Cancer Cluster Information

What is a Cancer Cluster?

A cancer cluster is the occurrence of a greater-than-expected number of cases of a specific cancer within a group of people, a geographic area or a period of time.

Some cancer clusters are random occurrences with unrelated exposes and happen by chance. Some cancer clusters are due to a common exposure and the cause needs to be identified and eliminated. Some factors may indicate that an alleged cluster is due to a common exposure. When evaluating cancer clusters, each cancer site is considered a separate disease.

Some Cancer Facts

- Cancer is the uncontrolled growth and spread of abnormal cells anywhere in the body. Cancer is not just one disease; it is actually an umbrella term for at least 100 different but related diseases.
- Each type of cancer has certain known and/or suspected risk factors associated with it.
- Cancers have many different causes, including smoking, obesity, physical inactivity, genetic predisposition, environmental factors and occupation.
- Environmental factors include not only air, water and soil, but also substances and conditions in the home and workplace. It also includes diet; use of tobacco, alcohol or drugs; and exposure to chemicals, sunlight and other forms of radiation.
- Cancer is almost always caused by a combination of factors that interact in ways that are not yet fully understood.
- Cancer is more likely to occur as people get older; because people are living longer, more cases of cancer can be expected in the future. This may create the impression of an abnormally high number of cancer cases.
- Carcinogenesis (the process by which normal cells are transformed into cancer cells) involves a series of changes within cells that usually occur over the course of many years. More than 10 years can go by between the beginning of carcinogenesis and the diagnosis of cancer, which makes it difficult to pinpoint the cause of the cancer.
- Cancer clusters can occur by chance. For some types and some geographic areas, a small number of cases may be enough to change an area's cancer rate from below average to above average. While the increase may be real, the additional cases may simply be the result of variations that occur randomly or by chance, and not be due to a single cause. Many communities have below average cancer rates and many others have above average cancer rates. Small communities tend to be more different from average while larger communities tend to be closer to average just because a small community with just a few cases can make a big difference to the rates.

  These cancer facts must be kept in mind when a report is received about a suspected cancer cluster in a neighborhood or workplace.

Cancer Cluster Investigations

- Over the past few years, a steadily rising number of suspected clusters of many types of cancer have been reported by the public. The majority of subsequent investigations do not yield a common factor because most cancer clusters occur by chance and are otherwise unrelated.
- The purpose of investigating a cancer cluster is to evaluate the possibility of an environmental, occupational or other preventable exposure associated with an increase risk of cancer. Reports of cancer cluster concerns come from the general public, public health entities and physicians who notice an unusual number of cases of a specific cancer.
- Since 1997, NDSCR has been collecting data on newly diagnosed cancers on the state's residents. Information collected includes demographic information, including age, race, sex, residence, cancer site, histologic type, stage at diagnosis and treatment. This information is very helpful in evaluating

a cancer cluster concern.
Additional patient information also may need to be collected for the investigation.

- The first step in investigating a cancer cluster concern is to gather and document information, including the number of cases, population and/or area involved, time period over which the cases incurred, and the suspected causes.
- Cancer Concern Identification Form
- Reported disease clusters of any kind, including suspected cancer clusters, are investigated by epidemiologists. Epidemiologists use their knowledge of diseases, environmental science, lifestyle factors and biostatistics to try to determine whether a suspected cluster represents a true excess of cancer cases.
- A suspected cancer cluster is more likely to be a true cluster if it involves:
    - A large number of cases of one type of cancer, rather than several different types.
    - A rare type of cancer, rather than common types.
    - An increased number of cases of a certain type of cancer in an age group not usually affected by that type of cancer.
- Epidemiologists try to establish whether the suspected exposure has the potential to cause the reported cancer, based upon what is known about that cancer's likely cause and what is known about the carcinogenic potential of the exposure. Various statistical methods are used to determine whether the reported excess of cases is really a larger number than normally would be expected to occur.
- For a variety of reasons, most reported cancer clusters are not shown to be true clusters. Many reported clusters do not include enough case for epidemiologists to arrive at any conclusions. Sometimes, even when a suspected cluster has enough cases for study, a true statistical excess cannot be demonstrated. Other times, epidemiologists find a true excess of cases, but they cannot find an explanation for it. For example, the suspected carcinogen may cause cancer only under certain circumstances, making its impact difficult to detect. Moreover, because today's populations move so often, it can be difficult for epidemiologists to identify previous exposures and find old records.