

Background

Cervical cancer results when cells in the lining of the cervix (the lower, narrow end of the uterus, or womb) go through abnormal changes and start to grow and spread more deeply into the cervix and to surrounding areas.

Nationally over the past 40 years, the incidence of invasive cervical cancer has decreased significantly. This decrease is due to the introduction of the Papanicolaou (Pap) test and the treatment of precancerous cervical lesions.

Summary

- ❖ **Incidence:** Cervical cancer is the tenth most commonly diagnosed cancer in women in Vermont. Approximately 31 Vermont women are diagnosed with cervical cancer each year.
- ❖ **Mortality:** Cervical cancer is ranked twelfth in causes of cancer deaths in women in Vermont. Approximately 10 Vermont women die from cervical cancer annually.
- ❖ **Vermont vs. U.S.:** Cervical cancer incidence rates for Vermont women are significantly higher than the U.S. The Vermont cervical cancer mortality rates are not significantly different compared to the U.S. While both the incidence and mortality of cervical cancer have decreased in the U.S., there has been no significant change in cervical cancer incidence or mortality in Vermont.
- ❖ **Age:** Women of all ages are at risk for cervical cancer. In Vermont, 94 percent of newly diagnosed cervical cancer cases are in women age 30 and older; 30 percent of these cases are in women 65 and older, with women aged 75-79 having the highest age-specific incidence of cervical cancer.
- ❖ **Stage:** In Vermont, 63 percent of cervical cancers are diagnosed at the localized stage, and 9 percent are diagnosed at the distant stage. National survival data show that 93 percent of women diagnosed with localized cervical cancer survive for at least five years, while 18 percent of women diagnosed with distant cervical cancer survive for at least 5 years.
- ❖ **Screening:** The Healthy Vermonters 2010 Objective is to increase the percentage of women (age 18+) who have had a Pap test in the preceding three years. In 2004 in Vermont, 87 percent of women (age 18+) had a Pap test in the preceding three years (Goal: 90%).

Cervical Cancer Incidence Compared with Other Cancers

Table 1. The five most commonly diagnosed cancers in females* – Vermont, yearly averages 1997-2001.

Cancer Site	Cases (per year)	Percent (per year)
Breast	465	30.8%
Colorectal	186	12.3%
Lung	176	11.7%
Uterus	103	6.8%
Melanoma	73	4.8%
Cervix	31	2.0%
All Sites	1,509	100%

- ❖ During 1997-2001, on average 1,509 women were diagnosed with invasive cancer each year in Vermont. Of those, on average, 31 were cases of cervical cancer.
- ❖ Cervical cancer incidence rates for Vermont women are significantly higher than the U.S. white rate.

* Excluding basal cell and squamous cell skin cancers and in situ (malignant but non-invasive) carcinomas except urinary bladder.

Cervical Cancer Mortality Compared with Other Cancers

Table 2. The five most common causes of cancer death in females – Vermont, yearly averages 1997-2001.

Cancer Site	Deaths (per year)	Percent (per year)
Lung	135	22.5%
Breast	97	16.2%
Colorectal	72	12.0%
Pancreas	31	5.2%
Ovary	30	5.0%
Cervix	10	1.7%
All sites	600	100%

- ❖ During 1997-2001, an average of 600 women died each year from cancer in Vermont. Of these, on average, 10 deaths were due to cervical cancer.

Cervical Cancer in Vermont Compared to the U.S.

Table 3. Rates of cervical cancer – Vermont and United States, yearly averages, 1998-2002.

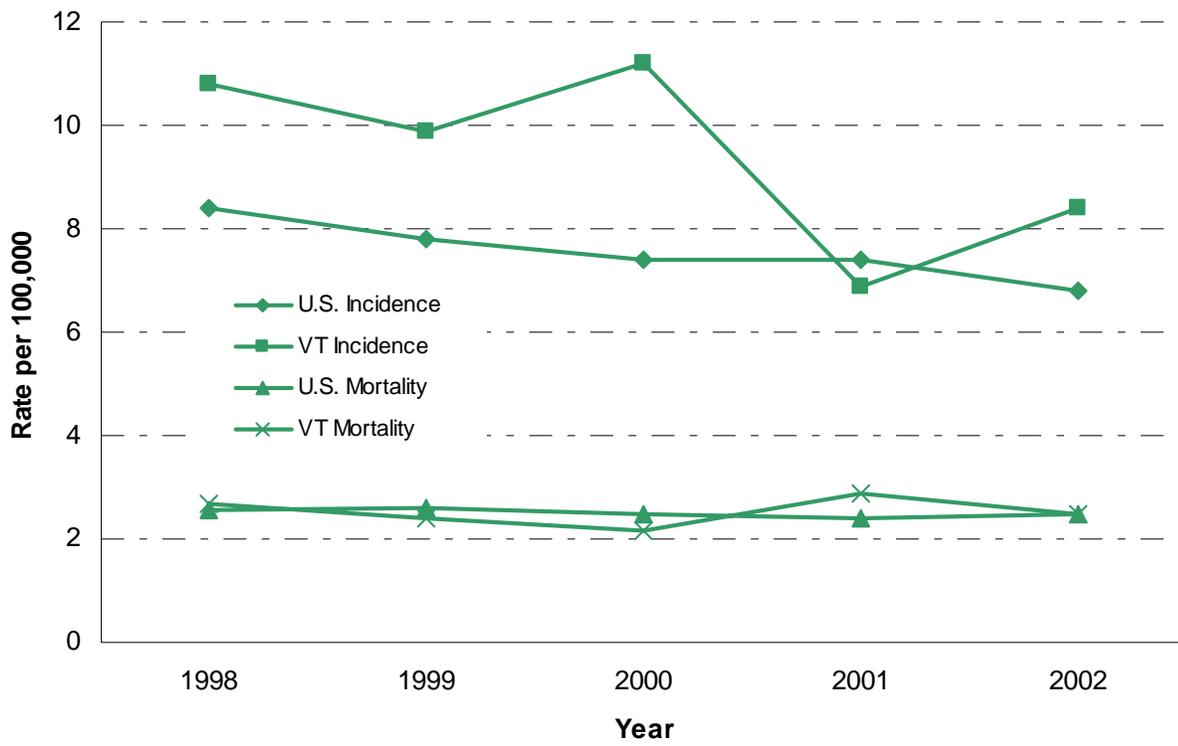
	Female Rates (per 100,000)	
	Incidence	Mortality
Vermont	9.5	2.5
United States	7.5	2.5

- ❖ During 1998-2002, cervical cancer incidence rates for Vermont women were significantly higher than the U.S. female white rates.
- ❖ Cervical cancer mortality rates are not significantly different compared to the U.S.

All rates are age-adjusted to the 2000 U.S. standard population. The U.S. mortality rates are based on the Vital Statistics System of the United States Public Use database. U.S. rates are 1998-2002 white population mortality rates. The U.S. incidence rates are based on the SEER Cancer Incidence Public Use Database. U.S. SEER incidence rates are 1998-2002 white population rates.

Cervical Cancer Yearly Trends

Figure 1. Incidence and mortality of cervical cancer, female – Vermont, 1998-2002.

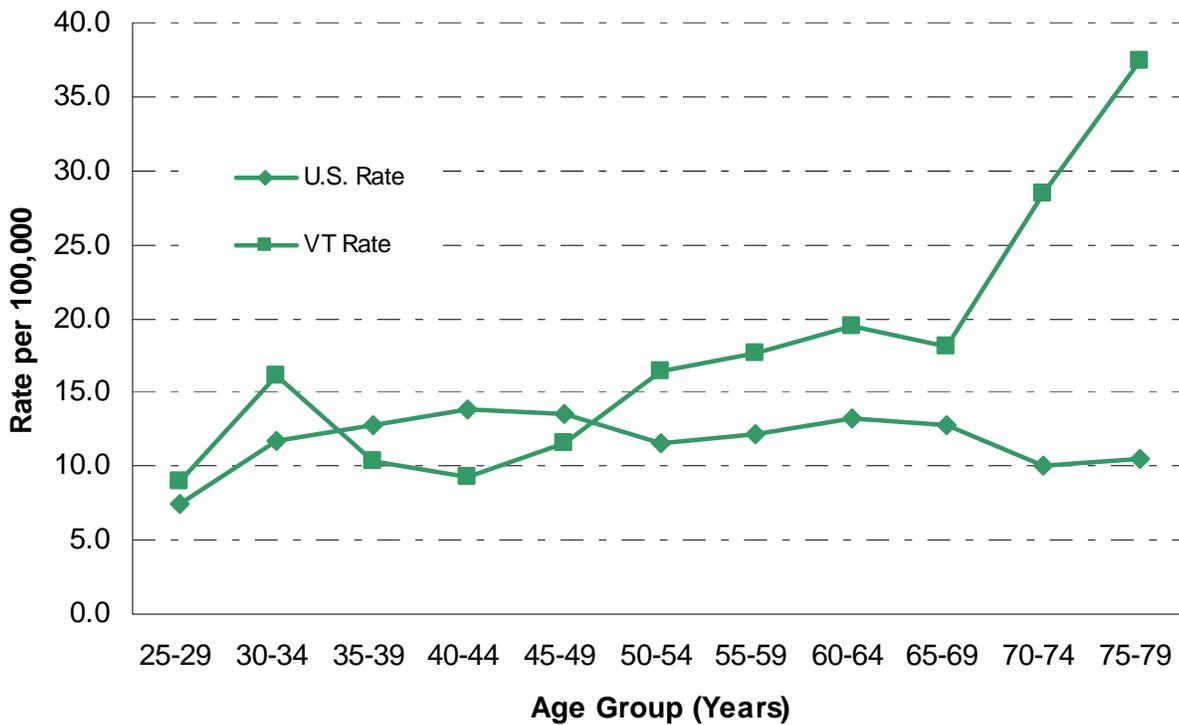


	1998	1999	2000	2001	2002
VT Incidence	10.8	9.9	11.2	6.9	8.4
US Incidence	8.4	7.8	7.4	7.4	6.8
VT Mortality	2.7	2.4	2.2	2.9	2.5
US Mortality	2.6	2.6	2.5	2.4	2.5

All rates are per 100,000 and are age-adjusted to the 2000 U.S. Standard population. The U.S. mortality rates are based on the Vital Statistics System of the United States Public Use database. U.S. rates are 1998-2002 white population mortality rates. The U.S. incidence rates are based on the SEER Cancer Incidence Public Use Database. U.S. SEER incidence rates are 1998-2002 white population rates.

Cervical Cancer Incidence and Age

Figure 2. Cervical cancer incidence rates, female by age – Vermont, 1997-2001.



Age Group	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79
VT Rate	8.9	16.1	10.4	9.3	11.6	16.4	17.7	19.4	18.1	28.4	37.4
US Rate	7.4	11.7	12.7	13.9	13.6	11.5	12.2	13.3	12.7	10.0	10.5

All rates are per 100,000 and age-adjusted to the 2000 U.S. standard population. The U.S. incidence rates are based on the SEER Cancer Incidence Public Use Database. U.S. SEER incidence rates are 1997-2001 white population rates. From 1997-2001, there were too few cases of cervical cancer in Vermonters younger than 25 years old to report. Because of the small number of cases in each age group and gender, these data are not presented. Rates are only presented when the number of cases in a particular age group is at least 6.

- ❖ In Vermont, 94 percent of newly diagnosed cervical cancer cases are in women age 30 and older; 30 percent of these cases are in women 65 and older.
- ❖ Women aged 75-79 have the highest age-specific incidence of cervical cancer.
- ❖ Women aged 70-74 have a significantly higher incidence rate compared to the U.S. The rates of all other Vermont age groups are not significantly different than the U.S.

Cervical Cancer Risk Factors

Many cases of cervical cancer are associated with known risk factors for the disease. Some of the risk factors cannot be avoided, but many can.

The following are some factors that have been shown to elevate a woman's risk of developing cervical cancer:

- ❖ HPV Infection: Cervical infection with human papillomavirus (HPV) is the primary risk factor for cervical cancer. However, HPV infection is very common and only a very small number of women infected with untreated HPV will develop cervical cancer.

- ❖ Sexual History: Women who begin having sexual intercourse at an early age and women who have had many sexual partners are at greater risk of HPV infection and developing cervical cancer.
- ❖ Reproductive History: Having seven or more full-term pregnancies increases the risk of cervical cancer.
- ❖ Oral Contraceptives: Use of oral contraceptives for 5 or more years increases the risk of cervical cancer.
- ❖ Smoking: Women who smoke are twice as likely as nonsmokers to develop cervical cancer.

Cervical Cancer Prevention and Screening

Receiving regular gynecological exams and Pap tests helps to prevent cervical cancer. Abnormal changes in the cervix can be found by the Pap test and treated before cancer develops. Women who do not regularly have Pap tests have an increased risk of cervical cancer.

Early detection increases the chances of long-term survival by diagnosing the cancer at an early and more treatable stage. All women should begin cervical cancer screening about 3 years after they begin having vaginal intercourse, but no later than age 21. Screening should be done every year with the regular Pap test or every 2 years using the newer liquid-based Pap test. Beginning at age 30, women who have had 3 normal Pap test results in a row may get screened every 2 to 3 years.

As part of the Healthy Vermonters 2010 objectives, Vermont set a goal to increase the percentage of women (age18+) who have had a Pap test in the preceding three years to 90 percent.

The 2004 Vermont Behavioral Risk Factor Surveillance System can be used to evaluate progress toward meeting this objective. Data show that:

- 87 percent of Vermont women 18 and older had a Pap test in the preceding three years.

Ladies First

Despite the availability of screening tests, deaths from breast and cervical cancer occur more frequently among women who are uninsured or under-insured. Mammography and Pap tests are underused by women who have less than a high school education, are older, live below the poverty level, or are members of certain racial and ethnic minority groups. Ladies First is part of National Breast and Cervical Cancer Early Detection Program, a national effort to increase access to mammography and Pap test screenings for women in need. The following table summarizes utilization of the program:

Table 4. Women served through Ladies First, five-year summary, Vermont 7/1999 to 6/2004

Women Served*	4,806
Women Receiving Mammography	3,244
Women Receiving Pap tests	3,410

Each category reports counts of unduplicated women receiving services within the 5-year period. Women may be counted in more than one category.

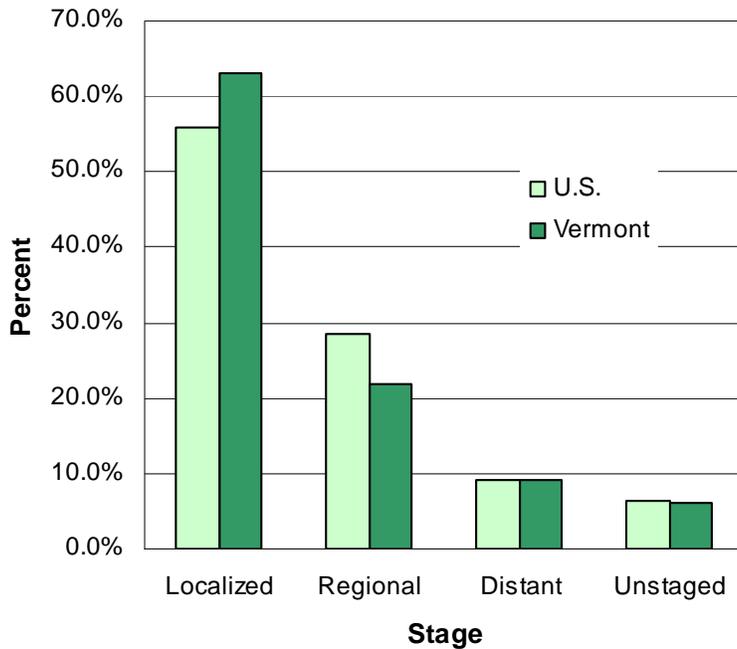
**Women Served includes women receiving any Ladies First funded screen or diagnostic procedure for breast or cervical cancer. These counts do not include pending or non-CDC funded results.*

For more information call Kate at 1-800-508-2222.

Cervical Cancer and Stage at Diagnosis

Nationally, 93 percent of women whose cancer is diagnosed in a localized stage survive their cervical cancers for at least five years. Only 18 percent of women diagnosed with distant stage cervical cancer survive for at least five years.

Figure 3. Percentage of new female cases by stage, 1997-2000.



- ❖ During 1997-2000 63 percent of cervical cancers were diagnosed in Vermont at the localized stage compared to 56 percent for the U.S.
- ❖ In Vermont and the U.S., during 1997-2000, 9 percent of cervical cancers were diagnosed at the distant stage.

Data Sources

Vermont Cancer Registry: The Vermont Cancer Registry is a central bank of information on all cancer cases diagnosed or treated in Vermont since January 1, 1994. The registry enables the state to collect information on new cases (incidence) of cancer. Previously, the state only kept records on deaths from cancer. The information maintained by the registry allows the Health Department to study cancer trends and improve cancer education and prevention efforts. Suggested Citation: Vermont Department of Health Cancer Registry, 1997-2002. The Vermont Cancer Registry can be contacted at 802-865-7749.

Vermont Vital Statistics: In Vermont, towns are required to file certified copies of death certificates with the Department of Health for all deaths occurring in their jurisdictions. The Health Department is responsible for maintaining the vital statistics system. Suggested Citation: VT Department of Health Vital Statistics System, 1997-2002.

Behavioral Risk Factor Surveillance System: Since 1990, Vermont and 49 other states and three territories track risk behaviors using a telephone survey of adults called the Behavioral Risk Factor Survey. Suggested Citation: Centers for Disease Control and Prevention (CDC). Behavioral Risk Factor Surveillance System Survey Data. Atlanta, Georgia: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, 2004.

Ladies First Program: April 2005 submission of National Breast and Cervical Cancer Early Detection Program (NBCCEDP) Minimum Data Elements (MDE), <http://www.cdc.gov/cancer/nbccedp/sps/profiles/vermont.htm>.

Surveillance, Epidemiology, and End Results: 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 14 population-based cancer registries and three supplemental registries covering approximately 26 percent of the U.S. population. These rates are used to estimate the U.S. cancer incidence rates. U.S. incidence is based on the SEER 9 Registries white rates. Suggested Citation: Ries LAG, Eisner MP, Kosary CL, Hankey BF, Miller BA, Clegg L, Mariotto A, Feuer EJ, Edwards BK (eds). SEER Cancer Statistics Review, 1975-2002, National Cancer Institute. Bethesda, MD, 2005. http://www.seer.cancer.gov/csr/1975_2002

U.S. Vital Statistics: The U.S. Public Use Database Vital Statistical System maintains the U.S. mortality rates. Rates presented in this report are for the U.S. white population and were obtained using CDC Wonder. Suggested Citation: United States Department of Health and Human Services (U.S. DHHS), Centers for Disease Control and Prevention (CDC), National Center for Health Statistics (NCHS), Office of Analysis, Epidemiology, and Health Promotion (OAEHP), Compressed Mortality File (CMF) compiled from CMF 1968-1988, Series 20, No. 2A 2000, CMF 1989-1998, Series 20, No. 2E 2003 and CMF 1999-2002, Series 20, No. 2G 2004 on CDC WONDER On-line Database.

Technical Notes and Definitions

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.

Incidence: 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 same year. The incidence data presented in this report were coded using the International Classification of Disease for Oncology (ICD-O) coding system. Cervical cancer cases were defined with ICD-O-3 codes of C53.0-C53.9 with the exception of histologies 9590-9989 (or equivalent for older data).

Mortality: Mortality refers to the number or rate of deaths from cancer. The mortality data presented here were coded using the International Classification of Diseases (ICD). From 1999 on, 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. Comparability ratios were applied to pre-1999 mortality rates to allow for continuity in trends across the ICD revisions.

Race: U.S. incidence and mortality rates for whites, rather than those for all races, are used for comparison because racial minority groups were estimated to make up 3.1 percent of the total

Vermont population, compared with the total U.S. non-white population of 19.6 percent in 2004. 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.

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 (such as males and females, or Vermont and the U.S.) 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 cancer incidence rate is 580.9 (567.8, 594.2) per 100,000 and the Vermont female cancer incidence rate is 446.8 (436.7, 457.0). Since the Vermont female confidence interval and the Vermont male confidence interval do not overlap, a statistical difference exists between the two rates.

Small Numbers: Rates are not presented in this report if the number of cases is fewer than 6. For this reason cases are not reported at the county level in this document.

Suggested Citation

Vermont Department of Health, Cervical Cancer in Vermont, 2006.

Acknowledgements

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Vermonters Taking Action Against Cancer (VTAAC)

VTAAC is a statewide partnership of more than 140 individuals, professionals and organizations working together to reduce the impact of cancer on all Vermonters. A comprehensive strategic plan addressing prevention, detection, treatment, survivorship needs, and palliative care related to Vermont's leading cancers is available at www.HealthVermont.gov/Cancer or call (802) 865-7706.