LYNDHURST
HEALTH DEPARTMENT
Health Center

JOYCE JACOBSON
Health Administrator

September 25, 2008

At the direction of Mayor Richard DiLascio, the Lyndhurst Health Department requested the New Jersey Department of Health and Senior Services (NJDHSS) to perform an in-depth analysis to answer questions regarding the cancer incidence in Lyndhurst. This new analysis, a standardized incidence ratio (SIR), was performed by the New Jersey State Cancer Epidemiology Services (CES).

The SIR, a method of determining if cancer rates are elevated, was used to advise us if the observed number of cases in Lyndhurst is higher or lower than the expected number. The incidence of all cancers combined as well as the incidence of multiple myeloma alone were analyzed.

According to Christina Tan, M.D., Acting State Epidemiologist, the Lyndhurst SIR shows that multiple myeloma and all cancers combined are "not statistically significantly elevated" in Lyndhurst. Additionally, multiple myeloma is not disproportionately affecting younger people in Lyndhurst, as has been questioned. Only 19% of Lyndhurst residents diagnosed with multiple myeloma (1990-2005) were under the age of 65, compared to the American Cancer Society statistic stating that 34% of multiple myeloma cases are diagnosed under the age of 65.

The SIR was completed using information from the New Jersey State Cancer Registry (NJSCR). The registry assigns cancer cases to the town in which people live at the time of diagnosis so as not to repeat cases in the registry. Former residents are included in the data of the town/state in which they live at the time of diagnosis. Lyndhurst residents are included even if they are diagnosed and treated in New York.

The Lyndhurst Health Department is currently working with the federal Agency for Toxic Substances and Disease Registry (ATSDR) and the NJDHSS Hazardous Site Health Evaluation Program to answer questions that have been raised about environmental concerns related to the former Penick site. These agencies are conducting a public health evaluation of the former Penick site. They are reviewing data, will speak with the public, and will provide a written report with recommendations.

The New Jersey State Cancer Epidemiology Services will update the Lyndhurst Health Department on a yearly basis, as new information becomes available. The following pages include the SIR report.

Joyce Jacobson

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September 5, 2008

Ms. Joyce Jacobson
Health Administrator
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Dear Ms. Jacobson:

This letter is a follow-up to your recent discussion with Pamela Agovino of my staff regarding continued community concerns about the number of cancers among former and current Lyndhurst residents and known contaminated sites in the township. I hope the following information will be helpful to you and everyone in the community. Please feel free to share it with them.

As a result of the continued concern, Cancer Epidemiology Services (CES) has completed a standardized incidence ratio (SIR) analysis for all cancers combined and multiple myeloma. An SIR analysis can tell us if the number of observed cancer cases in a particular geographic area is higher or lower than expected given the population and age distribution for that area. SIRs are the analysis method most often used by the New Jersey State Department of Health and Senior Services and the Agency for Toxic Substances and Disease Registry (ATSDR), U.S. Department of Health and Human Services to determine if cancer is elevated. Please refer to the attached fact sheet on the Lyndhurst SIR analysis. The results of the Lyndhurst SIR analysis indicate that the number of all malignant cancers combined and the number of multiple myeloma cancers are not statistically significantly elevated.

As you are aware, CES was provided with a list of cancer cases compiled by the community. Our program searched the NJSCR for each of the multiple myeloma cases on the list and were able to locate all of the individuals in the NJSCR. Some of the cases identified on the list, were either 1) not residents of Lyndhurst at the time of diagnosis or 2) diagnosed outside of the analysis period (1990-2005) or 3) diagnosed with a cancer other than multiple myeloma and therefore, according to standard practice across the country, cannot be included as a case in the SIR analysis for multiple myeloma in Lyndhurst. It should be noted that the Lyndhurst SIR analysis for all cancers combined does include this last group of non multiple myeloma cases in the all cancers combined analysis.

One of the concerns raised was that the multiple myeloma cases in Lyndhurst are being diagnosed at ages younger than would be expected. According the American Cancer Society (ACS), 34% of all multiple myelomas are diagnosed in individuals younger than 65 and 66% are diagnosed among individuals 65 or older, which is consistent with New Jersey data from 1990-2005. A review of the Lyndhurst multiple myeloma cases from the NJSCR for the same time period, revealed that 19% of the cases were diagnosed in residents younger than 65, indicating a lower proportion of younger individuals affected with multiple myeloma in Lyndhurst. This age distribution is not consistent with the community's concern that multiple myeloma is disproportionately affecting younger residents.

Another concern mentioned was the occurrence of a case of Neurilemoma (referred to as an epithelium schwannoma on the list provided to us) in a woman in her early thirties who was a former resident of Lyndhurst. The concern raised was that this cancer is very rare and is not typically diagnosed in this age group. CES reviewed the Neurilemoma data in the NJSCR and found about 130 cases diagnosed in New Jersey from 1990-2005. About 21% of the neurilomomas were diagnosed under the age of 35 and a little over 50% occurred among females. Although this is a rare cancer, the occurrence of a single case in a woman in this age group does not indicate an elevated number.

Because of the continued community concern, we will continue to monitor the NJSCR for multiple myeloma cases and all cancers combined in Lyndhurst when more years of data are complete. Presently, NJSCR data are complete through 2005, and we will review the complete years of Lyndhurst data for 2006 and 2007. We will update you on a yearly basis via letter.

Additional concerns have been raised about the number of known contaminated sites located in Lyndhurst. As you are aware these concerns have been forwarded to Ms. Sharon Kubiak with the New Jersey Department of Health & Senior Services - Consumer and Environmental Health Program.

Please feel free to call Cancer Epidemiology Services Monday through Friday between 9:00 AM and 5:00 PM at (609) 588-3500 with any other information or questions you may have.

Sincerely,

Christina G. Tan, M.D.
Acting Deputy Commissioner/Acting State Epidemiologist
Public Health Services Branch

Enclosure

c: Hansel F. Asmar, MS, MAS
Director/Health Officer, Bergen County Department of Health Services

The Honorable Richard J. DiLascio
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Analysis of Cancer Incidence in Lyndhurst Borough (1990-2005)

Cancer Epidemiology Services (CES) used the New Jersey State Cancer Registry (NJSCR) to examine the occurrence of all malignant cancers combined and multiple myeloma in Lyndhurst Borough for the time period from 1990-2005, as well as three consecutive time periods (1990-1994, 1995-1999 and 2000-2005) to examine trends. US and NJ data have not yet been published for 2006-present because they are incomplete. Males and females were evaluated separately. It should be noted that information on cancer risk factors, such as genetics, personal behaviors or occupational history, is not part of the required data collected by the NJSCR.

Standardized incidence ratios (SIRs) were used for the quantitative analysis of cancer incidence in the study area (Kelsey et al. 1986; Breslow and Day 1987). The SIR is calculated by dividing the observed number of cases from the NJSCR by the expected number of cancers for the surveyed population over the time period 1990 to 2005, assuming that the cancer rates of the state would be what was expected.

The expected number was derived by multiplying a comparison population's age-sex-specific cancer incidence rates and the study area age-sex-specific population figures. The comparison rates used to derive the expected number of cases were the New Jersey average annual incidence rates for 1990 to 2005 and for the three included time periods mentioned above. The study area's age-sex-specific population was determined from the 1990 and 2000 U.S. Census data (Census 1990, 2000). Each analysis used 18 age-specific population groups.

The observed and expected numbers are evaluated by interpreting the ratio of these numbers. If the observed number of cases equals the expected number of cases, the SIR will equal 1.0. An SIR less than 1.0 indicates that fewer cases are observed than expected. An SIR greater than 1.0 indicates that more cases than expected are observed.

The number of cases (observed cases) was obtained from the New Jersey State Cancer Registry (NJSCR). The NJSCR has been awarded the North American Association of Central Cancer Registries (NAACCR) Gold Standard, the highest standard possible, for the quality of data since the inception of this award many years ago. Some of the criteria used to judge the quality of the data include timeliness and completeness of cancer case ascertainment. A "case" is defined as an individual who was diagnosed with a new primary malignant cancer during the study period while residing in Lyndhurst. This case selection criteria is standard practice used to tally cases for national cancer statistics.

Random fluctuations may account for some SIRs being higher or lower than 1.0. The statistical significance of deviations from SIR equal to 1.0 was evaluated using a 95% confidence interval (CI). The 95% CI was used to evaluate the probability that the SIR may be greater or less than 1.0 due to chance alone, and was based on the Poisson distribution (Breslow and Day 1987; Checkoway et al. 1989). If the confidence interval includes 1.0, then the estimated SIR is not considered to be statistically significantly different than 1.0. The results of the Lyndhurst SIR analysis indicate that all cancers combined or multiple myeloma are not statistically significantly elevated.

References

Breslow NE, Day NE. 1987. Statistical methods in cancer research: Vol II. The design and analysis of cohort studies. IARC Scientific Publication No. 82. Lyon: International Agency for Research on Cancer.

Checkoway H, Pearce NE, Crawford-Brown DJ. 1989. Research methods in occupational epidemiology (Monographs in epidemiology and biostatistics, vol. 13). Oxford: Oxford University Press.

Kelsey JL, Thompson WD, Evans AS. 1986. Methods in observational epidemiology (Monographs in epidemiology and biostatistics, vol. 10). Oxford: Oxford University Press.

US Census Bureau. 1990. Population census report, general population characteristics. Washington, DC: US Department of Commerce.

US Census Bureau. 2000. Population census report, general population characteristics. Washington, DC: US Department of Commerce.

Standardized Incidence Ratio Analysis - Lyndhurst vs. New Jersey:

All Cancers Combined						
		Observed	**Expected**	**SIR**	***Lower**	***Upper**
1990-2005	Male	1026	1031.04	1.00	0.94	1.06
	Female	1007	995.03	1.01	0.95	1.08
1990-1994	Male	316	332.04	0.95	0.85	1.06
	Female	329	305.63	1.08	0.96	1.20
1995-1999	Male	348	325.09	1.07	0.96	1.19
	Female	304	313.17	0.97	0.86	1.09
2000-2005	Male	362	374.49	0.97	0.87	1.07
	Female	374	376.22	0.99	0.90	1.10

* 95% Confidence Interval: lower and upper limits.
Note: Intercensal population years are interpolated.

Multiple Myeloma						
		Observed	**Expected**	**SIR**	***Lower**	***Upper**
1990-2005	Male	13	11.83	1.10	0.58	1.88
	Female	14	12.09	1.16	0.63	1.94
1990-1994	Male	0	3.46	-	-	-
	Female	6	3.67	1.63	0.60	3.55
1995-1999	Male	6	3.69	1.63	0.59	3.54
	Female	3	3.69	0.81	0.16	2.37
2000-2005	Male	7	4.66	1.50	0.60	3.10
	Female	5	4.74	1.05	0.34	2.46

* 95% Confidence Interval: lower and upper limits.
Note: Intercensal population years are interpolated.