



## KAUAI CANCER INQUIRIES

*People have raised concerns on Kauai about the health impact of pesticides used by agricultural chemical companies. In response to inquiries from community members on Kauai, the Hawaii Tumor Registry (HTR) evaluated the incidence of cancer on Kauai compared to the entire state of Hawaii. The evaluation found that there is not a higher incidence of cancer on Kauai compared to the rest of the state; except for melanoma. This fact sheet addresses some key issues in evaluating cancer in communities.*

## HAWAII TUMOR REGISTRY FINDINGS

In April 2013, HTR evaluated the incidence of cancer by census tracts on Kauai compared to the entire state of Hawaii. Incidence is the number of newly diagnosed cases of cancer in a specific population during a specific time period. The evaluation found that there is not a higher incidence of cancer on Kauai compared to the rest of the state, except for melanoma. The primary risk factor for melanoma is exposure to ultraviolet radiation. The higher rates of melanoma on Kauai may be explained by a larger proportion of Caucasians (Whites) residing in the northern region of Kauai. In Hawaii, individuals of Caucasian ancestry have the highest incidence of melanoma compared to other groups.

## PESTICIDES AND CANCER

The U.S. Environmental Protection Agency (EPA) evaluates all pesticides for harmful human and ecological effects before they can be sold and used in the United States. EPA assesses possible cancer risk by considering how strong the evidence is that the pesticide causes cancer and the potential for it to get into your body. The pesticides are evaluated to determine if they cause cancer in laboratory animals, and for their potential to cause cancer in humans. These studies are required for all pesticides used on food and some non-food pesticides that could lead to long-term exposures in humans.

## CANCER FACTS

People may suspect a cancer cluster in their neighborhood or workplace if several people, pets or animals develop cancer. They sometimes suspect that the cancer may be caused by hazardous substances in the environment. It's important to remember that the term "cancer" is used to describe a group of more than 100 diseases. Thus, as a whole, cancer is a common disease.

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According to the American Cancer Society nearly 1 in 2 men and 1 out of 3 women in the United States will develop some form of cancer over the course of their lifetime. So, it is not unusual for several people in a neighborhood or workplace to develop cancer around the same time.

## **CAUSES OF CANCER**

Doctors and scientists often cannot explain why one person develops cancer and another does not. Cancer may be caused by a variety of factors acting alone or together, usually over a period of many years. These risk factors include age, family history and exposures to viruses and bacteria, lifestyle choices, sunlight exposure and on the job exposure to chemicals. Of the more than 12,000 cancer deaths in Hawaii between 2000 and 2005, it is estimated that nearly 30 percent could have been prevented by avoiding tobacco use and up to 35 percent could have been averted by improving nutrition and maintaining a normal body weight. Geographic, economic, and educational barriers and other social inequities influence lifestyle factors that increase a person's chance of developing cancer. The Hawaii State Department of Health (DOH) through its *Foundations for Healthy Generations Initiative* is committed to addressing the social conditions and physical environments where people live, work and play in order to improve the health of all groups in Hawaii.

## **CANCERS DUE TO HAZARDOUS CHEMICAL SUBSTANCES ARE RARE**

When all the risk factors are considered together, the role of chemical exposures in causing cancer is small and not very clear. Most health scientists believe that a relatively small percentage of cancers are related to exposure to hazardous chemicals in the home, community or workplace.

## **CANCER CLUSTERS ARE RARE**

Cancer clusters are rare, especially those that are linked to environmental exposures. Each type of cancer has its own causes and risk factors. An increase in the number of individuals being diagnosed with cancer in a particular area does not necessarily mean that a cancer cluster exists. Comparison of the incidence of cancer in the area to that of the state or nation is necessary to determine if it truly represents a cluster. According to the National Cancer Institute, to be considered a true cluster, rather than a coincidence it involves one or more of the following factors.

- A rare type of cancer, rather than common types
- A large number of cases of one type of cancer, rather than several different types

- An increased number of cases of a certain type of cancer in an age group that is not usually affected by that type of cancer

What often appears to be a cluster may actually reflect the expected number of cases or it may be due to chance alone. Because a variety of factors often work together to create the appearance of a cluster where nothing abnormal is occurring, most reports of suspected cancer clusters are not shown to be true clusters.

## **EXPERIENCE IN THE UNITED STATES WITH CANCER CLUSTER INVESTIGATIONS**

Perhaps the best known cancer cluster in the United States emerged in the 1960's when cases of a rare cancer of the chest and abdomen, called *mesothelioma*, was traced to occupational exposure to asbestos. Since then, thousands of statistical analyses and many intensive cancer cluster studies have been done by local, state, or federal agencies. Only two possible cases out of thousands of investigations were able to show a statistically significant increase of cancer linked to an environmental chemical cause. These two cases in Woburn, Massachusetts and Tom's River/Dover Township, New Jersey, involved an increased incidence of *leukemia* in young children associated with exposure to industrial chemicals in drinking water and air (for Tom's River/Dover Township).

## **HAWAII TUMOR REGISTRY**

HTR conducts cancer surveillance and maintains a confidential database of information on all reportable cases of cancer, benign brain tumors and many blood disorders diagnosed in Hawaii. Data are published to inform local, national and international research efforts. The Registry is jointly operated by the University of Hawaii Cancer Center and DOH.

The Hawaii Tumor Registry and DOH will continue to work together to provide information to members of the public about incidence rates of cancer in their communities.

For more information on cancer surveillance in Hawaii please see Hawaii Cancer Facts and Figures, 2010. (<http://www.crch.org/PDF/po/HawaiiCancerFactsandFigures2010.pdf>)

You may also visit the DOH website at [health.hawaii.gov](http://health.hawaii.gov)