

cancer cluster investigations

What are they?
What do they do?

Call the Florida Department of Health, Division of Environmental Health, Office of Environmental Public Health and Medicine at **850-245-4250** and ask to speak to someone about a cancer cluster investigation.



What is cancer?

Cancer is an uncontrolled growth and spread of abnormal cells any place in the body. There are many types of cancer. All cancers are not the same.

The risk for most types of cancer goes up with age. Therefore, it is important to consider age when trying to see what may be the cause of cancer. Other risk factors can add to the chance of getting cancer. These risk factors include where someone lives, their family's health history and health habits. It is important to be aware of these factors when trying to understand why and how often cancer occurs in an area.

Some general health habits that may add risk for cancer development:

1. **Whether or not someone smokes, or uses tobacco in other ways;**
2. **Whether or not someone drinks alcohol;**
3. **Whether or not someone eats a healthy diet; and**
4. **Whether or not someone gets enough exercise.**

Cancers in different parts of the body are often caused by different risk factors. For example, asbestos is known to be a risk factor for lung cancer. However, asbestos is not a risk factor for breast cancer. Exposure to radiation or benzene is a risk factor for certain types of leukemia (blood cancer). They are not, though, for colon cancer. What you eat and how active you keep yourself are factors for colon cancer. How much sun you get is a risk factor for skin cancer. Yet for most other cancers, sun is not a risk.

Cancer is often not caused by only one factor. Each type of cancer is almost always caused by a mix of factors. For most types of cancers, how well the body responds goes down with age. Therefore, most types of cancer are far more common in older people.

Because of new, better ways to treat cancer, there is now more hope for a cure when someone finds out that they have cancer. With many types of cancer, cases can be cured when caught early. Some of these types are cancer of the breast, cervix and colon. Making sure you get the right kind of screening tests can possibly help stop the disease and help you have a life free from cancer.

What cancers occur most frequently?

Cancer is a very common disease. The American Cancer Society says one in three people will get cancer during their lifetime. The following table shows the rates of the five most common types of cancer in the state. These rates are adjusted for age and are shown by gender:

Age-Adjusted Incidence Rates per 100,000 Population for Selected Cancer Sites by Gender, Florida 2003

Five Most Common Types of Cancer

Females		Males	
All Cancers*	377.6	All Cancers (*)	503.4
Breast	105.8	Prostate	124.4
Lung and bronchus	56.3	Lung and bronchus	85.1
Colorectal	40.5	Colorectal	54.1
Uterine	17.8	Bladder	35.3
Non-Hodgkin's	13.71	Head and Neck	27.1

*Excludes nonmelanoma skin cancer.

Source: Bureau of Epidemiology, Florida Department of Health

For details on the rates of the numbers of cases of cancer in Florida, go to: <http://fcds.med.miami.edu/inc/statistics.shtml>

What are cancer clusters?

When people learn that several friends, family members or neighbors have found out that they have cancer, cancer clusters are often suspected. Cancer clusters are also sometimes suspected when people get cancer who work at the same place or have some other factors in common. Cancer

clusters are higher numbers of the same type of cancer cases than expected within a period of time and area.

An excess of cancer is more likely to be a cluster if it occurs in a group of people where these cancers are not likely to occur. For example, we would not expect to find many cancer cases among children in a small geographic area. We also would not expect to find lung cancer in nonsmokers or breast cancer in men. These cases are simply not expected for those kinds of groups.

Because all cancers are not caused by the same factors, what was thought to be a cancer cluster usually is found to have occurred by chance. The cases rarely are found to relate to factors in the environment.

What is the purpose of a cancer cluster investigation?

Cancer cluster investigations are done to see if an unexpected number of cases of cancer have occurred. If a cause can be found, steps can be taken to get rid of the cause.

To analyze a suspected cancer cluster questions that must be answered include:

1. **Is there excess in the number of cases of a certain type of cancer in the area of concern?**
2. **Is there a common way people come into contact with something in the environment, like chemicals?**
3. **Have the chemicals of concern been associated with the cancers of concern?**

What sources of data are used in a cancer cluster investigation?

In Florida, the main source of data used in a cluster investigation is the Florida Cancer Data System (FCDS). Other statewide cancer reports are also looked at. So are other sources of vital data, such as whether people in an area are known to use tobacco. In some cases other things are checked. These include pathology reports, medical records, or death certificates. All studies include steps to make sure that health records and histories are kept protected.

To see whether an excess of cancer cases exists, recent data on the people who live in an area must be on hand. Known pollutants, how people might come into contact with them, and other risk factors must also be looked at.

How is incidence of cancer calculated in a cancer cluster investigation?

In a cancer cluster investigation, the rate of disease is the number of new cases in a group of people that occur for the certain period of time being studied. The rate of disease is also expressed as a rate by dividing the number of new cases by the number of people at risk. As a rule, the FCDS and the National Cancer Institute report rates per 100,000 persons.

How are cases of cancer confirmed in a cancer cluster investigation?

Before cluster reports can be looked at, the details of each case must be known. Some data that each case must have includes:

1. **Age of onset, or when someone was found to have cancer,**
2. **Race,**
3. **Sex (or gender),**
4. **Type of cancer,**
5. **When a doctor found the cancer, and**
6. **Where someone lived at the time the cancer was found and how long they lived there.**

A cancer cluster investigation must include people who are trained in a special way to study diseases, people who can figure the rate of cancer cases, doctors, and people who can find risk factors in the environment.

It is vital to be sure that cases reported by the public truly have cancer. Two common problems when the public reports possible cancer clusters are:

1. Many diseases with names that sound exotic might be thought to be cancer. For example: Lou Gehrig's disease, Cystic fibrosis, Ulcerative colitis, and Pernicious anemia.

For all cases, a doctor must decide someone has cancer before the case can be included in a cluster investigation. This medical proof is usually found through review of the FCDS. Other things can also be looked at to show proof. This includes review of hospital records, records of the doctor taking care of someone with cancer, or a death certificate when someone dies of cancer.

2. Cancers are often commonly thought to be the same and to have the same causes. However, it is important to make sure where the cancer is in the body and what type of cancer it is.

For example, one type of cancer might have a different cause than another type of cancer. Therefore, what looks like a cluster of cancer might not really be one because of the different types and causes.

What agencies work on a cancer cluster investigation?

If an investigation at first seems to look like it could be a cancer cluster, the local county health department works on it. Other resources in the region or county might also help with it. These agencies might include; the local County Environmental Commission, the Florida Department of Health, and the Florida Department of Environmental Protection.

How are an excessive number of cases determined?

Someone who is studying a suspected cluster must know how many people there are in a community. They must also know about the people's age, race, and sex. The investigator then computes the number of cancers that would be expected in that certain age, race or sex group. In true cancer clusters, the number of cases found will be higher than the expected number by more than can be explained by chance. These are also called "meaningful" clusters. Other factors must be considered to decide if a cancer cluster truly exists. Causes must also be considered to see if there is a link with the air, soil or water, or not.

What about exposures to contaminants in the area being studied in a cancer cluster investigation?

A cluster investigation must show the following; (a) if possible chemicals are known to be in the environment or not, and if so, (b) if there is a way for people to come into contact with the chemicals, if so, (c) where people come into contact with chemicals, (d) how long any contact occurred, (e) how much of a chemical people came into contact with, and (f) whether or not people live there who are more likely to be affected (such as children, old people, or someone who was sick before).

When an excessive number of cancer cases are found to exist in an area, the cluster investigation will look at records to answer these kinds of questions. When there are no records, the investigation will recommend ways to keep track of this data in the future and steps to take to protect people.

Who should people contact if a cancer cluster is suspected?

If a cancer cluster is thought to exist, the first call should be made to the local county health department. The CHD will follow the required DOH protocol or set of rules for further study.

For additional information:

<http://www.cancer.org>

<http://www.cancer.gov/>

<http://fcds.med.miami.edu/>

<http://www.cdc.gov/nceh/clusters/default.htm>

