

[Return to the Woburn Toxic Waste Home Page](#)

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Deaths from cancer increase in Woburn

(This is the story that caused all hell to break loose in Woburn, in the state, and at national levels. Up until this point most public officials had dismissed the contention of Anne Anderson and The Rev. Bruce Young that the city's water supply had caused a cluster of childhood leukemia. From this point on, Anne and Bruce had hard statistical evidence to back up their concerns. See the comments at the end for more details about the story behind this story. My editor was concerned about causing more panic, so the leukemia information was put near the middle of the story. Even so, the lead revealing a 17-percent increase in cancer-related deaths shook up quite a few people.)

By CHARLES C. RYAN

WOBURN - At a time when they might have been expected to decrease by three percent, deaths from cancer in Woburn actually increased by 17 percent from 1974 to 1978, according to Massachusetts Department of Public Health (DPH) figures.

And, in the preceding five-year period, even though the number of total cancer deaths in Woburn were only slightly higher than expected, several categories were elevated, or significantly high, according to a mortality study done by the DPH and Dr. Robert Tuthill and Dr. Leslie Lipworth of the University of Massachusetts.

Even though cancer seems to be on the increase in Woburn to a statistically significant extent, there is no way of knowing if that increase is due to the toxic wastes found in North Woburn without extensive tests and studies according to most experts contacted.

In May, G and H wells in East Woburn were closed down when they were found to be contaminated by trichloroethylene -- an industrial solvent known to cause cancer in laboratory animals. In July, the EPA found waste pits with high concentrations of arsenic, lead, chromium and other chemicals on land

formerly occupied by the Merrimack Chemical Company and other chemical firms.)

In the earlier study covering the five-year period from 1969 to 1973, Drs. Tuthill and Lipworth estimated there would be a total of 255 deaths from all forms of cancer except leukemia in Woburn. (They used a statistical method of analyzing the total number of deaths in the state and estimating the rate of death from certain diseases per thousand of population.)

While only 255 deaths were expected in the 1969 to 1973 study there were a total of 262 deaths from cancer in Woburn for that period, according to DPH records.

The study estimated there would be 122 female deaths and the DPH recorded 121. Likewise, the study estimated there would be 133 male cancer deaths from 1969 to 1974 and there 141.

But, in an examination of the deaths in Woburn from cancer in the five years from 1974 to 1978, the DPH figures show a "significant" increase in both male and female cancer deaths.

Using a similar formula, DPH Health Statistician Robert Beattle found that while only 248 deaths were expected, the actual number of deaths was 307 (24 percent more than "expected.")

Among females, where only 119 deaths were expected, there were actually 149 deaths. Among males, where 128 deaths were expected, there were 158, according to Beattle.

"It looks like there are several areas which should be looked at," he said.

Beattle and Drs. Tuthill and Lipworth at UMass, caution that a statistical analysis is just that and that some anomalies can be expected and, in and of themselves, the anomalies don't mean anything.

"You might think of them as red flags," explained Dr. Tuthill, speaking on the first five-year mortality study. He is an instructor with the UMass School of Health Sciences in Amherst. "They signify areas which should be looked at again the next time the study is done."

Leukemia high

In the study of the years 1969 to 1973 conducted by the DPH and UMass Drs. Tuthill and Lipworth, even though the total number of cancer deaths was only 7 more than predicted, there were several kinds of cancer in which the deaths were higher than expected.

Where only 5 female deaths from leukemia were expected in the study, there

were actually 12 who died. The study indicates there is a one in 40 chance of this being a statistical anomaly. In the same time period 6 males died from leukemia.

There were also more females who died from cancer of the bone, connective tissue and skin than were expected, with six actual deaths reported compared to only three predicted.

Similarly, 25 women died from cancer of the uterus where the study only expected 14 deaths.

And, in the period from 1969 to 1973 four women died from cancer of the kidneys where the study only expected two deaths.

In the second five year period, 1974 to 1978 the number of leukemia cases dropped somewhat among females, from 12 to three, but increased among males from six to nine deaths. But, according to Beattle, while the overall number of leukemia deaths dropped from 18 to 12, the number of deaths among children under 21 years of age increased from only one such death in 1969 to 1973 to five leukemia deaths among children during the 1974 to 1978 period.

Lung cancer increases

One area where there was a significant increase in the second five-year period was in lung cancer, particularly lung cancer among the women. The rate of female death from respiratory cancer jumped from five to 23 deaths between the two periods. Among males, the number of respiratory cancer deaths increased from 46 to 53.

According to Beattle and Dr. Tuthill, lung cancer is on the rise nationally and in Massachusetts among women and the largest cause of respiratory cancer is smoking. Tuthill said, however, that respiratory cancer could also be caused by airborne pollution.

Another area showing a significant increase among men is cancer of the prostate, or urinary tract. In the first study 15 males in Woburn died from that kind of cancer, but in the second five-year period the number of deaths doubled to 30. Similar cancers among women dropped slightly from 34 to 32 for the two five year periods.

Breast cancer among women in Woburn increased between the two studies from 27 deaths to 37 deaths.

And buccal cavity (lip, tongue, and palate) cancer among men also increased from five deaths in the first period to nine deaths in the second.

How much of a role does the environment play in the incidence of cancer?

According to Dr. Phillip Cole, an expert in the field of epidemiology formerly with Harvard and now with the University of Alabama, it depends what you mean by "the environment."

Dr. Cole said, "Most feel that if you interpret the meaning of environment broadly to include air, diet, water, work-place, drinking habits, and other factors, then 80 percent to 96 percent of cancer might be called environmentally caused.

But if you were talking about cancer caused by environmental pollution, then the answer would have to be "unknown."

What are the chances then, that some of the pollutants found in Woburn are playing a negative role in the overall health of the community?

What are the chances that the so-called "Woburn odor" is not just noxious, but also harmful? Or, that the arsenic blown about by the wind is causing a health hazard? Or, that the arsenic, chromium, lead and other chemicals dumped into the ground and buried along with the chemically saturated animal hides in North Woburn are adversely affecting the health of Woburn residents?

What are the chances that those possible adverse health affects are showing up in how many people die from certain diseases such as cancer?

No one knows.

But, Dr. Tuthill at UMass says, "I think it would be very appropriate to say there are statistically elevated rates of cancer and they act as a red flag, or warning, that things should be looked at to see what is going on."

(There is a story behind this story. I met with Anne Anderson and Bruce Young in early September 1979 to discuss their concerns about what they perceived to be an elevated level of childhood leukemia. Considering all of the hazardous materials which had been found at the North Woburn toxic waste site and the chemicals found in G and H wells, it seemed logical that if the chemicals were harmful and had been in the drinking water for 10 to 15 years, there should be some observable health effects. Anne and Bruce obtained a copy of a five-year mortality study done by the two UMass professors named above and we learned that the state's Department of Public Health (DPH) was conducting a second five-year study. The first study had shown some elevated rates of cancer and leukemia, but none that were "statistically significant" -- that is to say no figures which couldn't be caused by chance alone. From that point on I pestered the DPH for the results of the second five-year study. I pestered and pestered and pestered. Finally I was told I could come in and go over the results on December 9,

1979. On the morning of the day I was supposed to meet with the DPH there was a six-column front-page story in the Boston Herald which stated: NO HEALTH PROBLEMS IN WOBURN, SAYS DPH. To say I was miffed that the DPH had given the story to the Herald in the form of a press release after I had been seeking it for several months would be an understatement. But what the heck, I still had a job to do. I went in and met with state statistician Robert Beattle. We reviewed the data and found that while there were elevated levels of several cancers and leukemia, none was "statistically significant." Then Beattle said something which made me stop him in mid-sentence. He said "... according to the 1970 census ..." "Wait a minute," I said. "This is 1979. Don't you have a more recent census?" Beattle thought for a moment and then acknowledged that he did. He plugged in the new census figures and suddenly several of the death rates became "statistically significant." The city's population had shrunk considerably between the two census periods, giving much more meaning to the levels of illness. There was definitely a health problem in Woburn.)