



Summary of Cancer Incidence and Mortality for ZIP Code 29125 (Pinewood, SC), March 2012

To determine if there are any unusual cancer patterns in an area the first step is to look at the number of new cancer cases (incidence) and deaths (mortality) occurring in the ZIP code and compare this to the number of cancer cases and deaths expected to occur by chance alone, given the corresponding South Carolina state rates. The number of expected cases and deaths are determined by using South Carolina state cancer incidence and mortality rates and applying them to the population of the geographic area of interest (29125). These observed and expected values allow us to compare the ratio of observed to expected numbers or *SMR* (standardized morbidity or mortality ratio), as well as the calculation of a chi-square test statistic to look for statistically significant differences. When significant results are encountered, additional steps are taken to look at the data more closely (e.g., look at counts, type of cancers, age, etc.).

In order for a true cancer cluster to exist, the number of cancer cases occurring must be more than would be expected by chance. Additionally, a cancer cluster would more likely involve rarer types of cancer rather than more common cancers such lung, breast, prostate, or colon. A cancer cluster will usually occur with excess in one specific type of cancer rather than in several different types. Along with statistical testing, there are several other criteria that determine whether a true cancer cluster exists (see *Guidelines for Investigating Clusters of Chronic Disease and Adverse Birth Outcomes* for further information).

The time interval from reporting to public release for national and state-specific cancer statistics is generally 24 months. Extensive quality control and de-duplication takes place during this interval to assure cancer data are reported correctly. Currently, the data available from the SC Central Cancer Registry include cases and deaths from 1996 to 2008. While timeliness of the data is certainly a limitation, trends over time can help identify unusual cancer patterns. The most recent five years of data available (2004-2008) were used for this analysis.

Cancer Incidence for ZIP code 29125

Table 1 shows what types of cancer occurred in ZIP code 29125 from 2004-2008 and how many cancer cases were expected. A total of 88 new cases of cancer occurred in the ZIP code, while 97.5 cases were expected. Statistical testing showed that the observed number of new cases was not significantly different than expected. In South Carolina the most common types of cancer are prostate, lung, female breast, and colon/rectum. The most common types of cancer in this ZIP code are prostate, lung, female breast, and colon/rectum (listed in order from high to low). The analysis revealed that cases from the following cancers (if any) were significantly higher than expected: none. At least a three-fold increase of observed-to-expected cases is the scientific rule of thumb warranting further investigation. This level was not reached, therefore, at this time no further investigation is being conducted.

Cancer Mortality for ZIP code 29125

The same process used to analyze new cancer cases was also used to analyze cancer deaths. Table 2 shows that a total of 56 cancer deaths occurred in this ZIP code, while 40 deaths were expected. Statistical testing showed that the observed number of deaths was significantly different than expected. The most common causes of cancer death in South Carolina are lung, colon/rectum, female breast, and prostate. In this ZIP code the most common causes of cancer death are lung, pancreas, prostate, and colon/rectum (listed in order from high to low). The analysis revealed that deaths from the following cancers (if any) were significantly higher than expected: none. As noted above, at least a three-fold increase of observed-to-expected deaths is needed to warrant further investigation. This level was not reached, therefore, at this time; no further investigation is being conducted.

Conclusion

It is alarming when someone you know is diagnosed with cancer. Unfortunately, current statistics reported by the American Cancer Society reveal that one in two men and one in three women will develop cancer in his or her lifetime. One must keep in mind that inferences about cancer cannot be made on observations alone. Therefore, statistical tests must be conducted in order to determine if what is being seen is more than just a chance occurrence. This report takes into account the necessary steps used to assess if the number of reported cancer cases or deaths in ZIP code 29125 is above what is expected. Included with this report is a list of risk factors for those cancers, if any, which significantly exceed the number of expected cases and deaths. Residents of ZIP code 29125 are encouraged to have regular check-ups with their physicians and to lead a healthy, active lifestyle.

For questions about this report, please contact Susan Bolick, SC Central Cancer Registry.

Report provided by:

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Resources:

1. Washington State Department of Health, *Guidelines for Investigating Clusters of Chronic Disease and Adverse Birth Outcomes*,
<http://www.doh.wa.gov/ehsphl/Epidemiology/NICE/publications/ClusterProtocol.pdf>
2. American Cancer Society website, www.cancer.org
3. National Cancer Institute, www.cancer.gov

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 Divisions of Vital Records, Biostatistics, and Public Health Informatics, SC Dept. of Health and Environmental Control.

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Table 1. Summary of Cancer Incidence for ZIP code 29125: Incidence 2004-2008¹

site	Period	Observed	Expected	SMR	Statistic	Significant	Direction
All Cancer Sites	2004-2008	88	97.5	0.9	0.9	No	n/a
Prostate	2004-2008	17	15.3	1.1	0.2	No	n/a
Lung & Bronchus	2004-2008	15	15.4	1	0	No	n/a
Female Breast	2004-2008	12	13.4	0.9	0.1	No	n/a
Colon & Rectum	2004-2008	10+*	10*	1.1	0.1	No	n/a
Pancreas	2004-2008	10*	<5*	~	~	~	n/a
Non-Hodgkin Lymphoma	2004-2008	10*	<5*	~	~	~	n/a
Uterus/Corpus/NOS	2004-2008	<5*	<5*	~	~	~	n/a
Oral Cavity & Pharynx	2004-2008	<5*	<5*	~	~	~	n/a
Esophagus	2004-2008	<5*	<5*	~	~	~	n/a
Myeloma	2004-2008	<5*	<5*	~	~	~	n/a
Ovary	2004-2008	<5*	<5*	~	~	~	n/a
Leukemia	2004-2008	<5*	<5*	~	~	~	n/a
Cervix Uteri	2004-2008	<5*	<5*	~	~	~	n/a
Brain & Other Nervous System	2004-2008	<5*	<5*	~	~	~	n/a
Stomach	2004-2008	<5*	<5*	~	~	~	n/a
Urinary Bladder	2004-2008	<5*	<5*	~	~	~	n/a
Kidney & Renal Pelvis	2004-2008	<5*	<5*	~	~	~	n/a
Melanoma of Skin	2004-2008	<5*	<5*	~	~	~	n/a
Small Intestine	2004-2008	0	<5*	~	~	~	n/a
Anus & Anal Canal	2004-2008	0	<5*	~	~	~	n/a
Liver & Intrahepatic Bile Duct	2004-2008	0	<5*	~	~	~	n/a
Gallbladder	2004-2008	0	<5*	~	~	~	n/a
Larynx	2004-2008	0	<5*	~	~	~	n/a
Bones & Joints	2004-2008	0	<5*	~	~	~	n/a
Soft Tissue (& Heart)	2004-2008	0	<5*	~	~	~	n/a
Male Breast	2004-2008	0	<5*	~	~	~	n/a
Testis	2004-2008	0	<5*	~	~	~	n/a
Eye & Orbit	2004-2008	0	<5*	~	~	~	n/a
Thyroid	2004-2008	0	<5*	~	~	~	n/a
Other Endocrine & Thymus	2004-2008	0	<5*	~	~	~	n/a
Hodgkin Lymphoma	2004-2008	0	<5*	~	~	~	n/a
Mesothelioma	2004-2008	0	<5*	~	~	~	n/a
Kaposi Sarcoma	2004-2008	0	<5*	~	~	~	n/a

¹ Although ZIP code is specified, the area of analysis is ZCTA, or ZIP Code Tabulation Area, used in order to obtain valid census population data for analysis. The SMR is the ratio of observed to expected 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 or deaths is significantly different from the expected number of cases or deaths.

HIGHER: Indicates that the observed number of cases or deaths is significantly higher than the expected number.

LOWER: Indicates that the observed number of cases or deaths is significantly lower than the expected number.

* Suppression rules have been applied to these data: counts from 1-4 are recorded as <5; counts from 5-9 are rounded to 10.

Complementary cells associated with suppressed cells are also suppressed.

~ Cancer types with < 5 cases or deaths expected are not analyzed due to the unreliability of statistical tests based on small numbers.

Table 2. Summary of Cancer Mortality for ZIP code 29125: Mortality 2004-2008¹

site	Period	Observed	Expected	SMR	Statistic	Significant	Direction
All Cancer Sites	2004-2008	56	40	1.4	6.4	Yes	Higher
Lung & Bronchus	2004-2008	15	12.2	1.2	0.7	No	n/a
Pancreas	2004-2008	10*	<5*	~	~	~	n/a
Prostate	2004-2008	10*	<5*	~	~	~	n/a
Colon & Rectum	2004-2008	<5*	<5*	~	~	~	n/a
Stomach	2004-2008	<5*	<5*	~	~	~	n/a
Myeloma	2004-2008	<5*	<5*	~	~	~	n/a
Kidney & Renal Pelvis	2004-2008	<5*	<5*	~	~	~	n/a
Liver & Intrahepatic Bile Duct	2004-2008	<5*	<5*	~	~	~	n/a
Ovary	2004-2008	<5*	<5*	~	~	~	n/a
Non-Hodgkin Lymphoma	2004-2008	<5*	<5*	~	~	~	n/a
Leukemia	2004-2008	<5*	<5*	~	~	~	n/a
Female Breast	2004-2008	<5*	<5*	~	~	~	n/a
Uterus/Corpus/NOS	2004-2008	<5*	<5*	~	~	~	n/a
Oral Cavity & Pharynx	2004-2008	<5*	<5*	~	~	~	n/a
Urinary Bladder	2004-2008	<5*	<5*	~	~	~	n/a
Esophagus	2004-2008	<5*	<5*	~	~	~	n/a
Brain & Other Nervous System	2004-2008	<5*	<5*	~	~	~	n/a
Small Intestine	2004-2008	0	<5*	~	~	~	n/a
Anus & Anal Canal	2004-2008	0	<5*	~	~	~	n/a
Gallbladder	2004-2008	0	<5*	~	~	~	n/a
Larynx	2004-2008	0	<5*	~	~	~	n/a
Bones & Joints	2004-2008	0	<5*	~	~	~	n/a
Soft Tissue (& Heart)	2004-2008	0	<5*	~	~	~	n/a
Melanoma of Skin	2004-2008	0	<5*	~	~	~	n/a
Cervix Uteri	2004-2008	0	<5*	~	~	~	n/a
Male Breast	2004-2008	0	<5*	~	~	~	n/a
Testis	2004-2008	0	<5*	~	~	~	n/a
Eye & Orbit	2004-2008	0	<5*	~	~	~	n/a
Thyroid	2004-2008	0	<5*	~	~	~	n/a
Other Endocrine & Thymus	2004-2008	0	<5*	~	~	~	n/a
Hodgkin Lymphoma	2004-2008	0	<5*	~	~	~	n/a
Mesothelioma	2004-2008	0	<5*	~	~	~	n/a
Kaposi Sarcoma	2004-2008	0	<5*	~	~	~	n/a

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Cancer Risk Factors (from American Cancer Society www.cancer.org)

A risk factor is something that affects a person's chance of getting a disease. Lifestyle-related risk factors such as diet, body weight, physical activity, and tobacco use play a major role in many adult cancers and can be controlled. One of the most important things you can do to lower your risk of most cancers is to lead a healthy lifestyle, i.e., eat a diet high in fresh fruits and vegetables, maintain a healthy weight, exercise, and stay away from tobacco. Others, like a person's age, race, or family history cannot be changed. Different cancers have different risk factors. For example, exposing skin to strong sunlight is a risk factor for skin cancer. Smoking is a risk factor for cancers of the lung, mouth, larynx (voice box), bladder, kidney, and several other organs. But risk factors don't tell us everything. Having a risk factor, or even several, does not always mean that a person will get the disease, and many people get cancer without having any known risk factors.