Cancer in Vermont

A report of 1995-1999 cancer incidence data from the Vermont Cancer Registry

Vermont Department of Health
March 2003

Contents

Special Thanks —The Vermont Department of Health Cancer Registry staff would like to express our sincerest thanks to all of the Vermont hospital registrars, administrators, physicians and other health care professionals, and nursing home personnel who make collection of the cancer incidence data for this report possible.

Vermont Department of Health
Agency of Human Services

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Dear Vermonter,

The Vermont Cancer Registry is a powerful tool for public health. It is a central bank of information that helps to improve our understanding of cancer in Vermont's population.

This report contains an analysis of the five most recent years of cancer incidence and mortality data —1995 through 1999. Since the first *Cancer in Vermont* report was published in 2000, new data on melanoma and cervical cancer have been added. This report also presents information on risk factors, screening, age at diagnosis and stage distribution for the most prevalent types of cancer. There are several significant findings:

• Vermont's colorectal cancer incidence rate is higher than the U.S., and only one-third of these cancers are diagnosed at an early stage. Colorectal cancer is one of few cancers that can be prevented through a screening test, yet fewer than 50 percent of adults are screened.

• Vermont's cervical cancer incidence rate is higher than the U.S. With 48 percent of cervical cancers seen on or after age 50, it is important for women to continue with Pap test screening even after menopause. Cervical cancer is preventable by treatment of precancerous lesions found by screening.

• Although Vermont's breast cancer incidence rate is statistically better than the U.S. rate, the need for early detection through mammography and clinical breast exam continues to be a priority. Over 60 percent of breast cancers are diagnosed at a localized stage, when treatment is most likely to be successful.

• Vermont's melanoma rates are the same as the U.S. white rates. The rate of new cases being diagnosed is on the rise, pointing to the need to use protective measures from sun exposure.

• Lung cancer continues to be the leading cause of cancer death for both men and women, and has outpaced breast cancer as the leading cause of new cancers in women.

By tracking cancer in Vermont, we can improve our understanding of the prevention and treatment of cancer, and ultimately, reduce illness and death from cancer.

Jan K. Carney, MD, MPH
Commissioner of Health

An Introduction to Cancer

Cancer is the name for a group of more than 100 different diseases that have similar characteristics. In the U.S., nearly one out of every two men and at least one in every three women will develop cancer in their lifetime.

Any disease in which abnormal cells develop, divide, grow, and have the potential to spread throughout the body can be called cancer. If the spread of these cancer cells is not controlled, death may result.

Cancer cells form into a malignant tumor, also called a malignant neoplasm. Cancer cells can metastasize (break away from the tumor and enter the bloodstream or lymphatic system) to form new tumors in other parts of the body. Benign tumors are not cancer, because they do not metastasize.

Cancer Sites

There are many different types of cancer. Each is named by the organ (or primary site) where the abnormal cells first develop and by the type of cell involved.

Cells in the metastatic (or secondary) tumor are like those found in the primary tumor. For example, if breast cancer cells move to the lung, it is called metastatic breast cancer, not lung cancer.

Causes of Cancer

Cancer develops gradually as a result of a complex mix of factors related to lifestyle, environment and heredity. Each type of cancer is caused by a different set of factors, some well established (such as cigarette smoking causing lung cancer), some uncertain and some unknown. Many cancers are thought to result from more than one risk factor.

Risk Factors

A risk factor for cancer is a condition or an activity that increases a person's chance of developing a particular type of cancer. Some of the most common risk factors are associated with lifestyle. These include diet, tobacco use, alcohol use, lack of exercise, exposure to ultraviolet radiation (sun tanning), and certain sexually transmitted diseases. Other risk

Vermont Facts: Cancer among Females

- **From 1995 to 1999, an average of 1,457 new cases of cancer were diagnosed each year in Vermont females. During that same time period, 579 females died annually from cancer.**

Incidence *(new cases, based on data from 1995-1999)*

- **For all sites combined, the female cancer incidence rate is not statistically different from the U.S. SEER rate.** *(A description of U.S. SEER rates may be found on page 21.)*
- **The female incidence rate is statistically better than the U.S. SEER rate for breast cancer and liver cancer.**
- **The female incidence rate is statistically worse than the U.S. SEER rate for cancers of the colon and rectum, uterus, bladder, cervix, esophagus, and larynx.**

Mortality *(deaths, based on data from 1995-1999)*

- **For all sites combined, the female cancer death rate is not statistically different from the U.S. rate.**
- **The female death rate is statistically better than the U.S. rate for cancers of the brain and liver.**
- **The female colorectal cancer death rate is statistically worse than U.S. rate.**

factors include genetics or family history, hormones, and exposure to carcinogens (certain chemicals or naturally occurring substances that are known to cause cancer).

Any of these risk factors may act together or in sequence to initiate or promote cancer. For some cancers, such as oral cancer, the risk is multiplied when two risk factors (in this case, alcohol and tobacco use) are both present.

In cases where the cancer is due to contact with a cancer-causing agent, the disease does not develop immediately. Instead, there is often a long period—as long as 30 years—between exposure and diagnosis of cancer. This is called a latency period. For example, lung cancer is usually the result of smoking habits 20 or more years prior to diagnosis of disease. A long latency period makes pinpointing the cause of cancer even more difficult.

Cancer in the Population (Gender, Race, Ethnicity)

There are differences in cancer rates among people of different genders and people of different racial and ethnic backgrounds. For example, in the U.S., blacks have a vastly different cancer experience than the white population. Among men age 20 and older, black men have higher cancer incidence and higher death rates compared to white men.

In contrast, white women have the higher cancer incidence rates and black women have the higher cancer death rates.

American Indian and Alaskan Native men and women have lower cancer incidence and mortality rates for all sites combined, compared to other racial groups. Hispanic Americans have higher rates of cervical, esophageal, gallbladder and stomach cancers than the U.S. non-Hispanic population.

Age at Diagnosis

In Vermont and the nation, cancer is the second leading cause of death, following heart disease.

Almost anyone can develop cancer, including children and young adults. However, cancer is primarily a disease of middle and older age. Nearly 60 percent of new cancers are diag-

Vermont Facts: Cancer among Males

- **From 1995 to 1999, an average of 1,420 new cases of cancer were diagnosed each year in Vermont males. During that same time period, 631 males died annually from cancer.**

Incidence *(new cases, based on data from 1995-1999)*

- **For all cancer sites combined, the male cancer incidence rate is not statistically different from the U.S. SEER rate.** *(A description of U.S. SEER rate may be found on page 21.)*
- **The incidence rate is statistically better than the U.S. SEER rate for prostate cancer and cancers of the oral cavity, stomach, and liver.**
- **The incidence rate is statistically worse than the U.S. SEER rate for cancers of the lung, esophagus, and larynx.**

Mortality *(deaths, based on data from 1995-1999)*

- **For all sites combined, the male cancer death rate is not statistically different from the U.S. rate.**
- **The male death rate is statistically better than the U.S. rate for cancers of the brain, stomach, and liver.**
- **The male prostate cancer death rate is statistically worse than the U.S rate.**

nosed in people age 65 and older. In the U.S., between 50 and 70 percent of people diagnosed with one of the four most common cancers (breast, prostate, lung, colon/rectum) are age 65 or older.

Following is a description of the burden and types of cancers most often diagnosed among men and women combined in various age groups.

• Under Age 20

In Vermont, this age group accounts for 1 percent of all cancers.

Nationally, leukemia and cancers of the brain and nervous system account for 40 percent of cancers in people under age 20.

• Age 20 to 49

In Vermont, 15 percent of cancers occur in this age group. Breast cancer ranks higher than any other cancer, accounting for one-quarter of all cancers in this age group.

Nationally, melanoma, colorectal and lung cancers have similar incidence rates for men and women in this age group. However, overall age-adjusted incidence rates are much higher for women than for men.

• Age 50 to 64

Breast, prostate, lung and colorectal cancers are the leading sites among 50 to 64-year-olds.

In Vermont, more than one-quarter of cancers occur in this age group, and 84 percent of all cancers are diagnosed in people age 50 and older.

• Age 65 to 74

Both in Vermont and nationally, prostate cancer is the leading site among people in this age group, followed by lung, breast and colorectal cancers.

In Vermont, 28 percent of all cancers are diagnosed in this age group.

• Age 75+

Colorectal cancer ranks first in this age group followed by lung, breast and prostate cancers.

In Vermont, 29 percent of all cancers are diagnosed in people age 75 and older.

Vermont Cancer Incidence by Age and Gender

Percent new cases, 1995-1999

Males		Females	
20-49 years		20-49 years	
Melanoma	12%	Breast	39%
Testis	11%	Melanoma	10%
Lung	9%	Ovary	7%
Other	68%	Other	44%
50-64 years		50-64 years	
Prostate	29%	Breast	36%
Lung	18%	Lung	13%
Colon & Rectum	10%	Uterus	9%
Other	43%	Other	42%
65-74 years		65-74 years	
Prostate	34%	Breast	26%
Lung	19%	Lung	18%
Colon & Rectum	11%	Colon & Rectum	15%
Other	36%	Other	41%
75+ years		75+ years	
Prostate	25%	Breast	23%
Lung	18%	Colon & Rectum	22%
Colon & Rectum	15%	Lung	11%
Other	42%	Other	44%

Prevention and Early Detection

Many cancers can be prevented through tobacco use prevention (and smoking cessation) and good dietary habits. In addition, many skin cancers can be prevented by limiting exposure to the sun and by wearing protective clothing and using sunscreens.

Many cancers can be cured if they are detected and treated in the early stages.

Screening

Checking for cancer (or conditions that may lead to cancer) in a person who does not have any symptoms of the disease is called screening. Screening may involve a physical exam, a laboratory test, or procedures such as a mammogram or colonoscopy that look at an internal organ.

Screening, conducted regularly by a health care provider, can result in early detection of cancers of the breast, cervix, colon, rectum, testis, oral cavity and skin, at a time when treatment is most likely to be successful. Breast, testicle and skin self-exams can also result in detection of tumors at earlier stages. For these cancers, more widespread use of screening will lead to earlier detection of cancer in the population as a whole and to better survival rates.

Cancer Stage Definitions:

In situ - Also known as "non-invasive." Cancer cells are present, but the tumor has not invaded the supporting structure of the organ on which it arose.

Localized - A tumor limited to the organ of origin. The cancer has gone through the basement membrane of the organ, but there is no spread beyond the boundaries of the organ.

Regional - The tumor has extended beyond the limits of the organ of origin, and there is potential for spread by lymph nodes or the blood supply. Regional stage cancers directly extend beyond the primary site, involve regional lymph nodes, or both.

Distant - Distant metastases are tumor cells that have broken away from the primary tumor, have traveled to other parts of the body, and have begun to grow at the new location. Common sites of distant spread are liver, lung, brain and bones. These organs receive blood flow from all parts of the body and thus are a target for distant metastases.

Unknown - There is not enough information in the record to categorize a cancer into any of the above stages.

Stage

Stage describes the extent to which the disease has spread from the original site to another part of the body.

Physicians determine the stage of a cancer at the time of diagnosis. Knowing the stage of the cancer helps patients better understand their prognosis and make treatment decisions.

Treatment

Often cancer treatment involves a team of specialists. The team may include a medical oncologist (specialist in cancer treatment), a surgeon, a radiation oncologist, and others.

Cancer may be treated with surgery, radiation, chemotherapy, hormones, and immunotherapy.

Working together, physicians and patients may decide to use a single treatment method or a combination of methods. The treatment depends on the type

and location of the cancer, the stage of the disease, the patient's age and general health, and other factors.

Survival

A five-year relative cancer survival rate is the proportion of patients surviving cancer five years after their diagnosis (after adjusting for normal life expectancy). It includes those who are disease-free, in remission, or under treatment.

Advances in the ways cancer is diagnosed and treated have increased the number of people who live long periods of time free of their disease. The most recent U.S. estimate shows that for people diagnosed with cancer (all sites) in 1993, 62 percent survived cancer after five years.

Surveillance

Cancer surveillance is the systematic collection, analysis and interpretation of cancer data. The goal of cancer surveillance is to improve our understanding of the prevention and treatment of cancer, and ultimately, to reduce illness and death from cancer.

Cancer registries at the local, state and national level collect and analyze data on the diagnosis, stage, and treatment of cancer.

The Vermont Cancer Registry is Vermont's

Females: Cancer Incidence

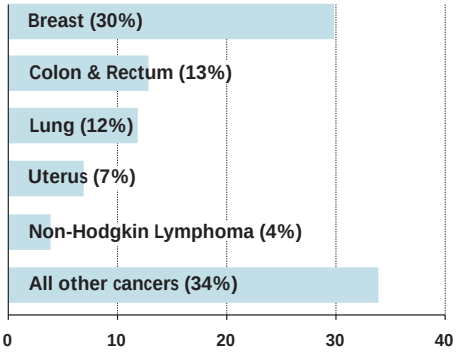
	U.S. SEER rate	VT rate		VT cases
	per 100,000	*per 100,000*	*(95% CI)*	*per year*
Breast	**140.9**	**132.8**	*(127.2, 138.5)* ★	**433**
Colon and Rectum	**47.1**	**54.3**	*(50.8, 57.9)* ✗	**187**
Lung	**53.3**	**51.9**	*(48.5, 55.5)*	**171**
Uterus	**26.5**	**30.1**	*(27.4, 32.9)* ✗	**98**
Ovary	**18.1**	**18.4**	*(16.3, 20.6)*	**60**
Melanoma of the Skin	**16.8**	**18.1**	*(16.0, 20.3)*	**58**
Non-Hodgkin Lymphoma	**16.5**	**18.1**	*(16.1, 20.3)*	**60**
Bladder	**10.2**	**11.9**	*(10.3, 13.7)* ✗	**40**
Cervix	**8.1**	**10.4**	*(8.8, 12.1)* ✗	**33**
Leukemia	**9.8**	**9.3**	*(7.9, 11.0)*	**31**
Pancreas	**9.5**	**9.3**	*(7.9, 10.9)*	**32**
Thyroid	**10.0**	**8.9**	*(7.5, 10.5)*	**28**
Kidney	**7.8**	**7.3**	*(6.0, 8.7)*	**24**
Oral Cavity and Throat	**6.7**	**6.0**	*(4.9, 7.3)*	**20**
Brain and Nervous System	**5.9**	**5.9**	*(4.8, 7.3)*	**19**
Myeloma	**4.2**	**4.2**	*(3.2, 5.3)*	**14**
Hodgkin Lymphoma	**2.8**	**3.7**	*(2.8, 4.8)*	**11**
Stomach	**4.6**	**3.6**	*(2.8, 4.6)*	**13**
Esophagus	**2.0**	**2.8**	*(2.1, 3.7)* ✗	**10**
Larynx	**1.6**	**2.4**	*(1.7, 3.3)* ✗	**8**
Liver	**2.5**	**1.6**	*(1.1, 2.4)* ★	**6**
All Sites Combined	**433.5**	**441.3**	*(431.2, 451.6)*	**1457**

★ *Vermont rate statistically **better** than U.S. SEER rate*

✗ *Vermont rate statistically **worse** than U.S. SEER rate*

Leading Female Cancer Sites

percentage of new Vermont female cases by site, 1995-1999



About this Table

Vermont rates are based on data from 1995-1999. All rates are age-adjusted to the 2000 U.S. standard population and exclude basal cell and squamous cell skin cancers and in situ (malignant but non-invasive) carcinomas except urinary bladder. Rates based on 10 or fewer cases are not individually calculated.

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statewide population-based cancer surveillance system. The registry collects information about all cancers diagnosed in Vermont (except non-melanoma skin cancers and carcinoma in situ of the cervix).

Operated by the Vermont Department of Health, the Vermont Cancer Registry is part of a national effort to gain a better understanding of cancer in the population. The goals of the registry are to:

- determine the incidence of cancer in the Vermont population
- monitor cancer incidence and mortality trends among state residents
- identify high risk populations
- report findings to health care professionals and the public
- contribute data for cancer prevention, control and treatment programs

Public health officials use cancer registry data to assist in leading effective cancer prevention and control programs focused on preventing risk behaviors for cancer. This information can also help identify specific populations that could benefit from increased public education and access to cancer prevention and screening services.

The data can also be used in clinical, epide-

Females: Cancer Mortality

	U.S. rate	VT rate			VT deaths
	per 100,000	*per 100,000*	*(95% CI)*		*per year*
Lung	**41.3**	**38.5**	*(35.5, 41.6)*		**130**
Breast	**28.4**	**27.5**	*(25.1, 30.2)*		**93**
Colon and Rectum	**18.0**	**21.1**	*(19.0, 23.4)*	✗	**75**
Ovary	**9.3**	**9.4**	*(8.0, 11.1)*		**32**
Pancreas	**9.0**	**8.2**	*(6.9, 9.8)*		**29**
Non-Hodgkin Lymphoma	**7.4**	**7.3**	*(6.0, 8.7)*		**25**
Leukemia	**6.2**	**5.5**	*(4.4, 6.8)*		**19**
Uterus	**4.0**	**4.8**	*(3.8, 6.0)*		**16**
Brain and Nervous System	**5.1**	**3.5**	*(2.7, 4.6)*	★	**12**
Cervix	**2.8**	**3.4**	*(2.5, 4.5)*		**11**
Bladder	**2.3**	**3.1**	*(2.3, 4.1)*		**11**
Myeloma	**3.1**	**2.8**	*(2.0, 3.7)*		**9**
Kidney	**2.9**	**2.5**	*(1.8, 3.4)*		**9**
Stomach	**3.1**	**2.3**	*(1.7, 3.2)*		**8**
Melanoma of the Skin	**2.0**	**2.1**	*(1.4, 3.0)*		**7**
Esophagus	**1.7**	**2.0**	*(1.4, 2.9)*		**7**
Liver	**2.7**	**1.7**	*(1.2, 2.5)*	★	**6**
Oral Cavity and Throat	**1.6**	**1.3**	*(0.8, 2.0)*		**5**
Thyroid	**2.0**	**—**			**—**
Larynx	**0.5**	**—**			**—**
Hodgkin Lymphoma	**0.5**	**—**			**—**
All Sites Combined	**171.4**	**170.3**	*(164.2, 176.7)*		**579**

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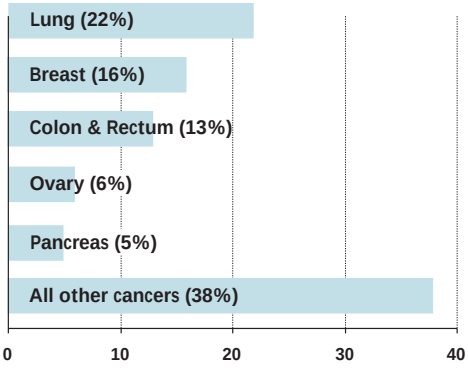
Leading Female Cancer Deaths

percentage of Vermont female deaths by site, 1995-1999



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The U.S. rates are 1995-1999 white population mortality rates. When the U.S. rate falls within the 95% confidence interval (95% CI) for the Vermont rate, it suggests that there is no statistical difference between the rates.

miologic and health services research. For example, differences in incidence rates might prompt a search for clues as to why the incidence of a certain type of cancer is higher for one group than another.

Concerns About Elevated Rates

Concerns arise when people observe a number of cases of cancer in their neighborhood, community or workplace. Because cancer is the second leading cause of death, it is not unusual to know several people who have been diagnosed with this disease. As a population ages, the occurrence of new cancer cases is expected to increase.

A suspected cancer cluster is more likely to be a true cluster if it involves a large number of cases of one type of cancer, rather than several different types; a rare type of cancer, rather than a common type; or an increased number of cases of a certain type of cancer in an age group not usually affected by that type of cancer.

Most geographic differences in cancer rates appear to result from behavioral differences or differences in lifestyle; not from anything in a person's physical surroundings or from environmental pollution.

Almost two-thirds of cancer deaths in the U.S.

Males: Cancer Incidence

	U.S. SEER rate	VT rate		VT cases
	per 100,000	*per 100,000*	*(95% CI)*	*per year*
Prostate	**163.2**	**145.7**	*(139.2, 152.6)* ★	**380**
Lung	**84.4**	**93.6**	*(88.3, 99.2)* ✗	**242**
Colon and Rectum	**65.0**	**64.5**	*(60.0, 69.3)*	**160**
Bladder	**39.8**	**40.4**	*(36.9, 44.3)*	**99**
Melanoma of the Skin	**24.4**	**25.3**	*(22.7, 28.2)*	**69**
Non-Hodgkin Lymphoma	**24.5**	**23.5**	*(20.9, 26.3)*	**62**
Leukemia	**16.7**	**16.7**	*(14.5, 19.2)*	**42**
Kidney	**15.6**	**16.2**	*(14.1, 18.6)*	**43**
Oral Cavity and Throat	**16.5**	**14.1**	*(12.1, 16.3)* ★	**39**
Pancreas	**12.3**	**13.2**	*(11.3, 15.5)*	**34**
Esophagus	**7.6**	**9.6**	*(8.0, 11.6)* ✗	**25**
Larynx	**7.1**	**9.5**	*(7.9, 11.4)* ✗	**26**
Stomach	**10.7**	**8.3**	*(6.7, 10.1)* ★	**21**
Brain and Nervous System	**8.7**	**8.2**	*(6.8, 10.0)*	**23**
Testis	**6.2**	**6.5**	*(5.3, 8.0)*	**19**
Myeloma	**6.5**	**6.0**	*(4.7, 7.6)*	**15**
Liver	**6.4**	**4.6**	*(3.5, 6.0)* ★	**12**
Thyroid	**3.8**	**3.7**	*(2.8, 4.9)*	**11**
Hodgkin Lymphoma	**3.4**	**2.9**	*(2.1, 4.0)*	**9**
All Sites Combined	**560.1**	**547.3**	*(534.4, 560.5)*	**1420**

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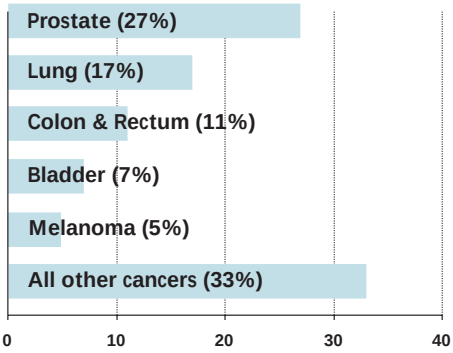
Leading Male Cancer Sites

percentage of new Vermont male cases by site, 1995-1999



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The U.S. SEER rates are 1995-1999 white population incidence rates. When the U.S. SEER rate falls within the 95% confidence interval (95% CI) for the Vermont rate, it suggests that there is no statistical difference between the rates.

can be linked to tobacco use, adult diet, obesity and lack of exercise. By contrast, only an estimated 4 percent of cancer deaths can be attributed to environmental pollution or radiation.

Non-Hodgkin Lymphoma

Non-Hodgkin Lymphoma has gone from being a relatively rare form of cancer to the fifth most common cancer in the United States during the last couple of decades. Currently there is little information about why this increase has occurred or about the exact cause or causes of this cancer.

In 2002, an estimated 53,900 new cases were diagnosed in the U.S., and there were 24,400 deaths from Non-Hodgkin Lymphoma. During 1992 through 1998, U.S. incidence rates stabilized, except among black females.

Vermont's incidence and mortality rates are similar to the U.S. rates for both men and women, and are not increasing.

Males: Cancer Mortality

	U.S. rate	VT rate		VT deaths
	per 100,000	*per 100,000*	*(95% CI)*	*per year*
Lung and Bronchus	**78.7**	**75.8**	*(71.0, 80.9)*	**195**
Prostate	**31.5**	**35.1**	*(31.6, 39.0)* ✗	**75**
Colon and Rectum	**25.7**	**27.9**	*(24.9, 31.3)*	**66**
Pancreas	**12.0**	**13.6**	*(11.6, 15.9)*	**35**
Non-Hodgkin Lymphoma	**11.0**	**11.7**	*(9.9, 14.0)*	**30**
Leukemia	**10.6**	**10.5**	*(8.7, 12.7)*	**25**
Bladder	**7.9**	**8.6**	*(6.9, 10.7)*	**19**
Esophagus	**7.2**	**8.1**	*(6.6, 10.0)*	**21**
Kidney and Renal Pelvis	**6.2**	**7.1**	*(5.7, 8.9)*	**18**
Brain and Nervous System	**7.5**	**5.4**	*(4.3, 6.9)* ★	**16**
Stomach	**6.3**	**4.7**	*(3.6, 6.1)* ★	**12**
Melanoma of the Skin	**4.4**	**4.6**	*(3.5, 6.0)*	**13**
Myeloma	**4.7**	**4.5**	*(3.4, 6.0)*	**11**
Liver	**5.8**	**4.3**	*(3.2, 5.7)* ★	**11**
Oral Cavity and Pharynx	**4.0**	**3.7**	*(2.7, 5.1)*	**10**
Larynx	**2.4**	**2.6**	*(1.8, 3.7)*	**7**
Thyroid	**1.8**	—		—
Hodgkin Lymphoma	**0.7**	—		—
Testis	**0.3**	—		—
All Sites	**254.1**	**258.5**	*(249.4, 268.0)*	**631**

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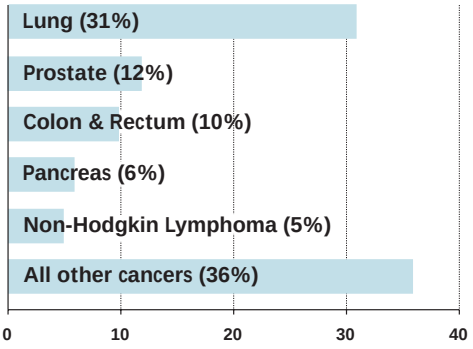
Leading Male Cancer Deaths

percentage of Vermont male deaths by site, 1995-1999



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Breast Cancer

Among women, breast cancer is the most commonly diagnosed cancer and a leading cause of cancer death in the United States.

Nationally, breast cancer accounts for 15 percent of all cancer deaths among women, and a woman's risk for developing breast cancer in her lifetime is about one in eight.

Risk Factors

While many factors have been associated with the risk of breast cancer, most only relate to a moderate increase in risk. This suggests that multiple factors may play a role in each woman's disease and that unrecognized factors may also exist.

Breast cancer incidence increases with age. Nationally, most women who get breast cancer are over age 50. The incidence rates for women before age 45 are higher among black women; after age 45 the rates are higher for white women. Overall, black women have lower incidence rates but higher mortality rates than white women.

Women who have had breast cancer or have a mother, sister or daughter with breast cancer, have an increased risk. Certain benign breast changes may also increase a woman's chance of developing breast cancer. Other risk factors may include first pregnancy after age 30, never bearing children, menstruation onset before age 12, and menopause after age 50.

Prevention

Currently, there is no known way to prevent breast cancer. Recent studies suggest that regular exercise may decrease risk in younger women and some evidence suggests a link between diet and breast cancer. Research is ongoing in these areas.

Screening

Early detection increases the chances of long-term survival. Mammography, combined with clinical breast exam, is the most effective means of early detection. However, controversy persists regarding whether mammography reduces mortality in women under age 50.

In Vermont from 1995 to 1999, 36 percent of breast cancers were detected by mammography compared to 2 percent from 1974 to 1984. In 2000, only 60 percent of women age 50 and older with household incomes below $15,000 received screening, compared to 88 percent of women with incomes over $75,000.

Stage

Early detection is the goal of breast cancer screening. Nationally, 97 percent of women whose breast cancer was diagnosed at a localized stage survive for at least five years, compared to only 24 percent of those diagnosed at a distant stage.

Nearly two-thirds of invasive breast cancer is diagnosed at the localized stage.

Vermont Breast Cancer Facts

(based on data from 1995-1999)

- **Each year approximately 433 women are diagnosed with breast cancer.**
- **Vermont's breast cancer incidence rate is statistically better than the U.S. SEER rate.**
- **About 93 women die from breast cancer each year.**
- **Vermont's breast cancer mortality rate is not statistically different from the U.S. rate.**

Healthy Vermonters 2010 Objective

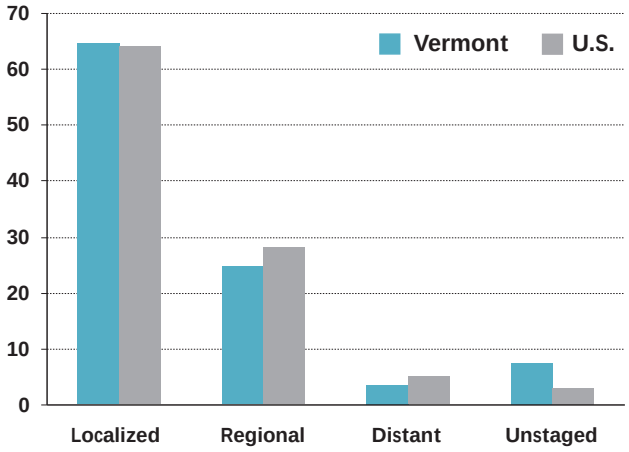
- **Increase the percentage of women (age 40+) who have had a mammogram in the preceding two years.**

Goal: 70% VT 2000: 78%

(While Vermont has met the 2010 goal for the population as a whole, certain groups known to be at highest risk are not getting screened. For example, only 66 percent of women age 40+ with a high school education or less and a household income below $20,000 have had a mammogram in the preceding two years.)

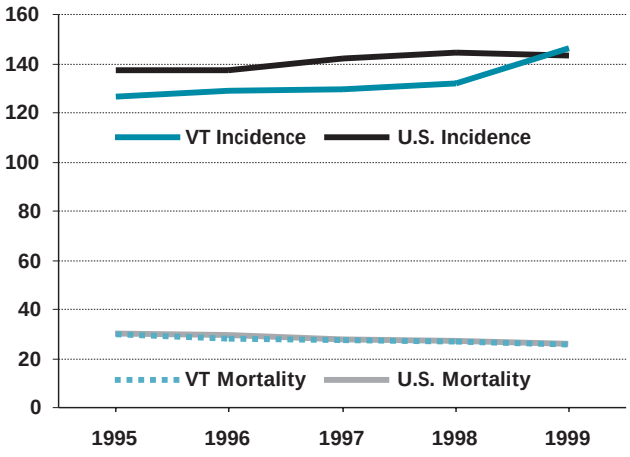
Breast Cancer Stage at Diagnosis

percentage of new female cases, 1995-1999



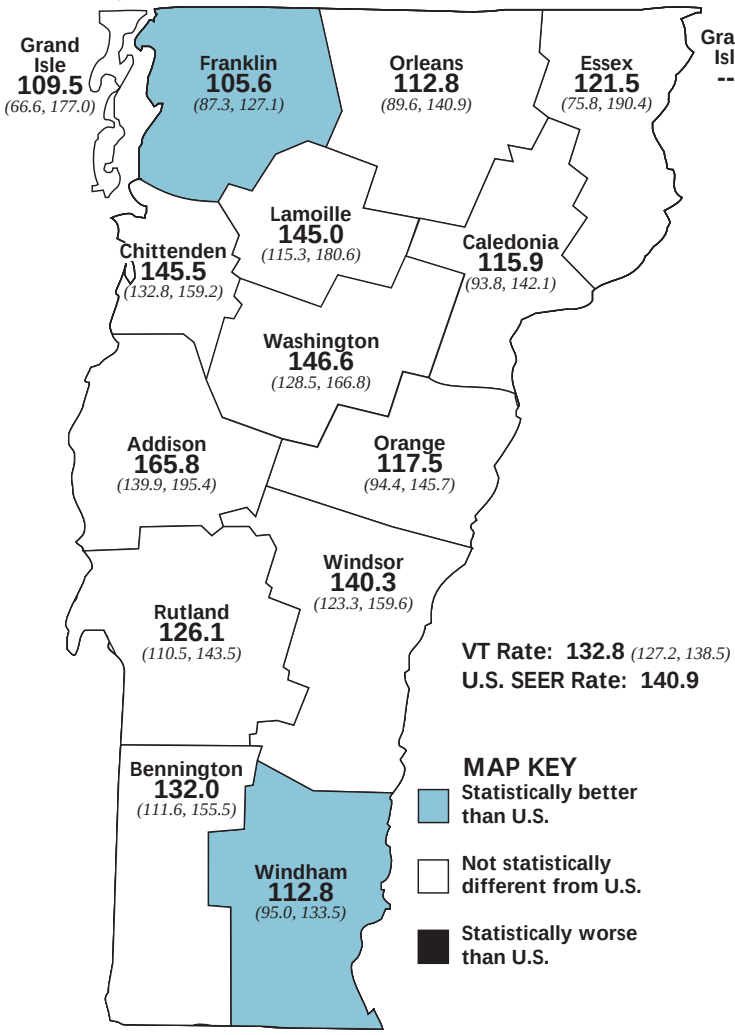
Breast Cancer Mortality and Incidence

per 100,000 females



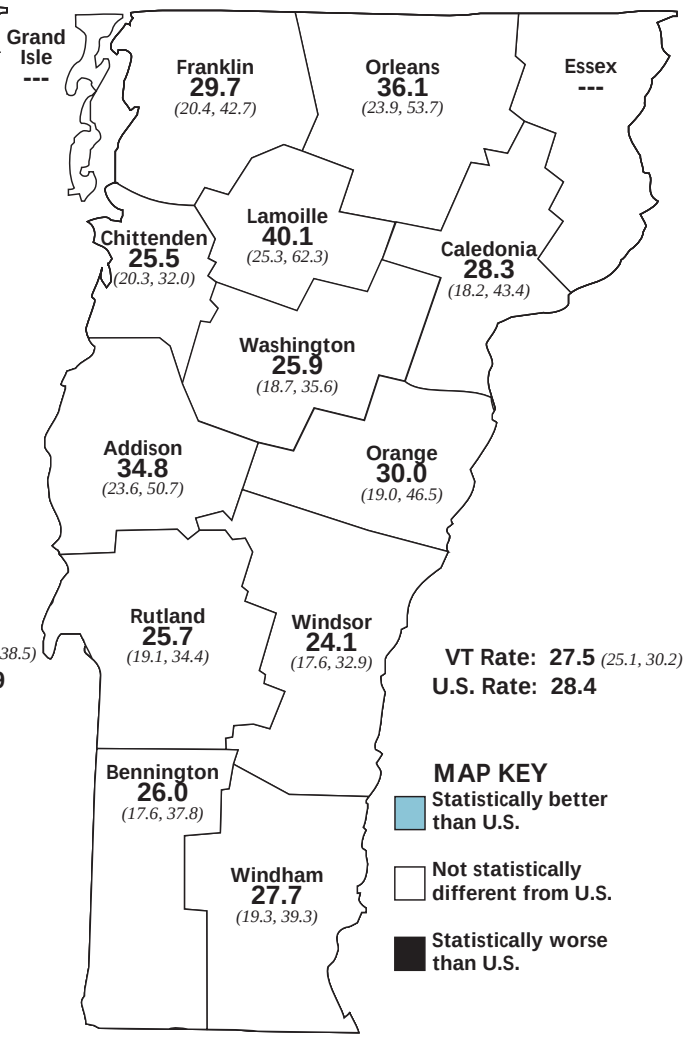
Breast Cancer Incidence

Per 100,000 females (1995-1999)



Breast Cancer Mortality

Per 100,000 females (1995-1999)



Colorectal Cancer

Nationally, colorectal cancer is the second leading cause of cancer death after lung cancer. Among men, it is the third most commonly diagnosed cancer (after lung and prostate cancer); among women, it ranks third (after lung and breast cancer).

Together, the colon and rectum make up the large bowel, or large intestine. The colon refers to the upper five or six feet of the large intestine and the rectum refers to the last five or six inches. Because these cancers are similar and sometimes hard to distinguish from one another, they are generally grouped as colorectal cancer.

Risk Factors

In the U.S., about 75 percent of all new cases of colorectal cancer occur in people with no known risks for the disease. The remaining cases occur in people who have a family history of colorectal cancer, previous adenomatous polyps, or a condition such as inflammatory bowel disease.

The incidence of colorectal cancer, as with many cancers, is extremely low in childhood and increases dramatically with age. Colorectal cancer is most often found among men and women who are over the age of 50.

Prevention

Individuals can lower their risk by getting regular screening tests, being more physically active, and eating more vegetables. Some studies suggest that a diet low in fat and calories and high in fiber can help prevent colorectal cancer.

Screening

Colorectal cancer is one of few cancers that can be prevented through a screening test. Research shows that colorectal cancer develops gradually from benign polyps. Polyps detected by sigmoidoscopy or colonoscopy can be removed before they become malignant.

Screening recommendations for people age 50 years and older are:

- Fecal occult blood test (FOBT) every year, or
- Sigmoidoscopy every 5 years, or
- FOBT annually and sigmoidoscopy every 5 years, or
- Colonoscopy every 10 years, or
- Double-contrast barium enema every 5-10 years.

Stage

Early detection is the goal of colorectal cancer screening. Nationally, 91 percent of men and women whose cancer is diagnosed in a localized stage survive their colorectal cancers for at least five years; compared to 9 percent of those diagnosed at a distant stage.

Vermont and the U.S. have a similar stage distribution, with only one-third of invasive colorectal cancer diagnosed at the localized stage.

Vermont Colorectal Cancer Facts

(based on data from 1995-1999)

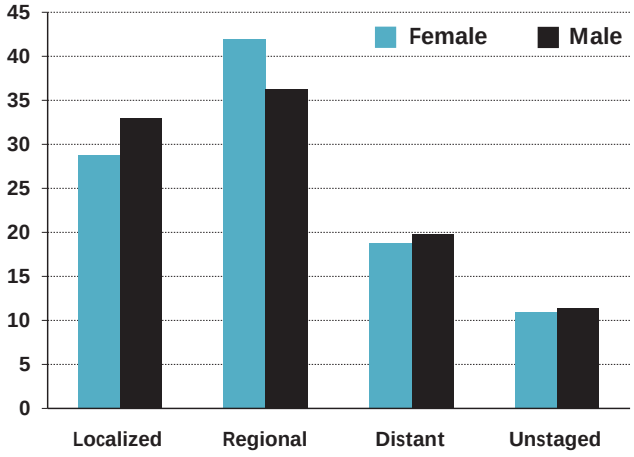
- **Each year, approximately 187 colorectal cancer cases are diagnosed in women, and 160 cases are diagnosed in men.**
- **Vermont's female colorectal cancer incidence rate is statistically worse than the U.S. SEER rate; the male rate is not statistically different from the U.S.**
- **Annually about 75 women and 66 men die from colorectal cancer.**
- **The female colorectal cancer mortality rate of 21.1** ***(19.0, 23.4)*** **per 100,000 is higher than the U.S. rate of 18.0.**
- **The male rate of 27.9** ***(24.9, 31.3)*** **per 100,000, is not statistically different from the U.S. rate of 25.7.**

Healthy Vermonters 2010 Objectives

- **Increase the percentage of adults age 50+ who have had a fecal occult blood test (FOBT) in the past two years.**
  Goal: 50% VT 1999: 37%
- **Increase the percentage of adults age 50+ who have ever had a sigmoidoscopy.**
  Goal: 50% VT 1999: 42%

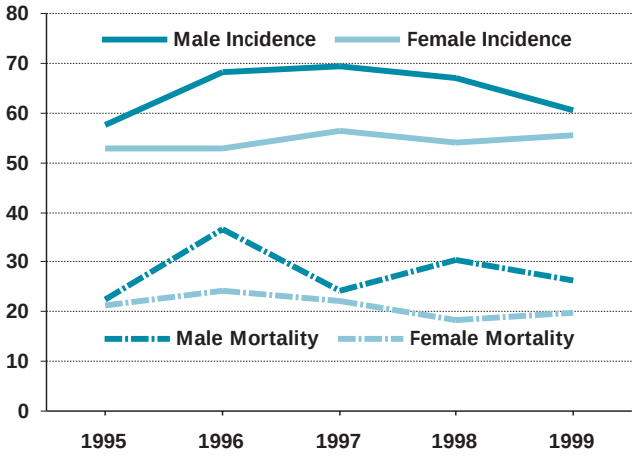
Colorectal Cancer Incidence by Stage at Diagnosis

percentage of new Vermont male and female cases, 1995-1999



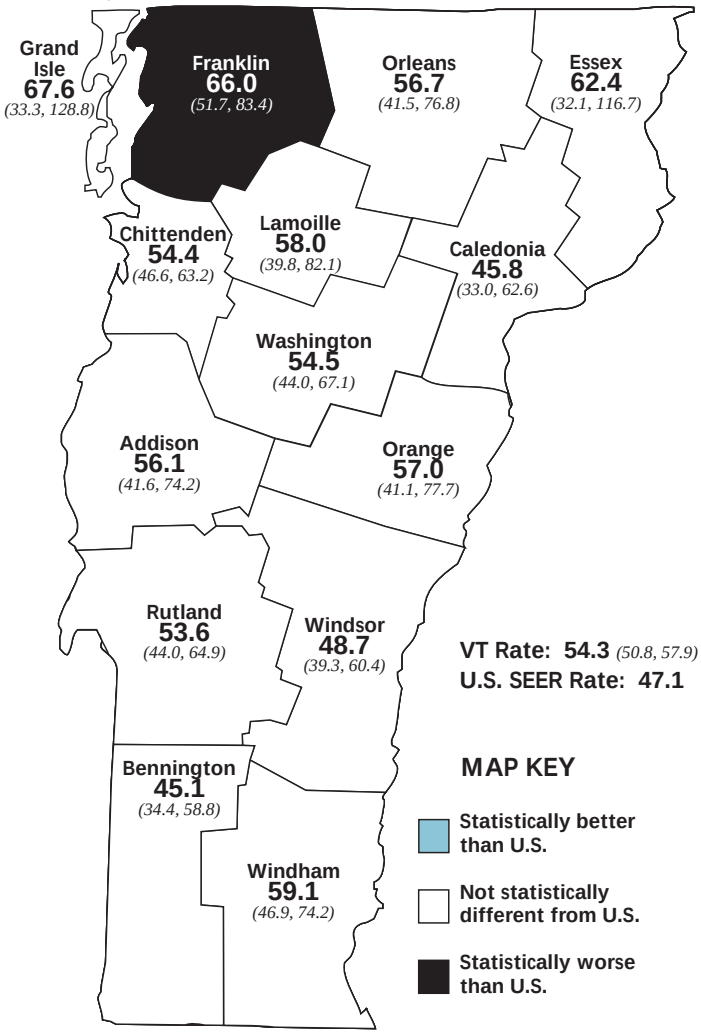
Colorectal Cancer Incidence and Mortality

per 100,000 Vermont males/females



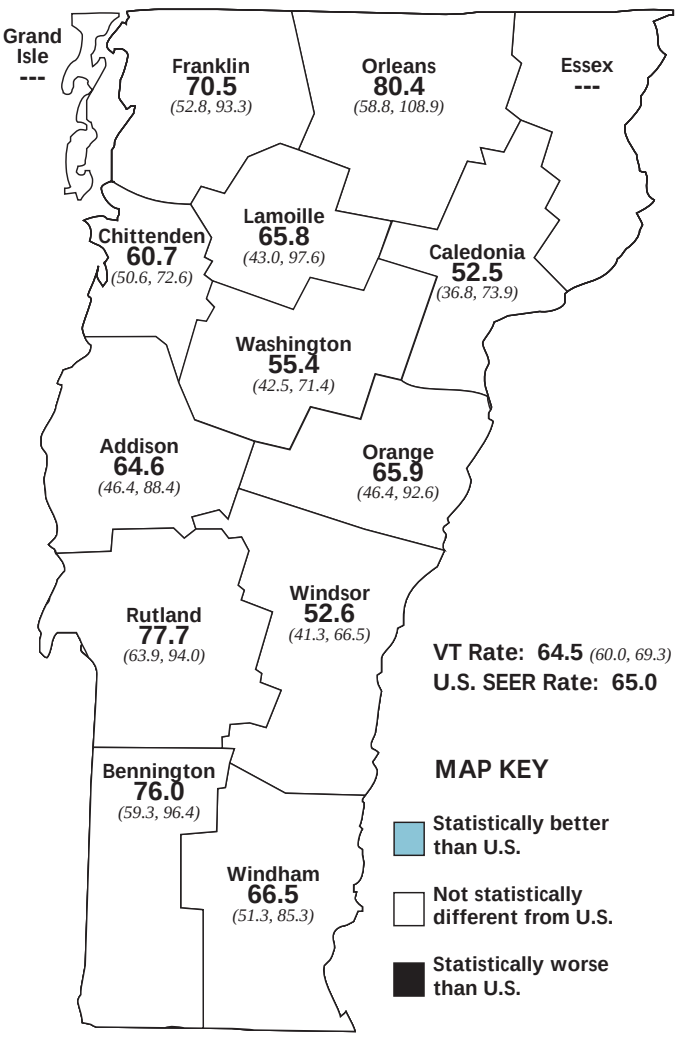
Female Colorectal Cancer Incidence

Per 100,000 females (1995-1999)



Male Colorectal Cancer Incidence

Per 100,000 males (1995-1999)



Lung Cancer

Among both men and women in the United States, lung cancer is the leading cause of cancer deaths and the second leading cause of new cancer cases. It accounts for about 13 percent of all newly diagnosed cancer cases and 28 percent of cancer deaths.

Nationally, since 1990, the lung cancer death rate among men has declined, while the rate among women has continued to increase. The lung cancer incidence rate among women has risen as well, reflecting an increase in cigarette smoking among females over the past several decades. Since 1987, more U.S. women have died each year from lung cancer than from breast cancer.

Risk Factors

Cigarette smoking is the major cause of lung cancer. An estimated 87 percent of all lung cancer deaths in the U.S. are attributable to smoking.

Lung cancers diagnosed today reflect people's smoking habits of decades ago. For this reason, the highest rates of lung cancer are not seen in the age group with the highest current smoking rates.

Currently, 29 percent of men and 25 percent of women age 20 to 49 smoke, while 14 percent of men and women age 65 to 74 and 4 percent of Vermonters over age 74 smoke. The latency period is shown by the higher lung cancer incidence rates in people age 65 and over.

Additional risks for lung cancer include cigar and pipe smoking, environmental tobacco smoke (secondhand smoke), radon gas, and occupational exposures to substances like asbestos. The combination of cigarette smoking and asbestos exposure increases the risk of lung cancer fifty-fold.

Prevention

The single most effective way to prevent lung cancer is to quit, or never start, smoking. Quitting smoking greatly reduces the risk of dying from lung cancer. Ten years after quitting, the risk of lung cancer among former smokers is about half of the risk for people who continue to smoke.

Among adults and youth regular smokers, 49 percent have tried at least once in the last year to quit smoking. The age group 18 to 24 is the one group with the highest percentage of people attempting to quit (68%). This is also the age group in which smoking is most prevalent, with 36 percent of adults age 18 to 24 reporting that they are regular smokers.

Screening

Currently, there are no screening tests for lung cancer and symptoms often do not appear until the disease is quite advanced.

Vermont Lung Cancer Facts

(based on data from 1995-1999)

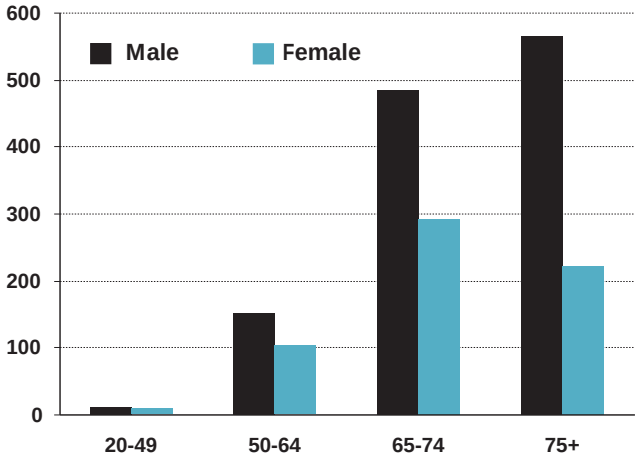
- **Each year, an average of 171 lung cancer cases are diagnosed in women, and 242 in men.**
- **Vermont's female lung cancer incidence rate is not statistically different from the U.S. SEER rate; the male lung cancer rate is statistically worse.**
- **Approximately 130 women and 195 men die from lung cancer each year.**
- **The female lung cancer mortality rate is 38.5** *(35.5, 41.6)* **per 100,000 and the male rate is 75.8** *(71.0, 80.9)* **per 100,000. These rates are not statistically different from the U.S. rates of 41.3 for women or 78.7 for men.**

Healthy Vermonters 2010 Objectives

- **Reduce the percentage of adults (age 18+) who smoke cigarettes.**
  Goal: 12% **VT 2001: 22%**
- **Reduce the percentage of youth who smoke cigarettes.**
  Goal: 16% **VT 2001: 22% of 8th-12th graders**

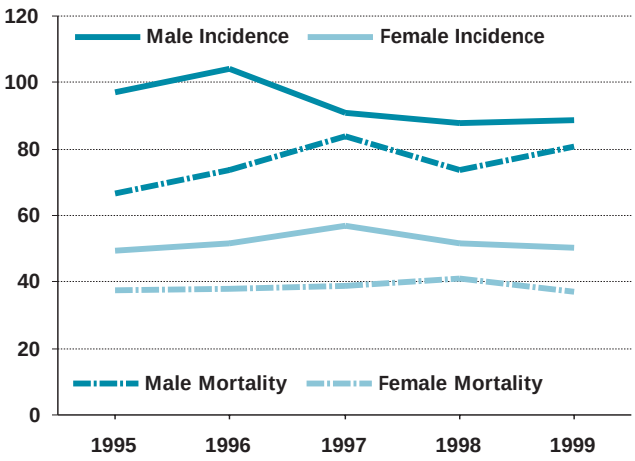
Lung Cancer Incidence by Age at Diagnosis

per 100,000 Vermont males/females, 1995-1999



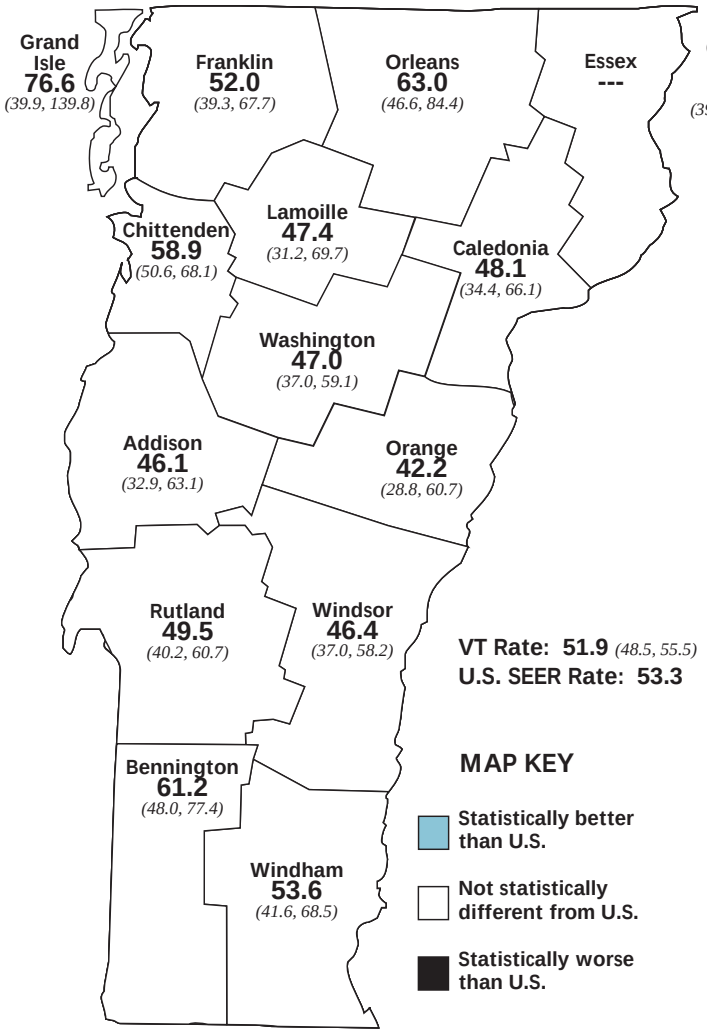
Lung Cancer Incidence and Mortality

per 100,000 Vermont males/females



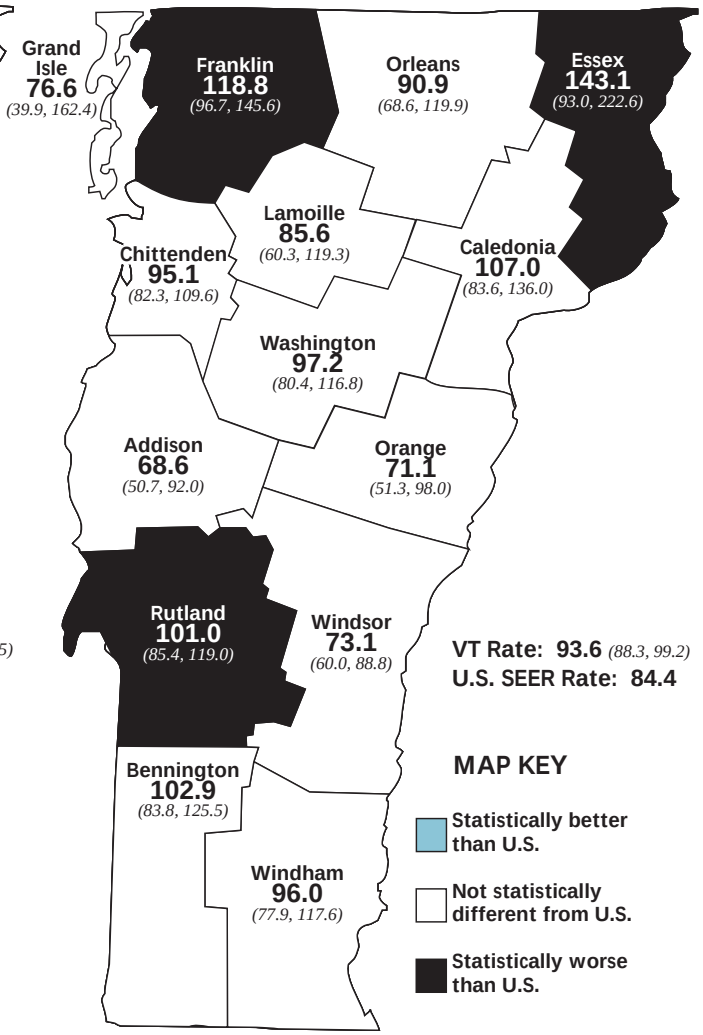
Female Lung Cancer Incidence

Per 100,000 females (1995-1999)



Male Lung Cancer Incidence

Per 100,000 males (1995-1999)



Melanoma

In the U.S., melanoma of the skin is the fifth most commonly diagnosed cancer in men, and sixth in women. Nationally, the number of new cases of melanoma has more than doubled in the past 20 years.

Melanoma is the most serious form of skin cancer. It is the most rapidly increasing form of cancer in the U.S., causing more than 75 percent of all deaths from skin cancer.

Risk Factors

Some of the factors associated with an increased risk of developing melanoma are family or personal history of melanoma, dysplastic nevi, weakened immune system, a large number of ordinary moles (more than 50), ultraviolet radiation exposure, one or more severe blistering sunburns, and fair skin.

The chance of developing melanoma increases with age, but this disease affects people of all age groups and is one of the most common cancers in adults age 20 to 49.

In the U.S., rates are more than 10 times higher in whites than in blacks. Melanoma mortality is increasing slightly in white men, while it has stabilized among white women.

Prevention

Protection from exposure to the sun's ultraviolet rays appears to be the most effective way to prevent the development of skin cancer. Skin cancer is largely preventable when sun protective practices and behaviors are consistently used.

In Vermont, 59 percent of women routinely use sunblock with a sun protection factor (SPF) greater than 15, compared to 37 percent of men.

Because of the possible link between severe sunburns in childhood and greatly increased risk of melanoma in later life, children, in particular, should be protected from the sun.

Screening

Experts do not agree whether to recommend routine screening for skin cancer by total skin examination. Generally, it is recommended that people with risk factors talk with their physician about skin cancer, the symptoms to watch for, and a schedule for checkups.

Other Skin Cancers

The two most common forms of skin cancer are basal cell and squamous cell carcinoma. Although more than a million new cases of these cancers are estimated to occur each year in the U.S., cancer registries do not routinely track them.

These highly curable cancers are usually treated in doctors' offices, and less than 1 percent are fatal.

Vermont Melanoma Facts

(based on data from 1995-1999)

- **Vermont's melanoma incidence rates are not statistically different from the U.S. SEER white rates.**
- **Each year, an average of 58 cases of melanoma are diagnosed in women, and 69 in men.**
- **An average of seven women and 13 men die from melanoma each year.**
- **The female melanoma mortality rate is 2.1** *(1.4, 3.0)* **per 100,000 and the male rate is 4.6** *(3.5, 6.0)* **per 100,000. These rates are not statistically different from the U.S. white rates of 2.0 for females or 4.4 for males.**

Healthy Vermonters 2010 Objective

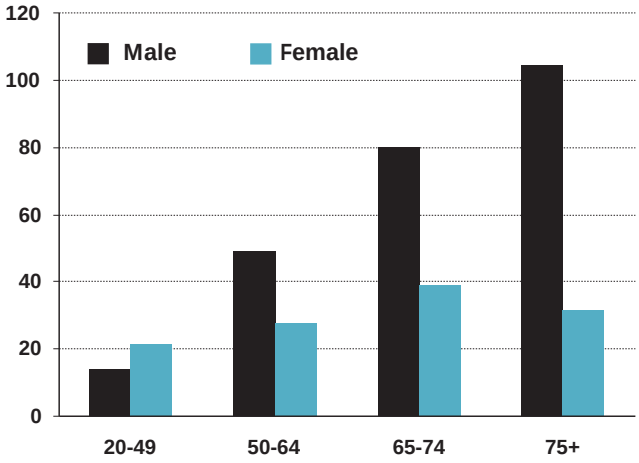
- **Increase the percentage of people (age 18+) who use at least one protective measure to decrease their risk of skin cancer.**

Goal: 75% VT 2001: 76%

(While Vermont has met the 2010 goal for the population as a whole, certain groups known to be at highest risk are not getting screened. For example, 71percent of men take precautions compared to 80 percent of women.)

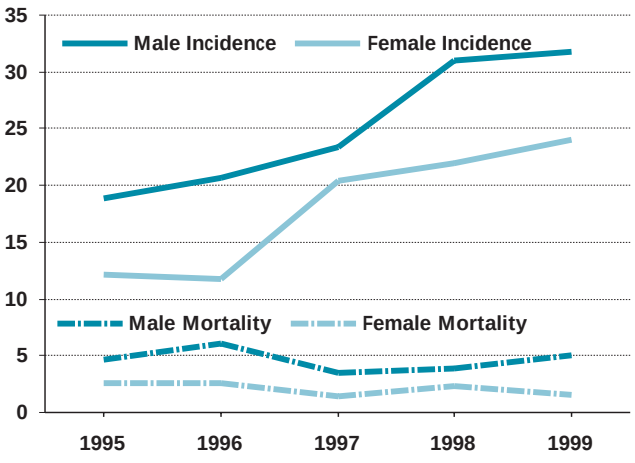
Melanoma Incidence by Age at Diagnosis

per 100,000 Vermont males/females, 1995-1999



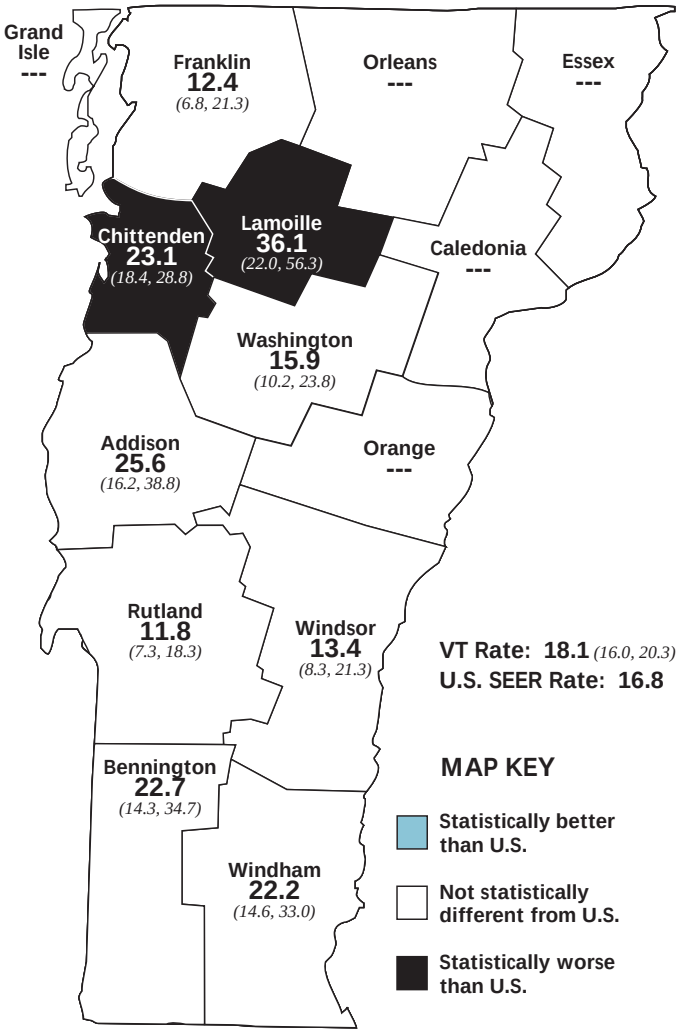
Melanoma Incidence and Mortality

per 100,000 Vermont males/females



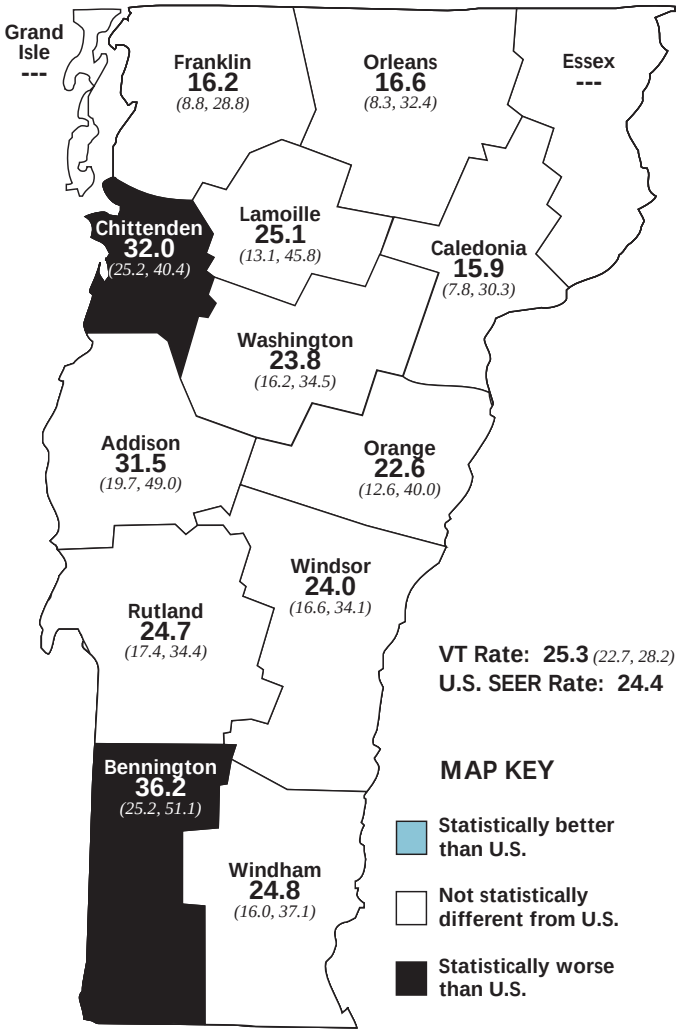
Female Melanoma Incidence

Per 100,000 females (1995-1999)



Male Melanoma Incidence

Per 100,000 males (1995-1999)



Prostate Cancer

Cancer of the prostate is the most commonly diagnosed cancer among men in the U.S. Among the leading causes of cancer death in men, prostate cancer is second, behind lung cancer.

Of all men who are diagnosed with cancer each year, more than one-quarter have prostate cancer.

Risk Factors

The causes of prostate cancer are not well understood. Some studies have found that age, family history, race, and diet are risk factors associated with prostate cancer.

In the U.S., more than 75 percent of men diagnosed with prostate cancer each year are over age 65. The average age at the time of diagnosis is 70. Prostate cancer is more common in black men than in men of other races or ethnic groups.

Screening

Medical experts agree that all men should receive all available information on the pros and cons of prostate cancer screening before making an informed decision. However, they do not agree about whether regular screening for prostate cancer is recommended.

According to the Centers for Disease Control and Prevention, medical experts who encourage regular screening believe current scientific evidence shows that finding and treating prostate cancer early, when treatment might be more effective, may save lives. These experts recommend that all men who have a life expectancy of at least 10 more years should be offered the prostate specific antigen (PSA) test and a digital rectal exam (DRE) annually beginning at age 50. They also recommend offering screening tests earlier to black men, and men who have a father or brother with prostate cancer.

Medical experts who do not recommend regular screening want convincing evidence that finding early-stage prostate cancer and treating it, saves lives. They believe that some of these cancers may never affect a man's health and treatment could cause temporary or long-lasting side effects.

Completeness of Reporting

The Vermont Cancer Registry is continuing to work with health care providers and facilities to reach its goal of 100 percent reporting for all new cancers diagnosed in Vermont. Underreporting could cause Vermont's prostate cancer incidence rate to appear lower than it actually is.

Due to possible reporting irregularities, county rates are not reported.

Vermont Prostate Cancer Facts

(based on data from 1995-1999)

- **Vermont's reported prostate cancer incidence rate is 145.7** *(139.2, 152.6)* **per 100,000. The U.S. SEER white rate is 163.2.**
- **Each year, 380 new cases of prostate cancer are diagnosed and reported to the Vermont Cancer Registry.**
- **Approximately 75 men die from prostate cancer each year.**
- **Vermont's prostate cancer mortality rate is 35.1** *(31.6, 39.0)* **per 100,000. This is statistically worse than the U.S. rate of 31.5.**

Healthy Vermonters 2010 Objective

- **There are no Healthy Vermonters 2010 objectives for prostate cancer. The national objective is to reduce prostate cancer deaths (per 100,000 men).**

  Goal: 29 VT 2000: 32

Cervical Cancer

Each year, about 13,000 women in the U.S. are diagnosed with invasive cancer of the cervix.

In Vermont and the U.S., almost 45 percent of invasive cervical cancers are found in women aged 50 and older. Incidence and mortality for invasive cervical cancer have declined about 40 percent since the early 1970s and since the introduction of the Papanicolaou (Pap) test.

Nationally, about 78 percent of cervical cancer cases are diagnosed at the in situ stage, before they have become invasive cancers. Cancer registries do not routinely track non-invasive (in situ) cancers of the cervix.

Risk Factors

The major risk factors for cervical cancer include initiation of sexual activity before age 18, multiple sexual partners, infection with human papilloma virus 16, and cigarette smoking.

Prevention and Screening

Currently, early detection and treatment of precancerous conditions are the most effective ways to prevent and treat invasive cervical cancer at an early, curable stage.

Screening Pap tests are recommended at least once every three years for all women age 18 to 65 who are or have been sexually active, even past menopause. In consultation with a physician, regular testing may be discontinued in women over age 65 who have had regular previous screening with consistently normal results.

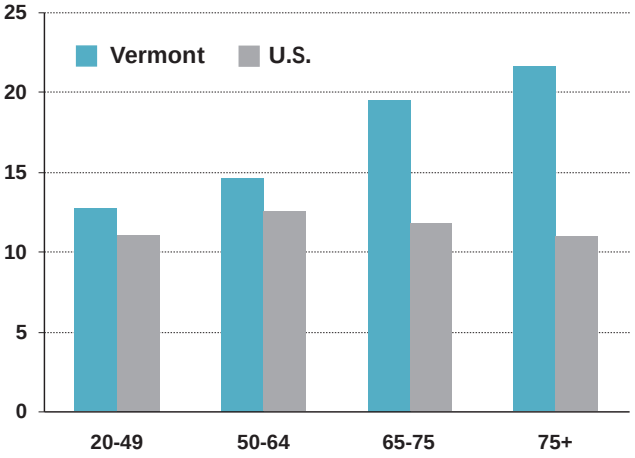
Cervical Cancer Screening by Age

percentage of Vermont women age 18+ screened (Pap test) within 3 years, 1996-2000

Age Group	20-49	50-64	65-74	75+
Screened	90%	84%	73%	56%

Cervical Cancer Incidence by Age at Diagnosis

per 100,000 females, 1995-1999



Vermont Cervical Cancer Facts

(based on data from 1995-1999)

- **Each year, an average of 33 women are diagnosed with invasive cervical cancer.**
- **Vermont's cervical cancer incidence rate is 10.4** *(8.8, 12.1)* **per 100,000 women. This statistically worse than the U.S. SEER rate of 8.1.**
- **Approximately 11 women die from cancer of the cervix each year.**
- **Vermont's cervical cancer mortality rate is 3.4** *(2.5, 4.5)* **per 100,000 women. This is not statistically different from the U.S. rate of 2.8.**

Healthy Vermonters 2010 Objective

- **Increase the percentage of women age 18+ who have had a Pap test in the preceding three years.**

  Goal: 90% VT 2000: 84%

The Vermont Cancer Registry

The Vermont Cancer Registry is a central bank of information on all cancer cases diagnosed or treated in Vermont since 1994. State law requires physicians and hospitals to report to the registry specific information on all cases of cancer they diagnose or treat in Vermont.

Four types of data are collected.

Demographic — including the cancer patient's name, age, sex, race, ethnicity, marital status, birth place, residence and occupation

Administrative — including the source of information and date the case was reported

Diagnostic — including the date the cancer was diagnosed, biopsy results, type of cancer (primary site and histology), tumor size and stage

First Course of Treatment — including date(s) and type(s) of surgery, radiation, chemotherapy, hormones, immunotherapy and other treatment.

Data Confidentiality

By law, all information that could possibly be used to identify an individual Vermonter is kept "confidential and privileged" by the Vermont Cancer Registry. This specifically includes identifying information regarding individual patients, health care providers and health care facilities. The law permits disclosure of certain confidential data to other cancer registries and federal cancer control agencies to collaborate in a national cancer registry, and to health researchers for cancer control and prevention research studies. However, strict requirements, including prior approval of the researcher's academic committee for the protection of human subjects, must be met.

Public data releases, such as published statistical reports, are carefully designed in order to provide data to the fullest extent possible while still realizing the mandate to protect patient confidentiality.

Data Collection

Thirteen Vermont hospitals report to the Vermont Cancer Registry on a regular basis, following federally established protocols. The hospital cancer registrars must not only report cases, but also identify all of the cases seen in the hospital that meet eligibility requirements.

Accurate and timely incidence reporting of cancer in the State of Vermont relies on the ability of cancer registrars to perform exhaustive searches of their institutions' records for reportable cases of cancer. This casefinding process involves review of pathology logs, radiology logs, discharge summaries, and many other information sources.

If a patient is not admitted to a Vermont hospital, physicians report any cancer they diagnose or treat .

The Vermont Department of Health maintains legal reciprocal agreements with other states for the purpose of sharing confidential cancer data. Through these agreements, Vermont is able to collect information about Vermont residents who are diagnosed or treated in other states such as New Hampshire, New York or Florida. Conversely, Vermont is required to provide cancer information about nonresidents who are treated or diagnosed in Vermont to their state of residence.

Data Quality

The Vermont Cancer Registry collaborates with hospitals and other reporting sources to report data of the highest quality in the most efficient manner. There are several procedures in place to evaluate the accuracy of data submitted by reporting institutions. The data initially undergo electronic edit checks to evaluate acceptance. Cases are visually reviewed, and reporting sources are contacted with any questions pertaining to the accuracy of the data.

To avoid reporting errors, duplicate records are assessed, and cases are consolidated. The most accurate patient and tumor information is compiled and merged into one record. Death certificates are reviewed as a final means to identify missed or incomplete cases.

Statistical Terms and Methods

• **Age Adjustment:** All rates in this document are age-adjusted to the 2000 U.S. standard population. This allows the comparison of rates among populations having different age distributions by standardizing the age-specific rates in each population to one standard population.

• **Confidence Intervals:** A confidence interval is a range of values within which the true rate is expected to fall. If the confidence intervals of two groups overlap, then any difference between the two rates is not statistically significant. All rates in this report are calculated at a 95 percent confidence level. For example, the age-adjusted Vermont male colorectal cancer incidence rate is 64.5 *(60.0, 69.3)* per 100,000. There is 95 percent chance that the true colorectal cancer incidence rate is between 60.0 and 69.3.

• **Incidence vs. Mortality:** Incidence refers to the number or rate of newly diagnosed cases of cancer. The incidence rate is calculated as the number of new cancers diagnosed in the state during one year divided by the number of residents in the state during the year. Mortality refers to the number or rate of deaths from cancer.

• **Interpretive Biases:** U.S. SEER comparison rates for whites, instead of those for all races, are used because racial minority groups were estimated to make up 1.6 percent of the total Vermont population in 1999, compared with the total U.S. non-white population of 17.4 percent in 1995-1999. Nationwide, whites have a higher risk compared to people of other races for female breast, melanoma, and bladder cancer incidence. Whites have a lower risk compared to other races for prostate, colorectal, and cervical cancer. The much smaller populations of Vermont residents of other races may have very different risks of these cancers. Combining data over many years will be required to determine cancer rates by race in Vermont.

• **Rate Comparisons:** To determine if there is a statistically significant difference between cancer incidence in Vermont compared to the U.S., the Vermont rate is compared to the U.S. SEER rate. If the SEER rate falls within the confidence interval for the state rate, it suggests that the rates are not statistically different from one another. For example, the Vermont female lung cancer incidence rate is 51.9 *(48.5, 55.5)* per 100,000 population and the SEER rate is 53.3. Since the SEER rate is found within the confidence interval *(48.5, 55.5)* of the Vermont rate, no statistical difference exists between the two rates.

• **Small Numbers:** With very small counts, it is often difficult to distinguish between random fluctuation and actual health issues. According to the National Center for Health Statistics, caution must be observed in interpreting the data when the number of events is small (perhaps less than 100) and the probability of such an event is small (such as being diagnosed with a rare disease).

The limited number of years of data in the registry and the small population of the state require policies and procedures to prevent the unintentional identification of individuals. To protect patient privacy, county-specific data are published only for commonly diagnosed cancer sites. Data on rare cancer sites, race, and other variables that could potentially identify individuals are not published.

• **U.S. Mortality Rates:** Based on the U.S. Public Use Database Vital Statistical System, the U.S. mortality rates are 1995-99 white population rates.

• **U.S. SEER Rates:** The National Cancer Institute funds a network of Surveillance, Epidemiology and End Results (SEER) registries. The SEER Program currently collects and publishes cancer incidence and survival data from 11 population-based cancer registries and three supplemental registries covering approximately 14 percent of the US population. These rates are used to estimate the U.S. cancer incidence rates.

Age Adjusted Cancer Incidence Rates, 1995-1999

Per 100,000 Population by Site and Gender

	Total US SEER rate	Total VT rate	(95% CI)	New Cases per year	Female US SEER rate	Female VT rate	Male US SEER rate	Male VT rate
All Sites	482.9	480.8	(472.9, 488.7)	2877	433.5	441.3	560.1	547.3
Oral Cavity and Throat	11.1	9.7	(8.6, 10.9)	59	6.7	6.0	16.5	14.1
Esophagus	4.5	5.8	(4.9, 6.7)	35	2.0	2.8	7.6	9.6
Stomach	7.2	5.7	(4.9, 6.6)	34	4.6	3.6	10.7	8.3
Colon and Rectum	54.8	58.5	(55.8, 61.3)	347	47.1	54.3	65.0	64.5
Liver	4.3	2.9	(2.3, 3.6)	17	2.5	1.6	6.4	4.6
Pancreas	10.7	11.1	(10.0, 12.4)	66	9.5	9.3	12.3	13.2
Larynx	4.1	5.6	(4.8, 6.6)	34	1.6	2.4	7.1	9.5
Lung	66.2	69.2	(66.3, 72.3)	414	53.3	51.9	84.4	93.6
Melanoma of the Skin	20.0	20.9	(19.3, 22.6)	126	16.8	18.1	24.4	25.3
Breast (female)	n/a	n/a		n/a	140.9	132.8	n/a	n/a
Cervix	n/a	n/a		n/a	8.1	10.4	n/a	n/a
Uterus	n/a	n/a		n/a	26.5	30.1	n/a	n/a
Ovary	n/a	n/a		n/a	18.1	18.4	n/a	n/a
Prostate	n/a	n/a		n/a	n/a	n/a	163.2	145.7
Testis	n/a	n/a		n/a	n/a	n/a	6.2	6.5
Bladder	22.6	23.4	(21.7, 25.2)	139	10.2	11.9	39.8	40.4
Kidney	11.3	11.3	(10.1, 12.5)	67	7.8	7.3	15.6	16.2
Brain and Nervous System	7.2	7.0	(6.1, 8.1)	42	5.9	5.9	8.7	8.2
Thyroid	6.9	6.4	(5.5, 7.3)	39	10.0	8.9	3.8	3.7
Hodgkin Lymphoma	3.1	3.3	(2.7, 4.0)	20	2.8	3.7	3.4	2.9
Non-Hodgkin Lymphoma	20.1	20.3	(18.7, 22.0)	122	16.5	18.1	24.5	23.5
Myeloma	5.2	4.9	(4.1, 5.7)	29	4.2	4.2	6.5	6.0
Leukemia	12.7	12.3	(11.1, 13.6)	73	9.8	9.3	16.7	16.7

About this Table:

All rates are age-adjusted to the 2000 U.S. standard population and exclude basal cell and squamous cell skin cancers and in situ (malignant but non-invasive) carcinomas except urinary bladder.

Rates based on 10 or fewer are not individually calculated.

The U.S. SEER data are based on the SEER Cancer Incidence Public Use Database. U.S. SEER rates are 1995-99 white population incidence rates.

Female and male incidence tables that include confidence intervals (95%CI) and Vermont cases per year can be found on pages 6 and 8.

Site group definitions are available in the Vermont Department of Health report, Cancer Registration in Vermont. Call (802)865-7749 for a copy.

Age Adjusted Cancer Mortality Rates, 1995-1999

Per 100,000 Population by Site and Gender

	Total US rate	Total VT rate	(95% CI)	Total Deaths per year	Female US rate	Female VT rate	Male US rate	Male VT rate
All Sites	204.0	204.6	(199.5, 209.8)	1211	171.4	170.3	254.1	258.5
Oral Cavity and Throat	2.7	2.4	(1.8, 3.0)	15	1.6	1.3	4.0	3.7
Esophagus	4.1	4.7	(3.9, 5.5)	28	1.7	2.0	7.2	8.1
Stomach	4.4	3.4	(2.8, 4.2)	20	3.1	2.3	6.3	4.7
Colon and Rectum	21.2	23.8	(22.1, 25.6)	141	18.0	21.1	25.7	27.9
Liver	4.0	2.8	(2.3, 3.5)	17	2.7	1.7	5.8	4.3
Pancreas	10.3	10.6	(9.5, 11.9)	63	9.0	8.2	12.0	13.6
Larynx	1.3	1.4	(1.0, 2.0)	9	0.5	—	2.4	2.6
Lung	56.9	53.9	(51.3, 56.6)	325	41.3	38.5	78.7	75.8
Melanoma of the Skin	3.0	3.2	(2.6, 3.9)	20	2.0	2.1	4.4	4.6
Breast (female)	n/a	n/a		n/a	28.4	27.5	n/a	n/a
Cervix	n/a	n/a		n/a	2.8	3.4	n/a	n/a
Uterus	n/a	n/a		n/a	4.0	4.8	n/a	n/a
Ovary	n/a	n/a		n/a	9.3	9.4	n/a	n/a
Prostate	n/a	n/a		n/a	n/a	n/a	31.5	35.1
Testis	n/a	n/a		n/a	n/a	n/a	0.3	—
Bladder	4.5	5.1	(4.3, 6.0)	30	2.3	3.1	7.9	8.6
Kidney	4.3	4.4	(3.7, 5.3)	26	2.9	2.5	6.2	7.1
Brain and Nervous System	6.1	4.4	(3.7, 5.3)	27	5.1	3.5	7.5	5.4
Thyroid	1.9	0.4	(0.2, 0.8)	3	2.0	—	1.8	—
Hodgkin Lynphoma	0.6	0.4	(0.2, 0.7)	2	0.5	—	0.7	—
Non-Hodgkin Lymphoma	9.0	9.1	(8.0, 10.3)	55	7.4	7.3	11.0	11.7
Myeloma	3.7	3.6	(2.9, 4.4)	21	3.1	2.8	4.7	4.5
Leukemia	8.0	7.4	(6.5, 8.5)	43	6.2	5.5	10.6	10.5

About this Table:

All rates are age-adjusted to the 2000 U.S. standard population.

Rates based on 10 or fewer cases are not individually calculated.

The U.S. rates are based on the Vital Statistical System of the United States Public use Database. U.S. rates are 1995-99 white population mortality rates.

Site group definitions are available in the Vermont Departmetn of Health report, Carcer Registration in Vermont. Call (802)865-7749 for a copy.

Female and male mortality tables that include confidence intervals (95%CI) and Vermont deaths per year can be found on page 7 and 9.

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What are the Benefits of Quitting Smoking?, American Lung Association, (*http://www.lungusa.org/tobacco/quit_ben.html*).

What You Need to Know About Cancer, National Institutes of Health, National Cancer Institute, *(http://cancernet.nci.nih.gov/wyntk_pubs)*.

About Incidence Maps on page 11, 13, 15 and 17:
Rates are age-adjusted to 2000 U.S. standard population and exclude basal cell and squamous skin cancers and in situ (malignant but non-invasive) carcinomas except urinary bladder. Rates based on 10 or fewer cases are not calculated. Maps are color coded based on comparison to the U.S. SEER 9 Registries white rate. When the U.S. rate falls within the 95 percent confidence interval (shown in parentheses), it suggests that there is no statistical difference.

About Mortality Map on pages 11:
Rates are age-adjusted to 2000 U.S. standard population. Rates based on 10 or fewer cases are not calculated. Maps are color-coded based on comparison to the U.S. white mortality rates. When the U.S. rate falls within the 95 percent confidence interval (*shown in parentheses*), it suggests that there is no statistical difference. Cancer mortality site groupings are defined by NCHS and based on ICD-10 classification. Cause of death before 1999 was coded according to ICD-9; beginning with deaths in 1999, ICD-10 was used. Comparability ratios were applied to pre-1999 mortality rates (except testis and thyroid) to allow for continuity in trends.

Comparison of this report with previous reports:
It is important to note that most rates in this report were age-adjusted to the 2000 standard US population; in the past, the 1970 standard population was used. Therefore, rates in this report cannot be compared to rates and trends in previous reports.

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Cancer in Vermont: A report of 1995-1999 cancer incidence data from the Vermont Cancer Registry, Vermont Department of Health, Burlington, VT, 2003.

This report can be made available in other accessible formats.

For More Information:

U.S.
• American Cancer Society, 1-800-ACS-2345
www.cancer.org
• American Society of Clinical Oncology (ASCO) and People Living With Cancer, *www.oncology.com*
• Centers for Disease Control and Prevention,
www.cdc.gov/cancer
• National Center for Health Statistics,
www.cdc.gov/nchswww/default.htm
• National Program of Cancer Registries, 1-888-842-6355
www.cdc.gov/cancer/npcr
• United States Cancer Statistics: 1999 Incidence
www.cdc.gov/cancer/npcr/uscs
• Harvard Center for Cancer Prevention
Your Cancer Risk, *www.yourcancerrisk.harvard.edu*
• National Cancer Institute, 1-800-4CANCER
www. cancer.gov/cancerinformation
• Surveillance Epidemiology and End Results (SEER) Program, *www.seer.cancer.gov*
• North American Assn. of Central Cancer Registries,
www.naaccr.org
• U.S. Department of Health and Human Services
Agency for Healthcare Research and Quality
www.preventiveservices.ahrq.gov

Vermont
• VT Department of Health - *www.healthyvermonters.info*

Breast Cancer
• National Cancer Institute
www.cancer.gov/cancerinfo/cancer_type/breast
• Vermont Department of Health, Chronic Disease in Vermont: Breast Cancer Screening,
www.healthyvermonters.info/dcb/092002.shtml#2

Cervical Cancer
• National Cancer Institute
www.cancer.gov/cancerinfo/types/cervical

Colorectal Cancer
• National Cancer Institute
www.cancer.gov/cancerinfo/cancer_type/colon_and_rectal

Lung Cancer
• American Lung Association
www.lungusa.org
• National Cancer Institute
www.cancer.gov/cancerinfo/cancer_type/lung
• National Lung Screening Trial
www.nci.nih.gov/NLST

Melanoma
• National Cancer Institute
www.cancer.gov/cancerinfo/cancer_type/melanoma

Non-Hodgkin Lymphoma
• American Society of Hematology
www.hematology.org
• Leukemia and Lymphoma Society
www.leukemia-lymphoma.org
• National Cancer Institute
www.cancer.gov/cancerinfo/cancer_type/lymphoma

Prostate Cancer
• CaP CURE, The Association for the Cure of Cancer of the Prostate, *www.capcure.org*
• Centers for Disease Control and Prevention
Prostate Cancer Screening: A Decision Guide
www.cdc.gov/cancer/prostate/decisionguide
• National Cancer Institute
www.cancer.gov/cancerinfo/cancer_type/prostate/

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