

Vermont Facts, 2000-2004

- ❖ **Incidence:** Colon cancer is the third most common cancer diagnosed in men and women. Each year, approximately 172 colon cancer cases are diagnosed in men, and 164 colon cancer cases are diagnosed in women.
- ❖ **Mortality:** Colon cancer is the third leading cause of cancer death in both men and women. Each year, approximately 62 men and 68 women die from colon cancer.
- ❖ **Trends (1995-2004):** Incidence and mortality for colon cancer among Vermont males has not changed over time. Incidence and mortality rates of colon cancer have decreased among women in Vermont.
- ❖ **Age:** The incidence of colon cancer increases dramatically with age. More than 90 percent of colon cancer cases are diagnosed in people age 50 and older.
- ❖ **Vermont vs. U.S.:** Colon cancer incidence and mortality rates among Vermont men and women are not different from the U.S.
- ❖ **Stage:** In Vermont, 38 percent of colon cancers are diagnosed at the localized stage (the cancer is limited to the organ of origin), 55 percent are diagnosed at the regional or distant stage (the cancer has extended beyond the local organ or has metastasized), and 7 percent are of unknown stage.
- ❖ **Advanced Stage:** As a measure of screening effectiveness, colon cancer incidence for Vermonters age 50 and older diagnosed at advanced stage (regional or distant stage), has declined over the past decade.
- ❖ **Screening:** According to the 2006 BRFSS, 63% of Vermonters age 50 and older have met the screening recommendations for colon cancer. However, certain subgroups 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 colon cancer and spread to the liver is still colon cancer.

Colon Cancer

Located within the digestive system, 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 of similarities between cancer of the colon and rectum, cancers in either of these sites are often grouped as colorectal cancer and is referred to as “colon cancer” throughout this document.

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 males and females – Vermont, average number of cases per year, 2000-2004.

Male Cancer Site	Cases (per year)	Percent (per year)	Female Cancer Site	Cases (per year)	Percent (per year)
Prostate	493	29%	Breast	475	31%
Lung	242	14%	Lung	179	12%
Colon & Rectum	172	10%	Colon & Rectum	164	11%
Bladder	120	7%	Uterus	110	7%
Melanoma of Skin	96	6%	Melanoma of Skin	84	5%
All Sites	1,679	100%	All Sites	1,535	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 of 1,679 cancers in males and 1,535 cancers in females are diagnosed each year in Vermont. Of those, an average of 172 men and 164 women are diagnosed with colon cancer each year.
- ❖ Colon cancer is the third most common cancer diagnosed in males and females and accounts for roughly ten percent of all cancers diagnosed in Vermont.

Mortality

The mortality rate is a measure of the number of deaths in a population during a specific period of time.

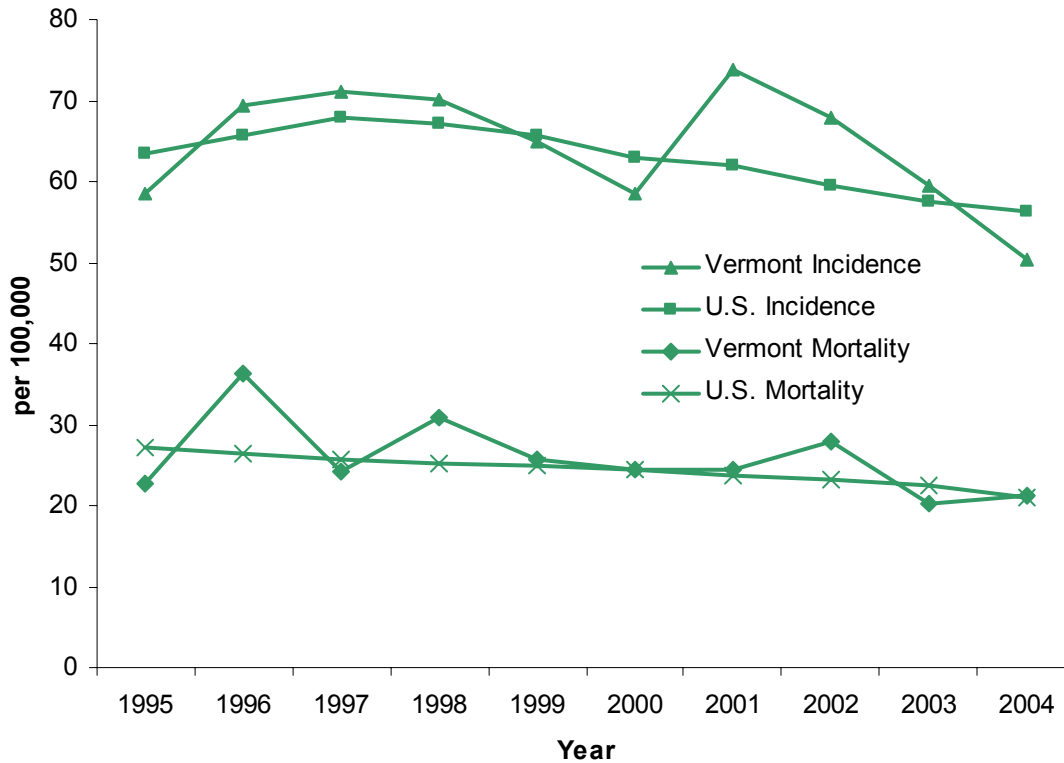
Table 2. The most common causes of cancer deaths in males and females – Vermont, average number of deaths per year, 2000-2004.

Male Cancer Site	Cases (per year)	Percent (per year)	Female Cancer Site	Cases (per year)	Percent (per year)
Lung	189	30%	Lung	140	24%
Prostate	69	11%	Breast	97	16%
Colon & Rectum	62	10%	Colon & Rectum	68	11%
Pancreas	31	5%	Ovary	31	5%
Non-Hodgkin Lymphoma	30	5%	Pancreas	30	5%
All Sites	632	100%	All Sites	595	100%

- ❖ An average of 632 males and 595 females die each year from cancer in Vermont. Of these, an average of 62 men and 68 women die from colon cancer.
- ❖ Colon cancer is the third leading cause of cancer death for males and females in Vermont.
- ❖ In Vermont, colon cancer accounts for roughly 10 percent of all cancer deaths among males and females.

Trends

Figure 1. Incidence and mortality rates of male colon cancer – Vermont and United States¹, 1995-2004.

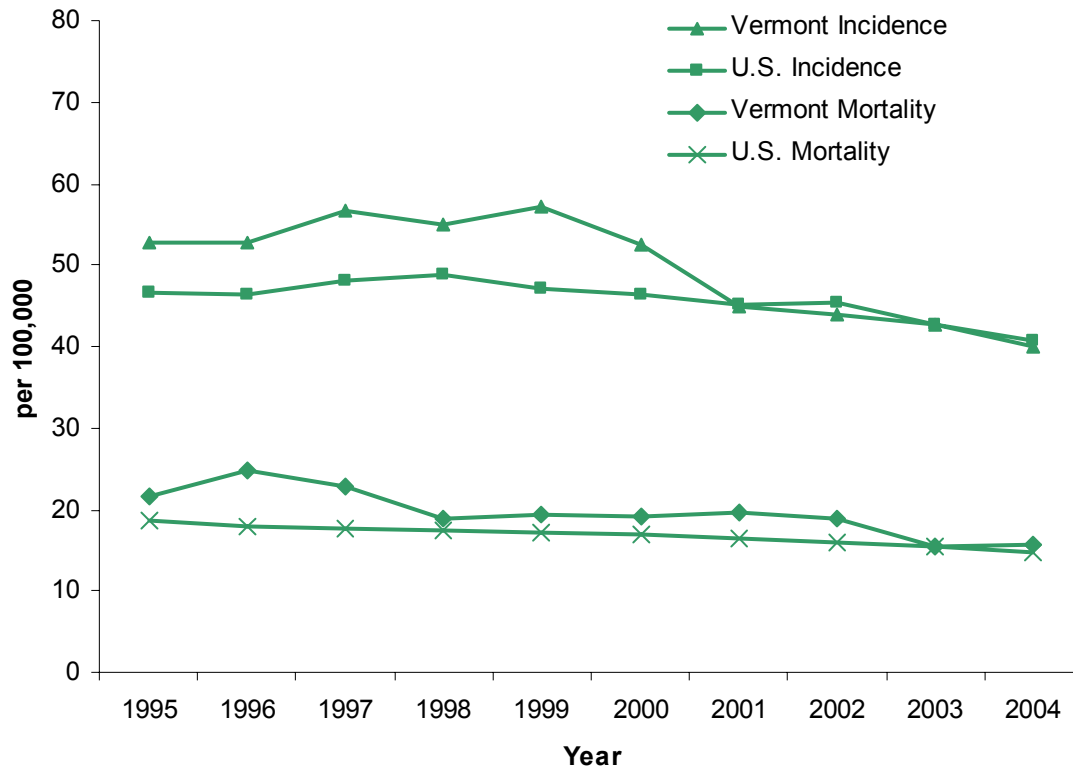


	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Vermont Incidence	58.4	69.5	71.0	70.2	65.0	58.6	73.8	68.0	59.4	50.4
U.S. Incidence	63.4	65.8	67.9	67.1	65.6	63.0	62.0	59.4	57.6	56.2
Vermont Mortality	22.6	36.4	24.3	30.8	25.7	24.4	24.4	27.8	20.2	21.2
U.S. Mortality	27.2	26.3	25.7	25.1	25.0	24.4	23.7	23.2	22.4	21.1

- ❖ From 1995 to 2004, trend analysis shows that there was no change in male colon cancer incidence in Vermont, but incidence rates decreased in the U.S.
- ❖ From 1995 to 2004, trend analysis shows that there was no change in male colon cancer mortality in Vermont, but mortality rates decreased in the U.S.

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

Figure 2. Incidence and mortality rates of female colon cancer – Vermont and United States, 1995-2004.



	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Vermont Incidence	52.7	52.7	56.6	54.9	57.2	52.4	44.8	43.9	42.7	40.1
U.S. Incidence	46.6	46.4	48.0	48.9	47.1	46.3	45.1	45.5	42.7	40.7
Vermont Mortality	21.5	24.7	22.7	18.9	19.5	19.1	19.6	18.8	15.4	15.8
U.S. Mortality	18.6	18.0	17.6	17.5	17.2	17.0	16.5	16.0	15.5	14.7

- ❖ From 1995 to 2004, trend analysis shows that female colon cancer incidence has decreased in Vermont and the U.S.
- ❖ From 1995 to 2004, trend analysis shows that female colon cancer mortality has decreased in Vermont and the U.S.

U.S. Comparisons

Table 3. Incidence and mortality rates of colon cancer – Vermont and United States, per 100,000, 2000-2004.

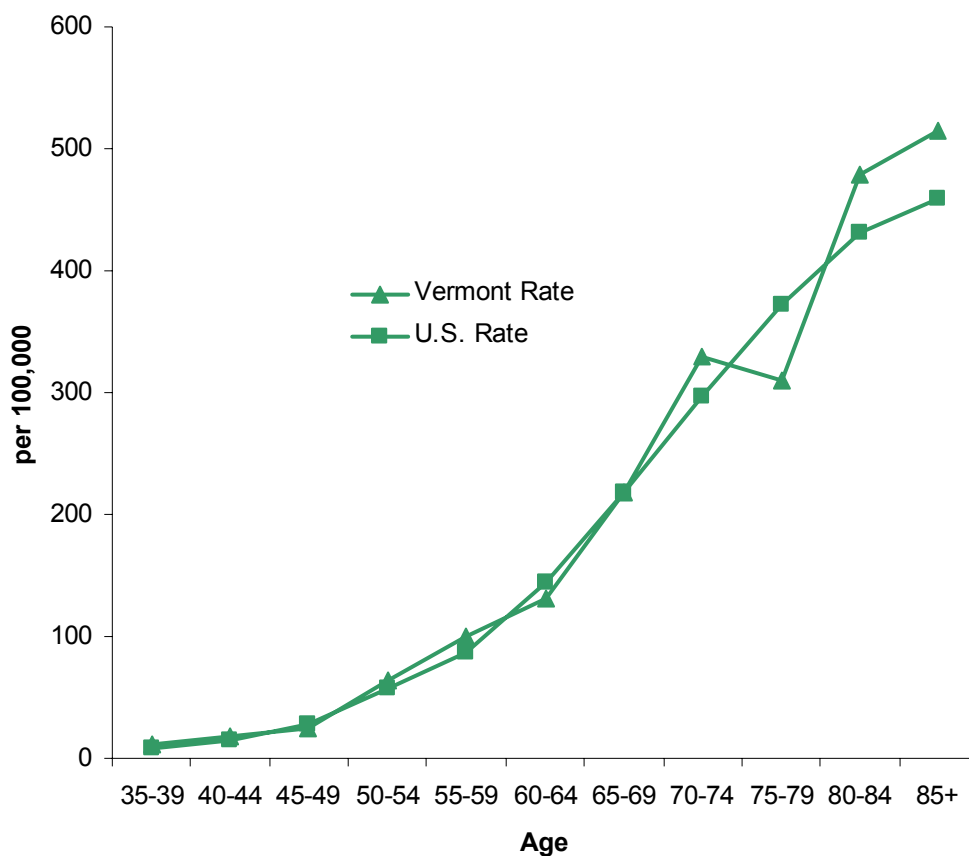
	Incidence	Mortality
Vermont Males	61.5	23.5
U.S. Males	59.6	22.7
Vermont Females	44.7	17.7
U.S. Females	44.0	15.9

- ❖ The colon cancer incidence rates among Vermont males and females are not different from the U.S.
- ❖ The colon cancer mortality rates among Vermont males and females are not different from the U.S.

Age

The incidence rates of colon cancer, as with many cancers, increases dramatically with age. While younger adults can develop colon cancer, over 90 percent of colon cancers are diagnosed in men and women over the age of 50.

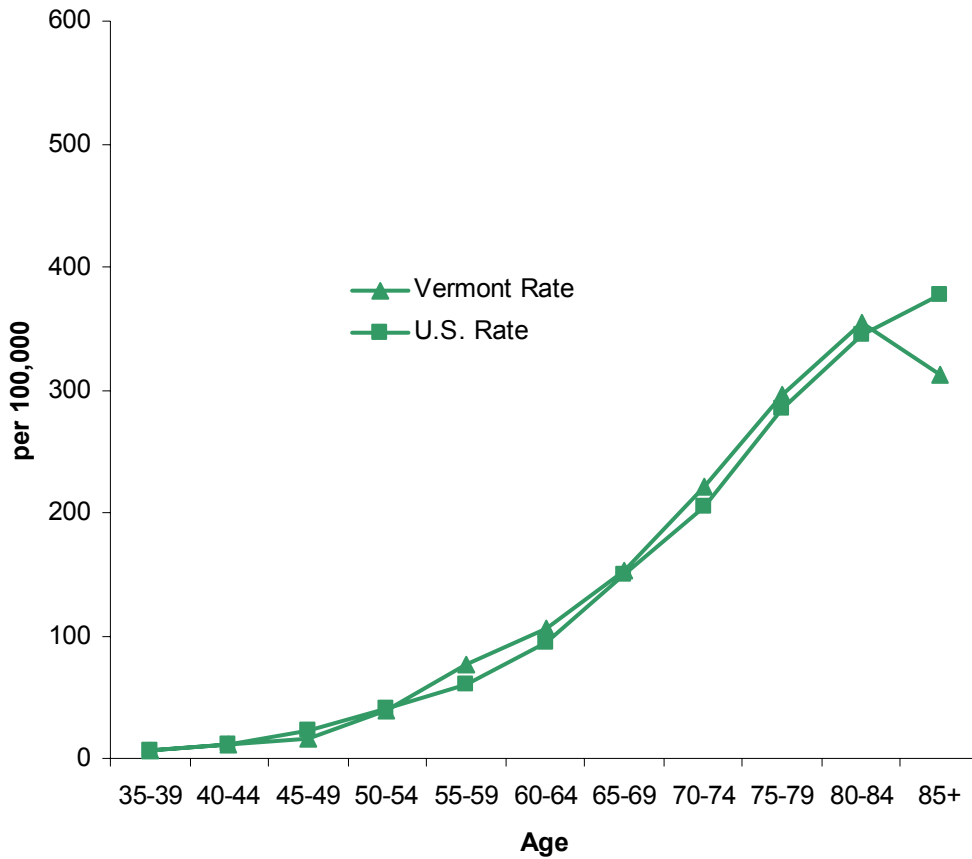
Figure 3. Incidence rates of male colon cancer, by age – Vermont and United States, 2000-2004.



Age Group	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85+
Vermont Rate	10.8	18.7	23.9	63.7	99.3	131.6	217.4	330.0	309.5	478.3	514.1
U.S. Rate	8.0	14.8	27.6	57.9	87.7	143.5	217.5	297.5	372.9	430.8	458.7

- ❖ Vermont males age 85 and older have the highest age-specific incidence of colon cancer, at a rate of 514.1 per 100,000.
- ❖ Among Vermont men, there are no differences in age-specific incidence rates of colon cancer compared to the U.S.

Figure 4. Incidence rates of female colon cancer, by age – Vermont and United States, 2000-2004.



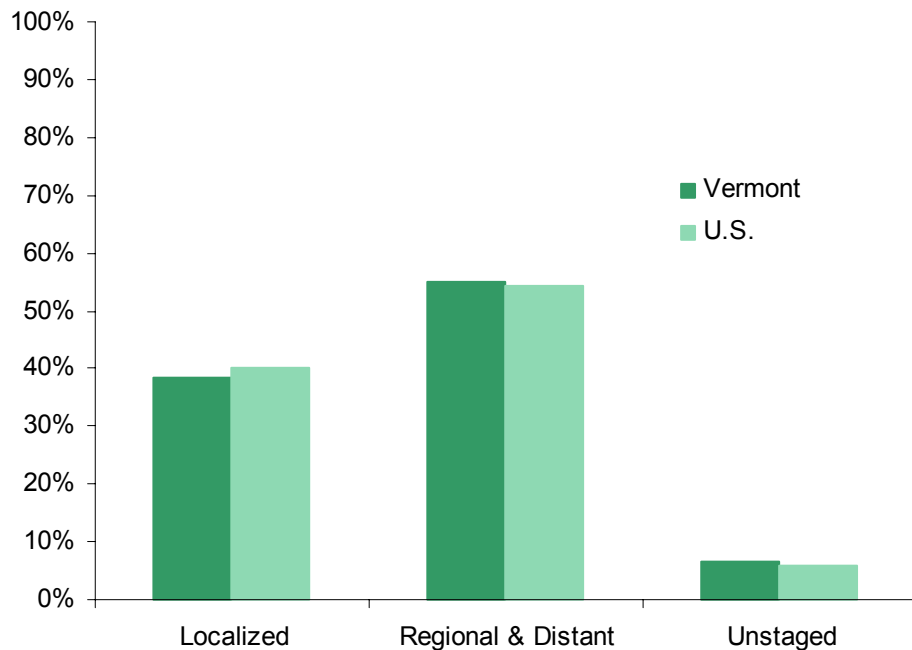
Age Group	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85+
Vermont Rate	6.8	11.3	16.1	39.6	76.4	106.5	152.1	221.9	296.0	353.9	311.8
U.S. Rate	6.2	12.1	22.6	40.9	60.6	93.5	150.0	205.4	284.3	344.1	378.0

- ❖ Vermont females age 80 to 84 have the highest age-specific incidence of colon cancer, at a rate of 353.9 per 100,000.
- ❖ Vermont females age 85 and older have a lower incidence of colon cancer, at a rate of 311.8 per 100,000 compared to 378.0 per 100,000 in 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. 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 more likely to be detected at an earlier stage than internal cancers that require imaging procedures or laboratory tests.

Figure 5. Distribution of colon cancer by stage at diagnosis – male and female, Vermont and the United States, 2000-2004.

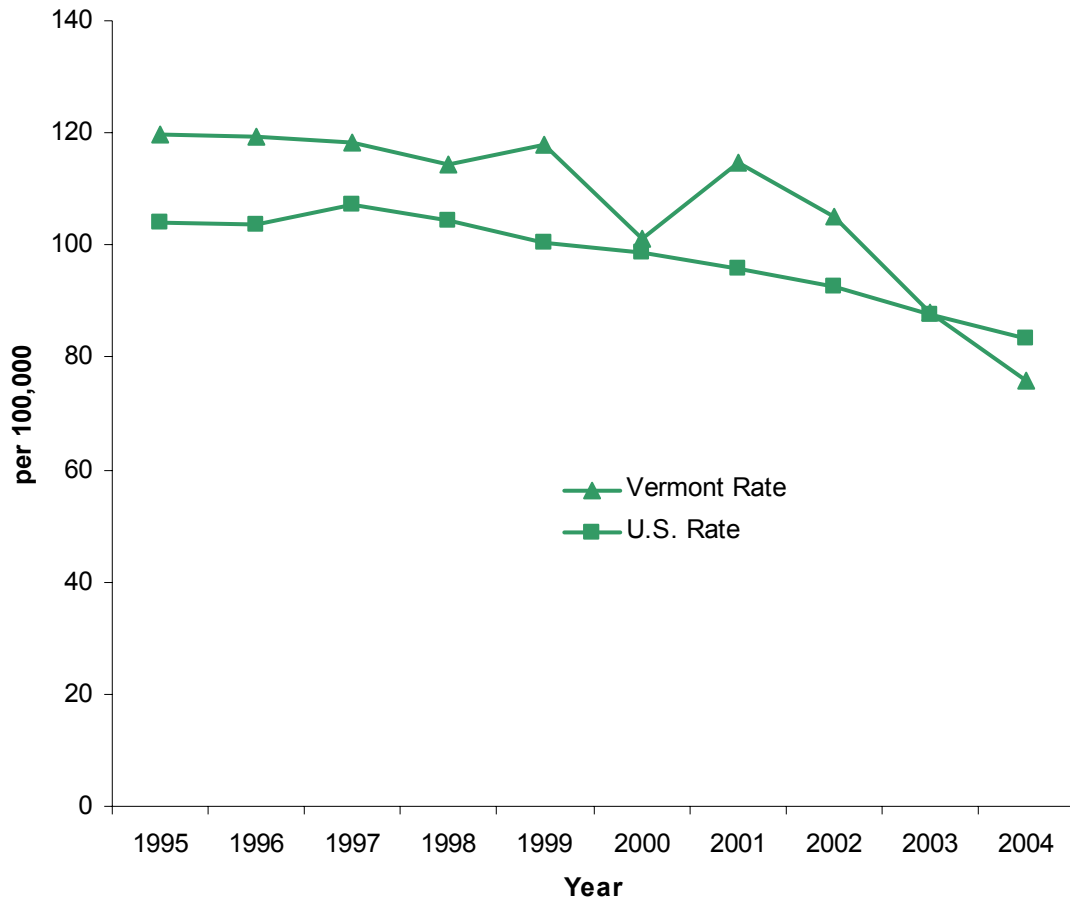


- ❖ Among Vermonters, approximately 38 percent of colon cancers are diagnosed at the early stage (localized), and 55 percent are diagnosed at a regional or distant stage. In the U.S., 40 percent of colon cancers are diagnosed at the early stage, and 54 percent are diagnosed at a regional or distant stage.
- ❖ There is no difference between Vermont and the U.S. for stage at diagnosis.

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 6. Incidence rates of advanced stage colon cancer, men and women age 50 and older – Vermont and the United States, 1995-2004.



- ❖ From 1995 to 2004, trend analysis shows that colon cancer incidence per 100,000 males and females age 50 and older diagnosed at advanced stage (regional or distant stage) has declined in Vermont and the U.S.
- ❖ Between 2000 and 2004, the Vermont advanced stage colon cancer incidence rate among Vermont males and females (96.4 per 100,000) was not different from the U.S. (91.4 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 people with known risk factors never develop colon cancer, and many who do develop this disease have none of the known risk factors. The exact causes of colon cancer are unknown, but some of the factors associated with an increased risk of developing colon cancer are:

- ❖ **Age:** The incidence of colon cancer, as with many cancers, increases dramatically with age. More than 90 percent of people with this disease are diagnosed after age 50. The average age at diagnosis is 72.
- ❖ **Family History:** Close relatives (parents, brothers, sisters, or children) of an individual with a history of colon cancer are more likely to develop this disease.
- ❖ **Polyps:** Polyps are growths on the inner wall of the colon or rectum. They are common in people over the age of 50. Most polyps are benign (non-cancerous) growths, but some types of polyps increase the risk of colon cancer, especially if they are large or if there are many of them. Removing colon polyps at the time of colonoscopy reduces the resulting risk of colon cancer.
- ❖ **Previous Cancer:** Even if a person's colon cancer has been completely removed, new cancers may start in other areas of the colon or rectum. Women with a history of cancer of the ovary, uterus (endometrium), or breast are at a somewhat higher risk of developing colon cancer.
- ❖ **Chronic Inflammatory Bowel Disease:** Chronic inflammatory bowel disease (IBD), including ulcerative colitis and Crohn's disease, is a condition in which the colon is inflamed over a long period of time. A personal history of chronic inflammatory bowel disease increases the risk of developing colon cancer.
- ❖ **Diabetes:** People with diabetes have an increased risk of developing colon cancer.
- ❖ **Genetic Alterations:** Changes in certain genes increase the risk of colon cancer. A small percentage of colon cancers are associated with the inherited colon cancer syndrome, called hereditary non-polyposis colon cancer (HNPCC), or Lynch syndrome. Another small percentage of colon cancer cases are associated with the inherited syndrome, called familial adenomatous polyposis (FAP), which involves having hundreds of polyps in the colon or rectum. Cancer can develop in one or more of these polyps.
- ❖ **Ethnic Background:** Jews of Eastern European descent (Ashkenazi Jews) have a higher risk for developing colon cancer (due to hereditary nonpolyposis colon cancer (HNPCC)).
- ❖ **Diet:** Studies suggest that diets high in fat (especially animal fat) and low in folate and fiber may increase the risk of colon cancer. Also, some studies suggest that people who eat a diet very low in fruits and vegetables may have a higher risk of colon cancer.
- ❖ **Alcohol:** Some studies have found an association between the heavy use of alcohol and an increased risk of colon cancer.
- ❖ **Physical Inactivity and Obesity:** If you are not physically active, you have a greater chance of developing colon cancer. If you are very overweight, your risk of dying from colon cancer is increased.
- ❖ **Virus:** Exposure to some viruses, such as particular strains of human papillomavirus (HPV), may be associated with colon cancer.
- ❖ **Tobacco:** A person who smokes cigarettes may be at increased risk of developing polyps and colon cancer.

Prevention and Screening

While many of the risk factors for colon cancer can not be modified, some studies suggest that a diet low in fat and calories and high in fiber can help prevent colon cancer. Individuals may also be able to lower their risk of colon cancer by being more physically active and not smoking. These healthy lifestyle choices also significantly reduce the risk of other chronic diseases, such as heart disease and diabetes.

Screening Recommendations

Colon cancer is one of the few cancers that can be prevented through a screening test. Research shows that colon cancer develops gradually from benign polyps. If caught early, these polyps may be removed, preventing the development of cancer. There are several tests used to screen for colon cancer:

- ❖ **Fecal Occult Blood Test:** The fecal occult blood test (FOBT) is used to find occult (hidden) blood in feces. Blood vessels at the surface of colon polyps or adenomas or cancers are often fragile and easily damaged by the passage of feces. The damaged vessels usually release a small amount of blood into the feces. If this test is positive, a colonoscopy is needed to see if there is a cancer, polyp, or other cause of bleeding.
- ❖ **Flexible sigmoidoscopy:** A sigmoidoscope is a slender, flexible, hollow, lighted tube. When inserted through the rectum, it enables the physician to view the inside of the large intestine, from the rectum through the last part of the colon, called the sigmoid or descending colon. Polyps that are visualized during the procedure can be removed, however, flexible sigmoidoscopy is not sufficient to detect polyps or cancer in the ascending or transverse colon (two-thirds of the colon). If an adenomatous polyp or colon cancer is found during the procedure, a colonoscopy is needed to look for polyps or cancer in the rest of the colon.
- ❖ **Colonoscopy:** A colonoscope is a longer version of a sigmoidoscope. When inserted through the rectum it allows the doctor to see the lining of the entire colon. If a small polyp is found, it may be removed by the physician during the procedure. The colonoscopy enables viewing of the entire colon and can be used as both a screening and preventive tool.
- ❖ **Barium enema with air contrast (or double-contrast barium enema):** The barium enema uses barium sulfate, a chalky substance, and air to fill and expand the colon in order to produce pictures of the lining of the colon. If any abnormalities are found, the procedure should be followed up with a colonoscopy.

Based on individual variation in comfort level, logistical difficulties, and financial barriers, people age 50 and older can select from the following screening recommendations²:

- 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.

If a person is identified as being at high risk for colon cancer, some physicians recommend beginning colon cancer screening before age 50.

² U.S. Preventive Services Task Force, Screening for Colorectal Cancer, July 2002. <http://www.ahrq.gov/clinic/uspstf/uspscolo.htm>.

Screening Rates in Vermont

Based on the 2006 Behavioral Risk Factor Surveillance System, among Vermonters age 50 and older:

- 16.8% had an FOBT in the past year,
- 16.7% had a colonoscopy or sigmoidoscopy in the past year,
- 55.5% had a colonoscopy or sigmoidoscopy in the past 5 years, and
- 62.0% had a colonoscopy or sigmoidoscopy in the past 10 years.

Combining these data, we find approximately 63 percent of Vermonters age 50 and older have met the screening recommendations for colon cancer (had either a sigmoidoscopy or colonoscopy in the past 5 years, or an FOBT in the past year). Overall screening rates for Vermont are higher than for the U.S. (56 percent). As part of the Vermont State Cancer Plan 2006-2010, an objective was set to increase the percentage of Vermonters (age 50+) who have received the recommended colon cancer screening tests to 65 percent.

Disparities in Screening Rates

Data indicate that certain subgroups are more or less likely to be screened for colon cancer. Based on data from the 2006 Behavioral Risk Factor Surveillance System (BRFSS), we observe the following disparities in compliance with colon cancer screening guidelines (had either a sigmoidoscopy or colonoscopy in the past 5 years, or an FOBT in the past year):

- **Personal Doctor:** 64% of Vermonters with a personal doctor were screened for colon cancer compared to 28% of those without a personal doctor.
- **Income:** 65% of Vermonters making over 250% of the Federal Poverty Guidelines were screened for colon cancer compared to only 55% of those making less than 250% of the Federal Poverty Guidelines.
- **Education:** 66% of Vermonters with a college degree or greater were screened for colon cancer compared to only 55% of those with less than a high school education.
- **Health Insurance:** 64% of Vermonters with health insurance were screened for colon cancer compared to 38% of those without health insurance.
- **Gender:** There are no differences in overall rates of screening compliance by gender.

Using BRFSS data we can also look at whether Vermonters with known risk factors for colon cancer are getting screened:

- **Age:** 54% of Vermonters age 50 to 59 were screened for colon cancer compared to 69% of those 60 to 69, 71% of those aged 70 to 79, and 62% of those age 80 and older.
- **Physical Activity:** 65% of Vermonters who reported any physical activity in the past month have been screened for colon cancer compared to 59% who reported being physically inactive.
- **Obesity:** There are no differences in overall rates of screening compliance between Vermonters who are considered to be underweight, overweight, or of healthy weight.
- **Smoking Status:** 65% of non-smokers were screened for colon cancer compared to 44% of current smokers.

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 for colon cancer depends on the stage of the disease. When colon cancer is diagnosed at an early stage (confined to the organ of origin) it can be curable. However, when it is diagnosed at later stages (with metastases present) it is less likely to be curable.

Nationally, 90 percent of men and women who are diagnosed with colon cancer at an early (localized) stage survive their disease for at least five years compared to 10.5 percent when diagnosed at a late (distant) stage.

Surgery is the primary treatment for colon cancer. Early cancer that develops within a polyp can often be cured by removing the polyp (i.e., polypectomy) at the time of colonoscopy whereas a more advanced tumor usually requires surgical removal of the section of colon containing the tumor and a small amount of healthy tissue around it (partial colectomy). Surgery is typically followed by **chemotherapy** (drugs toxic to cells), and/or less commonly, **radiation therapy** (ionizing radiation to control malignant cells) based on the staging of the cancer and other medical factors.

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 at:
<http://www.cancer.gov/clinicaltrials/search>.

Intervention, Policy, and Recommendations

The **Vermont State Cancer Plan**³, published by the Vermont Department of Health and **Vermonters Taking Action Against Cancer (VTAAC)**⁴, 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 colon cancer in Vermont can be reduced by achieving the following objectives, as identified in the State Cancer Plan:

Prevent future cancers by reducing exposure to known risk factors including:

- Reduce the prevalence of obesity among all Vermonters.
- Increase daily fruit and vegetable consumption among all Vermonters.
- Increase regular, moderate physical activity among all Vermonters.

Detect new cancers as early as possible through appropriate screening:

- Increase colon cancer screening among Vermonters ages 50+.

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

- Increase the number of primary care providers educated about the need for people with cancer to be assessed in a multi-modality setting.
- Increase the number of Vermonters who used the American Cancer Society's Road to Recovery transportation program to obtain their cancer treatment.
- Increase the number of Vermonters enrolled in clinical trials.
- Increase the percentage of Vermonters covered by insurance for all or part of the year.

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

- Increase the percentage of cancer survivors who report always or usually receiving emotional/psychological support when needed.
- Increase the percentage of cancer survivors who report that their general health is good or excellent.

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

- Improve Vermont's grade on the Pain Policy Progress Report Card.
- 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.

A Colon Cancer Workgroup was formed by VTAAC in 2005 and is implementing the following strategies and interventions to reach these objectives:

- Collaborate with UVM's College of Medicine to conduct a capacity assessment for colon cancer screening in Vermont;
- Host statewide summits;
- Partner with the state's health insurers and health care providers to increase colon cancer screening among insured Vermonters over age 50;
- Evaluate progress on current activities;
- Increase screening for under-insured Vermonters.

³ Vermont State Cancer Plan, 2006-2010: http://healthvermont.gov/pubs/cancerpubs/state_cancer_plan.aspx.

⁴ 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.

Vermonters Taking Action Against Cancer (VTAAC) is a statewide collaborative partnership of nearly 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 annually⁵.

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)**⁶ 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>.

National Efforts

Beginning in 1997, the **American Cancer Society (ACS)** and the **Centers for Disease Control and Prevention (CDC)** began to explore the possibility of forming a collaborative group of organizations interested in colon cancer. As a result, in 1997 the ACS and CDC convened the first meetings of the National Colon Cancer Roundtable (NCCRT) inviting potential partners to discuss strategies for educating medical providers and the public about the importance of colon cancer screening. The NCCRT is a national coalition of public, private, and voluntary organizations whose mission is to advance colon cancer control efforts by improving communication, coordination, and collaboration among health agencies, medical-professional organizations, and the public. The ultimate goal of the roundtable is to increase the use of proven colon cancer screening tests among the entire population for whom screening is appropriate. Through its collective efforts, the roundtable will:

- Strengthen the network of public and private organizations concerned with promoting colon cancer screening.
- Determine clinical and consumer barriers to screening through research.
- Assess current public awareness of and interest in screening.
- Develop and disseminate health messages.

Additionally, through the efforts of three workgroups focused on provider education, public education, and health policy, the NCCRT identified the educational needs and health messages for both health care providers and consumers and explored health care system and policy issues related to colon cancer. Each workgroup developed a set of recommendations that were incorporated into a national colon cancer strategic plan⁷.

The **American Cancer Society (ACS)**⁸ 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.

⁵ Vermont Cancer Plan Status Report, 2007: <http://healthvermont.gov/prevent/cancer/documents/CancerProgressSheet100207.pdf>.

⁶ For more information about the Vermont Cancer Survivor Network, visit <http://www.vcsn.net>.

⁷ *Promoting Early Detection Tests for Colorectal Carcinoma and Adenomatous Polyps. A Framework for Action: The Strategic Plan of the National Colorectal Cancer Roundtable*, American Cancer Society, 2002. <http://www.nccrt.org/Documents/General/NCCRT%20Strategic%20Plan.pdf>.

⁸ For more information about the American Cancer Society, call 1-800-227-2345 or visit <http://www.cancer.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. However, data presented in this document represents only Vermont residents, including residents diagnosed outside of Vermont. 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. Vermont Department of Health Cancer Registry, 1995-2004. The Vermont Cancer Registry can be contacted at 802-865-7749 (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, 1995-2004 (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. White rates include Hispanic ethnicity. 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, 1975-2004,

National Cancer Institute. Bethesda, MD, 2007 (http://www.seer.cancer.gov/csr/1975_2004).

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. White rates include Hispanic ethnicity. Suggested Citation: Surveillance, Epidemiology, and End Results (SEER) Program (www.seer.cancer.gov) SEER*Stat Database: Mortality - All COD, Public-Use With State, Total U.S. (1969-2004), National Cancer Institute, DCCPS, Surveillance Research Program, Cancer Statistics Branch, released April 2007. Underlying mortality data provided by NCHS (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 colon 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. Colorectal cancer cases were defined as invasive neoplasms with ICD-O-3 histology codes C18.0-C18.9, C19.9, C20.9, and C26.0 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, colon, 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.

Federal Poverty Level (FPL): The set minimum amount of income that a family needs for food, clothing, transportation, shelter and other necessities. In the United States, this level is determined by the Department of Health and Human Services. FPL varies according to family size. The number is adjusted for inflation and reported annually in the form of poverty guidelines. Public assistance programs, such as Medicaid in the U.S., define eligibility income limits as some percentage of FPL.

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, Colon Cancer in Vermont, 2008.

Acknowledgements

This publication was supported by Cooperative Agreement Number U58/DP000800 from the Centers for Disease Control and Prevention. Its contents are solely the responsibility of the authors and do not necessarily represent the official views of the Centers for Disease Control and Prevention.