

## *Vermont Facts*

- ❖ **Incidence:** Breast cancer is the most commonly diagnosed cancer in women. Each year, approximately 473 breast cancer cases are diagnosed among women in Vermont.
- ❖ **Mortality:** Breast cancer is the second leading cause of cancer death in women. Each year, approximately 92 women die from breast cancer in Vermont.
- ❖ **Trends:** Incidence and mortality for breast cancer among Vermont women has not changed from 1996 to 2005. Incidence and mortality rates for breast cancer have decreased among women in the U.S. during that same time period. However, Vermont breast cancer mortality has decreased since 1990.
- ❖ **Age:** The incidence of breast cancer increases with age. More than 75 percent of breast cancer cases are diagnosed in women age 50 and older.
- ❖ **Vermont vs. U.S.:** Breast cancer incidence and mortality rates among Vermont women are not different from the U.S.
- ❖ **Stage:** In Vermont, 63 percent of breast cancers are diagnosed at the localized stage (the cancer is limited to the organ of origin), and 33 percent are diagnosed at the regional or distant stage (the cancer has extended beyond the local organ or has metastasized).
- ❖ **Advanced Stage:** Breast cancer incidence for Vermont women diagnosed at advanced stage (regional or distant stage), has not changed over the past decade.
- ❖ **Screening:** According to the 2006 BRFSS, 79% of Vermont women 40 and older had a mammogram in the preceding two years. However, certain women are less likely to be screened, such as those that lack health insurance, have less than a high school education, have a lower level of income, or lack a personal doctor.

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## *Background*

In Vermont, cancer is the second leading cause of death, with approximately 1,200 people dying from cancer each year. For the past 40 years, the three leading causes of death in Vermont have been heart disease, cancer, and stroke. In contrast to the dramatic declines in the death rates for heart disease and stroke, the death rate for cancer rose steadily over the past few decades before decreasing in recent years. Roughly one out of every two men and one out of 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 from a malignant tumor can invade nearby tissues either by direct growth into adjacent tissue or by migration through the bloodstream and lymphatic system to other parts of the body. This process is called metastasis. Cancer that started as breast cancer and spread to the bones is still breast cancer.

## **Breast Cancer**

Breast cancer is a disease in which malignant cells form in the tissues of the breast. A woman's breast is made up of lobules, ducts, fatty and connective tissue, blood vessels, and lymph vessels. Breast cancer can begin in any part of the breast, and if left untreated, can spread to other parts of the body.

Among women, breast cancer is the most commonly diagnosed cancer and a leading cause of cancer deaths in the United States. 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 one in eight. Nationally, breast cancer death rates are decreasing. This is probably the effect of earlier diagnosis and improved treatment.

While breast cancer also occurs in males, incidences of breast cancer among men are approximately 100 times less common than in women. Because breast cancer among males accounts for less than one percent of cancers diagnosed nationally, only female breast cancer is presented in this report.

## Incidence

Defined as the number of *new* cases occurring in a population during a defined time interval, incidence rates are a useful measure of the risk of disease.

**Table 1. The most commonly diagnosed cancers in females – Vermont, average number of cases per year, 2001-2005.**

Female Cancer Site	Cases (per year)	Percent (per year)
<b>Breast</b>	<b>473</b>	<b>30%</b>
Lung	192	12%
Colon and Rectum	162	10%
Uterus	117	7%
Melanoma of Skin	87	5%
All Sites	1,578	100%

*New cases per year exclude basal cell and squamous cell skin cancers and in situ (malignant but non-invasive) carcinomas except urinary bladder.*

- ❖ An average 1,578 cancers in females are diagnosed each year in Vermont. Of those, an average of 473 women are diagnosed with breast cancer each year.
- ❖ Breast cancer is the most commonly diagnosed cancer in females and accounts for roughly 30 percent of all cancers diagnosed in Vermont women.

## Mortality

The mortality rate is a measure of the number of deaths (due to cancer) in a population during a specific period of time.

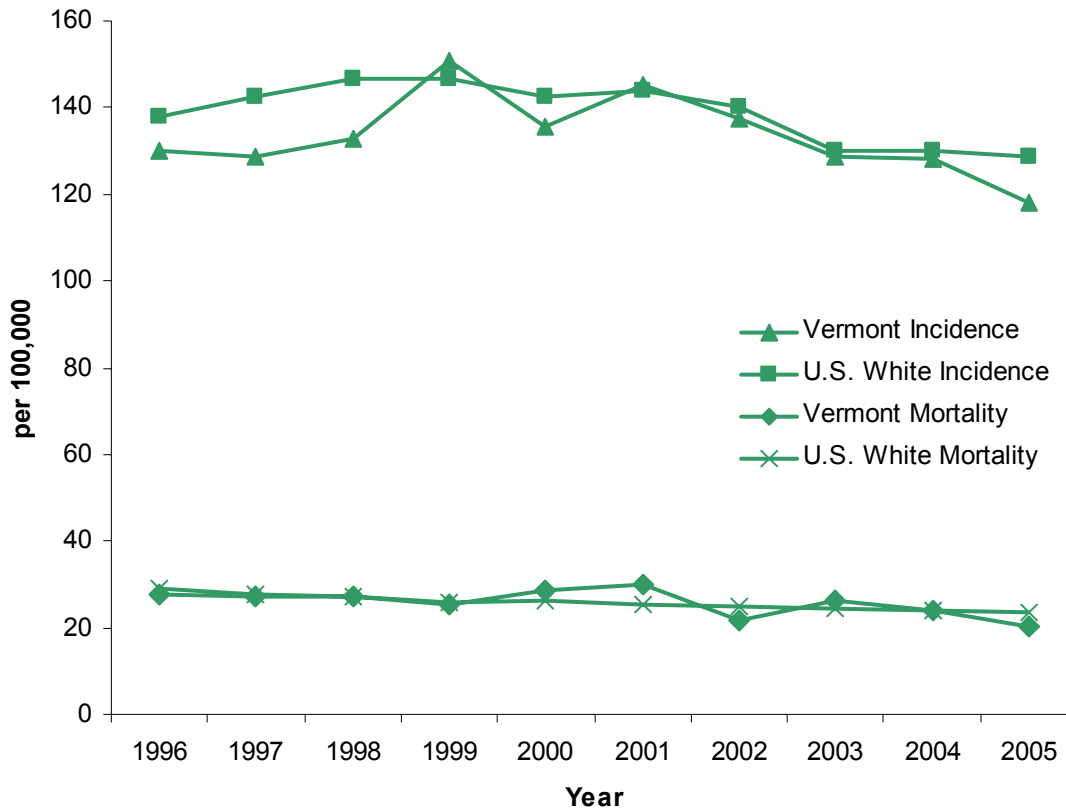
**Table 2. The most common causes of cancer deaths in females – Vermont, average number of deaths per year, 2001-2005.**

Female Cancer Site	Deaths (per year)	Percent (per year)
Lung	144	24%
<b>Breast</b>	<b>92</b>	<b>16%</b>
Colon and Rectum	64	11%
Ovary	31	5%
Pancreas	31	5%
All Sites	588	100%

- ❖ An average of 588 females die each year from cancer in Vermont. Of these, an average of 92 women die from breast cancer.
- ❖ Breast cancer is the second leading cause of cancer death among females in Vermont.
- ❖ In Vermont, breast cancer accounts for roughly 16 percent of all cancer deaths in women.

# Trends

Figure 1. Incidence and mortality rates of female breast cancer – Vermont and United States<sup>1</sup>, 1996-2005.



	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
<b>Vermont Incidence</b>	130.2	128.7	132.6	150.9	135.6	145.2	137.6	128.5	128.2	118.2
<b>U.S. Incidence</b>	137.9	142.5	146.5	146.6	142.6	143.9	140.0	129.9	129.8	128.6
<b>Vermont Mortality</b>	27.5	27.2	27.0	25.4	28.5	30.1	21.6	26.2	24.2	20.1
<b>U.S. Mortality</b>	29.0	27.6	27.0	26.0	26.2	25.4	24.9	24.6	23.8	23.3

- ❖ From 1996 to 2005, trend analysis shows that there was no change in female breast cancer incidence in Vermont, but incidence rates decreased in the U.S.
- ❖ From 1996 to 2005, trend analysis shows that there was no change in female breast cancer mortality in Vermont, but mortality rates decreased in the U.S. However, Vermont breast cancer mortality has decreased since 1990.

<sup>1</sup> The U.S. rates represented in this publication are for whites. See Technical Notes section for more information.

## U.S. Comparisons

**Table 3. Incidence and mortality rates of breast cancer – Vermont and United States, per 100,000, 2001-2005.**

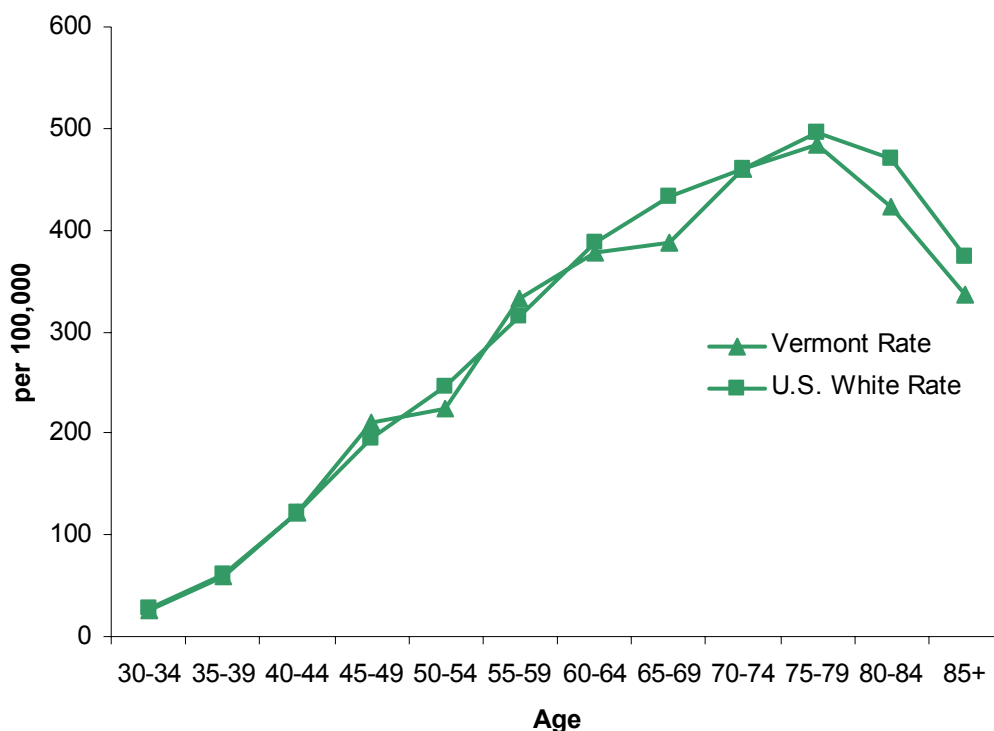
	Incidence	Mortality
Vermont Females	130.7	24.3
U.S. Females	134.2	24.4

- ❖ The breast cancer incidence rate among Vermont females is not different from the U.S.
- ❖ The breast cancer mortality rate among Vermont females is not different from the U.S.

## Age

The incidence of breast cancer, as with many cancers, increases with age and is most often diagnosed among women over the age of 50.

**Figure 2. Incidence rates of female breast cancer, by age – Vermont and United States, 2001-2005.**



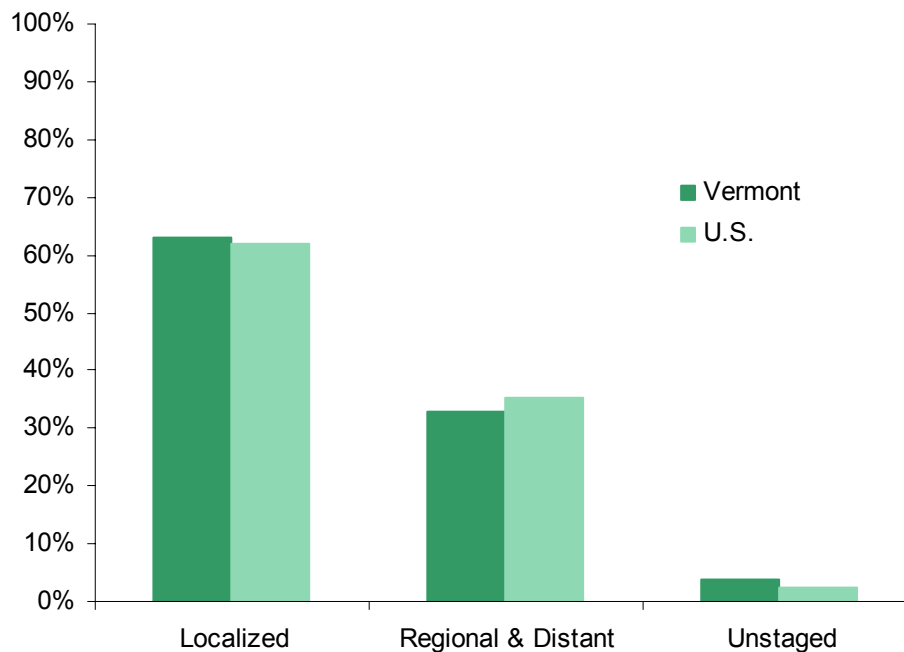
Age Group	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85+
<b>Vermont Rate</b>	25.5	59.0	121.8	209.7	224.6	333.1	377.9	387.3	459.8	483.1	423.5	336.0
<b>U.S. Rate</b>	27.6	61.4	122.3	194.7	245.4	314.4	387.2	433.6	460.8	495.0	469.4	373.6

- ❖ Vermont females age 75-79 have the highest age-specific incidence of breast cancer, at a rate of 483.1 per 100,000.
- ❖ There are no differences in age-specific incidence rates of breast cancer compared to the U.S.

## Stage at Diagnosis

Stage describes the extent to which the cancerous cells have spread from the original site to another part of the body; it helps determine prognosis and treatment options. Stage can be grouped into the following categories: in situ, localized, regional, distant, and unknown (unstaged). The earlier a cancer is diagnosed, the better a person's prognosis is likely to be. Some cancer types are easier to detect at an early stage (localized) than others. Cancers occurring in parts of the body that can be easily seen or felt (skin, breast) are first detected with more direct methods than internal cancers (lung), which require imaging procedures and/or laboratory tests.

**Figure 3. Invasive female breast cancer by stage at diagnosis – Vermont and the United States, 2001-2005.**

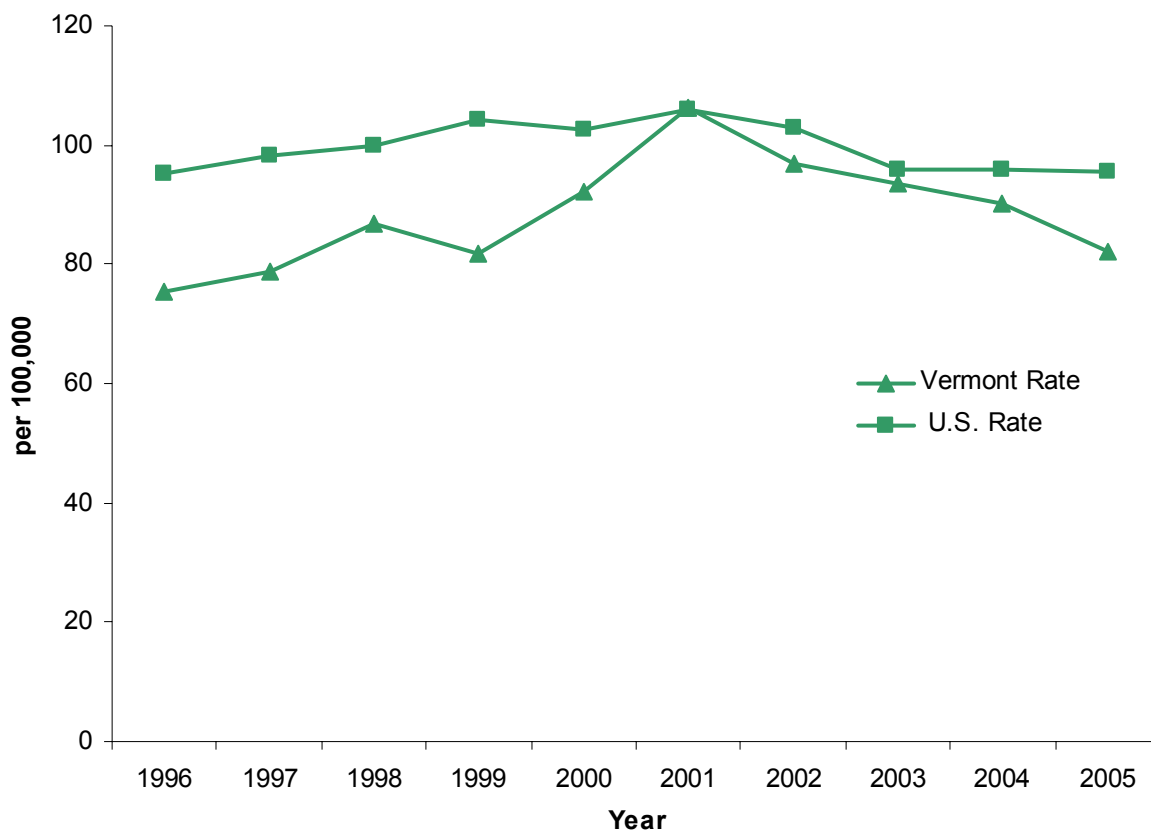


- ❖ Among Vermont women, approximately 63 percent of breast cancers are diagnosed at the early stage (localized), and 33 percent are diagnosed at a regional or distant stage. In the U.S., 62 percent of breast cancers are diagnosed at the early stage, and 35 percent are diagnosed at a regional or distant stage.
- ❖ Fewer Vermonters are diagnosed at a regional or distant stage compared to the U.S.; however, more Vermonters are categorized as an unknown stage compared to the U.S., which may account for this difference.

## Advanced Stage Diagnosis

The rate of cases of cancer that are diagnosed at late or advanced stages is a measure of the effectiveness of cancer screening efforts. A lower advanced stage rate may be due to better cancer screening effectiveness.

**Figure 4. Incidence rates of advanced stage breast cancer, women age 40 and older—Vermont and the United States, 1996-2005.**



- ❖ From 1996 to 2005, trend analysis shows that breast cancer incidence per 100,000 females age 40 and older diagnosed at advanced stage (regional or distant stage) has not changed in Vermont and the U.S.
- ❖ Between 2001 and 2005, the Vermont advanced stage breast cancer incidence rate among Vermont females (92.2 per 100,000) was not different from the U.S. (99.9 per 100,000).

## *Risk Factors*

A risk factor is a condition, an activity or an exposure that increases a person's chance of developing cancer. Cancer develops gradually as a result of a complex mix of factors related to lifestyle choices, environment and genetics. Each type of cancer is caused by a different set of factors, some well established, some uncertain, and some unknown. Many women with known risk factors never develop breast cancer, and many who do get this condition have none of the known risk factors. The exact causes of breast cancer are unknown, but some of the factors associated with an increased risk of developing breast cancer are:

- ❖ **Age:** Breast cancer incidence increases with age, but breast cancer tends to be more aggressive when it occurs in younger women. Most women who get breast cancer are over age 50.
- ❖ **Hormonal Factors:** Women who began menstruation before 12 years old, or who began menopause after age 55, have an increased risk of developing breast cancer. Other risk factors include: the use of menopausal hormone therapy drugs for five or more years; having a first child after the age of 35; never breastfeeding; or never bearing children. Studies have shown no link between abortion or miscarriage and breast cancer.
- ❖ **Radiation therapy to the chest:** Women who had radiation therapy to the chest (including breasts) before age 30 are at increased risk of breast cancer.
- ❖ **Family History and Genetics:** Women who have had breast cancer or have a mother, sister, or daughter with breast cancer, have an increased risk of developing it themselves. Women who inherit specific genes are at a greater risk for developing breast cancer. These genes include BRCA1 and BRCA2, which have been linked to the rare familial form of breast cancer.
- ❖ **Personal history of breast cancer and certain breast changes:** Women who had breast cancer in one breast have an increased risk of getting cancer in the other breast (separate from a reoccurrence). Some women have cells in the breast that look abnormal under a microscope. Having certain types of abnormal cells (atypical hyperplasia and lobular carcinoma in situ [LCIS]) increases the risk of breast cancer. Additionally, breast tissue may be dense or fatty. Older women whose mammograms (breast x-rays) show more dense tissue are at increased risk of breast cancer.
- ❖ **Race:** Breast cancer is diagnosed more frequently in white women than Latina, Asian, or African American women.
- ❖ **DES (diethylstilbestrol):** DES was given to some pregnant women in the United States between about 1940 and 1971. Women who took DES during pregnancy may have a slightly increased risk of breast cancer.
- ❖ **Diet and Lifestyle:** Lifestyle factors that can increase risk include: postmenopausal weight gain; physical inactivity; and alcohol consumption. Being active may help reduce risk by preventing weight gain and obesity.

## *Prevention and Screening*

### **Screening**

Many cancers can be treated quickly and effectively if they are detected early. Screening is a way of checking for disease when there are no symptoms. Some screening tests are used because they have been shown to be helpful both in finding cancers early and decreasing the chance of dying from these cancers. People of certain ages and genders are recommended to undergo screening tests, such as mammograms for breast cancer, Pap tests for cervical cancer, and colonoscopies for colorectal cancer.

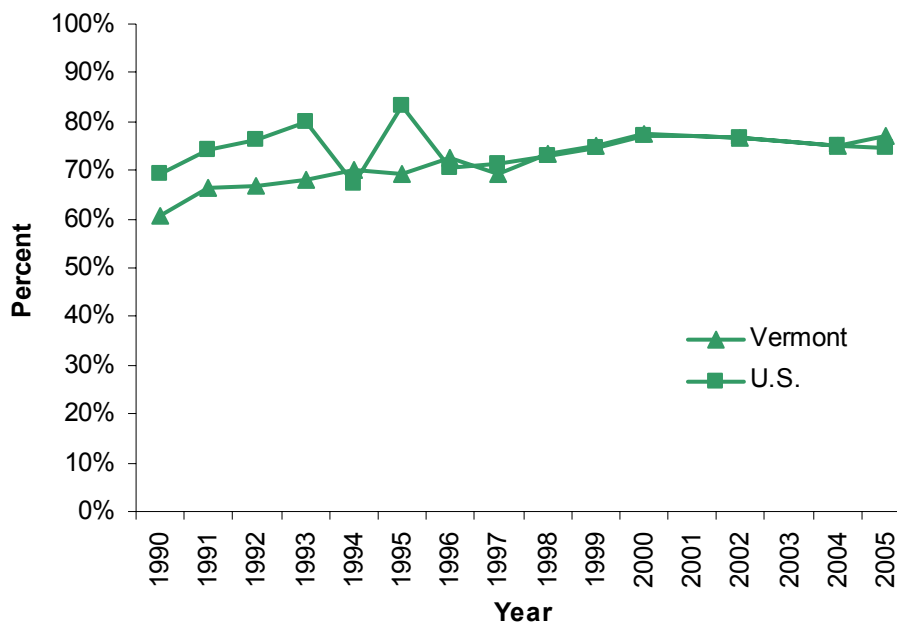
Early detection is the goal of breast cancer screening. If breast cancer is diagnosed at an earlier stage, the chances for survival are greater. Mammography, combined with a clinical breast exam, remains the most effective means of early detection. The **U.S. Preventive Services Task Force (USPSTF)**<sup>2</sup> recommends that women at average risk for cancer and without any specific symptoms have a mammogram, with or without clinical breast examination (CBE), every 1-2 years beginning at age 40<sup>3</sup>.

In Vermont, mammograms are covered by all health insurance programs. There is a cap of \$25.00 maximum out-of-pocket fee for each mammogram covered by insurance<sup>4</sup>.

Vermont has set a goal to increase the percentage of women (age 40+) who have had a mammogram at least every two years to 85 percent. Approximately 79 percent of Vermont women 40 and older had a mammogram in the preceding two years. However, data from the 2006 Behavioral Risk Factor Surveillance System indicate that certain women are less likely to have had a mammogram:

- **Lack of health insurance:** 57 percent of Vermont women without health insurance report having a mammogram in the preceding two years compared to 81 percent of those with health insurance.
- **Without a personal doctor:** 46 percent of Vermont women without a personal doctor report having a mammogram in the preceding two years compared to 81 percent of those with a personal doctor.
- **Education less than high school:** 74 percent of Vermont women who did not finish high school report having a mammogram in the preceding two years compared to 81 percent who have completed college or higher.
- **Income at or below 125 percent of the Federal Poverty Level:** 67 percent of Vermont women with an income at or below 125 percent of the Federal Poverty Level (FPL) report having a mammogram in the preceding two years compared to 85 percent at a FPL 500 percent or higher.

**Figure 5. Percentage of women age 40+ who have had a mammogram in the past two years.**



<sup>2</sup> The U.S. Preventive Services Task Force is sponsored by the Agency for Healthcare Research and Quality (AHRQ) and is "an independent panel of experts in primary care and prevention that systematically reviews the evidence of effectiveness and develops recommendations for clinical preventive services." For more information visit: <http://www.ahrq.gov/clinic/uspstfix.htm#About>.

<sup>3</sup> The current U.S. Preventive Services Task Force (USPSTF) recommendation on screening for breast cancer and the supporting scientific evidence are available at: <http://www.ahrq.gov/clinic/3rduspstf/breastcancer/brcanrr.htm>.

<sup>4</sup> Coverage for screening by low-dose mammography must be provided according to 8 V.S.A. §4100a *Mammograms; coverage required*. More information can be found at: <http://www.leg.state.vt.us/statutetext/08/hjs01!.htm>.

## Prevention

Currently, there is no known way to prevent breast cancer, only ways to reduce a person's risk. A woman may reduce her risk for breast cancer by altering those risk factors that can be changed. Limiting alcohol use, exercising regularly, and maintaining a healthy weight can decrease your risk of getting breast cancer. Exercise, especially in young women, may decrease hormone levels and reduce breast cancer risk. Breast feeding may also decrease a woman's risk of breast cancer. Forgoing elective postmenopausal hormone therapy (PHT) may also decrease risk.

Women who are or may be at **increased genetic risk** may wish to consider with their physician the following procedures that can reduce breast cancer risk. However, before deciding which, if any, of these may be right for you, it is very important to thoroughly explore these options with your physician.

**Genetic testing** can determine if a woman has certain changed (mutated) genes linked to breast cancer. With this information, women can consider options that may reduce their risk. The USPSTF recommends that only women with a strong family history of breast cancer (at least two first-degree relatives with breast cancer) be referred to genetic counseling about testing for BRCA gene mutations<sup>5</sup>. This group is only about two percent of adult women in the United States.

If you are considering genetic testing, you should talk to a genetic counselor, nurse, or doctor to understand what genetic testing can and cannot tell you, and the benefits and risks of testing.

The **High Risk Breast Program of Vermont (HRBP)** is a clinical program with a research focus intended to promote early detection and prevention of breast cancer through screening, treatment, education and research. The HRBP is based within the Breast Care Center and the Vermont Cancer Center at the University of Vermont and Fletcher Allen Health Care. The HRBP is available to women who have an increased risk for developing breast cancer due to a strong family history of breast and/or ovarian cancer, a genetic abnormality, or a prior abnormal breast biopsy. For more information visit: <http://hrbp.vermontcancer.org/> or call (802) 656-8502.

**Breast cancer chemoprevention** is the use of drugs to reduce the risk of cancer. Several drugs have been studied for use in lowering breast cancer risk. The drug tamoxifen has already been used for many years as a treatment for some types of breast cancer. Studies have shown that women at high risk for breast cancer are less likely to get the disease if they take tamoxifen. Another drug, raloxifene, has been approved to help reduce breast cancer risk in women past menopause who are at high risk for breast cancer. Other drugs are also being studied. The USPSTF recommends that "clinicians discuss chemoprevention with women at high risk for breast cancer and at low risk for adverse effects of chemoprevention. Clinicians should inform patients of the potential benefits and harms of chemoprevention<sup>6</sup>."

**Preventive surgery**, such as bilateral (double) mastectomy, may be an option for the few women who have a very high risk for breast cancer. In a preventive bilateral mastectomy, both breasts are removed before there is any known breast cancer. While this operation removes nearly all of the breast tissue, a small amount remains. While this procedure greatly reduces the risk of breast cancer, in rare instances, the disease can still start in the breast tissue that remains after surgery. There is no way to determine beforehand whether this surgery will benefit a particular woman. A second opinion is strongly recommended before making a decision to have this type of surgery.

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<sup>5</sup> The current U.S. Preventive Services Task Force (USPSTF) recommendation on genetic risk assessment and BRCA mutation testing for breast and ovarian cancer susceptibility are available at: <http://www.ahrq.gov/clinic/uspstf/uspstfbrgen.htm>.

<sup>6</sup> The current U.S. Preventive Services Task Force (USPSTF) recommendation for the chemoprevention of breast cancer and the supporting scientific evidence are available at: <http://www.ahrq.gov/clinic/3rduspstf/breastchemo/breastchemorr.htm>.

**Prophylactic oophorectomy** (removal of the ovaries) in high-risk individuals (women with the BRCA mutation gene change), when child-bearing is complete, reduces the risk of developing breast cancer by over half, as well as reducing the risk of developing ovarian cancer. Removing the ovaries eliminates the main sources of estrogen in the body. While this document is not about **ovarian cancer**, it is important that women with this gene change also recognize that they have a high risk of getting ovarian cancer. Many doctors recommend that these women have their ovaries removed after they are done having children.

## *Survival and Treatment*

Survival refers to the percentage of people who are alive for a given period of time after diagnosis and is an indication of the prognosis of the disease. The prognosis and treatment of breast cancer is largely determined by the stage of the disease which considers the size of the tumor, local involvement, lymph node status, and whether metastatic disease is present. Nationally, 98 percent of women diagnosed at a localized stage survive their breast cancers for at least five years. Only 29 percent of women diagnosed with distant stage breast cancer survive for at least five years.

**Treatment options** depend on the stage of disease and other factors such as the size of the tumor in relation to the size of the breast, the results of lab tests (such as whether the breast cancer cells need hormones to grow), whether or not menopause has occurred, and one's general health. Different types of treatment are available for patients with breast cancer including: surgery, radiation therapy, chemotherapy, hormone therapy, and biological therapy.

Breast cancer is usually treated with **surgery** to remove cancer from the breast. There are several types of surgery, and choosing the most appropriate option is an individual choice. A discussion with your physician can compare the benefits and risks as well as describe how each will change the way you look. **Breast conserving** or **breast-sparing surgery** is a procedure that removes the cancer but not the breast. It is also called *breast-conserving surgery, lumpectomy, segmental mastectomy, and partial mastectomy*. Sometimes an *excisional biopsy* serves as a lumpectomy because the surgeon removes the whole lump. Surgery to remove the breast (or as much of the breast tissue as possible) is a **mastectomy**. Patients may choose to have breast reconstruction (plastic surgery to rebuild the shape of the breast) which can be done at the same time as a mastectomy or later. Studies have determined equal survival rates for breast-sparing surgery (with radiation therapy) and mastectomy for Stage I and Stage II breast cancer. As part of either surgery, lymph nodes under the arm are typically removed and examined under a microscope to determine if they contain cancer cells. *Sentinel lymph node biopsy* is the standard of care for checking for cancer cells in the lymph nodes. A surgeon removes fewer lymph nodes, which causes fewer side effects.

Following surgery many women receive **radiation therapy** (ionizing radiation to control malignant cells) to destroy cancer cells that may remain in the breast. Most women receive radiation therapy after breast-sparing surgery and some women receive radiation therapy following a mastectomy. Radiation therapy may be used prior to surgery to destroy cancer cells and shrink the tumor. This approach may be used when the tumor is large or may be hard to remove. Some women also have **chemotherapy** (drugs toxic to cells) or **hormone therapy** (treatment that removes hormones or blocks their action and stops cancer cells from growing) prior to or following surgery.

Some breast tumors need hormones to grow. **Hormone therapy** keeps cancer cells from getting or using the natural hormones (estrogen and progesterone) they need. Lab tests can determine if a breast tumor has hormone receptors that would respond to this type of treatment. A physician may prescribe a drug that will block the natural hormone (such as tamoxifen) or prevents the body from making the female hormone estradiol, a form of estrogen. If the patient is premenopausal, a doctor may prescribe a drug that stops the ovaries from making estrogen (an *aromatase inhibitor*) or surgery to remove the ovaries may be recommended. The ovaries are the main source of the body's estrogen. A woman who has gone through menopause does not need surgery since the ovaries produce less estrogen after menopause.

**Biological therapy** assists the immune system, the body's natural defense against disease, to fight cancer. This treatment may be given to women whose cancer has spread and lab tests determine the presence of too

The **recommended treatment** for Stage 0, I, and II breast cancer<sup>7</sup> is lumpectomy followed by radiation therapy. The exceptions are patients age 70 or older, small tumor size (<1 cm), estrogen receptor antigen (ERA) positive cases, and patients with contraindications, including early pregnancy, prior radiation, and connective tissue disorders. Also recommended is sentinel lymph node (SLN) surgery to provide accurate staging. SLN surgery is controversial for Stage 0, but is the standard of care for Stage I and II<sup>8</sup>.

**Clinical trials** are generally designed to compare potentially better therapy with therapy that is currently accepted as standard and can be an important option for many individuals when considering treatment of this disease. Most of the progress made in identifying curative therapies for cancers has been achieved through clinical trials.

Information about ongoing clinical trials is available from the National Cancer Institute is available at: <http://www.cancer.gov/clinicaltrials/search>.

## *Intervention, Policy, and Recommendations*

### **Vermont Efforts**

The **Vermont State Cancer Plan**<sup>9</sup>, published by the Vermont Department of Health and **Vermonters Taking Action Against Cancer (VTAAC)**<sup>10</sup>, provides a strategic roadmap to reduce the burden of all cancers by 2010. The Plan identifies strategic priorities in the following areas: preventing future cancers, detecting new cancers early, increasing access to optimal treatment and follow up, improving the quality of life for cancer survivors, and improving pain management and end-of-life care.

The burden of breast cancer in Vermont can be reduced by achieving the following objectives, as identified in the State Cancer Plan:

**Prevent** future breast cancers by reducing exposure to known risk factors:

- Halt the increase of obesity among all Vermonters.
- Increase regular, moderate physical activity among all Vermonters.
- Increase breastfeeding rates among Vermont mothers.

**Detect** new breast cancers as early as possible through appropriate screening:

- Increase breast cancer screening among Vermonters ages 40+.
- Reduce the percentage of breast cancers found at an advanced stage.

**Increase access** to high quality cancer treatment and follow-up care:

- Reduce financial, geographic and cultural barriers to appropriate cancer treatments.
- Increase referrals for multi-modality treatment assessment.
- Increase use of transportation services to access cancer treatment.

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<sup>7</sup> Frederick L. Greene et al. (Eds). (2002). *AJCC Cancer Staging Manual (6th Edition)*. New York: Springer-Verlag. A classification scheme that measures local tumor growth (T), spread to regional lymph nodes (N), and metastasis (M). A lower stage number corresponds to a less invasive stage of disease.

<sup>8</sup> Lyman GH, Giuliano AE, Somerfield MR, et al. American society of clinical oncology guideline recommendations for sentinel lymph node biopsy in early-stage breast cancer. *J Clin. Oncol.* 2005;23:7703-7720.

<sup>9</sup> Vermont State Cancer Plan, 2006-2010: [http://healthvermont.gov/pubs/cancerpubs/state\\_cancer\\_plan.aspx](http://healthvermont.gov/pubs/cancerpubs/state_cancer_plan.aspx).

<sup>10</sup> A network of groups and individuals that speaks with one voice about reducing cancer risk, detecting cancers earlier, creating better access to quality cancer treatment, and improving the quality of life for cancer survivors. Visit <http://vtaac.org/> or call (802) 872-6303.

- Increase participation in clinical trials.
- Increase the percentage of Vermonters covered by insurance.

**Improve the quality of life** of Vermonters who are living with, through and beyond cancer.

- Improve emotional & psychological support for cancer survivors.
- Improve the general health of cancer survivors.

**Improve end-of-life care** for cancer patients through effective pain management and palliative care.

- Increase availability and use of pain management, hospice, and palliative care.
- Promote reimbursement for hospice and palliative care among insurers.
- Increase number of Vermonters enrolled in the Vermont Advance Directive Registry.

The **Ladies First program**<sup>11</sup> is funded by the Centers for Disease Control (CDC) to: screen women for breast and cervical cancers and heart disease; provide appropriate referrals for medical treatment (case management); develop and disseminate public information and education programs; improve education, training and skills of health professionals; monitor quality of screening procedures; and evaluate activities. Ladies First pays for annual mammograms, clinical breast exams, pelvic exams, Pap tests, instruction in breast self-exam, and cardiovascular disease risk factor (cholesterol, high blood pressure, diabetes) screening for eligible women. Services are provided locally, by the woman's own physician, in most cases. Ladies First also pays for repeat mammograms, ultrasounds, biopsies, and colposcopies.

Early and regular screening is essential to reducing the death rate from cancer and heart disease. Women who have limited income are less likely to be screened for cancer and heart disease. Breast and cervical cancer mortality occurs disproportionately among women of racial and ethnic minority and limited income groups.

Between July 2000 and December 2008:

- The Ladies First Program provided CDC-funded breast cancer screening to 4,577 Vermont women.
- 938 CDC-funded mammograms were abnormal requiring additional diagnostic services.
- 121 women were diagnosed with breast cancer.

**Vermonters Taking Action Against Cancer (VTAAC)** is a statewide collaborative partnership of over 200 organizations, healthcare providers and individuals working together to reduce the burden of cancer among all Vermonters. VTAAC workgroups and affiliate organizations develop and implement specific strategies and activities to achieve the objectives of the Vermont State Cancer Plan. Activities and progress towards these objectives are routinely assessed and reported annually. For more information about VTAAC, the State Cancer Plan or current activities and progress, visit: <http://healthvermont.gov/cancer>.

**The Vermont Cancer Survivor Network (VCSN)** was founded in 2005 and is implementing the survivorship objectives in the Vermont State Cancer Plan. The Network is hosting celebratory events, providing educational activities for cancer survivors, their families and caregivers, and creating a peer-to-peer support network called Kindred Connections. For more information about VCSN, [visit: http://vcsn.net](http://vcsn.net).

The **Vermont Cancer Center** at the University of Vermont and Fletcher Allen Health Care presents an annual **Breast Cancer Conference**, held in the Fall. This free conference presents more than 80 sessions during a day of education, inspiration and celebration. For more information visit: [www.vtbreastconference.org](http://www.vtbreastconference.org).

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<sup>11</sup>Ladies First also receives grant funding from The Susan G. Komen Breast Cancer Foundation. The screening data in this section of the report do not currently take into consideration screening provided by this non-CDC funding. Komen funding support is critical to the Ladies First program. The Komen funding increases the program's capacity to screen women less 50 years of age.

## National Efforts

The **American Cancer Society (ACS)** has developed the Cancer Resource Network which provides free services to cancer patients and their caregivers. Services include: rides to treatment, lodging, referral to local community resources, emotional support, cancer education classes, and a 24-hour telephone information service. Other programs offered by ACS in select areas include:

- “Reach for Recovery” which provides information and support to anyone facing breast cancer through one-on-one contact with volunteers who are breast cancer survivors.
- “Look Good, Feel Better,” a free, non-medical program where volunteer cosmetologists teach women how to deal with the appearance-related side effects of cancer treatment.
- “Road to Recovery,” a free service offered by trained volunteer drivers providing transportation to and from their regular scheduled medical appointments.

For more information, call 1-800-227-2345, or visit: [www.cancer.org](http://www.cancer.org).

**Men Against Breast Cancer (MABC)** is a national not-for-profit organization designed to provide targeted support services to educate and empower men to be effective caregivers when breast cancer strikes a loved one, as well as mobilize men to be active participants in the fight to eradicate breast cancer as a life-threatening disease. For more information, visit: [www.menagainstbreastcancer.org](http://www.menagainstbreastcancer.org).

## 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. The information maintained by the registry allows the Health Department to study cancer trends and improve cancer education and prevention efforts. Vermont Department of Health Cancer Registry, 1996-2005. The Vermont Cancer Registry can be contacted at 802-865-7749 ([http://healthvermont.gov/research/cancer\\_registry/registry.aspx](http://healthvermont.gov/research/cancer_registry/registry.aspx)).

**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. Vermont Department of Health Vital Statistics System, 1996-2005 ([http://healthvermont.gov/research/stats/vital\\_stats.aspx](http://healthvermont.gov/research/stats/vital_stats.aspx)).

**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, 2006.

**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, 1975-2005, National Cancer Institute. Bethesda, MD, 2008 ([http://www.seer.cancer.gov/csr/1975\\_2005](http://www.seer.cancer.gov/csr/1975_2005)).

**U.S. Vital Statistics:** The U.S. Public Use Database Vital Statistical System maintains the U.S. mortality rates. Rates represented in this report are for the

U.S. white population. Suggested Citation: Surveillance, Epidemiology, and End Results (SEER) Program ([www.seer.cancer.gov](http://www.seer.cancer.gov)) SEER\*Stat Database: Mortality - All COD, Public-Use With State, Total U.S. (1969-2005), National Cancer Institute, DCCPS, Surveillance Research Program, Cancer Statistics Branch, released April 2008. Underlying mortality data provided by NCHS ([www.cdc.gov/nchs](http://www.cdc.gov/nchs)).

## 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 breast cancer cases 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. Breast cancer cases were defined as invasive neoplasms with ICD-O-3 histology codes C50.0-C50.9 with the exception of histology 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). Cause of death was coded according to ICD-10. 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.

**Statistical Significance:** The use of the terms “higher” and “lower” in this document refer to a “statistically significant” difference. A statistically significant difference indicates that there is statistical evidence that there is a difference that is unlikely to have occurred by chance alone.

**Small Numbers:** Rates are not presented in this report if they are based on fewer than 6 cases.

### Suggested Citation

Vermont Department of Health, Breast Cancer in Vermont, 2009.

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