Summary of Cancer Incidence and Mortality for Zip Code 29209 (Columbia, SC)

Cancer Incidence in Zip Code 29209

The first step in the analysis of cancer data for zip code 29209 was to look at the number of new cancer cases diagnosed in the zip code and compare this to the number of cancer cases expected (see Table 1). This first step determines if there is anything unusual with cancer patterns in the area. The number of "expected" cancer cases is calculated by using South Carolina cancer rates and applying them to the population of the zip code.

Table 1 shows what types of cancer occurred in zip code 29209 from 1996-2000, and how many cancer cases were expected. Overall, there were fewer cases of cancer than expected. A total of 562 new cases of cancer occurred in the zip code, while 589 cases were expected. The most common types of cancer were female breast, lung, prostate, and colon/rectum cancers. These four types of cancer are also the most common cancers occurring across all of South Carolina.

The analysis did reveal one specific cancer site **(thyroid)** where the number of cases was significantly higher than expected. Most cases of papillary and follicular thyroid cancer are found in people between the ages of 30 and 50 years. Also, for reasons that aren't completely known, thyroid cancers occur more often in women than in men. One proven risk factor for papillary thyroid cancer is a history of head or neck radiation treatments as a child. In the past, children were sometimes treated with radiation for acne, fungus infections of the scalp, an enlarged thymus gland, or to shrink tonsils or adenoids. Years later, studies linked these treatments to an increased risk of thyroid cancer. Also, people with certain inherited medical conditions (i.e. Gardner's syndrome, Cowden's disease and familial polyposis) are at a higher risk of developing thyroid cancer.

Cancer Deaths in Zip Code 29209

To assess cancer deaths in this zip code, cancer mortality data from 1997-2001 were used. The same process used to analyze new cancer cases was also used to analyze cancer deaths. Table 2 shows the number of cancer deaths that occurred and the number expected in the zip code. A total of 250 cancer deaths occurred in this zip code, while 264 deaths were expected. Therefore, fewer cancer deaths occurred than expected.

The analysis did not reveal any specific cancer sites where the number of cancer deaths was significantly higher than expected.

Conclusions

To summarize, fewer cancer cases and deaths occurred in zip code 29209 than expected. Thyroid cancer cases were significantly elevated.

In order for a true cancer cluster to exist, the number of cancers occurring must be more than would be expected by chance. Along with statistical testing, there are several other criteria that determine whether a true cancer cluster exists. First, a cancer cluster would more likely involve rarer types of cancer rather than more common cancers like lung or colon/rectum cancers. Also, a cancer cluster would occur with one specific type of cancer rather than having excesses in several different types of cancer.

Taking all these criteria into consideration, there is no evidence of cancer clustering or of cancers resulting from environmental exposures in zip code 29209.

For questions about this report, please contact Laura Sanders at the SC Central Cancer Registry.

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References:

1. American Cancer Society website, www.cancer.org

Information on cancer incidence provided by the SC Central Cancer Registry, Office of Public Health Statistics and Information Services, SC Dept. of Health and Environmental Control.

Information on cancer mortality provided by the Division of Vital Records and the Division of Biostatistics, SC Dept. of Health and Environmental Control.

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Table 1. Analysis of New Cancer Cases in Zip Code 29209, 1996-2000

Site	Observed No. of Cases	Expected No. of Cases	Observed/Expected	Chi-SquareTest*
Breast (Female)	98	89.2	1.10	0.86
Lung/Bronchus	92	93.0	0.99	0.01
Prostate	86	97.1	0.89	1.26
Colon/Rectum	53	65.7	0.81	2.46
Non-Hodgkin's Lymphoma	27	19.2	1.40	3.15
Bladder	19	22.4	0.85	0.52
Oral/Pharynx	17	17.3	0.99	0.00
Pancreas	17	12.7	1.34	1.46
Kidney/Renal Pelvis	16	15.1	1.06	0.05
Leukemia	13	11.2	1.16	0.29
Thyroid	**13**	**6.7**	**1.94**	**5.94**
Melanoma	12	21.1	0.57	3.93
Ovary	12	9.8	1.22	0.48
Stomach	11	8.9	1.23	0.49
Uterus	8	14.4	0.55	2.88
Cervix	7	8.7	0.80	0.35
Larynx	6	7.5	0.80	0.29
Brain/CNS	5	8.3	0.60	1.34
Multiple Myeloma	5	6.4	0.78	0.32
Esophagus	2	8.2	0.24	4.67
Unknown/Ill-Defined	11	NA	NA	NA
All Sites	562	588.6	0.95	1.20

Excludes in situ cases of cancer to allow for comparison.
Cancer sites with less than 5 cases of cancer expected are not analyzed due to the unreliability of statistical tests based on small numbers.
*The Chi-Square statistical test allows us to determine if the difference between what is observed and what is expected is significant. If the value is greater than 3.84, the we are 95% confident that the observed number of cases is significantly different from the expected number of cases.
Prepared by: SC Central Cancer Registry, Office of Public Health Statistics and Information Services, Department of Health and Environmental Control, 2600 Bull St., Columbia, SC 29201
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Table 2. Analysis of Cancer Deaths in Zip Code 29209, 1997-2001

Site	Observed No. of Deaths	Expected No. of Deaths	Observed/Expected	Chi-SquareTest*
Lung/Bronchus	82	79.6	1.03	0.07
Colon/Rectum	22	25.4	0.87	0.44
Breast (Female)	17	19.8	0.86	0.38
Pancreas	16	14.3	1.12	0.19
Non-Hodgkin's Lymphoma	14	9.4	1.48	2.22
Prostate	13	17.3	0.75	1.06
Stomach	9	6.5	1.38	0.94
Liver	7	5.1	1.36	0.68
Kidney/Renal Pelvis	6	5.5	1.10	0.05
Leukemia	6	9.0	0.67	1.00
Multiple Myeloma	5	6.0	0.84	0.15
Bladder	4	4.7	0.86	0.10
Brain/CNS	4	7.1	0.56	1.38
Esophagus	3	6.8	0.44	2.09
Oral/Pharynx	3	5.2	0.58	0.92
Ovary	2	6.0	0.33	2.66
Unknown/Ill-Defined	12	NA	NA	NA
All Sites	250	264.1	0.95	0.75

Cancer sites with less than 5 cancer deaths expected are not analyzed due to the unreliability of statistical tests based on small numbers.
*The Chi-Square statistical test allows us to determine if the difference between what is observed and what is expected is significant. If the value is greater than 3.84, then we are 95% confident that the observed number of deaths is significantly different from the expected number of deaths.

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