



Love Canal Follow-up Health Study Cancer Study Community Report April 2009

This report summarizes the cancer study of Love Canal residents which was part of the larger follow-up health study being done by the New York State Department of Health. More information can be found in the scientific paper. The study compared Love Canal residents to others in Niagara County and New York State and also made comparisons within the group of residents studied.

About the Study

In 1996, the NYSDOH began gathering information for a comprehensive 20-year follow-up health study of Love Canal residents. The study (called the Love Canal Follow-up Health Study) is really four smaller studies. One focuses on birth outcomes, one on death rates and causes, and one on cancer incidence. The fourth measures and evaluates some Love Canal chemicals in the stored blood samples of a subset of the residents. Other health problems were not evaluated due to the difficulty in gathering comprehensive health data from former Love Canal residents. Each of the four studies is intended to stand alone and is based on information about the same group of Love Canal residents (called the Study Group). The four studies share common elements including the tracing (or search method) used to determine who was living or who had died among the Study Group, evaluating their likelihood of exposure to Canal chemicals, and computerizing information obtained from their earlier health status interviews. (See *Love Canal Background Community Report* for more details).

What We Did

New York State, like many other states, requires doctors, hospitals and laboratories to report to a Cancer Registry the names of any New York State residents who have been diagnosed with cancer. We matched the names of all the former Love Canal residents we found to the New York State Cancer Registry to find out who had been diagnosed with cancer in the study period, and what type of cancer they had. Because some people left New York State (16% of the group) and since there is no national cancer registry, we could only include people in this cancer study while they lived in the state. To look at some of the reasons people might have gotten cancer, we needed to know how old people were, if they were male or female, if they smoked, drank alcohol or worked in jobs where they might have been exposed to cancer-causing chemicals. The NYSDOH got this information from interviews of residents conducted between 1978 and 1982.

Love Canal Residents Included in Cancer Study

Residents interviewed between 1978 and 1982	=	6,181
Interviewed residents unable to be located in 1996	-	155
Total interviewed residents located in 1996	=	6,026
Residents who moved from NYS but not known when	-	974

**Residents compared to other
NYS and Niagara County residents = 5,052**



Residents without complete interviews or whose Love Canal addresses unknown	-	1,971
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**Residents compared to each other by when
and where they lived in the Canal area = 3,081**

We compared cancer cases in the larger Love Canal group (5,052 people) to cancer cases in two other groups of people from New York State. One of the comparison groups was made up of people living in New York State, not including New York City. This group was chosen because the population is large enough so that cancer rates are not affected by small increases or decreases in the number of cancers seen in the state. We did not include people from New York City because they are different from people in the rest of the state in many ways.

The other comparison group was made up of people from Niagara County. They were chosen because they had more in common with Love Canal residents than people in other parts of New York State. For example, they have the same kinds of jobs, they get their drinking water from similar sources, and they have the same pool of health care professionals making cancer diagnoses.

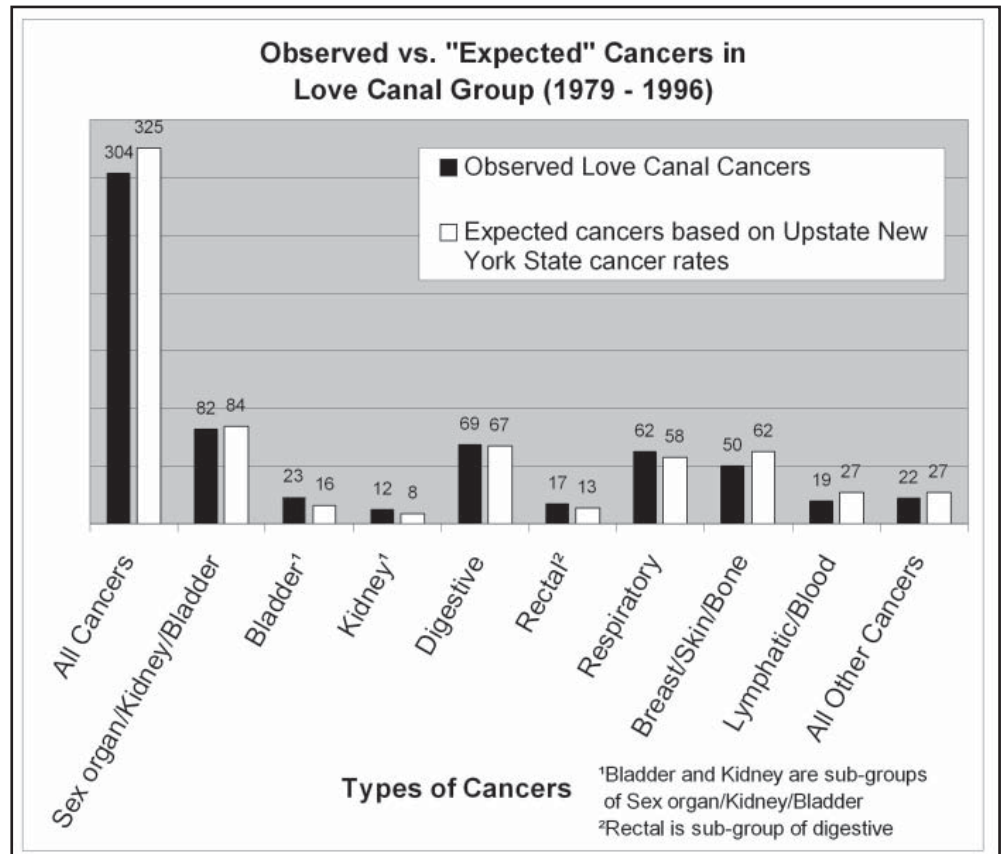
For the smaller Love Canal group (3,081 people), we looked at cancer cases together with information about their Love Canal residency. We wanted to see if people who may have had different chemical exposures while in the Canal area had different cancers because of where they lived. We looked at information about how long a person lived in the area, how close they lived to the canal and when they lived there.

What We Found

Overall, from 1979 to 1996, Love Canal residents got cancer at about the same rate as people of similar age and sex in both Niagara County and in upstate New York. These comparisons are based on the actual number of cancers among the Love Canal residents (304 cancers) compared to the number of cancers expected if they had the same cancer rates as Niagara County (332) or upstate New York (325). We found that some types of cancer were somewhat higher among former Love Canal residents (e.g. kidney, bladder, and respiratory) compared to upstate New York. Other types of cancer were somewhat lower (see figure). Additional comparisons are in the full paper.

There were 268 cases of cancer in those residents who also had complete interviews. For the most part, we did not see a big difference in the cancer rates in these people, depending on when and where they lived at the Canal. However, we did find a significant increase in the risk of bladder and kidney cancers for those who were exposed as children. We also found an increase in the risk of liver and rectal cancers for people who lived on a hot spot (areas with greatly elevated chemical levels) or swales (low, wet areas). The number of cases is small for many of these cancer types, however, so determining whether there is a pattern is difficult. Some of our findings (especially for bladder and kidney cancers) are similar to those of other studies of persons exposed to chemicals like those found at Love Canal.

There are some limits to what we can learn from this study. For example, it only covered the time period from 1979 to 1996. Because the cancer registry only began computerizing its files one year after residents were evacuated from Love Canal, cancers occurring before this time were not included. In addition, we were necessarily limited to studying only people who were interviewed by the NYSDOH from 1978 to 1982 and their children; others who may have lived at Love Canal between 1942 and 1978 were not included. The Love Canal population also is relatively young and additional cancers are expected to show up as people age. The effects of living in the Love Canal area may not be seen until people get older. Additional follow-up may allow us to see trends more clearly.



Conclusions

Overall, the number of cancers in residents was slightly less than in other New Yorkers. However, different patterns were found for certain cancer types. For example, cancers of the kidney and bladder were more common among Love Canal residents than the outside populations, especially for those who were exposed as children. Given the small number of cancer cases observed in the Love Canal, however, we cannot be certain that the results indicate a real difference or are simply the result of chance. The findings, especially for kidney and bladder cancer, nevertheless are similar to those of other studies of hazardous waste sites and what we know about the cancer-causing effects of chemicals found at Love Canal. As the Love Canal residents get older, other researchers may want to examine future cases of cancer to see if these same increases continue since more cancers are diagnosed as people age.

This report is one in a series of five intended to provide results of the Love Canal Follow-up Health Study. The five reports are Background, Mortality (published July 2008), Cancer, Reproductive, and Serum. These reports will be made available to the Love Canal community and others over the coming months.

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