



**North Carolina Department of Health and Human Services
Division of Public Health**

1931 Mail Service Center • Raleigh, North Carolina 27699-1931

Beverly Eaves Perdue, Governor
Albert A. Delia, Acting Secretary

Laura Gerald, MD, MPH
State Health Director

October 17, 2012

Dear Ms. Harris,

Thank you for your inquiry to the Central Cancer Registry regarding cancer cases in a Wake County neighborhood. We receive many requests such as yours for information about cancers in local areas throughout the state. The Central Cancer Registry compiles information on cancers across North Carolina and we monitor cancer rates for many types of cancer for each county annually to see if there appear to be areas of the state that need special attention.

Although much has been learned about cancer over the past couple of decades, there is still much that is not known about the causes of cancer. What we do know is that cancer is not one disease, but a group of diseases that behave similarly. We know that different types of cancers are caused by different things. For example, cigarette smoking has been implicated in causing lung cancer, some chemical exposures are associated with leukemia, and prolonged exposure to sunlight causes some types of skin cancer. Genetic research has shown that defects in certain genes result in a much higher likelihood that a person will get cancer. What is not known is how genetic factors and exposures to cancer causing agents interact.

Many people do not realize how common cancers are. It is estimated that one out of every two men and one out of every three women will develop a cancer of some type during his or her lifetime. As a result, it is common to find what appear to be cancer cases clustering in neighborhoods over a period of years. This will occur in any neighborhood. As people age, their chance of getting cancer increases, and so as we look at a community, it is common to see increasing numbers of cancer cases as the people in the community age.

Cancers are diseases that develop over many years. As a result, it is difficult to know when any specific cancer began to develop, and consequently, what the specific factor was which caused the cancer. Because people in our society move several times during their lives, the evaluation of clusters of cancer cases is quite challenging. One can never be certain that a specific cancer was caused by something in the community in which the person currently resides.

When clusters of cancer cases are investigated, we look for several things that are clues to likely associations with exposures in the community. These are:

1. Groups of cases of all the same type of cancer (such as brain cancer or leukemia). Because different things cause different types of cancer, cases of many different types of cancer do not constitute a cluster of cases.
2. Groups of cases among children, or ones with an unusual age distribution.
3. Cases diagnosed during a relatively short time interval. Cases diagnosed over a span of years do not constitute a cluster of cases unless there is consistency in the type of cancer.
4. Clusters of rare cancers. Because lung, breast, colon, and prostate cancers are so common, it is very difficult to find any association between them and exposures in a community.

In order to evaluate the cancer risk in the neighborhood requested, all of the cases of cancer in our database diagnosed from 1990 to 2011 were identified. During this time a total of 54,732 cancer cases were diagnosed in Wake County. Across the county, the four major cancers - female breast, colon/rectum, prostate, and lung - comprised 56% of the 54,732 cases. Pediatric cancers comprised about 1% of the total number of cases and 79% of the cases were age 50 or older, when cancer diagnoses are quite common. During this period, it is noted that the number of diagnosed cases have gradually increased for all cancer types but the cases are not concentrated in a short period of time.



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Further, we looked at all of the cases of cancer in our database diagnosed from 2005 to 2009. The 2005-2009 age-adjusted rates for female breast and prostate cancers in Wake County was relatively higher than the state rate, while the rates for colorectal and lung/bronchus cancers were slightly lower than the state rate.

In addition, concern was expressed over Ewing's sarcoma incidence. In order to evaluate the risk of cancer in Wake County, all of the cases of cancer in our database diagnosed from 1990 to 2011 were identified. Over this period, there were fewer than 1,800 cases of Ewing's sarcoma diagnosed in the state and fewer than 120 cases diagnosed in Wake County. The 2005-2009 age-adjusted rate for this cancer in Wake County was similar to the state rate. The number of cases gradually increases over the time period, but they are not concentrated in a short time period. In addition, we examined the geographical distribution of the cases provided by you. According to addresses provided, these cases were not concentrated in one area.

It is possible that there is an environmental risk for cancer in the area; however, we do not see a higher occurrence of cancers usually associated with environmental factors at this time. If you have questions regarding any of this information, please do not hesitate to contact me at Gary.YH.Leung@dhhs.nc.gov or (919) 715-4559.

At the request of the North Carolina Senate, House of Representatives and local health departments, copies of neighborhood cancer evaluations are also sent to those who represent and serve the area of the state being evaluated.

Sincerely,

Gary Leung, Ph.D.
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CC:

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