosed, or its signs and symptoms recognized, within the child's first year of life
- The infant must have been born alive.

In the future, as data sources improve, the Registry will be expanded to include diagnosed stillborns that are over 20 weeks in gestation. The conditions included in the Registry are similar to those identified by the federal Centers for Disease Control and Prevention (CDC) for national birth defects monitoring. A complete list of the conditions included in the Registry can be found in Appendix C of the Data Reporting Manual on the Registry website at <http://www.doh.state.fl.us/fbdr>. This report, however, was developed using only those diagnoses that appear on the CDC Birth Defects Reporting List (see Appendix G).

REGISTRY DATA SOURCES

To minimize the costs of data collection, the Registry makes use of existing data wherever possible. The state Vital Statistics Office maintains records of all pregnancies that reach the 20th week of gestation. These live birth records provided the population base for the Registry. Although Vital Statistics records provide a limited amount of diagnostic information, most birth defects are identified through the use of other data files. These include the hospital discharge database compiled by the state Agency for Health Care Administration (AHCA), and files from several DOH

Programs for children such as the Children's Medical Services (CMS) Regional Perinatal Intensive Care Centers (RPICC) and the Early Intervention Program (EIP). This data has been merged by staff at AHCA, DOH, and the Registry in order to eliminate duplication and to develop a single, comprehensive inventory of birth defects in the state. The data sources and merging methods are described in more detail in Appendix E. In the future, the Registry will include information collected as a part of DOH's institution of a new reporting requirement for individual hospitals and physicians to report cases of birth defects that are unlikely to be included in any of the other known data sources. This requirement is expected to take effect in June 1999. Details of the new birth defects reporting responsibilities can be found on the Registry website located at <http://www.doh.state.fl.us/fbdr>.

This first annual report contains provisional data for 1996 based on the Center for Disease Control (CDC) Birth Defects Reporting List. Ongoing efforts to identify and validate cases may result in minor adjustments to these figures. As other 1996 data sources are added to the four reported here, and the validation studies (data quality procedures) are completed, the revised 1996 data will be considered final and combined with 1997 data in next year's report expected to be released in February 2000.

DATA QUALITY

An overview of the assessment of the quality/accuracy of Registry data, and its limitations, is included in Appendix F. A more thorough report on data completeness and accuracy is in preparation, and will compare data from the Registry with information gathered independently from hospital medical records. A report on cases involving multiple malformation or syndromes is also in preparation. These reports will be available on the Registry website in the summer of 1999.

ENHANCED SURVEILLANCE PILOT PROJECTS

While a great deal of useful information can be extracted from the data sources described above, there are limitations inherent in using data originally gathered for other purposes. Two important limitations are inaccurate and/or incomplete reporting of diagnoses, and the often-lengthy delays between the diagnosis and the availability of data. This lack of timeliness limits the usefulness of the Registry for service coordination, focused prevention, and epidemiologic investigations. However, the CDC has developed a model for enhanced birth defects surveillance that overcomes these limitations. This model, realized by CDC in the Metropolitan Atlanta Congenital Defects Program (MACDP), has been adopted by several other states. It involves regular Registry staff visits to hospital nurseries, newborn intensive care units, and other sites to identify cases as they are diagnosed. Once a case is identified, an abstractor reviews the medical records and extracts complete data on the medical conditions and other relevant information.

The CDC has provided a \$30,000 grant to DOH for a pilot project designed to demonstrate the benefits of such an enhanced surveillance in Florida. This project will operate a system similar to MACDP for a limited time period in a one- or two-county area. The Florida Birth Defects Registry will work closely with local hospitals, Healthy Start programs, and other organizations to

ensure timely and thorough surveillance and service coordination. An evaluation of this demonstration is expected to be complete by the end of 1999. Based on cost projections from the CDC, Florida would need to increase its funding commitment to the Registry by at least ten times the current level to run an enhanced surveillance program statewide.

The CDC has also provided funding for a Neural Tube Defect (NTD) recurrence prevention program based on enhanced surveillance. This project relies on the rapid identification of all pregnancies statewide that are affected by an NTD. Women with an affected pregnancy are at an elevated risk of having a recurrence if they get pregnant again. High-dose supplements of folic acid can greatly reduce this risk. The Registry is developing procedures for obstetricians, neonatologists, geneticists, and other clinicians who diagnose NTDs to report cases within a short time after diagnosis. The Registry will then work with these clinicians to ensure that appropriate counseling on recurrence prevention is provided (e.g., by the Regional Genetics Centers). Grant funding will be available to pay for counseling services if they are not covered by private insurance. While this grant funding will be available for a maximum of three years, the enhanced NTD surveillance will continue indefinitely if it is successful at reducing NTD recurrences.

EDUCATION AND PREVENTION ACTIVITIES

Public and professional educational activities are central to the mission of the Registry. These programs are designed to increase understanding of the impact of birth defects, diagnosis and treatment of common birth defects, and birth defects reporting to the Registry.

The cornerstone of the professional education component is the *Genetics & Your Practice* curriculum developed by the March of Dimes, the Washington State Department of Health, and the Swedish Medical Center in Seattle. *Genetics & Your Practice* is designed to help physicians and other health and social services providers screen patients for genetic and congenital anomalies, make appropriate referrals to medical geneticists or genetic counselors, make correct diagnoses and create suitable intervention plans, and reduce risks through effective communication with patients and families. The Registry has teamed with the March of Dimes Florida Chapters to bring this course to Florida. Over two dozen experts in medical genetics have been trained to present the material in the state. The program can be tailored for anything from a one-hour presentation to a full-day workshop. The information is customized to include a discussion of resources in Florida, including the Registry and case reporting procedures. In addition, a statewide *Genetics & Your Practice* teleconference was held in May 1999; many practitioners will receive this instruction by the end of 1999.

The Internet provides new opportunities for conveying information to a wide range of audiences. The Registry web page has individual sections for medical profes-

sionals, for the public, and for data. The professional section contains much of the same information covered by *Genetics & Your Practice*, as well as links to other sites of interest. The public information section of the website contains important information on preventing birth defects including discussions of the value of pre-conceptional planning, prenatal care, and nutrition and pregnancy. The public information section also discusses the potential harmful effects of prescription drugs, maternal illnesses, and environmental exposures on the developing fetus. In addition, a resource subsection describing state programs, medical options, and voluntary support groups for families affected by birth defects is included. The data section of the website is intended for researchers and public policy makers who may be interested in more detailed information on the prevalence of specific birth defects in relation to various geographic, demographic, and behavioral risk factors. The entire website is kept current as new information and data becomes available.

Perhaps the most important prevention initiative is the statewide folic acid public health education campaign. The Registry received \$75,000 from the CDC, renewable for up to three years, to participate in the national campaign to increase consumption of folic acid by women of child-bearing age. DOH will combine its resources with additional funding from the March of Dimes (and other partners such as the Spina Bifida Association) to form the Florida Council on Folic Acid. The Council will work through its member organizations towards the following goals:

- Increasing the proportion of women who understand that consuming folic acid daily can help prevent birth defects;
- Making folic acid awareness a routine part of preventive health care services to women;
- Facilitating distribution of folic acid supplements from the department's central pharmacy and County Health Departments;
- Developing targeted educational materials for addressing the increased risks for families with a history of folic-acid-preventable birth defects; and
- Evaluating the effectiveness of the folic acid projects.

A great deal of up-to-date educational material, for print, radio, and television media has been developed at the national level. This is being made available locally free of cost by the CDC, the March of Dimes, and the National Council on Folic Acid.

FOR MORE INFORMATION

The most comprehensive source of additional information on the Registry is its Internet website. In addition to the public and professional educational material described earlier, the website will contain additional data and reports from the Registry as they become available. Reports in preparation include an analysis of data quality based on a comparison of Registry data with information extracted from hospital medical records, and a report classifying the cases that involve multiple malformation or syndromes. In addition, the data section of the website is enhanced regularly to

include more tables and selection options as the data becomes available. The target date for publishing the second Annual Report is February 2000. This report will look at trends in birth defects from 1996 and 1997.

Any other requests for information or data from the Registry, or questions about data reporting, can be directed to the Registry Hotline at 352-334-1360.

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⁸ The annual appropriation for the Registry is \$461,000 including one position at the Department of Health.



II. CENTRAL NERVOUS SYSTEM

EMBRYONIC ORIGIN

Approximately three weeks after conception, embryonic cells have organized to form the neural plate, which is the progenitor for the brain and spinal cord. Other cells associated with the neural plate will distribute throughout the body and form the peripheral nervous system. The neural plate develops a groove along its longitudinal axis and this groove develops into a tube (called the neural tube) by the end of the fourth week. The anterior (front) two-thirds of this tube forms the brain and the posterior (back) one-third forms the spinal cord. During the fourth week, the front part of the tube develops outpouchings, called brain vesicles, that will ultimately form the cerebrum, midbrain, cerebellum, and brainstem. During this time, septation occurs, and the brain is divided into bilateral structures. By the sixth to the seventh week, the basic structures of the brain are completely formed. By eight to 15 weeks, pronounced cellular growth further adds to the size of these structures. During this time, neurons proliferate and make their movements to their final places in the cortex.

TYPES OF BIRTH DEFECTS

Neural tube defects (NTDs) result from lack of proper closure of the neural tube. The prevalence of NTDs ranges from one to three per 1000 newborns with considerable variation between populations. Anencephaly (partial or complete absence of the brain), *encephaloceles* (cystic outpouchings of the brain), and *spina bifida* (disruptions of the spinal cord) are the most common among these defects. Abnormalities involving the midline or division of the brain can lead to the *agenesis* of the corpus callosum (the absence of crossing fibers) or to holopresencephaly (an incompletely divided brain). Absent or small eyes (anophthalmia and microphthalmia, respectively) occurs when the eye outpouchings of the brain fail to develop. Cranial nerves that govern vision, hearing, and facial movements can be absent if the early progenitors for these nerve cells are damaged. Obstructed flow of the cerebral spinal fluid within the brain causes *hydrocephalus* (an accumulation of fluid causing pressure on the brain). Generalized damage to brain nerve cells and supporting tissues can cause microcephaly (abnormal smallness of the head).

Microcephaly may stem from a wide variety of conditions that cause abnormal growth of the brain, and is often a symptom of syndromes associated with chromosomal conditions. Infants with microcephaly are born with either a normal or reduced head size. Subsequently, the head fails to grow while the face continues to develop at a normal rate. Development of motor functions and speech may be delayed. Hyperactivity and mental retardation are also common occurrences.

HEALTH EFFECTS

Birth Defects involving the central nervous system often have a tremendous impact on a baby's health and well-being. Some abnormalities, such as anencephaly, are incompatible with life. Mental deficiency can be severe when major structural brain malformations are present. Affected

children can have multiple medical problems due to the complications of seizures, poor muscle tone, and difficulties in breathing and swallowing. **Cerebral palsy** and other types of muscle and nerve incoordination are common. Special strategies are required to assist children with blindness or deafness.

TREATMENT

Babies born with NTDs are usually diagnosed at birth, if not before birth. Those born with spina bifida or encephaloceles usually receive surgical correction. Children with hydrocephalus associated with these types of central nervous system defects may receive a surgically placed shunt to relieve pressure on the brain. Aggressive early treatment can often ensure a good outcome and normal or near normal psychomotor functioning can result. Infants with microcephaly, agenesis of the corpus callosum, or other abnormalities can best benefit from early intervention programs (See Resources for a list of Florida's Early Intervention Programs).

CAUSE AND PREVENTION

Neural tube defects have now been clearly linked to **folic acid deficiency**. Folic acid supplementation has been proven to dramatically reduce the incidence of encephaloceles, spina bifida, and anencephaly. 400 micrograms per day is the dose advised for any woman of childbearing age. Four milligrams per day is the dose advised for women who have had a previous pregnancy affected by NTDs.

Mutations in several genes have now been shown to cause holoprosencephaly, hydrocephalus, and certain brain migration disorders. Certain agents have been found to be teratogenic (causing developmental malformations). For example, **in utero** exposure of the fetus to alcohol can cause microcephaly. Mothers with **phenylketonuria** (PKU) can have babies with significant microcephaly or learning delay, if the mother's phenylalanine level is not controlled during pregnancy, starting before conception.

PRENATAL DETECTION

Pregnancies at risk for NTDs can be detected by **maternal serum screening** for associated markers (i.e., alpha-fetoprotein). **Fetal ultrasound** and **amniocentesis** can be used to further study women identified to be at risk. Fetal ultrasound can detect the majority of specific structural brain abnormalities; however, more generalized problems in growth such as microcephaly may be difficult to identify.

Babies born with NTDs are usually diagnosed at birth, if not before birth.

Neural tube defects have now been clearly linked to folic acid deficiency.

Pregnancies at risk for NTDs can be detected by maternal serum screening.

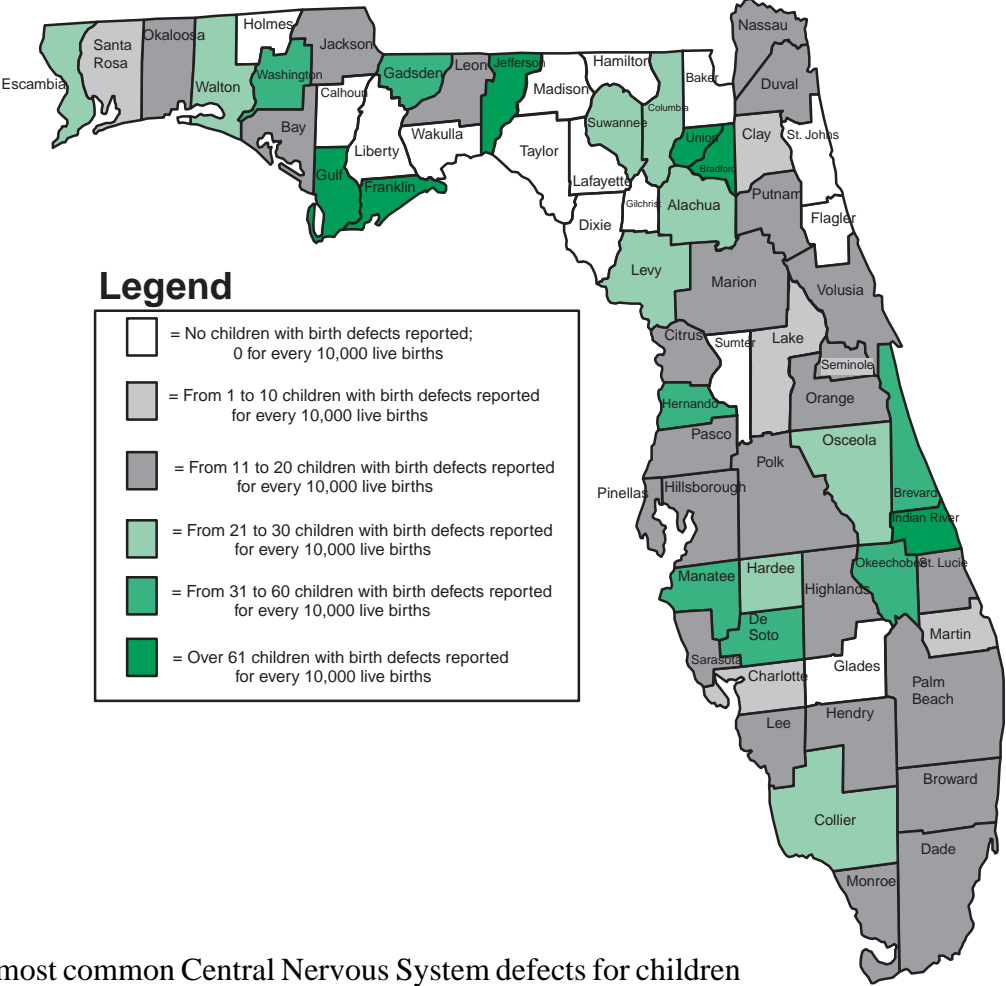
INFORMATION ON CENTRAL NERVOUS SYSTEM DEFECTS REPORTED IN FLORIDA FOR 1996

- 26 of Florida’s counties (38 percent) had less than 500 live births in 1996: Baker, Bradford, Calhoun, DeSoto, Dixie, Flagler, Franklin, Gilchrist, Glades, Gulf, Hamilton, Hardee, Holmes, Jefferson, Lafayette, Levy, Liberty, Madison, Okeechobee, Sumter, Suwannee, Taylor, Union, Wakulla, Walton, and Washington. Number and rate (number per 10,000 live births) of birth defects reported for these counties should be viewed with caution as a result of their relatively low birth rates.
- Florida birth defects are categorized as “central nervous system birth defects” based on the diagnostic codes (ICD-9s) given by the Birth Defects Reporting List (see Appendix G).
- The following counties (shown here in white) had no birth defects reported in 1996: Baker, Calhoun, Dixie, Flagler, Gilchrist, Glades, Hamilton, Holmes, Lafayette, Liberty, Madison, St. Johns, Sumter, Taylor, and Wakulla. This may be a result of the low number of total births, or a result of the low rate of occurrence of a particular birth defect. This should not be interpreted as a lack of potential risk for birth defects in a particular county or region.
- The following counties have the lowest (non-zero) rates of central nervous system birth defects reported (10 or less per 10,000 live births in 1996): Charlotte, Clay, Lake, Martin, and Santa Rosa. Results for counties with less than 500 live births reported for 1996 should be viewed with caution.
- The following counties have the highest rates of central nervous system birth defects reported (61 or more per 10,000 live births in 1996): Bradford, Franklin, Indian River, Jefferson, and Union. Results for counties with less than 500 live births reported for 1996 should be viewed with caution.
- There is a six-fold difference between the counties with the lowest rates and those with the highest rates.

RESOURCES (REFER TO APPENDIX B FOR MORE INFORMATION)

| | |
|--|--|
| Spina Bifida Association of America | The ARC |
| Hydrocephalus Association | Alliance of Genetic Support Groups |
| Hydrocephalus Support Group, Inc. | National Organization for Rare Disorders |
| Lissencephaly Network, Inc. | March of Dimes Birth Defect Foundation |
| Agensis of the Corpus Callosum Network | National Parent Network on Disabilities |

MAP 1. CHILDREN BORN WITH CENTRAL NERVOUS SYSTEM DEFECTS BY COUNTY FOR 1996†



The most common Central Nervous System defects for children born in Florida in 1996:

- Microcephaly (6.8 defects per 10,000 births)
- Hydrocephaly (without spina bifida) (5.3 defects per 10,000 births)
- Spina Bifida (without anencephalus) (5.1 defects per 10,000 births)

† 1996 provisional data from the Florida Birth Defects Registry. A discussion of data sources, quality and limitations is included in Appendices E and F.

TABLE 1. CHILDREN BORN WITH CENTRAL NERVOUS SYSTEM DEFECTS† BY COUNTY FOR 1996

| County | Microcephalus | | Hydrocephalus without spina bifida | | Spina bifida without anencephalus | |
|--------------|--------------------|------|------------------------------------|-------|-----------------------------------|------|
| | Number of Children | Rate | Number of Children | Rate | Number of Children | Rate |
| Alachua | 4 | 16.1 | 1 | 4.0 | 0 | 0.0 |
| Baker | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Bay | 3 | 15.3 | 0 | 0.0 | 0 | 0.0 |
| Bradford | 0 | 0.0 | 0 | 0.0 | 2 | 62.1 |
| Brevard | 6 | 12.0 | 4 | 8.0 | 6 | 12.0 |
| Broward | 13 | 6.5 | 13 | 6.5 | 10 | 5.0 |
| Calhoun | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Charlotte | 0 | 0.0 | 0 | 0.0 | 1 | 10.1 |
| Citrus | 1 | 11.5 | 0 | 0.0 | 0 | 0.0 |
| Clay | 1 | 6.1 | 0 | 0.0 | 0 | 0.0 |
| Collier | 2 | 8.0 | 2 | 8.0 | 2 | 8.0 |
| Columbia | 2 | 29.9 | 0 | 0.0 | 0 | 0.0 |
| Dade | 20 | 6.3 | 17 | 5.3 | 18 | 5.7 |
| DeSoto | 0 | 0.0 | 0 | 0.0 | 1 | 26.9 |
| Dixie | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Duval | 12 | 10.1 | 7 | 5.9 | 5 | 4.2 |
| Escambia | 4 | 10.4 | 3 | 7.8 | 2 | 5.2 |
| Flager | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Franklin | 0 | 0.0 | 1 | 102.0 | 0 | 0.0 |
| Gadsden | 0 | 0.0 | 2 | 30.5 | 0 | 0.0 |
| Gilchrist | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Glades | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Gulf | 0 | 0.0 | 1 | 61.0 | 0 | 0.0 |
| Hamilton | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Hardee | 1 | 21.7 | 0 | 0.0 | 0 | 0.0 |
| Hendry | 0 | 0.0 | 0 | 0.0 | 1 | 17.2 |
| Hernando | 2 | 19.8 | 1 | 9.9 | 0 | 0.0 |
| Highlands | 0 | 0.0 | 1 | 11.8 | 0 | 0.0 |
| Hillsborough | 13 | 9.5 | 8 | 5.9 | 4 | 2.9 |
| Holmes | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Indian-River | 0 | 0.0 | 5 | 51.1 | 1 | 10.2 |
| Jackson | 0 | 0.0 | 0 | 0.0 | 1 | 18.2 |
| Jefferson | 0 | 0.0 | 1 | 64.9 | 0 | 0.0 |
| Lafayette | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Lake | 0 | 0.0 | 0 | 0.0 | 2 | 10.3 |
| Lee | 2 | 4.5 | 2 | 4.5 | 2 | 4.5 |
| Leon | 2 | 7.1 | 2 | 7.1 | 0 | 0.0 |
| Levy | 1 | 27.6 | 0 | 0.0 | 0 | 0.0 |
| Liberty | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Madison | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Manatee | 3 | 10.5 | 3 | 10.5 | 3 | 10.5 |
| Marion | 2 | 8.0 | 1 | 4.0 | 0 | 0.0 |
| Martin | 0 | 0.0 | 0 | 0.0 | 1 | 8.8 |
| Monroe | 0 | 0.0 | 0 | 0.0 | 1 | 11.4 |
| Nassau | 1 | 14.4 | 0 | 0.0 | 0 | 0.0 |
| Okaloosa | 2 | 8.5 | 0 | 0.0 | 2 | 8.5 |
| Okeechobee | 0 | 0.0 | 0 | 0.0 | 2 | 45.9 |
| Orange | 3 | 2.6 | 5 | 4.3 | 3 | 2.6 |
| Osceola | 1 | 4.9 | 1 | 4.9 | 3 | 14.7 |
| Palm-Beach | 2 | 1.6 | 3 | 2.4 | 7 | 5.6 |
| Pasco | 1 | 3.1 | 3 | 9.4 | 2 | 6.3 |
| Pinellas | 7 | 7.7 | 4 | 4.4 | 6 | 6.6 |
| Polk | 7 | 11.4 | 2 | 3.2 | 0 | 0.0 |
| Putnam | 1 | 11.1 | 0 | 0.0 | 0 | 0.0 |
| St.-Johns | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| St.-Lucie | 0 | 0.0 | 2 | 9.4 | 2 | 9.4 |
| Santa-Rosa | 1 | 7.1 | 0 | 0.0 | 0 | 0.0 |
| Sarasota | 1 | 4.0 | 1 | 4.0 | 2 | 7.9 |
| Seminole | 3 | 6.9 | 4 | 9.2 | 1 | 2.3 |
| Sumter | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Suwannee | 1 | 26.4 | 0 | 0.0 | 0 | 0.0 |
| Taylor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Union | 1 | 82.0 | 0 | 0.0 | 0 | 0.0 |
| Volusia | 1 | 2.4 | 0 | 0.0 | 3 | 7.2 |
| Wakulla | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Walton | 1 | 26.6 | 0 | 0.0 | 0 | 0.0 |
| Washington | 0 | 0.0 | 1 | 39.8 | 0 | 0.0 |
| State | 128 | 6.8 | 101 | 5.3 | 96 | 5.1 |

All rates are per 10,000 live births

† 1996 provisional data from the Florida Birth Defects Registry. A discussion of data sources, quality and limitations is included in Appendices E and F.



III. CHROMOSOMAL CONDITIONS

EMBRYONIC ORIGIN

Most *chromosome* and genetic abnormalities originate at the time of development of the sperm and egg, and thus occur before the embryo is formed. During this process, chromosomes replicate and are distributed equally to each cell. Improper distribution can result in an extra chromosome (*trisomy*) or a missing chromosome (*monosomy*) in the embryo. Less frequently, a genetic abnormality occurs in a segment of a chromosome (examples include deletion, duplication, inversion, etc.). Although these abnormalities may be the result of a balanced abnormality in one of the parents, most birth defects that have a chromosomal origin are not inherited. There still remain, however, a large number that are inherited and may be passed from parent to child. Chromosomal abnormalities can affect the chromosome pairs 1-22 (also called autosomes) and/or the sex chromosome pair (X, Y).

TYPES OF BIRTH DEFECTS

The most common autosomal abnormalities in the newborn (those affecting chromosome pairs 1-22) include *Trisomy 21 (Down syndrome)*, *Trisomy 13*, and *Trisomy 18*. Trisomy 13 and 18 typically involve severe malformations and only a minority of affected babies survive beyond infancy. According to the March of Dimes, Trisomy 21 occurs in about 1 in every 900 births. Sex chromosome abnormalities may involve a missing X chromosome (Turner syndrome), an additional X chromosome in the male (Klinefelter syndrome: XXY) or the female (XXX constitutions), or an additional Y (47, XYY condition). Sex chromosome conditions have a frequency of 1 out of every 500 births. These conditions are not usually recognized at birth, since most affected babies have only minor physical abnormalities. Small deletions in chromosomes also cause several important genetic syndromes. The most common, the DiGeorge syndrome, involves an absent thymus and cardiac malformation. DiGeorge syndrome is due to a very small deletion on chromosome 22, and may occur in 1 out of every 4000 births. This deletion is responsible for most cases of the DiGeorge syndrome as well as certain other syndromes involving abnormalities of the heart and face.

HEALTH EFFECTS

Chromosome abnormalities are responsible for a significant proportion of genetic diseases, with chromosomal syndromes appearing in approximately 1 out of every 600 live births, according to the March of Dimes. Chromosome abnormalities are the leading known cause of both pregnancy loss and *mental retardation*. This reflects the fact that a large number of our genes participate in the development of the central nervous system. Thus, a chromosome abnormality is very likely to involve genes affecting development of the nervous system. Other health effects common to many chromosome disorders include growth delay, and increased risk of *congenital* malformations, especially heart defects. The health effects of chromosome disorders are widespread throughout childhood.

TREATMENT

Treatment depends on the particular gene or chromosome involved and its associated abnormalities. Early intervention and education is essential for all genetic conditions that lead to psychomotor delay.

CAUSE AND PREVENTION

As noted above, genetic and chromosomal disorders either can occur spontaneously or be inherited. Advancing maternal age, and to a lesser extent advancing paternal age, increases the risk for chromosome and certain other genetic disorders. **Genetic counseling** can assist families in increasing their likelihood of having a child born without a specific genetic disorder.

PRENATAL DETECTION

Most women beyond the age 35 are provided information about the increased risk of Down syndrome. The occurrence of Down syndrome approaches 1 out of every 100 live births by the time the mother is 40 years old. Pregnancies at risk for Down syndrome can undergo maternal blood screening (evidence of reduced **alpha-fetoprotein** levels, increased levels of estriol, human chorionic gonadotropin, or other pregnancy proteins). **Amniocentesis** for a chromosome study can detect Down syndrome and other types of chromosome abnormalities. **Fetal ultrasound** can provide information about risks concerning fetal development and may assist in decision making about the need for amniocentesis.

INFORMATION ON CHROMOSOMAL CONDITIONS REPORTED IN FLORIDA FOR 1996

- 26 of Florida's counties (38 percent) had less than 500 live births in 1996: Baker, Bradford, Calhoun, DeSoto, Dixie, Flagler, Franklin, Gilchrist, Glades, Gulf, Hamilton, Hardee, Holmes, Jefferson, Lafayette, Levy, Liberty, Madison, Okeechobee, Sumter, Suwannee, Taylor, Union, Wakulla, Walton, Washington. Number and rate (number per 10,000 live births) of birth defects reported for these counties should be viewed with caution as a result of their relatively low birth rates.
- Florida birth defects are categorized as "chromosomal birth defects" based on the diagnostic codes (ICD-9s) given by the Birth Defects Reporting List (see Appendix G).

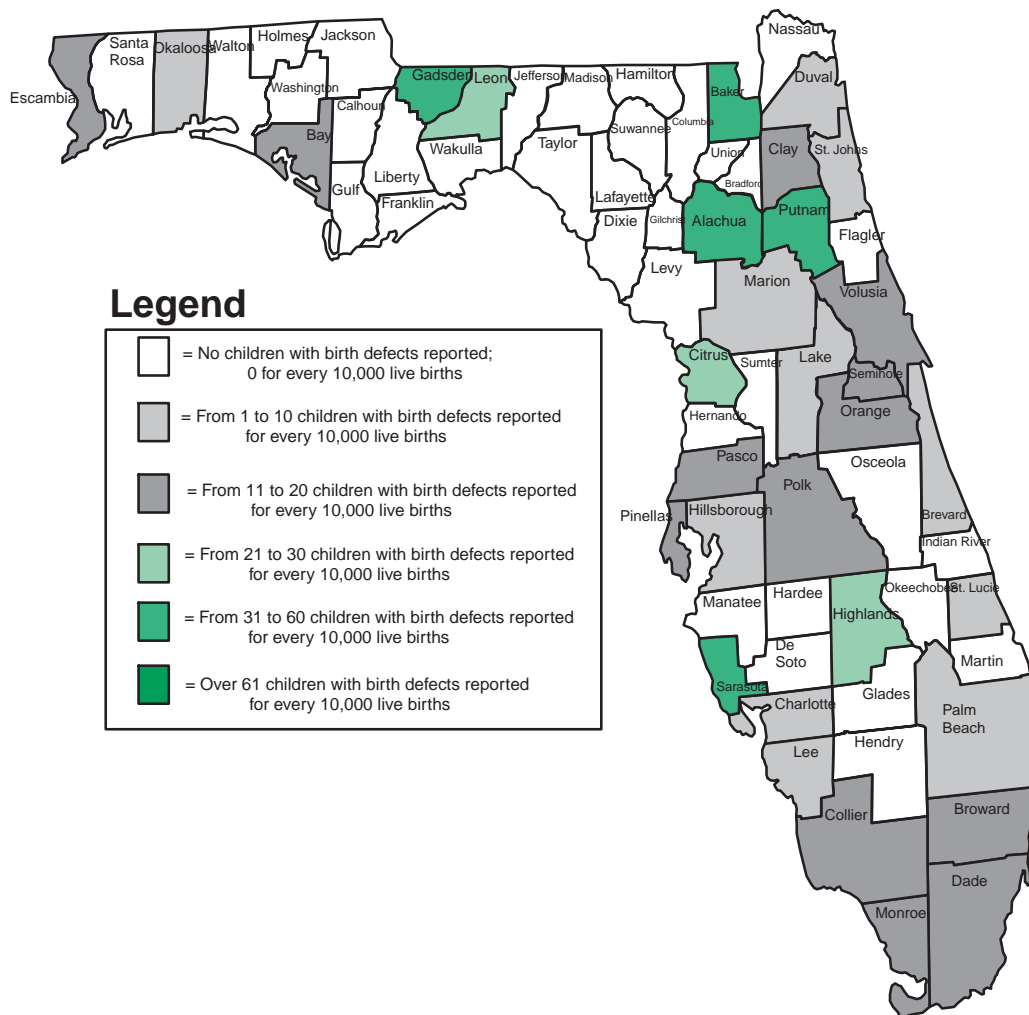
Genetic counseling can assist families in increasing their likelihood of having a child born without a specific genetic disorder.

- The following counties (shown here in white) had no birth defects reported in 1996: Bradford, Calhoun, Columbia, DeSoto, Dixie, Flagler, Franklin, Gilchrist, Glades, Gulf, Hamilton, Hardee, Hendry, Hernando, Holmes, Indian River, Jackson, Jefferson, Lafayette, Levy, Liberty, Madison, Manatee, Martin, Nassau, Okeechobee, Osceola, Santa Rosa, Sumter, Suwannee, Taylor, Union, Wakulla, Walton, and Washington. This may be a result of the low number of total births, or a result of the low rate of occurrence of a particular birth defect. This should not be interpreted as a lack of potential risk for birth defects in a particular county or region.
- The following counties have the lowest (non-zero) rates of chromosomal birth defects reported (10 or less per 10,000 live births in 1996): Brevard, Charlotte, Duval, Hillsborough, Lake, Lee, Marion, Okaloosa, Palm Beach, St. Johns, and St. Lucie. Results for counties with less than 500 live births reported for 1996 should be viewed with caution.
- The following counties have the highest rates of chromosomal birth defects reported (31 or more per 10,000 live births in 1996): Alachua, Baker, Gadsden, Putnam, and Sarasota. Results for counties with less than 500 live births reported for 1996 should be viewed with caution.
- There is a three-fold difference between the counties with the lowest rates and those with the highest rates.

RESOURCES (REFER TO APPENDIX B FOR MORE INFORMATION)

| | |
|--|---|
| Alliance of Genetic Support Groups | National Down Syndrome Congress |
| National Organization for Rare Disorders | Support Organization for Trisomy 18, 13 |
| National Down Syndrome Society | March of Dimes Birth Defect Foundation |
| Chromosome Deletion Outreach (CDO) | National Parent Network on Disabilities |

MAP 2. CHILDREN BORN WITH CHROMOSOMAL CONDITIONS BY COUNTY FOR 1996†



The most common Chromosomal defects for children born in Florida in 1996:

- Down Syndrome (10.5 defects per 10,000 births)
- Trisomy 13 (0.9 defects per 10,000 births)
- Trisomy 18 (0.7 defects per 10,000 births)

†1996 provisional data from the Florida Birth Defects Registry. A discussion of data sources, quality and limitations is included in Appendices E and F.

TABLE 2. CHILDREN BORN WITH CHROMOSOMAL CONDITIONS† BY COUNTY FOR 1996

| County | Down Syndrome | | Trisomy 13 | | Trisomy 18 | |
|--------------|--------------------|------|--------------------|------|--------------------|------|
| | Number of Children | Rate | Number of Children | Rate | Number of Children | Rate |
| Alachua | 8 | 32.2 | 0 | 0.0 | 0 | 0.0 |
| Baker | 1 | 35.7 | 0 | 0.0 | 0 | 0.0 |
| Bay | 3 | 15.3 | 1 | 5.1 | 0 | 0.0 |
| Bradford | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Brevard | 1 | 2.0 | 0 | 0.0 | 0 | 0.0 |
| Broward | 23 | 11.5 | 3 | 1.5 | 1 | 0.5 |
| Calhoun | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Charlotte | 1 | 10.1 | 0 | 0.0 | 0 | 0.0 |
| Citrus | 2 | 23.1 | 0 | 0.0 | 0 | 0.0 |
| Clay | 2 | 12.2 | 0 | 0.0 | 0 | 0.0 |
| Collier | 4 | 16.0 | 0 | 0.0 | 0 | 0.0 |
| Columbia | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Dade | 43 | 13.5 | 2 | 0.6 | 3 | 0.9 |
| DeSoto | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Dixie | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Duval | 9 | 7.6 | 0 | 0.0 | 0 | 0.0 |
| Escambia | 4 | 10.4 | 0 | 0.0 | 1 | 2.6 |
| Flager | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Franklin | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Gadsden | 3 | 45.8 | 0 | 0.0 | 0 | 0.0 |
| Gilchrist | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Glades | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Gulf | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Hamilton | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Hardee | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Hendry | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Hernando | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Highlands | 2 | 23.5 | 0 | 0.0 | 0 | 0.0 |
| Hillsborough | 8 | 5.9 | 0 | 0.0 | 2 | 1.5 |
| Holmes | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Indian-River | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Jackson | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Jefferson | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Lafayette | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Lake | 1 | 5.2 | 0 | 0.0 | 0 | 0.0 |
| Lee | 2 | 4.5 | 0 | 0.0 | 0 | 0.0 |
| Leon | 6 | 21.4 | 1 | 3.6 | 1 | 3.6 |
| Levy | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Liberty | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Madison | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Manatee | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Marion | 1 | 4.0 | 1 | 4.0 | 0 | 0.0 |
| Marlin | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Monroe | 1 | 11.4 | 0 | 0.0 | 0 | 0.0 |
| Nassau | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Okaloosa | 2 | 8.5 | 0 | 0.0 | 0 | 0.0 |
| Okeechobee | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Orange | 14 | 11.9 | 3 | 2.6 | 0 | 0.0 |
| Osceola | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Palm-Beach | 11 | 8.7 | 2 | 1.6 | 0 | 0.0 |
| Pasco | 3 | 9.4 | 1 | 3.1 | 2 | 6.3 |
| Pinellas | 12 | 13.1 | 1 | 1.1 | 0 | 0.0 |
| Polk | 6 | 9.7 | 0 | 0.0 | 1 | 1.6 |
| Putnam | 2 | 22.1 | 0 | 0.0 | 1 | 11.1 |
| St.-Johns | 1 | 8.7 | 0 | 0.0 | 0 | 0.0 |
| St.-Lucie | 2 | 9.4 | 0 | 0.0 | 0 | 0.0 |
| Santa-Rosa | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Sarasota | 8 | 31.7 | 1 | 4.0 | 0 | 0.0 |
| Seminole | 7 | 16.0 | 0 | 0.0 | 1 | 2.3 |
| Sumter | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Suwannee | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Taylor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Union | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Volusia | 5 | 11.9 | 1 | 2.4 | 0 | 0.0 |
| Wakulla | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Walton | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Washington | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| State | 198 | 10.5 | 17 | 0.9 | 13 | 0.7 |

All rates are per 10,000 live births

†1996 provisional data from the Florida Birth Defects Registry. A discussion of data sources, quality and limitations is included in Appendices E and F.



IV. CONGENITAL HEART DISEASE

EMBRYONIC ORIGIN

Two to three weeks after conception, embryonic cells form rows of cells on each side of the embryo called “cardiogenic cords”. These “cords” soon fuse in the midline to form the first evidence of the tubular heart. At three and a half weeks, this tube begins to show a pumping action. From three and a half weeks to six weeks after conception, all the basic structures of the heart will be formed. By the end of the fifth embryonic week, the primitive ventricles and atria have formed. Within the tube, groups of cells called endocardial cushions fuse to separate the ventricles from the atrium and the tube folds upon itself and becomes positioned on the leftward side of the embryo. Paired aortic arches, present in the first five weeks of development, fuse to form the aorta and many of its arteries. In the embryonic period, blood is shunted away from the fetal lung by the *patent ductus arteriosus*, but at birth, the ductus will close as blood begins its circulation into the lung areas.

TYPES OF BIRTH DEFECTS

25 percent of all *congenital* malformations involve the heart, and about 0.8 percent of all liveborn children have a congenital heart defect. Congenital heart defects can involve any area of the heart. The most common defects include atrial septal defects, ventricular septal defects, prolonged persistence of the ductus arteriosus (patent ductus arteriosus), and cardiac valve abnormalities (e.g., bicuspid aortic valve or stenosis of the pulmonary valve). Severe congenital heart disease can cause *cyanotic* heart problems (i.e., transposition of the aorta and the pulmonary artery) or conditions not associated with cyanosis (i.e., coarctation of the aorta). Problems with the position of the heart (i.e., placement of the heart in the right side of the chest), cardiac conduction abnormalities causing *arrhythmias*, and rare congenital *cardiomyopathies* are other types of cardiac disorders that can occur in newborns.

HEALTH EFFECTS

Significant cardiac malformations can cause lack of oxygen, low blood pressure, and improper blood flow. Babies become seriously ill when the brain and other vital tissues are deprived of oxygen. In these cases, immediate surgical and medical treatments are essential. Cardiac malformations can also predispose the heart to bacterial infection leading to multiple organ damage. Cardiac abnormalities can cause physical disabilities at any age, depending on how they affect the heart’s long term pumping ability.

TREATMENT

Cardiac surgery remains the mainstay for the treatment of severe congenital heart disease. Early detection and rapid referral for treatment remains an essential part of care. *Cardiac pacemakers*

and medications are often vital components of treatment. In certain situations, heart transplantation is the only recourse.

CAUSE AND PREVENTION

Most cardiac malformations occur as isolated malformations. They are typically considered to be due to a combination of environmental and yet-to-be-identified genetic factors. Unfortunately, the specific environmental and genetic causes for most cardiac defects have not been defined. The genetic basis for certain cardiomyopathies, however, has been identified (i.e., myosin or myosin-related genes) and certain types of cardiac malformations have been associated with **chromosome abnormalities** (i.e., chromosome 22 for interruptions of the aortic arch and **Trisomy 21** for endocardial cushion defect).

Prevention strategies for the common congenital heart malformations are limited at this time. The use of multivitamin and folic acid supplements for the prevention of certain heart defects is under investigation. Unnecessary medications and known **teratogens** (i.e., alcohol) should be avoided during pregnancy.

PRENATAL DETECTION

Fetal ultrasound is able to detect the majority of structural cardiac abnormalities as well as problems of cardiac position and muscle contractility. Rare cardiomyopathies or other genetic syndromes with known DNA markers or **mutations** are candidates for prenatal diagnosis.

INFORMATION ON CONGENITAL HEART DEFECTS REPORTED IN FLORIDA FOR 1996

- 26 of Florida's counties (38 percent) had less than 500 live births in 1996: Baker, Bradford, Calhoun, DeSoto, Dixie, Flagler, Franklin, Gilchrist, Glades, Gulf, Hamilton, Hardee, Holmes, Jefferson, Lafayette, Levy, Liberty, Madison, Okeechobee, Sumter, Suwannee, Taylor, Union, Wakulla, Walton, Washington. Number and rate (number per 10,000 live births) of birth defects reported for these counties should be viewed with caution as a result of their relatively low birth rates.
- Florida birth defects are categorized as "congenital heart birth defects" based on the diagnostic codes (ICD-9s) given by the Birth Defects Reporting List (see Appendix G).

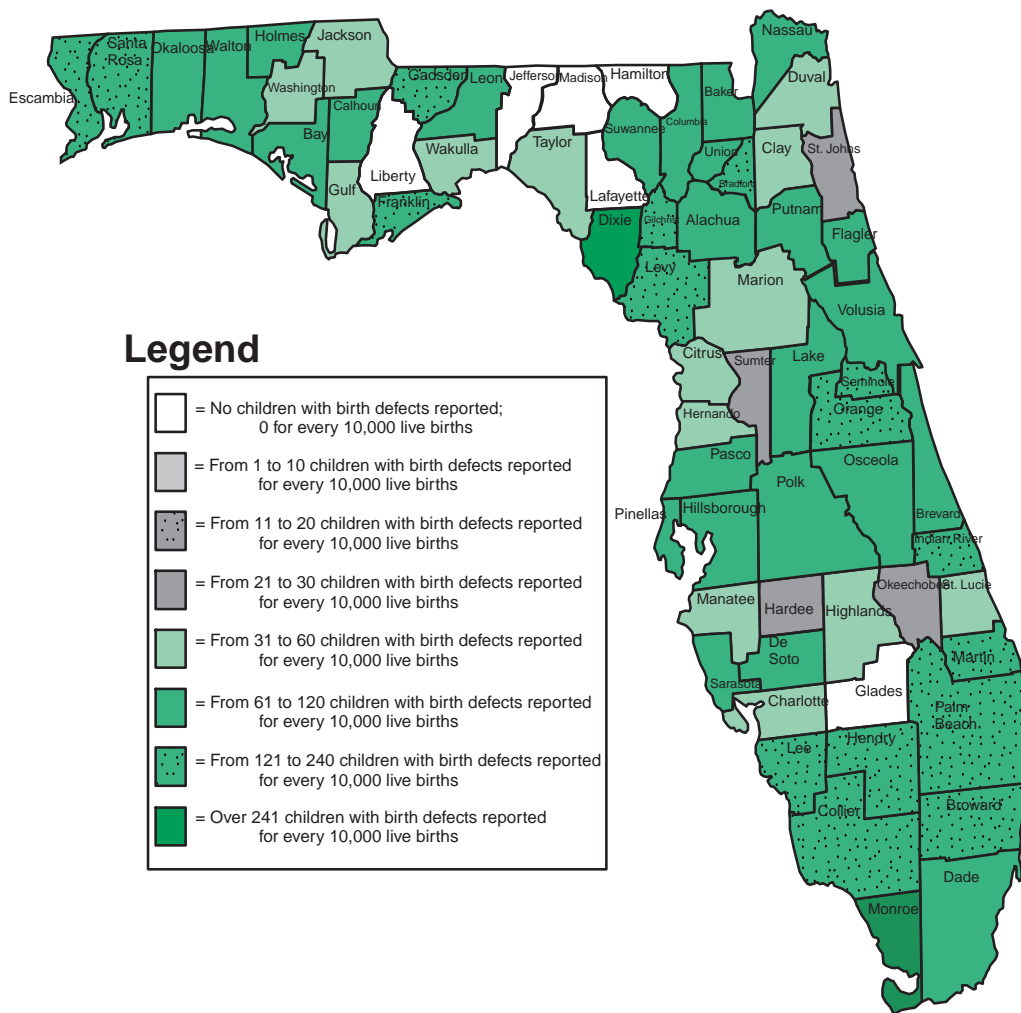
Unnecessary medications and known teratogens (i.e., alcohol) should be avoided during pregnancy.

- The following counties (shown here in white) had no birth defects reported in 1996: Franklin, Glades, Gulf, Hamilton, Hardee, Jefferson, Lafayette, Liberty, Madison, Okeechobee and Union. This may be a result of the low number of total births, or a result of the low rate of occurrence of a particular birth defect. This should not be interpreted as a lack of potential risk for birth defects in a particular county or region.
- The following counties have the lowest (non-zero) rates of congenital heart birth defects reported (20 or less per 10,000 live births in 1996): Jackson. Results for counties with less than 500 live births reported for 1996 should be viewed with caution.
- The following counties have the highest rates of congenital hearth birth defects reported (241 or more per 10,000 live births in 1996): Dixie. Results for counties with less than 500 live births reported for 1996 should be viewed with caution.
- There is an twelve-fold difference between the counties with the lowest rates and those with the highest rates.
- Congenital heart defects are the most prevalent type of birth defect. Over 40% of the children born with birth defects in Florida have some type of congenital heart defect.

RESOURCES (REFER TO APPENDIX B FOR MORE INFORMATION)

| | |
|--|--|
| Congenital Heart Anomalies (CHASER) | Alliance of Genetic Support Groups |
| American Heart Association | National Organization for Rare Disorders |
| Cardiac Arrhythmias Research and Education Foundation (CARE) | March of Dimes Birth Defect Foundation |
| | National Parent Network on Disabilities |

MAP 3. CHILDREN BORN WITH CONGENITAL HEART DEFECTS BY COUNTY FOR 1996†



The most common congenital heart defects for children born in Florida in 1996:

- Atrial septal defect (40.4 defects per 10,000 births)
- Ventricular septal defect (35.0 defects per 10,000 births)
- Pulmonary valve atresia and stenosis (9.1 defects per 10,000 births)

†1996 provisional data from the Florida Birth Defects Registry. A discussion of data sources, quality and limitations is included in Appendices E and F.

TABLE 3. CHILDREN BORN WITH CONGENITAL HEART DEFECTS† BY COUNTY FOR 1996

| County | Atrial septal defect | | Ventricular septal defect | | Pulmonary valve atresia and stenosis | |
|--------------|----------------------|-------|---------------------------|-------|--------------------------------------|------|
| | Number of Children | Rate | Number of Children | Rate | Number of Children | Rate |
| Alachua | 4 | 16.1 | 9 | 36.2 | 0 | 0.0 |
| Baker | 0 | 0.0 | 2 | 71.4 | 1 | 35.7 |
| Bay | 6 | 30.6 | 5 | 25.5 | 1 | 5.1 |
| Bradford | 1 | 31.1 | 0 | 0.0 | 0 | 0.0 |
| Brevard | 10 | 20.1 | 13 | 26.1 | 7 | 14.0 |
| Broward | 116 | 58.2 | 106 | 53.2 | 45 | 22.6 |
| Calhoun | 0 | 0.0 | 1 | 69.9 | 0 | 0.0 |
| Charlotte | 3 | 30.2 | 1 | 10.1 | 0 | 0.0 |
| Citrus | 3 | 34.6 | 3 | 34.6 | 0 | 0.0 |
| Clay | 1 | 6.1 | 2 | 12.2 | 0 | 0.0 |
| Collier | 28 | 112.2 | 13 | 52.1 | 3 | 12.0 |
| Columbia | 1 | 15.0 | 2 | 29.9 | 0 | 0.0 |
| Dade | 126 | 39.6 | 101 | 31.7 | 30 | 9.4 |
| DeSoto | 2 | 53.8 | 0 | 0.0 | 0 | 0.0 |
| Dixie | 2 | 134.2 | 4 | 268.5 | 0 | 0.0 |
| Duval | 9 | 7.6 | 14 | 11.8 | 11 | 9.3 |
| Escambia | 29 | 75.3 | 17 | 44.1 | 2 | 5.2 |
| Flager | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Franklin | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Gadsden | 5 | 76.3 | 2 | 30.5 | 2 | 30.5 |
| Gilchrist | 1 | 73.5 | 3 | 220.6 | 0 | 0.0 |
| Glades | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Gulf | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Hamilton | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Hardee | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Hendry | 9 | 154.9 | 1 | 17.2 | 1 | 17.2 |
| Hernando | 0 | 0.0 | 4 | 39.6 | 2 | 19.8 |
| Highlands | 2 | 23.5 | 1 | 11.8 | 1 | 11.8 |
| Hillsborough | 44 | 32.3 | 50 | 36.7 | 3 | 2.2 |
| Holmes | 0 | 0.0 | 1 | 48.8 | 1 | 48.8 |
| Indian-River | 2 | 20.4 | 4 | 40.9 | 0 | 0.0 |
| Jackson | 0 | 0.0 | 1 | 18.2 | 0 | 0.0 |
| Jefferson | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Lafayette | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Lake | 1 | 5.2 | 5 | 25.8 | 0 | 0.0 |
| Lee | 83 | 186.4 | 27 | 60.6 | 0 | 0.0 |
| Leon | 4 | 14.3 | 10 | 35.7 | 3 | 10.7 |
| Levy | 3 | 82.9 | 4 | 110.5 | 0 | 0.0 |
| Liberty | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Madison | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Manatee | 3 | 10.5 | 9 | 31.4 | 1 | 3.5 |
| Marion | 8 | 31.9 | 2 | 8.0 | 0 | 0.0 |
| Martin | 4 | 35.2 | 5 | 44.1 | 1 | 8.8 |
| Monroe | 1 | 11.4 | 3 | 34.2 | 0 | 0.0 |
| Nassau | 0 | 0.0 | 3 | 43.1 | 2 | 28.7 |
| Okaloosa | 10 | 42.5 | 5 | 21.2 | 0 | 0.0 |
| Okeechobee | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Orange | 49 | 41.8 | 58 | 49.5 | 8 | 6.8 |
| Osceola | 3 | 14.7 | 6 | 29.5 | 2 | 9.8 |
| Palm-Beach | 52 | 41.3 | 58 | 46.1 | 24 | 19.1 |
| Pasco | 15 | 47.1 | 15 | 47.1 | 3 | 9.4 |
| Pinellas | 39 | 42.7 | 29 | 31.7 | 4 | 4.4 |
| Polk | 38 | 61.7 | 13 | 21.1 | 3 | 4.9 |
| Putnam | 4 | 44.3 | 3 | 33.2 | 0 | 0.0 |
| St.-Johns | 2 | 17.3 | 1 | 8.7 | 0 | 0.0 |
| St.-Lucie | 5 | 23.4 | 3 | 14.0 | 0 | 0.0 |
| Santa-Rosa | 7 | 49.8 | 6 | 42.7 | 0 | 0.0 |
| Sarasota | 3 | 11.9 | 7 | 27.8 | 1 | 4.0 |
| Seminole | 15 | 34.4 | 18 | 41.3 | 4 | 9.2 |
| Sumter | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Suwannee | 0 | 0.0 | 2 | 52.8 | 1 | 26.4 |
| Taylor | 1 | 44.1 | 0 | 0.0 | 0 | 0.0 |
| Union | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Volusia | 7 | 16.7 | 9 | 21.5 | 4 | 9.6 |
| Wakulla | 0 | 0.0 | 0 | 0.0 | 1 | 45.0 |
| Walton | 2 | 53.2 | 1 | 26.6 | 0 | 0.0 |
| Washington | 1 | 39.8 | 0 | 0.0 | 0 | 0.0 |
| State | 764 | 40.4 | 662 | 35.0 | 172 | 9.1 |

All rates are per 10,000 live births

†1996 provisional data from the Florida Birth Defects Registry. A discussion of data sources, quality and limitations is included in Appendices E and F.



V. GASTROINTESTINAL DEFECTS

EMBRYONIC ORIGIN

The primitive gut begins to form at four weeks after conception when the lateral parts of the embryo fuse together to form the abdominal wall and a tube is formed through the middle of the embryo. In the fifth week, a septum divides this upper tube into the esophagus and the laryngotracheal canal. Between the fifth and sixth week, portions of the primitive gut tube (i.e., esophagus and duodenum) become filled with cellular tissue. By the seventh to eighth weeks, the tube recanalizes and becomes open again. Part of the midgut undergoes a normal herniation as part of it protrudes from the fetal umbilicus at the sixth embryonic week. By the tenth week, this gut (i.e., small intestine) retracts back into the embryo through the umbilical cord. During development of the intestinal tract, considerable rotation and movement of the intestines occur to accommodate for its increasing length, and to accommodate the development of other organs such as the liver and pancreas. Around age seven weeks, a thick septum of tissue (uro-rectal septum) separates the developing rectum from the bladder and genitalia.

TYPES OF BIRTH DEFECTS

Abnormalities in the development of the tracheoesophageal septum or failure of recanalization of the upper gut can result in tracheal-esophageal fistula (an opening between the trachea and esophagus) and esophageal atresia (closure). Duodenal atresia or stenosis (narrowing) can also result from failure of recanalization. **Omphalocele** occurs in 1 in every 6000 births and results from the midgut failing to properly return to its intra-abdominal location. **Gastroschisis** occurs when the lateral folds of the embryo fail to close above the umbilical cord, allowing herniation of the liver and intestines into the amniotic fluid. Gastroschisis also may be caused by abdominal wall disruption due to vascular mechanisms. Imperforate anus occurs in 1 in every 5000 newborns due to abnormal development of the uro-rectal septum.

HEALTH EFFECTS

Obstruction anywhere in the intestinal tract interferes with proper feeding and nutrition. Upper intestinal obstructions is often discovered shortly after birth when swallowing problems, vomiting, pneumonia, and respiratory distress may occur. Imperforate anus may be associated with developmental problems of the kidneys and genitalia, thus creating complex and prolonged medical and surgical management problems. Some intestinal problems remain undetected until later childhood when, for example, an intestinal obstruction occurs due to improper rotation of the gut. Gastroschisis and omphalocele require immediate surgical attention.

TREATMENT

The great majority of infants properly treated with surgical care and medical follow-up have good developmental outcomes.

CAUSE AND PREVENTION

Of the major intestinal malformations, about one-third are associated with genetic syndromes or chromosomal disorders. However, the majority of intestinal malformations have no known cause. Many may be due to random developmental events associated with an imperfect process of intestinal development. In these situations, there is a very small risk for a recurrence of the problem in future pregnancies. Strategies to prevent intestinal malformations are currently limited. The possible association of maternal smoking with increased risk for gastroschisis is under review. Some types of intestinal atresias have been associated with maternal cocaine exposure.

PRENATAL DETECTION

Increased amniotic fluid volume (polyhydramnios) may be an early sign of intestinal obstruction since swallowing regulates the normal amount of amniotic fluid. Abdominal wall defects can be associated with increased *alpha-fetoprotein* in either maternal serum or amniotic fluid. Abdominal ultrasound can detect omphalocele and other significant malformations, but many types of intestinal stenoses and atresias may not be detected by *fetal ultrasound*.

INFORMATION ON GASTROINTESTINAL DEFECTS REPORTED IN FLORIDA FOR 1996

- 26 of Florida's counties (38 percent) had less than 500 live births in 1996: Baker, Bradford, Calhoun, DeSoto, Dixie, Flagler, Franklin, Gilchrist, Glades, Gulf, Hamilton, Hardee, Holmes, Jefferson, Lafayette, Levy, Liberty, Madison, Okeechobee, Sumter, Suwannee, Taylor, Union, Wakulla, Walton, Washington. Number and rate (number per 10,000 live births) of birth defects reported for these counties should be viewed with caution as a result of their relatively low birth rates.
- Florida birth defects are categorized as "gastrointestinal birth defects" based on the diagnostic codes (ICD-9s) given by the Birth Defects Reporting List (see Appendix G).

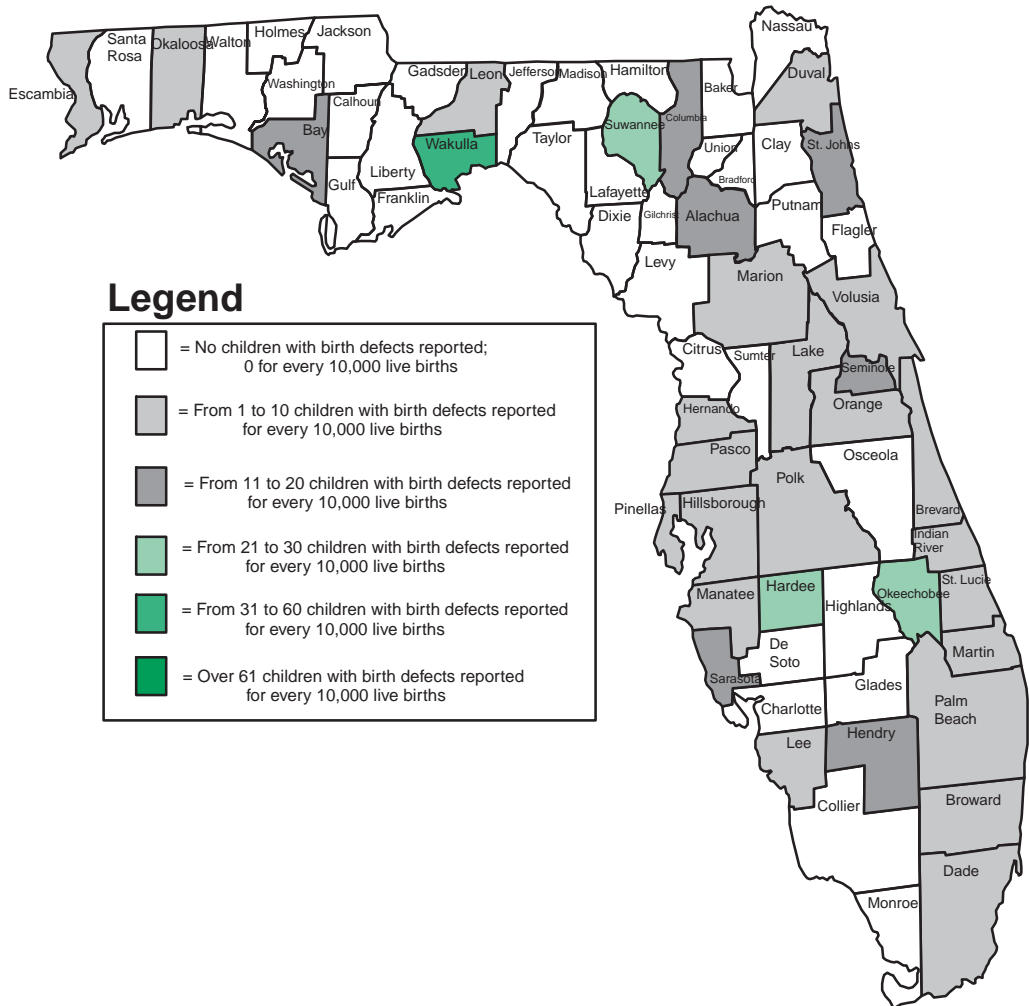
The great majority of infants properly treated with surgical care and medical follow-up have good developmental outcomes.

- The following counties (shown here in white) had no birth defects reported in 1996: Baker, Bradford, Calhoun, Charlotte, Citrus, Clay, Collier, DeSoto, Dixie, Flagler, Franklin, Gadsden, Gilchrist, Glades, Gulf, Hamilton, Highlands, Holmes, Jackson, Jefferson, Lafayette, Levy, Liberty, Madison, Martin, Monroe, Nassau, Okaloosa, Osceola, Putnam, Santa Rosa, Sumter, Taylor, Union, Wakulla, Walton and Washington. This may be a result of the low number of total births, or a result of the low rate of occurrence of a particular birth defect. This should not be interpreted as a lack of potential risk for birth defects in a particular county or region.
- The following counties have the lowest (non-zero) rates of gastrointestinal birth defects reported (10 or less per 10,000 live births in 1996): Bay, Brevard, Broward, Dade, Duval, Escambia, Hernando, Hillsborough, Indian River, Lake, Lee, Leon, Manatee, Marion, Orange, Palm Beach, Pasco, Pinellas, Polk, St. Lucie and Volusia. Results for counties with less than 500 live births reported for 1996 should be viewed with caution.
- The following counties have the highest rates of gastrointestinal birth defects reported (21 or more per 10,000 live births in 1996): Hardee, Okeechobee and Suwanee. Results for counties with less than 500 live births reported for 1996 should be viewed with caution.
- There is a two-fold difference between the counties with the lowest rates and those with the highest rates.

RESOURCES (REFER TO APPENDIX B FOR MORE INFORMATION)

| | |
|---|--|
| Pullthru Network | Alliance of Genetic Support Groups |
| TEF VATER International Support Network | National Organization for Rare Disorders |
| American Pseudo-Obstruction and Hirschsprung's Disease Society, Inc. (APHS) | March of Dimes Birth Defect Foundation |
| | National Parent Network on Disabilities |

MAP 4. CHILDREN BORN WITH GASTROINTESTINAL DEFECTS BY COUNTY FOR 1996†



The most common gastrointestinal defects for children born in Florida in 1996:

- Rectal and large intestine atresia/stenosis (2.5 defects per 10,000 births)
- Esophageal atresia/tracheoesophageal fistula (1.8 defects per 10,000 births)
- Hirschsprung's disease (congenital mega-colon) (1.7 defects per 10,000 births)

†1996 provisional data from the Florida Birth Defects Registry. A discussion of data sources, quality and limitations is included in Appendices E and F.

TABLE 4. CHILDREN BORN WITH GASTROINTESTINAL DEFECTS† BY COUNTY FOR 1996

| County | Rectal and large intestinal atresia/stenosis | | Esophageal atresia/tracheoesophageal fistula | | Hirschsprung's disease (congenital megacolon) | |
|--------------|--|------|--|------|---|------|
| | Number of Children | Rate | Number of Children | Rate | Number of Children | Rate |
| Alachua | 1 | 4.0 | 2 | 8.0 | 0 | 0.0 |
| Baker | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Bay | 1 | 5.1 | 0 | 0.0 | 1 | 5.1 |
| Bradford | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Brevard | 1 | 2.0 | 2 | 4.0 | 1 | 2.0 |
| Broward | 4 | 2.0 | 3 | 1.5 | 4 | 2.0 |
| Calhoun | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Charlotte | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Citrus | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Clay | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Collier | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Columbia | 0 | 0.0 | 1 | 15.0 | 0 | 0.0 |
| Dade | 5 | 1.6 | 3 | 0.9 | 9 | 2.8 |
| DeSoto | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Dixie | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Duval | 3 | 2.5 | 1 | 0.8 | 2 | 1.7 |
| Escambia | 1 | 2.6 | 1 | 2.6 | 0 | 0.0 |
| Flager | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Franklin | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Gadsden | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Gilchrist | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Glades | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Gulf | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Hamilton | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Hardee | 0 | 0.0 | 0 | 0.0 | 1 | 21.7 |
| Hendry | 1 | 17.2 | 0 | 0.0 | 0 | 0.0 |
| Hernando | 0 | 0.0 | 0 | 0.0 | 1 | 9.9 |
| Highlands | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Hillsborough | 3 | 2.2 | 4 | 2.9 | 0 | 0.0 |
| Holmes | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Indian-River | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Jackson | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Jefferson | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Lafayette | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Lake | 1 | 5.2 | 0 | 0.0 | 0 | 0.0 |
| Lee | 1 | 2.2 | 1 | 2.2 | 1 | 2.2 |
| Leon | 0 | 0.0 | 2 | 7.1 | 0 | 0.0 |
| Levy | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Liberty | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Madison | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Manatee | 1 | 3.5 | 1 | 3.5 | 1 | 3.5 |
| Marion | 1 | 4.0 | 0 | 0.0 | 1 | 4.0 |
| Martin | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Monroe | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Nassau | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Okaloosa | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Okeechobee | 0 | 0.0 | 1 | 22.9 | 0 | 0.0 |
| Orange | 1 | 0.9 | 2 | 1.7 | 1 | 0.9 |
| Osceola | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Palm-Beach | 2 | 1.6 | 0 | 0.0 | 4 | 3.2 |
| Pasco | 1 | 3.1 | 0 | 0.0 | 1 | 3.1 |
| Pinellas | 3 | 3.3 | 5 | 5.5 | 2 | 2.2 |
| Polk | 3 | 4.9 | 0 | 0.0 | 0 | 0.0 |
| Putnam | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| St.-Johns | 2 | 17.3 | 1 | 8.7 | 0 | 0.0 |
| St.-Lucie | 2 | 9.4 | 0 | 0.0 | 0 | 0.0 |
| Santa-Rosa | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Sarasota | 2 | 7.9 | 1 | 4.0 | 0 | 0.0 |
| Seminole | 4 | 9.2 | 3 | 6.9 | 2 | 4.6 |
| Sumter | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Suwannee | 1 | 26.4 | 0 | 0.0 | 0 | 0.0 |
| Taylor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Union | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Volusia | 2 | 4.8 | 0 | 0.0 | 0 | 0.0 |
| Wakulla | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Walton | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Washington | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| State | 47 | 2.5 | 34 | 1.8 | 32 | 1.7 |

All rates are per 10,000 live births

†1996 provisional data from the Florida Birth Defects Registry. A discussion of data sources, quality and limitations is included in Appendices E and F.



VI. GENITAL AND URINARY DEFECTS

EMBRYONIC ORIGIN

The beginnings of the urogenital system can be identified at around three to four weeks of embryonic age when, on each side of the body wall, there appears a line of cells called the urogenital ridge. Part of this ridge will develop into the “nephrogenic cord” that will then give rise to the kidneys, ureters, bladder, and urethra. These structures will be fully developed and functional by the 12th week of fetal life. Another portion of the urogenital ridge will develop into the “gonadal ridge” that, under the influence of sex determining genes, will develop into male or female internal and external genitalia. Male and female embryos cannot be distinguished physically until differentiation of the genitalia becomes distinct between nine and twelve weeks of gestational age using transvaginal ultrasound.

TYPES OF BIRTH DEFECTS

Unilateral absence of a kidney is relatively common and occurs in 1/1000 newborns; bilateral absence is rare (3/10,000). The kidneys may be in displaced (ectopic) locations or may be fused (horseshoe kidney). Abnormalities in development of the ureters can cause obstruction leading to hydronephrosis (obstruction of urine flow). **Congenital** obstruction of the urethra is a common cause of severe hydronephrosis that occurs only in males. Hypospadias (the opening of the penis is too low) is a common genital abnormality in males (1/300). Defects in the embryonic tissues responsible for normal genital development can lead to poorly formed external genitalia (ambiguous genitalia).

HEALTH EFFECTS AND TREATMENT

Obstructive problems in the urinary system are generally amenable to surgical treatment. Some babies can benefit from prenatal surgery to relieve the obstruction. Because of the long duration of the obstruction during fetal development, there is often considerable damage to the kidneys and this problem can require long term medical care. Bilateral renal **agenesis** (absence) is not compatible with life. Hypospadias is usually amenable to surgical treatment. The diagnosis and management of problems of ambiguous genitalia requires a team approach, including endocrinologist, geneticist, and urologist.

CAUSE AND PREVENTION

Like other birth defects, there are multiple causes for defects in the urogenital system. Single gene disorders are often associated with bilateral absence of the kidneys. Sex **chromosome** abnormalities can lead to problems in genital development. Obstructive lesions of the kidneys are often of unknown origin. Prevention strategies are limited until more understanding is available regarding causation.

PRENATAL DETECTION

Fetal ultrasound remains the primary method for the early detection of urogenital abnormalities. Absence of kidneys and obstructive renal lesions can lead to a decreased urine outflow with subsequent decrease of the amniotic fluid volume (oligohydramnios).

INFORMATION ON GENITAL AND URINARY DEFECTS REPORTED IN FLORIDA FOR 1996

- 26 of Florida's counties (38 percent) had less than 500 live births in 1996: Baker, Bradford, Calhoun, DeSoto, Dixie, Flagler, Franklin, Gilchrist, Glades, Gulf, Hamilton, Hardee, Holmes, Jefferson, Lafayette, Levy, Liberty, Madison, Okeechobee, Sumter, Suwannee, Taylor, Union, Wakulla, Walton, Washington. Number and rate (number per 10,000 live births) of birth defects reported for these counties should be viewed with caution as a result of their relatively low birth rates.
- Florida birth defects are categorized as "genital and urinary birth defects" based on the diagnostic codes (ICD-9s) given by the Birth Defects Reporting List (see Appendix G).
- The following counties (shown here in white) had no birth defects reported in 1996: Flagler, Glades, Gulf, Holmes, Jefferson, Lafayette, Liberty, Madison, Suwannee and Wakulla. This may be a result of the low number of total births, or a result of the low rate of occurrence of a particular birth defect. This should not be interpreted as a lack of potential risk for birth defects in a particular county or region.
- The following counties have the lowest (non-zero) rates of genital and urinary birth defects reported (20 or less per 10,000 live births in 1996): Gadsden, Indian River and St. Johns. Results for counties with less than 500 live births reported for 1996 should be viewed with caution.
- The following counties have the highest rates of genital and urinary birth defects reported (121 or more per 10,000 live births in 1996): Calhoun, Dixie and Hamilton. Results for counties with less than 500 live births reported for 1996 should be viewed with caution.
- There is a six-fold difference between the counties with the lowest rates and those with the highest rates.

Fetal ultrasound remains the primary method for the early detection of urogenital abnormalities.

RESOURCES (REFER TO APPENDIX B FOR MORE INFORMATION)

Ambiguous Genitalia Support Network

National Organization for Rare Disorders

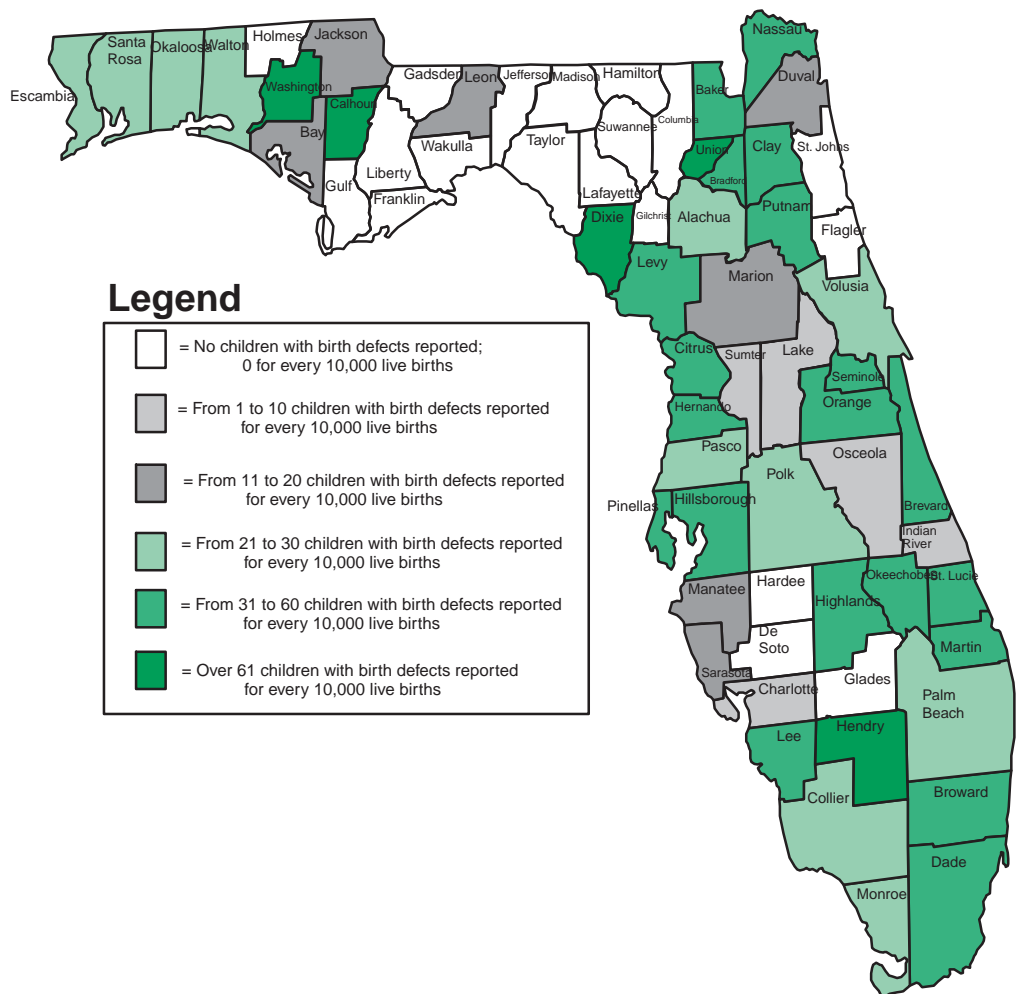
National Kidney Foundation

March of Dimes Birth Defect Foundation

Alliance of Genetic Support Groups

National Parent Network on Disabilities

MAP 5. CHILDREN BORN WITH GENITAL AND URINARY DEFECTS BY COUNTY FOR 1996†



The most common Genito-Urinary defects for children born in Florida in 1996:

- Hypospadias and epispadias (68.4 defects per 10,000 male births)
- Obstructive genito-urinary defect (18.1 defects per 10,000 births)
- Renal agenesis/hypoplasia (3.0 defects per 10,000 births)

†1996 provisional data from the Florida Birth Defects Registry. A discussion of data sources, quality and limitations is included in Appendices E and F.

TABLE 5. CHILDREN BORN WITH GENITAL AND URINARY DEFECTS[†] BY COUNTY FOR 1996

| County | Hypospadias and Epispadias | | Obstructive genitourinary defect | | Renal agenesis/hypoplasia | |
|--------------|----------------------------|-------|----------------------------------|------|---------------------------|------|
| | Number of Children | Rate | Number of Children | Rate | Number of Children | Rate |
| Alachua | 10 | 78.1 | 4 | 16.1 | 1 | 4.0 |
| Baker | 2 | 135.1 | 1 | 35.7 | 0 | 0.0 |
| Bay | 7 | 72.5 | 1 | 5.1 | 1 | 5.1 |
| Bradford | 0 | 0.0 | 1 | 31.1 | 0 | 0.0 |
| Brevard | 11 | 43.0 | 11 | 22.1 | 4 | 8.0 |
| Broward | 75 | 72.7 | 43 | 21.6 | 5 | 2.5 |
| Calhoun | 2 | 281.7 | 1 | 69.9 | 0 | 0.0 |
| Charlotte | 3 | 59.8 | 1 | 10.1 | 0 | 0.0 |
| Citrus | 2 | 44.8 | 3 | 34.6 | 0 | 0.0 |
| Clay | 5 | 59.2 | 5 | 30.4 | 0 | 0.0 |
| Collier | 5 | 39.9 | 4 | 16.0 | 3 | 12.0 |
| Columbia | 4 | 118.0 | 0 | 0.0 | 0 | 0.0 |
| Dade | 91 | 56.2 | 72 | 22.6 | 10 | 3.1 |
| DeSoto | 2 | 108.1 | 0 | 0.0 | 0 | 0.0 |
| Dixie | 3 | 394.7 | 0 | 0.0 | 0 | 0.0 |
| Duval | 29 | 47.9 | 15 | 12.7 | 2 | 1.7 |
| Escambia | 21 | 108.1 | 5 | 13.0 | 3 | 7.8 |
| Flager | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Franklin | 1 | 212.8 | 0 | 0.0 | 0 | 0.0 |
| Gadsden | 1 | 31.6 | 0 | 0.0 | 0 | 0.0 |
| Gilchrist | 1 | 135.1 | 0 | 0.0 | 0 | 0.0 |
| Glades | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Gulf | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Hamilton | 2 | 259.7 | 0 | 0.0 | 0 | 0.0 |
| Hardee | 2 | 87.0 | 0 | 0.0 | 0 | 0.0 |
| Hendry | 1 | 33.0 | 2 | 34.4 | 1 | 17.2 |
| Hernando | 3 | 62.9 | 3 | 29.7 | 0 | 0.0 |
| Highlands | 3 | 67.0 | 1 | 11.8 | 0 | 0.0 |
| Hillsborough | 50 | 71.7 | 23 | 16.9 | 5 | 3.7 |
| Holmes | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Indian-River | 2 | 39.8 | 0 | 0.0 | 0 | 0.0 |
| Jackson | 1 | 36.2 | 0 | 0.0 | 1 | 18.2 |
| Jefferson | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Lafayette | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Lake | 10 | 99.7 | 0 | 0.0 | 0 | 0.0 |
| Lee | 17 | 75.2 | 19 | 42.7 | 2 | 4.5 |
| Leon | 8 | 54.9 | 2 | 7.1 | 0 | 0.0 |
| Levy | 0 | 0.0 | 2 | 55.2 | 0 | 0.0 |
| Liberty | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Madison | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Manatee | 7 | 47.8 | 2 | 7.0 | 1 | 3.5 |
| Marion | 3 | 23.8 | 2 | 8.0 | 2 | 8.0 |
| Martin | 3 | 50.2 | 5 | 44.1 | 0 | 0.0 |
| Monroe | 4 | 88.7 | 0 | 0.0 | 0 | 0.0 |
| Nassau | 6 | 164.8 | 1 | 14.4 | 0 | 0.0 |
| Okaloosa | 9 | 73.4 | 2 | 8.5 | 1 | 4.2 |
| Okeechobee | 1 | 45.5 | 1 | 22.9 | 0 | 0.0 |
| Orange | 50 | 82.4 | 24 | 20.5 | 5 | 4.3 |
| Osceola | 5 | 47.5 | 2 | 9.8 | 0 | 0.0 |
| Palm-Beach | 51 | 78.5 | 14 | 11.1 | 2 | 1.6 |
| Pasco | 12 | 71.3 | 6 | 18.8 | 1 | 3.1 |
| Pinellas | 54 | 114.4 | 20 | 21.9 | 3 | 3.3 |
| Polk | 22 | 69.4 | 9 | 14.6 | 0 | 0.0 |
| Putnam | 3 | 61.9 | 2 | 22.1 | 0 | 0.0 |
| St.-Johns | 2 | 34.1 | 0 | 0.0 | 0 | 0.0 |
| St.-Lucie | 8 | 72.1 | 7 | 32.7 | 0 | 0.0 |
| Santa-Rosa | 11 | 149.1 | 0 | 0.0 | 0 | 0.0 |
| Sarasota | 8 | 62.4 | 2 | 7.9 | 1 | 4.0 |
| Seminole | 17 | 75.9 | 13 | 29.8 | 2 | 4.6 |
| Sumter | 1 | 49.8 | 1 | 26.2 | 0 | 0.0 |
| Suwannee | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Taylor | 2 | 155.0 | 0 | 0.0 | 0 | 0.0 |
| Union | 0 | 0.0 | 1 | 82.0 | 0 | 0.0 |
| Volusia | 9 | 42.7 | 8 | 19.1 | 0 | 0.0 |
| Wakulla | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Walton | 0 | 0.0 | 1 | 26.6 | 0 | 0.0 |
| Washington | 2 | 146.0 | 1 | 39.8 | 0 | 0.0 |
| State | 664 | 68.4 | 343 | 18.1 | 56 | 3.0 |

All rates are per 10,000 live births except hypospadias and epispadias which is per 10,000 live male births

[†]1996 provisional data from the Florida Birth Defects Registry. A discussion of data sources, quality and limitations is included in Appendices E and F.



VII. MUSCULAR AND SKELETAL

EMBRYONIC ORIGIN

The crucial period for development of the limbs is three to six weeks after conception. Small limb buds begin to appear on the side of the embryo during the fourth week; the upper limb buds appear a few days before the lower ones. By the end of the sixth week, the buds have elongated and the fingers and toes are visible as webbed-like pads. Tissue breakdown occurs in the webbed areas by the end of the eighth week. This exposes the individual fingers and toes. Cartilage appears in the limbs by the sixth week. By the seventh week, small bone-forming cells appear. The essential structures of the limbs are fully developed by six weeks after conception.

TYPES OF BIRTH DEFECTS

Numerous types of defects of the extremities have been described. Duplication or absence of a *digit* can occur often as a simple, isolated defect. However, it may be associated with some complex genetic disorders. Deficiencies of the middle portion of the hands and feet can cause severe clefting and are usually of genetic origin. Failure of the limb buds to develop can result in various degrees of *hypoplasia* (underdevelopment) or absence of the limbs (hypomelia and amelia conditions). Fibrous strands from the amnion may become entangled in the limbs and cause amniotic band syndrome resulting in digit and limb amputations. Blood vessel abnormalities can also cause similar disruptive problems in the limbs.

HEALTH EFFECTS

The health effects of limb abnormalities depend on the extent of the limb defect and the presence or absence of associated malformations. The function of the involved limb is a crucial factor in habilitation.

TREATMENT

The correction of many limb abnormalities requires surgery and physical therapy. Amniotic band constrictions of the fingers and toes (as well as other *congenital* anomalies) may necessitate extensive plastic surgery to ensure adequate blood and nerve supply. Tendon transfers are often needed to ensure function. Use of *prosthetics* and specialized adaptive devices are needed in other cases.

CAUSE AND PREVENTION

Like other malformations, many limb defects are caused by either chromosome abnormalities or by single gene defects. Some of these abnormalities are isolated, while others are part of syndromes or other patterns of *multiple congenital anomaly*. In some cases, the defect may be caused by mutant genes that govern pattern development in the embryo. Environmental factors may also play

a role, the most notorious being exposure to the drug *Thalidomide*. In addition, a combination of genetic and environmental factors (*multifactorial* inheritance) can cause some limb abnormalities such as congenital hip dysplasia.

PRENATAL DETECTION

Fetal ultrasound remains the main method of early detection of limb abnormalities.

INFORMATION ON MUSCULAR AND SKELETAL DEFECTS REPORTED IN FLORIDA FOR 1996

- 26 of Florida's counties (38 percent) had less than 500 live births in 1996: Baker, Bradford, Calhoun, DeSoto, Dixie, Flagler, Franklin, Gilchrist, Glades, Gulf, Hamilton, Hardee, Holmes, Jefferson, Lafayette, Levy, Liberty, Madison, Okeechobee, Sumter, Suwannee, Taylor, Union, Wakulla, Walton, Washington. Number and rate (number per 10,000 live births) of birth defects reported for these counties should be viewed with caution as a result of their relatively low birth rates.
- Florida birth defects are categorized as "muscular and skeletal birth defects" based on the diagnostic codes (ICD-9s) given by the Birth Defects Reporting List (see Appendix G).
- The following counties (shown here in white) had no birth defects reported in 1996: Baker, Columbia, Dixie, Flagler, Franklin, Gilchrist, Glades, Gulf, Hardee, Hendry, Holmes, Jefferson, Lafayette, Liberty, Madison, Okaloosa, Putnam, Suwannee, Taylor, Union, Walton, and Washington. This may be a result of the low number of total births, or a result of the low rate of occurrence of a particular birth defect. This should not be interpreted as a lack of potential risk for birth defects in a particular county or region.
- The following counties have the lowest (non-zero) rates of muscular and skeletal birth defects reported (10 or less per 10,000 live births in 1996): Leon and Marion. Results for counties with less than 500 live births reported for 1996 should be viewed with caution.
- The following counties have the highest rates of muscular and skeletal birth defects reported (61 or more per 10,000 live births in 1996): Bradford, Calhoun, Hamilton, Indian River, and Okeechobee. Results for counties with less than 500 live births reported for 1996 should be viewed with caution.
- There is a six-fold difference between the counties with the lowest rates and those with the highest rates.

The health effects of limb abnormalities depend on the extent of the limb defect and the presence or absence of associated malformations.

RESOURCES (REFER TO APPENDIX B FOR MORE INFORMATION)

Cherub Association

SuperKids Newsletter

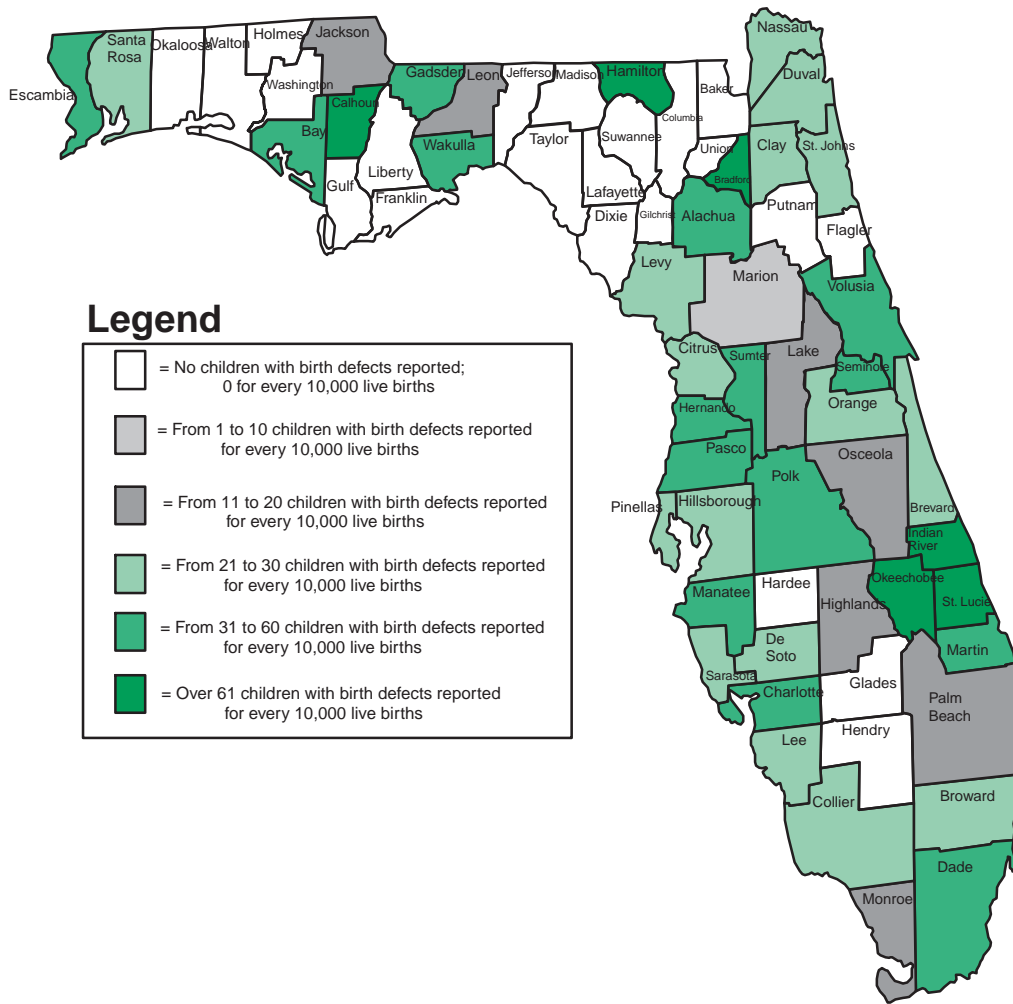
Alliance of Genetic Support Groups

March of Dimes Birth Defect
Foundation

National Organization for Rare
Disorders

National Parent Network on Disabilities

MAP 6. CHILDREN BORN WITH MUSCULAR AND SKELETAL DEFECTS BY COUNTY FOR 1996†



The most common muscular and skeletal defects for children born in Florida in 1996:

- Congenital hip dislocation (15.4 defects per 10,000 births)
- Diaphragmatic hernia (2.4 defects per 10,000 births)
- Reduction deformity: upper limbs (2.2 defects per 10,000 births)

†1996 provisional data from the Florida Birth Defects Registry. A discussion of data sources, quality and limitations is included in Appendices E and F.

TABLE 6. CHILDREN BORN WITH MUSCULAR AND SKELETAL DEFECTS† BY COUNTY FOR 1996

| County | Congenital hip dislocation | | Gastroschisis/Omphalocele | | Diaphragmatic hernia | |
|--------------|----------------------------|------|---------------------------|------|----------------------|------|
| | Number of Children | Rate | Number of Children | Rate | Number of Children | Rate |
| Alachua | 3 | 12.1 | 3 | 12.1 | 0 | 0.0 |
| Baker | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Bay | 3 | 15.3 | 3 | 15.3 | 0 | 0.0 |
| Bradford | 2 | 62.1 | 0 | 0.0 | 1 | 31.1 |
| Brevard | 10 | 20.1 | 0 | 0.0 | 0 | 0.0 |
| Broward | 31 | 15.5 | 8 | 4.0 | 5 | 2.5 |
| Calhoun | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Charlotte | 0 | 0.0 | 4 | 40.3 | 0 | 0.0 |
| Citrus | 0 | 0.0 | 0 | 0.0 | 2 | 23.1 |
| Clay | 2 | 12.2 | 0 | 0.0 | 1 | 6.1 |
| Collier | 3 | 12.0 | 2 | 8.0 | 0 | 0.0 |
| Columbia | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Dade | 77 | 24.2 | 20 | 6.3 | 8 | 2.5 |
| DeSoto | 0 | 0.0 | 1 | 26.9 | 0 | 0.0 |
| Dixie | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Duval | 21 | 17.7 | 8 | 6.7 | 1 | 0.8 |
| Escambia | 6 | 15.6 | 5 | 13.0 | 2 | 5.2 |
| Flager | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Franklin | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Gadsden | 2 | 30.5 | 0 | 0.0 | 0 | 0.0 |
| Gilchrist | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Glades | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Gulf | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Hamilton | 0 | 0.0 | 0 | 0.0 | 1 | 67.1 |
| Hardee | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Hendry | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Hernando | 2 | 19.8 | 2 | 19.8 | 0 | 0.0 |
| Highlands | 1 | 11.8 | 0 | 0.0 | 0 | 0.0 |
| Hillsborough | 18 | 13.2 | 8 | 5.9 | 4 | 2.9 |
| Holmes | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Indian-River | 8 | 81.7 | 2 | 20.4 | 0 | 0.0 |
| Jackson | 1 | 18.2 | 0 | 0.0 | 0 | 0.0 |
| Jefferson | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Lafayette | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Lake | 2 | 10.3 | 1 | 5.2 | 0 | 0.0 |
| Lee | 4 | 9.0 | 6 | 13.5 | 0 | 0.0 |
| Leon | 1 | 3.6 | 0 | 0.0 | 1 | 3.6 |
| Levy | 1 | 27.6 | 0 | 0.0 | 0 | 0.0 |
| Liberty | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Madison | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Manatee | 5 | 17.4 | 3 | 10.5 | 1 | 3.5 |
| Marion | 0 | 0.0 | 1 | 4.0 | 0 | 0.0 |
| Martin | 3 | 26.4 | 1 | 8.8 | 0 | 0.0 |
| Monroe | 0 | 0.0 | 1 | 11.4 | 0 | 0.0 |
| Nassau | 0 | 0.0 | 2 | 28.7 | 0 | 0.0 |
| Okaloosa | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Okeechobee | 2 | 45.9 | 1 | 22.9 | 0 | 0.0 |
| Orange | 16 | 13.6 | 9 | 7.7 | 5 | 4.3 |
| Osceola | 1 | 4.9 | 1 | 4.9 | 1 | 4.9 |
| Palm-Beach | 11 | 8.7 | 6 | 4.8 | 3 | 2.4 |
| Pasco | 6 | 18.8 | 7 | 22.0 | 0 | 0.0 |
| Pinellas | 16 | 17.5 | 5 | 5.5 | 2 | 2.2 |
| Polk | 4 | 6.5 | 8 | 13.0 | 4 | 6.5 |
| Putnam | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| St.-Johns | 1 | 8.7 | 1 | 8.7 | 0 | 0.0 |
| St.-Lucie | 6 | 28.1 | 6 | 28.1 | 0 | 0.0 |
| Santa-Rosa | 3 | 21.4 | 0 | 0.0 | 0 | 0.0 |
| Sarasota | 4 | 15.9 | 3 | 11.9 | 0 | 0.0 |
| Seminole | 11 | 25.2 | 2 | 4.6 | 1 | 2.3 |
| Sumter | 1 | 26.2 | 1 | 26.2 | 0 | 0.0 |
| Suwannee | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Taylor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Union | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Volusia | 3 | 7.2 | 7 | 16.7 | 2 | 4.8 |
| Wakulla | 0 | 0.0 | 1 | 45.0 | 0 | 0.0 |
| Walton | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Washington | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| State | 291 | 15.4 | 139 | 7.3 | 45 | 2.4 |

All rates are per 10,000 live births

†1996 provisional data from the Florida Birth Defects Registry. A discussion of data sources, quality and limitations is included in Appendices E and F.



VIII. ORAL CLEFTS

EMBRYONIC ORIGIN

Midline facial structures begin to fuse to form the palate and the front portions of the lip by the end of the fifth embryonic week. This fusion will be complete by 12 weeks of embryonic age; the critical period of this process is six to nine weeks. During this time, the central portion of the embryo's face is completed by the ingrowth of lateral structures. The front-most part of the upper lip and palate is formed by the fusion of nasal bulges of tissue known as the "median nasal" processes. The hard and soft part of the palate is formed from the fusion of lateral processes in the maxillary area (the "lateral palatine" processes). The face is generally completely formed by 10 to 12 weeks of embryonic age.

TYPES OF BIRTH DEFECTS

Clefts in the fetal face can be caused by abnormalities in the fusion of tissues or events that disrupt the tissues after they have fused. About one in every 1,000 births have some type of cleft lip that may or may not be associated with a cleft palate. About one in every 2,500 babies have only a cleft palate (no lip cleft). Clefts of the lip can be bilateral (both sides of the midline of the lip) or unilateral (one side of the lip) and they may involve the gingival ridge (gum) and the hard and soft palate. If the lower jaw of the fetus is small, the back part of the palate can be prevented from fusing. This would cause the tongue to be held in an abnormally elevated and posterior position. This in turn can prevent fusion of the lateral palatine processes, causing what is termed the Robin sequence. Facial clefts, which are rarer types of oral clefts, may involve other areas of the face, including the eye, maxilla, and lateral mouth. In facial clefts, the clefting can occur anywhere along the boundaries of the upper lip and may extend into the nasal, eye, and brain areas.

HEALTH EFFECTS

Oral and facial clefts can be cosmetically deforming and thereby affect psychological development. Clefts of the palate expose the eustachian tube and middle ear to infections and food contamination. This can lead to hearing loss if it is not corrected. Clefts can contribute to feeding problems which may lead to *aspiration* and pneumonia. Even with the most successful surgical corrections, clefts of the palate and lip can interfere with speech. Larger facial clefts can also be associated with eye defects, blindness and brain abnormalities.

TREATMENT

Most oral clefting conditions are treated by a team of craniofacial specialists at specialized centers. These teams combine the multi-disciplinary resources of surgeons, speech pathologists, audiologists, pediatricians, and others to achieve the best optimal outcome. Prior to surgery, specially

designed palatal prostheses and feeding nipples can assist in feeding. Aggressive speech therapy may be needed after surgical correction.

CAUSE AND PREVENTION

Most children with clefts of the lip (with or without clefts of the palate) have acquired this abnormality through *multifactorial* inheritance. This means that multiple genes and environmental agents have acted together to increase the risk for occurrence of the defect. Currently, no specific gene has been identified as the major cause of the common form of cleft lip and palate. However, several genes are under study and several environmental agents have been implicated. In a smaller proportion of cases, cleft lip and/ or cleft palate can be components of a syndrome. The approach to prevention of oral cleft defects will depend on whether the syndrome is genetically determined or if the cleft is caused by an environmental agent such as anti-seizure medication, drug or alcohol consumption during pregnancy. Prevention strategies that are directly applicable to cleft lip and palate are somewhat limited at this time. Preliminary studies indicate that the *periconceptual* use of folic acid supplements may help prevent at least some types of oral clefts. During pregnancy, unnecessary medications and exposure to known *teratogens* (e.g. alcohol) should be avoided.

Currently, no specific gene has been identified as the major cause of the common form of cleft lip and palate.

PRENATAL DETECTION

Fetal ultrasound remains the method of choice for fetal detection of oral or facial clefting.

INFORMATION ON ORAL DEFECTS REPORTED IN FLORIDA FOR 1996

- 26 of Florida's counties (38 percent) had less than 500 live births in 1996: Baker, Bradford, Calhoun, DeSoto, Dixie, Flagler, Franklin, Gilchrist, Glades, Gulf, Hamilton, Hardee, Holmes, Jefferson, Lafayette, Levy, Liberty, Madison, Okeechobee, Sumter, Suwannee, Taylor, Union, Wakulla, Walton, Washington. Number and rate (number per 10,000 live births) of birth defects reported for these counties should be viewed with caution as a result of their relatively low birth rates.
- Florida birth defects are categorized as "oral birth defects" based on the diagnostic codes (ICD-9s) given by the Birth Defects Reporting List (see Appendix G).

- The following counties (shown here in white) had no birth defects reported in 1996: Baker, Bradford, Dixie, Franklin, Glades, Gulf, Hamilton, Holmes, Jackson, Lafayette, Levy, Liberty, Sumter, Suwannee, Taylor, Union, Wakulla, Walton, and Washington. This may be a result of the low number of total births, or a result of the low rate of occurrence of a particular birth defect. This should not be interpreted as a lack of potential risk for birth defects in a particular county or region.
- The following counties have the lowest (non-zero) rates of oral birth defects reported (10 or less per 10,000 live births in 1996): Alachua, Charlotte, Duval, Sarasota, St. Johns, and St. Lucie. Results for counties with less than 500 live births reported for 1996 should be viewed with caution.
- The following counties have the highest rates of oral birth defects reported (121 or more per 10,000 live births in 1996): Gilchrist. Results for counties with less than 500 live births reported for 1996 should be viewed with caution.
- There is a twelve-fold difference between the counties with the lowest rates and those with the highest rates.

RESOURCES (REFER TO APPENDIX B FOR MORE INFORMATION)

Cleft Palate Foundation (CPF)

Alliance of Genetic Support Groups

AboutFace USA

National Organization for Rare Disorders

FACES

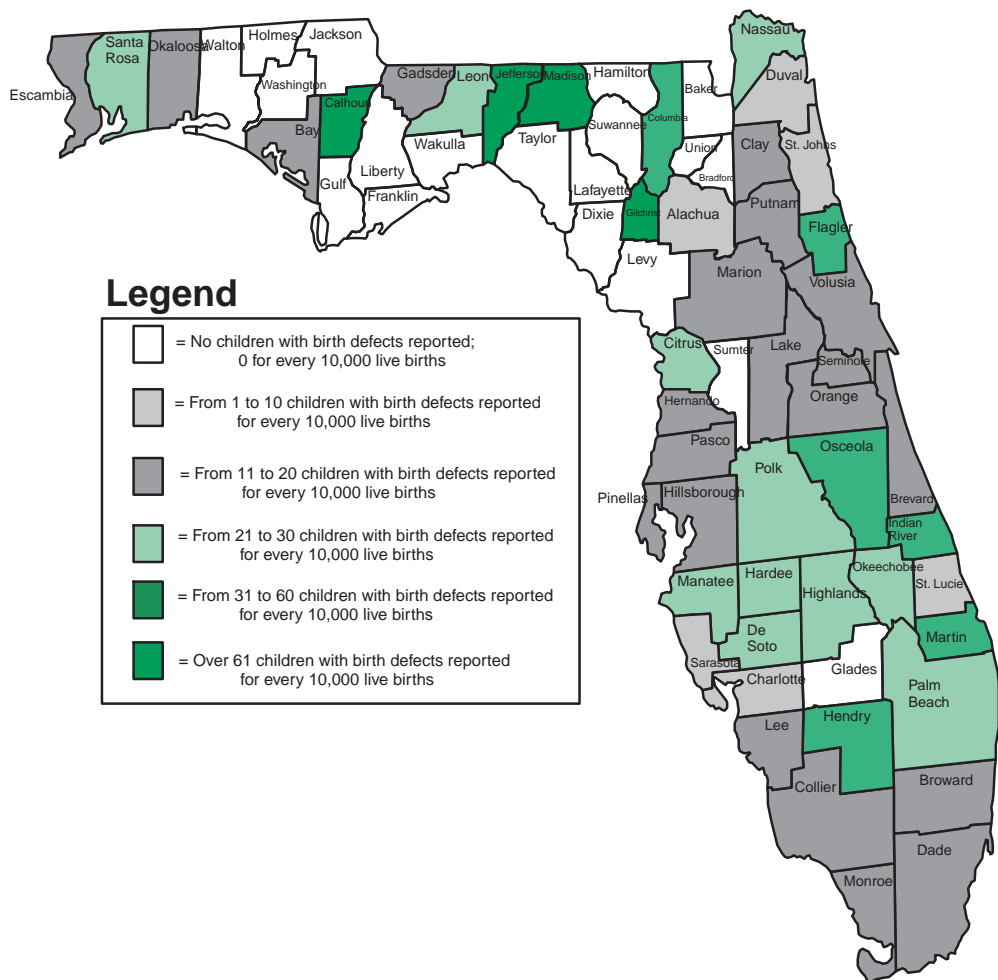
March of Dimes Birth Defect Foundation

Let's Face It, Inc.

National Parent Network on Disabilities

Prescription Parents, Inc.

MAP 7. CHILDREN BORN WITH ORAL DEFECTS BY COUNTY FOR 1996[†]



The most common defects for children born in Florida in 1996:

- Cleft lip with and without cleft palate (8.7 defects per 10,000 births)
- Cleft palate without cleft lip (6.1 defects per 10,000 births)
- Choanal atresia (1.1 defects per 10,000 births)

[†]1996 provisional data from the Florida Birth Defects Registry. A discussion of data sources, quality and limitations is included in Appendices E and F.

TABLE 7. CHILDREN BORN WITH ORAL DEFECTS† BY COUNTY FOR 1996

| County | Cleft lip with and without cleft palate | | Cleft palate without cleft lip | | Choanal atresia | |
|--------------|---|------|--------------------------------|------|--------------------|------|
| | Number of Children | Rate | Number of Children | Rate | Number of Children | Rate |
| Alachua | 2 | 8.0 | 0 | 0.0 | 0 | 0.0 |
| Baker | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Bay | 1 | 5.1 | 3 | 15.3 | 0 | 0.0 |
| Bradford | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Brevard | 4 | 8.0 | 3 | 6.0 | 1 | 2.0 |
| Broward | 13 | 6.5 | 5 | 2.5 | 5 | 2.5 |
| Calhoun | 0 | 0.0 | 1 | 69.9 | 0 | 0.0 |
| Charlotte | 0 | 0.0 | 0 | 0.0 | 1 | 10.1 |
| Citrus | 2 | 23.1 | 0 | 0.0 | 0 | 0.0 |
| Clay | 2 | 12.2 | 1 | 6.1 | 0 | 0.0 |
| Collier | 3 | 12.0 | 0 | 0.0 | 1 | 4.0 |
| Columbia | 1 | 15.0 | 2 | 29.9 | 0 | 0.0 |
| Dade | 25 | 7.9 | 13 | 4.1 | 3 | 0.9 |
| DeSoto | 1 | 26.9 | 0 | 0.0 | 0 | 0.0 |
| Dixie | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Duval | 6 | 5.1 | 5 | 4.2 | 1 | 0.8 |
| Escambia | 3 | 7.8 | 3 | 7.8 | 0 | 0.0 |
| Flager | 1 | 32.3 | 0 | 0.0 | 0 | 0.0 |
| Franklin | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Gadsden | 1 | 15.3 | 1 | 15.3 | 0 | 0.0 |
| Gilchrist | 1 | 73.5 | 0 | 0.0 | 1 | 73.5 |
| Glades | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Gulf | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Hamilton | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Hardee | 1 | 21.7 | 0 | 0.0 | 0 | 0.0 |
| Hendry | 1 | 17.2 | 1 | 17.2 | 0 | 0.0 |
| Hernando | 1 | 9.9 | 1 | 9.9 | 0 | 0.0 |
| Highlands | 2 | 23.5 | 0 | 0.0 | 0 | 0.0 |
| Hillsborough | 13 | 9.5 | 8 | 5.9 | 2 | 1.5 |
| Holmes | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Indian-River | 2 | 20.4 | 2 | 20.4 | 0 | 0.0 |
| Jackson | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Jefferson | 0 | 0.0 | 1 | 64.9 | 0 | 0.0 |
| Lafayette | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Lake | 1 | 5.2 | 2 | 10.3 | 0 | 0.0 |
| Lee | 4 | 9.0 | 4 | 9.0 | 0 | 0.0 |
| Leon | 2 | 7.1 | 4 | 14.3 | 0 | 0.0 |
| Levy | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Liberty | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Madison | 2 | 94.8 | 0 | 0.0 | 0 | 0.0 |
| Manatee | 4 | 13.9 | 3 | 10.5 | 0 | 0.0 |
| Marion | 2 | 8.0 | 1 | 4.0 | 0 | 0.0 |
| Martin | 3 | 26.4 | 3 | 26.4 | 0 | 0.0 |
| Monroe | 0 | 0.0 | 1 | 11.4 | 0 | 0.0 |
| Nassau | 1 | 14.4 | 1 | 14.4 | 0 | 0.0 |
| Okaloosa | 0 | 0.0 | 3 | 12.7 | 0 | 0.0 |
| Okeechobee | 1 | 22.9 | 0 | 0.0 | 0 | 0.0 |
| Orange | 6 | 5.1 | 8 | 6.8 | 1 | 0.9 |
| Osceola | 3 | 14.7 | 2 | 9.8 | 0 | 0.0 |
| Palm-Beach | 16 | 12.7 | 14 | 11.1 | 1 | 0.8 |
| Pasco | 2 | 6.3 | 2 | 6.3 | 1 | 3.1 |
| Pinellas | 9 | 9.8 | 5 | 5.5 | 1 | 1.1 |
| Polk | 6 | 9.7 | 6 | 9.7 | 1 | 1.6 |
| Putnam | 1 | 11.1 | 0 | 0.0 | 0 | 0.0 |
| St.-Johns | 0 | 0.0 | 1 | 8.7 | 0 | 0.0 |
| St.-Lucie | 0 | 0.0 | 0 | 0.0 | 1 | 4.7 |
| Santa-Rosa | 2 | 14.2 | 2 | 14.2 | 0 | 0.0 |
| Sarasota | 1 | 4.0 | 0 | 0.0 | 0 | 0.0 |
| Seminole | 6 | 13.8 | 2 | 4.6 | 0 | 0.0 |
| Sumter | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Suwannee | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Taylor | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Union | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Volusia | 6 | 14.3 | 2 | 4.8 | 0 | 0.0 |
| Wakulla | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Walton | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Washington | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| State | 164 | 8.7 | 116 | 6.1 | 21 | 1.1 |

All rates are per 10,000 live births

†1996 provisional data from the Florida Birth Defects Registry. A discussion of data sources, quality and limitations is included in Appendices E and F.



Appendices



Appendix A - Glossary

Agenesis Lack of development or failure to develop part(s) of the body.

Alpha-fetoprotein A protein produced by the fetus during gestation. The level of this protein can be measured during the pregnancy. The level of this protein is elevated in pregnancies with neural tube defects and may be decreased in pregnancies with Down syndrome.

Amniocentesis A method of prenatal diagnosis which a small amount of amniotic fluid is withdrawn to obtain fetal cells, which can be tested for the presence of some genetic diseases.

Arrhythmia An alteration in the rhythm of the heartbeat in either time or force.

Aspiration Foreign matter or food entering the lungs during breathing.

Atresia (Imperforation) Absence or closure of a normal opening or hollow organ.

Cardiac pacemaker An electrical device that stimulates, steadies, or reestablishes the beat of the heart.

Cardiomyopathy A usually chronic disorder of the heart muscle that may involve hypertrophy (excessive growth or increase in bulk) and obstructive damage to the heart.

Cerebral palsy A disability resulting from damage to the brain before, during or shortly after birth and characterized by lack of muscular coordination and speech disturbances.

Chromosome Threadlike structure in cells that individual genes are arranged along.

Chromosome abnormalities A major group of genetic diseases in which alterations of chromosome number or structure occur and are observable by microscope.

Cleft palate The congenital failure of the palate to fuse properly, forming a grooved depression or fissure in the roof of the mouth.

Cleft lip The congenital failure of the maxillary and median nasal processes to fuse, forming a groove or fissure in the lip.

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.

Cyanotic Involving or producing a deficit in oxygenation.

Cytogenetics The study of chromosomes and their abnormalities.

Diaphragmatic hernia The protrusion of an abdominal organ through a defect in the diaphragm.

Down syndrome See Trisomy 21.

Edwards syndrome See Trisomy 18.

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

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.

Fetal ultrasound A diagnostic examination of the fetus using ultrasound (sound waves at a frequency above what is detectable to human hearing).

Folic acid deficiency A lack of folic acid in the mother's diet which may lead to an increased risk for neural tube defects. Current recommendations from the March of Dimes indicate that women who are or may become pregnant should take a folic acid supplement to decrease the risk of neural tube defects.

Gastroschisis A congenital opening of the abdominal wall with protrusion of the intestines.

Genetic counseling The delivery of information about the risks, natural history, and management of genetic diseases to patients and/or their families.

Hydrocephalus The abnormal accumulation of fluid within the skull.

Hyperplasia An abnormal or unusual increase in the elements composing a part (as tissue cells).

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 Congenital heart defect consisting of 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).

In utero In the uterus; before birth.

Malformation A primary morphologic defect resulting from an abnormal developmental process.

Maternal serum screening A diagnostic method that examines the mother's blood serum for indicators of anomalies in the process of fetal development.

Mental retardation A condition of below average intellectual ability (IQ less than 70) that is present from birth or infancy.

Meninges Membranes that cover the brain and spinal cord.

Monosomy A condition in which a particular chromosome is present in only a single copy (a chromosome is missing from a pair – 45 chromosomes instead of 46).

Multifactorial A term used to describe characteristics or diseases that are caused by a combination of multiple genetic and environmental factors.

Multiple congenital anomaly Term used to describe the presence of more than one anomaly at birth.

Mutagen Substance that is known to cause a mutation.

Mutations Alterations in the sequence of DNA.

Neural tube defect A general term for a number of defects caused by failure of the neural tube to develop properly during the embryonic stage. The major conditions include anencephaly, spina bifida and encephalocele.

Occurrence risk The probability that a couple will produce a child with a genetic disease.

Omphalocele The membrane-covered protrusion of an abdominal organ through the abdominal wall at the umbilicus.

Patau Syndrome See Trisomy 13.

Patent Ductus Arteriosus A type of congenital heart defect in which a fetal pattern of circulation (via the ductus arteriosus) persists.

Periconceptual At or around the time of conception.

Phenylketonuria (PKU) A disease in which an individual is unable to properly metabolize the amino acid phenylalanine.

Prosthesis An artificial device that replaces a missing part of the body.

Recurrence risk The probability that another affected fetus will be produced in a family that already has one or more affected offspring.

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

Spina bifida Defective closure of the bony encasement of the spinal cord, through which the cord and meninges may or may not protrude. Includes myelomeningocele and meningocele.

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

Syndrome A pattern of multiple primary malformations or defects all due to a single underlying cause (for example, Down syndrome).

Teratogen A substance in the environment that can cause a birth defect.

Tetralogy of Fallot Congenital heart defect consisting of ventricular septal defect with pulmonary stenosis or atresia, aorta displaced to the right, and hypertrophy of right ventricle.

Thalidomide A drug that has been identified as a cause of malformations when used by women during pregnancy.

Tracheoesophageal fistula, esophageal atresia and stenosis An abnormal passage between the esophagus and trachea, or the absence, closure or constriction of the esophagus.

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 by the right ventricle, via the aorta, to the systemic circulation without being oxygenated in the lungs.

Trisomy A condition in which an individual has an extra copy of one chromosome.

Trisomy 13 (Patau syndrome) A chromosomal abnormality that is characterized by impaired midline facial development, cleft lip and palate, polydactyly and severe mental retardation.

Trisomy 18 (Edwards syndrome) A chromosomal abnormality that is characterized by mental retardation, growth retardation, low-set ears, skull malformation and short digits.

Trisomy 21 (Down syndrome) A chromosomal abnormality that is characterized by moderate to severe mental retardation, sloping forehead, small ear canals, flat-bridge of the nose and short fingers and toes.



Appendix B - Resource Directory

UNIVERSITY PROGRAMS

University of Florida

Division of Pediatric Genetics
P.O. Box 100296 UFHSC
Gainesville, FL 32610-0296
352-392-3388

Clinic Locations:

Cocoa Beach, Daytona Beach, Ocala, Orlando,
Panama City, Pensacola, Tallahassee,
Gainesville

Teratogen Information Service:

800-392-3050 or 352-392-3050

University of Miami

Genetics Division
Department of Pediatrics
School of Medicine Mailman Center for Child
Development
1601 NW 12th Avenue
Miami, FL 33136
305-243-6006

Clinic Locations:

Hollywood, Palm Beach Gardens, Marathon,
West Palm Beach, Fort Pierce, Fort Lauderdale,
Miami

Teratogen Information Service:

305-243-6464

University of South Florida

College of Medicine
Department of Pediatrics
Regional Genetics Program
10770 North 46th Street, Suite C-900
Tampa, FL 33617-3451
813-975-6900
813-975-6615 (fax)

Clinic Locations:

St Petersburg, Lakeland, Sarasota, Fort Myers,
Tampa

Teratogen Information Service:

813-975-6905

HOSPITAL & PRIVATE PROGRAMS

North Florida University Medical Center

Division of Genetics
655 West 8th Street, UA 3628
Jacksonville, FL 32209
904-549-4270 or 904-549-6953

Nemours Children's Clinic

Division of Genetics and Metabolism
807 Nira Street
Jacksonville, FL 32207
904-390-3586

Sacred Heart Women's Hospital

Joan Smith
Regional Perinatal Center
5151 North Ninth Ave.
Pensacola, Florida 32504
877-744-2003/850-416-2477

Genzyme Genetics (Genetic Counseling only)

7000 SW 97th Avenue, Suite 121
Miami, FL 33173
800-245-4363

Genetics Institute of Florida

5500 Village Boulevard, Suite 103
West Palm Beach, FL 33407
561-697-4200

Miami Children's Hospital

Genetics Division
3100 S.W. 62nd Avenue
Miami, FL 33155
305-666-6511 Ext. 2890

All Children's Hospital

Genetics/Genetics Labs
801 6th Street South
St. Petersburg, FL 33701
727-898-7451
727-892-8559 (lab)

Genzyme Genetics

10770 North 46th Street, Suite A-100
Tampa, FL 33617
800-966-4440

MedGenetics Diagnostic Resources

807 S. Orlando Avenue, Suite S
Winter Park, FL 32789
407-628-0744

Fetal Diagnostic Center

Arnold Palmer Hospital
92 West Miller Street
Orlando, FL 32806-2036
407-649-6910 ext. 1050

Florida Hospital Maternal Fetal Center

601 E. Rollins Street
Orlando, FL 32803
407-895-7692

Nemours Children's Clinic

Division of Genetics
83 West Columbia Street
Orlando, FL 32806
407-650-7245

BIRTH DEFECTS ORGANIZATIONS**Cystic Fibrosis Foundation**

800-344-4923
www.cff.org

Florida Chapter

954-739-5006
Executive Director:
Ms. Christina Landshut
Associate Executive Director:
Ms. Jody Kotler
florida@cff.org

Regional Offices:

Jacksonville Regional Office
904-724-0064
Director of Development:
Ms. Claudia Werner
jax-fl@cff.org

Miami Regional Office
305-755-9555
Executive Director:
Ms. Ariane Miller
Associate Executive Director:
Ms. Millie Velez
miami-fl@cff.org

Orlando Regional Office
407-339-8334
Director of Development:
Ms. Jackie Murphy
orlando-fl@cff.org

Palm Beach Regional Office
561-683-9965
Executive Director:
Ms. Marie Cook
palm-beach-fl@cff.org

Sarasota Branch
941-952-5836
Director of Development:
Ms. Laura Knauss
sarasota-fl@cff.org

Tampa Regional Office
813-286-0266
Director of Development:
Ms. Susan Baty
tampa-fl@cff.org

National Down Syndrome Society

800-221-4602
www.ndss.org

Gold Coast Down Syndrome Organization, Inc.

Terri Harmon, President
22626 SW 65th Terrace
Boca Raton, FL 33428

Gold Coast Down Syndrome Organization

Diane De Braga
Broward County
1688 N.W. 111 Way
Coral Springs, FL 33071

Down Syndrome Association of SW Florida

Tom Cannon, President
P.O. Box 150803
Cape Coral, FL 33915-0803

Down Syndrome Association of Jacksonville, Inc.

Brent Montgomery, Executive Director
7932 Hunters Grove Road
Jacksonville, FL 32256

Down Syndrome Association of Polk County

Susan A. Rogers, President
2815 Oakland Avenue
Lakeland, FL 33803

Central Florida Down Syndrome Association

Julie Hagen
P.O. Box 947541
Maitland, FL 32794-7541

Down Syndrome Association of Dade County

Delia Carricaburu, President
9555 S.W. 24th Street G 206
Miami, FL 33165

National Hemophilia Foundation

212-238-3700
www.hemophilia.org

Florida Chapter of NHF/ National Hemophilia Foundation

Natalie Philipsen, President
17810 Littlewood Dr.
Springhill, FL 34610 -7357
813-856-7057
888-880-8330
813-856-2257 (fax)
nnd@niren.imsweb.net

March of Dimes

888-663-4637
www.modimes.org

East Central Florida Chapter

135 West Central Blvd, Suite 440
Orlando, Florida 32801
407-849-0790

Florida Bay Chapter

405 North Reo Street, Suite 105
Tampa, Florida 33609
813-287-2600

North Central Florida Chapter

1831 NW 13th Street, Suite 3
Gainesville, Florida 32609
352-378-9522
www.gatorbabies.org

Northeast Florida Chapter

4161 Carmichael Avenue, #212
Jacksonville, Florida 32207
904-398-2821

Northwest Florida Chapter

3375-F201 Capital Circle NE
Tallahassee, Florida 32308
850-422-3152

Southwest Coast Florida Chapter

6314 Corporate Court, Suite C-3
Ft. Myers, Florida 33919
941-433-3463
www.modswf.org

South Florida Chapter

1001 W. Cypress Creek Road #110 & 111
Ft. Lauderdale, Florida 33309
954-772-0013

Muscular Dystrophy Association

800-572-1717
www.mdausa.org

**Muscular Dystrophy Association for North/
Central/Panhandle of Florida**

District Director - 727-577-4509
Program Services - 727-576-5202 or 813-229-
3332
9455 Cogler Boulevard, Suite 102
St. Petersburg, FL 33702

**Muscular Dystrophy Association for South
Florida**

District Director - 561-627-4300
Program Services - 561-627-5454
8895 North Military Trail, Suite 208-D
Palm Beach Gardens, FL 33410

**Sickle Cell Disease Association of America,
Inc.**

800-421-8453
www.SickleCellDisease.org

SCDAA-Florida State

PO Box 11982
Tampa Fl 33660-1982
3402 N 22nd St Suite 164
Tampa Fl 33065
813-248-2888
813-247-1543 (fax)

SCDAA-Volusia County

PO Box 9083
Daytona Beach Fl 32120
111 Bethune Village
Daytona Beach Fl 32114
904-258-5605
904-258-158 (fax)

SCDAA-Broward County

PO Box 8535
Ft Lauderdale Fl 33310
954-524-4920

SCDAA-Northeast Florida

PO Box 4011
Jacksonville Fl 32206
1133 Ionia St
Jacksonville Fl 32202
904-353-5737
904-354-4093 (fax)

Dade County Sickle Cell Foundation

Miami Comprehensive Sickle Cell Center
Astrid Mack, PhD, Executive Director
794 NW 18th St
Miami Fl 33136
305-243-6924
305-324-6785 (fax)
Amack@Mednet.Med.Miami.Edu

SCDAA-Escambia County

Christine Sutton, Office Manager
PO Box 9132
Pensacola Fl 32513
2406 N 12th Ave
Pensacola Fl 32503
850-434-6092
850-434-8763 (fax)

SCDAA-St Petersburg

PO Box 4141
St Petersburg Fl 33733
813-896-2355
813-893-7288 (fax)

SCDAA-Hillsborough County

PO Box 310364
Tampa Fl 33680-0364
3402 N 22nd St
Tampa Fl 33605
813-247-5999
813-247-1543 (fax)

SCDAA-Palm Beach County

Milagros Hendricks-Rivera, Exec Director
1600 N Australian Ave
West Palm Beach FL 33407-5621
561-833-3113
561-659-4505 (fax)

Spina Bifida Association of America

800-621-3141
www.sbaa.org

SBA of Florida

24 Beach Walker Rd.
Fernandina Beach, FL 32034-6600
(904) 261-6639

SBA of Central Florida

PO Box 547070
Orlando, FL 32854-7970
407-263-8350

SBA of Florida Space Coast

3685 Starlight Avenue
Merritt Island, FL 32953
407-454-9737

SBA of Jacksonville

PO Box 5720
Jacksonville, FL 32247
904-390-3686

SBA of Southeast FL

10060 SW 2nd Street
Plantation, FL 33324
954-472-4089

SBA of Southwest Florida

PO Box 2684
Ft. Myers, FL 33902
941-332-7904

SBA of Tampa

PO Box 151038
Tampa, FL 33684
813-933-4827

STATE-FUNDED PROGRAMS**Florida Children's Medical Services****Headquarters:**

Mittie Moffett, R.N., M.S.
State Genetics Program Coordinator
2020 Capital Circle SE, Bin A-06
Tallahassee, FL 32399
850-488-1465

Local Service Sites:

Glenda Thomas, R.N., CMS Nursing Director
5192 Bayou Boulevard
Pensacola, FL 32503-2101
904 484-5040
Counties: Escambia, Okaloosa, Santa Rosa,
Walton

Donna Drew, R.N., CMS Nursing Director
1308 Florida Avenue
Panama City, FL 32401
850 872-4700

Counties: Bay, Calhoun, Gulf, Holmes, Jack-
son, Washington

Sharyn R. Bennett, R.N., CMS Nursing Direc-
tor
2303 Phillips Road
Tallahassee, FL 32308
850 487-2604

Counties: Franklin, Gadsden, Jefferson, Leon,
Liberty Madison, Taylor, Wakulla

Sharon Surrency, R.N., CMS Nursing Director
1701 S.W. 16th Avenue
Gainesville, Florida 32608
(352) 334-1400

North Referral Center

Maggie Bednar, R.N., CMS Nursing Director
Shands Hospital
Post Office Box 100353
Gainesville, Florida 32610
(352) 395-0459

Counties: Alachua, Bradford, Citrus, Columbia,
Dixie, Gilchrist, Hamilton, Hernando,
Lafayette, Lake, Levy, Marion, Putnam,
Sumter, Suwannee, Union

Sandra Everett, R.N., CMS Nursing Director
4080 Woodcock Drive, Suite 201
Jacksonville, Florida 32207-2723
(904) 348-2700

Counties: Baker, Clay, Duval, Nassau, St. Johns

Mary Jean Rappelt, R.N., CMS Nursing Director

3251 3rd Ave. North, Suite 130
St. Petersburg, Florida 33713
(813) 893-2775

Counties: Pasco, Pinellas

Joanne Angel, R.N., CMS Nursing Director

USF Referral Center
17 Davis Boulevard, Suite 407
Tampa, Florida 33606
(813) 272-2761

Counties: Hillsborough

Barbara Ray, R.N., CMS Nursing Director

5655 S. Orange Avenue
Orlando, Florida 32809
(407) 856-6525

Counties: Orange, Osceola, Seminole

Susan Chance, R.N., CMS Nursing Director

1133 Seminole Drive
Rockledge, Florida 32955
(407) 690-3850

Counties: Brevard

Lois Crumbacher, R.N., CMS Nursing Director
Sarasota Memorial Hospital
1950 Arlington Street, Suite 222
Sarasota, Florida 34239-3521
(941) 361-6250

Counties: Charlotte, Desoto, Sarasota, Manatee

Elaine LoGuidice, R.N., CMS Nursing Director

Healthpark Medical Center
P. O. Box 60171
9981 Healthpark Circle Suite 110
Ft. Myers, Florida 33908
(941) 433-6723

Counties: Glades, Hendry, Lee

Linda Hendrickson, R.N., CMS Nursing Director

1065 - 5th Avenue, North
Naples, Florida 34102
(941) 262-3636

Counties: Collier

Shelley Greif, R.N., CMS Nursing Director

5101 Greenwood Avenue
West Palm Beach, Florida 33407
(561) 881-5040

Counties: Palm Beach

Mary A. Hooshmand, R.N., CMS Nursing Director

Medical Office Building
Broward General Medical Center
1625 S.E. 3rd Avenue, Suite 415
Ft. Lauderdale, Florida 33316
(954) 713-3100

Counties: Broward

Leonor Alonso, R.N., CMS Nursing Director

1500 N.W. 12th Avenue, Suite 829
Miami, Florida 33136-1079
(305) 325-2830

Counties: North Dade

Nancy O'Donald, R.N., CMS Nursing Director
3100 S.W. 62nd Avenue
Miami, Florida 33155
(305) 669-6931
Counties: South Dade

Michelle Kern, R.N., CMS Nursing Director
6807 Overseas Highway
Marathon, Florida 33050
(305) 292-6852
Counties: Monroe

Deanie Hopes, R.N., CMS Nursing Director
509 S. Clyde Morris Boulevard
Daytona Beach, Florida 32114-3929
(904) 238-4980
Counties: Flagler, Volusia

Charlotte Brooks, R.N., CMS Nursing Director
4718 Old Highway 37 South
Lakeland, Florida 33813
(941) 701-1151
Counties: Hardee, Highlands, Polk

Lois Looby, R.N., CMS Nursing Director
1701 South 23rd Street
Ft. Pierce, Florida 34950
(561) 467-6000
Counties: Indian River, Martin, Okeechobee, St.
Lucie

FLORIDA DIRECTORY OF EARLY CHILD- HOOD SERVICES

A statewide computerized information and referral system for families, service coordinators and other professionals who work with children with special needs. This information system provides a wide range of services available in communities across the state of Florida through a network of 34 local sites that assist families and professionals.

The statewide toll free number
1-800-654-4440
or contact your local Central Directory.



Appendix C - Children's Medical Services (CMS) Early Intervention Program (EIP)

The CMS Early Intervention Program provides developmental evaluation and intervention services to children birth to age three. Contact an EIP Center in your area to speak to someone about your child's development.

Center 01 – Tampa

Program Name: USF Division of Child Dev.
& Neurology
Address: 17 Davis Blvd., Suite 401
Tampa FL 33606
Phone: (813) 272-2755
FAX: (813) 272-2793
Contact: Pat Grosz, R.N., Ph.D.
EIP Director/Coordinator

Program Name: USF Child Development
Address: 1811 Crystal Lake Dr.
Lakeland FL 33801
Phone: (941) 284-3087
Contact: Louise Boothby
EIP Coordinator (Bradenton)

Program Name: USF Child Development
Address: 1811 Crystal Lake Dr.
Lakeland FL 33801
Phone: (941) 284-3087
Contact: Louise Solomon, R.N.
EIP Coordinator (Lakeland)

Center 02- Gainesville

Program Name: DEI Program
Address: 1701 SW 16 Avenue
Gainesville FL 32608
Phone: (352) 334-1480
Contact: Fonda D. Eyler, Ph.D.
EIP Director/Coordinator

Center 03 - Jacksonville

Program Name: Early Intervention Program
Address: 555 W. 11 St.
Jacksonville FL 32206
Phone: (904) 549-4328
Contact: Ann Milton
EIP Coordinator

Center 04 – Miami (Mailman Ctr.)

Program Name: Mailman Ctr for Child Dvlp
Address: PO Box 016820 (D-820)
Miami FL 33101
Phone: (305) 243-6660
Contact: Elaine Matthews, R.N.
EIP Coordinator

Center 05 - Pensacola

Program Name: Early Intervention Program
Address: 5150 Bayou Blvd., Suite 1-N
Pensacola FL 32503
Phone: (850) 416-7657
Contact: Lane Guess
EIP Coordinator

Center 06 - Orlando

Program Name: Developmental Center for
Infants & Children
Address: 1717 S. Orange Ave., Suite
200
Orlando FL 32806
Phone: (407) 317-7430 ext 109
Contact: Cindi Kopelman
EIP Coordinator

Center 07 – St. Petersburg

Program Name: Ctr for Child Development
Address: PO Box 31020
St. Petersburg FL 33731-
8920
Phone: (813) 892-4403
Contact: Judi Vitucci, ARNP, Ph.D.
EIP Coordinator

Center 08 – West Palm Beach

Program Name: Early Intervention Program
Address: 5325 Greenwood Ave., #210
West Palm Beach FL 33407
Phone: (561) 881-6432
Contact: Wanda Baldwin, LCSW
EIP Coordinator

Center 10 – Ft. Lauderdale

Program Name: Children’s Diagnostic &
Treatment Ctr of S. Florida
Address: 417 S. Andrews Ave.
Ft. Lauderdale FL 33301
Phone: (954) 728-8080
Contact: Ellie Pierce
EIP Coordinator

Center 51 - Tallahassee

Program Name: Children’s Home Society
Address: 820 E Park Ave., #A-100
Tallahassee FL 32301
Phone: (850) 921-0330
Contact: Janice M. Kane, MSW
EIP Director/Coordinator

Center 52 – Brevard (formerly Melbourne)

Program Name: Early Intervention Program
Address: 1022 S. Florida Ave. Suite 6
Rockledge FL 32955
Phone: (407) 637-7700
Contact: Sally Golden-McCord
EIP Coordinator

Center 53 – Ft. Myers

Program Name: Early Intervention Program
Address: 9981 Health Park Cir., Suite
276
Ft. Myers FL 33908
Phone: (941) 432-3800
Contact: Andrea P. Olmsted, MSW
EIP Director/Coordinator

Center 54 - Sarasota

Program Name: Early Intervention Program
Address: 1700 S. Tamiami Trail
Sarasota FL 34239
Phone: (941) 917-7550
FAX: (941) 917-7426
Contact: Phil Blankenship, B.S.,
M.Ed.
EIP Director/ Coordinator

Center 55 – Daytona Beach

Program Name: CMS-Early Intervention
Program
Address: PO Box 10568
Daytona Beach FL 32120-
1109
Phone: (904) 258-7434
FAX: (904) 258-2283
Contact: Gayla Clark
EIP Coordinator

Center 56 - Stuart

Program Name: Early Intervention Program
Address: PO Box 2027
Stuart FL 34995
Phone: (561) 223-9633
FAX: (561) 223-9377
Contact: Lori Shamroth-Carver
EIP Coordinator (Stuart)

Center 57 – S. Miami

Program Name: Child Development Ctr
Address: 6200 SW 73 St.
Miami FL 33143
Phone: (305) 663-5080
Contact: Rosa Marie Inserni
EIP Coordinator

Center 58 – Key West

Program Name: FL Easter Seal Society
Address: 5220 College Rd.
Key West FL 33040
Phone: (305) 295-0663
Contact: Patti Weinhofer
EIP Director/Coordinator

Statewide Early Intervention Program

Program Name: CMS-EIP (Program Office)
Address: 1309 Winewood Blvd., Bldg
6 #130
Tallahassee FL 32399-0700
Phone: (850) 921-6635
Contact: Tom Nurse
CMS-EIP Statewide Parent
Consultant



Appendix D - Florida's Birth Defects Registry (FBDR) Consortium and Advisory Committee

FLORIDA BIRTH DEFECTS REGISTRY CONSORTIUM MEMBERS

Principal Investigator

Cynthia Harris, Ph.D.

Associate Professor and Director of the Institute of Public Health

Florida A & M University

Specialty – Environmental Toxicology

Mario Ariet, Ph.D., Professor
Division of Computer Sciences
College of Medicine
University of Florida
Specialty – Computer Science

Barbara Moseley, Associate Professor
Health Information Management Program
College of Allied Health
Florida A & M University
Specialty – Health Information Management

Perry Brown, Dr. P.H., Associate Professor
Institute of Public Health
Florida A & M University
Specialty - Epidemiology

Michael B. Resnick, Ed.D., Professor
Department of Pediatrics
College of Medicine
University of Florida
Specialty – Child Development & Evaluation

Randy Carter, Ph.D., Professor
Department of Statistics
College of Liberal Arts & Sciences
University of Florida
Specialty – Biostatistics and Longitudinal Data
Analysis

Jeffrey Roth, Ph.D., Assistant Professor
Department of Pediatrics
College of Medicine
University of Florida
Specialty - Evaluation

Jaime Frias, M.D., Professor and Chair
Department of Pediatrics
College of Medicine
University of South Florida
Specialty – Clinical Genetics

Charles Williams, M.D., Professor
Department of Pediatrics
College of Medicine
University of Florida
Specialty – Clinical Genetics



THE FLORIDA BIRTH DEFECTS CONSORTIUM

The registration and documentation of birth defects in the state is conducted by the Florida Birth Defects Registry (FBDR). The registry is composed of a consortium of institutions (Florida Department of Health and three Florida universities: Florida A & M University, University of Florida, and the University of South Florida). These institutions have a long history of research, education, and community service in the areas of public health, perinatology, pediatrics, pediatric genetics, epidemiology, environmental toxicology, biostatistics, and data management and analysis.

The Florida Birth Defects Registry will maintain comprehensive data for birth defects surveillance and research. Information collected for the registry will be used to:

- Assess the impact of birth defects upon children, families, and the health care system
- Study the effect of environmental hazards and other risk factors on birth defects
- Develop and focus primary prevention strategies
- Assist affected families in obtaining needed services;
- Plan for the allocation of funds; and
- Conduct research on the causes of birth defects.

The possible association between environmental contaminants and human health problems is an important topic throughout Florida. One of the most frequently voiced concerns of those affected is the fear that sub-clinical exposures of adults may affect the health and development of the fetus resulting in birth defects. The ability to quantify the public health impact of birth defects as measured by mortality, morbidity, disability, and economic impact is fundamental to prevention and improving the quality of lives of affected families.

The registry will merge data from multiple sources to create a comprehensive listing of birth defects in the state. Data sources will include Vital Statistics, hospital discharges, direct provider reports, hospital medical record reviews, metabolic and cytogenetic laboratory tests, Children's Medical Services clinical records, Regional Genetic Centers, Regional Perinatal Intensive Care Centers, and the Early Intervention Program.

The registry's data consists of a confidential, patient level database containing information from the listed data sources. It will be updated annually to provide the state with current, comprehensive data on birth defects. Access to this confidential data is governed by the Department of Health Information Security Policy and applicable state laws and rules. The consortium also has a public-use version of the registry data for use by external entities. This version is as comprehensive as

possible while protecting patient identity. This is done by limiting some data fields available and masking data where necessary. The public use data from the consortium is available on the Internet Web Site.

A variety of aggregate reports conforming to Department of Health and Centers for Disease Control specifications are produced. The capability for providing ad-hoc reporting of non-confidential data exists on a fee-for-service basis.

UNIVERSITY CONSORTIUM PARTNERS:

Florida A & M University, Institute of Public Health

The Institute of Public Health (IPH) at Florida A&M University (FAMU), is administratively housed in the College of Pharmacy and Pharmaceutical Science and is the result of the commitment of the 1995 Florida Legislature to resolve the public health and environmental problems that disproportionately affect the educationally and economically disadvantaged residents of the state. The purpose of the Institute of Public Health is to provide education at the graduate level by initially offering the Master in Public Health (MPH) degree. Special emphasis is placed on the provision of graduate training and research on diseases and health problems that disproportionately affect educationally and economically disadvantaged individuals. This includes, without limitations, the human health effects associated with acute and chronic disease, environmental pollution, and violence. Contributory disciplines at FAMU are epidemiology, environmental toxicology, and health information management.

University of Florida, Department of Pediatrics-Perinatal Data Systems

The University of Florida, Department of Pediatrics-Perinatal Data Systems has longstanding experience with working with some of the most complex and comprehensive pediatric datasets in the state regarding the tracking of birth defects and handicapping conditions. The databases under management at the Perinatal Data Center include (1) Regional Perinatal Infant Care Center Database (RPICC), (2) Early Intervention Project Database (EIP), (3) Teratogen Information Services State-wide Database (TIS), (4) Department of Education database, (5) Healthy Start, and (6) Vital Statistics.

The complimentary disciplines at the University of Florida are found in the areas of statistics, epidemiology, database management, and medical genetics. The University of Florida has significant publications in the area of birth defects and epidemiology and brings to the consortium an active history of funded research in genetics and birth defects.

University of South Florida, Department of Pediatrics

The University of South Florida is one of the premiere institutions involved in the area of birth defects in Florida. Under the direction of Dr. Jaime Frías, the University of South Florida has been an ongoing collaborator in the Spanish Collaborative Study of Congenital Malformation. As a dysmorphology consultant for this program he and the University have been heavily involved in the review and classification of a multitude of cases identified by this program, particularly infants and children with multiple birth defects.

An Internet Web site for the consortium has been developed at the University of South Florida. This site maintains state and national data on birth defects, has information on educational programs on birth defects, and resources for birth defects.

Significant expertise exists at the University of South Florida in the areas of Dysmorphology, Pediatrics, Database Design, and Web Page Construction.

ADVISORY COMMITTEE

An external advisory committee has been formed consisting of representatives from various health professions, civic organizations, and the lay public. Representation on the Advisory Committee consists of individuals from:

| | |
|--|---|
| Lay public | Florida Agency for Health Care Administration |
| Florida Association of Pediatric Surgeons | Centers for Disease Control |
| Florida Pediatric Society | Florida Healthy Start Coalitions |
| March of Dimes | University of South Florida School of Public Health |
| Legal Environmental Assistance Foundation | Regional Perinatal Intensive Care Centers |
| Spina Bifida Association of Florida | University of Miami School of Medicine |
| Center for Prevention and Early Intervention, Florida State University | Florida Perinatal Association |
| Florida Health Information Management Association | County Health Departments |
| Florida Children's Medical Services | Regional Genetics Centers |

The function of the Advisory Committee is to:

1. Review and provide advice regarding criteria for case definition and content of the master data file,
2. Review and provide advice regarding prospective studies,
3. Be apprized of clusters and review results of any cluster analysis,
4. Review and provide advice about information dissemination and web site activities,
5. Review and provide advice regarding enhancement of the surveillance system,
6. Review drafts of all reports published by the consortium,
7. Assist in the identification of birth defects due to environmental exposures.

Three subcommittees have been formed to assist the consortium in the continued development of the registry. These are:

Data Management and Reporting

Folic Acid Education

Neural Tube Defect Rapid Surveillance and Recurrence Prevention

These subcommittees represent major emphasis areas of the consortium and the Florida Department of Health.

The committee meets publicly four times per year around the state. At these meetings the accomplishments and plans of the Registry are presented and discussed. Recommendations are made, recorded and acted upon by the Consortium.



Appendix E - Data Sources and Record Linking Strategies

Data sources for this first year of the Florida Birth Defects Registry included 1) Florida Vital Statistics birth data; 2) Agency for Health Care Administration (AHCA) hospital discharge data; 3) Children’s Medical Services (CMS) Regional Perinatal Intensive Care Center (RPICC) data; and 4) CMS Early Intervention Program (EIP) data.

At birth, information about the mother and infant is collected and recorded on a Florida Birth Certificate. The **Florida Department of Health (DOH) Office of Vital Statistics** collects birth certificate information into a data set. The Florida Birth Defects Registry Consortium requested and received a subset of this data set, which contained information about children born during 1996. From this data, the Registry extracted records for children born to women who indicated a primary residence in Florida on their child’s birth certificate. Data elements included patient identifiers, demographic information and diagnostic coding.

Florida hospitals collect a great deal of information during a patient’s stay in the hospital. Information about each patient’s hospital stay is collected and reported to the **Agency for Health Care Administration (AHCA)**. The Florida Birth Defects Registry Consortium requested and received a subset which included information on all hospitalizations occurring in the first year of life for all children born in 1996. The Registry then extracted records for children whose hospital admission was the same or one day later than the child’s date of birth. This criterion was selected in order to capture the “birth hospitalization period” for infants born in 1996. This definition allowed the Registry to capture information for 1) all children born in Florida hospitals; and 2) children born outside of a hospital who were then admitted for immediately necessary medical treatment. Data elements included patient identifiers, demographic information and diagnostic coding.

Specific data about mothers and infants receiving services from certain neonatal intensive care centers (NICU) is collected and recorded by the **Children’s Medical Services (CMS) Regional Perinatal Intensive Care Center (RPICC)**, which has established centers at a number of Florida hospitals. The Florida Birth Defects Registry Consortium requested and received a subset of this data that contained information about infants born during 1996. From this data, the Registry extracted records for children who received services from the RPICC Center within their first year of life. Data elements obtained included patient identifiers, demographic information and diagnostic coding.

The **CMS Early Intervention Program (EIP)** collects demographic and service provision information about children from birth to age three who receive developmental evaluation and early intervention services (under IDEA Part C or the Developmental Evaluation and Intervention (DEI) component) at its 17 EIP Centers located across Florida. The Birth Defects Registry Consortium requested and received a subset of this data that contained information about children born in 1996. From this data, the Registry extracted records for children who received services from the EIP Center within their first year of life. Data elements obtained included patient identifiers, demographic information and diagnostic coding.

RECORD LINKING STRATEGIES

Once the Registry obtained the source data (sub)sets, the records had to be “linked” in order to create a new data set having one record for each child and containing available information from all four source data sets. Because the Registry’s subset of the Florida Vital Statistics birth data was considered to most adequately contain the set of “children of interest” (i.e., all children born to Florida residents), this data was used as the basis for the new, linked data set. In other words, a child had to have a record in the Florida Vital Statistics data set in order to be considered for inclusion in the Registry.

To create the linked data set, the source data sets from AHCA (a total of 183,069 records), CMS RPICC (a total of 3,172 records) and CMS EIP (a total of 10,136 records) were taken one at a time and compared their records to those of the Florida Vital Statistics birth data set. The comparison was limited to the values of selected variables, such as mother’s social security number, mother’s date of birth, mother’s name, child’s date of birth, the child’s name, the child’s gender, etc. A “match” between a record from AHCA, RPICC or EIP and one from the Florida Vital Statistics birth data was declared if:

- 1) the two records matched exactly on all selected variables, and
- 2) the match was unique (i.e., no other (Birth) Vital Statistics record matched on these variables).

Once a match was declared between records, both records were removed from the “pool” of unmatched records and the process continued. Multiple iterations of this linking process were performed using different subsets of variables in the comparisons. Eventually, 97% of the records from AHCA, 96% of the records from CMS RPICC, and 70% of the records from CMS EIP were matched to records in the Florida Vital Statistics birth data set. Any records from AHCA, RPICC, or EIP that remained unmatched at the end of the process were discarded.

The linked data set was then examined to identify children whose records indicated a diagnosis (an ICD-9 or a Florida Vital Statistics birth defect indicator) that was on the Registry’s list of ineludible birth defects. Although the Florida Birth Defects Registry contains all of the children who appeared to have a birth defect based on the Registry inclusion list, this annual report focuses only on those birth defects identified in the Center for Disease Control (CDC) Birth Defects reporting list. Appendix G contains the list of diagnoses covered by this report.



Appendix F - Data Quality and Limitations

INTRODUCTION

The 1996 Florida Birth Defects Registry was based on surveillance of four statewide data sets:

- Florida's Agency for Health Care Administration (AHCA) hospital discharge diagnosis data files
- Florida (Birth) Vital Statistics (BVS)
- Children's Medical Services (CMS) Regional Perinatal Intensive Care Centers (RPICC) Data Reporting System
- CMS Early Intervention Program (EIP) Data Reporting System.

These source databases are described in detail in Appendix E of this report. There are limitations typically inherent in such databases that, if present, would result in imperfections in the quality of data presented in this report. Furthermore, the process of creating the Registry from these source data sets also suffers from certain limitations. The extent to which such limitations actually impacted the quality of data in the 1996 FBDR must be assessed through data quality studies, which are summarized briefly below. In the future, several additional data sources will be added to the surveillance system and will be similarly addressed in data quality studies.

LIMITATIONS OF SOURCE DATA SETS

Miscoding and incomplete coding are potential problems in any database and are particularly probable when users are far removed from the collection, coding, and data entry process. Furthermore, the data collection forms for multi-purpose data sets cannot possibly satisfy all the needs of future users. Thus, problems due to a lack of detail in the coding system can occur, even when the data collection form has been filled in completely and correctly. Misdiagnosis or missed diagnoses are a concern, especially in non-universal databases (i.e., do not include entries for all births in the state) and/or data sets that rely on out-of-hospital diagnoses. Finally, each database produces a snapshot in time and the condition of interest may not exist or be diagnosable at that time.

These problems are expected to exist to some extent in one or more of the Registry's four source data sets. Of specific concern is the potential for the following limitations of each data source:

AHCA The AHCA data set contained records of all birth hospitalizations in the state. This means that only those birth defects that were identifiable at birth are included. It has been estimated that roughly half of all birth defects are identifiable at birth. Also, although the AHCA database is nearly universal, there are about 10,000 births a year that occur outside of hospitals and have no data reported by AHCA. Finally, it would be pure speculation at this point to guess the extent of

miscoding, misdiagnosis, or missed diagnoses in AHCA. Nevertheless, it is clear that these problems exist to some extent in any large database and cannot be ruled out.

BVS BVS is a universal database, but it is widely suspected to underreport birth defects. Evidence in support of this suspicion is contained in the temporal pattern of birth defect rates in BVS. From 1985-1987, when the data collection forms asked simply whether a congenital anomaly was diagnosed or not, 2.5% of all births were coded with an anomaly. In 1989, the first year of a data collection form that required yes or no coding for each of 22 different anomalies, the percentage dropped to 1.0% and has remained constant since. Clearly the rate of congenital anomalies did not drop 2.5 fold in two years. Since most current estimates range from 3% to 5%, it is presumed that this drop was due to increased underreporting.

BVS also suffers from a lack of detail in coding compared with ICD-9 codes used in other data sets. The 22 BVS codes for congenital anomalies are not easily translated into ICD-9's without error. This is not a severe limitation when ascertaining whether any birth defect exists, but it is likely to cause problems when ascertaining specific birth defects. One can more accurately map the many ICD-9 codes into the 22 BVS codes, but this would lead to unconventional reporting of birth defects compared to other registries. As with AHCA, BVS includes only cases that are diagnosed at birth.

RPICC The RPICC Program provides NICU care to infants who are born sick or premature. RPICC employs a sophisticated computerized data collection system with feedback loops that have resulted in continuing improvements to data quality for the past 19 years. Nevertheless, some errors in the data undoubtedly persist. The major concern, however, with regard to ascertainment of birth defects is that the RPICC Program is not universal. Only about 10% of births in Florida require NICU care, and about 50% of those receive care in a RPICC NICU. Thus, many birth defects will not be ascertained through RPICC. Some defects that are not diagnosed at birth, however, will be diagnosed during the typically longer stays and more intensive diagnostic efforts in the NICU as compared to the newborn nursery. Nevertheless, because it is not universal, RPICC cannot be expected to capture all birth defects up to age one year.

EIP EIP is also a non-universal system (not all birth defects result in developmental delay, one of the main criteria for EIP eligibility) and as such, will suffer to some extent from imperfect data quality. It is the only source data set currently in use, however, that allows for the ascertainment of late onset cases (i.e. those that are not diagnosed during the birth hospitalization).

LIMITATION OF THE PROCESS

The process followed to create the Registry from the four source data sets is described in Appendix E. Whether or not a birth defect was included in the Registry depended on whether or not that birth defect was diagnosed in any of the four source data sets, and whether the record containing that diagnosis could be linked to a record in BVS. Thus, limitations in record linkage can result in omitted diagnoses. If, for example, an infant had a birth defect diagnosis in only the RPICC data set, and their RPICC record could not be matched to their birth record in BVS because of inadequate common identifiers, then the infant's birth defect would not be included in the Registry.

This problem will be reduced in future years when improved common identifiers exist in the four source data sets. Mother's social security number, for example, was not present in the 1996 AHCA data set, but will be added in 1997.

LIKELY IMPACT OF LIMITATIONS

Given the limitations noted above, it is suspected that BVS, RPICC, and EIP will lack ascertainment sensitivity, but will be highly specific. AHCA should have the highest sensitivity of the four data sources. It should be noted that the results from all four data sources taken together may identify cases very well, in spite of the limitations of the individual source data sets. If indeed AHCA is sensitive while BVS, RPICC, and EIP are specific, and EIP captures late onset cases well, then the four together may produce quite accurate identification of cases.

DATA QUALITY STUDIES

Two data quality studies are planned to assess the ascertainment accuracy of each of the four source data sets. The first relies on statistical methods for estimating the accuracy of three or more diagnostic tests (i.e. data sources in this case) in the absence of a true gold standard. These methods are known as Latent Class Structure Analysis. They will allow us to use statewide data from AHCA, BVS, RPICC, and EIP to estimate ascertainment sensitivity and specificity for each data source. More importantly, they provide a means by which the information from the four sources can be combined (using Bayes Rule) to obtain a consensus assignment of each infant as having a birth defect or not. This assignment will be based on the estimated probability of a birth defect given the ascertainment results from the four data sources. Consider, for example, the following scenarios:

- 1) an infant is identified with a birth defect in AHCA but not in BVS, RPICC or EIP, and that the estimated probability such an infant truly has a birth defect is 0.18
- 2) an infant is identified as a case in all four data sets, and the estimated probability that such an infant truly has a birth defect is 1.0.

The first infant would be classified as a non-case in the registry, while the second would be classified as a case. The accuracy of such classifications should be better than accuracy of classifications that rely solely on any one of the data sources.

A second hospital-based study is planned at Tampa General and Shands Hospitals and will produce "gold standard" diagnoses for use in a conventional assessment of ascertainment accuracy. The estimated sensitivities and specificities from this study will be compared to corresponding values from the statewide latent class analysis described above for cross-validation of the two methods. The hospital-based study will involve surveillance of hospital birth logs followed by abstraction of medical records for suspect cases. Those containing a birth defect diagnosis will be classified as a "true" birth defect. These "true" classifications will then be compared to the classifications from each source data set to estimate the sensitivity and specificity of ascertainment by each source. Results from both of these studies will be presented in a separate report on data quality.



Appendix G - Birth Defects Reporting List

This report presents information about Florida’s children born with birth defects in 1996. Reporting here follows the Center for Disease Control’s (CDC) Birth Defects Reporting List, which classifies major birth defects into 45 categories each defined by one or more ICD-9-CM (ICD-9) codes. The CDC list was chosen as the basis for this report as it allows for easy comparison with data disseminated by the CDC as well as other states, despite containing only a portion of the diagnoses included in the Florida Birth Defects Registry. Due to questions regarding the quality of certain diagnoses, we have chosen to report only 43 of these 45 categories, excluding patent ductus arteriosis and pyloric stenosis.

| <u>Description of Birth Defect</u> | <u>Diagnosis Codes (ICD-9s) for Inclusion in Category</u> |
|------------------------------------|---|
|------------------------------------|---|

CENTRAL NERVOUS SYSTEM:

| | |
|------------------------------------|--|
| Anencephalus | 740.0, 740.1 |
| Spina bifida without anencephalus | 741, 741.0, 741.00-741.03, 741.9, 741.90-741.93 without either 740.0 or 740.1 |
| Hydrocephalus without spina bifida | 742.3 without any of 741, 741.1, 741.00-741.03, 741.9, 741.90-741.93 |
| Encephalocele | 742.0 |
| Microcephalus | 742.1 |

CHROMOSOMAL:

| | |
|---------------|-------|
| Trisomy 13 | 758.1 |
| Down syndrome | 758.0 |
| Trisomy 18 | 758.2 |

GASTROINTESTINAL:

| | |
|---|--------|
| Esophageal atresia/tracheoesophageal fistula | 750.3 |
| Rectal and large intestinal atresia/stenosis | 751.2 |
| Hirschsprung’s disease (congenital megacolon) | 751.3 |
| Biliary atresia | 751.61 |

GENITAL AND URINARY:

| | |
|----------------------------------|-------------------------------------|
| Renal agenesis/hypoplasia | 753.0 |
| Bladder exstrophy | 753.5 |
| Obstructive genitourinary defect | 753.2, 753.20-753.23, 753.29, 753.6 |
| Hypospadias and Epispadias | 752.6, 752.61-752.62 |

CONGENITAL HEART:

| | |
|--------------------------------------|------------------------------|
| Common truncus | 745.0 |
| Transposition of great arteries | 745.1, 745.10-745.12, 745.19 |
| Tetralogy of Fallot | 745.2 |
| Ventricular septal defect | 745.4 |
| Atrial septal defect | 745.5 |
| Endocardial cushion defect | 745.60-745.61, 745.69 |
| Pulmonary valve atresia and stenosis | 746.01-746.02 |
| Tricuspid valve atresia and stenosis | 746.1 |
| Ebstein's anomaly | 746.2 |
| Aortic valve stenosis | 746.3 |
| Hypoplastic left heart syndrome | 746.7 |
| Coarctation of aorta | 747.1, 747.10 |
| Pulmonary artery anomalies | 747.3 |

MUSCULOSKELETAL:

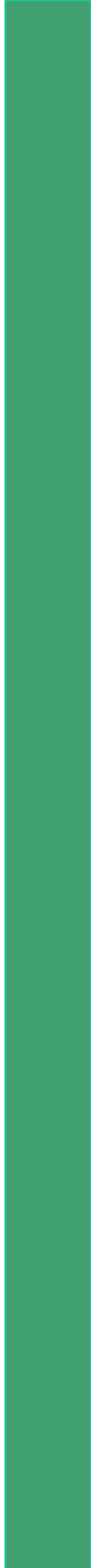
| | |
|----------------------------------|-----------------------|
| Reduction deformity: upper limbs | 755.20-755.29, 755.3 |
| Reduction deformity: lower limbs | 755.3, 755.30-755.39 |
| Gastroschisis/Omphalocele | 756.7, 756.79 |
| Congenital hip dislocation | 754.30-754.31, 754.35 |
| Diaphragmatic hernia | 756.6 |

ORAL CLEFT:

| | |
|---|--|
| Cleft palate without cleft lip | 749.0, 749.00-749.04 |
| Cleft lip with and without cleft palate | 749.1, 749.10-749.14, 749.2, 749.20-749.25 |
| Choanal atresia | 748.0 |

OTHER DEFECTS:

| | |
|-----------------------------|---|
| Anophthalmia/microphthalmia | 743.0, 743.00, 743.03, 743.06, 743.1, 743.10-743.12 |
| Congenital cataract | 743.30-743.34 |
| Aniridia | 743.45 |
| Anotia/microtia | 744.01, 744.23 |
| Lung agenesis/hypoplasia | 748.5 |
| Fetal alcohol syndrome | 760.71 |



Appendix H - County and Statewide Tables

STATEWIDE

1996 provisional data from the Florida Birth Defects Registry.

| Birth Defect | Number of Diagnoses | Rate* |
|---|---------------------|-------------|
| CENTRAL NERVOUS SYSTEM DEFECTS: | 335 | 17.7 |
| Anencephalus | 12 | 0.6 |
| Spina bifida without anencephalus | 96 | 5.1 |
| Hydrocephalus without spina bifida | 101 | 5.3 |
| Encephalocele | 12 | 0.6 |
| Microcephalus | 128 | 6.8 |
| CHROMOSOMAL DEFECTS: | 227 | 12.0 |
| Trisomy 13 | 17 | 0.9 |
| Down syndrome | 198 | 10.5 |
| Trisomy 18 | 13 | 0.7 |
| GASTROINTESTINAL DEFECTS: | 110 | 5.8 |
| Esophageal atresia/tracheoesophageal fistula | 34 | 1.8 |
| Rectal and large intestinal atresia/stenosis | 47 | 2.5 |
| Hirschsprung's disease (congenital megacolon) | 32 | 1.7 |
| Biliary atresia | 2 | 0.1 |
| GENITAL AND URINARY DEFECTS: | 1056 | 55.8 |
| Renal agenesis/hypoplasia | 56 | 3.0 |
| Bladder exstrophy | 9 | 0.5 |
| Obstructive genitourinary defect | 343 | 18.1 |
| Hypospadias and Epispadias | 664 | 68.4 |
| CONGENITAL HEART DEFECTS: | 1703 | 90.0 |
| Common truncus | 16 | 0.8 |
| Transposition of great arteries | 37 | 2.0 |
| Tetralogy of Fallot | 49 | 2.6 |
| Ventricular septal defect | 662 | 35.0 |
| Atrial septal defect | 764 | 40.4 |
| Endocardial cushion defect | 41 | 2.2 |
| Pulmonary valve atresia and stenosis | 172 | 9.1 |
| Tricuspid valve atresia and stenosis | 19 | 1.0 |
| Ebstein's anomaly | 9 | 0.5 |
| Aortic valve stenosis | 16 | 0.8 |
| Hypoplastic left heart syndrome | 32 | 1.7 |
| Coarctation of aorta | 43 | 2.3 |
| Pulmonary artery anomalies | 170 | 9.0 |
| MUSCULOSKELETAL DEFECTS: | 534 | 28.2 |
| Reduction deformity: upper limbs | 42 | 2.2 |
| Reduction deformity: lower limbs | 24 | 1.3 |
| Gastroschisis/Omphalocele | 139 | 7.3 |
| Congenital hip dislocation | 291 | 15.4 |
| Diaphragmatic hernia | 45 | 2.4 |
| ORAL CLEFT DEFECTS: | 289 | 15.3 |
| Cleft palate without cleft lip | 116 | 6.1 |
| Cleft lip with and without cleft palate | 164 | 8.7 |
| Choanal atresia | 21 | 1.1 |
| OTHER DEFECTS: | 178 | 9.4 |
| Anophthalmia/microphthalmia | 20 | 1.1 |
| Congenital cataract | 13 | 0.7 |
| Aniridia | 0 | 0.0 |
| Anotia/microtia | 8 | 0.4 |
| Lung agenesis/hypoplasia | 64 | 3.4 |
| Fetal alcohol syndrome | 73 | 3.9 |

| |
|-----------------------------------|
| At a glance: |
| 189,134 total children born |
| 4,042 children with birth defects |

* All rates given are per 10,000 live births, except Hypospadias and Epispadias which are per 10,000 live male births. Additionally, the total number of children in each category may be less than the sum of the children with each individual birth defect since some children may have more than one birth defect.

ALACHUA COUNTY

1996 provisional data from the Florida Birth Defects Registry.

| Birth Defect | Number of Diagnoses | Rate* |
|---|---------------------|-------------|
| CENTRAL NERVOUS SYSTEM DEFECTS: | 6 | 24.1 |
| Anencephalus | 1 | 4.0 |
| Spina bifida without anencephalus | 0 | 0.0 |
| Hydrocephalus without spina bifida | 1 | 4.0 |
| Encephalocele | 0 | 0.0 |
| Microcephalus | 4 | 16.1 |
| CHROMOSOMAL DEFECTS: | 8 | 32.2 |
| Trisomy 13 | 0 | 0.0 |
| Down syndrome | 8 | 32.2 |
| Trisomy 18 | 0 | 0.0 |
| GASTROINTESTINAL DEFECTS: | 3 | 12.1 |
| Esophageal atresia/tracheoesophageal fistula | 2 | 8.0 |
| Rectal and large intestinal atresia/stenosis | 1 | 4.0 |
| Hirschsprung's disease (congenital megacolon) | 0 | 0.0 |
| Biliary atresia | 0 | 0.0 |
| GENITAL AND URINARY DEFECTS: | 14 | 56.3 |
| Renal agenesis/hypoplasia | 1 | 4.0 |
| Bladder exstrophy | 0 | 0.0 |
| Obstructive genitourinary defect | 4 | 16.1 |
| Hypospadias and Epispadias | 10 | 78.1 |
| CONGENITAL HEART DEFECTS: | 21 | 84.5 |
| Common truncus | 1 | 4.0 |
| Transposition of great arteries | 0 | 0.0 |
| Tetralogy of Fallot | 2 | 8.0 |
| Ventricular septal defect | 9 | 36.2 |
| Atrial septal defect | 4 | 16.1 |
| Endocardial cushion defect | 1 | 4.0 |
| Pulmonary valve atresia and stenosis | 0 | 0.0 |
| Tricuspid valve atresia and stenosis | 1 | 4.0 |
| Ebstein's anomaly | 0 | 0.0 |
| Aortic valve stenosis | 0 | 0.0 |
| Hypoplastic left heart syndrome | 0 | 0.0 |
| Coarctation of aorta | 0 | 0.0 |
| Pulmonary artery anomalies | 4 | 16.1 |
| MUSCULOSKELETAL DEFECTS: | 8 | 32.2 |
| Reduction deformity: upper limbs | 2 | 8.0 |
| Reduction deformity: lower limbs | 0 | 0.0 |
| Gastroschisis/Omphalocele | 3 | 12.1 |
| Congenital hip dislocation | 3 | 12.1 |
| Diaphragmatic hernia | 0 | 0.0 |
| ORAL CLEFT DEFECTS: | 2 | 8.0 |
| Cleft palate without cleft lip | 0 | 0.0 |
| Cleft lip with and without cleft palate | 2 | 8.0 |
| Choanal atresia | 0 | 0.0 |
| OTHER DEFECTS: | 2 | 8.0 |
| Anophthalmia/microphthalmia | 0 | 0.0 |
| Congenital cataract | 0 | 0.0 |
| Aniridia | 0 | 0.0 |
| Anotia/microtia | 0 | 0.0 |
| Lung agenesis/hypoplasia | 1 | 4.0 |
| Fetal alcohol syndrome | 1 | 4.0 |

| At a glance: |
|--------------------------------|
| 2,485 total children born |
| 59 children with birth defects |
| 1.5 % of the state total |

* All rates given are per 10,000 live births, except Hypospadias and Epispadias which are per 10,000 live male births. Additionally, the total number of children in each category may be less than the sum of the children with each individual birth defect since some children may have more than one birth defect.

BAKER COUNTY

1996 provisional data from the Florida Birth Defects Registry.

| Birth Defect | Number of Diagnoses | Rate* |
|---|---------------------|--------------|
| CENTRAL NERVOUS SYSTEM DEFECTS: | 0 | 0.0 |
| Anencephalus | 0 | 0.0 |
| Spina bifida without anencephalus | 0 | 0.0 |
| Hydrocephalus without spina bifida | 0 | 0.0 |
| Encephalocele | 0 | 0.0 |
| Microcephalus | 0 | 0.0 |
| CHROMOSOMAL DEFECTS: | 1 | 35.7 |
| Trisomy 13 | 0 | 0.0 |
| Down syndrome | 1 | 35.7 |
| Trisomy 18 | 0 | 0.0 |
| GASTROINTESTINAL DEFECTS: | 0 | 0.0 |
| Esophageal atresia/tracheoesophageal fistula | 0 | 0.0 |
| Rectal and large intestinal atresia/stenosis | 0 | 0.0 |
| Hirschsprung's disease (congenital megacolon) | 0 | 0.0 |
| Biliary atresia | 0 | 0.0 |
| GENITAL AND URINARY DEFECTS: | 3 | 107.1 |
| Renal agenesis/hypoplasia | 0 | 0.0 |
| Bladder exstrophy | 0 | 0.0 |
| Obstructive genitourinary defect | 1 | 35.7 |
| Hypospadias and Epispadias | 2 | 135.1 |
| CONGENITAL HEART DEFECTS: | 3 | 107.1 |
| Common truncus | 0 | 0.0 |
| Transposition of great arteries | 1 | 35.7 |
| Tetralogy of Fallot | 0 | 0.0 |
| Ventricular septal defect | 2 | 71.4 |
| Atrial septal defect | 0 | 0.0 |
| Endocardial cushion defect | 0 | 0.0 |
| Pulmonary valve atresia and stenosis | 1 | 35.7 |
| Tricuspid valve atresia and stenosis | 0 | 0.0 |
| Ebstein's anomaly | 0 | 0.0 |
| Aortic valve stenosis | 0 | 0.0 |
| Hypoplastic left heart syndrome | 0 | 0.0 |
| Coarctation of aorta | 0 | 0.0 |
| Pulmonary artery anomalies | 0 | 0.0 |
| MUSCULOSKELETAL DEFECTS: | 0 | 0.0 |
| Reduction deformity: upper limbs | 0 | 0.0 |
| Reduction deformity: lower limbs | 0 | 0.0 |
| Gastroschisis/Omphalocele | 0 | 0.0 |
| Congenital hip dislocation | 0 | 0.0 |
| Diaphragmatic hernia | 0 | 0.0 |
| ORAL CLEFT DEFECTS: | 0 | 0.0 |
| Cleft palate without cleft lip | 0 | 0.0 |
| Cleft lip with and without cleft palate | 0 | 0.0 |
| Choanal atresia | 0 | 0.0 |
| OTHER DEFECTS: | 0 | 0.0 |
| Anophthalmia/microphthalmia | 0 | 0.0 |
| Congenital cataract | 0 | 0.0 |
| Aniridia | 0 | 0.0 |
| Anotia/microtia | 0 | 0.0 |
| Lung agenesis/hypoplasia | 0 | 0.0 |
| Fetal alcohol syndrome | 0 | 0.0 |

| At a glance: |
|-------------------------------|
| 280 total children born |
| 7 children with birth defects |
| 0.2 % of the state total |

* All rates given are per 10,000 live births, except Hypospadias and Epispadias which are per 10,000 live male births. Additionally, the total number of children in each category may be less than the sum of the children with each individual birth defect since some children may have more than one birth defect.

BAY COUNTY

1996 provisional data from the Florida Birth Defects Registry.

| Birth Defect | Number of Diagnoses | Rate* |
|---|---------------------|-------------|
| CENTRAL NERVOUS SYSTEM DEFECTS: | 3 | 15.3 |
| Anencephalus | 0 | 0.0 |
| Spina bifida without anencephalus | 0 | 0.0 |
| Hydrocephalus without spina bifida | 0 | 0.0 |
| Encephalocele | 0 | 0.0 |
| Microcephalus | 3 | 15.3 |
| CHROMOSOMAL DEFECTS: | 4 | 20.4 |
| Trisomy 13 | 1 | 5.1 |
| Down syndrome | 3 | 15.3 |
| Trisomy 18 | 0 | 0.0 |
| GASTROINTESTINAL DEFECTS: | 2 | 10.2 |
| Esophageal atresia/tracheoesophageal fistula | 0 | 0.0 |
| Rectal and large intestinal atresia/stenosis | 1 | 5.1 |
| Hirschsprung's disease (congenital megacolon) | 1 | 5.1 |
| Biliary atresia | 0 | 0.0 |
| GENITAL AND URINARY DEFECTS: | 9 | 45.8 |
| Renal agenesis/hypoplasia | 1 | 5.1 |
| Bladder exstrophy | 0 | 0.0 |
| Obstructive genitourinary defect | 1 | 5.1 |
| Hypospadias and Epispadias | 7 | 72.5 |
| CONGENITAL HEART DEFECTS: | 17 | 86.6 |
| Common truncus | 0 | 0.0 |
| Transposition of great arteries | 0 | 0.0 |
| Tetralogy of Fallot | 2 | 10.2 |
| Ventricular septal defect | 5 | 25.5 |
| Atrial septal defect | 6 | 30.6 |
| Endocardial cushion defect | 1 | 5.1 |
| Pulmonary valve atresia and stenosis | 1 | 5.1 |
| Tricuspid valve atresia and stenosis | 0 | 0.0 |
| Ebstein's anomaly | 0 | 0.0 |
| Aortic valve stenosis | 0 | 0.0 |
| Hypoplastic left heart syndrome | 0 | 0.0 |
| Coarctation of aorta | 1 | 5.1 |
| Pulmonary artery anomalies | 3 | 15.3 |
| MUSCULOSKELETAL DEFECTS: | 7 | 35.7 |
| Reduction deformity: upper limbs | 1 | 5.1 |
| Reduction deformity: lower limbs | 0 | 0.0 |
| Gastroschisis/Omphalocele | 3 | 15.3 |
| Congenital hip dislocation | 3 | 15.3 |
| Diaphragmatic hernia | 0 | 0.0 |
| ORAL CLEFT DEFECTS: | 3 | 15.3 |
| Cleft palate without cleft lip | 3 | 15.3 |
| Cleft lip with and without cleft palate | 1 | 5.1 |
| Choanal atresia | 0 | 0.0 |
| OTHER DEFECTS: | 3 | 15.3 |
| Anophthalmia/microphthalmia | 2 | 10.2 |
| Congenital cataract | 0 | 0.0 |
| Aniridia | 0 | 0.0 |
| Anotia/microtia | 0 | 0.0 |
| Lung agenesis/hypoplasia | 0 | 0.0 |
| Fetal alcohol syndrome | 1 | 5.1 |

| At a glance: |
|--------------------------------|
| 1,963 total children born |
| 39 children with birth defects |
| 1.0 % of the state total |

* All rates given are per 10,000 live births, except Hypospadias and Epispadias which are per 10,000 live male births. Additionally, the total number of children in each category may be less than the sum of the children with each individual birth defect since some children may have more than one birth defect.

BRADFORD COUNTY

1996 provisional data from the Florida Birth Defects Registry.

| Birth Defect | Number of Diagnoses | Rate* |
|---|---------------------|-------------|
| CENTRAL NERVOUS SYSTEM DEFECTS: | 2 | 62.1 |
| Anencephalus | 0 | 0.0 |
| Spina bifida without anencephalus | 2 | 62.1 |
| Hydrocephalus without spina bifida | 0 | 0.0 |
| Encephalocele | 0 | 0.0 |
| Microcephalus | 0 | 0.0 |
| CHROMOSOMAL DEFECTS: | 0 | 0.0 |
| Trisomy 13 | 0 | 0.0 |
| Down syndrome | 0 | 0.0 |
| Trisomy 18 | 0 | 0.0 |
| GASTROINTESTINAL DEFECTS: | 0 | 0.0 |
| Esophageal atresia/tracheoesophageal fistula | 0 | 0.0 |
| Rectal and large intestinal atresia/stenosis | 0 | 0.0 |
| Hirschsprung's disease (congenital megacolon) | 0 | 0.0 |
| Biliary atresia | 0 | 0.0 |
| GENITAL AND URINARY DEFECTS: | 1 | 31.1 |
| Renal agenesis/hypoplasia | 0 | 0.0 |
| Bladder exstrophy | 0 | 0.0 |
| Obstructive genitourinary defect | 1 | 31.1 |
| Hypospadias and Epispadias | 0 | 0.0 |
| CONGENITAL HEART DEFECTS: | 3 | 93.2 |
| Common truncus | 0 | 0.0 |
| Transposition of great arteries | 0 | 0.0 |
| Tetralogy of Fallot | 0 | 0.0 |
| Ventricular septal defect | 0 | 0.0 |
| Atrial septal defect | 1 | 31.1 |
| Endocardial cushion defect | 1 | 31.1 |
| Pulmonary valve atresia and stenosis | 0 | 0.0 |
| Tricuspid valve atresia and stenosis | 0 | 0.0 |
| Ebstein's anomaly | 0 | 0.0 |
| Aortic valve stenosis | 1 | 31.1 |
| Hypoplastic left heart syndrome | 0 | 0.0 |
| Coarctation of aorta | 0 | 0.0 |
| Pulmonary artery anomalies | 0 | 0.0 |
| MUSCULOSKELETAL DEFECTS: | 3 | 93.2 |
| Reduction deformity: upper limbs | 0 | 0.0 |
| Reduction deformity: lower limbs | 0 | 0.0 |
| Gastroschisis/Omphalocele | 0 | 0.0 |
| Congenital hip dislocation | 2 | 62.1 |
| Diaphragmatic hernia | 1 | 31.1 |
| ORAL CLEFT DEFECTS: | 0 | 0.0 |
| Cleft palate without cleft lip | 0 | 0.0 |
| Cleft lip with and without cleft palate | 0 | 0.0 |
| Choanal atresia | 0 | 0.0 |
| OTHER DEFECTS: | 0 | 0.0 |
| Anophthalmia/microphthalmia | 0 | 0.0 |
| Congenital cataract | 0 | 0.0 |
| Aniridia | 0 | 0.0 |
| Anotia/microtia | 0 | 0.0 |
| Lung agenesis/hypoplasia | 0 | 0.0 |
| Fetal alcohol syndrome | 0 | 0.0 |

| |
|-------------------------------|
| At a glance: |
| 322 total children born |
| 8 children with birth defects |
| 0.2 % of the state total |

* All rates given are per 10,000 live births, except Hypospadias and Epispadias which are per 10,000 live male births. Additionally, the total number of children in each category may be less than the sum of the children with each individual birth defect since some children may have more than one birth defect.

BREVARD COUNTY

1996 provisional data from the Florida Birth Defects Registry.

| Birth Defect | Number of Diagnoses | Rate* |
|---|---------------------|-------------|
| CENTRAL NERVOUS SYSTEM DEFECTS: | 16 | 32.1 |
| Anencephalus | 0 | 0.0 |
| Spina bifida without anencephalus | 6 | 12.0 |
| Hydrocephalus without spina bifida | 4 | 8.0 |
| Encephalocele | 2 | 4.0 |
| Microcephalus | 6 | 12.0 |
| CHROMOSOMAL DEFECTS: | 1 | 2.0 |
| Trisomy 13 | 0 | 0.0 |
| Down syndrome | 1 | 2.0 |
| Trisomy 18 | 0 | 0.0 |
| GASTROINTESTINAL DEFECTS: | 3 | 6.0 |
| Esophageal atresia/tracheoesophageal fistula | 2 | 4.0 |
| Rectal and large intestinal atresia/stenosis | 1 | 2.0 |
| Hirschsprung's disease (congenital megacolon) | 1 | 2.0 |
| Biliary atresia | 0 | 0.0 |
| GENITAL AND URINARY DEFECTS: | 26 | 52.2 |
| Renal agenesis/hypoplasia | 4 | 8.0 |
| Bladder exstrophy | 1 | 2.0 |
| Obstructive genitourinary defect | 11 | 22.1 |
| Hypospadias and Epispadias | 11 | 43.0 |
| CONGENITAL HEART DEFECTS: | 37 | 74.2 |
| Common truncus | 0 | 0.0 |
| Transposition of great arteries | 1 | 2.0 |
| Tetralogy of Fallot | 1 | 2.0 |
| Ventricular septal defect | 13 | 26.1 |
| Atrial septal defect | 10 | 20.1 |
| Endocardial cushion defect | 1 | 2.0 |
| Pulmonary valve atresia and stenosis | 7 | 14.0 |
| Tricuspid valve atresia and stenosis | 1 | 2.0 |
| Ebstein's anomaly | 0 | 0.0 |
| Aortic valve stenosis | 2 | 4.0 |
| Hypoplastic left heart syndrome | 1 | 2.0 |
| Coarctation of aorta | 1 | 2.0 |
| Pulmonary artery anomalies | 1 | 2.0 |
| MUSCULOSKELETAL DEFECTS: | 11 | 22.1 |
| Reduction deformity: upper limbs | 1 | 2.0 |
| Reduction deformity: lower limbs | 1 | 2.0 |
| Gastroschisis/Omphalocele | 0 | 0.0 |
| Congenital hip dislocation | 10 | 20.1 |
| Diaphragmatic hernia | 0 | 0.0 |
| ORAL CLEFT DEFECTS: | 8 | 16.0 |
| Cleft palate without cleft lip | 3 | 6.0 |
| Cleft lip with and without cleft palate | 4 | 8.0 |
| Choanal atresia | 1 | 2.0 |
| OTHER DEFECTS: | 6 | 12.0 |
| Anophthalmia/microphthalmia | 0 | 0.0 |
| Congenital cataract | 0 | 0.0 |
| Aniridia | 0 | 0.0 |
| Anotia/microtia | 0 | 0.0 |
| Lung agenesis/hypoplasia | 1 | 2.0 |
| Fetal alcohol syndrome | 5 | 10.0 |

| At a glance: |
|---------------------------------|
| 4,985 total children born |
| 102 children with birth defects |
| 2.5 % of the state total |

* All rates given are per 10,000 live births, except Hypospadias and Epispadias which are per 10,000 live male births. Additionally, the total number of children in each category may be less than the sum of the children with each individual birth defect since some children may have more than one birth defect.

BROWARD COUNTY

1996 provisional data from the Florida Birth Defects Registry.

| Birth Defect | Number of Diagnoses | Rate* |
|---|---------------------|--------------|
| CENTRAL NERVOUS SYSTEM DEFECTS: | 33 | 16.5 |
| Anencephalus | 0 | 0.0 |
| Spina bifida without anencephalus | 10 | 5.0 |
| Hydrocephalus without spina bifida | 13 | 6.5 |
| Encephalocele | 0 | 0.0 |
| Microcephalus | 13 | 6.5 |
| CHROMOSOMAL DEFECTS: | 27 | 13.5 |
| Trisomy 13 | 3 | 1.5 |
| Down syndrome | 23 | 11.5 |
| Trisomy 18 | 1 | 0.5 |
| GASTROINTESTINAL DEFECTS: | 11 | 5.5 |
| Esophageal atresia/tracheoesophageal fistula | 3 | 1.5 |
| Rectal and large intestinal atresia/stenosis | 4 | 2.0 |
| Hirschsprung's disease (congenital megacolon) | 4 | 2.0 |
| Biliary atresia | 0 | 0.0 |
| GENITAL AND URINARY DEFECTS: | 124 | 62.2 |
| Renal agenesis/hypoplasia | 5 | 2.5 |
| Bladder exstrophy | 1 | 0.5 |
| Obstructive genitourinary defect | 43 | 21.6 |
| Hypospadias and Epispadias | 75 | 72.7 |
| CONGENITAL HEART DEFECTS: | 316 | 158.5 |
| Common truncus | 3 | 1.5 |
| Transposition of great arteries | 2 | 1.0 |
| Tetralogy of Fallot | 7 | 3.5 |
| Ventricular septal defect | 106 | 53.2 |
| Atrial septal defect | 116 | 58.2 |
| Endocardial cushion defect | 5 | 2.5 |
| Pulmonary valve atresia and stenosis | 45 | 22.6 |
| Tricuspid valve atresia and stenosis | 4 | 2.0 |
| Ebstein's anomaly | 2 | 1.0 |
| Aortic valve stenosis | 1 | 0.5 |
| Hypoplastic left heart syndrome | 8 | 4.0 |
| Coarctation of aorta | 5 | 2.5 |
| Pulmonary artery anomalies | 59 | 29.6 |
| MUSCULOSKELETAL DEFECTS: | 48 | 24.1 |
| Reduction deformity: upper limbs | 2 | 1.0 |
| Reduction deformity: lower limbs | 2 | 1.0 |
| Gastroschisis/Omphalocele | 8 | 4.0 |
| Congenital hip dislocation | 31 | 15.5 |
| Diaphragmatic hernia | 5 | 2.5 |
| ORAL CLEFT DEFECTS: | 23 | 11.5 |
| Cleft palate without cleft lip | 5 | 2.5 |
| Cleft lip with and without cleft palate | 13 | 6.5 |
| Choanal atresia | 5 | 2.5 |
| OTHER DEFECTS: | 13 | 6.5 |
| Anophthalmia/microphthalmia | 3 | 1.5 |
| Congenital cataract | 0 | 0.0 |
| Aniridia | 0 | 0.0 |
| Anotia/microtia | 0 | 0.0 |
| Lung agenesis/hypoplasia | 5 | 2.5 |
| Fetal alcohol syndrome | 5 | 2.5 |

| At a glance: |
|---------------------------------|
| 19,942 total children born |
| 533 children with birth defects |
| 13.2 % of the state total |

* All rates given are per 10,000 live births, except Hypospadias and Epispadias which are per 10,000 live male births. Additionally, the total number of children in each category may be less than the sum of the children with each individual birth defect since some children may have more than one birth defect.

CALHOUN COUNTY

1996 provisional data from the Florida Birth Defects Registry.

| Birth Defect | Number of Diagnoses | Rate* |
|---|---------------------|-------|
| CENTRAL NERVOUS SYSTEM DEFECTS: | 0 | 0.0 |
| Anencephalus | 0 | 0.0 |
| Spina bifida without anencephalus | 0 | 0.0 |
| Hydrocephalus without spina bifida | 0 | 0.0 |
| Encephalocele | 0 | 0.0 |
| Microcephalus | 0 | 0.0 |
| CHROMOSOMAL DEFECTS: | 0 | 0.0 |
| Trisomy 13 | 0 | 0.0 |
| Down syndrome | 0 | 0.0 |
| Trisomy 18 | 0 | 0.0 |
| GASTROINTESTINAL DEFECTS: | 0 | 0.0 |
| Esophageal atresia/tracheoesophageal fistula | 0 | 0.0 |
| Rectal and large intestinal atresia/stenosis | 0 | 0.0 |
| Hirschsprung's disease (congenital megacolon) | 0 | 0.0 |
| Biliary atresia | 0 | 0.0 |
| GENITAL AND URINARY DEFECTS: | 3 | 209.8 |
| Renal agenesis/hypoplasia | 0 | 0.0 |
| Bladder exstrophy | 0 | 0.0 |
| Obstructive genitourinary defect | 1 | 69.9 |
| Hypospadias and Epispadias | 2 | 281.7 |
| CONGENITAL HEART DEFECTS: | 1 | 69.9 |
| Common truncus | 0 | 0.0 |
| Transposition of great arteries | 0 | 0.0 |
| Tetralogy of Fallot | 0 | 0.0 |
| Ventricular septal defect | 1 | 69.9 |
| Atrial septal defect | 0 | 0.0 |
| Endocardial cushion defect | 0 | 0.0 |
| Pulmonary valve atresia and stenosis | 0 | 0.0 |
| Tricuspid valve atresia and stenosis | 0 | 0.0 |
| Ebstein's anomaly | 0 | 0.0 |
| Aortic valve stenosis | 0 | 0.0 |
| Hypoplastic left heart syndrome | 0 | 0.0 |
| Coarctation of aorta | 0 | 0.0 |
| Pulmonary artery anomalies | 0 | 0.0 |
| MUSCULOSKELETAL DEFECTS: | 1 | 69.9 |
| Reduction deformity: upper limbs | 1 | 69.9 |
| Reduction deformity: lower limbs | 0 | 0.0 |
| Gastroschisis/Omphalocele | 0 | 0.0 |
| Congenital hip dislocation | 0 | 0.0 |
| Diaphragmatic hernia | 0 | 0.0 |
| ORAL CLEFT DEFECTS: | 1 | 69.9 |
| Cleft palate without cleft lip | 1 | 69.9 |
| Cleft lip with and without cleft palate | 0 | 0.0 |
| Choanal atresia | 0 | 0.0 |
| OTHER DEFECTS: | 1 | 69.9 |
| Anophthalmia/microphthalmia | 0 | 0.0 |
| Congenital cataract | 0 | 0.0 |
| Aniridia | 0 | 0.0 |
| Anotia/microtia | 1 | 69.9 |
| Lung agenesis/hypoplasia | 0 | 0.0 |
| Fetal alcohol syndrome | 0 | 0.0 |

| |
|-------------------------------|
| At a glance: |
| 143 total children born |
| 6 children with birth defects |
| 0.2 % of the state total |

* All rates given are per 10,000 live births, except Hypospadias and Epispadias which are per 10,000 live male births. Additionally, the total number of children in each category may be less than the sum of the children with each individual birth defect since some children may have more than one birth defect.

CHARLOTTE COUNTY

1996 provisional data from the Florida Birth Defects Registry.

| Birth Defect | Number of Diagnoses | Rate* |
|---|---------------------|-------------|
| CENTRAL NERVOUS SYSTEM DEFECTS: | 1 | 10.1 |
| Anencephalus | 0 | 0.0 |
| Spina bifida without anencephalus | 1 | 10.1 |
| Hydrocephalus without spina bifida | 0 | 0.0 |
| Encephalocele | 0 | 0.0 |
| Microcephalus | 0 | 0.0 |
| CHROMOSOMAL DEFECTS: | 1 | 10.1 |
| Trisomy 13 | 0 | 0.0 |
| Down syndrome | 1 | 10.1 |
| Trisomy 18 | 0 | 0.0 |
| GASTROINTESTINAL DEFECTS: | 0 | 0.0 |
| Esophageal atresia/tracheoesophageal fistula | 0 | 0.0 |
| Rectal and large intestinal atresia/stenosis | 0 | 0.0 |
| Hirschsprung's disease (congenital megacolon) | 0 | 0.0 |
| Biliary atresia | 0 | 0.0 |
| GENITAL AND URINARY DEFECTS: | 4 | 40.3 |
| Renal agenesis/hypoplasia | 0 | 0.0 |
| Bladder exstrophy | 0 | 0.0 |
| Obstructive genitourinary defect | 1 | 10.1 |
| Hypospadias and Epispadias | 3 | 59.8 |
| CONGENITAL HEART DEFECTS: | 5 | 50.4 |
| Common truncus | 0 | 0.0 |
| Transposition of great arteries | 1 | 10.1 |
| Tetralogy of Fallot | 0 | 0.0 |
| Ventricular septal defect | 1 | 10.1 |
| Atrial septal defect | 3 | 30.2 |
| Endocardial cushion defect | 2 | 20.2 |
| Pulmonary valve atresia and stenosis | 0 | 0.0 |
| Tricuspid valve atresia and stenosis | 0 | 0.0 |
| Ebstein's anomaly | 0 | 0.0 |
| Aortic valve stenosis | 0 | 0.0 |
| Hypoplastic left heart syndrome | 0 | 0.0 |
| Coarctation of aorta | 0 | 0.0 |
| Pulmonary artery anomalies | 0 | 0.0 |
| MUSCULOSKELETAL DEFECTS: | 4 | 40.3 |
| Reduction deformity: upper limbs | 0 | 0.0 |
| Reduction deformity: lower limbs | 0 | 0.0 |
| Gastroschisis/Omphalocele | 4 | 40.3 |
| Congenital hip dislocation | 0 | 0.0 |
| Diaphragmatic hernia | 0 | 0.0 |
| ORAL CLEFT DEFECTS: | 1 | 10.1 |
| Cleft palate without cleft lip | 0 | 0.0 |
| Cleft lip with and without cleft palate | 0 | 0.0 |
| Choanal atresia | 1 | 10.1 |
| OTHER DEFECTS: | 1 | 10.1 |
| Anophthalmia/microphthalmia | 0 | 0.0 |
| Congenital cataract | 0 | 0.0 |
| Aniridia | 0 | 0.0 |
| Anotia/microtia | 0 | 0.0 |
| Lung agenesis/hypoplasia | 0 | 0.0 |
| Fetal alcohol syndrome | 1 | 10.1 |

At a glance:

992 total children born
16 children with birth
defects
0.4 % of the state total

* All rates given are per 10,000 live births, except Hypospadias and Epispadias which are per 10,000 live male births. Additionally, the total number of children in each category may be less than the sum of the children with each individual birth defect since some children may have more than one birth defect.

CITRUS COUNTY

1996 provisional data from the Florida Birth Defects Registry.

| Birth Defect | Number of Diagnoses | Rate* |
|---|---------------------|-------------|
| CENTRAL NERVOUS SYSTEM DEFECTS: | 1 | 11.5 |
| Anencephalus | 0 | 0.0 |
| Spina bifida without anencephalus | 0 | 0.0 |
| Hydrocephalus without spina bifida | 0 | 0.0 |
| Encephalocele | 0 | 0.0 |
| Microcephalus | 1 | 11.5 |
| CHROMOSOMAL DEFECTS: | 2 | 23.1 |
| Trisomy 13 | 0 | 0.0 |
| Down syndrome | 2 | 23.1 |
| Trisomy 18 | 0 | 0.0 |
| GASTROINTESTINAL DEFECTS: | 0 | 0.0 |
| Esophageal atresia/tracheoesophageal fistula | 0 | 0.0 |
| Rectal and large intestinal atresia/stenosis | 0 | 0.0 |
| Hirschsprung's disease (congenital megacolon) | 0 | 0.0 |
| Biliary atresia | 0 | 0.0 |
| GENITAL AND URINARY DEFECTS: | 5 | 57.7 |
| Renal agenesis/hypoplasia | 0 | 0.0 |
| Bladder exstrophy | 0 | 0.0 |
| Obstructive genitourinary defect | 3 | 34.6 |
| Hypospadias and Epispadias | 2 | 44.8 |
| CONGENITAL HEART DEFECTS: | 3 | 34.6 |
| Common truncus | 0 | 0.0 |
| Transposition of great arteries | 0 | 0.0 |
| Tetralogy of Fallot | 1 | 11.5 |
| Ventricular septal defect | 3 | 34.6 |
| Atrial septal defect | 3 | 34.6 |
| Endocardial cushion defect | 1 | 11.5 |
| Pulmonary valve atresia and stenosis | 0 | 0.0 |
| Tricuspid valve atresia and stenosis | 0 | 0.0 |
| Ebstein's anomaly | 1 | 11.5 |
| Aortic valve stenosis | 0 | 0.0 |
| Hypoplastic left heart syndrome | 0 | 0.0 |
| Coarctation of aorta | 0 | 0.0 |
| Pulmonary artery anomalies | 1 | 11.5 |
| MUSCULOSKELETAL DEFECTS: | 2 | 23.1 |
| Reduction deformity: upper limbs | 0 | 0.0 |
| Reduction deformity: lower limbs | 0 | 0.0 |
| Gastroschisis/Omphalocele | 0 | 0.0 |
| Congenital hip dislocation | 0 | 0.0 |
| Diaphragmatic hernia | 2 | 23.1 |
| ORAL CLEFT DEFECTS: | 2 | 23.1 |
| Cleft palate without cleft lip | 0 | 0.0 |
| Cleft lip with and without cleft palate | 2 | 23.1 |
| Choanal atresia | 0 | 0.0 |
| OTHER DEFECTS: | 0 | 0.0 |
| Anophthalmia/microphthalmia | 0 | 0.0 |
| Congenital cataract | 0 | 0.0 |
| Aniridia | 0 | 0.0 |
| Anotia/microtia | 0 | 0.0 |
| Lung agenesis/hypoplasia | 0 | 0.0 |
| Fetal alcohol syndrome | 0 | 0.0 |

| |
|--------------------------------|
| At a glance: |
| 867 total children born |
| 13 children with birth defects |
| 0.3 % of the state total |

* All rates given are per 10,000 live births, except Hypospadias and Epispadias which are per 10,000 live male births. Additionally, the total number of children in each category may be less than the sum of the children with each individual birth defect since some children may have more than one birth defect.

CLAY COUNTY

1996 provisional data from the Florida Birth Defects Registry.

| Birth Defect | Number of Diagnoses | Rate* |
|---|---------------------|-------------|
| CENTRAL NERVOUS SYSTEM DEFECTS: | 1 | 6.1 |
| Anencephalus | 0 | 0.0 |
| Spina bifida without anencephalus | 0 | 0.0 |
| Hydrocephalus without spina bifida | 0 | 0.0 |
| Encephalocele | 0 | 0.0 |
| Microcephalus | 1 | 6.1 |
| CHROMOSOMAL DEFECTS: | 2 | 12.2 |
| Trisomy 13 | 0 | 0.0 |
| Down syndrome | 2 | 12.2 |
| Trisomy 18 | 0 | 0.0 |
| GASTROINTESTINAL DEFECTS: | 0 | 0.0 |
| Esophageal atresia/tracheoesophageal fistula | 0 | 0.0 |
| Rectal and large intestinal atresia/stenosis | 0 | 0.0 |
| Hirschsprung's disease (congenital megacolon) | 0 | 0.0 |
| Biliary atresia | 0 | 0.0 |
| GENITAL AND URINARY DEFECTS: | 11 | 66.9 |
| Renal agenesis/hypoplasia | 0 | 0.0 |
| Bladder exstrophy | 1 | 6.1 |
| Obstructive genitourinary defect | 5 | 30.4 |
| Hypospadias and Epispadias | 5 | 59.2 |
| CONGENITAL HEART DEFECTS: | 4 | 24.3 |
| Common truncus | 0 | 0.0 |
| Transposition of great arteries | 1 | 6.1 |
| Tetralogy of Fallot | 0 | 0.0 |
| Ventricular septal defect | 2 | 12.2 |
| Atrial septal defect | 1 | 6.1 |
| Endocardial cushion defect | 0 | 0.0 |
| Pulmonary valve atresia and stenosis | 0 | 0.0 |
| Tricuspid valve atresia and stenosis | 0 | 0.0 |
| Ebstein's anomaly | 0 | 0.0 |
| Aortic valve stenosis | 0 | 0.0 |
| Hypoplastic left heart syndrome | 0 | 0.0 |
| Coarctation of aorta | 0 | 0.0 |
| Pulmonary artery anomalies | 1 | 6.1 |
| MUSCULOSKELETAL DEFECTS: | 5 | 30.4 |
| Reduction deformity: upper limbs | 2 | 12.2 |
| Reduction deformity: lower limbs | 0 | 0.0 |
| Gastroschisis/Omphalocele | 0 | 0.0 |
| Congenital hip dislocation | 2 | 12.2 |
| Diaphragmatic hernia | 1 | 6.1 |
| ORAL CLEFT DEFECTS: | 3 | 18.2 |
| Cleft palate without cleft lip | 1 | 6.1 |
| Cleft lip with and without cleft palate | 2 | 12.2 |
| Choanal atresia | 0 | 0.0 |
| OTHER DEFECTS: | 0 | 0.0 |
| Anophthalmia/microphthalmia | 0 | 0.0 |
| Congenital cataract | 0 | 0.0 |
| Aniridia | 0 | 0.0 |
| Anotia/microtia | 0 | 0.0 |
| Lung agenesis/hypoplasia | 0 | 0.0 |
| Fetal alcohol syndrome | 0 | 0.0 |

| At a glance: |
|--------------------------------|
| 1,645 total children born |
| 26 children with birth defects |
| 0.6 % of the state total |

* All rates given are per 10,000 live births, except Hypospadias and Epispadias which are per 10,000 live male births. Additionally, the total number of children in each category may be less than the sum of the children with each individual birth defect since some children may have more than one birth defect.

COLLIER COUNTY

1996 provisional data from the Florida Birth Defects Registry.

| Birth Defect | Number of Diagnoses | Rate* |
|---|---------------------|--------------|
| CENTRAL NERVOUS SYSTEM DEFECTS: | 6 | 24.0 |
| Anencephalus | 0 | 0.0 |
| Spina bifida without anencephalus | 2 | 8.0 |
| Hydrocephalus without spina bifida | 2 | 8.0 |
| Encephalocele | 0 | 0.0 |
| Microcephalus | 2 | 8.0 |
| CHROMOSOMAL DEFECTS: | 4 | 16.0 |
| Trisomy 13 | 0 | 0.0 |
| Down syndrome | 4 | 16.0 |
| Trisomy 18 | 0 | 0.0 |
| GASTROINTESTINAL DEFECTS: | 0 | 0.0 |
| Esophageal atresia/tracheoesophageal fistula | 0 | 0.0 |
| Rectal and large intestinal atresia/stenosis | 0 | 0.0 |
| Hirschsprung's disease (congenital megacolon) | 0 | 0.0 |
| Biliary atresia | 0 | 0.0 |
| GENITAL AND URINARY DEFECTS: | 11 | 44.1 |
| Renal agenesis/hypoplasia | 3 | 12.0 |
| Bladder exstrophy | 0 | 0.0 |
| Obstructive genitourinary defect | 4 | 16.0 |
| Hypospadias and Epispadias | 5 | 39.9 |
| CONGENITAL HEART DEFECTS: | 35 | 140.2 |
| Common truncus | 0 | 0.0 |
| Transposition of great arteries | 0 | 0.0 |
| Tetralogy of Fallot | 0 | 0.0 |
| Ventricular septal defect | 13 | 52.1 |
| Atrial septal defect | 28 | 112.2 |
| Endocardial cushion defect | 0 | 0.0 |
| Pulmonary valve atresia and stenosis | 3 | 12.0 |
| Tricuspid valve atresia and stenosis | 0 | 0.0 |
| Ebstein's anomaly | 0 | 0.0 |
| Aortic valve stenosis | 0 | 0.0 |
| Hypoplastic left heart syndrome | 0 | 0.0 |
| Coarctation of aorta | 0 | 0.0 |
| Pulmonary artery anomalies | 2 | 8.0 |
| MUSCULOSKELETAL DEFECTS: | 6 | 24.0 |
| Reduction deformity: upper limbs | 1 | 4.0 |
| Reduction deformity: lower limbs | 1 | 4.0 |
| Gastroschisis/Omphalocele | 2 | 8.0 |
| Congenital hip dislocation | 3 | 12.0 |
| Diaphragmatic hernia | 0 | 0.0 |
| ORAL CLEFT DEFECTS: | 4 | 16.0 |
| Cleft palate without cleft lip | 0 | 0.0 |
| Cleft lip with and without cleft palate | 3 | 12.0 |
| Choanal atresia | 1 | 4.0 |
| OTHER DEFECTS: | 2 | 8.0 |
| Anophthalmia/microphthalmia | 0 | 0.0 |
| Congenital cataract | 0 | 0.0 |
| Aniridia | 0 | 0.0 |
| Anotia/microtia | 0 | 0.0 |
| Lung agenesis/hypoplasia | 2 | 8.0 |
| Fetal alcohol syndrome | 0 | 0.0 |

| At a glance: |
|--------------------------------|
| 2,496 total children born |
| 64 children with birth defects |
| 1.6 % of the state total |

* All rates given are per 10,000 live births, except Hypospadias and Epispadias which are per 10,000 live male births. Additionally, the total number of children in each category may be less than the sum of the children with each individual birth defect since some children may have more than one birth defect.

COLUMBIA COUNTY

1996 provisional data from the Florida Birth Defects Registry.

| Birth Defect | Number of Diagnoses | Rate* |
|---|---------------------|-------------|
| CENTRAL NERVOUS SYSTEM DEFECTS: | 2 | 29.9 |
| Anencephalus | 0 | 0.0 |
| Spina bifida without anencephalus | 0 | 0.0 |
| Hydrocephalus without spina bifida | 0 | 0.0 |
| Encephalocele | 0 | 0.0 |
| Microcephalus | 2 | 29.9 |
| CHROMOSOMAL DEFECTS: | 0 | 0.0 |
| Trisomy 13 | 0 | 0.0 |
| Down syndrome | 0 | 0.0 |
| Trisomy 18 | 0 | 0.0 |
| GASTROINTESTINAL DEFECTS: | 1 | 15.0 |
| Esophageal atresia/tracheoesophageal fistula | 1 | 15.0 |
| Rectal and large intestinal atresia/stenosis | 0 | 0.0 |
| Hirschsprung's disease (congenital megacolon) | 0 | 0.0 |
| Biliary atresia | 0 | 0.0 |
| GENITAL AND URINARY DEFECTS: | 4 | 59.9 |
| Renal agenesis/hypoplasia | 0 | 0.0 |
| Bladder exstrophy | 0 | 0.0 |
| Obstructive genitourinary defect | 0 | 0.0 |
| Hypospadias and Epispadias | 4 | 118.0 |
| CONGENITAL HEART DEFECTS: | 4 | 59.9 |
| Common truncus | 0 | 0.0 |
| Transposition of great arteries | 0 | 0.0 |
| Tetralogy of Fallot | 0 | 0.0 |
| Ventricular septal defect | 2 | 29.9 |
| Atrial septal defect | 1 | 15.0 |
| Endocardial cushion defect | 0 | 0.0 |
| Pulmonary valve atresia and stenosis | 0 | 0.0 |
| Tricuspid valve atresia and stenosis | 0 | 0.0 |
| Ebstein's anomaly | 0 | 0.0 |
| Aortic valve stenosis | 0 | 0.0 |
| Hypoplastic left heart syndrome | 0 | 0.0 |
| Coarctation of aorta | 1 | 15.0 |
| Pulmonary artery anomalies | 0 | 0.0 |
| MUSCULOSKELETAL DEFECTS: | 0 | 0.0 |
| Reduction deformity: upper limbs | 0 | 0.0 |
| Reduction deformity: lower limbs | 0 | 0.0 |
| Gastroschisis/Omphalocele | 0 | 0.0 |
| Congenital hip dislocation | 0 | 0.0 |
| Diaphragmatic hernia | 0 | 0.0 |
| ORAL CLEFT DEFECTS: | 3 | 44.9 |
| Cleft palate without cleft lip | 2 | 29.9 |
| Cleft lip with and without cleft palate | 1 | 15.0 |
| Choanal atresia | 0 | 0.0 |
| OTHER DEFECTS: | 1 | 15.0 |
| Anophthalmia/microphthalmia | 0 | 0.0 |
| Congenital cataract | 0 | 0.0 |
| Aniridia | 0 | 0.0 |
| Anotia/microtia | 1 | 15.0 |
| Lung agenesis/hypoplasia | 0 | 0.0 |
| Fetal alcohol syndrome | 0 | 0.0 |

| |
|--------------------------------|
| At a glance: |
| 668 total children born |
| 11 children with birth defects |
| 0.3 % of the state total |

* All rates given are per 10,000 live births, except Hypospadias and Epispadias which are per 10,000 live male births. Additionally, the total number of children in each category may be less than the sum of the children with each individual birth defect since some children may have more than one birth defect.

DADE COUNTY

1996 provisional data from the Florida Birth Defects Registry.

| Birth Defect | Number of Diagnoses | Rate* |
|---|---------------------|-------------|
| CENTRAL NERVOUS SYSTEM DEFECTS: | 54 | 17.0 |
| Anencephalus | 1 | 0.3 |
| Spina bifida without anencephalus | 18 | 5.7 |
| Hydrocephalus without spina bifida | 17 | 5.3 |
| Encephalocele | 0 | 0.0 |
| Microcephalus | 20 | 6.3 |
| CHROMOSOMAL DEFECTS: | 48 | 15.1 |
| Trisomy 13 | 2 | 0.6 |
| Down syndrome | 43 | 13.5 |
| Trisomy 18 | 3 | 0.9 |
| GASTROINTESTINAL DEFECTS: | 17 | 5.3 |
| Esophageal atresia/tracheoesophageal fistula | 3 | 0.9 |
| Rectal and large intestinal atresia/stenosis | 5 | 1.6 |
| Hirschsprung's disease (congenital megacolon) | 9 | 2.8 |
| Biliary atresia | 0 | 0.0 |
| GENITAL AND URINARY DEFECTS: | 171 | 53.7 |
| Renal agenesis/hypoplasia | 10 | 3.1 |
| Bladder exstrophy | 1 | 0.3 |
| Obstructive genitourinary defect | 72 | 22.6 |
| Hypospadias and Epispadias | 91 | 56.2 |
| CONGENITAL HEART DEFECTS: | 267 | 83.9 |
| Common truncus | 0 | 0.0 |
| Transposition of great arteries | 8 | 2.5 |
| Tetralogy of Fallot | 9 | 2.8 |
| Ventricular septal defect | 101 | 31.7 |
| Atrial septal defect | 126 | 39.6 |
| Endocardial cushion defect | 9 | 2.8 |
| Pulmonary valve atresia and stenosis | 30 | 9.4 |
| Tricuspid valve atresia and stenosis | 4 | 1.3 |
| Ebstein's anomaly | 1 | 0.3 |
| Aortic valve stenosis | 1 | 0.3 |
| Hypoplastic left heart syndrome | 5 | 1.6 |
| Coarctation of aorta | 5 | 1.6 |
| Pulmonary artery anomalies | 18 | 5.7 |
| MUSCULOSKELETAL DEFECTS: | 118 | 37.1 |
| Reduction deformity: upper limbs | 10 | 3.1 |
| Reduction deformity: lower limbs | 4 | 1.3 |
| Gastroschisis/Omphalocele | 20 | 6.3 |
| Congenital hip dislocation | 77 | 24.2 |
| Diaphragmatic hernia | 8 | 2.5 |
| ORAL CLEFT DEFECTS: | 37 | 11.6 |
| Cleft palate without cleft lip | 13 | 4.1 |
| Cleft lip with and without cleft palate | 25 | 7.9 |
| Choanal atresia | 3 | 0.9 |
| OTHER DEFECTS: | 35 | 11.0 |
| Anophthalmia/microphthalmia | 3 | 0.9 |
| Congenital cataract | 3 | 0.9 |
| Aniridia | 0 | 0.0 |
| Anotia/microtia | 0 | 0.0 |
| Lung agenesis/hypoplasia | 13 | 4.1 |
| Fetal alcohol syndrome | 16 | 5.0 |

| At a glance: |
|---------------------------------|
| 31,838 total children born |
| 682 children with birth defects |
| 16.9 % of the state total |

* All rates given are per 10,000 live births, except Hypospadias and Epispadias which are per 10,000 live male births. Additionally, the total number of children in each category may be less than the sum of the children with each individual birth defect since some children may have more than one birth defect.

DESOTO COUNTY

1996 provisional data from the Florida Birth Defects Registry.

| Birth Defect | Number of Diagnoses | Rate* |
|---|---------------------|-------------|
| CENTRAL NERVOUS SYSTEM DEFECTS: | 2 | 53.8 |
| Anencephalus | 1 | 26.9 |
| Spina bifida without anencephalus | 1 | 26.9 |
| Hydrocephalus without spina bifida | 0 | 0.0 |
| Encephalocele | 0 | 0.0 |
| Microcephalus | 0 | 0.0 |
| CHROMOSOMAL DEFECTS: | 0 | 0.0 |
| Trisomy 13 | 0 | 0.0 |
| Down syndrome | 0 | 0.0 |
| Trisomy 18 | 0 | 0.0 |
| GASTROINTESTINAL DEFECTS: | 0 | 0.0 |
| Esophageal atresia/tracheoesophageal fistula | 0 | 0.0 |
| Rectal and large intestinal atresia/stenosis | 0 | 0.0 |
| Hirschsprung's disease (congenital megacolon) | 0 | 0.0 |
| Biliary atresia | 0 | 0.0 |
| GENITAL AND URINARY DEFECTS: | 2 | 53.8 |
| Renal agenesis/hypoplasia | 0 | 0.0 |
| Bladder exstrophy | 0 | 0.0 |
| Obstructive genitourinary defect | 0 | 0.0 |
| Hypospadias and Epispadias | 2 | 108.1 |
| CONGENITAL HEART DEFECTS: | 2 | 53.8 |
| Common truncus | 0 | 0.0 |
| Transposition of great arteries | 0 | 0.0 |
| Tetralogy of Fallot | 0 | 0.0 |
| Ventricular septal defect | 0 | 0.0 |
| Atrial septal defect | 2 | 53.8 |
| Endocardial cushion defect | 0 | 0.0 |
| Pulmonary valve atresia and stenosis | 0 | 0.0 |
| Tricuspid valve atresia and stenosis | 0 | 0.0 |
| Ebstein's anomaly | 0 | 0.0 |
| Aortic valve stenosis | 0 | 0.0 |
| Hypoplastic left heart syndrome | 0 | 0.0 |
| Coarctation of aorta | 0 | 0.0 |
| Pulmonary artery anomalies | 0 | 0.0 |
| MUSCULOSKELETAL DEFECTS: | 1 | 26.9 |
| Reduction deformity: upper limbs | 0 | 0.0 |
| Reduction deformity: lower limbs | 0 | 0.0 |
| Gastroschisis/Omphalocele | 1 | 26.9 |
| Congenital hip dislocation | 0 | 0.0 |
| Diaphragmatic hernia | 0 | 0.0 |
| ORAL CLEFT DEFECTS: | 1 | 26.9 |
| Cleft palate without cleft lip | 0 | 0.0 |
| Cleft lip with and without cleft palate | 1 | 26.9 |
| Choanal atresia | 0 | 0.0 |
| OTHER DEFECTS: | 1 | 26.9 |
| Anophthalmia/microphthalmia | 0 | 0.0 |
| Congenital cataract | 0 | 0.0 |
| Aniridia | 0 | 0.0 |
| Anotia/microtia | 0 | 0.0 |
| Lung agenesis/hypoplasia | 0 | 0.0 |
| Fetal alcohol syndrome | 1 | 26.9 |

| |
|-------------------------------|
| At a glance: |
| 372 total children born |
| 8 children with birth defects |
| 0.2 % of the state total |

* All rates given are per 10,000 live births, except Hypospadias and Epispadias which are per 10,000 live male births. Additionally, the total number of children in each category may be less than the sum of the children with each individual birth defect since some children may have more than one birth defect.

DIXIE COUNTY

1996 provisional data from the Florida Birth Defects Registry.

| Birth Defect | Number of Diagnoses | Rate* |
|---|---------------------|-------|
| CENTRAL NERVOUS SYSTEM DEFECTS: | 0 | 0.0 |
| Anencephalus | 0 | 0.0 |
| Spina bifida without anencephalus | 0 | 0.0 |
| Hydrocephalus without spina bifida | 0 | 0.0 |
| Encephalocele | 0 | 0.0 |
| Microcephalus | 0 | 0.0 |
| CHROMOSOMAL DEFECTS: | 0 | 0.0 |
| Trisomy 13 | 0 | 0.0 |
| Down syndrome | 0 | 0.0 |
| Trisomy 18 | 0 | 0.0 |
| GASTROINTESTINAL DEFECTS: | 0 | 0.0 |
| Esophageal atresia/tracheoesophageal fistula | 0 | 0.0 |
| Rectal and large intestinal atresia/stenosis | 0 | 0.0 |
| Hirschsprung's disease (congenital megacolon) | 0 | 0.0 |
| Biliary atresia | 0 | 0.0 |
| GENITAL AND URINARY DEFECTS: | 3 | 201.3 |
| Renal agenesis/hypoplasia | 0 | 0.0 |
| Bladder exstrophy | 0 | 0.0 |
| Obstructive genitourinary defect | 0 | 0.0 |
| Hypospadias and Epispadias | 3 | 394.7 |
| CONGENITAL HEART DEFECTS: | 4 | 268.5 |
| Common truncus | 0 | 0.0 |
| Transposition of great arteries | 0 | 0.0 |
| Tetralogy of Fallot | 0 | 0.0 |
| Ventricular septal defect | 4 | 268.5 |
| Atrial septal defect | 2 | 134.2 |
| Endocardial cushion defect | 0 | 0.0 |
| Pulmonary valve atresia and stenosis | 0 | 0.0 |
| Tricuspid valve atresia and stenosis | 0 | 0.0 |
| Ebstein's anomaly | 0 | 0.0 |
| Aortic valve stenosis | 0 | 0.0 |
| Hypoplastic left heart syndrome | 0 | 0.0 |
| Coarctation of aorta | 0 | 0.0 |
| Pulmonary artery anomalies | 0 | 0.0 |
| MUSCULOSKELETAL DEFECTS: | 0 | 0.0 |
| Reduction deformity: upper limbs | 0 | 0.0 |
| Reduction deformity: lower limbs | 0 | 0.0 |
| Gastroschisis/Omphalocele | 0 | 0.0 |
| Congenital hip dislocation | 0 | 0.0 |
| Diaphragmatic hernia | 0 | 0.0 |
| ORAL CLEFT DEFECTS: | 0 | 0.0 |
| Cleft palate without cleft lip | 0 | 0.0 |
| Cleft lip with and without cleft palate | 0 | 0.0 |
| Choanal atresia | 0 | 0.0 |
| OTHER DEFECTS: | 1 | 67.1 |
| Anophthalmia/microphthalmia | 0 | 0.0 |
| Congenital cataract | 0 | 0.0 |
| Aniridia | 0 | 0.0 |
| Anotia/microtia | 0 | 0.0 |
| Lung agenesis/hypoplasia | 0 | 0.0 |
| Fetal alcohol syndrome | 1 | 67.1 |

| |
|-------------------------------|
| At a glance: |
| 149 total children born |
| 8 children with birth defects |
| 0.2 % of the state total |

* All rates given are per 10,000 live births, except Hypospadias and Epispadias which are per 10,000 live male births. Additionally, the total number of children in each category may be less than the sum of the children with each individual birth defect since some children may have more than one birth defect.

DUVAL COUNTY

1996 provisional data from the Florida Birth Defects Registry.

| Birth Defect | Number of Diagnoses | Rate* |
|---|---------------------|-------------|
| CENTRAL NERVOUS SYSTEM DEFECTS: | 24 | 20.2 |
| Anencephalus | 1 | 0.8 |
| Spina bifida without anencephalus | 5 | 4.2 |
| Hydrocephalus without spina bifida | 7 | 5.9 |
| Encephalocele | 0 | 0.0 |
| Microcephalus | 12 | 10.1 |
| CHROMOSOMAL DEFECTS: | 9 | 7.6 |
| Trisomy 13 | 0 | 0.0 |
| Down syndrome | 9 | 7.6 |
| Trisomy 18 | 0 | 0.0 |
| GASTROINTESTINAL DEFECTS: | 6 | 5.1 |
| Esophageal atresia/tracheoesophageal fistula | 1 | 0.8 |
| Rectal and large intestinal atresia/stenosis | 3 | 2.5 |
| Hirschsprung's disease (congenital megacolon) | 2 | 1.7 |
| Biliary atresia | 0 | 0.0 |
| GENITAL AND URINARY DEFECTS: | 44 | 37.1 |
| Renal agenesis/hypoplasia | 2 | 1.7 |
| Bladder exstrophy | 0 | 0.0 |
| Obstructive genitourinary defect | 15 | 12.7 |
| Hypospadias and Epispadias | 29 | 47.9 |
| CONGENITAL HEART DEFECTS: | 43 | 36.3 |
| Common truncus | 0 | 0.0 |
| Transposition of great arteries | 0 | 0.0 |
| Tetralogy of Fallot | 1 | 0.8 |
| Ventricular septal defect | 14 | 11.8 |
| Atrial septal defect | 9 | 7.6 |
| Endocardial cushion defect | 2 | 1.7 |
| Pulmonary valve atresia and stenosis | 11 | 9.3 |
| Tricuspid valve atresia and stenosis | 1 | 0.8 |
| Ebstein's anomaly | 0 | 0.0 |
| Aortic valve stenosis | 2 | 1.7 |
| Hypoplastic left heart syndrome | 2 | 1.7 |
| Coarctation of aorta | 3 | 2.5 |
| Pulmonary artery anomalies | 8 | 6.7 |
| MUSCULOSKELETAL DEFECTS: | 36 | 30.4 |
| Reduction deformity: upper limbs | 4 | 3.4 |
| Reduction deformity: lower limbs | 2 | 1.7 |
| Gastroschisis/Omphalocele | 8 | 6.7 |
| Congenital hip dislocation | 21 | 17.7 |
| Diaphragmatic hernia | 1 | 0.8 |
| ORAL CLEFT DEFECTS: | 12 | 10.1 |
| Cleft palate without cleft lip | 5 | 4.2 |
| Cleft lip with and without cleft palate | 6 | 5.1 |
| Choanal atresia | 1 | 0.8 |
| OTHER DEFECTS: | 10 | 8.4 |
| Anophthalmia/microphthalmia | 1 | 0.8 |
| Congenital cataract | 0 | 0.0 |
| Aniridia | 0 | 0.0 |
| Anotia/microtia | 1 | 0.8 |
| Lung agenesis/hypoplasia | 2 | 1.7 |
| Fetal alcohol syndrome | 6 | 5.1 |

| At a glance: |
|---------------------------------|
| 11,855 total children born |
| 168 children with birth defects |
| 4.2 % of the state total |

* All rates given are per 10,000 live births, except Hypospadias and Epispadias which are per 10,000 live male births. Additionally, the total number of children in each category may be less than the sum of the children with each individual birth defect since some children may have more than one birth defect.

ESCAMBIA COUNTY

1996 provisional data from the Florida Birth Defects Registry.

| Birth Defect | Number of Diagnoses | Rate* |
|---|---------------------|--------------|
| CENTRAL NERVOUS SYSTEM DEFECTS: | 9 | 23.4 |
| Anencephalus | 0 | 0.0 |
| Spina bifida without anencephalus | 2 | 5.2 |
| Hydrocephalus without spina bifida | 3 | 7.8 |
| Encephalocele | 0 | 0.0 |
| Microcephalus | 4 | 10.4 |
| CHROMOSOMAL DEFECTS: | 5 | 13.0 |
| Trisomy 13 | 0 | 0.0 |
| Down syndrome | 4 | 10.4 |
| Trisomy 18 | 1 | 2.6 |
| GASTROINTESTINAL DEFECTS: | 2 | 5.2 |
| Esophageal atresia/tracheoesophageal fistula | 1 | 2.6 |
| Rectal and large intestinal atresia/stenosis | 1 | 2.6 |
| Hirschsprung's disease (congenital megacolon) | 0 | 0.0 |
| Biliary atresia | 0 | 0.0 |
| GENITAL AND URINARY DEFECTS: | 29 | 75.3 |
| Renal agenesis/hypoplasia | 3 | 7.8 |
| Bladder exstrophy | 0 | 0.0 |
| Obstructive genitourinary defect | 5 | 13.0 |
| Hypospadias and Epispadias | 21 | 108.1 |
| CONGENITAL HEART DEFECTS: | 49 | 127.2 |
| Common truncus | 0 | 0.0 |
| Transposition of great arteries | 0 | 0.0 |
| Tetralogy of Fallot | 3 | 7.8 |
| Ventricular septal defect | 17 | 44.1 |
| Atrial septal defect | 29 | 75.3 |
| Endocardial cushion defect | 0 | 0.0 |
| Pulmonary valve atresia and stenosis | 2 | 5.2 |
| Tricuspid valve atresia and stenosis | 0 | 0.0 |
| Ebstein's anomaly | 0 | 0.0 |
| Aortic valve stenosis | 0 | 0.0 |
| Hypoplastic left heart syndrome | 0 | 0.0 |
| Coarctation of aorta | 1 | 2.6 |
| Pulmonary artery anomalies | 5 | 13.0 |
| MUSCULOSKELETAL DEFECTS: | 15 | 38.9 |
| Reduction deformity: upper limbs | 2 | 5.2 |
| Reduction deformity: lower limbs | 0 | 0.0 |
| Gastroschisis/Omphalocele | 5 | 13.0 |
| Congenital hip dislocation | 6 | 15.6 |
| Diaphragmatic hernia | 2 | 5.2 |
| ORAL CLEFT DEFECTS: | 6 | 15.6 |
| Cleft palate without cleft lip | 3 | 7.8 |
| Cleft lip with and without cleft palate | 3 | 7.8 |
| Choanal atresia | 0 | 0.0 |
| OTHER DEFECTS: | 4 | 10.4 |
| Anophthalmia/microphthalmia | 0 | 0.0 |
| Congenital cataract | 0 | 0.0 |
| Aniridia | 0 | 0.0 |
| Anotia/microtia | 0 | 0.0 |
| Lung agenesis/hypoplasia | 3 | 7.8 |
| Fetal alcohol syndrome | 1 | 2.6 |

| At a glance: |
|---------------------------------|
| 3,852 total children born |
| 108 children with birth defects |
| 2.7 % of the state total |

* All rates given are per 10,000 live births, except Hypospadias and Epispadias which are per 10,000 live male births. Additionally, the total number of children in each category may be less than the sum of the children with each individual birth defect since some children may have more than one birth defect.

FLAGLER COUNTY

1996 provisional data from the Florida Birth Defects Registry.

| Birth Defect | Number of Diagnoses | Rate* |
|---|---------------------|-------|
| CENTRAL NERVOUS SYSTEM DEFECTS: | 0 | 0.0 |
| Anencephalus | 0 | 0.0 |
| Spina bifida without anencephalus | 0 | 0.0 |
| Hydrocephalus without spina bifida | 0 | 0.0 |
| Encephalocele | 0 | 0.0 |
| Microcephalus | 0 | 0.0 |
| CHROMOSOMAL DEFECTS: | 0 | 0.0 |
| Trisomy 13 | 0 | 0.0 |
| Down syndrome | 0 | 0.0 |
| Trisomy 18 | 0 | 0.0 |
| GASTROINTESTINAL DEFECTS: | 0 | 0.0 |
| Esophageal atresia/tracheoesophageal fistula | 0 | 0.0 |
| Rectal and large intestinal atresia/stenosis | 0 | 0.0 |
| Hirschsprung's disease (congenital megacolon) | 0 | 0.0 |
| Biliary atresia | 0 | 0.0 |
| GENITAL AND URINARY DEFECTS: | 0 | 0.0 |
| Renal agenesis/hypoplasia | 0 | 0.0 |
| Bladder exstrophy | 0 | 0.0 |
| Obstructive genitourinary defect | 0 | 0.0 |
| Hypospadias and Epispadias | 0 | 0.0 |
| CONGENITAL HEART DEFECTS: | 1 | 32.3 |
| Common truncus | 0 | 0.0 |
| Transposition of great arteries | 0 | 0.0 |
| Tetralogy of Fallot | 0 | 0.0 |
| Ventricular septal defect | 0 | 0.0 |
| Atrial septal defect | 0 | 0.0 |
| Endocardial cushion defect | 0 | 0.0 |
| Pulmonary valve atresia and stenosis | 0 | 0.0 |
| Tricuspid valve atresia and stenosis | 0 | 0.0 |
| Ebstein's anomaly | 0 | 0.0 |
| Aortic valve stenosis | 0 | 0.0 |
| Hypoplastic left heart syndrome | 0 | 0.0 |
| Coarctation of aorta | 0 | 0.0 |
| Pulmonary artery anomalies | 1 | 32.3 |
| MUSCULOSKELETAL DEFECTS: | 0 | 0.0 |
| Reduction deformity: upper limbs | 0 | 0.0 |
| Reduction deformity: lower limbs | 0 | 0.0 |
| Gastroschisis/Omphalocele | 0 | 0.0 |
| Congenital hip dislocation | 0 | 0.0 |
| Diaphragmatic hernia | 0 | 0.0 |
| ORAL CLEFT DEFECTS: | 1 | 32.3 |
| Cleft palate without cleft lip | 0 | 0.0 |
| Cleft lip with and without cleft palate | 1 | 32.3 |
| Choanal atresia | 0 | 0.0 |
| OTHER DEFECTS: | 0 | 0.0 |
| Anophthalmia/microphthalmia | 0 | 0.0 |
| Congenital cataract | 0 | 0.0 |
| Aniridia | 0 | 0.0 |
| Anotia/microtia | 0 | 0.0 |
| Lung agenesis/hypoplasia | 0 | 0.0 |
| Fetal alcohol syndrome | 0 | 0.0 |

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| At a glance: |
| 310 total children born |
| 2 children with birth defects |
| 0.1 % of the state total |

* All rates given are per 10,000 live births, except Hypospadias and Epispadias which are per 10,000 live male births. Additionally, the total number of children in each category may be less than the sum of the children with each individual birth defect since some children may have more than one birth defect.

FRANKLIN COUNTY

1996 provisional data from the Florida Birth Defects Registry.

| Birth Defect | Number of Diagnoses | Rate* |
|---|---------------------|--------------|
| CENTRAL NERVOUS SYSTEM DEFECTS: | 1 | 102.0 |
| Anencephalus | 0 | 0.0 |
| Spina bifida without anencephalus | 0 | 0.0 |
| Hydrocephalus without spina bifida | 1 | 102.0 |
| Encephalocele | 0 | 0.0 |
| Microcephalus | 0 | 0.0 |
| CHROMOSOMAL DEFECTS: | 0 | 0.0 |
| Trisomy 13 | 0 | 0.0 |
| Down syndrome | 0 | 0.0 |
| Trisomy 18 | 0 | 0.0 |
| GASTROINTESTINAL DEFECTS: | 0 | 0.0 |
| Esophageal atresia/tracheoesophageal fistula | 0 | 0.0 |
| Rectal and large intestinal atresia/stenosis | 0 | 0.0 |
| Hirschsprung's disease (congenital megacolon) | 0 | 0.0 |
| Biliary atresia | 0 | 0.0 |
| GENITAL AND URINARY DEFECTS: | 1 | 102.0 |
| Renal agenesis/hypoplasia | 0 | 0.0 |
| Bladder exstrophy | 0 | 0.0 |
| Obstructive genitourinary defect | 0 | 0.0 |
| Hypospadias and Epispadias | 1 | 212.8 |
| CONGENITAL HEART DEFECTS: | 0 | 0.0 |
| Common truncus | 0 | 0.0 |
| Transposition of great arteries | 0 | 0.0 |
| Tetralogy of Fallot | 0 | 0.0 |
| Ventricular septal defect | 0 | 0.0 |
| Atrial septal defect | 0 | 0.0 |
| Endocardial cushion defect | 0 | 0.0 |
| Pulmonary valve atresia and stenosis | 0 | 0.0 |
| Tricuspid valve atresia and stenosis | 0 | 0.0 |
| Ebstein's anomaly | 0 | 0.0 |
| Aortic valve stenosis | 0 | 0.0 |
| Hypoplastic left heart syndrome | 0 | 0.0 |
| Coarctation of aorta | 0 | 0.0 |
| Pulmonary artery anomalies | 0 | 0.0 |
| MUSCULOSKELETAL DEFECTS: | 0 | 0.0 |
| Reduction deformity: upper limbs | 0 | 0.0 |
| Reduction deformity: lower limbs | 0 | 0.0 |
| Gastroschisis/Omphalocele | 0 | 0.0 |
| Congenital hip dislocation | 0 | 0.0 |
| Diaphragmatic hernia | 0 | 0.0 |
| ORAL CLEFT DEFECTS: | 0 | 0.0 |
| Cleft palate without cleft lip | 0 | 0.0 |
| Cleft lip with and without cleft palate | 0 | 0.0 |
| Choanal atresia | 0 | 0.0 |
| OTHER DEFECTS: | 0 | 0.0 |
| Anophthalmia/microphthalmia | 0 | 0.0 |
| Congenital cataract | 0 | 0.0 |
| Aniridia | 0 | 0.0 |
| Anotia/microtia | 0 | 0.0 |
| Lung agenesis/hypoplasia | 0 | 0.0 |
| Fetal alcohol syndrome | 0 | 0.0 |

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| At a glance: |
| 98 total children born |
| 2 children with birth defects |
| 0.1 % of the state total |

* All rates given are per 10,000 live births, except Hypospadias and Epispadias which are per 10,000 live male births. Additionally, the total number of children in each category may be less than the sum of the children with each individual birth defect since some children may have more than one birth defect.

GADSDEN COUNTY

1996 provisional data from the Florida Birth Defects Registry.

| Birth Defect | Number of Diagnoses | Rate* |
|---|---------------------|--------------|
| CENTRAL NERVOUS SYSTEM DEFECTS: | 2 | 30.5 |
| Anencephalus | 0 | 0.0 |
| Spina bifida without anencephalus | 0 | 0.0 |
| Hydrocephalus without spina bifida | 2 | 30.5 |
| Encephalocele | 0 | 0.0 |
| Microcephalus | 0 | 0.0 |
| CHROMOSOMAL DEFECTS: | 3 | 45.8 |
| Trisomy 13 | 0 | 0.0 |
| Down syndrome | 3 | 45.8 |
| Trisomy 18 | 0 | 0.0 |
| GASTROINTESTINAL DEFECTS: | 0 | 0.0 |
| Esophageal atresia/tracheoesophageal fistula | 0 | 0.0 |
| Rectal and large intestinal atresia/stenosis | 0 | 0.0 |
| Hirschsprung's disease (congenital megacolon) | 0 | 0.0 |
| Biliary atresia | 0 | 0.0 |
| GENITAL AND URINARY DEFECTS: | 1 | 15.3 |
| Renal agenesis/hypoplasia | 0 | 0.0 |
| Bladder exstrophy | 0 | 0.0 |
| Obstructive genitourinary defect | 0 | 0.0 |
| Hypospadias and Epispadias | 1 | 31.6 |
| CONGENITAL HEART DEFECTS: | 10 | 152.7 |
| Common truncus | 0 | 0.0 |
| Transposition of great arteries | 1 | 15.3 |
| Tetralogy of Fallot | 1 | 15.3 |
| Ventricular septal defect | 2 | 30.5 |
| Atrial septal defect | 5 | 76.3 |
| Endocardial cushion defect | 3 | 45.8 |
| Pulmonary valve atresia and stenosis | 2 | 30.5 |
| Tricuspid valve atresia and stenosis | 0 | 0.0 |
| Ebstein's anomaly | 1 | 15.3 |
| Aortic valve stenosis | 0 | 0.0 |
| Hypoplastic left heart syndrome | 0 | 0.0 |
| Coarctation of aorta | 0 | 0.0 |
| Pulmonary artery anomalies | 2 | 30.5 |
| MUSCULOSKELETAL DEFECTS: | 2 | 30.5 |
| Reduction deformity: upper limbs | 0 | 0.0 |
| Reduction deformity: lower limbs | 0 | 0.0 |
| Gastroschisis/Omphalocele | 0 | 0.0 |
| Congenital hip dislocation | 2 | 30.5 |
| Diaphragmatic hernia | 0 | 0.0 |
| ORAL CLEFT DEFECTS: | 1 | 15.3 |
| Cleft palate without cleft lip | 1 | 15.3 |
| Cleft lip with and without cleft palate | 1 | 15.3 |
| Choanal atresia | 0 | 0.0 |
| OTHER DEFECTS: | 0 | 0.0 |
| Anophthalmia/microphthalmia | 0 | 0.0 |
| Congenital cataract | 0 | 0.0 |
| Aniridia | 0 | 0.0 |
| Anotia/microtia | 0 | 0.0 |
| Lung agenesis/hypoplasia | 0 | 0.0 |
| Fetal alcohol syndrome | 0 | 0.0 |

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|--------------------------------|
| At a glance: |
| 655 total children born |
| 16 children with birth defects |
| 0.4 % of the state total |

* All rates given are per 10,000 live births, except Hypospadias and Epispadias which are per 10,000 live male births. Additionally, the total number of children in each category may be less than the sum of the children with each individual birth defect since some children may have more than one birth defect.

GILCHRIST COUNTY

1996 provisional data from the Florida Birth Defects Registry.

| Birth Defect | Number of Diagnoses | Rate* |
|---|---------------------|-------|
| CENTRAL NERVOUS SYSTEM DEFECTS: | 0 | 0.0 |
| Anencephalus | 0 | 0.0 |
| Spina bifida without anencephalus | 0 | 0.0 |
| Hydrocephalus without spina bifida | 0 | 0.0 |
| Encephalocele | 0 | 0.0 |
| Microcephalus | 0 | 0.0 |
| CHROMOSOMAL DEFECTS: | 0 | 0.0 |
| Trisomy 13 | 0 | 0.0 |
| Down syndrome | 0 | 0.0 |
| Trisomy 18 | 0 | 0.0 |
| GASTROINTESTINAL DEFECTS: | 0 | 0.0 |
| Esophageal atresia/tracheoesophageal fistula | 0 | 0.0 |
| Rectal and large intestinal atresia/stenosis | 0 | 0.0 |
| Hirschsprung's disease (congenital megacolon) | 0 | 0.0 |
| Biliary atresia | 0 | 0.0 |
| GENITAL AND URINARY DEFECTS: | 1 | 73.5 |
| Renal agenesis/hypoplasia | 0 | 0.0 |
| Bladder exstrophy | 0 | 0.0 |
| Obstructive genitourinary defect | 0 | 0.0 |
| Hypospadias and Epispadias | 1 | 135.1 |
| CONGENITAL HEART DEFECTS: | 3 | 220.6 |
| Common truncus | 0 | 0.0 |
| Transposition of great arteries | 1 | 73.5 |
| Tetralogy of Fallot | 0 | 0.0 |
| Ventricular septal defect | 3 | 220.6 |
| Atrial septal defect | 1 | 73.5 |
| Endocardial cushion defect | 0 | 0.0 |
| Pulmonary valve atresia and stenosis | 0 | 0.0 |
| Tricuspid valve atresia and stenosis | 0 | 0.0 |
| Ebstein's anomaly | 0 | 0.0 |
| Aortic valve stenosis | 0 | 0.0 |
| Hypoplastic left heart syndrome | 0 | 0.0 |
| Coarctation of aorta | 1 | 73.5 |
| Pulmonary artery anomalies | 0 | 0.0 |
| MUSCULOSKELETAL DEFECTS: | 0 | 0.0 |
| Reduction deformity: upper limbs | 0 | 0.0 |
| Reduction deformity: lower limbs | 0 | 0.0 |
| Gastroschisis/Omphalocele | 0 | 0.0 |
| Congenital hip dislocation | 0 | 0.0 |
| Diaphragmatic hernia | 0 | 0.0 |
| ORAL CLEFT DEFECTS: | 2 | 147.1 |
| Cleft palate without cleft lip | 0 | 0.0 |
| Cleft lip with and without cleft palate | 1 | 73.5 |
| Choanal atresia | 1 | 73.5 |
| OTHER DEFECTS: | 1 | 73.5 |
| Anophthalmia/microphthalmia | 1 | 73.5 |
| Congenital cataract | 0 | 0.0 |
| Aniridia | 0 | 0.0 |
| Anotia/microtia | 0 | 0.0 |
| Lung agenesis/hypoplasia | 0 | 0.0 |
| Fetal alcohol syndrome | 0 | 0.0 |

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|-------------------------------|
| At a glance: |
| 136 total children born |
| 4 children with birth defects |
| 0.1 % of the state total |

* All rates given are per 10,000 live births, except Hypospadias and Epispadias which are per 10,000 live male births. Additionally, the total number of children in each category may be less than the sum of the children with each individual birth defect since some children may have more than one birth defect.

GLADES COUNTY

1996 provisional data from the Florida Birth Defects Registry.

| Birth Defect | Number of Diagnoses | Rate* |
|---|---------------------|-------|
| CENTRAL NERVOUS SYSTEM DEFECTS: | 0 | 0.0 |
| Anencephalus | 0 | 0.0 |
| Spina bifida without anencephalus | 0 | 0.0 |
| Hydrocephalus without spina bifida | 0 | 0.0 |
| Encephalocele | 0 | 0.0 |
| Microcephalus | 0 | 0.0 |
| CHROMOSOMAL DEFECTS: | 0 | 0.0 |
| Trisomy 13 | 0 | 0.0 |
| Down syndrome | 0 | 0.0 |
| Trisomy 18 | 0 | 0.0 |
| GASTROINTESTINAL DEFECTS: | 0 | 0.0 |
| Esophageal atresia/tracheoesophageal fistula | 0 | 0.0 |
| Rectal and large intestinal atresia/stenosis | 0 | 0.0 |
| Hirschsprung's disease (congenital megacolon) | 0 | 0.0 |
| Biliary atresia | 0 | 0.0 |
| GENITAL AND URINARY DEFECTS: | 0 | 0.0 |
| Renal agenesis/hypoplasia | 0 | 0.0 |
| Bladder exstrophy | 0 | 0.0 |
| Obstructive genitourinary defect | 0 | 0.0 |
| Hypospadias and Epispadias | 0 | 0.0 |
| CONGENITAL HEART DEFECTS: | 0 | 0.0 |
| Common truncus | 0 | 0.0 |
| Transposition of great arteries | 0 | 0.0 |
| Tetralogy of Fallot | 0 | 0.0 |
| Ventricular septal defect | 0 | 0.0 |
| Atrial septal defect | 0 | 0.0 |
| Endocardial cushion defect | 0 | 0.0 |
| Pulmonary valve atresia and stenosis | 0 | 0.0 |
| Tricuspid valve atresia and stenosis | 0 | 0.0 |
| Ebstein's anomaly | 0 | 0.0 |
| Aortic valve stenosis | 0 | 0.0 |
| Hypoplastic left heart syndrome | 0 | 0.0 |
| Coarctation of aorta | 0 | 0.0 |
| Pulmonary artery anomalies | 0 | 0.0 |
| MUSCULOSKELETAL DEFECTS: | 0 | 0.0 |
| Reduction deformity: upper limbs | 0 | 0.0 |
| Reduction deformity: lower limbs | 0 | 0.0 |
| Gastroschisis/Omphalocele | 0 | 0.0 |
| Congenital hip dislocation | 0 | 0.0 |
| Diaphragmatic hernia | 0 | 0.0 |
| ORAL CLEFT DEFECTS: | 0 | 0.0 |
| Cleft palate without cleft lip | 0 | 0.0 |
| Cleft lip with and without cleft palate | 0 | 0.0 |
| Choanal atresia | 0 | 0.0 |
| OTHER DEFECTS: | 0 | 0.0 |
| Anophthalmia/microphthalmia | 0 | 0.0 |
| Congenital cataract | 0 | 0.0 |
| Aniridia | 0 | 0.0 |
| Anotia/microtia | 0 | 0.0 |
| Lung agenesis/hypoplasia | 0 | 0.0 |
| Fetal alcohol syndrome | 0 | 0.0 |

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|-------------------------------|
| At a glance: |
| 78 total children born |
| 0 children with birth defects |
| 0.0 % of the state total |

* All rates given are per 10,000 live births, except Hypospadias and Epispadias which are per 10,000 live male births. Additionally, the total number of children in each category may be less than the sum of the children with each individual birth defect since some children may have more than one birth defect.

GULF COUNTY

1996 provisional data from the Florida Birth Defects Registry.

| Birth Defect | Number of Diagnoses | Rate* |
|---|---------------------|-------------|
| CENTRAL NERVOUS SYSTEM DEFECTS: | 1 | 61.0 |
| Anencephalus | 0 | 0.0 |
| Spina bifida without anencephalus | 0 | 0.0 |
| Hydrocephalus without spina bifida | 1 | 61.0 |
| Encephalocele | 0 | 0.0 |
| Microcephalus | 0 | 0.0 |
| CHROMOSOMAL DEFECTS: | 0 | 0.0 |
| Trisomy 13 | 0 | 0.0 |
| Down syndrome | 0 | 0.0 |
| Trisomy 18 | 0 | 0.0 |
| GASTROINTESTINAL DEFECTS: | 0 | 0.0 |
| Esophageal atresia/tracheoesophageal fistula | 0 | 0.0 |
| Rectal and large intestinal atresia/stenosis | 0 | 0.0 |
| Hirschsprung's disease (congenital megacolon) | 0 | 0.0 |
| Biliary atresia | 0 | 0.0 |
| GENITAL AND URINARY DEFECTS: | 0 | 0.0 |
| Renal agenesis/hypoplasia | 0 | 0.0 |
| Bladder exstrophy | 0 | 0.0 |
| Obstructive genitourinary defect | 0 | 0.0 |
| Hypospadias and Epispadias | 0 | 0.0 |
| CONGENITAL HEART DEFECTS: | 0 | 0.0 |
| Common truncus | 0 | 0.0 |
| Transposition of great arteries | 0 | 0.0 |
| Tetralogy of Fallot | 0 | 0.0 |
| Ventricular septal defect | 0 | 0.0 |
| Atrial septal defect | 0 | 0.0 |
| Endocardial cushion defect | 0 | 0.0 |
| Pulmonary valve atresia and stenosis | 0 | 0.0 |
| Tricuspid valve atresia and stenosis | 0 | 0.0 |
| Ebstein's anomaly | 0 | 0.0 |
| Aortic valve stenosis | 0 | 0.0 |
| Hypoplastic left heart syndrome | 0 | 0.0 |
| Coarctation of aorta | 0 | 0.0 |
| Pulmonary artery anomalies | 0 | 0.0 |
| MUSCULOSKELETAL DEFECTS: | 0 | 0.0 |
| Reduction deformity: upper limbs | 0 | 0.0 |
| Reduction deformity: lower limbs | 0 | 0.0 |
| Gastroschisis/Omphalocele | 0 | 0.0 |
| Congenital hip dislocation | 0 | 0.0 |
| Diaphragmatic hernia | 0 | 0.0 |
| ORAL CLEFT DEFECTS: | 0 | 0.0 |
| Cleft palate without cleft lip | 0 | 0.0 |
| Cleft lip with and without cleft palate | 0 | 0.0 |
| Choanal atresia | 0 | 0.0 |
| OTHER DEFECTS: | 0 | 0.0 |
| Anophthalmia/microphthalmia | 0 | 0.0 |
| Congenital cataract | 0 | 0.0 |
| Aniridia | 0 | 0.0 |
| Anotia/microtia | 0 | 0.0 |
| Lung agenesis/hypoplasia | 0 | 0.0 |
| Fetal alcohol syndrome | 0 | 0.0 |

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|----------------------------|
| At a glance: |
| 164 total children born |
| 1 child with birth defects |
| 0.0 % of the state total |

* All rates given are per 10,000 live births, except Hypospadias and Epispadias which are per 10,000 live male births. Additionally, the total number of children in each category may be less than the sum of the children with each individual birth defect since some children may have more than one birth defect.

HAMILTON COUNTY

1996 provisional data from the Florida Birth Defects Registry.

| Birth Defect | Number of Diagnoses | Rate* |
|---|---------------------|-------|
| CENTRAL NERVOUS SYSTEM DEFECTS: | 0 | 0.0 |
| Anencephalus | 0 | 0.0 |
| Spina bifida without anencephalus | 0 | 0.0 |
| Hydrocephalus without spina bifida | 0 | 0.0 |
| Encephalocele | 0 | 0.0 |
| Microcephalus | 0 | 0.0 |
| CHROMOSOMAL DEFECTS: | 0 | 0.0 |
| Trisomy 13 | 0 | 0.0 |
| Down syndrome | 0 | 0.0 |
| Trisomy 18 | 0 | 0.0 |
| GASTROINTESTINAL DEFECTS: | 0 | 0.0 |
| Esophageal atresia/tracheoesophageal fistula | 0 | 0.0 |
| Rectal and large intestinal atresia/stenosis | 0 | 0.0 |
| Hirschsprung's disease (congenital megacolon) | 0 | 0.0 |
| Biliary atresia | 0 | 0.0 |
| GENITAL AND URINARY DEFECTS: | 2 | 134.2 |
| Renal agenesis/hypoplasia | 0 | 0.0 |
| Bladder exstrophy | 0 | 0.0 |
| Obstructive genitourinary defect | 0 | 0.0 |
| Hypospadias and Epispadias | 2 | 259.7 |
| CONGENITAL HEART DEFECTS: | 0 | 0.0 |
| Common truncus | 0 | 0.0 |
| Transposition of great arteries | 0 | 0.0 |
| Tetralogy of Fallot | 0 | 0.0 |
| Ventricular septal defect | 0 | 0.0 |
| Atrial septal defect | 0 | 0.0 |
| Endocardial cushion defect | 0 | 0.0 |
| Pulmonary valve atresia and stenosis | 0 | 0.0 |
| Tricuspid valve atresia and stenosis | 0 | 0.0 |
| Ebstein's anomaly | 0 | 0.0 |
| Aortic valve stenosis | 0 | 0.0 |
| Hypoplastic left heart syndrome | 0 | 0.0 |
| Coarctation of aorta | 0 | 0.0 |
| Pulmonary artery anomalies | 0 | 0.0 |
| MUSCULOSKELETAL DEFECTS: | 1 | 67.1 |
| Reduction deformity: upper limbs | 0 | 0.0 |
| Reduction deformity: lower limbs | 0 | 0.0 |
| Gastroschisis/Omphalocele | 0 | 0.0 |
| Congenital hip dislocation | 0 | 0.0 |
| Diaphragmatic hernia | 1 | 67.1 |
| ORAL CLEFT DEFECTS: | 0 | 0.0 |
| Cleft palate without cleft lip | 0 | 0.0 |
| Cleft lip with and without cleft palate | 0 | 0.0 |
| Choanal atresia | 0 | 0.0 |
| OTHER DEFECTS: | 0 | 0.0 |
| Anophthalmia/microphthalmia | 0 | 0.0 |
| Congenital cataract | 0 | 0.0 |
| Aniridia | 0 | 0.0 |
| Anotia/microtia | 0 | 0.0 |
| Lung agenesis/hypoplasia | 0 | 0.0 |
| Fetal alcohol syndrome | 0 | 0.0 |

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|----------------------------|
| At a glance: |
| 149 total children born |
| 3 child with birth defects |
| 0.1 % of the state total |

* All rates given are per 10,000 live births, except Hypospadias and Epispadias which are per 10,000 live male births. Additionally, the total number of children in each category may be less than the sum of the children with each individual birth defect since some children may have more than one birth defect.

HARDEE COUNTY

1996 provisional data from the Florida Birth Defects Registry.

| Birth Defect | Number of Diagnoses | Rate* |
|---|---------------------|-------------|
| CENTRAL NERVOUS SYSTEM DEFECTS: | 1 | 21.7 |
| Anencephalus | 0 | 0.0 |
| Spina bifida without anencephalus | 0 | 0.0 |
| Hydrocephalus without spina bifida | 0 | 0.0 |
| Encephalocele | 1 | 21.7 |
| Microcephalus | 1 | 21.7 |
| CHROMOSOMAL DEFECTS: | 0 | 0.0 |
| Trisomy 13 | 0 | 0.0 |
| Down syndrome | 0 | 0.0 |
| Trisomy 18 | 0 | 0.0 |
| GASTROINTESTINAL DEFECTS: | 1 | 21.7 |
| Esophageal atresia/tracheoesophageal fistula | 0 | 0.0 |
| Rectal and large intestinal atresia/stenosis | 0 | 0.0 |
| Hirschsprung's disease (congenital megacolon) | 1 | 21.7 |
| Biliary atresia | 0 | 0.0 |
| GENITAL AND URINARY DEFECTS: | 2 | 43.5 |
| Renal agenesis/hypoplasia | 0 | 0.0 |
| Bladder exstrophy | 0 | 0.0 |
| Obstructive genitourinary defect | 0 | 0.0 |
| Hypospadias and Epispadias | 2 | 87.0 |
| CONGENITAL HEART DEFECTS: | 0 | 0.0 |
| Common truncus | 0 | 0.0 |
| Transposition of great arteries | 0 | 0.0 |
| Tetralogy of Fallot | 0 | 0.0 |
| Ventricular septal defect | 0 | 0.0 |
| Atrial septal defect | 0 | 0.0 |
| Endocardial cushion defect | 0 | 0.0 |
| Pulmonary valve atresia and stenosis | 0 | 0.0 |
| Tricuspid valve atresia and stenosis | 0 | 0.0 |
| Ebstein's anomaly | 0 | 0.0 |
| Aortic valve stenosis | 0 | 0.0 |
| Hypoplastic left heart syndrome | 0 | 0.0 |
| Coarctation of aorta | 0 | 0.0 |
| Pulmonary artery anomalies | 0 | 0.0 |
| MUSCULOSKELETAL DEFECTS: | 0 | 0.0 |
| Reduction deformity: upper limbs | 0 | 0.0 |
| Reduction deformity: lower limbs | 0 | 0.0 |
| Gastroschisis/Omphalocele | 0 | 0.0 |
| Congenital hip dislocation | 0 | 0.0 |
| Diaphragmatic hernia | 0 | 0.0 |
| ORAL CLEFT DEFECTS: | 1 | 21.7 |
| Cleft palate without cleft lip | 0 | 0.0 |
| Cleft lip with and without cleft palate | 1 | 21.7 |
| Choanal atresia | 0 | 0.0 |
| OTHER DEFECTS: | 0 | 0.0 |
| Anophthalmia/microphthalmia | 0 | 0.0 |
| Congenital cataract | 0 | 0.0 |
| Aniridia | 0 | 0.0 |
| Anotia/microtia | 0 | 0.0 |
| Lung agenesis/hypoplasia | 0 | 0.0 |
| Fetal alcohol syndrome | 0 | 0.0 |

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|-------------------------------|
| At a glance: |
| 460 total children born |
| 5 children with birth defects |
| 0.1 % of the state total |

* All rates given are per 10,000 live births, except Hypospadias and Epispadias which are per 10,000 live male births. Additionally, the total number of children in each category may be less than the sum of the children with each individual birth defect since some children may have more than one birth defect.

HENDRY COUNTY

1996 provisional data from the Florida Birth Defects Registry.

| Birth Defect | Number of Diagnoses | Rate* |
|---|---------------------|--------------|
| CENTRAL NERVOUS SYSTEM DEFECTS: | 1 | 17.2 |
| Anencephalus | 0 | 0.0 |
| Spina bifida without anencephalus | 1 | 17.2 |
| Hydrocephalus without spina bifida | 0 | 0.0 |
| Encephalocele | 0 | 0.0 |
| Microcephalus | 0 | 0.0 |
| CHROMOSOMAL DEFECTS: | 0 | 0.0 |
| Trisomy 13 | 0 | 0.0 |
| Down syndrome | 0 | 0.0 |
| Trisomy 18 | 0 | 0.0 |
| GASTROINTESTINAL DEFECTS: | 1 | 17.2 |
| Esophageal atresia/tracheoesophageal fistula | 0 | 0.0 |
| Rectal and large intestinal atresia/stenosis | 1 | 17.2 |
| Hirschsprung's disease (congenital megacolon) | 0 | 0.0 |
| Biliary atresia | 0 | 0.0 |
| GENITAL AND URINARY DEFECTS: | 4 | 68.8 |
| Renal agenesis/hypoplasia | 1 | 17.2 |
| Bladder exstrophy | 0 | 0.0 |
| Obstructive genitourinary defect | 2 | 34.4 |
| Hypospadias and Epispadias | 1 | 33.0 |
| CONGENITAL HEART DEFECTS: | 10 | 172.1 |
| Common truncus | 0 | 0.0 |
| Transposition of great arteries | 0 | 0.0 |
| Tetralogy of Fallot | 0 | 0.0 |
| Ventricular septal defect | 1 | 17.2 |
| Atrial septal defect | 9 | 154.9 |
| Endocardial cushion defect | 0 | 0.0 |
| Pulmonary valve atresia and stenosis | 1 | 17.2 |
| Tricuspid valve atresia and stenosis | 0 | 0.0 |
| Ebstein's anomaly | 0 | 0.0 |
| Aortic valve stenosis | 0 | 0.0 |
| Hypoplastic left heart syndrome | 0 | 0.0 |
| Coarctation of aorta | 1 | 17.2 |
| Pulmonary artery anomalies | 0 | 0.0 |
| MUSCULOSKELETAL DEFECTS: | 0 | 0.0 |
| Reduction deformity: upper limbs | 0 | 0.0 |
| Reduction deformity: lower limbs | 0 | 0.0 |
| Gastroschisis/Omphalocele | 0 | 0.0 |
| Congenital hip dislocation | 0 | 0.0 |
| Diaphragmatic hernia | 0 | 0.0 |
| ORAL CLEFT DEFECTS: | 2 | 34.4 |
| Cleft palate without cleft lip | 1 | 17.2 |
| Cleft lip with and without cleft palate | 1 | 17.2 |
| Choanal atresia | 0 | 0.0 |
| OTHER DEFECTS: | 3 | 51.6 |
| Anophthalmia/microphthalmia | 0 | 0.0 |
| Congenital cataract | 0 | 0.0 |
| Aniridia | 0 | 0.0 |
| Anotia/microtia | 0 | 0.0 |
| Lung agenesis/hypoplasia | 2 | 34.4 |
| Fetal alcohol syndrome | 1 | 17.2 |

| At a glance: |
|--------------------------------|
| 581 total children born |
| 19 children with birth defects |
| 0.5 % of the state total |

* All rates given are per 10,000 live births, except Hypospadias and Epispadias which are per 10,000 live male births. Additionally, the total number of children in each category may be less than the sum of the children with each individual birth defect since some children may have more than one birth defect.

HERNANDO COUNTY

1996 provisional data from the Florida Birth Defects Registry.

| Birth Defect | Number of Diagnoses | Rate* |
|---|---------------------|-------------|
| CENTRAL NERVOUS SYSTEM DEFECTS: | 4 | 39.6 |
| Anencephalus | 0 | 0.0 |
| Spina bifida without anencephalus | 0 | 0.0 |
| Hydrocephalus without spina bifida | 1 | 9.9 |
| Encephalocele | 2 | 19.8 |
| Microcephalus | 2 | 19.8 |
| CHROMOSOMAL DEFECTS: | 0 | 0.0 |
| Trisomy 13 | 0 | 0.0 |
| Down syndrome | 0 | 0.0 |
| Trisomy 18 | 0 | 0.0 |
| GASTROINTESTINAL DEFECTS: | 1 | 9.9 |
| Esophageal atresia/tracheoesophageal fistula | 0 | 0.0 |
| Rectal and large intestinal atresia/stenosis | 0 | 0.0 |
| Hirschsprung's disease (congenital megacolon) | 1 | 9.9 |
| Biliary atresia | 0 | 0.0 |
| GENITAL AND URINARY DEFECTS: | 6 | 59.3 |
| Renal agenesis/hypoplasia | 0 | 0.0 |
| Bladder exstrophy | 0 | 0.0 |
| Obstructive genitourinary defect | 3 | 29.7 |
| Hypospadias and Epispadias | 3 | 62.9 |
| CONGENITAL HEART DEFECTS: | 5 | 49.5 |
| Common truncus | 0 | 0.0 |
| Transposition of great arteries | 0 | 0.0 |
| Tetralogy of Fallot | 0 | 0.0 |
| Ventricular septal defect | 4 | 39.6 |
| Atrial septal defect | 0 | 0.0 |
| Endocardial cushion defect | 1 | 9.9 |
| Pulmonary valve atresia and stenosis | 2 | 19.8 |
| Tricuspid valve atresia and stenosis | 0 | 0.0 |
| Ebstein's anomaly | 0 | 0.0 |
| Aortic valve stenosis | 0 | 0.0 |
| Hypoplastic left heart syndrome | 0 | 0.0 |
| Coarctation of aorta | 0 | 0.0 |
| Pulmonary artery anomalies | 0 | 0.0 |
| MUSCULOSKELETAL DEFECTS: | 4 | 39.6 |
| Reduction deformity: upper limbs | 0 | 0.0 |
| Reduction deformity: lower limbs | 0 | 0.0 |
| Gastroschisis/Omphalocele | 2 | 19.8 |
| Congenital hip dislocation | 2 | 19.8 |
| Diaphragmatic hernia | 0 | 0.0 |
| ORAL CLEFT DEFECTS: | 2 | 19.8 |
| Cleft palate without cleft lip | 1 | 9.9 |
| Cleft lip with and without cleft palate | 1 | 9.9 |
| Choanal atresia | 0 | 0.0 |
| OTHER DEFECTS: | 0 | 0.0 |
| Anophthalmia/microphthalmia | 0 | 0.0 |
| Congenital cataract | 0 | 0.0 |
| Aniridia | 0 | 0.0 |
| Anotia/microtia | 0 | 0.0 |
| Lung agenesis/hypoplasia | 0 | 0.0 |
| Fetal alcohol syndrome | 0 | 0.0 |

| At a glance: |
|--------------------------------|
| 1,011 total children born |
| 22 children with birth defects |
| 0.5 % of the state total |

* All rates given are per 10,000 live births, except Hypospadias and Epispadias which are per 10,000 live male births. Additionally, the total number of children in each category may be less than the sum of the children with each individual birth defect since some children may have more than one birth defect.

HIGHLANDS COUNTY

1996 provisional data from the Florida Birth Defects Registry.

| Birth Defect | Number of Diagnoses | Rate* |
|---|---------------------|-------------|
| CENTRAL NERVOUS SYSTEM DEFECTS: | 1 | 11.8 |
| Anencephalus | 0 | 0.0 |
| Spina bifida without anencephalus | 0 | 0.0 |
| Hydrocephalus without spina bifida | 1 | 11.8 |
| Encephalocele | 0 | 0.0 |
| Microcephalus | 0 | 0.0 |
| CHROMOSOMAL DEFECTS: | 2 | 23.5 |
| Trisomy 13 | 0 | 0.0 |
| Down syndrome | 2 | 23.5 |
| Trisomy 18 | 0 | 0.0 |
| GASTROINTESTINAL DEFECTS: | 0 | 0.0 |
| Esophageal atresia/tracheoesophageal fistula | 0 | 0.0 |
| Rectal and large intestinal atresia/stenosis | 0 | 0.0 |
| Hirschsprung's disease (congenital megacolon) | 0 | 0.0 |
| Biliary atresia | 0 | 0.0 |
| GENITAL AND URINARY DEFECTS: | 4 | 47.1 |
| Renal agenesis/hypoplasia | 0 | 0.0 |
| Bladder exstrophy | 0 | 0.0 |
| Obstructive genitourinary defect | 1 | 11.8 |
| Hypospadias and Epispadias | 3 | 67.0 |
| CONGENITAL HEART DEFECTS: | 4 | 47.1 |
| Common truncus | 0 | 0.0 |
| Transposition of great arteries | 0 | 0.0 |
| Tetralogy of Fallot | 1 | 11.8 |
| Ventricular septal defect | 1 | 11.8 |
| Atrial septal defect | 2 | 23.5 |
| Endocardial cushion defect | 0 | 0.0 |
| Pulmonary valve atresia and stenosis | 1 | 11.8 |
| Tricuspid valve atresia and stenosis | 0 | 0.0 |
| Ebstein's anomaly | 0 | 0.0 |
| Aortic valve stenosis | 0 | 0.0 |
| Hypoplastic left heart syndrome | 0 | 0.0 |
| Coarctation of aorta | 0 | 0.0 |
| Pulmonary artery anomalies | 1 | 11.8 |
| MUSCULOSKELETAL DEFECTS: | 1 | 11.8 |
| Reduction deformity: upper limbs | 0 | 0.0 |
| Reduction deformity: lower limbs | 0 | 0.0 |
| Gastroschisis/Omphalocele | 0 | 0.0 |
| Congenital hip dislocation | 1 | 11.8 |
| Diaphragmatic hernia | 0 | 0.0 |
| ORAL CLEFT DEFECTS: | 2 | 23.5 |
| Cleft palate without cleft lip | 0 | 0.0 |
| Cleft lip with and without cleft palate | 2 | 23.5 |
| Choanal atresia | 0 | 0.0 |
| OTHER DEFECTS: | 0 | 0.0 |
| Anophthalmia/microphthalmia | 0 | 0.0 |
| Congenital cataract | 0 | 0.0 |
| Aniridia | 0 | 0.0 |
| Anotia/microtia | 0 | 0.0 |
| Lung agenesis/hypoplasia | 0 | 0.0 |
| Fetal alcohol syndrome | 0 | 0.0 |

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|--------------------------------|
| At a glance: |
| 850 total children born |
| 13 children with birth defects |
| 0.3 % of the state total |

* All rates given are per 10,000 live births, except Hypospadias and Epispadias which are per 10,000 live male births. Additionally, the total number of children in each category may be less than the sum of the children with each individual birth defect since some children may have more than one birth defect.

HILLSBOROUGH COUNTY

1996 provisional data from the Florida Birth Defects Registry.

| Birth Defects | Number of Diagnoses | Rate* |
|---|---------------------|-------------|
| CENTRAL NERVOUS SYSTEM DEFECTS: | 27 | 19.8 |
| Anencephalus | 1 | 0.7 |
| Spina bifida without anencephalus | 4 | 2.9 |
| Hydrocephalus without spina bifida | 8 | 5.9 |
| Encephalocele | 1 | 0.7 |
| Microcephalus | 13 | 9.5 |
| CHROMOSOMAL DEFECTS: | 10 | 7.3 |
| Trisomy 13 | 0 | 0.0 |
| Down syndrome | 8 | 5.9 |
| Trisomy 18 | 2 | 1.5 |
| GASTROINTESTINAL DEFECTS: | 6 | 4.4 |
| Esophageal atresia/tracheoesophageal fistula | 4 | 2.9 |
| Rectal and large intestinal atresia/stenosis | 3 | 2.2 |
| Hirschsprung's disease (congenital megacolon) | 0 | 0.0 |
| Biliary atresia | 0 | 0.0 |
| GENITAL AND URINARY DEFECTS: | 78 | 57.2 |
| Renal agenesis/hypoplasia | 5 | 3.7 |
| Bladder exstrophy | 1 | 0.7 |
| Obstructive genitourinary defect | 23 | 16.9 |
| Hypospadias and Epispadias | 50 | 71.7 |
| CONGENITAL HEART DEFECTS: | 109 | 79.9 |
| Common truncus | 1 | 0.7 |
| Transposition of great arteries | 5 | 3.7 |
| Tetralogy of Fallot | 4 | 2.9 |
| Ventricular septal defect | 50 | 36.7 |
| Atrial septal defect | 44 | 32.3 |
| Endocardial cushion defect | 1 | 0.7 |
| Pulmonary valve atresia and stenosis | 3 | 2.2 |
| Tricuspid valve atresia and stenosis | 1 | 0.7 |
| Ebstein's anomaly | 2 | 1.5 |
| Aortic valve stenosis | 1 | 0.7 |
| Hypoplastic left heart syndrome | 1 | 0.7 |
| Coarctation of aorta | 4 | 2.9 |
| Pulmonary artery anomalies | 8 | 5.9 |
| MUSCULOSKELETAL DEFECTS: | 37 | 27.1 |
| Reduction deformity: upper limbs | 4 | 2.9 |
| Reduction deformity: lower limbs | 3 | 2.2 |
| Gastroschisis/Omphalocele | 8 | 5.9 |
| Congenital hip dislocation | 18 | 13.2 |
| Diaphragmatic hernia | 4 | 2.9 |
| ORAL CLEFT DEFECTS: | 23 | 16.9 |
| Cleft palate without cleft lip | 8 | 5.9 |
| Cleft lip with and without cleft palate | 13 | 9.5 |
| Choanal atresia | 2 | 1.5 |
| OTHER DEFECTS: | 22 | 16.1 |
| Anophthalmia/microphthalmia | 2 | 1.5 |
| Congenital cataract | 0 | 0.0 |
| Aniridia | 0 | 0.0 |
| Anotia/microtia | 0 | 0.0 |
| Lung agenesis/hypoplasia | 6 | 4.4 |
| Fetal alcohol syndrome | 14 | 10.3 |

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|---------------------------------|
| At a glance: |
| 13,638 total children born |
| 282 children with birth defects |
| 7.0 % of the state total |

* All rates given are per 10,000 live births, except Hypospadias and Epispadias which are per 10,000 live male births. Additionally, the total number of children in each category may be less than the sum of the children with each individual birth defect since some children may have more than one birth defect.

HOLMES COUNTY

1996 provisional data from the Florida Birth Defects Registry.

| Birth Defect | Number of Diagnoses | Rate* |
|---|---------------------|-------|
| CENTRAL NERVOUS SYSTEM DEFECTS: | 0 | 0.0 |
| Anencephalus | 0 | 0.0 |
| Spina bifida without anencephalus | 0 | 0.0 |
| Hydrocephalus without spina bifida | 0 | 0.0 |
| Encephalocele | 0 | 0.0 |
| Microcephalus | 0 | 0.0 |
| CHROMOSOMAL DEFECTS: | 0 | 0.0 |
| Trisomy 13 | 0 | 0.0 |
| Down syndrome | 0 | 0.0 |
| Trisomy 18 | 0 | 0.0 |
| GASTROINTESTINAL DEFECTS: | 0 | 0.0 |
| Esophageal atresia/tracheoesophageal fistula | 0 | 0.0 |
| Rectal and large intestinal atresia/stenosis | 0 | 0.0 |
| Hirschsprung's disease (congenital megacolon) | 0 | 0.0 |
| Biliary atresia | 0 | 0.0 |
| GENITAL AND URINARY DEFECTS: | 0 | 0.0 |
| Renal agenesis/hypoplasia | 0 | 0.0 |
| Bladder exstrophy | 0 | 0.0 |
| Obstructive genitourinary defect | 0 | 0.0 |
| Hypospadias and Epispadias | 0 | 0.0 |
| CONGENITAL HEART DEFECTS: | 1 | 48.8 |
| Common truncus | 0 | 0.0 |
| Transposition of great arteries | 1 | 48.8 |
| Tetralogy of Fallot | 0 | 0.0 |
| Ventricular septal defect | 1 | 48.8 |
| Atrial septal defect | 0 | 0.0 |
| Endocardial cushion defect | 0 | 0.0 |
| Pulmonary valve atresia and stenosis | 1 | 48.8 |
| Tricuspid valve atresia and stenosis | 0 | 0.0 |
| Ebstein's anomaly | 0 | 0.0 |
| Aortic valve stenosis | 0 | 0.0 |
| Hypoplastic left heart syndrome | 0 | 0.0 |
| Coarctation of aorta | 0 | 0.0 |
| Pulmonary artery anomalies | 0 | 0.0 |
| MUSCULOSKELETAL DEFECTS: | 0 | 0.0 |
| Reduction deformity: upper limbs | 0 | 0.0 |
| Reduction deformity: lower limbs | 0 | 0.0 |
| Gastroschisis/Omphalocele | 0 | 0.0 |
| Congenital hip dislocation | 0 | 0.0 |
| Diaphragmatic hernia | 0 | 0.0 |
| ORAL CLEFT DEFECTS: | 0 | 0.0 |
| Cleft palate without cleft lip | 0 | 0.0 |
| Cleft lip with and without cleft palate | 0 | 0.0 |
| Choanal atresia | 0 | 0.0 |
| OTHER DEFECTS: | 0 | 0.0 |
| Anophthalmia/microphthalmia | 0 | 0.0 |
| Congenital cataract | 0 | 0.0 |
| Aniridia | 0 | 0.0 |
| Anotia/microtia | 0 | 0.0 |
| Lung agenesis/hypoplasia | 0 | 0.0 |
| Fetal alcohol syndrome | 0 | 0.0 |

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|----------------------------|
| At a glance: |
| 205 total children born |
| 1 child with birth defects |
| 0.0 % of the state total |

* All rates given are per 10,000 live births, except Hypospadias and Epispadias which are per 10,000 live male births. Additionally, the total number of children in each category may be less than the sum of the children with each individual birth defect since some children may have more than one birth defect.

INDIAN RIVER COUNTY

1996 provisional data from the Florida Birth Defects Registry.

| Birth Defect | Number of Diagnoses | Rate* |
|---|---------------------|--------------|
| CENTRAL NERVOUS SYSTEM DEFECTS: | 8 | 81.7 |
| Anencephalus | 1 | 10.2 |
| Spina bifida without anencephalus | 1 | 10.2 |
| Hydrocephalus without spina bifida | 5 | 51.1 |
| Encephalocele | 2 | 20.4 |
| Microcephalus | 0 | 0.0 |
| CHROMOSOMAL DEFECTS: | 0 | 0.0 |
| Trisomy 13 | 0 | 0.0 |
| Down syndrome | 0 | 0.0 |
| Trisomy 18 | 0 | 0.0 |
| GASTROINTESTINAL DEFECTS: | 1 | 10.2 |
| Esophageal atresia/tracheoesophageal fistula | 0 | 0.0 |
| Rectal and large intestinal atresia/stenosis | 0 | 0.0 |
| Hirschsprung's disease (congenital megacolon) | 0 | 0.0 |
| Biliary atresia | 1 | 10.2 |
| GENITAL AND URINARY DEFECTS: | 2 | 20.4 |
| Renal agenesis/hypoplasia | 0 | 0.0 |
| Bladder exstrophy | 0 | 0.0 |
| Obstructive genitourinary defect | 0 | 0.0 |
| Hypospadias and Epispadias | 2 | 39.8 |
| CONGENITAL HEART DEFECTS: | 7 | 71.5 |
| Common truncus | 0 | 0.0 |
| Transposition of great arteries | 0 | 0.0 |
| Tetralogy of Fallot | 0 | 0.0 |
| Ventricular septal defect | 4 | 40.9 |
| Atrial septal defect | 2 | 20.4 |
| Endocardial cushion defect | 0 | 0.0 |
| Pulmonary valve atresia and stenosis | 0 | 0.0 |
| Tricuspid valve atresia and stenosis | 0 | 0.0 |
| Ebstein's anomaly | 0 | 0.0 |
| Aortic valve stenosis | 0 | 0.0 |
| Hypoplastic left heart syndrome | 1 | 10.2 |
| Coarctation of aorta | 0 | 0.0 |
| Pulmonary artery anomalies | 1 | 10.2 |
| MUSCULOSKELETAL DEFECTS: | 10 | 102.1 |
| Reduction deformity: upper limbs | 0 | 0.0 |
| Reduction deformity: lower limbs | 0 | 0.0 |
| Gastroschisis/Omphalocele | 2 | 20.4 |
| Congenital hip dislocation | 8 | 81.7 |
| Diaphragmatic hernia | 0 | 0.0 |
| ORAL CLEFT DEFECTS: | 3 | 30.6 |
| Cleft palate without cleft lip | 2 | 20.4 |
| Cleft lip with and without cleft palate | 2 | 20.4 |
| Choanal atresia | 0 | 0.0 |
| OTHER DEFECTS: | 1 | 10.2 |
| Anophthalmia/microphthalmia | 0 | 0.0 |
| Congenital cataract | 0 | 0.0 |
| Aniridia | 0 | 0.0 |
| Anotia/microtia | 0 | 0.0 |
| Lung agenesis/hypoplasia | 0 | 0.0 |
| Fetal alcohol syndrome | 1 | 10.2 |

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|--------------------------------|
| At a glance: |
| 979 total children born |
| 31 children with birth defects |
| 0.8 % of the state total |

* All rates given are per 10,000 live births, except Hypospadias and Epispadias which are per 10,000 live male births. Additionally, the total number of children in each category may be less than the sum of the children with each individual birth defect since some children may have more than one birth defect.

JACKSON COUNTY

1996 provisional data from the Florida Birth Defects Registry.

| Birth Defect | Number of Diagnoses | Rate* |
|---|---------------------|-------------|
| CENTRAL NERVOUS SYSTEM DEFECTS: | 1 | 18.2 |
| Anencephalus | 0 | 0.0 |
| Spina bifida without anencephalus | 1 | 18.2 |
| Hydrocephalus without spina bifida | 0 | 0.0 |
| Encephalocele | 0 | 0.0 |
| Microcephalus | 0 | 0.0 |
| CHROMOSOMAL DEFECTS: | 0 | 0.0 |
| Trisomy 13 | 0 | 0.0 |
| Down syndrome | 0 | 0.0 |
| Trisomy 18 | 0 | 0.0 |
| GASTROINTESTINAL DEFECTS: | 0 | 0.0 |
| Esophageal atresia/tracheoesophageal fistula | 0 | 0.0 |
| Rectal and large intestinal atresia/stenosis | 0 | 0.0 |
| Hirschsprung's disease (congenital megacolon) | 0 | 0.0 |
| Biliary atresia | 0 | 0.0 |
| GENITAL AND URINARY DEFECTS: | 2 | 36.4 |
| Renal agenesis/hypoplasia | 1 | 18.2 |
| Bladder exstrophy | 0 | 0.0 |
| Obstructive genitourinary defect | 0 | 0.0 |
| Hypospadias and Epispadias | 1 | 36.2 |
| CONGENITAL HEART DEFECTS: | 1 | 18.2 |
| Common truncus | 0 | 0.0 |
| Transposition of great arteries | 0 | 0.0 |
| Tetralogy of Fallot | 0 | 0.0 |
| Ventricular septal defect | 1 | 18.2 |
| Atrial septal defect | 0 | 0.0 |
| Endocardial cushion defect | 0 | 0.0 |
| Pulmonary valve atresia and stenosis | 0 | 0.0 |
| Tricuspid valve atresia and stenosis | 0 | 0.0 |
| Ebstein's anomaly | 0 | 0.0 |
| Aortic valve stenosis | 0 | 0.0 |
| Hypoplastic left heart syndrome | 0 | 0.0 |
| Coarctation of aorta | 0 | 0.0 |
| Pulmonary artery anomalies | 0 | 0.0 |
| MUSCULOSKELETAL DEFECTS: | 1 | 18.2 |
| Reduction deformity: upper limbs | 0 | 0.0 |
| Reduction deformity: lower limbs | 0 | 0.0 |
| Gastroschisis/Omphalocele | 0 | 0.0 |
| Congenital hip dislocation | 1 | 18.2 |
| Diaphragmatic hernia | 0 | 0.0 |
| ORAL CLEFT DEFECTS: | 0 | 0.0 |
| Cleft palate without cleft lip | 0 | 0.0 |
| Cleft lip with and without cleft palate | 0 | 0.0 |
| Choanal atresia | 0 | 0.0 |
| OTHER DEFECTS: | 2 | 36.4 |
| Anophthalmia/microphthalmia | 0 | 0.0 |
| Congenital cataract | 0 | 0.0 |
| Aniridia | 0 | 0.0 |
| Anotia/microtia | 0 | 0.0 |
| Lung agenesis/hypoplasia | 2 | 36.4 |
| Fetal alcohol syndrome | 0 | 0.0 |

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|-------------------------------|
| At a glance: |
| 549 total children born |
| 5 children with birth defects |
| 0.1 % of the state total |

* All rates given are per 10,000 live births, except Hypospadias and Epispadias which are per 10,000 live male births. Additionally, the total number of children in each category may be less than the sum of the children with each individual birth defect since some children may have more than one birth defect.

JEFFERSON COUNTY

1996 provisional data from the Florida Birth Defects Registry.

| Birth Defect | Number of Diagnoses | Rate* |
|---|---------------------|-------------|
| CENTRAL NERVOUS SYSTEM DEFECTS: | 1 | 64.9 |
| Anencephalus | 0 | 0.0 |
| Spina bifida without anencephalus | 0 | 0.0 |
| Hydrocephalus without spina bifida | 1 | 64.9 |
| Encephalocele | 0 | 0.0 |
| Microcephalus | 0 | 0.0 |
| CHROMOSOMAL DEFECTS: | 0 | 0.0 |
| Trisomy 13 | 0 | 0.0 |
| Down syndrome | 0 | 0.0 |
| Trisomy 18 | 0 | 0.0 |
| GASTROINTESTINAL DEFECTS: | 0 | 0.0 |
| Esophageal atresia/tracheoesophageal fistula | 0 | 0.0 |
| Rectal and large intestinal atresia/stenosis | 0 | 0.0 |
| Hirschsprung's disease (congenital megacolon) | 0 | 0.0 |
| Biliary atresia | 0 | 0.0 |
| GENITAL AND URINARY DEFECTS: | 0 | 0.0 |
| Renal agenesis/hypoplasia | 0 | 0.0 |
| Bladder exstrophy | 0 | 0.0 |
| Obstructive genitourinary defect | 0 | 0.0 |
| Hypospadias and Epispadias | 0 | 0.0 |
| CONGENITAL HEART DEFECTS: | 0 | 0.0 |
| Common truncus | 0 | 0.0 |
| Transposition of great arteries | 0 | 0.0 |
| Tetralogy of Fallot | 0 | 0.0 |
| Ventricular septal defect | 0 | 0.0 |
| Atrial septal defect | 0 | 0.0 |
| Endocardial cushion defect | 0 | 0.0 |
| Pulmonary valve atresia and stenosis | 0 | 0.0 |
| Tricuspid valve atresia and stenosis | 0 | 0.0 |
| Ebstein's anomaly | 0 | 0.0 |
| Aortic valve stenosis | 0 | 0.0 |
| Hypoplastic left heart syndrome | 0 | 0.0 |
| Coarctation of aorta | 0 | 0.0 |
| Pulmonary artery anomalies | 0 | 0.0 |
| MUSCULOSKELETAL DEFECTS: | 0 | 0.0 |
| Reduction deformity: upper limbs | 0 | 0.0 |
| Reduction deformity: lower limbs | 0 | 0.0 |
| Gastroschisis/Omphalocele | 0 | 0.0 |
| Congenital hip dislocation | 0 | 0.0 |
| Diaphragmatic hernia | 0 | 0.0 |
| ORAL CLEFT DEFECTS: | 1 | 64.9 |
| Cleft palate without cleft lip | 1 | 64.9 |
| Cleft lip with and without cleft palate | 0 | 0.0 |
| Choanal atresia | 0 | 0.0 |
| OTHER DEFECTS: | 0 | 0.0 |
| Anophthalmia/microphthalmia | 0 | 0.0 |
| Congenital cataract | 0 | 0.0 |
| Aniridia | 0 | 0.0 |
| Anotia/microtia | 0 | 0.0 |
| Lung agenesis/hypoplasia | 0 | 0.0 |
| Fetal alcohol syndrome | 0 | 0.0 |

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|-------------------------------|
| At a glance: |
| 154 total children born |
| 2 children with birth defects |
| 0.1 % of the state total |

* All rates given are per 10,000 live births, except Hypospadias and Epispadias which are per 10,000 live male births. Additionally, the total number of children in each category may be less than the sum of the children with each individual birth defect since some children may have more than one birth defect.

LAFAYETTE COUNTY

1996 provisional data from the Florida Birth Defects Registry.

| Birth Defect | Number of Diagnoses | Rate* |
|---|---------------------|-------|
| CENTRAL NERVOUS SYSTEM DEFECTS: | 0 | 0.0 |
| Anencephalus | 0 | 0.0 |
| Spina bifida without anencephalus | 0 | 0.0 |
| Hydrocephalus without spina bifida | 0 | 0.0 |
| Encephalocele | 0 | 0.0 |
| Microcephalus | 0 | 0.0 |
| CHROMOSOMAL DEFECTS: | 0 | 0.0 |
| Trisomy 13 | 0 | 0.0 |
| Down syndrome | 0 | 0.0 |
| Trisomy 18 | 0 | 0.0 |
| GASTROINTESTINAL DEFECTS: | 0 | 0.0 |
| Esophageal atresia/tracheoesophageal fistula | 0 | 0.0 |
| Rectal and large intestinal atresia/stenosis | 0 | 0.0 |
| Hirschsprung's disease (congenital megacolon) | 0 | 0.0 |
| Biliary atresia | 0 | 0.0 |
| GENITAL AND URINARY DEFECTS: | 0 | 0.0 |
| Renal agenesis/hypoplasia | 0 | 0.0 |
| Bladder exstrophy | 0 | 0.0 |
| Obstructive genitourinary defect | 0 | 0.0 |
| Hypospadias and Epispadias | 0 | 0.0 |
| CONGENITAL HEART DEFECTS: | 0 | 0.0 |
| Common truncus | 0 | 0.0 |
| Transposition of great arteries | 0 | 0.0 |
| Tetralogy of Fallot | 0 | 0.0 |
| Ventricular septal defect | 0 | 0.0 |
| Atrial septal defect | 0 | 0.0 |
| Endocardial cushion defect | 0 | 0.0 |
| Pulmonary valve atresia and stenosis | 0 | 0.0 |
| Tricuspid valve atresia and stenosis | 0 | 0.0 |
| Ebstein's anomaly | 0 | 0.0 |
| Aortic valve stenosis | 0 | 0.0 |
| Hypoplastic left heart syndrome | 0 | 0.0 |
| Coarctation of aorta | 0 | 0.0 |
| Pulmonary artery anomalies | 0 | 0.0 |
| MUSCULOSKELETAL DEFECTS: | 0 | 0.0 |
| Reduction deformity: upper limbs | 0 | 0.0 |
| Reduction deformity: lower limbs | 0 | 0.0 |
| Gastroschisis/Omphalocele | 0 | 0.0 |
| Congenital hip dislocation | 0 | 0.0 |
| Diaphragmatic hernia | 0 | 0.0 |
| ORAL CLEFT DEFECTS: | 0 | 0.0 |
| Cleft palate without cleft lip | 0 | 0.0 |
| Cleft lip with and without cleft palate | 0 | 0.0 |
| Choanal atresia | 0 | 0.0 |
| OTHER DEFECTS: | 0 | 0.0 |
| Anophthalmia/microphthalmia | 0 | 0.0 |
| Congenital cataract | 0 | 0.0 |
| Aniridia | 0 | 0.0 |
| Anotia/microtia | 0 | 0.0 |
| Lung agenesis/hypoplasia | 0 | 0.0 |
| Fetal alcohol syndrome | 0 | 0.0 |

| At a glance: |
|-------------------------------|
| 71 total children born |
| 0 children with birth defects |
| 0.0 % of the state total |

* All rates given are per 10,000 live births, except Hypospadias and Epispadias which are per 10,000 live male births. Additionally, the total number of children in each category may be less than the sum of the children with each individual birth defect since some children may have more than one birth defect.

LAKE COUNTY

1996 provisional data from the Florida Birth Defects Registry.

| Birth Defect | Number of Diagnoses | Rate* |
|---|---------------------|-------------|
| CENTRAL NERVOUS SYSTEM DEFECTS: | 2 | 10.3 |
| Anencephalus | 0 | 0.0 |
| Spina bifida without anencephalus | 2 | 10.3 |
| Hydrocephalus without spina bifida | 0 | 0.0 |
| Encephalocele | 0 | 0.0 |
| Microcephalus | 0 | 0.0 |
| CHROMOSOMAL DEFECTS: | 1 | 5.2 |
| Trisomy 13 | 0 | 0.0 |
| Down syndrome | 1 | 5.2 |
| Trisomy 18 | 0 | 0.0 |
| GASTROINTESTINAL DEFECTS: | 1 | 5.2 |
| Esophageal atresia/tracheoesophageal fistula | 0 | 0.0 |
| Rectal and large intestinal atresia/stenosis | 1 | 5.2 |
| Hirschsprung's disease (congenital megacolon) | 0 | 0.0 |
| Biliary atresia | 0 | 0.0 |
| GENITAL AND URINARY DEFECTS: | 11 | 56.7 |
| Renal agenesis/hypoplasia | 0 | 0.0 |
| Bladder exstrophy | 1 | 5.2 |
| Obstructive genitourinary defect | 0 | 0.0 |
| Hypospadias and Epispadias | 10 | 99.7 |
| CONGENITAL HEART DEFECTS: | 6 | 30.9 |
| Common truncus | 0 | 0.0 |
| Transposition of great arteries | 0 | 0.0 |
| Tetralogy of Fallot | 0 | 0.0 |
| Ventricular septal defect | 5 | 25.8 |
| Atrial septal defect | 1 | 5.2 |
| Endocardial cushion defect | 0 | 0.0 |
| Pulmonary valve atresia and stenosis | 0 | 0.0 |
| Tricuspid valve atresia and stenosis | 0 | 0.0 |
| Ebstein's anomaly | 0 | 0.0 |
| Aortic valve stenosis | 0 | 0.0 |
| Hypoplastic left heart syndrome | 0 | 0.0 |
| Coarctation of aorta | 1 | 5.2 |
| Pulmonary artery anomalies | 0 | 0.0 |
| MUSCULOSKELETAL DEFECTS: | 3 | 15.5 |
| Reduction deformity: upper limbs | 0 | 0.0 |
| Reduction deformity: lower limbs | 0 | 0.0 |
| Gastroschisis/Omphalocele | 1 | 5.2 |
| Congenital hip dislocation | 2 | 10.3 |
| Diaphragmatic hernia | 0 | 0.0 |
| ORAL CLEFT DEFECTS: | 3 | 15.5 |
| Cleft palate without cleft lip | 2 | 10.3 |
| Cleft lip with and without cleft palate | 1 | 5.2 |
| Choanal atresia | 0 | 0.0 |
| OTHER DEFECTS: | 5 | 25.8 |
| Anophthalmia/microphthalmia | 0 | 0.0 |
| Congenital cataract | 1 | 5.2 |
| Aniridia | 0 | 0.0 |
| Anotia/microtia | 0 | 0.0 |
| Lung agenesis/hypoplasia | 1 | 5.2 |
| Fetal alcohol syndrome | 3 | 15.5 |

| At a glance: |
|--------------------------------|
| 1,939 total children born |
| 30 children with birth defects |
| 0.7 % of the state total |

* All rates given are per 10,000 live births, except Hypospadias and Epispadias which are per 10,000 live male births. Additionally, the total number of children in each category may be less than the sum of the children with each individual birth defect since some children may have more than one birth defect.

LEE COUNTY

1996 provisional data from the Florida Birth Defects Registry.

| Birth Defect | Number of Diagnoses | Rate* |
|---|---------------------|--------------|
| CENTRAL NERVOUS SYSTEM DEFECTS: | 8 | 18.0 |
| Anencephalus | 2 | 4.5 |
| Spina bifida without anencephalus | 2 | 4.5 |
| Hydrocephalus without spina bifida | 2 | 4.5 |
| Encephalocele | 0 | 0.0 |
| Microcephalus | 2 | 4.5 |
| CHROMOSOMAL DEFECTS: | 2 | 4.5 |
| Trisomy 13 | 0 | 0.0 |
| Down syndrome | 2 | 4.5 |
| Trisomy 18 | 0 | 0.0 |
| GASTROINTESTINAL DEFECTS: | 3 | 6.7 |
| Esophageal atresia/tracheoesophageal fistula | 1 | 2.2 |
| Rectal and large intestinal atresia/stenosis | 1 | 2.2 |
| Hirschsprung's disease (congenital megacolon) | 1 | 2.2 |
| Biliary atresia | 0 | 0.0 |
| GENITAL AND URINARY DEFECTS: | 38 | 85.4 |
| Renal agenesis/hypoplasia | 2 | 4.5 |
| Bladder exstrophy | 0 | 0.0 |
| Obstructive genitourinary defect | 19 | 42.7 |
| Hypospadias and Epispadias | 17 | 75.2 |
| CONGENITAL HEART DEFECTS: | 97 | 217.9 |
| Common truncus | 0 | 0.0 |
| Transposition of great arteries | 2 | 4.5 |
| Tetralogy of Fallot | 1 | 2.2 |
| Ventricular septal defect | 27 | 60.6 |
| Atrial septal defect | 83 | 186.4 |
| Endocardial cushion defect | 0 | 0.0 |
| Pulmonary valve atresia and stenosis | 0 | 0.0 |
| Tricuspid valve atresia and stenosis | 0 | 0.0 |
| Ebstein's anomaly | 0 | 0.0 |
| Aortic valve stenosis | 3 | 6.7 |
| Hypoplastic left heart syndrome | 1 | 2.2 |
| Coarctation of aorta | 1 | 2.2 |
| Pulmonary artery anomalies | 5 | 11.2 |
| MUSCULOSKELETAL DEFECTS: | 10 | 22.5 |
| Reduction deformity: upper limbs | 0 | 0.0 |
| Reduction deformity: lower limbs | 0 | 0.0 |
| Gastroschisis/Omphalocele | 6 | 13.5 |
| Congenital hip dislocation | 4 | 9.0 |
| Diaphragmatic hernia | 0 | 0.0 |
| ORAL CLEFT DEFECTS: | 8 | 18.0 |
| Cleft palate without cleft lip | 4 | 9.0 |
| Cleft lip with and without cleft palate | 4 | 9.0 |
| Choanal atresia | 0 | 0.0 |
| OTHER DEFECTS: | 2 | 4.5 |
| Anophthalmia/microphthalmia | 1 | 2.2 |
| Congenital cataract | 0 | 0.0 |
| Aniridia | 0 | 0.0 |
| Anotia/microtia | 0 | 0.0 |
| Lung agenesis/hypoplasia | 1 | 2.2 |
| Fetal alcohol syndrome | 0 | 0.0 |

| At a glance: |
|---------------------------------|
| 4,452 total children born |
| 162 children with birth defects |
| 4.0 % of the state total |

* All rates given are per 10,000 live births, except Hypospadias and Epispadias which are per 10,000 live male births. Additionally, the total number of children in each category may be less than the sum of the children with each individual birth defect since some children may have more than one birth defect.

LEON COUNTY

1996 provisional data from the Florida Birth Defects Registry.

| Birth Defect | Number of Diagnoses | Rate* |
|---|---------------------|-------------|
| CENTRAL NERVOUS SYSTEM DEFECTS: | 4 | 14.3 |
| Anencephalus | 0 | 0.0 |
| Spina bifida without anencephalus | 0 | 0.0 |
| Hydrocephalus without spina bifida | 2 | 7.1 |
| Encephalocele | 0 | 0.0 |
| Microcephalus | 2 | 7.1 |
| CHROMOSOMAL DEFECTS: | 8 | 28.5 |
| Trisomy 13 | 1 | 3.6 |
| Down syndrome | 6 | 21.4 |
| Trisomy 18 | 1 | 3.6 |
| GASTROINTESTINAL DEFECTS: | 2 | 7.1 |
| Esophageal atresia/tracheoesophageal fistula | 2 | 7.1 |
| Rectal and large intestinal atresia/stenosis | 0 | 0.0 |
| Hirschsprung's disease (congenital megacolon) | 0 | 0.0 |
| Biliary atresia | 0 | 0.0 |
| GENITAL AND URINARY DEFECTS: | 10 | 35.7 |
| Renal agenesis/hypoplasia | 0 | 0.0 |
| Bladder exstrophy | 0 | 0.0 |
| Obstructive genitourinary defect | 2 | 7.1 |
| Hypospadias and Epispadias | 8 | 54.9 |
| CONGENITAL HEART DEFECTS: | 18 | 64.2 |
| Common truncus | 0 | 0.0 |
| Transposition of great arteries | 0 | 0.0 |
| Tetralogy of Fallot | 1 | 3.6 |
| Ventricular septal defect | 10 | 35.7 |
| Atrial septal defect | 4 | 14.3 |
| Endocardial cushion defect | 3 | 10.7 |
| Pulmonary valve atresia and stenosis | 3 | 10.7 |
| Tricuspid valve atresia and stenosis | 0 | 0.0 |
| Ebstein's anomaly | 0 | 0.0 |
| Aortic valve stenosis | 0 | 0.0 |
| Hypoplastic left heart syndrome | 0 | 0.0 |
| Coarctation of aorta | 0 | 0.0 |
| Pulmonary artery anomalies | 0 | 0.0 |
| MUSCULOSKELETAL DEFECTS: | 3 | 10.7 |
| Reduction deformity: upper limbs | 1 | 3.6 |
| Reduction deformity: lower limbs | 1 | 3.6 |
| Gastroschisis/Omphalocele | 0 | 0.0 |
| Congenital hip dislocation | 1 | 3.6 |
| Diaphragmatic hernia | 1 | 3.6 |
| ORAL CLEFT DEFECTS: | 6 | 21.4 |
| Cleft palate without cleft lip | 4 | 14.3 |
| Cleft lip with and without cleft palate | 2 | 7.1 |
| Choanal atresia | 0 | 0.0 |
| OTHER DEFECTS: | 3 | 10.7 |
| Anophthalmia/microphthalmia | 2 | 7.1 |
| Congenital cataract | 1 | 3.6 |
| Aniridia | 0 | 0.0 |
| Anotia/microtia | 0 | 0.0 |
| Lung agenesis/hypoplasia | 0 | 0.0 |
| Fetal alcohol syndrome | 0 | 0.0 |

| |
|--------------------------------|
| At a glance: |
| 2,804 total children born |
| 46 children with birth defects |
| 1.1 % of the state total |

* All rates given are per 10,000 live births, except Hypospadias and Epispadias which are per 10,000 live male births. Additionally, the total number of children in each category may be less than the sum of the children with each individual birth defect since some children may have more than one birth defect.

LEVY COUNTY

1996 provisional data from the Florida Birth Defects Registry.

| Birth Defect | Number of Diagnoses | Rate* |
|---|---------------------|--------------|
| CENTRAL NERVOUS SYSTEM DEFECTS: | 1 | 27.6 |
| Anencephalus | 0 | 0.0 |
| Spina bifida without anencephalus | 0 | 0.0 |
| Hydrocephalus without spina bifida | 0 | 0.0 |
| Encephalocele | 0 | 0.0 |
| Microcephalus | 1 | 27.6 |
| CHROMOSOMAL DEFECTS: | 0 | 0.0 |
| Trisomy 13 | 0 | 0.0 |
| Down syndrome | 0 | 0.0 |
| Trisomy 18 | 0 | 0.0 |
| GASTROINTESTINAL DEFECTS: | 0 | 0.0 |
| Esophageal atresia/tracheoesophageal fistula | 0 | 0.0 |
| Rectal and large intestinal atresia/stenosis | 0 | 0.0 |
| Hirschsprung's disease (congenital megacolon) | 0 | 0.0 |
| Biliary atresia | 0 | 0.0 |
| GENITAL AND URINARY DEFECTS: | 2 | 55.2 |
| Renal agenesis/hypoplasia | 0 | 0.0 |
| Bladder exstrophy | 0 | 0.0 |
| Obstructive genitourinary defect | 2 | 55.2 |
| Hypospadias and Epispadias | 0 | 0.0 |
| CONGENITAL HEART DEFECTS: | 5 | 138.1 |
| Common truncus | 0 | 0.0 |
| Transposition of great arteries | 0 | 0.0 |
| Tetralogy of Fallot | 0 | 0.0 |
| Ventricular septal defect | 4 | 110.5 |
| Atrial septal defect | 3 | 82.9 |
| Endocardial cushion defect | 0 | 0.0 |
| Pulmonary valve atresia and stenosis | 0 | 0.0 |
| Tricuspid valve atresia and stenosis | 0 | 0.0 |
| Ebstein's anomaly | 0 | 0.0 |
| Aortic valve stenosis | 0 | 0.0 |
| Hypoplastic left heart syndrome | 0 | 0.0 |
| Coarctation of aorta | 0 | 0.0 |
| Pulmonary artery anomalies | 0 | 0.0 |
| MUSCULOSKELETAL DEFECTS: | 1 | 27.6 |
| Reduction deformity: upper limbs | 0 | 0.0 |
| Reduction deformity: lower limbs | 0 | 0.0 |
| Gastroschisis/Omphalocele | 0 | 0.0 |
| Congenital hip dislocation | 1 | 27.6 |
| Diaphragmatic hernia | 0 | 0.0 |
| ORAL CLEFT DEFECTS: | 0 | 0.0 |
| Cleft palate without cleft lip | 0 | 0.0 |
| Cleft lip with and without cleft palate | 0 | 0.0 |
| Choanal atresia | 0 | 0.0 |
| OTHER DEFECTS: | 0 | 0.0 |
| Anophthalmia/microphthalmia | 0 | 0.0 |
| Congenital cataract | 0 | 0.0 |
| Aniridia | 0 | 0.0 |
| Anotia/microtia | 0 | 0.0 |
| Lung agenesis/hypoplasia | 0 | 0.0 |
| Fetal alcohol syndrome | 0 | 0.0 |

| |
|-------------------------------|
| At a glance: |
| 362 total children born |
| 9 children with birth defects |
| 0.2 % of the state total |

* All rates given are per 10,000 live births, except Hypospadias and Epispadias which are per 10,000 live male births. Additionally, the total number of children in each category may be less than the sum of the children with each individual birth defect since some children may have more than one birth defect.

LIBERTY COUNTY

1996 provisional data from the Florida Birth Defects Registry.

| Birth Defect | Number of Diagnoses | Rate* |
|---|---------------------|-------|
| CENTRAL NERVOUS SYSTEM DEFECTS: | 0 | 0.0 |
| Anencephalus | 0 | 0.0 |
| Spina bifida without anencephalus | 0 | 0.0 |
| Hydrocephalus without spina bifida | 0 | 0.0 |
| Encephalocele | 0 | 0.0 |
| Microcephalus | 0 | 0.0 |
| CHROMOSOMAL DEFECTS: | 0 | 0.0 |
| Trisomy 13 | 0 | 0.0 |
| Down syndrome | 0 | 0.0 |
| Trisomy 18 | 0 | 0.0 |
| GASTROINTESTINAL DEFECTS: | 0 | 0.0 |
| Esophageal atresia/tracheoesophageal fistula | 0 | 0.0 |
| Rectal and large intestinal atresia/stenosis | 0 | 0.0 |
| Hirschsprung's disease (congenital megacolon) | 0 | 0.0 |
| Biliary atresia | 0 | 0.0 |
| GENITAL AND URINARY DEFECTS: | 0 | 0.0 |
| Renal agenesis/hypoplasia | 0 | 0.0 |
| Bladder exstrophy | 0 | 0.0 |
| Obstructive genitourinary defect | 0 | 0.0 |
| Hypospadias and Epispadias | 0 | 0.0 |
| CONGENITAL HEART DEFECTS: | 0 | 0.0 |
| Common truncus | 0 | 0.0 |
| Transposition of great arteries | 0 | 0.0 |
| Tetralogy of Fallot | 0 | 0.0 |
| Ventricular septal defect | 0 | 0.0 |
| Atrial septal defect | 0 | 0.0 |
| Endocardial cushion defect | 0 | 0.0 |
| Pulmonary valve atresia and stenosis | 0 | 0.0 |
| Tricuspid valve atresia and stenosis | 0 | 0.0 |
| Ebstein's anomaly | 0 | 0.0 |
| Aortic valve stenosis | 0 | 0.0 |
| Hypoplastic left heart syndrome | 0 | 0.0 |
| Coarctation of aorta | 0 | 0.0 |
| Pulmonary artery anomalies | 0 | 0.0 |
| MUSCULOSKELETAL DEFECTS: | 0 | 0.0 |
| Reduction deformity: upper limbs | 0 | 0.0 |
| Reduction deformity: lower limbs | 0 | 0.0 |
| Gastroschisis/Omphalocele | 0 | 0.0 |
| Congenital hip dislocation | 0 | 0.0 |
| Diaphragmatic hernia | 0 | 0.0 |
| ORAL CLEFT DEFECTS: | 0 | 0.0 |
| Cleft palate without cleft lip | 0 | 0.0 |
| Cleft lip with and without cleft palate | 0 | 0.0 |
| Choanal atresia | 0 | 0.0 |
| OTHER DEFECTS: | 0 | 0.0 |
| Anophthalmia/microphthalmia | 0 | 0.0 |
| Congenital cataract | 0 | 0.0 |
| Aniridia | 0 | 0.0 |
| Anotia/microtia | 0 | 0.0 |
| Lung agenesis/hypoplasia | 0 | 0.0 |
| Fetal alcohol syndrome | 0 | 0.0 |

| |
|-------------------------------|
| At a glance: |
| 78 total children born |
| 0 children with birth defects |
| 0.0 % of the state total |

* All rates given are per 10,000 live births, except Hypospadias and Epispadias which are per 10,000 live male births. Additionally, the total number of children in each category may be less than the sum of the children with each individual birth defect since some children may have more than one birth defect.

MADISON COUNTY

1996 provisional data from the Florida Birth Defects Registry.

| Birth Defect | Number of Diagnoses | Rate* |
|---|---------------------|-------|
| CENTRAL NERVOUS SYSTEM DEFECTS: | 0 | 0.0 |
| Anencephalus | 0 | 0.0 |
| Spina bifida without anencephalus | 0 | 0.0 |
| Hydrocephalus without spina bifida | 0 | 0.0 |
| Encephalocele | 0 | 0.0 |
| Microcephalus | 0 | 0.0 |
| CHROMOSOMAL DEFECTS: | 0 | 0.0 |
| Trisomy 13 | 0 | 0.0 |
| Down syndrome | 0 | 0.0 |
| Trisomy 18 | 0 | 0.0 |
| GASTROINTESTINAL DEFECTS: | 0 | 0.0 |
| Esophageal atresia/tracheoesophageal fistula | 0 | 0.0 |
| Rectal and large intestinal atresia/stenosis | 0 | 0.0 |
| Hirschsprung's disease (congenital megacolon) | 0 | 0.0 |
| Biliary atresia | 0 | 0.0 |
| GENITAL AND URINARY DEFECTS: | 0 | 0.0 |
| Renal agenesis/hypoplasia | 0 | 0.0 |
| Bladder exstrophy | 0 | 0.0 |
| Obstructive genitourinary defect | 0 | 0.0 |
| Hypospadias and Epispadias | 0 | 0.0 |
| CONGENITAL HEART DEFECTS: | 0 | 0.0 |
| Common truncus | 0 | 0.0 |
| Transposition of great arteries | 0 | 0.0 |
| Tetralogy of Fallot | 0 | 0.0 |
| Ventricular septal defect | 0 | 0.0 |
| Atrial septal defect | 0 | 0.0 |
| Endocardial cushion defect | 0 | 0.0 |
| Pulmonary valve atresia and stenosis | 0 | 0.0 |
| Tricuspid valve atresia and stenosis | 0 | 0.0 |
| Ebstein's anomaly | 0 | 0.0 |
| Aortic valve stenosis | 0 | 0.0 |
| Hypoplastic left heart syndrome | 0 | 0.0 |
| Coarctation of aorta | 0 | 0.0 |
| Pulmonary artery anomalies | 0 | 0.0 |
| MUSCULOSKELETAL DEFECTS: | 0 | 0.0 |
| Reduction deformity: upper limbs | 0 | 0.0 |
| Reduction deformity: lower limbs | 0 | 0.0 |
| Gastroschisis/Omphalocele | 0 | 0.0 |
| Congenital hip dislocation | 0 | 0.0 |
| Diaphragmatic hernia | 0 | 0.0 |
| ORAL CLEFT DEFECTS: | 2 | 94.8 |
| Cleft palate without cleft lip | 0 | 0.0 |
| Cleft lip with and without cleft palate | 2 | 94.8 |
| Choanal atresia | 0 | 0.0 |
| OTHER DEFECTS: | 0 | 0.0 |
| Anophthalmia/microphthalmia | 0 | 0.0 |
| Congenital cataract | 0 | 0.0 |
| Aniridia | 0 | 0.0 |
| Anotia/microtia | 0 | 0.0 |
| Lung agenesis/hypoplasia | 0 | 0.0 |
| Fetal alcohol syndrome | 0 | 0.0 |

| |
|-------------------------------|
| At a glance: |
| 211 total children born |
| 2 children with birth defects |
| 0.0 % of the state total |

* All rates given are per 10,000 live births, except Hypospadias and Epispadias which are per 10,000 live male births. Additionally, the total number of children in each category may be less than the sum of the children with each individual birth defect since some children may have more than one birth defect.

MANATEE COUNTY

1996 provisional data from the Florida Birth Defects Registry.

| Birth Defect | Number of Diagnoses | Rate* |
|---|---------------------|-------------|
| CENTRAL NERVOUS SYSTEM DEFECTS: | 10 | 34.8 |
| Anencephalus | 1 | 3.5 |
| Spina bifida without anencephalus | 3 | 10.5 |
| Hydrocephalus without spina bifida | 3 | 10.5 |
| Encephalocele | 0 | 0.0 |
| Microcephalus | 3 | 10.5 |
| CHROMOSOMAL DEFECTS: | 0 | 0.0 |
| Trisomy 13 | 0 | 0.0 |
| Down syndrome | 0 | 0.0 |
| Trisomy 18 | 0 | 0.0 |
| GASTROINTESTINAL DEFECTS: | 3 | 10.5 |
| Esophageal atresia/tracheoesophageal fistula | 1 | 3.5 |
| Rectal and large intestinal atresia/stenosis | 1 | 3.5 |
| Hirschsprung's disease (congenital megacolon) | 1 | 3.5 |
| Biliary atresia | 0 | 0.0 |
| GENITAL AND URINARY DEFECTS: | 10 | 34.8 |
| Renal agenesis/hypoplasia | 1 | 3.5 |
| Bladder exstrophy | 0 | 0.0 |
| Obstructive genitourinary defect | 2 | 7.0 |
| Hypospadias and Epispadias | 7 | 47.8 |
| CONGENITAL HEART DEFECTS: | 15 | 52.3 |
| Common truncus | 1 | 3.5 |
| Transposition of great arteries | 1 | 3.5 |
| Tetralogy of Fallot | 2 | 7.0 |
| Ventricular septal defect | 9 | 31.4 |
| Atrial septal defect | 3 | 10.5 |
| Endocardial cushion defect | 0 | 0.0 |
| Pulmonary valve atresia and stenosis | 1 | 3.5 |
| Tricuspid valve atresia and stenosis | 0 | 0.0 |
| Ebstein's anomaly | 0 | 0.0 |
| Aortic valve stenosis | 0 | 0.0 |
| Hypoplastic left heart syndrome | 0 | 0.0 |
| Coarctation of aorta | 2 | 7.0 |
| Pulmonary artery anomalies | 0 | 0.0 |
| MUSCULOSKELETAL DEFECTS: | 9 | 31.4 |
| Reduction deformity: upper limbs | 0 | 0.0 |
| Reduction deformity: lower limbs | 0 | 0.0 |
| Gastroschisis/Omphalocele | 3 | 10.5 |
| Congenital hip dislocation | 5 | 17.4 |
| Diaphragmatic hernia | 1 | 3.5 |
| ORAL CLEFT DEFECTS: | 7 | 24.4 |
| Cleft palate without cleft lip | 3 | 10.5 |
| Cleft lip with and without cleft palate | 4 | 13.9 |
| Choanal atresia | 0 | 0.0 |
| OTHER DEFECTS: | 3 | 10.5 |
| Anophthalmia/microphthalmia | 1 | 3.5 |
| Congenital cataract | 0 | 0.0 |
| Aniridia | 0 | 0.0 |
| Anotia/microtia | 0 | 0.0 |
| Lung agenesis/hypoplasia | 0 | 0.0 |
| Fetal alcohol syndrome | 2 | 7.0 |

| At a glance: |
|--------------------------------|
| 2,870 total children born |
| 50 children with birth defects |
| 1.2 % of the state total |

* All rates given are per 10,000 live births, except Hypospadias and Epispadias which are per 10,000 live male births. Additionally, the total number of children in each category may be less than the sum of the children with each individual birth defect since some children may have more than one birth defect.

MARION COUNTY

1996 provisional data from the Florida Birth Defects Registry.

| Birth Defect | Number of Diagnoses | Rate* |
|---|---------------------|-------------|
| CENTRAL NERVOUS SYSTEM DEFECTS: | 3 | 12.0 |
| Anencephalus | 0 | 0.0 |
| Spina bifida without anencephalus | 0 | 0.0 |
| Hydrocephalus without spina bifida | 1 | 4.0 |
| Encephalocele | 0 | 0.0 |
| Microcephalus | 2 | 8.0 |
| CHROMOSOMAL DEFECTS: | 2 | 8.0 |
| Trisomy 13 | 1 | 4.0 |
| Down syndrome | 1 | 4.0 |
| Trisomy 18 | 0 | 0.0 |
| GASTROINTESTINAL DEFECTS: | 2 | 8.0 |
| Esophageal atresia/tracheoesophageal fistula | 0 | 0.0 |
| Rectal and large intestinal atresia/stenosis | 1 | 4.0 |
| Hirschsprung's disease (congenital megacolon) | 1 | 4.0 |
| Biliary atresia | 0 | 0.0 |
| GENITAL AND URINARY DEFECTS: | 7 | 27.9 |
| Renal agenesis/hypoplasia | 2 | 8.0 |
| Bladder exstrophy | 0 | 0.0 |
| Obstructive genitourinary defect | 2 | 8.0 |
| Hypospadias and Epispadias | 3 | 23.8 |
| CONGENITAL HEART DEFECTS: | 11 | 43.9 |
| Common truncus | 0 | 0.0 |
| Transposition of great arteries | 0 | 0.0 |
| Tetralogy of Fallot | 0 | 0.0 |
| Ventricular septal defect | 2 | 8.0 |
| Atrial septal defect | 8 | 31.9 |
| Endocardial cushion defect | 0 | 0.0 |
| Pulmonary valve atresia and stenosis | 0 | 0.0 |
| Tricuspid valve atresia and stenosis | 0 | 0.0 |
| Ebstein's anomaly | 0 | 0.0 |
| Aortic valve stenosis | 0 | 0.0 |
| Hypoplastic left heart syndrome | 0 | 0.0 |
| Coarctation of aorta | 0 | 0.0 |
| Pulmonary artery anomalies | 3 | 12.0 |
| MUSCULOSKELETAL DEFECTS: | 1 | 4.0 |
| Reduction deformity: upper limbs | 0 | 0.0 |
| Reduction deformity: lower limbs | 0 | 0.0 |
| Gastroschisis/Omphalocele | 1 | 4.0 |
| Congenital hip dislocation | 0 | 0.0 |
| Diaphragmatic hernia | 0 | 0.0 |
| ORAL CLEFT DEFECTS: | 3 | 12.0 |
| Cleft palate without cleft lip | 1 | 4.0 |
| Cleft lip with and without cleft palate | 2 | 8.0 |
| Choanal atresia | 0 | 0.0 |
| OTHER DEFECTS: | 0 | 0.0 |
| Anophthalmia/microphthalmia | 0 | 0.0 |
| Congenital cataract | 0 | 0.0 |
| Aniridia | 0 | 0.0 |
| Anotia/microtia | 0 | 0.0 |
| Lung agenesis/hypoplasia | 0 | 0.0 |
| Fetal alcohol syndrome | 0 | 0.0 |

| At a glance: |
|--------------------------------|
| 2,505 total children born |
| 27 children with birth defects |
| 0.7 % of the state total |

* All rates given are per 10,000 live births, except Hypospadias and Epispadias which are per 10,000 live male births. Additionally, the total number of children in each category may be less than the sum of the children with each individual birth defect since some children may have more than one birth defect.

MARTIN COUNTY

1996 provisional data from the Florida Birth Defects Registry.

| Birth Defect | Number of Diagnoses | Rate* |
|---|---------------------|-------------|
| CENTRAL NERVOUS SYSTEM DEFECTS: | 1 | 8.8 |
| Anencephalus | 0 | 0.0 |
| Spina bifida without anencephalus | 1 | 8.8 |
| Hydrocephalus without spina bifida | 0 | 0.0 |
| Encephalocele | 0 | 0.0 |
| Microcephalus | 0 | 0.0 |
| CHROMOSOMAL DEFECTS: | 0 | 0.0 |
| Trisomy 13 | 0 | 0.0 |
| Down syndrome | 0 | 0.0 |
| Trisomy 18 | 0 | 0.0 |
| GASTROINTESTINAL DEFECTS: | 0 | 0.0 |
| Esophageal atresia/tracheoesophageal fistula | 0 | 0.0 |
| Rectal and large intestinal atresia/stenosis | 0 | 0.0 |
| Hirschsprung's disease (congenital megacolon) | 0 | 0.0 |
| Biliary atresia | 0 | 0.0 |
| GENITAL AND URINARY DEFECTS: | 7 | 61.7 |
| Renal agenesis/hypoplasia | 0 | 0.0 |
| Bladder exstrophy | 0 | 0.0 |
| Obstructive genitourinary defect | 5 | 44.1 |
| Hypospadias and Epispadias | 3 | 50.2 |
| CONGENITAL HEART DEFECTS: | 9 | 79.3 |
| Common truncus | 0 | 0.0 |
| Transposition of great arteries | 0 | 0.0 |
| Tetralogy of Fallot | 0 | 0.0 |
| Ventricular septal defect | 5 | 44.1 |
| Atrial septal defect | 4 | 35.2 |
| Endocardial cushion defect | 0 | 0.0 |
| Pulmonary valve atresia and stenosis | 1 | 8.8 |
| Tricuspid valve atresia and stenosis | 0 | 0.0 |
| Ebstein's anomaly | 0 | 0.0 |
| Aortic valve stenosis | 0 | 0.0 |
| Hypoplastic left heart syndrome | 0 | 0.0 |
| Coarctation of aorta | 0 | 0.0 |
| Pulmonary artery anomalies | 1 | 8.8 |
| MUSCULOSKELETAL DEFECTS: | 4 | 35.2 |
| Reduction deformity: upper limbs | 0 | 0.0 |
| Reduction deformity: lower limbs | 0 | 0.0 |
| Gastroschisis/Omphalocele | 1 | 8.8 |
| Congenital hip dislocation | 3 | 26.4 |
| Diaphragmatic hernia | 0 | 0.0 |
| ORAL CLEFT DEFECTS: | 5 | 44.1 |
| Cleft palate without cleft lip | 3 | 26.4 |
| Cleft lip with and without cleft palate | 3 | 26.4 |
| Choanal atresia | 0 | 0.0 |
| OTHER DEFECTS: | 1 | 8.8 |
| Anophthalmia/microphthalmia | 0 | 0.0 |
| Congenital cataract | 0 | 0.0 |
| Aniridia | 0 | 0.0 |
| Anotia/microtia | 0 | 0.0 |
| Lung agenesis/hypoplasia | 0 | 0.0 |
| Fetal alcohol syndrome | 1 | 8.8 |

| At a glance: |
|--------------------------------|
| 1,135 total children born |
| 25 children with birth defects |
| 0.6 % of the state total |

* All rates given are per 10,000 live births, except Hypospadias and Epispadias which are per 10,000 live male births. Additionally, the total number of children in each category may be less than the sum of the children with each individual birth defect since some children may have more than one birth defect.

MONROE COUNTY

1996 provisional data from the Florida Birth Defects Registry.

| Birth Defect | Number of Diagnoses | Rate* |
|---|---------------------|-------|
| CENTRAL NERVOUS SYSTEM DEFECTS: | 1 | 11.4 |
| Anencephalus | 0 | 0.0 |
| Spina bifida without anencephalus | 1 | 11.4 |
| Hydrocephalus without spina bifida | 0 | 0.0 |
| Encephalocele | 0 | 0.0 |
| Microcephalus | 0 | 0.0 |
| CHROMOSOMAL DEFECTS: | 1 | 11.4 |
| Trisomy 13 | 0 | 0.0 |
| Down syndrome | 1 | 11.4 |
| Trisomy 18 | 0 | 0.0 |
| GASTROINTESTINAL DEFECTS: | 0 | 0.0 |
| Esophageal atresia/tracheoesophageal fistula | 0 | 0.0 |
| Rectal and large intestinal atresia/stenosis | 0 | 0.0 |
| Hirschsprung's disease (congenital megacolon) | 0 | 0.0 |
| Biliary atresia | 0 | 0.0 |
| GENITAL AND URINARY DEFECTS: | 4 | 45.6 |
| Renal agenesis/hypoplasia | 0 | 0.0 |
| Bladder exstrophy | 0 | 0.0 |
| Obstructive genitourinary defect | 0 | 0.0 |
| Hypospadias and Epispadias | 4 | 88.7 |
| CONGENITAL HEART DEFECTS: | 4 | 45.6 |
| Common truncus | 0 | 0.0 |
| Transposition of great arteries | 0 | 0.0 |
| Tetralogy of Fallot | 1 | 11.4 |
| Ventricular septal defect | 3 | 34.2 |
| Atrial septal defect | 1 | 11.4 |
| Endocardial cushion defect | 0 | 0.0 |
| Pulmonary valve atresia and stenosis | 0 | 0.0 |
| Tricuspid valve atresia and stenosis | 0 | 0.0 |
| Ebstein's anomaly | 0 | 0.0 |
| Aortic valve stenosis | 0 | 0.0 |
| Hypoplastic left heart syndrome | 0 | 0.0 |
| Coarctation of aorta | 0 | 0.0 |
| Pulmonary artery anomalies | 0 | 0.0 |
| MUSCULOSKELETAL DEFECTS: | 1 | 11.4 |
| Reduction deformity: upper limbs | 0 | 0.0 |
| Reduction deformity: lower limbs | 0 | 0.0 |
| Gastroschisis/Omphalocele | 1 | 11.4 |
| Congenital hip dislocation | 0 | 0.0 |
| Diaphragmatic hernia | 0 | 0.0 |
| ORAL CLEFT DEFECTS: | 1 | 11.4 |
| Cleft palate without cleft lip | 1 | 11.4 |
| Cleft lip with and without cleft palate | 0 | 0.0 |
| Choanal atresia | 0 | 0.0 |
| OTHER DEFECTS: | 1 | 11.4 |
| Anophthalmia/microphthalmia | 1 | 11.4 |
| Congenital cataract | 0 | 0.0 |
| Aniridia | 0 | 0.0 |
| Anotia/microtia | 0 | 0.0 |
| Lung agenesis/hypoplasia | 0 | 0.0 |
| Fetal alcohol syndrome | 0 | 0.0 |

| |
|--------------------------------|
| At a glance: |
| 877 total children born |
| 11 children with birth defects |
| 0.3 % of the state total |

* All rates given are per 10,000 live births, except Hypospadias and Epispadias which are per 10,000 live male births. Additionally, the total number of children in each category may be less than the sum of the children with each individual birth defect since some children may have more than one birth defect.

NASSAU COUNTY

1996 provisional data from the Florida Birth Defects Registry.

| Birth Defect | Number of Diagnoses | Rate* |
|---|---------------------|--------------|
| CENTRAL NERVOUS SYSTEM DEFECTS: | 1 | 14.4 |
| Anencephalus | 0 | 0.0 |
| Spina bifida without anencephalus | 0 | 0.0 |
| Hydrocephalus without spina bifida | 0 | 0.0 |
| Encephalocele | 0 | 0.0 |
| Microcephalus | 1 | 14.4 |
| CHROMOSOMAL DEFECTS: | 0 | 0.0 |
| Trisomy 13 | 0 | 0.0 |
| Down syndrome | 0 | 0.0 |
| Trisomy 18 | 0 | 0.0 |
| GASTROINTESTINAL DEFECTS: | 0 | 0.0 |
| Esophageal atresia/tracheoesophageal fistula | 0 | 0.0 |
| Rectal and large intestinal atresia/stenosis | 0 | 0.0 |
| Hirschsprung's disease (congenital megacolon) | 0 | 0.0 |
| Biliary atresia | 0 | 0.0 |
| GENITAL AND URINARY DEFECTS: | 7 | 100.6 |
| Renal agenesis/hypoplasia | 0 | 0.0 |
| Bladder exstrophy | 0 | 0.0 |
| Obstructive genitourinary defect | 1 | 14.4 |
| Hypospadias and Epispadias | 6 | 164.8 |
| CONGENITAL HEART DEFECTS: | 6 | 86.2 |
| Common truncus | 1 | 14.4 |
| Transposition of great arteries | 0 | 0.0 |
| Tetralogy of Fallot | 0 | 0.0 |
| Ventricular septal defect | 3 | 43.1 |
| Atrial septal defect | 0 | 0.0 |
| Endocardial cushion defect | 0 | 0.0 |
| Pulmonary valve atresia and stenosis | 2 | 28.7 |
| Tricuspid valve atresia and stenosis | 0 | 0.0 |
| Ebstein's anomaly | 0 | 0.0 |
| Aortic valve stenosis | 0 | 0.0 |
| Hypoplastic left heart syndrome | 0 | 0.0 |
| Coarctation of aorta | 0 | 0.0 |
| Pulmonary artery anomalies | 0 | 0.0 |
| MUSCULOSKELETAL DEFECTS: | 2 | 28.7 |
| Reduction deformity: upper limbs | 0 | 0.0 |
| Reduction deformity: lower limbs | 0 | 0.0 |
| Gastroschisis/Omphalocele | 2 | 28.7 |
| Congenital hip dislocation | 0 | 0.0 |
| Diaphragmatic hernia | 0 | 0.0 |
| ORAL CLEFT DEFECTS: | 2 | 28.7 |
| Cleft palate without cleft lip | 1 | 14.4 |
| Cleft lip with and without cleft palate | 1 | 14.4 |
| Choanal atresia | 0 | 0.0 |
| OTHER DEFECTS: | 0 | 0.0 |
| Anophthalmia/microphthalmia | 0 | 0.0 |
| Congenital cataract | 0 | 0.0 |
| Aniridia | 0 | 0.0 |
| Anotia/microtia | 0 | 0.0 |
| Lung agenesis/hypoplasia | 0 | 0.0 |
| Fetal alcohol syndrome | 0 | 0.0 |

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|--------------------------------|
| At a glance: |
| 696 total children born |
| 18 children with birth defects |
| 0.5 % of the state total |

* All rates given are per 10,000 live births, except Hypospadias and Epispadias which are per 10,000 live male births. Additionally, the total number of children in each category may be less than the sum of the children with each individual birth defect since some children may have more than one birth defect.

OKALOOSA COUNTY

1996 provisional data from the Florida Birth Defects Registry.

| Birth Defect | Number of Diagnoses | Rate* |
|---|---------------------|-------------|
| CENTRAL NERVOUS SYSTEM DEFECTS: | 4 | 17.0 |
| Anencephalus | 0 | 0.0 |
| Spina bifida without anencephalus | 2 | 8.5 |
| Hydrocephalus without spina bifida | 0 | 0.0 |
| Encephalocele | 0 | 0.0 |
| Microcephalus | 2 | 8.5 |
| CHROMOSOMAL DEFECTS: | 2 | 8.5 |
| Trisomy 13 | 0 | 0.0 |
| Down syndrome | 2 | 8.5 |
| Trisomy 18 | 0 | 0.0 |
| GASTROINTESTINAL DEFECTS: | 0 | 0.0 |
| Esophageal atresia/tracheoesophageal fistula | 0 | 0.0 |
| Rectal and large intestinal atresia/stenosis | 0 | 0.0 |
| Hirschsprung's disease (congenital megacolon) | 0 | 0.0 |
| Biliary atresia | 0 | 0.0 |
| GENITAL AND URINARY DEFECTS: | 12 | 51.0 |
| Renal agenesis/hypoplasia | 1 | 4.2 |
| Bladder exstrophy | 0 | 0.0 |
| Obstructive genitourinary defect | 2 | 8.5 |
| Hypospadias and Epispadias | 9 | 73.4 |
| CONGENITAL HEART DEFECTS: | 16 | 68.0 |
| Common truncus | 1 | 4.2 |
| Transposition of great arteries | 2 | 8.5 |
| Tetralogy of Fallot | 0 | 0.0 |
| Ventricular septal defect | 5 | 21.2 |
| Atrial septal defect | 10 | 42.5 |
| Endocardial cushion defect | 1 | 4.2 |
| Pulmonary valve atresia and stenosis | 0 | 0.0 |
| Tricuspid valve atresia and stenosis | 1 | 4.2 |
| Ebstein's anomaly | 0 | 0.0 |
| Aortic valve stenosis | 0 | 0.0 |
| Hypoplastic left heart syndrome | 0 | 0.0 |
| Coarctation of aorta | 2 | 8.5 |
| Pulmonary artery anomalies | 0 | 0.0 |
| MUSCULOSKELETAL DEFECTS: | 0 | 0.0 |
| Reduction deformity: upper limbs | 0 | 0.0 |
| Reduction deformity: lower limbs | 0 | 0.0 |
| Gastroschisis/Omphalocele | 0 | 0.0 |
| Congenital hip dislocation | 0 | 0.0 |
| Diaphragmatic hernia | 0 | 0.0 |
| ORAL CLEFT DEFECTS: | 3 | 12.7 |
| Cleft palate without cleft lip | 3 | 12.7 |
| Cleft lip with and without cleft palate | 0 | 0.0 |
| Choanal atresia | 0 | 0.0 |
| OTHER DEFECTS: | 1 | 4.2 |
| Anophthalmia/microphthalmia | 0 | 0.0 |
| Congenital cataract | 0 | 0.0 |
| Aniridia | 0 | 0.0 |
| Anotia/microtia | 0 | 0.0 |
| Lung agenesis/hypoplasia | 1 | 4.2 |
| Fetal alcohol syndrome | 0 | 0.0 |

| At a glance: |
|--------------------------------|
| 2,353 total children born |
| 32 children with birth defects |
| 0.8 % of the state total |

* All rates given are per 10,000 live births, except Hypospadias and Epispadias which are per 10,000 live male births. Additionally, the total number of children in each category may be less than the sum of the children with each individual birth defect since some children may have more than one birth defect.

OKEECHOBEE COUNTY

1996 provisional data from the Florida Birth Defects Registry.

| Birth Defect | Number of Diagnoses | Rate* |
|---|---------------------|-------------|
| CENTRAL NERVOUS SYSTEM DEFECTS: | 2 | 45.9 |
| Anencephalus | 0 | 0.0 |
| Spina bifida without anencephalus | 2 | 45.9 |
| Hydrocephalus without spina bifida | 0 | 0.0 |
| Encephalocele | 0 | 0.0 |
| Microcephalus | 0 | 0.0 |
| CHROMOSOMAL DEFECTS: | 0 | 0.0 |
| Trisomy 13 | 0 | 0.0 |
| Down syndrome | 0 | 0.0 |
| Trisomy 18 | 0 | 0.0 |
| GASTROINTESTINAL DEFECTS: | 1 | 22.9 |
| Esophageal atresia/tracheoesophageal fistula | 1 | 22.9 |
| Rectal and large intestinal atresia/stenosis | 0 | 0.0 |
| Hirschsprung's disease (congenital megacolon) | 0 | 0.0 |
| Biliary atresia | 0 | 0.0 |
| GENITAL AND URINARY DEFECTS: | 2 | 45.9 |
| Renal agenesis/hypoplasia | 0 | 0.0 |
| Bladder exstrophy | 0 | 0.0 |
| Obstructive genitourinary defect | 1 | 22.9 |
| Hypospadias and Epispadias | 1 | 45.5 |
| CONGENITAL HEART DEFECTS: | 0 | 0.0 |
| Common truncus | 0 | 0.0 |
| Transposition of great arteries | 0 | 0.0 |
| Tetralogy of Fallot | 0 | 0.0 |
| Ventricular septal defect | 0 | 0.0 |
| Atrial septal defect | 0 | 0.0 |
| Endocardial cushion defect | 0 | 0.0 |
| Pulmonary valve atresia and stenosis | 0 | 0.0 |
| Tricuspid valve atresia and stenosis | 0 | 0.0 |
| Ebstein's anomaly | 0 | 0.0 |
| Aortic valve stenosis | 0 | 0.0 |
| Hypoplastic left heart syndrome | 0 | 0.0 |
| Coarctation of aorta | 0 | 0.0 |
| Pulmonary artery anomalies | 0 | 0.0 |
| MUSCULOSKELETAL DEFECTS: | 3 | 68.8 |
| Reduction deformity: upper limbs | 0 | 0.0 |
| Reduction deformity: lower limbs | 0 | 0.0 |
| Gastroschisis/Omphalocele | 1 | 22.9 |
| Congenital hip dislocation | 2 | 45.9 |
| Diaphragmatic hernia | 0 | 0.0 |
| ORAL CLEFT DEFECTS: | 1 | 22.9 |
| Cleft palate without cleft lip | 0 | 0.0 |
| Cleft lip with and without cleft palate | 1 | 22.9 |
| Choanal atresia | 0 | 0.0 |
| OTHER DEFECTS: | 1 | 22.9 |
| Anophthalmia/microphthalmia | 0 | 0.0 |
| Congenital cataract | 1 | 22.9 |
| Aniridia | 0 | 0.0 |
| Anotia/microtia | 0 | 0.0 |
| Lung agenesis/hypoplasia | 0 | 0.0 |
| Fetal alcohol syndrome | 0 | 0.0 |

| |
|--------------------------------|
| At a glance: |
| 436 total children born |
| 10 children with birth defects |
| 0.3 % of the state total |

* All rates given are per 10,000 live births, except Hypospadias and Epispadias which are per 10,000 live male births. Additionally, the total number of children in each category may be less than the sum of the children with each individual birth defect since some children may have more than one birth defect.

ORANGE COUNTY

1996 provisional data from the Florida Birth Defects Registry.

| Birth Defect | Number of Diagnoses | Rate* |
|---|---------------------|--------------|
| CENTRAL NERVOUS SYSTEM DEFECTS: | 13 | 11.1 |
| Anencephalus | 0 | 0.0 |
| Spina bifida without anencephalus | 3 | 2.6 |
| Hydrocephalus without spina bifida | 5 | 4.3 |
| Encephalocele | 2 | 1.7 |
| Microcephalus | 3 | 2.6 |
| CHROMOSOMAL DEFECTS: | 17 | 14.5 |
| Trisomy 13 | 3 | 2.6 |
| Down syndrome | 14 | 11.9 |
| Trisomy 18 | 0 | 0.0 |
| GASTROINTESTINAL DEFECTS: | 4 | 3.4 |
| Esophageal atresia/tracheoesophageal fistula | 2 | 1.7 |
| Rectal and large intestinal atresia/stenosis | 1 | 0.9 |
| Hirschsprung's disease (congenital megacolon) | 1 | 0.9 |
| Biliary atresia | 0 | 0.0 |
| GENITAL AND URINARY DEFECTS: | 80 | 68.2 |
| Renal agenesis/hypoplasia | 5 | 4.3 |
| Bladder exstrophy | 1 | 0.9 |
| Obstructive genitourinary defect | 24 | 20.5 |
| Hypospadias and Epispadias | 50 | 82.4 |
| CONGENITAL HEART DEFECTS: | 130 | 110.9 |
| Common truncus | 1 | 0.9 |
| Transposition of great arteries | 2 | 1.7 |
| Tetralogy of Fallot | 2 | 1.7 |
| Ventricular septal defect | 58 | 49.5 |
| Atrial septal defect | 49 | 41.8 |
| Endocardial cushion defect | 5 | 4.3 |
| Pulmonary valve atresia and stenosis | 8 | 6.8 |
| Tricuspid valve atresia and stenosis | 2 | 1.7 |
| Ebstein's anomaly | 0 | 0.0 |
| Aortic valve stenosis | 1 | 0.9 |
| Hypoplastic left heart syndrome | 6 | 5.1 |
| Coarctation of aorta | 4 | 3.4 |
| Pulmonary artery anomalies | 17 | 14.5 |
| MUSCULOSKELETAL DEFECTS: | 33 | 28.1 |
| Reduction deformity: upper limbs | 2 | 1.7 |
| Reduction deformity: lower limbs | 2 | 1.7 |
| Gastroschisis/Omphalocele | 9 | 7.7 |
| Congenital hip dislocation | 16 | 13.6 |
| Diaphragmatic hernia | 5 | 4.3 |
| ORAL CLEFT DEFECTS: | 15 | 12.8 |
| Cleft palate without cleft lip | 8 | 6.8 |
| Cleft lip with and without cleft palate | 6 | 5.1 |
| Choanal atresia | 1 | 0.9 |
| OTHER DEFECTS: | 10 | 8.5 |
| Anophthalmia/microphthalmia | 2 | 1.7 |
| Congenital cataract | 2 | 1.7 |
| Aniridia | 0 | 0.0 |
| Anotia/microtia | 1 | 0.9 |
| Lung agenesis/hypoplasia | 4 | 3.4 |
| Fetal alcohol syndrome | 1 | 0.9 |

| At a glance: |
|---------------------------------|
| 11,726 total children born |
| 275 children with birth defects |
| 6.8 % of the state total |

* All rates given are per 10,000 live births, except Hypospadias and Epispadias which are per 10,000 live male births. Additionally, the total number of children in each category may be less than the sum of the children with each individual birth defect since some children may have more than one birth defect.

OSCEOLA COUNTY

1996 provisional data from the Florida Birth Defects Registry.

| Birth Defect | Number of Diagnoses | Rate* |
|---|---------------------|-------------|
| CENTRAL NERVOUS SYSTEM DEFECTS: | 5 | 24.6 |
| Anencephalus | 0 | 0.0 |
| Spina bifida without anencephalus | 3 | 14.7 |
| Hydrocephalus without spina bifida | 1 | 4.9 |
| Encephalocele | 0 | 0.0 |
| Microcephalus | 1 | 4.9 |
| CHROMOSOMAL DEFECTS: | 0 | 0.0 |
| Trisomy 13 | 0 | 0.0 |
| Down syndrome | 0 | 0.0 |
| Trisomy 18 | 0 | 0.0 |
| GASTROINTESTINAL DEFECTS: | 0 | 0.0 |
| Esophageal atresia/tracheoesophageal fistula | 0 | 0.0 |
| Rectal and large intestinal atresia/stenosis | 0 | 0.0 |
| Hirschsprung's disease (congenital megacolon) | 0 | 0.0 |
| Biliary atresia | 0 | 0.0 |
| GENITAL AND URINARY DEFECTS: | 7 | 34.4 |
| Renal agenesis/hypoplasia | 0 | 0.0 |
| Bladder exstrophy | 0 | 0.0 |
| Obstructive genitourinary defect | 2 | 9.8 |
| Hypospadias and Epispadias | 5 | 47.5 |
| CONGENITAL HEART DEFECTS: | 12 | 59.0 |
| Common truncus | 0 | 0.0 |
| Transposition of great arteries | 1 | 4.9 |
| Tetralogy of Fallot | 0 | 0.0 |
| Ventricular septal defect | 6 | 29.5 |
| Atrial septal defect | 3 | 14.7 |
| Endocardial cushion defect | 0 | 0.0 |
| Pulmonary valve atresia and stenosis | 2 | 9.8 |
| Tricuspid valve atresia and stenosis | 0 | 0.0 |
| Ebstein's anomaly | 1 | 4.9 |
| Aortic valve stenosis | 0 | 0.0 |
| Hypoplastic left heart syndrome | 0 | 0.0 |
| Coarctation of aorta | 0 | 0.0 |
| Pulmonary artery anomalies | 1 | 4.9 |
| MUSCULOSKELETAL DEFECTS: | 4 | 19.7 |
| Reduction deformity: upper limbs | 0 | 0.0 |
| Reduction deformity: lower limbs | 1 | 4.9 |
| Gastroschisis/Omphalocele | 1 | 4.9 |
| Congenital hip dislocation | 1 | 4.9 |
| Diaphragmatic hernia | 1 | 4.9 |
| ORAL CLEFT DEFECTS: | 5 | 24.6 |
| Cleft palate without cleft lip | 2 | 9.8 |
| Cleft lip with and without cleft palate | 3 | 14.7 |
| Choanal atresia | 0 | 0.0 |
| OTHER DEFECTS: | 2 | 9.8 |
| Anophthalmia/microphthalmia | 0 | 0.0 |
| Congenital cataract | 0 | 0.0 |
| Aniridia | 0 | 0.0 |
| Anotia/microtia | 0 | 0.0 |
| Lung agenesis/hypoplasia | 2 | 9.8 |
| Fetal alcohol syndrome | 0 | 0.0 |

| At a glance: |
|--------------------------------|
| 2,035 total children born |
| 34 children with birth defects |
| 0.8 % of the state total |

* All rates given are per 10,000 live births, except Hypospadias and Epispadias which are per 10,000 live male births. Additionally, the total number of children in each category may be less than the sum of the children with each individual birth defect since some children may have more than one birth defect.

PALM BEACH COUNTY

1996 provisional data from the Florida Birth Defects Registry.

| Birth Defect | Number of Diagnoses | Rate* |
|---|---------------------|--------------|
| CENTRAL NERVOUS SYSTEM DEFECTS: | 15 | 11.9 |
| Anencephalus | 2 | 1.6 |
| Spina bifida without anencephalus | 7 | 5.6 |
| Hydrocephalus without spina bifida | 3 | 2.4 |
| Encephalocele | 1 | 0.8 |
| Microcephalus | 2 | 1.6 |
| CHROMOSOMAL DEFECTS: | 13 | 10.3 |
| Trisomy 13 | 2 | 1.6 |
| Down syndrome | 11 | 8.7 |
| Trisomy 18 | 0 | 0.0 |
| GASTROINTESTINAL DEFECTS: | 6 | 4.8 |
| Esophageal atresia/tracheoesophageal fistula | 0 | 0.0 |
| Rectal and large intestinal atresia/stenosis | 2 | 1.6 |
| Hirschsprung's disease (congenital megacolon) | 4 | 3.2 |
| Biliary atresia | 0 | 0.0 |
| GENITAL AND URINARY DEFECTS: | 67 | 53.2 |
| Renal agenesis/hypoplasia | 2 | 1.6 |
| Bladder exstrophy | 0 | 0.0 |
| Obstructive genitourinary defect | 14 | 11.1 |
| Hypospadias and Epispadias | 51 | 78.5 |
| CONGENITAL HEART DEFECTS: | 136 | 108.0 |
| Common truncus | 0 | 0.0 |
| Transposition of great arteries | 3 | 2.4 |
| Tetralogy of Fallot | 1 | 0.8 |
| Ventricular septal defect | 58 | 46.1 |
| Atrial septal defect | 52 | 41.3 |
| Endocardial cushion defect | 1 | 0.8 |
| Pulmonary valve atresia and stenosis | 24 | 19.1 |
| Tricuspid valve atresia and stenosis | 1 | 0.8 |
| Ebstein's anomaly | 0 | 0.0 |
| Aortic valve stenosis | 1 | 0.8 |
| Hypoplastic left heart syndrome | 1 | 0.8 |
| Coarctation of aorta | 2 | 1.6 |
| Pulmonary artery anomalies | 11 | 8.7 |
| MUSCULOSKELETAL DEFECTS: | 22 | 17.5 |
| Reduction deformity: upper limbs | 2 | 1.6 |
| Reduction deformity: lower limbs | 1 | 0.8 |
| Gastroschisis/Omphalocele | 6 | 4.8 |
| Congenital hip dislocation | 11 | 8.7 |
| Diaphragmatic hernia | 3 | 2.4 |
| ORAL CLEFT DEFECTS: | 29 | 23.0 |
| Cleft palate without cleft lip | 14 | 11.1 |
| Cleft lip with and without cleft palate | 16 | 12.7 |
| Choanal atresia | 1 | 0.8 |
| OTHER DEFECTS: | 9 | 7.1 |
| Anophthalmia/microphthalmia | 0 | 0.0 |
| Congenital cataract | 1 | 0.8 |
| Aniridia | 0 | 0.0 |
| Anotia/microtia | 1 | 0.8 |
| Lung agenesis/hypoplasia | 3 | 2.4 |
| Fetal alcohol syndrome | 4 | 3.2 |

| At a glance: |
|---------------------------------|
| 12,591 total children born |
| 278 children with birth defects |
| 6.9 % of the state total |

* All rates given are per 10,000 live births, except Hypospadias and Epispadias which are per 10,000 live male births. Additionally, the total number of children in each category may be less than the sum of the children with each individual birth defect since some children may have more than one birth defect.

PASCO COUNTY

1996 provisional data from the Florida Birth Defects Registry.

| Birth Defect | Number of Diagnoses | Rate* |
|---|---------------------|-------------|
| CENTRAL NERVOUS SYSTEM DEFECTS: | 6 | 18.8 |
| Anencephalus | 0 | 0.0 |
| Spina bifida without anencephalus | 2 | 6.3 |
| Hydrocephalus without spina bifida | 3 | 9.4 |
| Encephalocele | 0 | 0.0 |
| Microcephalus | 1 | 3.1 |
| CHROMOSOMAL DEFECTS: | 5 | 15.7 |
| Trisomy 13 | 1 | 3.1 |
| Down syndrome | 3 | 9.4 |
| Trisomy 18 | 2 | 6.3 |
| GASTROINTESTINAL DEFECTS: | 2 | 6.3 |
| Esophageal atresia/tracheoesophageal fistula | 0 | 0.0 |
| Rectal and large intestinal atresia/stenosis | 1 | 3.1 |
| Hirschsprung's disease (congenital megacolon) | 1 | 3.1 |
| Biliary atresia | 0 | 0.0 |
| GENITAL AND URINARY DEFECTS: | 19 | 59.7 |
| Renal agenesis/hypoplasia | 1 | 3.1 |
| Bladder exstrophy | 0 | 0.0 |
| Obstructive genitourinary defect | 6 | 18.8 |
| Hypospadias and Epispadias | 12 | 71.3 |
| CONGENITAL HEART DEFECTS: | 30 | 94.2 |
| Common truncus | 1 | 3.1 |
| Transposition of great arteries | 0 | 0.0 |
| Tetralogy of Fallot | 0 | 0.0 |
| Ventricular septal defect | 15 | 47.1 |
| Atrial septal defect | 15 | 47.1 |
| Endocardial cushion defect | 0 | 0.0 |
| Pulmonary valve atresia and stenosis | 3 | 9.4 |
| Tricuspid valve atresia and stenosis | 0 | 0.0 |
| Ebstein's anomaly | 0 | 0.0 |
| Aortic valve stenosis | 0 | 0.0 |
| Hypoplastic left heart syndrome | 1 | 3.1 |
| Coarctation of aorta | 1 | 3.1 |
| Pulmonary artery anomalies | 3 | 9.4 |
| MUSCULOSKELETAL DEFECTS: | 14 | 44.0 |
| Reduction deformity: upper limbs | 1 | 3.1 |
| Reduction deformity: lower limbs | 0 | 0.0 |
| Gastroschisis/Omphalocele | 7 | 22.0 |
| Congenital hip dislocation | 6 | 18.8 |
| Diaphragmatic hernia | 0 | 0.0 |
| ORAL CLEFT DEFECTS: | 5 | 15.7 |
| Cleft palate without cleft lip | 2 | 6.3 |
| Cleft lip with and without cleft palate | 2 | 6.3 |
| Choanal atresia | 1 | 3.1 |
| OTHER DEFECTS: | 4 | 12.6 |
| Anophthalmia/microphthalmia | 0 | 0.0 |
| Congenital cataract | 0 | 0.0 |
| Aniridia | 0 | 0.0 |
| Anotia/microtia | 0 | 0.0 |
| Lung agenesis/hypoplasia | 1 | 3.1 |
| Fetal alcohol syndrome | 3 | 9.4 |

| At a glance: |
|--------------------------------|
| 3,185 total children born |
| 78 children with birth defects |
| 1.9 % of the state total |

* All rates given are per 10,000 live births, except Hypospadias and Epispadias which are per 10,000 live male births. Additionally, the total number of children in each category may be less than the sum of the children with each individual birth defect since some children may have more than one birth defect.

PINELLAS COUNTY

1996 provisional data from the Florida Birth Defects Registry.

| Birth Defect | Number of Diagnoses | Rate* |
|---|---------------------|-------------|
| CENTRAL NERVOUS SYSTEM DEFECTS: | 16 | 17.5 |
| Anencephalus | 0 | 0.0 |
| Spina bifida without anencephalus | 6 | 6.6 |
| Hydrocephalus without spina bifida | 4 | 4.4 |
| Encephalocele | 1 | 1.1 |
| Microcephalus | 7 | 7.7 |
| CHROMOSOMAL DEFECTS: | 13 | 14.2 |
| Trisomy 13 | 1 | 1.1 |
| Down syndrome | 12 | 13.1 |
| Trisomy 18 | 0 | 0.0 |
| GASTROINTESTINAL DEFECTS: | 9 | 9.8 |
| Esophageal atresia/tracheoesophageal fistula | 5 | 5.5 |
| Rectal and large intestinal atresia/stenosis | 3 | 3.3 |
| Hirschsprung's disease (congenital megacolon) | 2 | 2.2 |
| Biliary atresia | 0 | 0.0 |
| GENITAL AND URINARY DEFECTS: | 75 | 82.0 |
| Renal agenesis/hypoplasia | 3 | 3.3 |
| Bladder exstrophy | 1 | 1.1 |
| Obstructive genitourinary defect | 20 | 21.9 |
| Hypospadias and Epispadias | 54 | 114.4 |
| CONGENITAL HEART DEFECTS: | 72 | 78.7 |
| Common truncus | 1 | 1.1 |
| Transposition of great arteries | 0 | 0.0 |
| Tetralogy of Fallot | 4 | 4.4 |
| Ventricular septal defect | 29 | 31.7 |
| Atrial septal defect | 39 | 42.7 |
| Endocardial cushion defect | 1 | 1.1 |
| Pulmonary valve atresia and stenosis | 4 | 4.4 |
| Tricuspid valve atresia and stenosis | 1 | 1.1 |
| Ebstein's anomaly | 0 | 0.0 |
| Aortic valve stenosis | 2 | 2.2 |
| Hypoplastic left heart syndrome | 1 | 1.1 |
| Coarctation of aorta | 3 | 3.3 |
| Pulmonary artery anomalies | 3 | 3.3 |
| MUSCULOSKELETAL DEFECTS: | 25 | 27.3 |
| Reduction deformity: upper limbs | 0 | 0.0 |
| Reduction deformity: lower limbs | 2 | 2.2 |
| Gastroschisis/Omphalocele | 5 | 5.5 |
| Congenital hip dislocation | 16 | 17.5 |
| Diaphragmatic hernia | 2 | 2.2 |
| ORAL CLEFT DEFECTS: | 14 | 15.3 |
| Cleft palate without cleft lip | 5 | 5.5 |
| Cleft lip with and without cleft palate | 9 | 9.8 |
| Choanal atresia | 1 | 1.1 |
| OTHER DEFECTS: | 9 | 9.8 |
| Anophthalmia/microphthalmia | 0 | 0.0 |
| Congenital cataract | 0 | 0.0 |
| Aniridia | 0 | 0.0 |
| Anotia/microtia | 1 | 1.1 |
| Lung agenesis/hypoplasia | 6 | 6.6 |
| Fetal alcohol syndrome | 2 | 2.2 |

| At a glance: |
|---------------------------------|
| 9,144 total children born |
| 216 children with birth defects |
| 5.3 % of the state total |

* All rates given are per 10,000 live births, except Hypospadias and Epispadias which are per 10,000 live male births. Additionally, the total number of children in each category may be less than the sum of the children with each individual birth defect since some children may have more than one birth defect.

POLK COUNTY

1996 provisional data from the Florida Birth Defects Registry.

| Birth Defect | Number of Diagnoses | Rate* |
|---|---------------------|-------------|
| CENTRAL NERVOUS SYSTEM DEFECTS: | 8 | 13.0 |
| Anencephalus | 0 | 0.0 |
| Spina bifida without anencephalus | 0 | 0.0 |
| Hydrocephalus without spina bifida | 2 | 3.2 |
| Encephalocele | 0 | 0.0 |
| Microcephalus | 7 | 11.4 |
| CHROMOSOMAL DEFECTS: | 7 | 11.4 |
| Trisomy 13 | 0 | 0.0 |
| Down syndrome | 6 | 9.7 |
| Trisomy 18 | 1 | 1.6 |
| GASTROINTESTINAL DEFECTS: | 4 | 6.5 |
| Esophageal atresia/tracheoesophageal fistula | 0 | 0.0 |
| Rectal and large intestinal atresia/stenosis | 3 | 4.9 |
| Hirschsprung's disease (congenital megacolon) | 0 | 0.0 |
| Biliary atresia | 1 | 1.6 |
| GENITAL AND URINARY DEFECTS: | 32 | 51.9 |
| Renal agenesis/hypoplasia | 0 | 0.0 |
| Bladder exstrophy | 1 | 1.6 |
| Obstructive genitourinary defect | 9 | 14.6 |
| Hypospadias and Epispadias | 22 | 69.4 |
| CONGENITAL HEART DEFECTS: | 54 | 87.6 |
| Common truncus | 2 | 3.2 |
| Transposition of great arteries | 0 | 0.0 |
| Tetralogy of Fallot | 0 | 0.0 |
| Ventricular septal defect | 13 | 21.1 |
| Atrial septal defect | 38 | 61.7 |
| Endocardial cushion defect | 1 | 1.6 |
| Pulmonary valve atresia and stenosis | 3 | 4.9 |
| Tricuspid valve atresia and stenosis | 0 | 0.0 |
| Ebstein's anomaly | 0 | 0.0 |
| Aortic valve stenosis | 0 | 0.0 |
| Hypoplastic left heart syndrome | 4 | 6.5 |
| Coarctation of aorta | 2 | 3.2 |
| Pulmonary artery anomalies | 2 | 3.2 |
| MUSCULOSKELETAL DEFECTS: | 19 | 30.8 |
| Reduction deformity: upper limbs | 2 | 3.2 |
| Reduction deformity: lower limbs | 2 | 3.2 |
| Gastroschisis/Omphalocele | 8 | 13.0 |
| Congenital hip dislocation | 4 | 6.5 |
| Diaphragmatic hernia | 4 | 6.5 |
| ORAL CLEFT DEFECTS: | 13 | 21.1 |
| Cleft palate without cleft lip | 6 | 9.7 |
| Cleft lip with and without cleft palate | 6 | 9.7 |
| Choanal atresia | 1 | 1.6 |
| OTHER DEFECTS: | 8 | 13.0 |
| Anophthalmia/microphthalmia | 1 | 1.6 |
| Congenital cataract | 1 | 1.6 |
| Aniridia | 0 | 0.0 |
| Anotia/microtia | 1 | 1.6 |
| Lung agenesis/hypoplasia | 4 | 6.5 |
| Fetal alcohol syndrome | 1 | 1.6 |

| At a glance: |
|---------------------------------|
| 6,163 total children born |
| 128 children with birth defects |
| 3.2 % of the state total |

* All rates given are per 10,000 live births, except Hypospadias and Epispadias which are per 10,000 live male births. Additionally, the total number of children in each category may be less than the sum of the children with each individual birth defect since some children may have more than one birth defect.

PUTNAM COUNTY

1996 provisional data from the Florida Birth Defects Registry.

| Birth Defect | Number of Diagnoses | Rate* |
|---|---------------------|-------------|
| CENTRAL NERVOUS SYSTEM DEFECTS: | 1 | 11.1 |
| Anencephalus | 0 | 0.0 |
| Spina bifida without anencephalus | 0 | 0.0 |
| Hydrocephalus without spina bifida | 0 | 0.0 |
| Encephalocele | 0 | 0.0 |
| Microcephalus | 1 | 11.1 |
| CHROMOSOMAL DEFECTS: | 3 | 33.2 |
| Trisomy 13 | 0 | 0.0 |
| Down syndrome | 2 | 22.1 |
| Trisomy 18 | 1 | 11.1 |
| GASTROINTESTINAL DEFECTS: | 0 | 0.0 |
| Esophageal atresia/tracheoesophageal fistula | 0 | 0.0 |
| Rectal and large intestinal atresia/stenosis | 0 | 0.0 |
| Hirschsprung's disease (congenital megacolon) | 0 | 0.0 |
| Biliary atresia | 0 | 0.0 |
| GENITAL AND URINARY DEFECTS: | 5 | 55.4 |
| Renal agenesis/hypoplasia | 0 | 0.0 |
| Bladder exstrophy | 0 | 0.0 |
| Obstructive genitourinary defect | 2 | 22.1 |
| Hypospadias and Epispadias | 3 | 61.9 |
| CONGENITAL HEART DEFECTS: | 6 | 66.4 |
| Common truncus | 1 | 11.1 |
| Transposition of great arteries | 0 | 0.0 |
| Tetralogy of Fallot | 1 | 11.1 |
| Ventricular septal defect | 3 | 33.2 |
| Atrial septal defect | 4 | 44.3 |
| Endocardial cushion defect | 0 | 0.0 |
| Pulmonary valve atresia and stenosis | 0 | 0.0 |
| Tricuspid valve atresia and stenosis | 0 | 0.0 |
| Ebstein's anomaly | 0 | 0.0 |
| Aortic valve stenosis | 0 | 0.0 |
| Hypoplastic left heart syndrome | 0 | 0.0 |
| Coarctation of aorta | 0 | 0.0 |
| Pulmonary artery anomalies | 0 | 0.0 |
| MUSCULOSKELETAL DEFECTS: | 0 | 0.0 |
| Reduction deformity: upper limbs | 0 | 0.0 |
| Reduction deformity: lower limbs | 0 | 0.0 |
| Gastroschisis/Omphalocele | 0 | 0.0 |
| Congenital hip dislocation | 0 | 0.0 |
| Diaphragmatic hernia | 0 | 0.0 |
| ORAL CLEFT DEFECTS: | 1 | 11.1 |
| Cleft palate without cleft lip | 0 | 0.0 |
| Cleft lip with and without cleft palate | 1 | 11.1 |
| Choanal atresia | 0 | 0.0 |
| OTHER DEFECTS: | 0 | 0.0 |
| Anophthalmia/microphthalmia | 0 | 0.0 |
| Congenital cataract | 0 | 0.0 |
| Aniridia | 0 | 0.0 |
| Anotia/microtia | 0 | 0.0 |
| Lung agenesis/hypoplasia | 0 | 0.0 |
| Fetal alcohol syndrome | 0 | 0.0 |

| At a glance: |
|--------------------------------|
| 903 total children born |
| 13 children with birth defects |
| 0.3 % of the state total |

* All rates given are per 10,000 live births, except Hypospadias and Epispadias which are per 10,000 live male births. Additionally, the total number of children in each category may be less than the sum of the children with each individual birth defect since some children may have more than one birth defect.

ST. JOHN COUNTY

1996 provisional data from the Florida Birth Defects Registry.

| Birth Defect | Number of Diagnoses | Rate* |
|---|---------------------|-------|
| CENTRAL NERVOUS SYSTEM DEFECTS: | 0 | 0.0 |
| Anencephalus | 0 | 0.0 |
| Spina bifida without anencephalus | 0 | 0.0 |
| Hydrocephalus without spina bifida | 0 | 0.0 |
| Encephalocele | 0 | 0.0 |
| Microcephalus | 0 | 0.0 |
| CHROMOSOMAL DEFECTS: | 1 | 8.7 |
| Trisomy 13 | 0 | 0.0 |
| Down syndrome | 1 | 8.7 |
| Trisomy 18 | 0 | 0.0 |
| GASTROINTESTINAL DEFECTS: | 2 | 17.3 |
| Esophageal atresia/tracheoesophageal fistula | 1 | 8.7 |
| Rectal and large intestinal atresia/stenosis | 2 | 17.3 |
| Hirschsprung's disease (congenital megacolon) | 0 | 0.0 |
| Biliary atresia | 0 | 0.0 |
| GENITAL AND URINARY DEFECTS: | 2 | 17.3 |
| Renal agenesis/hypoplasia | 0 | 0.0 |
| Bladder exstrophy | 0 | 0.0 |
| Obstructive genitourinary defect | 0 | 0.0 |
| Hypospadias and Epispadias | 2 | 34.1 |
| CONGENITAL HEART DEFECTS: | 3 | 26.0 |
| Common truncus | 0 | 0.0 |
| Transposition of great arteries | 0 | 0.0 |
| Tetralogy of Fallot | 0 | 0.0 |
| Ventricular septal defect | 1 | 8.7 |
| Atrial septal defect | 2 | 17.3 |
| Endocardial cushion defect | 0 | 0.0 |
| Pulmonary valve atresia and stenosis | 0 | 0.0 |
| Tricuspid valve atresia and stenosis | 0 | 0.0 |
| Ebstein's anomaly | 0 | 0.0 |
| Aortic valve stenosis | 0 | 0.0 |
| Hypoplastic left heart syndrome | 0 | 0.0 |
| Coarctation of aorta | 0 | 0.0 |
| Pulmonary artery anomalies | 1 | 8.7 |
| MUSCULOSKELETAL DEFECTS: | 3 | 26.0 |
| Reduction deformity: upper limbs | 1 | 8.7 |
| Reduction deformity: lower limbs | 0 | 0.0 |
| Gastroschisis/Omphalocele | 1 | 8.7 |
| Congenital hip dislocation | 1 | 8.7 |
| Diaphragmatic hernia | 0 | 0.0 |
| ORAL CLEFT DEFECTS: | 1 | 8.7 |
| Cleft palate without cleft lip | 1 | 8.7 |
| Cleft lip with and without cleft palate | 0 | 0.0 |
| Choanal atresia | 0 | 0.0 |
| OTHER DEFECTS: | 1 | 8.7 |
| Anophthalmia/microphthalmia | 0 | 0.0 |
| Congenital cataract | 1 | 8.7 |
| Aniridia | 0 | 0.0 |
| Anotia/microtia | 0 | 0.0 |
| Lung agenesis/hypoplasia | 0 | 0.0 |
| Fetal alcohol syndrome | 0 | 0.0 |

| At a glance: |
|--------------------------------|
| 1,156 total children born |
| 12 children with birth defects |
| 0.3 % of the state total |

* All rates given are per 10,000 live births, except Hypospadias and Epispadias which are per 10,000 live male births. Additionally, the total number of children in each category may be less than the sum of the children with each individual birth defect since some children may have more than one birth defect.

ST. LUCIE COUNTY

1996 provisional data from the Florida Birth Defects Registry.

| Birth Defect | Number of Diagnoses | Rate* |
|---|---------------------|-------------|
| CENTRAL NERVOUS SYSTEM DEFECTS: | 4 | 18.7 |
| Anencephalus | 0 | 0.0 |
| Spina bifida without anencephalus | 2 | 9.4 |
| Hydrocephalus without spina bifida | 2 | 9.4 |
| Encephalocele | 0 | 0.0 |
| Microcephalus | 0 | 0.0 |
| CHROMOSOMAL DEFECTS: | 2 | 9.4 |
| Trisomy 13 | 0 | 0.0 |
| Down syndrome | 2 | 9.4 |
| Trisomy 18 | 0 | 0.0 |
| GASTROINTESTINAL DEFECTS: | 2 | 9.4 |
| Esophageal atresia/tracheoesophageal fistula | 0 | 0.0 |
| Rectal and large intestinal atresia/stenosis | 2 | 9.4 |
| Hirschsprung's disease (congenital megacolon) | 0 | 0.0 |
| Biliary atresia | 0 | 0.0 |
| GENITAL AND URINARY DEFECTS: | 14 | 65.5 |
| Renal agenesis/hypoplasia | 0 | 0.0 |
| Bladder exstrophy | 0 | 0.0 |
| Obstructive genitourinary defect | 7 | 32.7 |
| Hypospadias and Epispadias | 8 | 72.1 |
| CONGENITAL HEART DEFECTS: | 8 | 37.4 |
| Common truncus | 0 | 0.0 |
| Transposition of great arteries | 0 | 0.0 |
| Tetralogy of Fallot | 0 | 0.0 |
| Ventricular septal defect | 3 | 14.0 |
| Atrial septal defect | 5 | 23.4 |
| Endocardial cushion defect | 0 | 0.0 |
| Pulmonary valve atresia and stenosis | 0 | 0.0 |
| Tricuspid valve atresia and stenosis | 0 | 0.0 |
| Ebstein's anomaly | 0 | 0.0 |
| Aortic valve stenosis | 0 | 0.0 |
| Hypoplastic left heart syndrome | 0 | 0.0 |
| Coarctation of aorta | 0 | 0.0 |
| Pulmonary artery anomalies | 0 | 0.0 |
| MUSCULOSKELETAL DEFECTS: | 13 | 60.8 |
| Reduction deformity: upper limbs | 1 | 4.7 |
| Reduction deformity: lower limbs | 0 | 0.0 |
| Gastroschisis/Omphalocele | 6 | 28.1 |
| Congenital hip dislocation | 6 | 28.1 |
| Diaphragmatic hernia | 0 | 0.0 |
| ORAL CLEFT DEFECTS: | 1 | 4.7 |
| Cleft palate without cleft lip | 0 | 0.0 |
| Cleft lip with and without cleft palate | 0 | 0.0 |
| Choanal atresia | 1 | 4.7 |
| OTHER DEFECTS: | 0 | 0.0 |
| Anophthalmia/microphthalmia | 0 | 0.0 |
| Congenital cataract | 0 | 0.0 |
| Aniridia | 0 | 0.0 |
| Anotia/microtia | 0 | 0.0 |
| Lung agenesis/hypoplasia | 0 | 0.0 |
| Fetal alcohol syndrome | 0 | 0.0 |

| At a glance: |
|--------------------------------|
| 2,138 total children born |
| 42 children with birth defects |
| 1.0 % of the state total |

* All rates given are per 10,000 live births, except Hypospadias and Epispadias which are per 10,000 live male births. Additionally, the total number of children in each category may be less than the sum of the children with each individual birth defect since some children may have more than one birth defect.

SANTA ROSA COUNTY

1996 provisional data from the Florida Birth Defects Registry.

| Birth Defect | Number of Diagnoses | Rate* |
|---|---------------------|-------------|
| CENTRAL NERVOUS SYSTEM DEFECTS: | 1 | 7.1 |
| Anencephalus | 0 | 0.0 |
| Spina bifida without anencephalus | 0 | 0.0 |
| Hydrocephalus without spina bifida | 0 | 0.0 |
| Encephalocele | 0 | 0.0 |
| Microcephalus | 1 | 7.1 |
| CHROMOSOMAL DEFECTS: | 0 | 0.0 |
| Trisomy 13 | 0 | 0.0 |
| Down syndrome | 0 | 0.0 |
| Trisomy 18 | 0 | 0.0 |
| GASTROINTESTINAL DEFECTS: | 0 | 0.0 |
| Esophageal atresia/tracheoesophageal fistula | 0 | 0.0 |
| Rectal and large intestinal atresia/stenosis | 0 | 0.0 |
| Hirschsprung's disease (congenital megacolon) | 0 | 0.0 |
| Biliary atresia | 0 | 0.0 |
| GENITAL AND URINARY DEFECTS: | 11 | 78.3 |
| Renal agenesis/hypoplasia | 0 | 0.0 |
| Bladder exstrophy | 0 | 0.0 |
| Obstructive genitourinary defect | 0 | 0.0 |
| Hypospadias and Epispadias | 11 | 149.1 |
| CONGENITAL HEART DEFECTS: | 13 | 92.5 |
| Common truncus | 0 | 0.0 |
| Transposition of great arteries | 0 | 0.0 |
| Tetralogy of Fallot | 0 | 0.0 |
| Ventricular septal defect | 6 | 42.7 |
| Atrial septal defect | 7 | 49.8 |
| Endocardial cushion defect | 1 | 7.1 |
| Pulmonary valve atresia and stenosis | 0 | 0.0 |
| Tricuspid valve atresia and stenosis | 0 | 0.0 |
| Ebstein's anomaly | 0 | 0.0 |
| Aortic valve stenosis | 0 | 0.0 |
| Hypoplastic left heart syndrome | 0 | 0.0 |
| Coarctation of aorta | 0 | 0.0 |
| Pulmonary artery anomalies | 1 | 7.1 |
| MUSCULOSKELETAL DEFECTS: | 4 | 28.5 |
| Reduction deformity: upper limbs | 0 | 0.0 |
| Reduction deformity: lower limbs | 1 | 7.1 |
| Gastroschisis/Omphalocele | 0 | 0.0 |
| Congenital hip dislocation | 3 | 21.4 |
| Diaphragmatic hernia | 0 | 0.0 |
| ORAL CLEFT DEFECTS: | 4 | 28.5 |
| Cleft palate without cleft lip | 2 | 14.2 |
| Cleft lip with and without cleft palate | 2 | 14.2 |
| Choanal atresia | 0 | 0.0 |
| OTHER DEFECTS: | 0 | 0.0 |
| Anophthalmia/microphthalmia | 0 | 0.0 |
| Congenital cataract | 0 | 0.0 |
| Aniridia | 0 | 0.0 |
| Anotia/microtia | 0 | 0.0 |
| Lung agenesis/hypoplasia | 0 | 0.0 |
| Fetal alcohol syndrome | 0 | 0.0 |

| At a glance: |
|--------------------------------|
| 1,405 total children born |
| 31 children with birth defects |
| 0.8 % of the state total |

* All rates given are per 10,000 live births, except Hypospadias and Epispadias which are per 10,000 live male births. Additionally, the total number of children in each category may be less than the sum of the children with each individual birth defect since some children may have more than one birth defect.

SARASOTA COUNTY

1996 provisional data from the Florida Birth Defects Registry.

| Birth Defect | Number of Diagnoses | Rate* |
|---|---------------------|-------------|
| CENTRAL NERVOUS SYSTEM DEFECTS: | 4 | 15.9 |
| Anencephalus | 0 | 0.0 |
| Spina bifida without anencephalus | 2 | 7.9 |
| Hydrocephalus without spina bifida | 1 | 4.0 |
| Encephalocele | 0 | 0.0 |
| Microcephalus | 1 | 4.0 |
| CHROMOSOMAL DEFECTS: | 9 | 35.7 |
| Trisomy 13 | 1 | 4.0 |
| Down syndrome | 8 | 31.7 |
| Trisomy 18 | 0 | 0.0 |
| GASTROINTESTINAL DEFECTS: | 3 | 11.9 |
| Esophageal atresia/tracheoesophageal fistula | 1 | 4.0 |
| Rectal and large intestinal atresia/stenosis | 2 | 7.9 |
| Hirschsprung's disease (congenital megacolon) | 0 | 0.0 |
| Biliary atresia | 0 | 0.0 |
| GENITAL AND URINARY DEFECTS: | 10 | 39.7 |
| Renal agenesis/hypoplasia | 1 | 4.0 |
| Bladder exstrophy | 0 | 0.0 |
| Obstructive genitourinary defect | 2 | 7.9 |
| Hypospadias and Epispadias | 8 | 62.4 |
| CONGENITAL HEART DEFECTS: | 11 | 43.7 |
| Common truncus | 1 | 4.0 |
| Transposition of great arteries | 1 | 4.0 |
| Tetralogy of Fallot | 0 | 0.0 |
| Ventricular septal defect | 7 | 27.8 |
| Atrial septal defect | 3 | 11.9 |
| Endocardial cushion defect | 0 | 0.0 |
| Pulmonary valve atresia and stenosis | 1 | 4.0 |
| Tricuspid valve atresia and stenosis | 0 | 0.0 |
| Ebstein's anomaly | 0 | 0.0 |
| Aortic valve stenosis | 0 | 0.0 |
| Hypoplastic left heart syndrome | 0 | 0.0 |
| Coarctation of aorta | 0 | 0.0 |
| Pulmonary artery anomalies | 1 | 4.0 |
| MUSCULOSKELETAL DEFECTS: | 7 | 27.8 |
| Reduction deformity: upper limbs | 0 | 0.0 |
| Reduction deformity: lower limbs | 0 | 0.0 |
| Gastroschisis/Omphalocele | 3 | 11.9 |
| Congenital hip dislocation | 4 | 15.9 |
| Diaphragmatic hernia | 0 | 0.0 |
| ORAL CLEFT DEFECTS: | 1 | 4.0 |
| Cleft palate without cleft lip | 0 | 0.0 |
| Cleft lip with and without cleft palate | 1 | 4.0 |
| Choanal atresia | 0 | 0.0 |
| OTHER DEFECTS: | 4 | 15.9 |
| Anophthalmia/microphthalmia | 0 | 0.0 |
| Congenital cataract | 0 | 0.0 |
| Aniridia | 0 | 0.0 |
| Anotia/microtia | 1 | 4.0 |
| Lung agenesis/hypoplasia | 1 | 4.0 |
| Fetal alcohol syndrome | 2 | 7.9 |

| At a glance: |
|--------------------------------|
| 2,520 total children born |
| 40 children with birth defects |
| 1.0 % of the state total |

* All rates given are per 10,000 live births, except Hypospadias and Epispadias which are per 10,000 live male births. Additionally, the total number of children in each category may be less than the sum of the children with each individual birth defect since some children may have more than one birth defect.

SEMINOLE COUNTY

1996 provisional data from the Florida Birth Defects Registry.

| Birth Defect | Number of Diagnoses | Rate* |
|---|---------------------|-------------|
| CENTRAL NERVOUS SYSTEM DEFECTS: | 8 | 18.3 |
| Anencephalus | 0 | 0.0 |
| Spina bifida without anencephalus | 1 | 2.3 |
| Hydrocephalus without spina bifida | 4 | 9.2 |
| Encephalocele | 0 | 0.0 |
| Microcephalus | 3 | 6.9 |
| CHROMOSOMAL DEFECTS: | 8 | 18.3 |
| Trisomy 13 | 0 | 0.0 |
| Down syndrome | 7 | 16.0 |
| Trisomy 18 | 1 | 2.3 |
| GASTROINTESTINAL DEFECTS: | 8 | 18.3 |
| Esophageal atresia/tracheoesophageal fistula | 3 | 6.9 |
| Rectal and large intestinal atresia/stenosis | 4 | 9.2 |
| Hirschsprung's disease (congenital megacolon) | 2 | 4.6 |
| Biliary atresia | 0 | 0.0 |
| GENITAL AND URINARY DEFECTS: | 31 | 71.1 |
| Renal agenesis/hypoplasia | 2 | 4.6 |
| Bladder exstrophy | 0 | 0.0 |
| Obstructive genitourinary defect | 13 | 29.8 |
| Hypospadias and Epispadias | 17 | 75.9 |
| CONGENITAL HEART DEFECTS: | 39 | 89.4 |
| Common truncus | 1 | 2.3 |
| Transposition of great arteries | 2 | 4.6 |
| Tetralogy of Fallot | 3 | 6.9 |
| Ventricular septal defect | 18 | 41.3 |
| Atrial septal defect | 15 | 34.4 |
| Endocardial cushion defect | 0 | 0.0 |
| Pulmonary valve atresia and stenosis | 4 | 9.2 |
| Tricuspid valve atresia and stenosis | 1 | 2.3 |
| Ebstein's anomaly | 1 | 2.3 |
| Aortic valve stenosis | 0 | 0.0 |
| Hypoplastic left heart syndrome | 0 | 0.0 |
| Coarctation of aorta | 0 | 0.0 |
| Pulmonary artery anomalies | 2 | 4.6 |
| MUSCULOSKELETAL DEFECTS: | 15 | 34.4 |
| Reduction deformity: upper limbs | 0 | 0.0 |
| Reduction deformity: lower limbs | 1 | 2.3 |
| Gastroschisis/Omphalocele | 2 | 4.6 |
| Congenital hip dislocation | 11 | 25.2 |
| Diaphragmatic hernia | 1 | 2.3 |
| ORAL CLEFT DEFECTS: | 8 | 18.3 |
| Cleft palate without cleft lip | 2 | 4.6 |
| Cleft lip with and without cleft palate | 6 | 13.8 |
| Choanal atresia | 0 | 0.0 |
| OTHER DEFECTS: | 2 | 4.6 |
| Anophthalmia/microphthalmia | 0 | 0.0 |
| Congenital cataract | 1 | 2.3 |
| Aniridia | 0 | 0.0 |
| Anotia/microtia | 0 | 0.0 |
| Lung agenesis/hypoplasia | 1 | 2.3 |
| Fetal alcohol syndrome | 0 | 0.0 |

| At a glance: |
|---------------------------------|
| 4,363 total children born |
| 105 children with birth defects |
| 2.6 % of the state total |

* All rates given are per 10,000 live births, except Hypospadias and Epispadias which are per 10,000 live male births. Additionally, the total number of children in each category may be less than the sum of the children with each individual birth defect since some children may have more than one birth defect.

SUMTER COUNTY

1996 provisional data from the Florida Birth Defects Registry.

| Birth Defect | Number of Diagnoses | Rate* |
|---|---------------------|-------|
| CENTRAL NERVOUS SYSTEM DEFECTS: | 0 | 0.0 |
| Anencephalus | 0 | 0.0 |
| Spina bifida without anencephalus | 0 | 0.0 |
| Hydrocephalus without spina bifida | 0 | 0.0 |
| Encephalocele | 0 | 0.0 |
| Microcephalus | 0 | 0.0 |
| CHROMOSOMAL DEFECTS: | 0 | 0.0 |
| Trisomy 13 | 0 | 0.0 |
| Down syndrome | 0 | 0.0 |
| Trisomy 18 | 0 | 0.0 |
| GASTROINTESTINAL DEFECTS: | 0 | 0.0 |
| Esophageal atresia/tracheoesophageal fistula | 0 | 0.0 |
| Rectal and large intestinal atresia/stenosis | 0 | 0.0 |
| Hirschsprung's disease (congenital megacolon) | 0 | 0.0 |
| Biliary atresia | 0 | 0.0 |
| GENITAL AND URINARY DEFECTS: | 2 | 52.5 |
| Renal agenesis/hypoplasia | 0 | 0.0 |
| Bladder exstrophy | 0 | 0.0 |
| Obstructive genitourinary defect | 1 | 26.2 |
| Hypospadias and Epispadias | 1 | 49.8 |
| CONGENITAL HEART DEFECTS: | 1 | 26.2 |
| Common truncus | 0 | 0.0 |
| Transposition of great arteries | 0 | 0.0 |
| Tetralogy of Fallot | 0 | 0.0 |
| Ventricular septal defect | 0 | 0.0 |
| Atrial septal defect | 0 | 0.0 |
| Endocardial cushion defect | 0 | 0.0 |
| Pulmonary valve atresia and stenosis | 0 | 0.0 |
| Tricuspid valve atresia and stenosis | 0 | 0.0 |
| Ebstein's anomaly | 0 | 0.0 |
| Aortic valve stenosis | 0 | 0.0 |
| Hypoplastic left heart syndrome | 0 | 0.0 |
| Coarctation of aorta | 1 | 26.2 |
| Pulmonary artery anomalies | 0 | 0.0 |
| MUSCULOSKELETAL DEFECTS: | 2 | 52.5 |
| Reduction deformity: upper limbs | 0 | 0.0 |
| Reduction deformity: lower limbs | 0 | 0.0 |
| Gastroschisis/Omphalocele | 1 | 26.2 |
| Congenital hip dislocation | 1 | 26.2 |
| Diaphragmatic hernia | 0 | 0.0 |
| ORAL CLEFT DEFECTS: | 0 | 0.0 |
| Cleft palate without cleft lip | 0 | 0.0 |
| Cleft lip with and without cleft palate | 0 | 0.0 |
| Choanal atresia | 0 | 0.0 |
| OTHER DEFECTS: | 0 | 0.0 |
| Anophthalmia/microphthalmia | 0 | 0.0 |
| Congenital cataract | 0 | 0.0 |
| Aniridia | 0 | 0.0 |
| Anotia/microtia | 0 | 0.0 |
| Lung agenesis/hypoplasia | 0 | 0.0 |
| Fetal alcohol syndrome | 0 | 0.0 |

| |
|-------------------------------|
| At a glance: |
| 381 total children born |
| 4 children with birth defects |
| 0.1 % of the state total |

* All rates given are per 10,000 live births, except Hypospadias and Epispadias which are per 10,000 live male births. Additionally, the total number of children in each category may be less than the sum of the children with each individual birth defect since some children may have more than one birth defect.

SUWANEE COUNTY

1996 provisional data from the Florida Birth Defects Registry.

| Birth Defect | Number of Diagnoses | Rate* |
|---|---------------------|--------------|
| CENTRAL NERVOUS SYSTEM DEFECTS: | 1 | 26.4 |
| Anencephalus | 0 | 0.0 |
| Spina bifida without anencephalus | 0 | 0.0 |
| Hydrocephalus without spina bifida | 0 | 0.0 |
| Encephalocele | 0 | 0.0 |
| Microcephalus | 1 | 26.4 |
| CHROMOSOMAL DEFECTS: | 0 | 0.0 |
| Trisomy 13 | 0 | 0.0 |
| Down syndrome | 0 | 0.0 |
| Trisomy 18 | 0 | 0.0 |
| GASTROINTESTINAL DEFECTS: | 1 | 26.4 |
| Esophageal atresia/tracheoesophageal fistula | 0 | 0.0 |
| Rectal and large intestinal atresia/stenosis | 1 | 26.4 |
| Hirschsprung's disease (congenital megacolon) | 0 | 0.0 |
| Biliary atresia | 0 | 0.0 |
| GENITAL AND URINARY DEFECTS: | 0 | 0.0 |
| Renal agenesis/hypoplasia | 0 | 0.0 |
| Bladder exstrophy | 0 | 0.0 |
| Obstructive genitourinary defect | 0 | 0.0 |
| Hypospadias and Epispadias | 0 | 0.0 |
| CONGENITAL HEART DEFECTS: | 4 | 105.5 |
| Common truncus | 0 | 0.0 |
| Transposition of great arteries | 0 | 0.0 |
| Tetralogy of Fallot | 0 | 0.0 |
| Ventricular septal defect | 2 | 52.8 |
| Atrial septal defect | 0 | 0.0 |
| Endocardial cushion defect | 0 | 0.0 |
| Pulmonary valve atresia and stenosis | 1 | 26.4 |
| Tricuspid valve atresia and stenosis | 0 | 0.0 |
| Ebstein's anomaly | 0 | 0.0 |
| Aortic valve stenosis | 0 | 0.0 |
| Hypoplastic left heart syndrome | 0 | 0.0 |
| Coarctation of aorta | 1 | 26.4 |
| Pulmonary artery anomalies | 0 | 0.0 |
| MUSCULOSKELETAL DEFECTS: | 0 | 0.0 |
| Reduction deformity: upper limbs | 0 | 0.0 |
| Reduction deformity: lower limbs | 0 | 0.0 |
| Gastroschisis/Omphalocele | 0 | 0.0 |
| Congenital hip dislocation | 0 | 0.0 |
| Diaphragmatic hernia | 0 | 0.0 |
| ORAL CLEFT DEFECTS: | 0 | 0.0 |
| Cleft palate without cleft lip | 0 | 0.0 |
| Cleft lip with and without cleft palate | 0 | 0.0 |
| Choanal atresia | 0 | 0.0 |
| OTHER DEFECTS: | 0 | 0.0 |
| Anophthalmia/microphthalmia | 0 | 0.0 |
| Congenital cataract | 0 | 0.0 |
| Aniridia | 0 | 0.0 |
| Anotia/microtia | 0 | 0.0 |
| Lung agenesis/hypoplasia | 0 | 0.0 |
| Fetal alcohol syndrome | 0 | 0.0 |

| |
|-------------------------------|
| At a glance: |
| 379 total children born |
| 6 children with birth defects |
| 0.1 % of the state total |

* All rates given are per 10,000 live births, except Hypospadias and Epispadias which are per 10,000 live male births. Additionally, the total number of children in each category may be less than the sum of the children with each individual birth defect since some children may have more than one birth defect.

TAYLOR COUNTY

1996 provisional data from the Florida Birth Defects Registry.

| Birth Defect | Number of Diagnoses | Rate* |
|---|---------------------|-------|
| CENTRAL NERVOUS SYSTEM DEFECTS: | 0 | 0.0 |
| Anencephalus | 0 | 0.0 |
| Spina bifida without anencephalus | 0 | 0.0 |
| Hydrocephalus without spina bifida | 0 | 0.0 |
| Encephalocele | 0 | 0.0 |
| Microcephalus | 0 | 0.0 |
| CHROMOSOMAL DEFECTS: | 0 | 0.0 |
| Trisomy 13 | 0 | 0.0 |
| Down syndrome | 0 | 0.0 |
| Trisomy 18 | 0 | 0.0 |
| GASTROINTESTINAL DEFECTS: | 0 | 0.0 |
| Esophageal atresia/tracheoesophageal fistula | 0 | 0.0 |
| Rectal and large intestinal atresia/stenosis | 0 | 0.0 |
| Hirschsprung's disease (congenital megacolon) | 0 | 0.0 |
| Biliary atresia | 0 | 0.0 |
| GENITAL AND URINARY DEFECTS: | 2 | 88.1 |
| Renal agenesis/hypoplasia | 0 | 0.0 |
| Bladder exstrophy | 0 | 0.0 |
| Obstructive genitourinary defect | 0 | 0.0 |
| Hypospadias and Epispadias | 2 | 155.0 |
| CONGENITAL HEART DEFECTS: | 1 | 44.1 |
| Common truncus | 0 | 0.0 |
| Transposition of great arteries | 0 | 0.0 |
| Tetralogy of Fallot | 0 | 0.0 |
| Ventricular septal defect | 0 | 0.0 |
| Atrial septal defect | 1 | 44.1 |
| Endocardial cushion defect | 0 | 0.0 |
| Pulmonary valve atresia and stenosis | 0 | 0.0 |
| Tricuspid valve atresia and stenosis | 0 | 0.0 |
| Ebstein's anomaly | 0 | 0.0 |
| Aortic valve stenosis | 0 | 0.0 |
| Hypoplastic left heart syndrome | 0 | 0.0 |
| Coarctation of aorta | 0 | 0.0 |
| Pulmonary artery anomalies | 0 | 0.0 |
| MUSCULOSKELETAL DEFECTS: | 0 | 0.0 |
| Reduction deformity: upper limbs | 0 | 0.0 |
| Reduction deformity: lower limbs | 0 | 0.0 |
| Gastroschisis/Omphalocele | 0 | 0.0 |
| Congenital hip dislocation | 0 | 0.0 |
| Diaphragmatic hernia | 0 | 0.0 |
| ORAL CLEFT DEFECTS: | 0 | 0.0 |
| Cleft palate without cleft lip | 0 | 0.0 |
| Cleft lip with and without cleft palate | 0 | 0.0 |
| Choanal atresia | 0 | 0.0 |
| OTHER DEFECTS: | 0 | 0.0 |
| Anophthalmia/microphthalmia | 0 | 0.0 |
| Congenital cataract | 0 | 0.0 |
| Aniridia | 0 | 0.0 |
| Anotia/microtia | 0 | 0.0 |
| Lung agenesis/hypoplasia | 0 | 0.0 |
| Fetal alcohol syndrome | 0 | 0.0 |

| |
|-------------------------------|
| At a glance: |
| 227 total children born |
| 3 children with birth defects |
| 0.1 % of the state total |

* All rates given are per 10,000 live births, except Hypospadias and Epispadias which are per 10,000 live male births. Additionally, the total number of children in each category may be less than the sum of the children with each individual birth defect since some children may have more than one birth defect.

UNION COUNTY

1996 provisional data from the Florida Birth Defects Registry.

| Birth Defect | Number of Diagnoses | Rate* |
|---|---------------------|-------------|
| CENTRAL NERVOUS SYSTEM DEFECTS: | 1 | 82.0 |
| Anencephalus | 0 | 0.0 |
| Spina bifida without anencephalus | 0 | 0.0 |
| Hydrocephalus without spina bifida | 0 | 0.0 |
| Encephalocele | 0 | 0.0 |
| Microcephalus | 1 | 82.0 |
| CHROMOSOMAL DEFECTS: | 0 | 0.0 |
| Trisomy 13 | 0 | 0.0 |
| Down syndrome | 0 | 0.0 |
| Trisomy 18 | 0 | 0.0 |
| GASTROINTESTINAL DEFECTS: | 0 | 0.0 |
| Esophageal atresia/tracheoesophageal fistula | 0 | 0.0 |
| Rectal and large intestinal atresia/stenosis | 0 | 0.0 |
| Hirschsprung's disease (congenital megacolon) | 0 | 0.0 |
| Biliary atresia | 0 | 0.0 |
| GENITAL AND URINARY DEFECTS: | 1 | 82.0 |
| Renal agenesis/hypoplasia | 0 | 0.0 |
| Bladder exstrophy | 0 | 0.0 |
| Obstructive genitourinary defect | 1 | 82.0 |
| Hypospadias and Epispadias | 0 | 0.0 |
| CONGENITAL HEART DEFECTS: | 0 | 0.0 |
| Common truncus | 0 | 0.0 |
| Transposition of great arteries | 0 | 0.0 |
| Tetralogy of Fallot | 0 | 0.0 |
| Ventricular septal defect | 0 | 0.0 |
| Atrial septal defect | 0 | 0.0 |
| Endocardial cushion defect | 0 | 0.0 |
| Pulmonary valve atresia and stenosis | 0 | 0.0 |
| Tricuspid valve atresia and stenosis | 0 | 0.0 |
| Ebstein's anomaly | 0 | 0.0 |
| Aortic valve stenosis | 0 | 0.0 |
| Hypoplastic left heart syndrome | 0 | 0.0 |
| Coarctation of aorta | 0 | 0.0 |
| Pulmonary artery anomalies | 0 | 0.0 |
| MUSCULOSKELETAL DEFECTS: | 0 | 0.0 |
| Reduction deformity: upper limbs | 0 | 0.0 |
| Reduction deformity: lower limbs | 0 | 0.0 |
| Gastroschisis/Omphalocele | 0 | 0.0 |
| Congenital hip dislocation | 0 | 0.0 |
| Diaphragmatic hernia | 0 | 0.0 |
| ORAL CLEFT DEFECTS: | 0 | 0.0 |
| Cleft palate without cleft lip | 0 | 0.0 |
| Cleft lip with and without cleft palate | 0 | 0.0 |
| Choanal atresia | 0 | 0.0 |
| OTHER DEFECTS: | 0 | 0.0 |
| Anophthalmia/microphthalmia | 0 | 0.0 |
| Congenital cataract | 0 | 0.0 |
| Aniridia | 0 | 0.0 |
| Anotia/microtia | 0 | 0.0 |
| Lung agenesis/hypoplasia | 0 | 0.0 |
| Fetal alcohol syndrome | 0 | 0.0 |

| |
|-------------------------------|
| At a glance: |
| 122 total children born |
| 2 children with birth defects |
| 0.0 % of the state total |

* All rates given are per 10,000 live births, except Hypospadias and Epispadias which are per 10,000 live male births. Additionally, the total number of children in each category may be less than the sum of the children with each individual birth defect since some children may have more than one birth defect.

VOLUSIA COUNTY

1996 provisional data from the Florida Birth Defects Registry.

| Birth Defect | Number of Diagnoses | Rate* |
|---|---------------------|-------------|
| CENTRAL NERVOUS SYSTEM DEFECTS: | 5 | 11.9 |
| Anencephalus | 1 | 2.4 |
| Spina bifida without anencephalus | 3 | 7.2 |
| Hydrocephalus without spina bifida | 0 | 0.0 |
| Encephalocele | 0 | 0.0 |
| Microcephalus | 1 | 2.4 |
| CHROMOSOMAL DEFECTS: | 6 | 14.3 |
| Trisomy 13 | 1 | 2.4 |
| Down syndrome | 5 | 11.9 |
| Trisomy 18 | 0 | 0.0 |
| GASTROINTESTINAL DEFECTS: | 2 | 4.8 |
| Esophageal atresia/tracheoesophageal fistula | 0 | 0.0 |
| Rectal and large intestinal atresia/stenosis | 2 | 4.8 |
| Hirschsprung's disease (congenital megacolon) | 0 | 0.0 |
| Biliary atresia | 0 | 0.0 |
| GENITAL AND URINARY DEFECTS: | 17 | 40.6 |
| Renal agenesis/hypoplasia | 0 | 0.0 |
| Bladder exstrophy | 0 | 0.0 |
| Obstructive genitourinary defect | 8 | 19.1 |
| Hypospadias and Epispadias | 9 | 42.7 |
| CONGENITAL HEART DEFECTS: | 26 | 62.1 |
| Common truncus | 0 | 0.0 |
| Transposition of great arteries | 1 | 2.4 |
| Tetralogy of Fallot | 1 | 2.4 |
| Ventricular septal defect | 9 | 21.5 |
| Atrial septal defect | 7 | 16.7 |
| Endocardial cushion defect | 0 | 0.0 |
| Pulmonary valve atresia and stenosis | 4 | 9.6 |
| Tricuspid valve atresia and stenosis | 1 | 2.4 |
| Ebstein's anomaly | 0 | 0.0 |
| Aortic valve stenosis | 1 | 2.4 |
| Hypoplastic left heart syndrome | 0 | 0.0 |
| Coarctation of aorta | 0 | 0.0 |
| Pulmonary artery anomalies | 3 | 7.2 |
| MUSCULOSKELETAL DEFECTS: | 14 | 33.4 |
| Reduction deformity: upper limbs | 2 | 4.8 |
| Reduction deformity: lower limbs | 0 | 0.0 |
| Gastroschisis/Omphalocele | 7 | 16.7 |
| Congenital hip dislocation | 3 | 7.2 |
| Diaphragmatic hernia | 2 | 4.8 |
| ORAL CLEFT DEFECTS: | 7 | 16.7 |
| Cleft palate without cleft lip | 2 | 4.8 |
| Cleft lip with and without cleft palate | 6 | 14.3 |
| Choanal atresia | 0 | 0.0 |
| OTHER DEFECTS: | 3 | 7.2 |
| Anophthalmia/microphthalmia | 0 | 0.0 |
| Congenital cataract | 1 | 2.4 |
| Aniridia | 0 | 0.0 |
| Anotia/microtia | 0 | 0.0 |
| Lung agenesis/hypoplasia | 2 | 4.8 |
| Fetal alcohol syndrome | 0 | 0.0 |

| At a glance: |
|--------------------------------|
| 4,187 total children born |
| 76 children with birth defects |
| 1.9 % of the state total |

* All rates given are per 10,000 live births, except Hypospadias and Epispadias which are per 10,000 live male births. Additionally, the total number of children in each category may be less than the sum of the children with each individual birth defect since some children may have more than one birth defect.

WAKULLA COUNTY

1996 provisional data from the Florida Birth Defects Registry.

| Birth Defect | Number of Diagnoses | Rate* |
|---|---------------------|-------|
| CENTRAL NERVOUS SYSTEM DEFECTS: | 0 | 0.0 |
| Anencephalus | 0 | 0.0 |
| Spina bifida without anencephalus | 0 | 0.0 |
| Hydrocephalus without spina bifida | 0 | 0.0 |
| Encephalocele | 0 | 0.0 |
| Microcephalus | 0 | 0.0 |
| CHROMOSOMAL DEFECTS: | 0 | 0.0 |
| Trisomy 13 | 0 | 0.0 |
| Down syndrome | 0 | 0.0 |
| Trisomy 18 | 0 | 0.0 |
| GASTROINTESTINAL DEFECTS: | 0 | 0.0 |
| Esophageal atresia/tracheoesophageal fistula | 0 | 0.0 |
| Rectal and large intestinal atresia/stenosis | 0 | 0.0 |
| Hirschsprung's disease (congenital megacolon) | 0 | 0.0 |
| Biliary atresia | 0 | 0.0 |
| GENITAL AND URINARY DEFECTS: | 0 | 0.0 |
| Renal agenesis/hypoplasia | 0 | 0.0 |
| Bladder exstrophy | 0 | 0.0 |
| Obstructive genitourinary defect | 0 | 0.0 |
| Hypospadias and Epispadias | 0 | 0.0 |
| CONGENITAL HEART DEFECTS: | 1 | 45.0 |
| Common truncus | 0 | 0.0 |
| Transposition of great arteries | 0 | 0.0 |
| Tetralogy of Fallot | 0 | 0.0 |
| Ventricular septal defect | 0 | 0.0 |
| Atrial septal defect | 0 | 0.0 |
| Endocardial cushion defect | 0 | 0.0 |
| Pulmonary valve atresia and stenosis | 1 | 45.0 |
| Tricuspid valve atresia and stenosis | 0 | 0.0 |
| Ebstein's anomaly | 0 | 0.0 |
| Aortic valve stenosis | 0 | 0.0 |
| Hypoplastic left heart syndrome | 0 | 0.0 |
| Coarctation of aorta | 0 | 0.0 |
| Pulmonary artery anomalies | 0 | 0.0 |
| MUSCULOSKELETAL DEFECTS: | 1 | 45.0 |
| Reduction deformity: upper limbs | 0 | 0.0 |
| Reduction deformity: lower limbs | 0 | 0.0 |
| Gastroschisis/Omphalocele | 1 | 45.0 |
| Congenital hip dislocation | 0 | 0.0 |
| Diaphragmatic hernia | 0 | 0.0 |
| ORAL CLEFT DEFECTS: | 0 | 0.0 |
| Cleft palate without cleft lip | 0 | 0.0 |
| Cleft lip with and without cleft palate | 0 | 0.0 |
| Choanal atresia | 0 | 0.0 |
| OTHER DEFECTS: | 0 | 0.0 |
| Anophthalmia/microphthalmia | 0 | 0.0 |
| Congenital cataract | 0 | 0.0 |
| Aniridia | 0 | 0.0 |
| Anotia/microtia | 0 | 0.0 |
| Lung agenesis/hypoplasia | 0 | 0.0 |
| Fetal alcohol syndrome | 0 | 0.0 |

| |
|-------------------------------|
| At a glance: |
| 222 total children born |
| 2 children with birth defects |
| 0.1 % of the state total |

* All rates given are per 10,000 live births, except Hypospadias and Epispadias which are per 10,000 live male births. Additionally, the total number of children in each category may be less than the sum of the children with each individual birth defect since some children may have more than one birth defect.

WALTON COUNTY

1996 provisional data from the Florida Birth Defects Registry.

| Birth Defect | Number of Diagnoses | Rate* |
|---|---------------------|-------|
| CENTRAL NERVOUS SYSTEM DEFECTS: | 1 | 26.6 |
| Anencephalus | 0 | 0.0 |
| Spina bifida without anencephalus | 0 | 0.0 |
| Hydrocephalus without spina bifida | 0 | 0.0 |
| Encephalocele | 0 | 0.0 |
| Microcephalus | 1 | 26.6 |
| CHROMOSOMAL DEFECTS: | 0 | 0.0 |
| Trisomy 13 | 0 | 0.0 |
| Down syndrome | 0 | 0.0 |
| Trisomy 18 | 0 | 0.0 |
| GASTROINTESTINAL DEFECTS: | 0 | 0.0 |
| Esophageal atresia/tracheoesophageal fistula | 0 | 0.0 |
| Rectal and large intestinal atresia/stenosis | 0 | 0.0 |
| Hirschsprung's disease (congenital megacolon) | 0 | 0.0 |
| Biliary atresia | 0 | 0.0 |
| GENITAL AND URINARY DEFECTS: | 1 | 26.6 |
| Renal agenesis/hypoplasia | 0 | 0.0 |
| Bladder exstrophy | 0 | 0.0 |
| Obstructive genitourinary defect | 1 | 26.6 |
| Hypospadias and Epispadias | 0 | 0.0 |
| CONGENITAL HEART DEFECTS: | 3 | 79.8 |
| Common truncus | 0 | 0.0 |
| Transposition of great arteries | 0 | 0.0 |
| Tetralogy of Fallot | 0 | 0.0 |
| Ventricular septal defect | 1 | 26.6 |
| Atrial septal defect | 2 | 53.2 |
| Endocardial cushion defect | 0 | 0.0 |
| Pulmonary valve atresia and stenosis | 0 | 0.0 |
| Tricuspid valve atresia and stenosis | 0 | 0.0 |
| Ebstein's anomaly | 0 | 0.0 |
| Aortic valve stenosis | 0 | 0.0 |
| Hypoplastic left heart syndrome | 0 | 0.0 |
| Coarctation of aorta | 0 | 0.0 |
| Pulmonary artery anomalies | 0 | 0.0 |
| MUSCULOSKELETAL DEFECTS: | 0 | 0.0 |
| Reduction deformity: upper limbs | 0 | 0.0 |
| Reduction deformity: lower limbs | 0 | 0.0 |
| Gastroschisis/Omphalocele | 0 | 0.0 |
| Congenital hip dislocation | 0 | 0.0 |
| Diaphragmatic hernia | 0 | 0.0 |
| ORAL CLEFT DEFECTS: | 0 | 0.0 |
| Cleft palate without cleft lip | 0 | 0.0 |
| Cleft lip with and without cleft palate | 0 | 0.0 |
| Choanal atresia | 0 | 0.0 |
| OTHER DEFECTS: | 0 | 0.0 |
| Anophthalmia/microphthalmia | 0 | 0.0 |
| Congenital cataract | 0 | 0.0 |
| Aniridia | 0 | 0.0 |
| Anotia/microtia | 0 | 0.0 |
| Lung agenesis/hypoplasia | 0 | 0.0 |
| Fetal alcohol syndrome | 0 | 0.0 |

| |
|-------------------------------|
| At a glance: |
| 376 total children born |
| 5 children with birth defects |
| 0.1 % of the state total |

* All rates given are per 10,000 live births, except Hypospadias and Epispadias which are per 10,000 live male births. Additionally, the total number of children in each category may be less than the sum of the children with each individual birth defect since some children may have more than one birth defect.

WASHINGTON COUNTY

1996 provisional data from the Florida Birth Defects Registry.

| Birth Defect | Number of Diagnoses | Rate* |
|---|---------------------|--------------|
| CENTRAL NERVOUS SYSTEM DEFECTS: | 1 | 39.8 |
| Anencephalus | 0 | 0.0 |
| Spina bifida without anencephalus | 0 | 0.0 |
| Hydrocephalus without spina bifida | 1 | 39.8 |
| Encephalocele | 0 | 0.0 |
| Microcephalus | 0 | 0.0 |
| CHROMOSOMAL DEFECTS: | 0 | 0.0 |
| Trisomy 13 | 0 | 0.0 |
| Down syndrome | 0 | 0.0 |
| Trisomy 18 | 0 | 0.0 |
| GASTROINTESTINAL DEFECTS: | 0 | 0.0 |
| Esophageal atresia/tracheoesophageal fistula | 0 | 0.0 |
| Rectal and large intestinal atresia/stenosis | 0 | 0.0 |
| Hirschsprung's disease (congenital megacolon) | 0 | 0.0 |
| Biliary atresia | 0 | 0.0 |
| GENITAL AND URINARY DEFECTS: | 3 | 119.5 |
| Renal agenesis/hypoplasia | 0 | 0.0 |
| Bladder exstrophy | 0 | 0.0 |
| Obstructive genitourinary defect | 1 | 39.8 |
| Hypospadias and Epispadias | 2 | 146.0 |
| CONGENITAL HEART DEFECTS: | 1 | 39.8 |
| Common truncus | 0 | 0.0 |
| Transposition of great arteries | 0 | 0.0 |
| Tetralogy of Fallot | 0 | 0.0 |
| Ventricular septal defect | 0 | 0.0 |
| Atrial septal defect | 1 | 39.8 |
| Endocardial cushion defect | 0 | 0.0 |
| Pulmonary valve atresia and stenosis | 0 | 0.0 |
| Tricuspid valve atresia and stenosis | 0 | 0.0 |
| Ebstein's anomaly | 0 | 0.0 |
| Aortic valve stenosis | 0 | 0.0 |
| Hypoplastic left heart syndrome | 0 | 0.0 |
| Coarctation of aorta | 0 | 0.0 |
| Pulmonary artery anomalies | 1 | 39.8 |
| MUSCULOSKELETAL DEFECTS: | 0 | 0.0 |
| Reduction deformity: upper limbs | 0 | 0.0 |
| Reduction deformity: lower limbs | 0 | 0.0 |
| Gastroschisis/Omphalocele | 0 | 0.0 |
| Congenital hip dislocation | 0 | 0.0 |
| Diaphragmatic hernia | 0 | 0.0 |
| ORAL CLEFT DEFECTS: | 0 | 0.0 |
| Cleft palate without cleft lip | 0 | 0.0 |
| Cleft lip with and without cleft palate | 0 | 0.0 |
| Choanal atresia | 0 | 0.0 |
| OTHER DEFECTS: | 0 | 0.0 |
| Anophthalmia/microphthalmia | 0 | 0.0 |
| Congenital cataract | 0 | 0.0 |
| Aniridia | 0 | 0.0 |
| Anotia/microtia | 0 | 0.0 |
| Lung agenesis/hypoplasia | 0 | 0.0 |
| Fetal alcohol syndrome | 0 | 0.0 |

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| At a glance: |
| 251 total children born |
| 4 children with birth defects |
| 0.1 % of the state total |

* All rates given are per 10,000 live births, except Hypospadias and Epispadias which are per 10,000 live male births. Additionally, the total number of children in each category may be less than the sum of the children with each individual birth defect since some children may have more than one birth defect.