A fact sheet from the Greater Bay Area Cancer Registry

Adolescent and Young Adult Cancers in the Greater Bay Area, 1991-2005

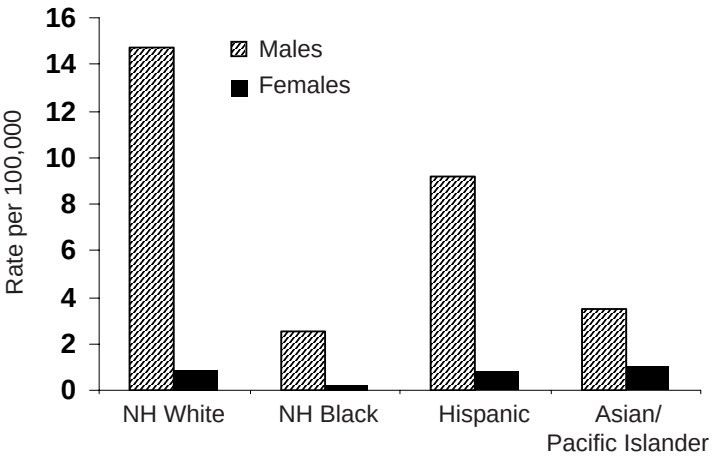
Spring 2008

In 2005, 5% of all cancers in the Greater Bay Area occurred in adolescents and young adults 15 to 39 years of age. The most common cancer sites in this age group, accounting for 88% of cancers in adolescents and young adults during the period 1991-2005, were breast, lymphoma, skin, endocrine, female and male genital, kaposi sarcoma, digestive system, brain, and leukemia. Germ cell cancer, acute lymphoblastic leukemia (ALL), osteo, Ewings and synovial sarcoma, non-Hodgkin lymphoma (NHL) and Hodgkin lymphoma (HL) account for 24% of cancer in this age group.

Germ Cell Cancer

Germ cells are responsible for production of eggs or sperm in the reproductive organs. Germ cell cancer results when abnormal growth and development occurs, producing a tumor. Most ovarian and testicular tumors in children originate from germ cells. There are no known environmental or toxic factors associated with germ cell cancer, and the 5-year relative survival rate is over 90% (UCSF). From 1991-2005 the incidence rate of germ cell cancer in the Greater Bay Area was highest among non-Hispanic (NH) whites and lowest among non-Hispanic blacks (Figure 1).

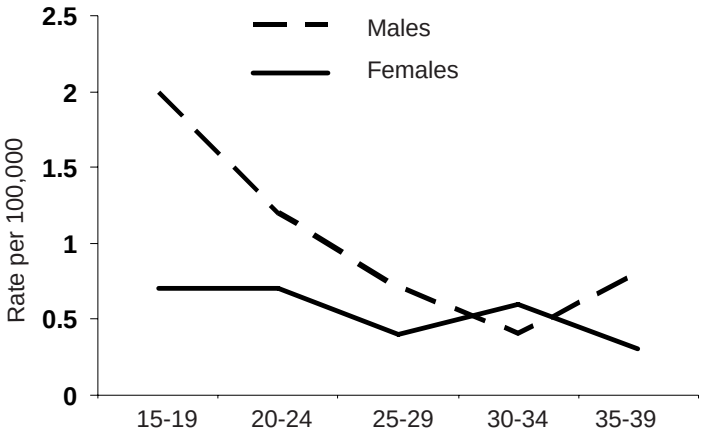
Figure 1. Age-adjusted incidence rates of germ cell cancer by race in adolescents and young adults, Greater Bay Area, 2001-2005



Acute Lymphoblastic Leukemia

ALL is a cancer of the white blood cells. The incidence rate of ALL from 2001-2005 was higher among males than females and decreased with age (Figure 2). Hispanic young adults and adolescents experienced the highest rate of ALL followed by Asian/Pacific Islanders (1.1 and 0.8 per 100,000 respectively). In addition to being a male, in utero x-ray exposure, postnatal radiation, down syndrome, and socioeconomic status are a few of the known risk factors for ALL (Bleyer et al).

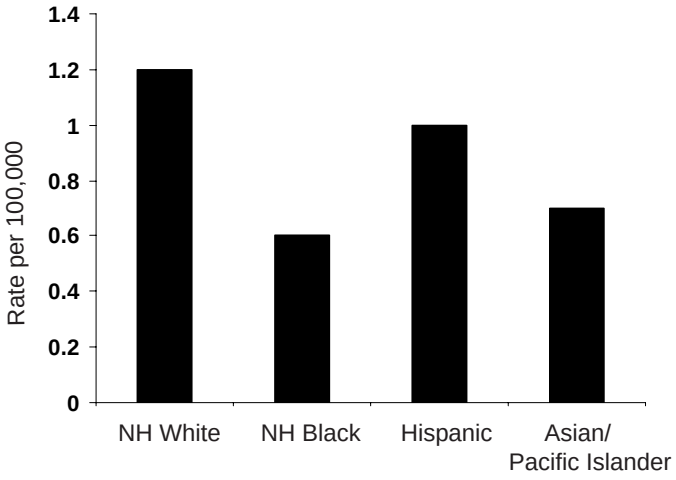
Figure 2. Age-specific incidence rates of ALL by age group, Greater Bay Area, 2001-2005



Osteo, Ewings, Synovial Sarcoma

Sarcomas are cancers of the connective tissues (nerves, muscles, joints, bones, and blood vessels). There are over 50 subtypes of sarcomas and nationwide sarcomas account for 15-20% of all childhood cancers (Shriver). As shown in Figure 3, the incidence rate for these three sarcomas is highest among non-Hispanic whites and lowest among non-Hispanic blacks. Risk factors vary by type of sarcoma.

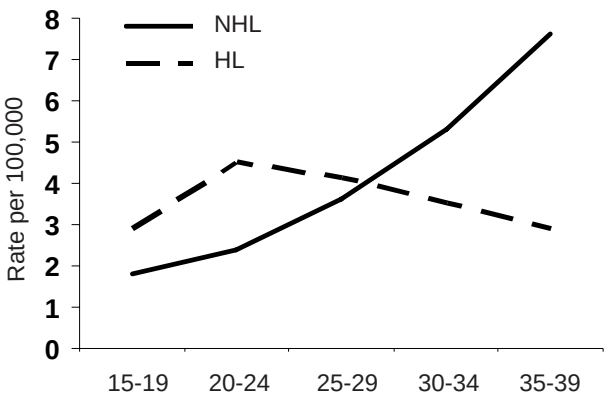
Figure 3. Age-adjusted incidence rates of osteo, Ewings and synovial sarcoma by race in adolescents and young adults, Greater Bay Area, 1991-2005



Non-Hodgkin and Hogkin Lymphoma

In 2005, NHL and HL accounted for 14% of all cancers in adolescents and young adults in the Greater Bay Area . The incidence of HL peaks between the ages of 20 to 24, while the incidence rate of NHL increases with age (Figure 4). Overall, the incidence of both NHL and HL from 1991 to 2005 was highest among non-Hispanic whites, and lowest among non-Hispanic Asian/Pacific Islanders. Although the NHL and HL are different diseases they share some risk factors, such as Epstein-Barr Virus and human immunodeficiency virus infection, overall male predominance, and an association with immunodeficiency syndromes (Bleyer et al).

Figure 4. Age-specific incidence rates of Hodgkins and non-Hodgkins lymphoma, Greater Bay Area 1991-2005



References:
University of San Fransisco (UCSF) Children's Hospital. Germ Cell Tumor. Retrieved Januray 30, 2008. http://www.ucsfhealth.org/childrens/medical_services/cancer/germ/index.htmls.

The Liddy Shriver Sarcoma Initiative. Sarcomas. Retrieved January 30, 2008 http://liddyshriversarcomainitiative.org/Sarcomas/sarcomas.htm

Bleyer A, O'Leary M, Barr R, Reis LAG (eds): *Cancer Epidemiology in Older Adolescents and Young Adults 15-29 Years of Age, Including SEER Incidence and Survival: 1975-2000.* National Cancer Institute, NIH Pub, No.06-5767. Bethesda Md 2006.

Technical Notes: Because age distributions vary by population, a standard statistical procedure called "age-adjustment" was used so that we can examine differences in cancer incidence and mortality rates due to factors other than age. Rates are age-adjusted (using the Year 2000 population standard) unless noted to be age-specific. Race/ethnicity was categorized as four mutually-exclusive racial/ethnic groups: non-Hispanic whites (whites), non-Hispanic blacks (blacks), Hispanics, and non-Hispanic Asians/Pacific Islanders (Asians/Pacific Islanders).

About the data: Cancer data have been collected in Alameda, Contra Costa, Marin, San Francisco, and San Mateo counties since 1973, and in Monterey, San Benito, Santa Clara, and Santa Cruz counties since 1988, forming two parts (Regions 1 and 8) of the California Cancer Registry. These counties, referred to as the Greater San Francisco Bay Area are also part of the National Cancer Institute's Surveillance, Epidemiology, and End Results (SEER) registry program.

Founded in 1974, the mission of the **Northern California Cancer Center** is to reduce the burden of cancer through surveillance, epidemiology, prevention research and education. Essential to this mission is collaboration with partners in cancer research, education and the community.

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