



Public Health
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Volusia County Health Department

Health Study Overview

In certain situations, communities may request an on-the-ground health study or review of cancer rates in their area when neighborhood contamination is detected. A number of factors should be considered before a study can be designed.

Health studies of a group are most often done in the work place settings rather than community settings. Workers are usually the most highly exposed to a particular contaminant, the time period of exposure is understood (the work day), the level of exposure is known or can be estimated (based on records and job type) and large numbers of individuals can be followed forward or backward in time through a combination of work records and health data records. Most of the currently understood links between chemical contaminants and cancer (for example between polyvinyl chloride and liver cancers) are a result of these types of large and long-term occupational studies.

It is important to have an understanding of the potential health outcomes before designing a health study. There are no published studies that link health effects with dieldrin exposure levels like those found in this community; either short-term effects or more chronic effects. The Florida Department of Health has reviewed the scientific literature on the effects of dieldrin in humans; very few effects are documented and these occur only at very high doses either in an occupational setting or as an accidental overdose over a period of time. Unfortunately, even if an effect were to occur for a low dose exposure (like in this community) over a number of years, a very large population would be needed to be able to detect this small increase in disease.

Communities often have an interest in a health study that asks questions about many different individual illnesses or symptoms. However, the responses are difficult to interpret. For example, many residents in a neighborhood may have migraines. No related national or state statistics exist (as is true for most diseases and symptoms). In that example, the Florida Department of Health would have no way to assess if migraines are more or less common than in any other community. Illness varies by gender, age, race, genetics and personal behaviors (such as smoking). All of these risk factors need to be understood for the impacted community as well as for the comparison community in order to assess whether symptoms are more common in one community versus another.

Health studies can provide meaningful information when the health effects of exposure to the contaminant are clearly understood by science, when the amount and time period of exposure is documented, when the population exposed is large (generally thousands of people), when enough time has passed for disease to occur after exposure (in some cases 20-30 years), when the community has not experienced frequent in-or-out migration (moving in or out), and when other characteristics linked to individual health are known (smoking status, etc). Health studies are not always the best approach in the absence of this information.

The Florida Department of Health is currently focusing efforts in finding all the homes whose wells are affected by dieldrin and to assist in mitigation efforts by working closely with the Department of Environmental Protection. For additional information about health studies:

- The Centers for Disease Control and Prevention's Guidelines for Investigating Cluster of Health Events.
- Breslow NE, Day NE. Statistical methods in cancer research. Vol II: The design and analysis of cohort studies, Lyon: IARC Scientific Publications; 1987