Childhood Cancer in Florida, 1997-2006

Bureau of Epidemiology

Cancers in children, including adolescents, are often more difficult to recognize than adult cancers because early symptoms are usually nonspecific. While most adult cancers result from lifestyle factors, the causes of childhood cancers are unknown. Parents should ensure that their children have regular health check-ups and be alert to any unusual, persisting symptoms including: unusual mass or swelling; unexplained paleness and/or loss of energy; sudden tendency to bruise; persistent, localized pain or limping; prolonged fever or illness; frequent headaches, often with vomiting; sudden eye or vision changes; and excessive, rapid weight loss. Childhood cancers can be treated by a combination of therapies based on the type and stage of cancer. For optimal care, children, including adolescents, should be diagnosed and treated by a multidisciplinary team at a facility that specializes in childhood cancers.

This report presents cancer data on children and adolescents aged 0-19 years old in Florida from 1997-2006. Incidence data are obtained from the Florida Cancer Data System (FCDS). Rates in this report are expressed in million populations, due to small sample size. The FCDS data used for this report have been grouped according to the Surveillance Epidemiology and End Results (SEER) modifications of the International Classification of Childhood Cancers, Third Edition (ICCC) specifications.

Number of Cancer Cases:

- In Florida, 7,065 children were diagnosed with cancer between 1997 and 2006.
- Children in the 0-4 years age group had the highest percentage of cancer cases (31.9%) while the 5-9 years age group had the lowest (17.9%).
- Males (54.4%) and whites (79.2%) had higher percentage of cancer cases compared to females (45.6%) and blacks (17.3%).

Table 1. Demographic Characteristics of Children with Cancer, Florida, 1997-2006

	Count	Percent
All	7,065	100.0
0-4	2,257	31.9
5-9	1,267	17.9
10-14	1,422	20.1
15-19	2,119	30.0
Male	3,840	54.4
Female	3,224	45.6
White	5,593	79.2
Black	1,224	17.3

Values for other and unknown races are not shown

Table 2. Age-Adjusted† and Age-Specific‡ Incidence Rates for All Childhood Cancers, Florida, 1997-2006

	Rates per Million
All †	168.6
0-4 ‡	226.7
5-9 ‡	120.4
10-14 ‡	131.5
15-19 ‡	199.1
Male †	179.0
Female †	157.6
White †	179.0
Black †	131.9

Incidence Rates:

- The age-adjusted incidence rate of all childhood cancers diagnosed between 1997 and 2006 was 168.6 per million children.

- The age-specific incidence rate was higher among children in the 0-4 years age group (226.7 per million) compared to children in older age groups.
- Males (179.0 per million) and whites (179.0 per million) had higher age-adjusted incidence rates compared to females (157.6 per million) and blacks (131.9 per million), respectively.

Types of Childhood Cancer:

- The childhood cancer site groups shown in Table 3 are based on the International Classification of Childhood Cancer (ICCC), which is based on the International Classification of Diseases for Oncology, 3rd Edition (ICD-O-3).
- Leukemia had the highest age-adjusted incidence rate (42.0 per million) followed by malignant tumors of central nervous system (CNS) (30.8 per million) and lymphoma (25.0 per million).
- Of the specified cancer types, hepatic tumors were the least commonly diagnosed childhood cancer with an age-adjusted rate of 2.0 per million children.
- Figures 1-4 show the age-specific rates of childhood cancers by ICCC groups and figures 5 and 6 show the age-adjusted rates by sex and race.
- Leukemia was the most commonly diagnosed cancer group among those in the 0-9 years age group, both sexes, and both race groups; and the second most commonly diagnosed cancer group among those in the 10-14 years age group.
- CNS neoplasms were the second most commonly occurring cancer group among those in the 0-9 years age group, both sexes and both race groups; and the leading cancer among those in the 10-14 years age group.
- The age-specific incidence rate of leukemia was higher among those in the 0-4 years age group (76.9 per million) compared to the other age groups.
- The age-adjusted incidence rate of leukemia was higher among males (47.1 per million) and whites (46.0 per million) compared to females (36.5 per million) and blacks (28.0 per million), respectively.

Table 3. Childhood Cancers by ICCC Category, Florida, 1997-2006

Cancer Site Group	Count	Percentage	Age-Adjusted Incidence Rate (per million)
Leukemias, myeloproliferative diseases, and myelodysplastic diseases	1,753	24.8	42.0
CNS and miscellaneous intracranial and intraspinal neoplasms	1,289	18.2	30.8
Lymphomas and reticuloendothelial neoplasms	1,054	14.9	25.0
Other malignant epithelial neoplasms/carcinomas and malignant melanomas	646	9.1	15.3
Soft tissue and other extraosseous sarcomas	549	7.8	13.1
Malignant bone tumors	433	6.1	10.3
Germ cell tumors, trophoblastic tumors, and neoplasms of gonads	406	5.7	9.6
Neuroblastomas and other peripheral nervous cell (SNS) tumors	371	5.3	9.0
Renal tumors	299	4.2	7.2
Retinoblastomas	142	2.0	3.4
Hepatic tumors	81	1.1	2.0
Other and unspecified malignant neoplasms and unspecified malignant neoplasms	42	0.6	1.0

Fig. 1. Age-Specific Incidence Rates of Childhood Cancers by ICCC Category, 0-4 Years Age Group, Florida, 1997-2006

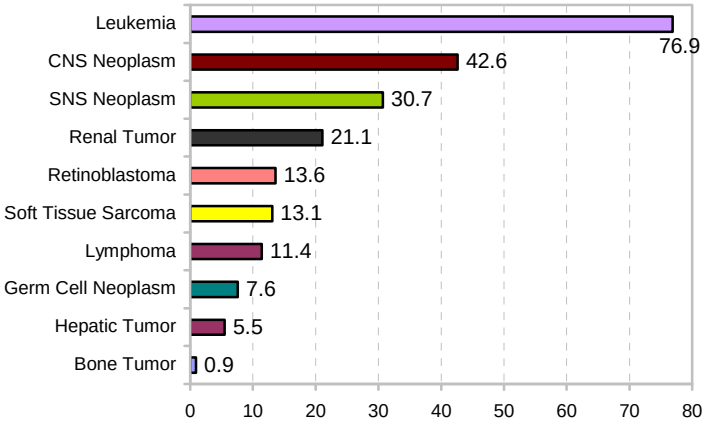


Fig. 2. Age-Specific Incidence Rates of Childhood Cancers by ICCC Category, 5-9 Years Age Group, Florida, 1997-2006

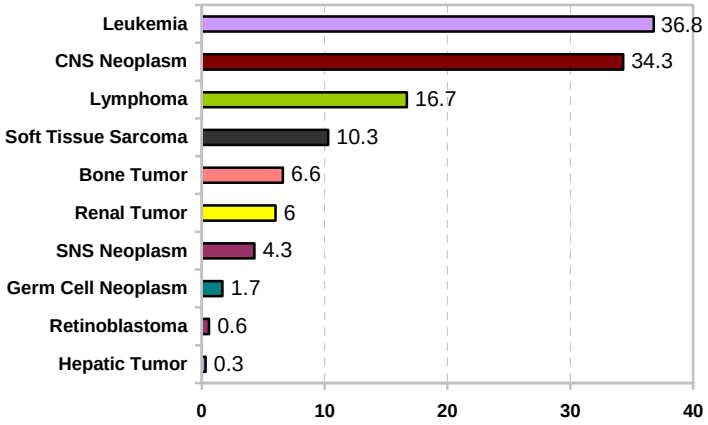


Fig. 3. Age-Specific Incidence Rates of Childhood Cancers by ICCC Category, 10-14 Years Age Group, Florida, 1997-2006

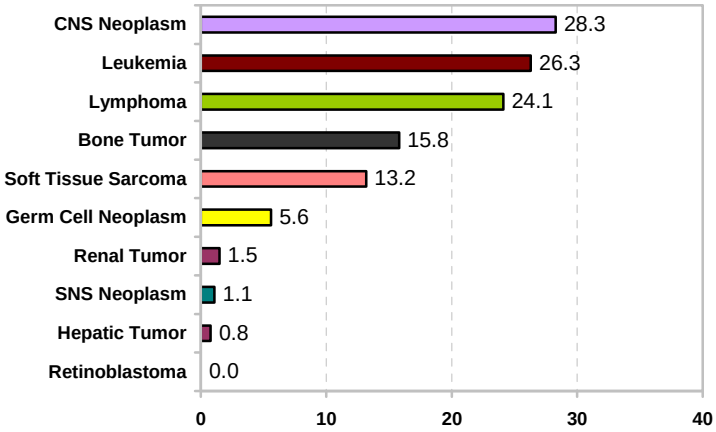


Fig. 4. Age-Specific Incidence Rates of Childhood Cancers by ICCC Category, 15-19 Years Age Group, Florida, 1997-2006

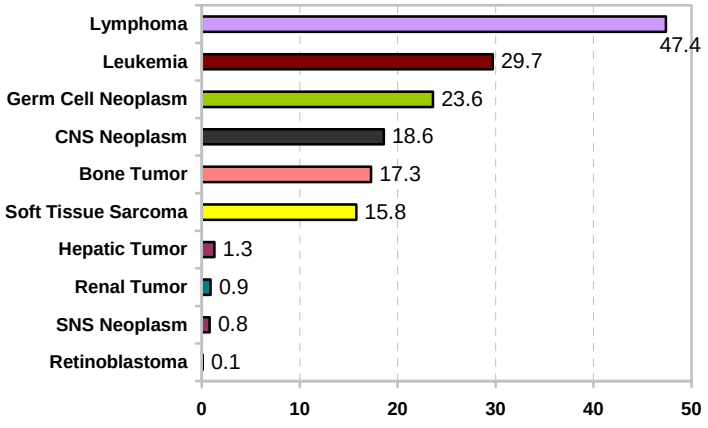


Fig. 5. Age-Adjusted Incidence Rates of Childhood Cancers by ICCC Category, by Sex, Florida, 1997-2006

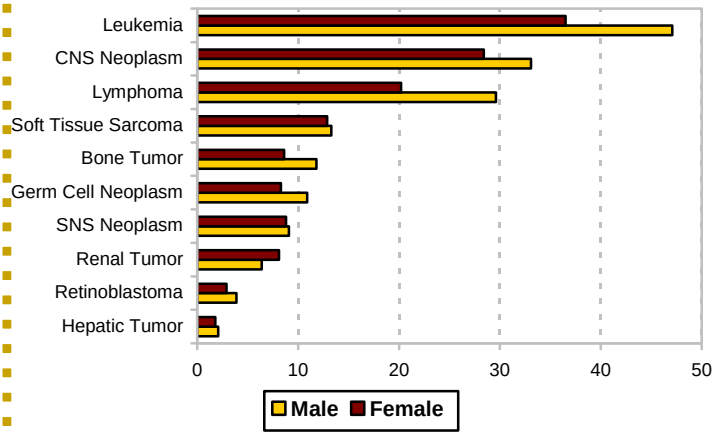
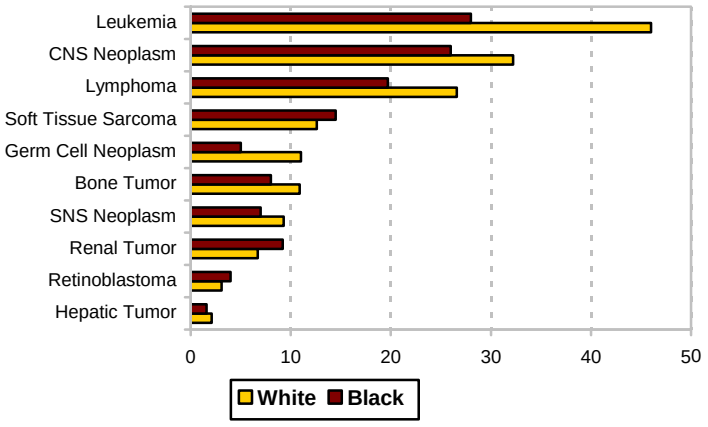


Fig. 6. Age-Adjusted Incidence Rates of Childhood Cancers by ICCC Category, by Race, Florida, 1997-2006



Trends in Incidence Rate:

- The 2006 (170.4 per million) incidence rate of childhood cancer was 22% higher than the rate in 1981 (140.2 per million).
- The 2006 incidence rate of childhood cancer increased significantly in all age groups, except among those in the 5 to 9 years age group, compared to the incidence rate in 1981.
- The incidence rate of childhood cancer also increased significantly among both sexes and blacks from 1981 to 2006.
- The incidence rates of cancer sites in all ICCC categories were higher in 2006 compared to the rates in 1981, except for lymphoma, hepatic tumors, and germ cell neoplasms. *(Note: Trend data for ICCC categories are not shown. Please visit Florida Cancer Data System (FCDS) at: https://fcds.med.miami.edu/inc/statistics.shtml#dynrates for details)*.

Fig. 7. Age-Adjusted Incidence Rates of All Childhood Cancers, by Sex, Florida, 1981-2006

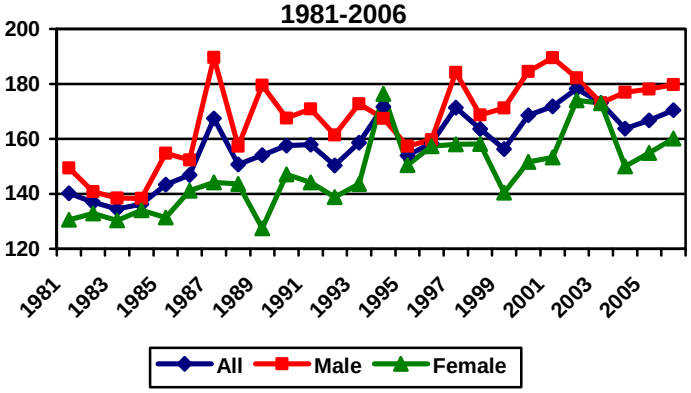


Fig. 8. Age-Adjusted Incidence Rates of All Childhood Cancers, by Age Group, Florida, 1981-2006

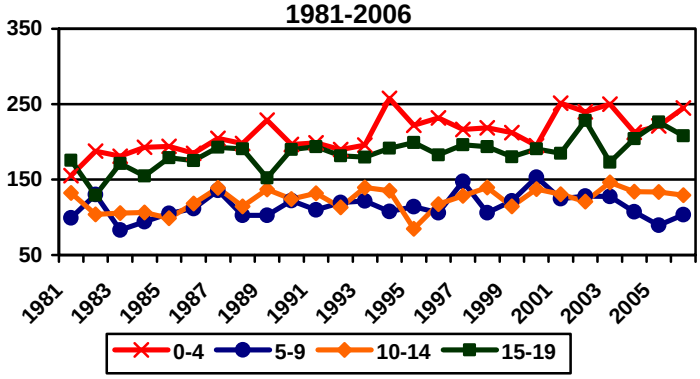
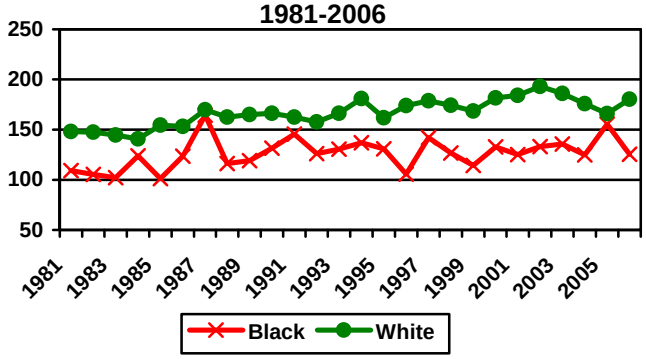


Fig. 9. Age-Adjusted Incidence Rates of All Childhood Cancers, by Race, Florida, 1981-2006



For additional information on this report, please contact Florida Department of Health, Bureau of Epidemiology at 850.245.4401 or visit our website at: http://www.floridachronicdisease.org/.

For additional information on childhood cancer, please visit Children's Medical Services at www.cms-kids.com, the National Cancer Institute at www.cancer.gov, or the Florida Association of Pediatric Tumor Centers, Inc., at www.faptp.org.