

Summary of Cancer Incidence and Mortality for Zip Code 29732 (Rock Hill, SC)

Cancer Incidence in Zip Code 29732

The first step in the analysis of cancer data for zip code 29732 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 29732 from 1996-2000, and how many cancer cases were expected. Overall, there were fewer cases of cancer than expected. A total of 623 new cases of cancer occurred in the zip code, while 857 cases were expected. The most common types of cancer were female breast, prostate, lung, and colon/rectum cancers. These four types of cancer are also the most common cancers occurring across all of South Carolina.

The analysis did not reveal any specific types of cancer where the number of new cases that occurred was significantly higher than expected.

Cancer Deaths in Zip Code 29732

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 351 cancer deaths occurred in this zip code, while 416 deaths were expected. Therefore, fewer cancer deaths occurred than expected. There was one type of cancer death that was significantly elevated, **brain cancer deaths**.

A total of 18 brain deaths occurred while 10 were expected. The only established environmental risk factor for brain cancer is radiation. Today, most radiation-induced brain tumors are caused by radiation to the head given for the treatment of other cancers. Other environmental factors such as exposure to vinyl chloride, aspartame, and electromagnetic fields from cellular telephones or power lines have been suggested as risk factors. However, most researchers in this field agree that no conclusive evidence exists that clearly implicates these factors. Other risk factors for brain cancer include having an impaired immune system or a family history of brain cancer¹.

Conclusions

To summarize, fewer cancer cases and deaths occurred in zip code 29732 than expected. The number of brain cancer deaths that occurred in the zip code was significantly higher than expected. Statistics show that York County ranks 8th among the 46 counties in the state for brain cancer deaths. Therefore, higher brain cancer death rates are a trend seen not only in zip code 29732, but also across all of York County.

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 breast or lung 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 29732.

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

Report provided by:

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References

1. American Cancer Society, 2001. 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.

6/23/03

Table 1. Analysis of New Cancer Cases in Zip Code 29732, 1996-2000

Site	Observed No. of Cases	Expected No. of Cases	Observed/Expected	Chi-SquareTest*
Breast (Female)	113	131.6	0.86	2.63
Prostate	108	128.3	0.84	3.22
Lung/Bronchus	84	130.7	0.64	16.68
Colon/Rectum	66	101.5	0.65	12.43
Melanoma	30	30.0	1.00	0.00
Bladder	21	33.9	0.62	4.93
Kidney/Renal Pelvis	16	21.4	0.75	1.36
Brain/CNS	16	11.7	1.37	1.59
Non-Hodgkin's Lymphoma	15	28.3	0.53	6.28
Leukemia	15	17.4	0.86	0.32
Oral/Pharynx	13	24.8	0.53	5.58
Cervix	13	12.7	1.03	0.01
Uterus	12	21.0	0.57	3.84
Pancreas	12	19.9	0.60	3.17
Ovary	12	14.7	0.82	0.49
Multiple Myeloma	8	9.8	0.82	0.33
Stomach	7	14.1	0.50	3.60
Larynx	7	10.2	0.68	1.03
Esophagus	5	11.5	0.44	3.66
Thyroid	5	9.4	0.53	2.06
Liver	5	6.1	0.82	0.20
Unknown/III-Defined	13	NA	NA	NA
All Sites	623	856.8	0.73	63.81

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, then 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

May 15, 2003 lcs

Table 2. Analysis of Cancer Deaths in Zip Code 29732, 1997-2001

<u>Site</u>	<u>Observed No. of Deaths</u>	<u>Expected No. of Deaths</u>	<u>Observed/Expected</u>	<u>Chi-SquareTest*</u>
Lung/Bronchus	108	115.4	0.94	0.48
Colon/Rectum	32	42.7	0.75	2.70
Breast (Female)	27	31.9	0.85	0.76
Brain/CNS	18	10.2	1.77	5.97
Non-Hodgkin's Lymphoma	15	15.3	0.98	0.01
Prostate	14	27.8	0.50	6.82
Leukemia	13	15.3	0.85	0.36
Pancreas	12	23.1	0.52	5.35
Bladder	11	8.2	1.34	0.93
Stomach	9	10.9	0.82	0.34
Liver	9	7.8	1.15	0.19
Esophagus	8	9.7	0.82	0.30
Multiple Myeloma	7	9.5	0.74	0.67
Kidney/Renal Pelvis	7	8.4	0.83	0.23
Uterus	7	5.0	1.41	0.84
Ovary	6	9.8	0.61	1.49
Oral/Pharynx	5	8.0	0.63	1.12
Unknown/III-Defined	20	NA	NA	NA
All Sites	351	415.9	0.84	10.13

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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