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Cancer Incidence & Mortality in Maine 1997-1998

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Maine Cancer Registry

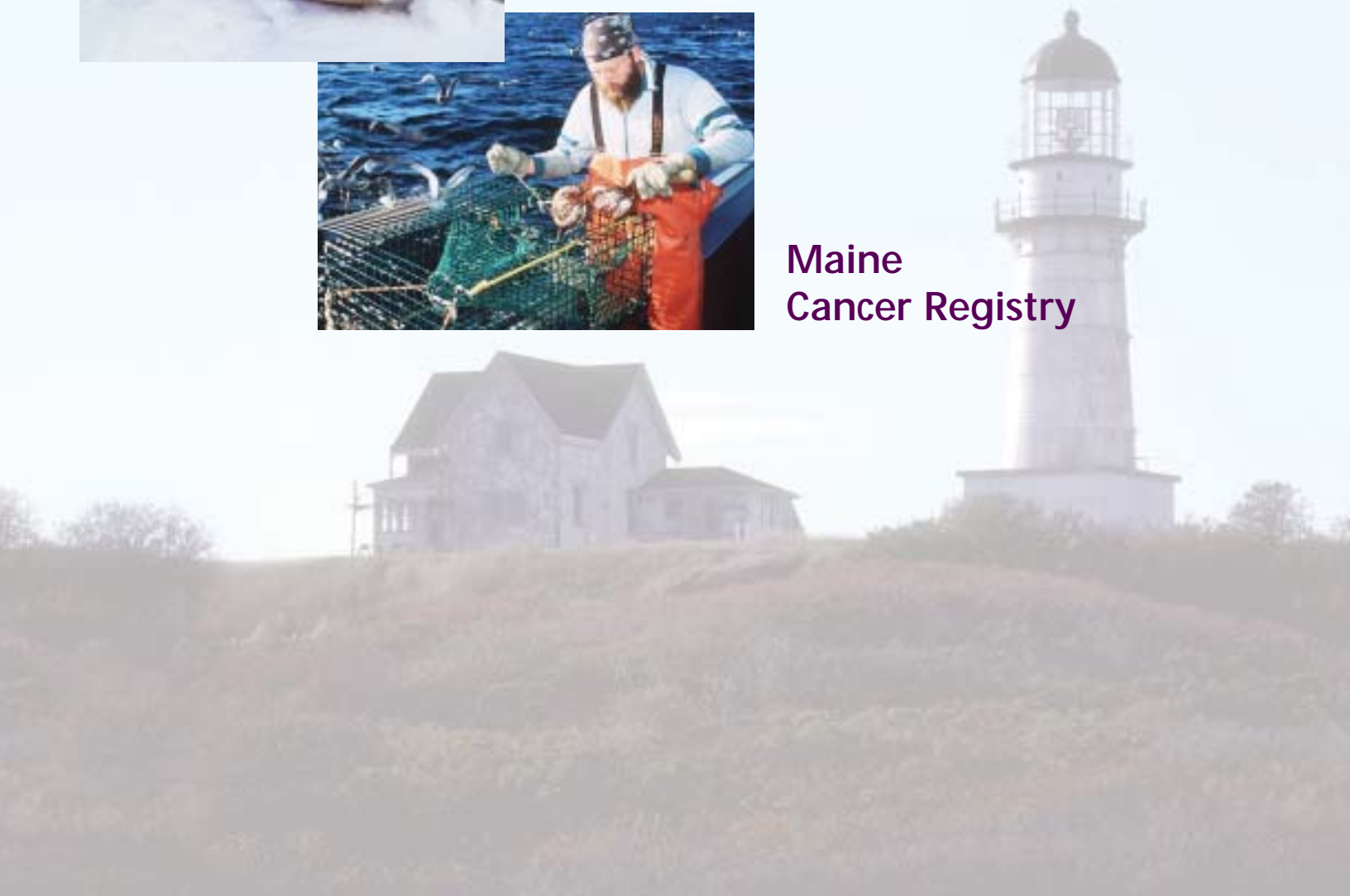Follow this and additional works at: https://digitalmaine.com/mecdc_docs

Cancer
Incidence & Mortality
in Maine

1997-1998

**Maine
Cancer Registry**

Cancer Incidence and Mortality in Maine, 1997-1998

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Table of Contents

Executive Summary

Cancer is a widespread disease that affects people around the world. A national program called "Healthy People 2010" was developed to establish measurable goals to help increase the quality and number of healthy years of life. One of the key goals of this program is to reduce the number of new cancer cases as well as the illness, disability, and death caused by cancer. In Maine, the Comprehensive Cancer Control Consortium was developed to address the burden of cancer in our state. A plan has been developed to improve prevention, early detection, treatment, rehabilitation, survivorship, palliation, and hospice care for the people of Maine.

In our lifetime, each of us will undoubtedly be touched by cancer in one way or another. The American Cancer Society reports that one out of every two men and one out of every three women will be diagnosed with some form of cancer in their lifetimes. In Maine an estimated 7,300 new cases will be diagnosed in the year 2003. Cancer is the second leading cause of death in the United States and in Maine. The American Cancer Society estimates that 3,000 Maine residents will die from cancer in the year 2003.

Cancer is not a single disease. There are over 100 different types of cancer, each with its own behavior, treatment, and survival rate. Four types of cancer account for over 56% of all cases diagnosed in Maine from 1997 to 1998: lung (15.7%), female breast (14.3%), prostate (14.5%), and colorectal (12.4%). Bladder cancer accounts for an additional 5.5% of the cases. During the 1994 to 1998 time period, Maine's cancer mortality was the eighth highest in the nation. Maine had the second highest bladder cancer mortality rate, the eleventh highest colorectal cancer mortality rate, and the eleventh highest lung cancer mortality rate. Maine women ranked 21st in breast cancer mortality and Maine men ranked 32nd in prostate cancer mortality.

There are various causes of cancer. The 1996 Harvard Report on Cancer Prevention concluded that 65% of all cancer deaths could be attributed to three modifiable lifestyle factors: tobacco use, adult diet and obesity, and a sedentary lifestyle. Heredity and environmental factors, such as pollution, viruses, occupational exposures and ultraviolet radiation, also contribute to the development of cancer. Because cancer can take up to 30 years to develop, it is difficult to pinpoint a particular exposure that might have contributed to a given cancer. While hereditary factors are not modifiable, people can reduce their risk of developing cancer by exercising, eating a healthy diet, and not smoking.

The goal of this annual report is to provide educational and statistical information on cancer in the state of Maine. The report represents data collected from 38 hospitals, physician offices, and pathology labs in Maine. Additional data is contributed by other states that care for Maine residents with cancer. The report explains the purpose of the Maine Cancer Registry and provides incidence and mortality data for all cancers combined, for the five most common cancer sites (lung, breast, prostate, colorectal, and bladder), and for three sites where preventive measures can also be implemented (cervical, oral, and melanoma). Risk factors and methods of prevention are included for each cancer site. Detailed data tables by county and more specific cancer sites are also included.

Note: Due to changes in our case-finding methods, which began in 1995, we have not included time trends for Maine. Time trends will be resumed in future reports.

What is the Maine Cancer Registry?

The Maine Cancer Registry (MCR) is a statewide population-based cancer surveillance system. The MCR collects information about all newly diagnosed and treated cancers in Maine residents (except basal and squamous cell carcinoma of the skin). This information is used to better understand cancer and improve cancer prevention, treatment and control.

Where does the MCR's authority and funding come from?

State law created the MCR in 1983 (MRSA 22 1401-1404).

Federal law provided funds for the MCR to expand in 1994, under the National Program of Cancer Registries, a program of the Centers for Disease Control and Prevention (USC Title 42-280e). Today the CDC provides three dollars to the MCR for every dollar from the state.

Where do cancer case reports come from?

All hospitals, health care facilities, physicians, and other providers who diagnose or treat cancer patients are **required by law** to report new cases to the MCR.

The MCR also actively **finds new cancer cases** in other databases at independent labs, state death files and other state registries.

What kind of information is reported?

- **About the person:** age, sex, race, residence, occupation
- **About the cancer:** which body part (site), how far it has spread (stage), when it was diagnosed
- **Treatment:** surgery, radiation, chemotherapy

How is the information kept confidential?

The MCR follows **strict requirements of federal and state law** to keep all personal information confidential. This means that any information that could identify a person is kept in locked files or secure computer accounts. Very specific guidelines are followed when data are released.

What does the MCR do with reported cases?

The MCR spends a lot of time making sure that the information is complete and accurate. For example, because more than one source often reports the same case, MCR staff must make sure that each case is in the database only once. MCR staff are specially trained to do this quality assurance work and keep these skills up to date with continuous education.

How are MCR cancer data used?

MCR data are currently used in several forms, including:

- the annual report, which is often used to answer general questions by the public;
- special reports which are generated in response to requests for aggregated data;
- identifiable data sets for researchers in the field of cancer;
- investigating local concerns about cancer rates; and
- data submissions for larger collaborative efforts.

Examples of these current uses are listed below:

Data Use	Types of Users		
Annual Report	• Public Health Organizations (private and public) • Other State Agencies	• Legislators • Hospitals • Universities	• Health Insurance Companies • Private Citizens
Summary data reports	• Comprehensive Cancer Planning Initiatives	• Hospitals • Universities	• Students • State Agencies
Identifiable data for research	• Researchers and Planners		
Local concerns about rates	• State Agencies	• Towns	• Industries
Data submissions	• North American Association of Central Cancer Registries • National Program of Cancer Registries • Central Brain Tumor Registry of the United States		

All Cancers

Facts About Cancer in the U.S.

According to the 1998 American Cancer Society, *Cancer Facts & Figures,* an estimated 1,228,600 people in the U.S. were diagnosed with cancer and the National Center for Health Statistics (NCHS) reports that 541,519 people died from some form of this disease. Cancer varies by climate and region. In the U.S., cancer is diagnosed more often in the Northeast and areas of the South. Cancer is more common in men than in women. One in every two men and one in every three women will be diagnosed with cancer in his or her lifetime. Cancer is more common with increasing age.

The key to preventing death from cancer is to find it early when it can be cured.

Risk Factors for Cancer

The Harvard Report on Cancer Prevention in 1996 researched the risk factors for cancer. The estimated percent of total cancer deaths attributed to established causes of cancer were:

Risk Factor	Percentage
Tobacco	30%
Adult diet/obesity	30%
Sedentary lifestyle	5%
Occupational factors	5%
Family history of cancer	5%
Viruses/biological agents	5%
Perinatal factors/growth	5%
Reproductive factors	3%
Alcohol	3%
Socioeconomic status	3%
Environmental pollution	2%
Ionizing/UV radiation	2%
Other	2%

Prevention

The most successful way to prevent cancer is to **limit the number of modifiable risk factors** by following these guidelines:

- **Do not smoke**
- **Eat a diet high in fresh fruits and vegetables and low in fats**
- **Get some exercise every day**
- **Limit alcohol intake**

Early Detection

Recommended screening tests are listed here and discussed in more detail in the following chapters:

- **Mammogram**
- **Pap Smear**
- **Colorectal Exam**
- **Mouth and Throat Exam**
- **Skin Cancer Screening**
- **Prostate Screening**

Age-Adjusted Mortality Rates for All Cancers, White Males, 1970-1994

■ 219.09 to 233.52
■ 214.67 to 219.09
■ 201.41 to 214.67
□ 191.46 to 201.41
□ 150.13 to 191.46
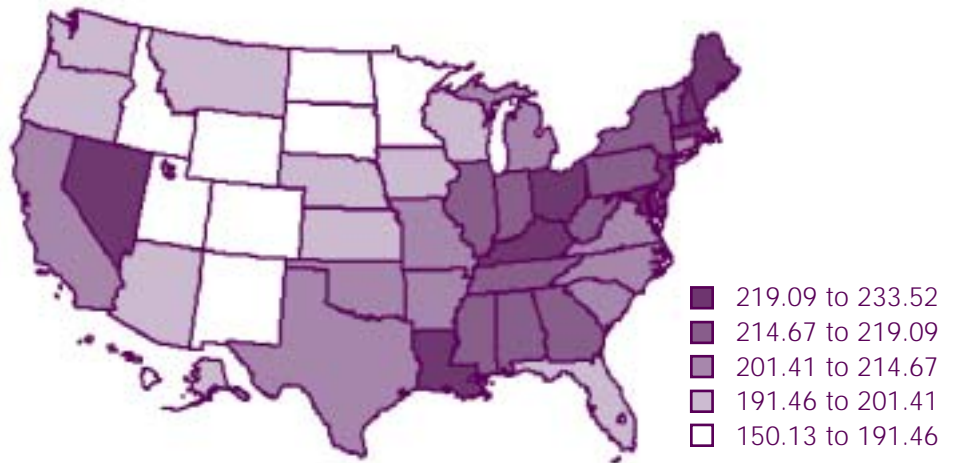
Age-Adjusted Mortality Rates for All Cancers, White Females, 1970-1994

■ 141.83 to 151.14
■ 136.81 to 141.83
■ 127.60 to 136.81
□ 122.71 to 127.60
□ 104.29 to 122.71
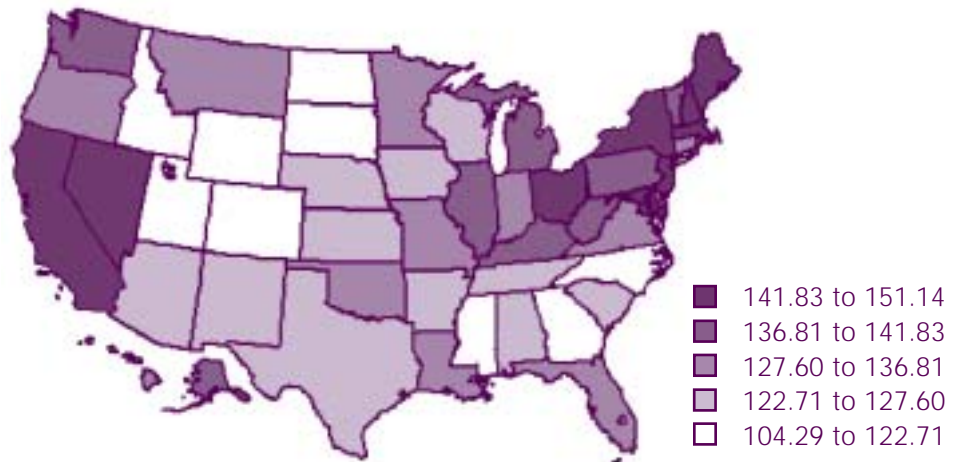
Note: Mortality rate/100,000 age-adjusted to 1970 U.S. population
Source: Atlas of Cancer Mortality in the U.S.

Facts about Cancer in Maine

■ In 1997 and 1998, cancer was the second leading cause of death after heart disease and accounted for almost 25% of all deaths in Maine.

■ Cancer was the number one cause of potential years of life lost, accounting for 1,543 years per 100,000 people in Maine. Heart disease only accounted for 950 years of potential life lost. This measure indicates that cancer deaths occur in people at a much younger age than heart disease.

Risk Factors in Maine

The 2000 Behavioral Risk Factor Surveillance System (BRFSS) shows that:

■ Over 23% of Maine adults smoke cigarettes.

■ Over 75% of Maine residents do not eat the recommended five or more servings of fruits and vegetables a day.

■ Over 27% of Maine residents indicate that they have not participated in any physical activity in the past month. This may contribute to obesity.

Cancer was the number one cause of potential years of life lost, accounting for 1,543 years per 100,000 people in Maine.

Early Detection in Maine

The 2000 BRFSS shows the following patterns of early detection in Maine:

■ **Breast Cancer:** Approximately 90% of the women in Maine, over age 40, have ever had a mammogram. However, only 75% of these women have had the mammogram within the screening guideline of one year.

■ **Cervical Cancer:** Ninety-four percent of Maine women have ever had a Pap Smear. Of these women, 73% have had the Pap smear within the recommended timeframe of one year.

■ **Colon Cancer:** The 1999 BRFSS shows that only 36% of men and women in Maine, over age 50, have had a fecal occult blood test (FOBT). Only 34% of Maine men and women, over age 50, have had either a sigmoidoscopy or colonoscopy.

Burden of Cancer in Maine

■ In 1997 and 1998 an average of 3,348 men and 3,178 women were diagnosed with some form of cancer.

■ 1,514 men and 1,426 women died of cancer each year.

■ Over 71% of new cancers in Maine were diagnosed in people over 60 years old.

Within Maine, there is a lot of random variation between the county rates. Counties whose rates for all cancers combined are significantly lower than the rate in Maine include Cumberland and York.
The incidence rate in Androscoggin County was significantly higher than the Maine rate.
(See Incidence Rates, page 43, for 95% confidence intervals.)

Maine = 399.7
National (SEER[1] Whites) = 401.4

[1] Surveillance, Epidemiology, and End Results

Maine Age-Adjusted Cancer Incidence Rates in Males and Females by County
All Sites 1997-1998

Aroostook
380.4

Piscataquis
384.1

Somerset
410.4

Penobscot
428.0

Franklin
410.6

Washington
425.3

Waldo
385.9

Hancock
411.8

Oxford
403.8

Kennebec
426.0

Cumberland
373.4

Knox
428.0

Lincoln
424.6

York
362.8

Sagadahoc
368.6

Androscoggin
441.7
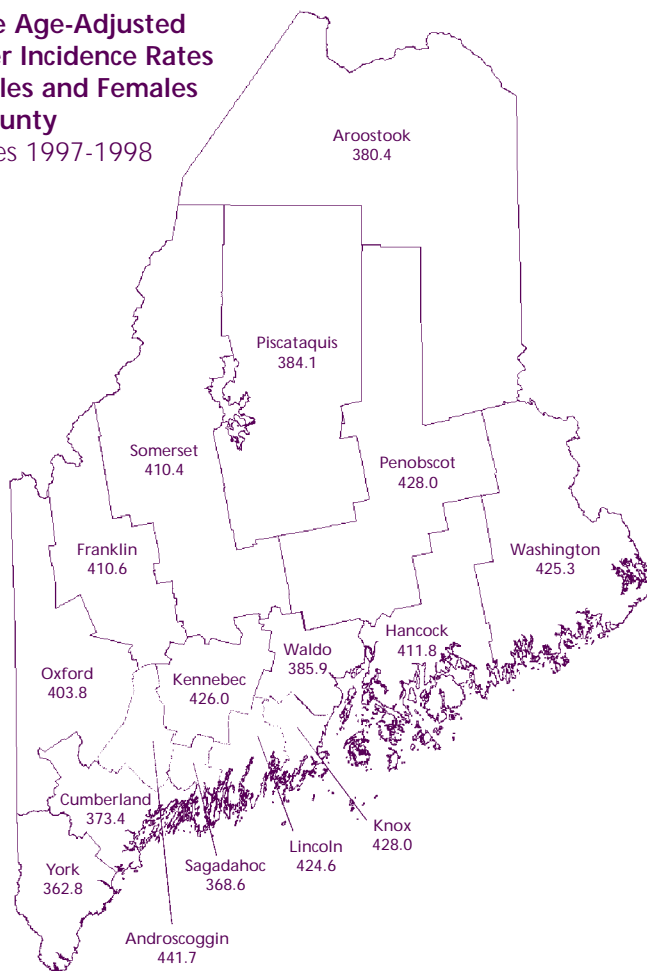
Prostate cancer is the most commonly diagnosed cancer in Maine males, followed by lung, colorectal, and bladder cancer. These four types of cancer account for 65% of all newly diagnosed cancers in males for 1997 and 1998.

Distribution of Age-Adjusted Incidence Rates in Maine by Site
Males, 1997-1998

Site	Rate per 100,000
Prostate gland	
Lung	
Colon and Rectum	
Bladder	
Non-Hodgkin's Lymphoma	
Oral Cavity and Throat	
Melanomas	
Kidney	
Stomach	
Leukemias	
Brain and CNS	
Pancreas	
Larynx	
Esophagus	
Testis	
Hodgkin's	
Multiple myeloma	
Liver	
Thyroid	
Male Breast	

Rate per 100,000
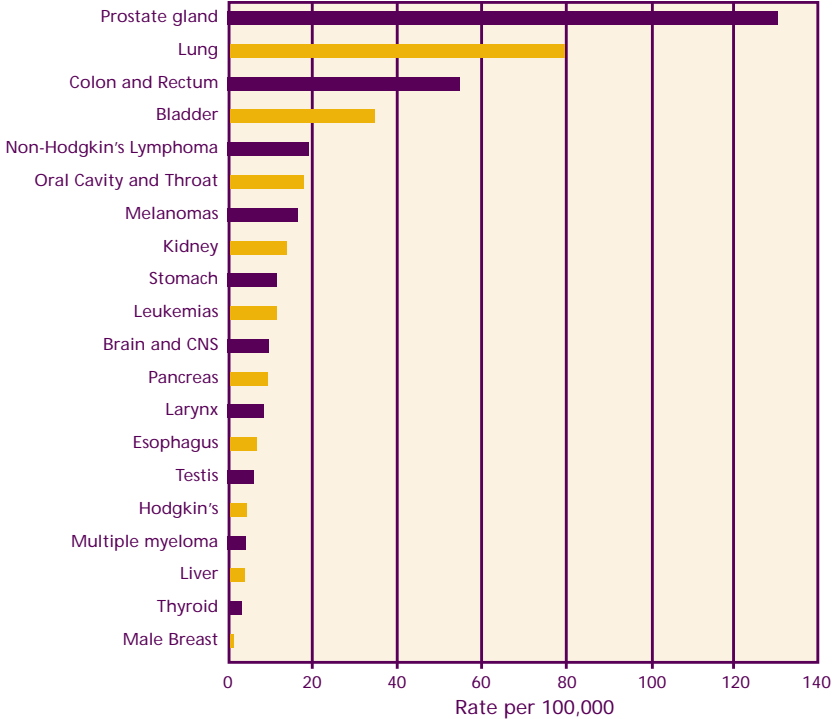
Breast cancer is the most commonly diagnosed cancer in Maine females, followed by lung, colorectal, and uterine cancer. These four types of cancer account for almost two-thirds (63%) of all cancers diagnosed in females for 1997 and 1998.

Distribution of Age-Adjusted Incidence Rates in Maine by Site
Females, 1997-1998

Site	Rate per 100,000
Female Breast	
Lung	
Colon and Rectum	
Uterus	
Ovary	
Melanomas	
Non-Hodgkin's Lymphoma	
Bladder	
Leukemias	
Cervix uteri	
Kidney	
Pancreas	
Brain and CNS	
Thyroid	
Oral Cavity and Throat	
Multiple myeloma	
Stomach	
Larynx	
Esophagus	
Hodgkin's	
Liver	

Rate per 100,000
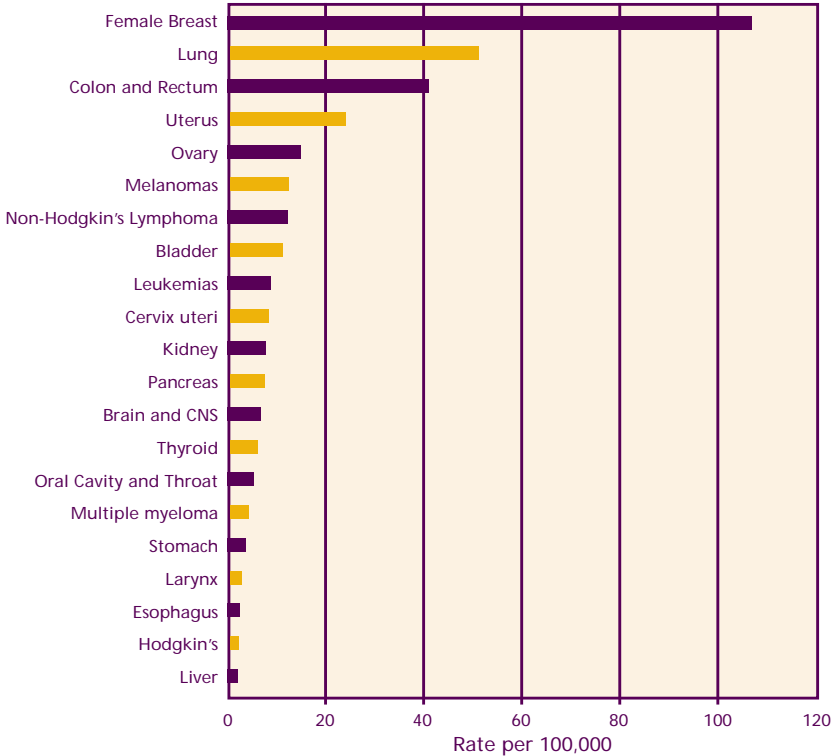
The age-adjusted incidence rate for all types of cancer combined in Maine men was not statistically different from the U.S. The all cancer incidence rate in Maine women was significantly lower than the U.S.
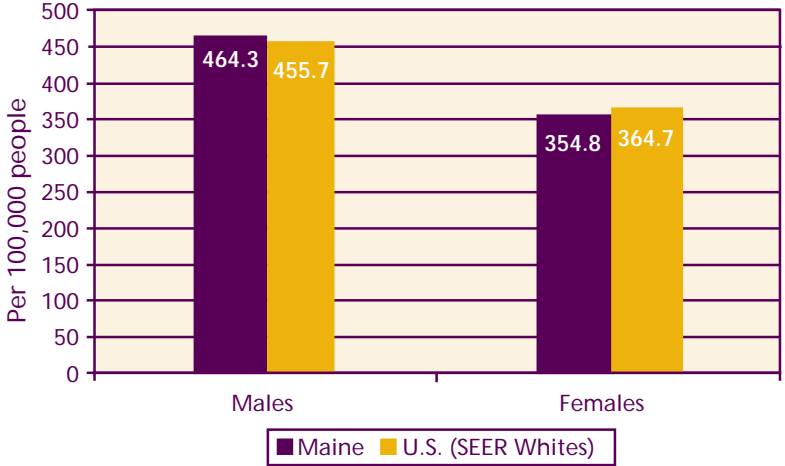
There were more deaths due to all cancers in Maine men and women than in the U.S. This difference was statistically significant. The difference may be due to a number of factors, including a lack of access to cancer screenings and delayed diagnosis or access to appropriate treatment.
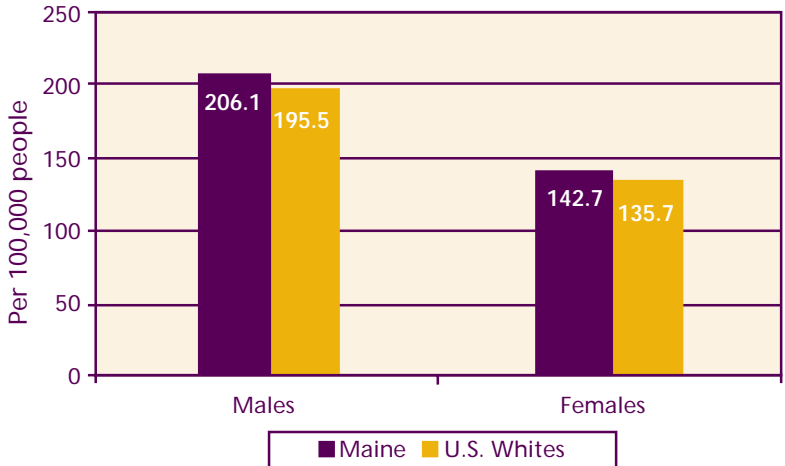
Cancer is more common as people get older. For each age group over 60, the cancer rates are much higher for men than for women.

Age-Adjusted Incidence Rates by Sex, Maine and U.S.
All Cancers, 1997-1998

Per 100,000 people

Males: Maine 464.3, U.S. (SEER Whites) 455.7
Females: Maine 354.8, U.S. (SEER Whites) 364.7

■ Maine ■ U.S. (SEER Whites)

Age-Adjusted Mortality Rates by Sex, Maine and U.S.
All Cancers, 1997-1998

Per 100,000 people

Males: Maine 206.1, U.S. Whites 195.5
Females: Maine 142.7, U.S. Whites 135.7

■ Maine ■ U.S. Whites

Note: Rates are age-adjusted to the 1970 U.S. standard population

Maine Age-Specific Incidence Rates
All Cancers, 1997-1998

Rate per 100,000

■ Male
■ Female

Age: 0-9, 10-19, 20-29, 30-39, 40-49, 50-59, 60-69, 70-79, 80+
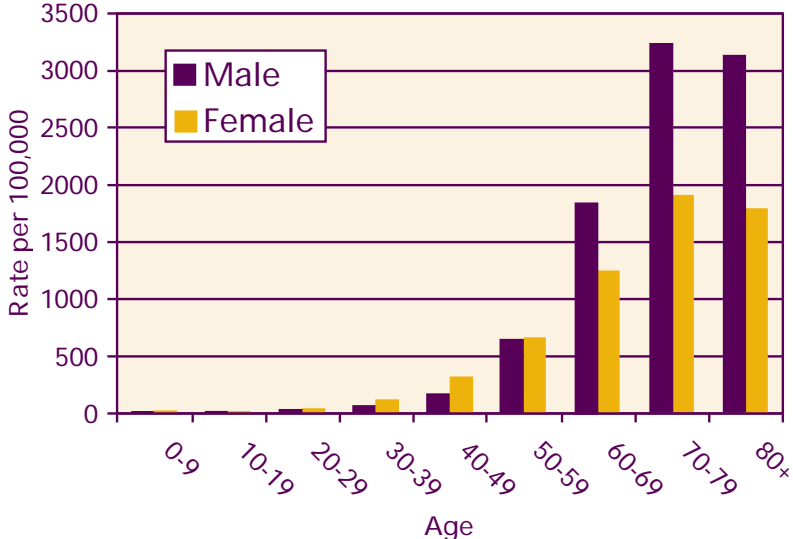
Lung Cancer

Lung Cancer in the U.S.

Lung cancer is the second most common cancer among both women and men, second to breast and prostate cancer respectively. It accounts for 13% of all new cancer cases. Because of its low survival rate, lung cancer is the leading cause of cancer deaths, accounting for 28% of the total. According to the 1998 American Cancer Society, *Cancer Facts & Figures,* an estimated 171,500 people in the U.S. were diagnosed with lung cancer and the National Center for Health Statistics (NCHS) reports that 154,472 people died from this disease. In the late 1980's, lung cancer deaths for U.S. men stopped rising and have been slowly falling since the early 1990's. However, for women, lung cancer deaths continued to rise in the 1990's.

The most effective prevention for lung cancer is to never smoke.

Because of its low survival rate, lung cancer is the leading cause of cancer deaths, accounting for 28% of the total.

Risk Factors for Lung Cancer

- Smoking is currently estimated to cause 85-90% of all lung cancer cases. The more you smoke the more likely you are to get lung cancer.

- The risk of dying from lung cancer is 22 times higher among male smokers and 12 times higher among female smokers than among people who have never smoked.

- Cigar and pipe smoking increase the risk of lung cancer.

- Breathing second-hand smoke also contributes to lung cancer risk for non-smokers.

- Two well-know causes of work-related lung cancer are radon and asbestos.

- People may also be exposed to enough radon at home to increase their chance of developing lung cancer, especially if they smoke.

- People with low intakes of fruits and vegetables have a higher risk of developing lung cancer.

Prevention of Lung Cancer

- **The most effective prevention for lung cancer is to never smoke.**

- Even if you have already smoked, quitting now can make a difference. **Ten years after quitting, cigarette smokers cut their chances of getting lung cancer in half.**

- Homes should be tested for radon.

Early Detection of Lung Cancer

- There are no good screening tests to detect lung cancer early.

- Only 16% of lung cancers are found at the earliest stage, and even for these people, only half will be alive five years later.

- Cases detected at the distant stage (when disease has spread to another part of the body) have only a 2% chance of living five more years.

- The best way to reduce the chance of dying of lung cancer is to not smoke tobacco.

Radon in Maine Homes

- Approximately 1/3 of Maine homes have radon concentrations above the U.S. EPA's action level of 4 picocuries per liter of air. In Southern Maine, approximately 1/2 of the homes have high radon levels.
- All Maine homes should be tested for radon.
- For additional information about testing for radon in your home call the **Maine Bureau of Health, Radiation Control Program at (800) 232-0842.**

Burden of Lung Cancer in Maine

- In 1997 and 1998, an average of 577 men and 449 women each year were diagnosed with lung cancer.
- During the same time period, an average of 483 men and 376 women each year died of lung cancer.
- Over 80% of the lung cancer cases diagnosed in Maine are in men and women over 60 years old.

The age-adjusted incidence rates for lung cancer in both men and women were statistically higher (more cases) in Maine than the U.S. While there are many factors that may contribute to this difference, smoking is a major cause of lung cancer in Maine.

Age-Adjusted Incidence Rates by Sex, Maine and U.S.
Lung Cancer, 1997-1998
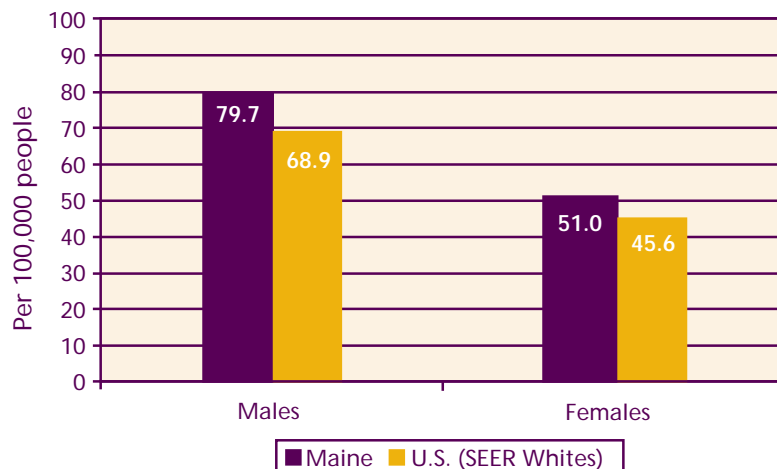
Per 100,000 people

	Maine	U.S. (SEER Whites)
Males	79.7	68.9
Females	51.0	45.6
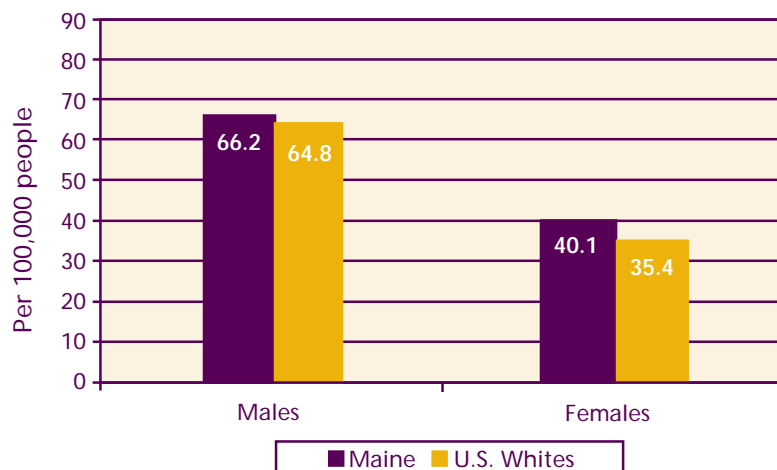
The age-adjusted mortality rate for lung cancer was statistically higher (more deaths) for women in Maine compared to the U.S.

Age-Adjusted Mortality Rates by Sex, Maine and U.S.
Lung Cancer, 1997-1998

Per 100,000 people

	Maine	U.S. Whites
Males	66.2	64.8
Females	40.1	35.4

Maine Age-Specific Incidence Rates
Lung Cancer, 1997-1998

Lung cancer is much more common as people get older. Within each age group, the rates are higher for men than for women.

Legend:
- Male
- Female

Y-axis: Rate per 100,000 (0 to 700)
X-axis: Age (0-9, 10-19, 20-29, 30-39, 40-49, 50-59, 60-69, 70-79, 80+)
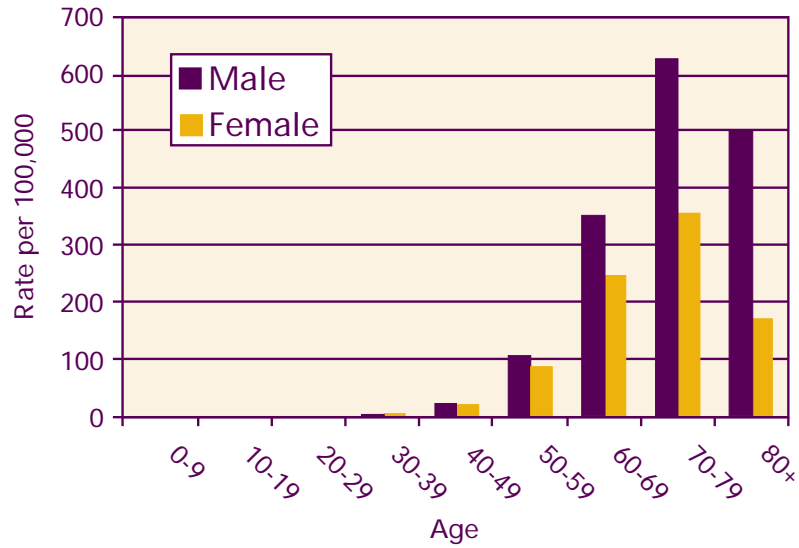
Within Maine, no single county has a statistically higher or lower rate of lung cancer incidence than the rest of the state. (See Incidence Rates, page 43, for 95% confidence intervals.)

Maine = 63.2
National (SEER¹ Whites) = 55.6

1 Surveillance, Epidemiology, and End Results

Maine Age-Adjusted Lung Cancer Incidence Rates by County
1997-1998

- Aroostook 54.1
- Piscataquis 62.7
- Somerset 75.9
- Penobscot 72.2
- Franklin 64.6
- Washington 78.4
- Oxford 64.5
- Kennebec 66.8
- Waldo 59.5
- Hancock 61.5
- Cumberland 58.8
- Knox 54.6
- Lincoln 52.4
- Sagadahoc 47.6
- York 60.2
- Androscoggin 72.4

13
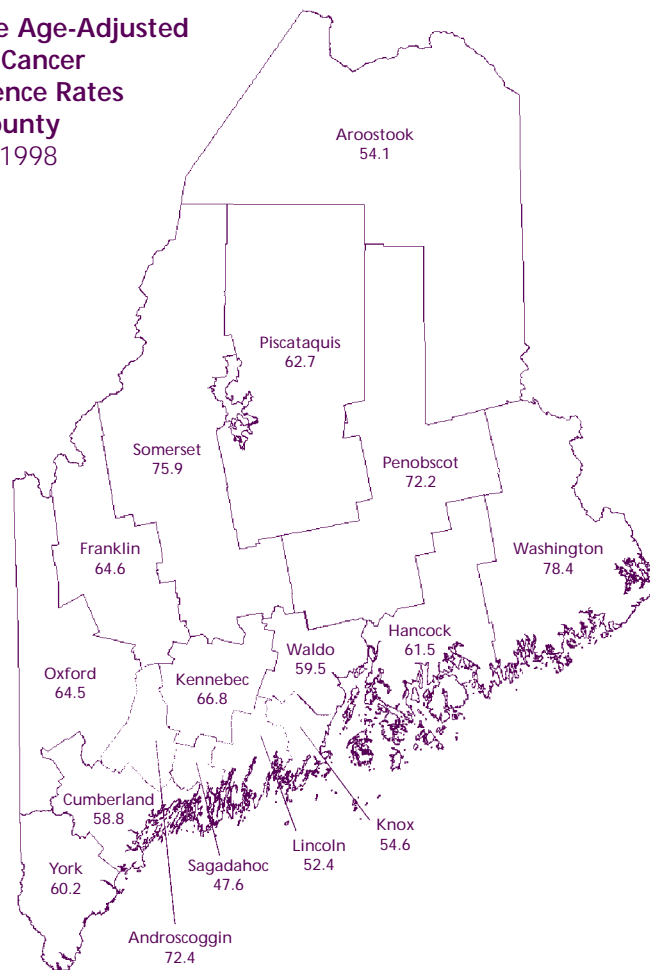
Breast Cancer

Breast Cancer in the U.S.

Breast cancer rates in the United States are among the highest in the world. Breast cancer is the most common cancer among women in the United States, accounting for 32% of all cancer in women. It is the second leading cause of cancer-related deaths (after lung cancer) among U.S. women. According to the 1998 American Cancer Society, *Cancer Facts & Figures,* an estimated 180,300 women in the U.S. were diagnosed with breast cancer and the National Center for Health Statistics (NCHS) reports that 41,736 people died from this disease. From 1973 to 1991, the incidence of invasive breast cancer in the United States increased 25.8 percent in White women while the mortality rate has declined since 1989. Although early detection (using mammograms) accounts for some of this increase in incidence, other factors play a role. From 1992-1999, 87.9% of White females and 73.5% of African American females survived for at least five years after being diagnosed with breast cancer.

Most women with breast cancer do not have any known risk factors besides older age.

Risk Factors for Breast Cancer

■ One of the strongest risk factors is older age.

■ Some genetic factors are believed to play a role in a small number of breast cancers, such as having a close female relative (mother, sister, daughter) with breast cancer or inheritance of the breast cancer gene BRCA1 or BRCA2.

■ Other factors related to a woman's medical history may increase risk, including:
   • First full-term pregnancy after age 30, or never having borne a child.
   • Being overweight (mainly after menopause).
   • A history of breast, ovarian, or endometrial cancer.
   • Atypical hyperplasia or a high degree of dense breast tissue.
   • Long term use of high doses of estrogen (such as oral contraceptives or hormone replacement therapy).

■ Some environmental exposures may contribute to breast cancer risk, such as high doses of radiation in infancy or from puberty through the childbearing years or more than two drinks of alcohol a day.

Prevention of Breast Cancer

Most women with breast cancer do not have any known risk factors besides older age. However, some studies suggest that there are **fewer cases of breast cancer** among groups of women who do the following:

■ Maintain a healthy weight

■ Avoid prolonged use of estrogen

■ Do not drink excess amounts of alcohol

Early Detection of Breast Cancer

Why is early detection important?

■ Cases detected early (local disease) have about a 97% chance of living for at least five more years.

■ Cases detected at the distant stage (when disease has spread to another part of the body) have only a 23% chance of living for five more years.

How to Improve your Chances of Detecting Breast Cancer Early

■ Have a health care provider examine your breasts every year.

■ Learn from your provider how to examine your own breasts and do it every month.

■ Get your first screening mammogram when you turn 40 and earlier if your provider advises because of other risks factors, such as:
   • a close female relative with breast cancer
   • a biopsy with "atypical hyperplasia"
   • carrying the genes BRCA1 or BRCA2

■ Get a screening mammogram every 1-2 years between 40 and 49 years of age and every year after age 50.

Burden of Breast Cancer in Maine

■ In 1997 and 1998 an average of 930 women were diagnosed with breast cancer each year.

■ An average of 203 women died of breast cancer each year.

■ In Maine, 58% of breast cancer cases are diagnosed after age 60, reflecting a higher rate of breast cancer after menopause.

The age-adjusted incidence rate of breast cancer in Maine is significantly lower than the U.S.

Age-Adjusted Incidence Rates, Maine and U.S.
Female Breast Cancer, 1997-1998

Per 100,000 people

| | Maine: 106.4 | U.S. (SEER Whites): 120.8 |

■ Maine ■ U.S. (SEER Whites)
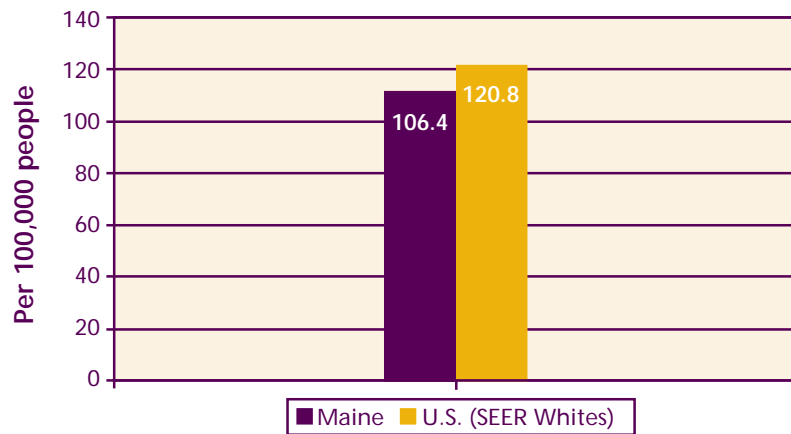
The age-adjusted mortality rate of breast cancer in Maine is not statistically different from the U.S.

Age-Adjusted Mortality Rates, Maine and U.S.
Female Breast Cancer, 1997-1998

Per 100,000 people

| | Maine: 21.1 | U.S. Whites: 22.6 |

■ Maine ■ U.S. Whites
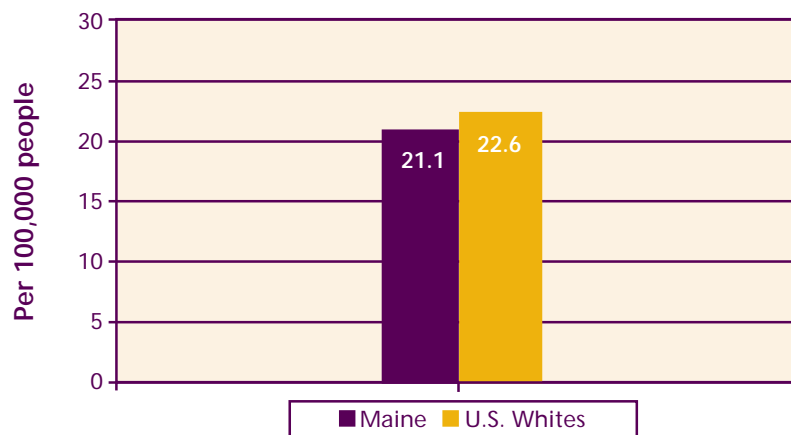
As with most types of cancer, breast cancer is more common as women get older.

Maine Age-Specific Incidence Rates
Female Breast Cancer, 1997-1998
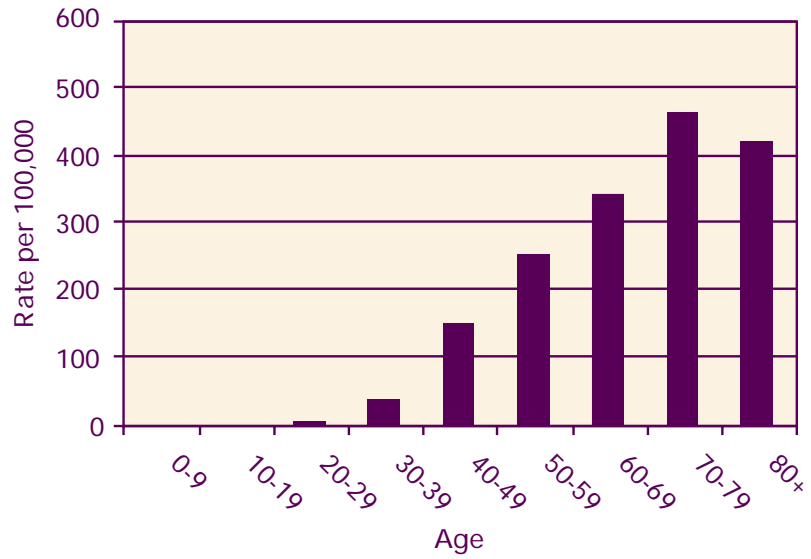
Within Maine, no counties are significantly higher or lower than the rest of the state.
(See Incidence Rates, page 43, for 95% confidence intervals.)

Maine = 106.4
National (SEER[1] Whites) = 120.8

1 Surveillance, Epidemiology, and End Results

Maine Age-Adjusted Breast Cancer Incidence Rates by County
1997-1998

Aroostook
94.9

Piscataquis
114.0

Somerset
97.9

Penobscot
106.0

Franklin
136.3

Washington
111.9

Waldo
87.3

Hancock
118.3

Oxford
94.8

Kennebec
110.9

Cumberland
106.2

Knox
121.4

York
98.0

Sagadahoc
86.2

Lincoln
108.8

Androscoggin
125.2
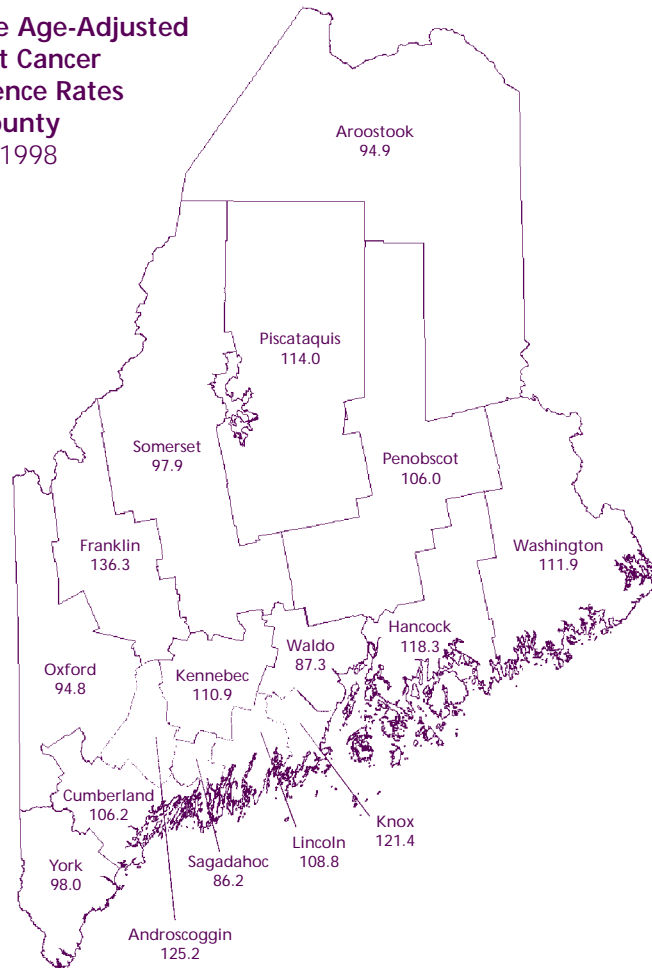
Prostate Cancer

Prostate Cancer in the U.S.

Prostate cancer is the most common cancer among U.S. men, accounting for 33% of all cancer cases in males. According to the 1998 American Cancer Society, *Cancer Facts & Figures,* an estimated 184,500 men in the U.S. were diagnosed with prostate cancer and the National Center for Health Statistics (NCHS) reports that 32,203 men died from this disease. Prostate cancer is primarily a disease of older men. The rate doubles every ten years after the age of 40. In the 1970's and 1980's prostate cancer incidence rose steadily, but since 1992 has decreased. Some of the increase in cases may have been due to finding more cases at an earlier stage, through screening and routine surgeries. Since the early 1990's the mortality rates have also decreased. However, deaths from prostate cancer in African American men remain over twice as high as White men.

Older age is the biggest risk factor for prostate cancer.

Men aged 50 years or older with no risk factors should talk with their health care providers about being screened for prostate cancer.

Risk Factors for Prostate Cancer

■ As with many cancers, **older age** is the biggest risk factor for prostate cancer.

■ Prostate enlargement (benign prostatic hypertrophy) may increase the risk for some men.

■ A history of prostate cancer in a close family member may also increase an individual's risk.

■ Recent steady increases in prostate cancer incidence and mortality suggest that some environmental factors, such as dietary animal fat, may play a role, but these are not definite.

Prevention of Prostate Cancer

It is not yet clearly understood how best to prevent prostate cancer. Early detection may be the best strategy for reducing the chances of dying from this disease. Recent research indicates that a **high intake of certain fruits and vegetables** may decrease the risk of prostate cancer.

Early Detection of Prostate Cancer

Why is early detection important?

■ Cases detected early (local disease) have about a 100% chance of living for at least five more years.

■ Cases detected at the distant stage (when disease has spread to another part of the body) have only a 34% chance of living for five more years.

How to Improve your Chances of Detecting Prostate Cancer Early

■ Men aged 50 years or older with **no risk factors** should talk with their health care providers about being screened for prostate cancer with a **digital rectal exam and blood test (PSA)**.

■ Men **with risk factors**, such as a family history of prostate cancer, may want to talk with their providers about being **screened earlier**.

Burden of Prostate Cancer in Maine

■ In 1997 and 1998 an average of 944 cases of prostate cancer were diagnosed each year.

■ On average, 152 men died from prostate cancer each year during this time period.

■ Over 88% of prostate cancer cases occur in men over 60 years old.

The age-adjusted incidence rate for prostate cancer in Maine is similar to the U.S. rate.

Age-Adjusted Incidence Rates, Maine and U.S.
Prostate Cancer, 1997-1998

Per 100,000 people

- Maine: 131.1
- U.S. (SEER Whites): 134.7

■ Maine ■ U.S. (SEER Whites)
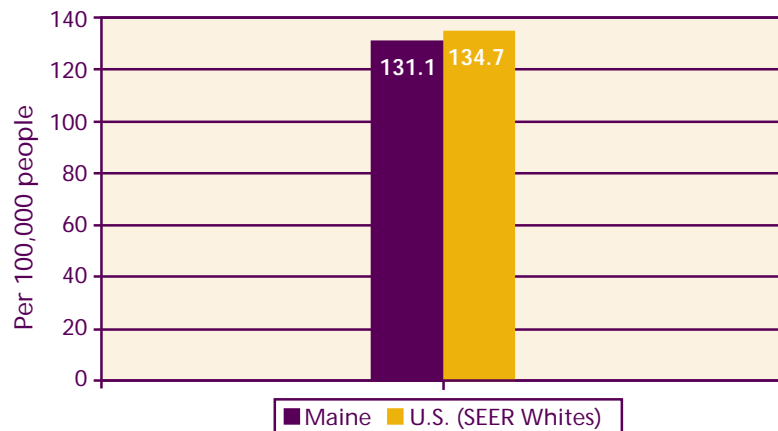
The age-adjusted mortality rate for prostate cancer is not statistically different from the U.S. rate.

Age-Adjusted Mortality Rates, Maine and U.S.
Prostate Cancer, 1997-1998

Per 100,000 people

- Maine: 19.8
- U.S. Whites: 20.3

■ Maine ■ U.S. Whites

Maine Age-Specific Incidence Rates
Prostate Cancer, 1997-1998
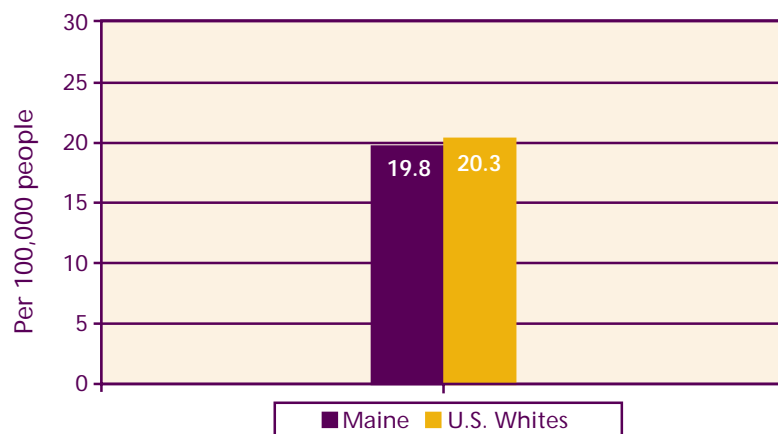
As with most types of cancer, prostate cancer is more common as people age. In Maine, the rate of new cases rises dramatically after age 60.

Rate per 100,000 (y-axis: 0 to 1200)

Age (x-axis): 0-9, 10-19, 20-29, 30-39, 40-49, 50-59, 60-69, 70-79, 80+
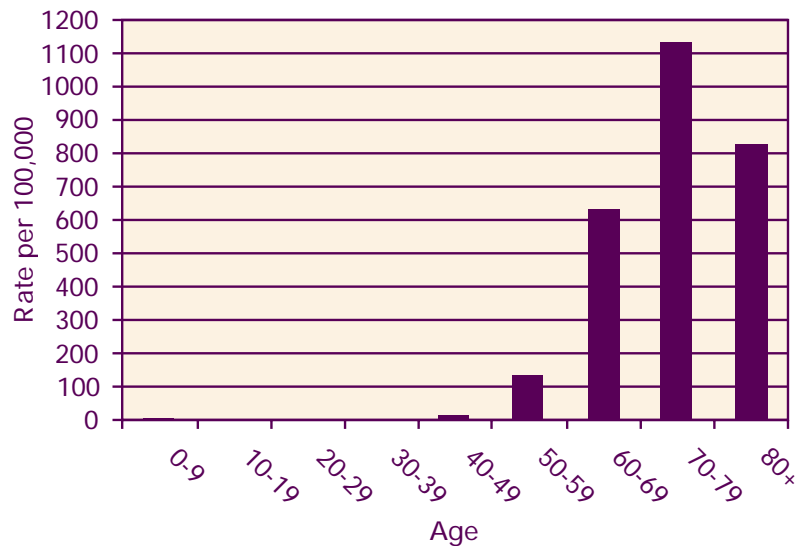
Within Maine,
the incidence rate is significantly higher in Androscoggin County than the rest of the state.
(See Incidence Rates, page 43, for 95% confidence intervals.)

Maine = 131.1
National (SEER[1] Whites) = 134.7

1 Surveillance, Epidemiology, and End Results

Maine Age-Adjusted Prostate Cancer Incidence Rates by County
1997-1998

Aroostook
133.5

Piscataquis
128.2

Somerset
163.5

Penobscot
113.2

Franklin
85.7

Washington
148.2

Oxford
155.3

Kennebec
146.9

Waldo
92.4

Hancock
106.1

Cumberland
118.3

Knox
167.5

Lincoln
164.7

York
114.6

Sagadahoc
119.4

Androscoggin
171.4
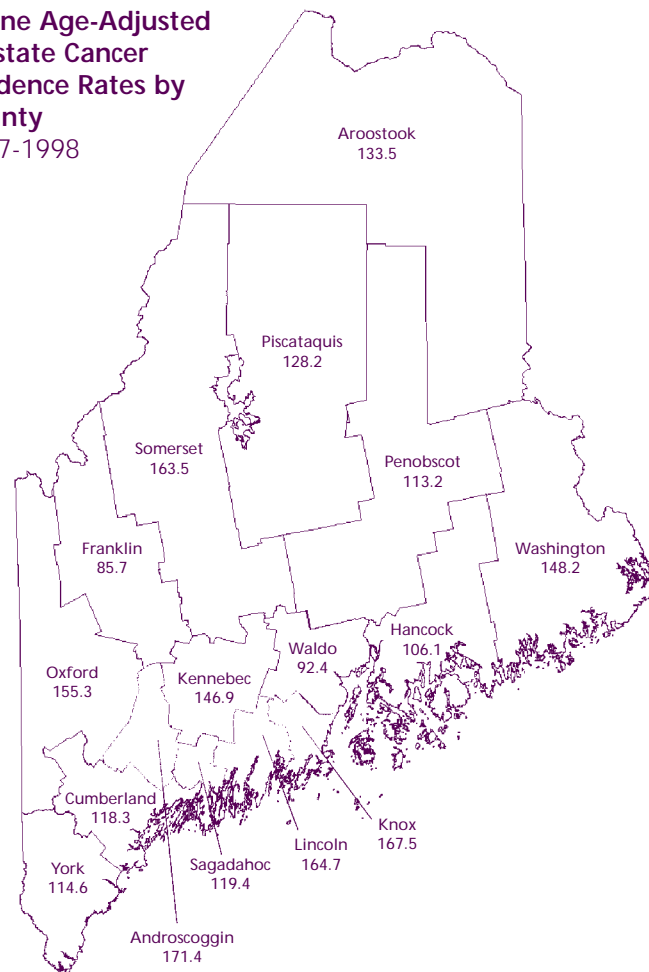
Colorectal Cancer

Colorectal Cancer in the U.S.

Colorectal cancer is the third most common cancer among U.S. men and women, following prostate and lung cancer in men and breast and lung cancer in women. Colorectal cancer is the second leading cause of cancer deaths in the U.S. According to the 1998 American Cancer Society, *Cancer Facts & Figures,* an estimated 131,600 people in the U.S. were diagnosed with colorectal cancer and the National Center for Health Statistics (NCHS) reports that 56,973 people died from this disease. Until the mid 1980's, colorectal cancer was diagnosed as often among African Americans as Whites; however, in the mid 1980's White rates began to decline while African American rates did not. Similarly, the rate of death from colorectal cancer has been slowly declining among Whites since 1978, while it continues to remain steady among African Americans. Industrialized countries in North America and Western Europe tend to have much higher rates of colorectal cancer cases and deaths than the less industrialized countries in Africa and Asia.

Cases detected early (local disease) have about a 90% chance of living for at least five more years.

Risk Factors for Colorectal Cancer

Studies over many years have shown several factors to be associated with colorectal cancer:

- A personal or family history of colorectal polyps or cancer
- Not exercising
- Eating a lot of red meat and saturated fat
- Not eating a lot of fruits and vegetables

Prevention of Colorectal Cancer

The most effective ways now known to reduce our chances of getting colon cancer may be the following:

- Eating a diet low in red meat and animal fat
- Eating a diet high in fruits and vegetables (at least five servings a day)
- Getting some exercise every day
- Getting screened for colon polyps after age 50

Early Detection of Colorectal Cancer

Why is early detection important?

- Cases detected early (local disease) have about a 90% chance of living for at least five more years.
- Cases detected at the distant stage (when disease has spread to another part of the body) have only a 9% chance of living for five more years.

How to Improve your Chances of Detecting Colorectal Cancer Early

The average-risk person 50 years of age or older, should have one of the following tests to screen for colorectal cancer. You and your health care provider should discuss which test is best for you.

- Home stool-blood test every year
    OR
- Sigmoidoscopy every 5 years
    OR
- Home stool-blood test every year **AND** sigmoidoscopy every 5 years
    OR
- Colonoscopy every 10 years
    OR
- Double contrast barium enema every 5-10 years

If you have risk factors (for example you or a family member has a history of colon cancer or polyps), **you should talk to your health care provider about the best way to be screened.**

Burden of Colorectal Cancer in Maine

- Between 1997 and 1998, 404 men and 408 women each year were diagnosed with colorectal cancer on average.
- On average, 154 men and 167 women died from colorectal cancer each year.
- Over 80% of new cases in Maine occur in men and women over 60 years old.

The age-adjusted incidence rate for colorectal cancer in Maine women was statistically higher than the U.S. The rate for Maine men was not statistically different than the U.S.

Age-Adjusted Incidence Rates by Sex, Maine and U.S.
Colorectal Cancer, 1997-1998
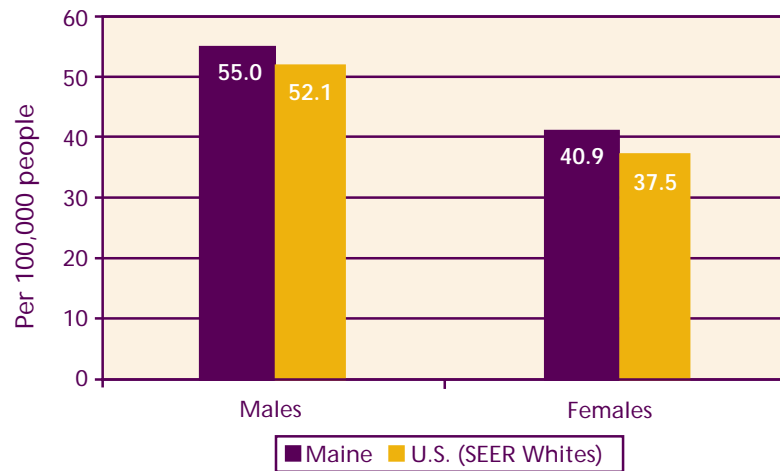
Per 100,000 people

	Males	Females
Maine	55.0	40.9
U.S. (SEER Whites)	52.1	37.5

■ Maine ■ U.S. (SEER Whites)
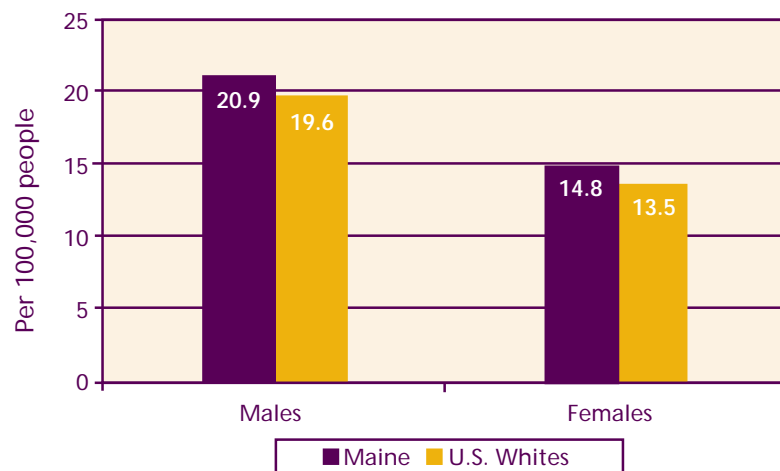
The age-adjusted mortality rates for colorectal cancer in Maine were not statistically different from the U.S. rates.

Age-Adjusted Mortality Rates by Sex, Maine and U.S.
Colorectal Cancer, 1997-1998

Per 100,000 people

	Males	Females
Maine	20.9	14.8
U.S. Whites	19.6	13.5

■ Maine ■ U.S. Whites

Maine Age-Specific Incidence Rates
Colorectal Cancer, 1997-1998

Colorectal cancer is more common in older people.
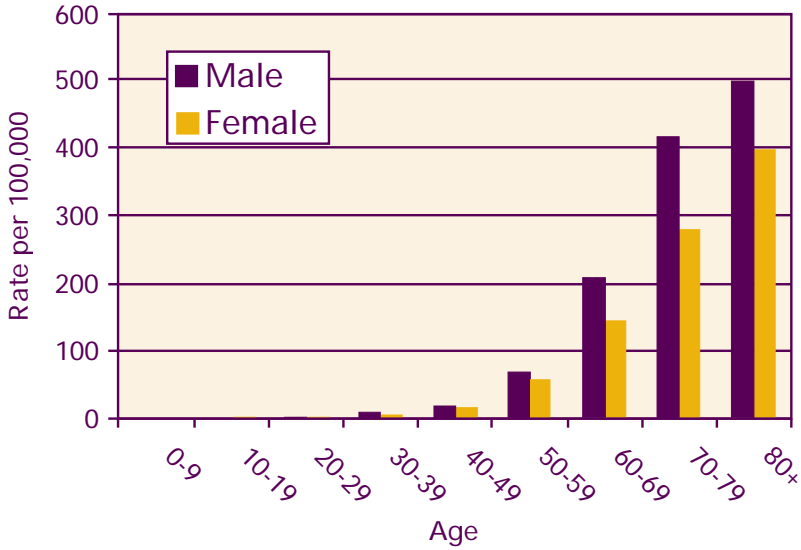
Within Maine, no single county is statistically different from the Maine rate.
(See Incidence Rates, page 43, for 95% confidence intervals.)

Maine = 47.0
National (SEER[1] Whites) = 43.9

1 Surveillance, Epidemiology, and End Results

Maine Age-Adjusted Colorectal Cancer Incidence Rates by County
1997-1998

Aroostook 51.5
Piscataquis 52.4
Somerset 54.0
Penobscot 47.5
Franklin 50.8
Washington 54.9
Oxford 46.5
Kennebec 48.4
Waldo 46.7
Hancock 45.0
Cumberland 40.9
Knox 48.1
York 46.9
Sagadahoc 42.2
Lincoln 48.8
Androscoggin 48.5
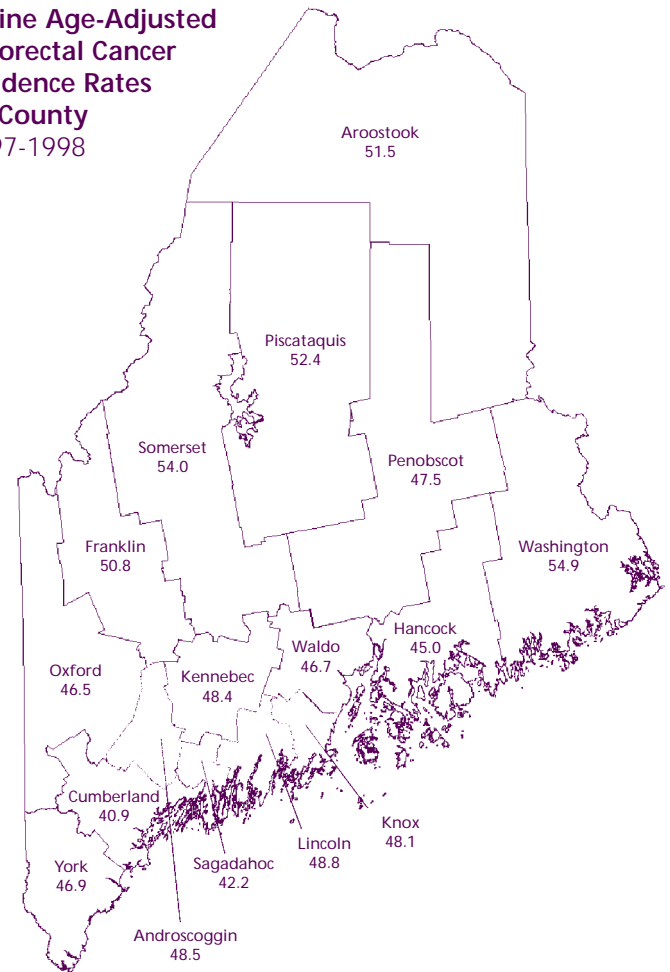
Bladder Cancer

Bladder Cancer in the U.S.

Bladder cancer is the sixth most common cancer in the United States. According to the 1998 American Cancer Society, *Cancer Facts & Figures,* an estimated 54,400 people in the U.S. were diagnosed with bladder cancer and the National Center for Health Statistics (NCHS) reports that 11,757 people died from this disease. Bladder cancer is most commonly found in white men over age 65. White men get bladder cancer twice as often as non-white men do. Bladder cancer is about two to three times more common in men than women. It is the fourth most common cancer among men and the tenth most common among women. Despite a slow increase in the bladder cancer incidence rate from 1975-1987, the rate has been fairly steady for the last ten years. The mortality rate from bladder cancer has shown a general decline since 1975. Internationally, the incidence of bladder cancer varies about 10-fold. The disease is reported most often in Western Europe and North America and least often in Eastern Europe and several areas of Asia.

In the United States, it is believed that smoking plays a role in almost half of the bladder cancers among men and in a third of cases among women.

Risk Factors for Bladder Cancer

- In the United States, it is believed that smoking plays a role in almost half of the bladder cancers among men and a third of cases among women. Cigarette smokers are 2-3 times more likely to develop bladder cancer than nonsmokers.

- As early as 1895, it was known that bladder cancer occurred at higher rates among workers exposed to dyestuffs. Two of these chemicals, benzidine and 2-naphthylamine, are now known to be potent bladder carcinogens in humans and are no longer used.

- Today 25% of bladder cancer may still be associated with some occupations, including: rubber and leather workers, painters, drivers of trucks and other motor vehicles, aluminum workers, machinists, chemical workers, printers, metal workers, hairdressers, and textile workers.

- Exposure to arsenic, a naturally occurring chemical in rocks, soil, and the water in contact with them, can increase the risk of developing bladder cancer.

Prevention of Bladder Cancer

- The single most important thing you can do to reduce the risk of developing bladder cancer is to **stop smoking** all kinds of tobacco (cigarettes, pipes and cigars).

- People in higher-risk occupations should **follow recommendations for protecting themselves in the work place.**

- People using well water for drinking should have it tested for arsenic.

Early Detection of Bladder Cancer

Why is it important?

- Cases detected early (local disease) have about a 94% chance of living for at least five more years.

- Cases detected at the distant stage (when disease has spread to another part of the body) have only a 6% chance of living for five more years.

How to Improve your Chances of Detecting Bladder Cancer Early

There are no screening tests for people who don't have symptoms. If you have any of the following symptoms, you should see your health care provider:

- Blood in the urine (giving it a red or pink color)

- Having to urinate more often than usual

- Repeated bladder infections

Arsenic in Drinking Water

■ The EPA recommends arsenic levels below 10 micrograms per liter of water.

■ For additional information about testing your water for arsenic, call the **Maine Drinking Water Program at (207) 287-2070.**

Burden of Bladder Cancer in Maine

■ On average 254 men and 108 women each year were diagnosed with bladder cancer from 1997 to 1998.

■ 47 men and 24 women each year, on average, died from bladder cancer in Maine.

■ Over 80% of bladder cancer cases in Maine occur in men and women over 60 years old.

The age-adjusted incidence rate for bladder cancer was statistically higher (more cases) for Maine men and Maine women compared with the U.S.

Age-Adjusted Incidence Rates by Sex, Maine and U.S.
Bladder Cancer, 1997-1998

Per 100,000 people

	Males	Females
Maine	34.7	10.8
U.S. (SEER Whites)	31.5	8.0

■ Maine ■ U.S. (SEER Whites)
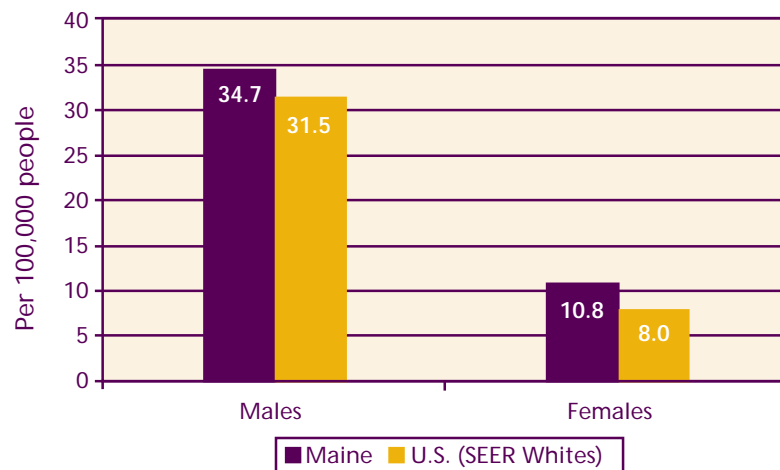
The age-adjusted mortality rate for Maine men was significantly higher than the U.S. rate, but no different for Maine women.

Age-Adjusted Mortality Rates by Sex, Maine and U.S.
Bladder Cancer, 1997-1998

Per 100,000 people

	Males		Females	
Maine	7.5		2.0	
U.S. Whites		5.7		1.7

■ Maine ■ U.S. Whites
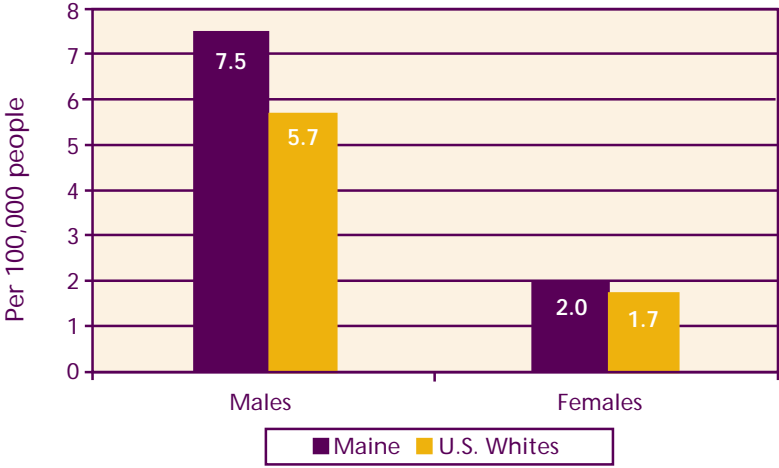
Bladder cancer is more common in older people. The incidence of bladder cancer is much higher in men than women.

Maine Age-Specific Incidence Rates
Bladder Cancer, 1997-1998

Rate per 100,000

■ Male
■ Female

Age: 0-9, 10-19, 20-29, 30-39, 40-49, 50-59, 60-69, 70-79, 80+

29
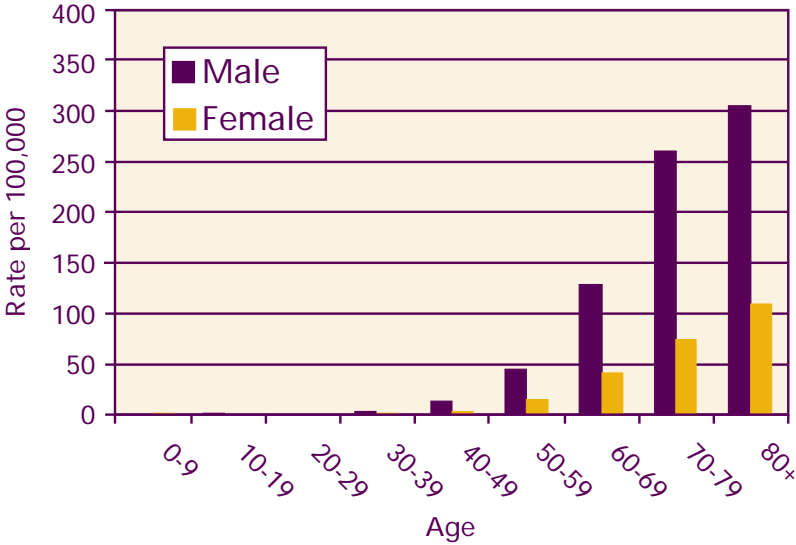
Oral & Throat Cancer

Oral and Throat Cancer in the U.S.

Oral and throat cancer is the 12th most common cancer in the U.S. According to the 1998 American Cancer Society, *Cancer Facts & Figures,* an estimated 30,300 new cases of oral and throat cancer were diagnosed in the U.S. Two thirds of the cases were in men, for whom it is the 8th most common cancer. The National Center for Health Statistics (NCHS) reports that 7,965 people in the U.S. died from oral and throat cancer. Through the 1980's and 1990's the incidence and mortality rates of this cancer have been decreasing.

In the U.S. an estimated 75% of oral and throat cancers are associated with tobacco or alcohol, alone or in combination.

Risk Factors for Oral and Throat Cancer

■ In the U.S. an estimated 75% of oral and throat cancers are associated with tobacco or alcohol, alone or in combination.

■ A person who is a heavy smoker and drinker is 35 times more likely to get oral or throat cancer than a person who does not smoke or drink.

■ Smokeless/chewed tobacco (snuff) can cause higher rates of this cancer.

■ A diet low in fresh fruits and vegetables can promote oral and throat cancer.

Prevention of Oral and Throat Cancer

■ Not smoking and reducing alcohol intake are the most effective ways for Americans to reduce their chances of getting oral and throat cancer.

■ A smoker's risk of getting oral and throat cancer can be cut in half within 5 years of quitting. Ten years after quitting, the risk may be close to a non-smoker's.

Early Detection of Oral and Throat Cancer

Why is it important?

■ Cases detected early (local disease) have about an 82% chance of living for at least five more years.

■ Cases detected at the distant stage (when disease has spread to another part of the body) have only a 26% chance of living for five more years.

How to Improve your Chances of Detecting Oral and Throat Cancer Early

■ See your dentist regularly and ask about being examined for these kinds of cancer.

Burden of Oral and Throat Cancer in Maine

■ Between 1997 and 1998 an average of 127 cases were diagnosed in men and 44 cases in women per year.

■ 21 men and 12 women died from oral and throat cancer per year.

■ Over 68% of the cases in Maine occur in people over 60 years old.

The age-adjusted incidence rate of oral and throat cancer in Maine men was significantly higher than the U.S. rate. The rate in Maine women was not different from the U.S. rate.

Age-Adjusted Incidence Rates by Sex, Maine and U.S.
Oral and Throat Cancer, 1997-1998

Per 100,000 people

	Males	Females
Maine	17.7	4.8
U.S. (SEER Whites)	13.9	5.7

■ Maine ■ U.S. (SEER Whites)
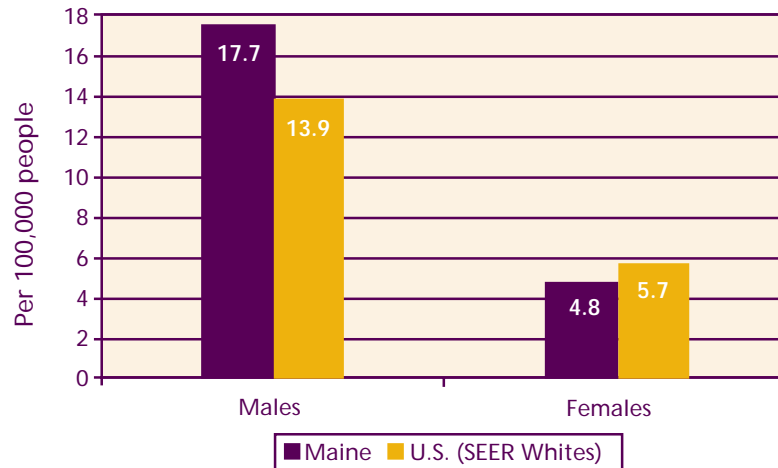
The age-adjusted mortality rates for oral and throat cancer were not statistically different for men and women in Maine than in the U.S.

Age-Adjusted Mortality Rates by Sex, Maine and U.S.
Oral and Throat Cancer, 1997-1998

Per 100,000 people

	Males	Females
Maine	2.9	1.1
U.S. Whites	3.5	1.4

■ Maine ■ U.S. Whites
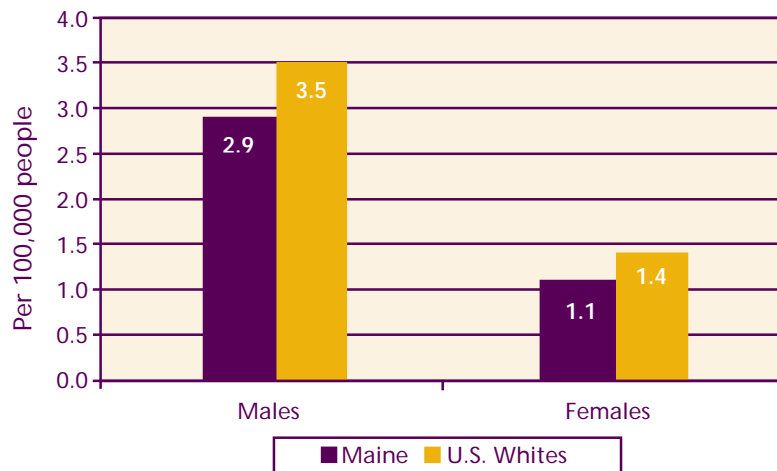
Oral and throat cancer is more common as people age. The age-specific rates are much higher for men than for women, reflecting a higher use of tobacco products, including chewing tobacco, and intake of alcohol.

Maine Age-Specific Incidence Rates
Oral and Throat Cancer, 1997-1998

Rate per 100,000

■ Male
■ Female

Age: 0-9, 10-19, 20-29, 30-39, 40-49, 50-59, 60-69, 70-79, 80+
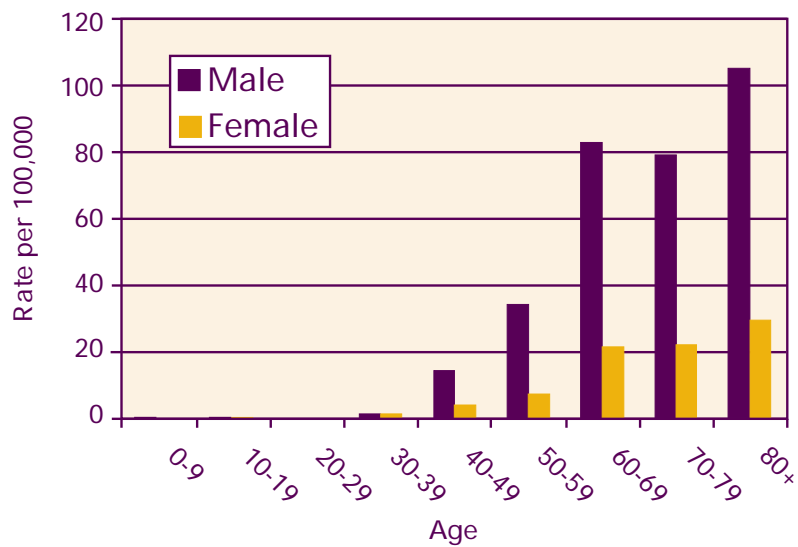
Cervical Cancer

Cervical Cancer in the U.S.

Both incidence and mortality for invasive cancer of the cervix have declined steadily in this country over the past three decades. The U.S. incidence rates are generally lower than other parts of the world, such as India and South America. These trends are largely due to successful use of Pap smears to detect pre-malignant changes or early cancer. However, in spite of our ability to prevent this cancer, according to the 1998 American Cancer Society, *Cancer Facts & Figures,* an estimated 13,700 women in the U.S. were diagnosed with cervical cancer and the National Center for Health Statistics (NCHS) reports that 4,340 women died from this disease. Additionally, African American women have a higher rate of cervical cancer than White women.

The two most important measures a woman can take to reduce her chance of getting cervical cancer are to get regular Pap smears and to use safer sex practices

Risk Factors for Cervical Cancer

Most cervical cancers (85%) are associated with human papilloma virus (HPV), a virus passed along through sexual contact. The following behaviors make HPV infection — and therefore cancer — of the cervix more likely:

- A higher number of sexual partners over a lifetime
- Sexual activity with a man who has had multiple sexual partners
- Early age at first intercourse

Other factors that may influence the development of cervical cancer are:

- Long-term oral contraceptive use
- Poor immune system function
- Infection with HIV/AIDS
- Smoking

Prevention of Cervical Cancer

The two most important measures a woman can take to reduce her chance of getting cervical cancer are:

- Get regular Pap smears to screen for early cancer or lesions which may become cancerous (dysplasias)
- Use safer sex practices, such as condom use and decreasing the number of sexual partners, to lower exposure to infectious agents.

Early Detection

Why is early detection important?

- Cases detected early (local disease) have about a 92% chance of living for at least five more years.
- Cases detected at the distant stage (when disease has spread to another part of the body) have only a 16% chance of living for five more years.

How to Improve your Chances of Detecting Cervical Cancer Early:

See your health care provider about regular Pap smears. **Women with no risk factors** should do the following:

- Start having annual Pap smears within three years after becoming sexually active, but no later than age 21.
- If three in a row are normal it might be possible to have a Pap smear every 2-3 years

Women with the following risk factors should discuss with their providers having Pap smears more often:

- A history of an abnormal Pap smear
- A history of genital warts or any Sexually Transmitted Disease
- Known HPV or HIV infection
- Early age at first sexual intercourse
- History of multiple sexual partners

Burden of Cervical Cancer in Maine

- From 1997 to 1998, 64 women on average were diagnosed with cervical cancer each year.

- Each year 21 women died of cervical cancer on average.

- Over 70% of the cases in Maine occur in women under age 60.

The age-adjusted incidence rates of cervical cancer in Maine were not statistically different from the U.S. rates.

Age-Adjusted Incidence Rates by Sex, Maine and U.S.
Cervical Cancer, 1997-1998

Per 100,000 people

8.0

6.8

■ Maine ■ U.S. (SEER Whites)
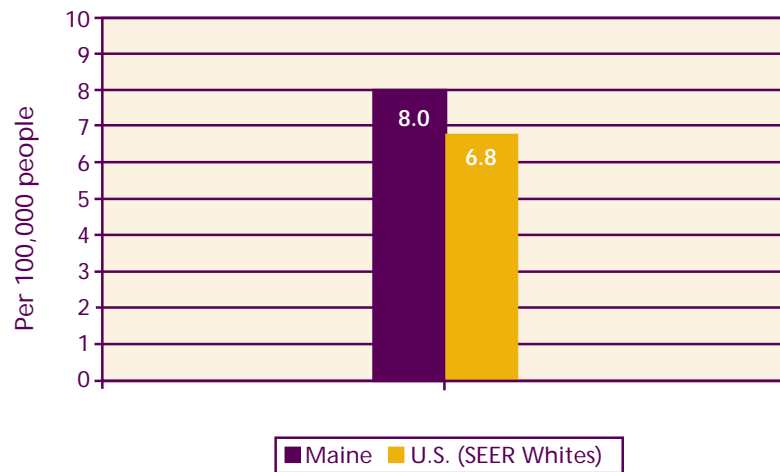
The age-adjusted mortality rate for cervical cancer in Maine was not statistically different from the U.S. rate.

Age-Adjusted Mortality Rates by Sex, Maine and U.S.
Cervical Cancer, 1997-1998

Per 100,000 people

2.5	2.3

■ Maine ■ U.S. Whites
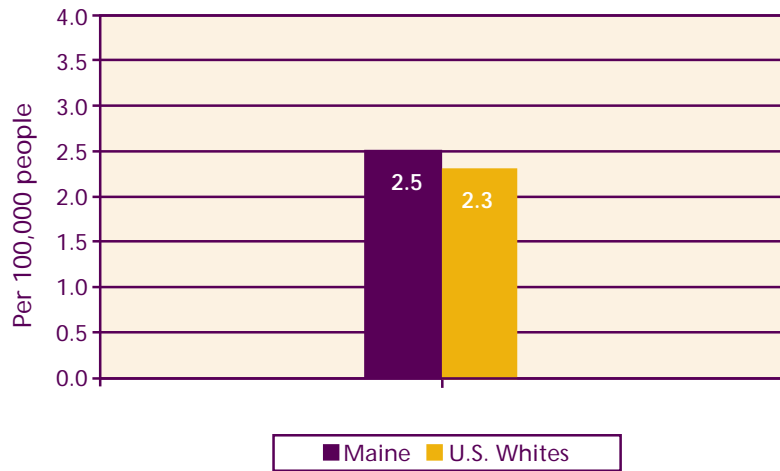
Cervical cancer is one of the few cancers diagnosed in younger, as well as older, women. The age distribution is younger because the develop-ment of cervical cancer is strongly related to a sexually transmitted virus (human papilloma virus).

Maine Age-Specific Incidence Rates
Cervical Cancer, 1997-1998

Rate per 100,000

Age: 0-9, 10-19, 20-29, 30-39, 40-49, 50-59, 60-69, 70-79, 80+
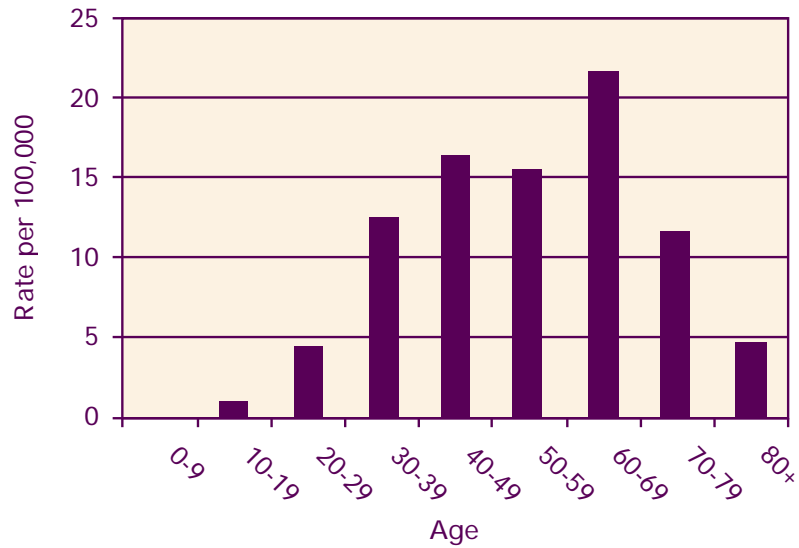
Melanoma

Melanoma in the U.S.

Melanoma incidence increased faster than any other cancer in the 1970's and 1980's. It is now the 5th most common cancer among U.S. men and the 7th most common cancer among U.S. women. According to the 1998 American Cancer Society, *Cancer Facts & Figures,* an estimated 41,600 cases of melanoma were diagnosed in the U.S. and the National Center for Health Statistics (NCHS) reports that 7,431 people died from this disease. Whites get melanoma ten times as often as African Americans and five times as often as Hispanics. Melanoma is the most common cancer in U.S. men aged 35-44 years and the second most common cancer, after breast cancer, in women from this age group. Incidence around the world varies a hundred-fold with the highest rates among Whites in Australia and the lowest rates in parts of Asia.

The most important thing people can do to reduce their chances of getting melanoma is to avoid sun exposure.

Risk Factors for Melanoma

There are several factors that may increase a person's chance of getting melanoma:

- Family history of melanoma
- Large number of moles (nevi)
- Presence of atypical moles (dysplastic nevi)
- Intermittent blistering sunburns, especially in childhood and adolescence
- Skin that burns easily, tans poorly or freckles

Prevention of Melanoma

The most important thing people can do to reduce their chances of getting melanoma is to:

- Avoid being outside in mid-day hours
- Use sunscreen
- Wear hats and long sleeves when in the sun

Early Detection of Melanoma

Why is early detection important?

- Cases detected early (local disease) have about a 96% chance of living for at least five more years.
- Cases detected at the distant stage (when disease has spread to another part of the body) have only a 14% chance of living for five more years.

How to Improve your Chances of Detecting Melanoma Early

Talk to your health care provider about **regular skin exams if you have any of the following:**

- Many moles on your skin
- A history of dysplastic nevi (atypical moles)
- Family members with melanoma or dysplastic nevi
- A history of melanoma

If you have a **mole that is changing** (for example in size or color or sensation) see your health care provider.

Burden of Melanoma in Maine

■ On average 121 men and 102 women each year were diagnosed with melanoma between 1997 and 1998.

■ 24 men and 15 women each year died from melanoma on average.

■ In Maine, 52% of melanoma cases are diagnosed in people <u>under</u> age 60.

The age-adjusted incidence rate for melanoma was statistically lower (less cases) in Maine men than in the U.S. This may be due to underreporting of cases diagnosed outside the hospital or the fact that melanoma is less common in northern U.S.

Age-Adjusted Incidence Rates by Sex, Maine and U.S.
Melanoma, 1997-1998

Per 100,000 people

	Males	Females
Maine	16.5	12.0
U.S. (SEER Whites)	19.7	14.0

■ Maine ■ U.S. (SEER Whites)
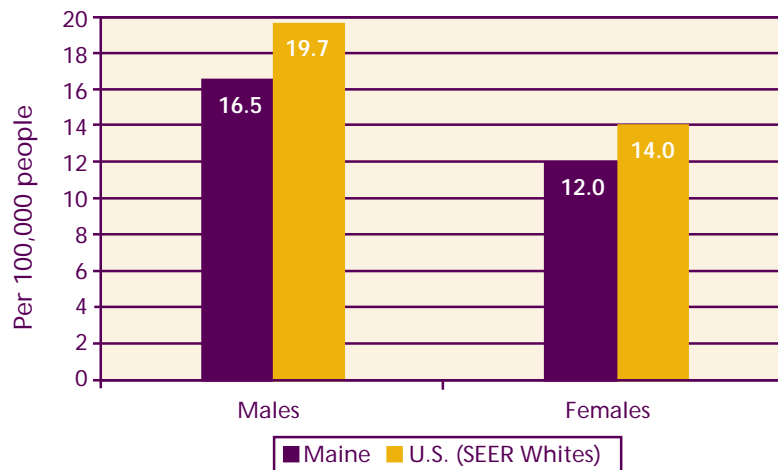
The age-adjusted mortality rates for melanoma in Maine were not statistically different from the U.S. for both males and females.

Age-Adjusted Mortality Rates by Sex, Maine and U.S.
Melanoma, 1997-1998
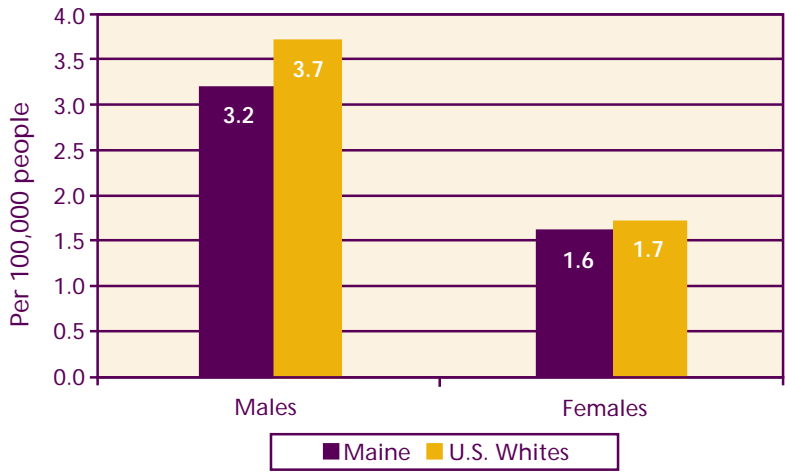
Melanomas frequently occur in young people, including teenagers.

Maine Age-Specific Incidence Rates
Melanoma, 1997-1998

Incidence Rates by Sex

Age-Adjusted Incidence Rates by Sex with 95% Confidence Intervals, Maine and U.S.
Selected Sites, 1997-1998

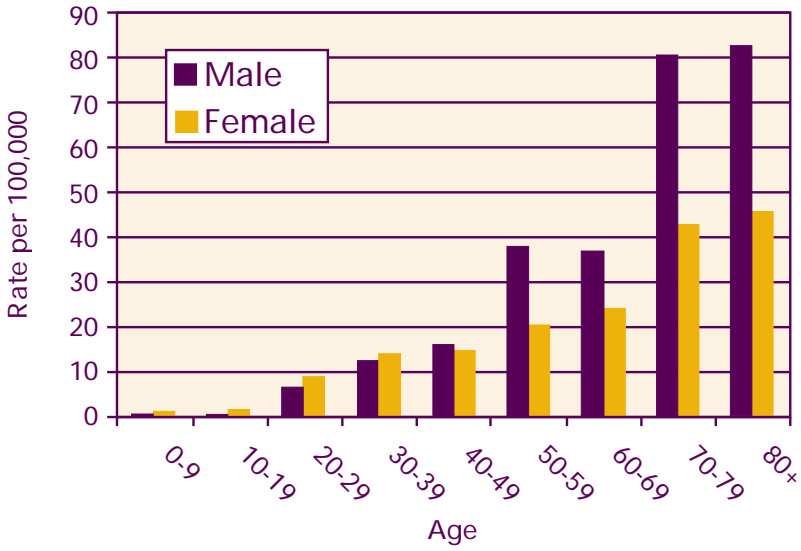| Primary Site	MALES			FEMALES			MALES & FEMALES		
	Maine	95% CI	SEER Whites	Maine	95% CI	SEER Whites	Maine	95% CI	SEER Whites
All Sites	464.3	(453.2-475.7)	455.7	354.8	(345.7-364.1)	364.7	399.7	(392.7-406.8)	401.4
Lung and Bronchus	79.7	(75.1-84.5)	68.9	51.0	(47.6-54.6)	45.6	63.2	(60.5-66.1)	55.6
Breast	1.0	(0.6-1.8)	1.0	106.4	(101.5-111.6)	120.8	57.5	(54.9-60.2)	64.9
Prostate	131.1	(125.2-137.2)	134.7	—	—	—	—	—	—
Colon and Rectum	55.0	(51.3-59.0)	52.1	40.9	(38.0-44.0)	37.5	47.0	(44.7-49.5)	43.9
Urinary Bladder	34.7	(31.8-38.0)	31.5	10.8	(9.4-12.6)	8.0	21.3	(19.7-23.0)	18.2
Non-Hodgkin's Lymphoma	19.4	(17.1-21.9)	19.5	12.0	(10.4-13.8)	13.9	15.3	(14.0-16.8)	16.5
Corpus Uteri	—	—	—	23.8	(21.4-26.3)	23.2	—	—	—
Kidney and Renal Pelvis	13.6	(11.8-15.8)	13.0	7.4	(6.2-8.9)	6.8	10.3	(9.2-11.5)	9.6
Brain and CNS	9.6	(8.0-11.5)	7.6	6.3	(5.0-7.9)	5.5	7.9	(6.9-9.1)	6.4
Melanoma	16.5	(14.5-18.8)	19.7	12.0	(10.3-14.0)	14.0	14.0	(12.7-15.4)	16.4
Oral Cavity and Pharynx	17.7	(15.6-20.1)	13.9	4.8	(3.8-6.1)	5.7	10.7	(9.5-11.9)	9.5
Leukemia	11.4	(9.7-13.5)	13.2	8.4	(7.0-10.2)	8.2	9.6	(8.5-10.9)	10.4
Pancreas	9.2	(7.7-11.0)	9.9	7.1	(5.9.-8.5)	7.5	8.1	(7.2-9.2)	8.6
Ovary	—	—	—	14.5	(12.7-16.6)	14.9	—	—	—
Stomach	11.5	(9.8-13.4)	8.2	3.1	(2.3-4.0)	3.5	6.8	(5.9-7.8)	5.6
Larynx	8.6	(7.1-10.3)	5.8	2.5	(1.8-3.4)	1.4	5.3	(4.5-6.2)	3.4
Cervix Uteri	—	—	—	8.0	(6.7-9.7)	6.8	—	—	—
Multiple Myeloma	4.1	(3.1-5.4)	5.2	3.7	(2.9-4.8)	3.4	3.8	(3.2-4.6)	4.2
Thyroid	3.0	(2.2-4.2)	3.3	5.7	(4.6-7.2)	8.8	4.4	(3.7-5.3)	6.1
Esophagus	6.6	(5.4-8.2)	6.5	2.0	(1.4-2.9)	1.6	4.1	(3.4-4.9)	3.8
Hodgkin's Disease	4.2	(3.1-5.5)	3.1	1.9	(1.2-2.9)	2.8	3.0	(2.4-3.8)	2.9
Testis	6.0	(4.7-7.5)	5.7	—	—	—	—	—	—
Liver and Intrahepatic Bile Duct	4.0	(3.0-5.3)	5.4	1.8	(1.2-2.6)	2.0	2.8	(2.3-3.5)	3.6

[ ] Significantly higher than SEER White rate   [ ] Significantly lower than SEER White rate

Note: All rates are age-adjusted to the 1970 U.S. standard population.

*SEER rates for Whites only

Incidence Rates by County

Maine Age-Adjusted Incidence Rates by County with 95% Confidence Intervals
Most Common Sites, 1997-1998

County	All Sites	Lung	Colorectal	Prostate (Males)	Breast (Females)
Androscoggin	441.7 (416.0-469.0)	72.4 (62.3-84.1)	48.5 (40.3-58.3)	171.4 (147.9-198.6)	125.2 (106.6-146.8)
Aroostook	380.4 (354.1-408.6)	54.1 (44.7-65.5)	51.5 (42.5-62.3)	133.5 (111.9-159.1)	94.9 (77.1-116.6)
Cumberland	373.4 (357.9-389.5)	58.8 (52.8-65.5)	40.9 (36.0-46.3)	118.3 (105.4-132.8)	106.2 (95.2-118.3)
Franklin	410.6 (365.2-461.5)	64.6 (47.4-87.5)	50.8 (36.0-71.1)	85.7 (57.2-126.6)	136.3 (101.3-182.3)
Hancock	411.8 (377.7-449.0)	61.5 (48.9-77.0)	45.0 (35.0-57.7)	106.1 (82.4-136.2)	118.3 (94.0-148.5)
Kennebec	426.0 (402.5-450.9)	66.8 (57.6-77.4)	48.4 (40.9-57.2)	146.9 (126.8-170.0)	110.9 (94.7-129.7)
Knox	428.0 (389.6-470.1)	54.6 (41.6-71.2)	48.1 (36.2-63.6)	167.5 (133.6-209.5)	121.4 (94.0-156.3)
Lincoln	424.6 (384.2-469.2)	52.4 (39.0-70.0)	48.8 (36.3-65.2)	164.7 (130.5-207.3)	108.8 (82.0-143.6)
Oxford	403.8 (371.9-438.4)	64.5 (52.4-79.2)	46.5 (36.2-59.5)	155.3 (127.3-189.0)	94.8 (73.5-121.8)
Penobscot	428.0 (406.3-450.9)	72.2 (63.5-82.1)	47.5 (40.6-55.6)	113.2 (96.8-132.1)	106.0 (91.6-122.5)
Piscataquis	384.1 (330.8-445.5)	62.7 (43.2-90.0)	52.4 (33.0-81.7)	128.2 (87.3-186.1)	114.0 (74.7-171.3)
Sagadahoc	368.6 (326.9-415.4)	47.6 (33.2-67.5)	42.2 (29.3-60.0)	119.4 (85.1-166.1)	86.2 (61.0-120.7)
Somerset	410.4 (376.1-447.6)	75.9 (61.3-93.6)	54.0 (42.3-68.7)	163.5 (132.5-201.4)	97.9 (75.6-126.3)
Waldo	385.9 (346.1-430.1)	59.5 (44.6-79.1)	46.7 (34.0-63.6)	92.4 (65.2-129.7)	87.3 (63.3-119.5)
Washington	425.3 (385.4-469.2)	78.4 (62.0-98.9)	54.9 (41.6-72.2)	148.2 (115.4-189.6)	111.9 (83.2-149.8)
York	362.8 (345.1-381.4)	60.2 (53.1-68.2)	46.9 (40.7-54.0)	114.6 (100.2-131.1)	98.0 (85.6-112.2)
Maine	**399.7 (392.7-406.8)**	**63.2 (60.5-66.1)**	**47.0 (44.7-49.5)**	**131.1 (125.2-137.2)**	**106.4 (101.5-111.6)**

▮ Significantly higher than the Maine rate   ▮ Significantly lower than the Maine rate

Note: All rates are age-adjusted to the 1970 U.S. standard population.

Mortality Rates by Sex

Age-Adjusted Mortality Rates by Sex with 95% Confidence Intervals, Maine and U.S.
Selected Sites, 1997-1998

Primary Site	MALES			FEMALES			MALES & FEMALES		
	Maine	95% CI	US Whites	Maine	95% CI	US Whites	Maine	95% CI	US Whites
All Sites	206.1	(198.7-213.4)	195.5	142.7	(137.2-148.2)	135.7	168.6	(164.2-173.0)	160.4
Lung and Bronchus	66.2	(62.0-70.4)	64.8	40.1	(37.1-43.0)	35.4	51.1	(48.6-53.5)	48.1
Prostate	19.8	(17.6-22.0)	20.3	—	—	—	—	—	—
Breast	0.2	(0.0-0.6)	0.2	21.1	(18.9-23.2)	22.6	11.7	(10.5-12.9)	12.5
Colon and Rectum	20.9	(18.5-23.2)	19.6	14.8	(13.1-16.5)	13.5	17.4	(16.0-18.8)	16.0
Pancreas	9.9	(8.3-11.5)	9.6	6.8	(5.6-8.0)	7.0	8.2	(7.2-9.2)	8.1
Ovary	—	—	—	7.2	(6.0-8.5)	7.7	—	—	—
Non-Hodgkin's Lymphoma	10.2	(8.6-11.9)	8.9	5.8	(4.7-6.9)	5.9	7.7	(6.7-8.6)	7.3
Esophagus	8.0	(6.6-9.5)	6.0	1.7	(1.2-2.4)	1.3	4.6	(3.8-5.3)	3.5
Leukemia	7.4	(5.9-8.8)	8.3	4.7	(3.7-5.8)	4.8	5.9	(5.0-6.7)	6.3
Kidney and Renal Pelvis	5.8	(4.6-7.2)	5.1	2.6	(2.0-3.5)	2.4	4.1	(3.4-4.7)	3.6
Urinary Bladder	7.5	(6.1-8.9)	5.7	2.0	(1.5-2.7)	1.7	4.2	(3.6-4.9)	3.3
Stomach	6.3	(5.1-7.7)	4.8	1.9	(1.4-2.6)	2.3	3.8	(3.2-4.5)	3.4
Brain and CNS	5.9	(4.7-7.3)	5.3	3.8	(2.9-4.9)	3.6	4.8	(4.0-5.6)	4.4
Cervix Uteri	—	—	—	2.5	(1.8-3.4)	2.3	—	—	—
Corpus Uteri	—	—	—	3.4	(2.6-4.4)	3.1	—	—	—
Oral Cavity and Pharynx	2.9	(2.1-3.9)	3.5	1.1	(0.7-1.7)	1.4	1.9	(1.5-2.5)	2.3
Liver and Intrahepatic Bile Duct	3.8	(2.9-4.9)	4.9	2.6	(1.9-3.5)	2.2	3.1	(2.5-3.8)	3.4
Multiple Myeloma	4.3	(3.3-5.5)	3.5	2.8	(2.1-3.7)	2.4	3.4	(2.8-4.0)	2.9
Melanoma	3.2	(2.4-4.3)	3.7	1.6	(1.1-2.3)	1.7	2.4	(1.8-3.0)	2.6
Larynx	1.9	(1.2-2.7)	2.0	0.6	(0.3-1.1)	0.5	1.2	(0.9-1.7)	1.1
Hodgkin's Disease	0.1	(0.0-0.5)	0.5	0.2	(0.1-0.6)	0.4	0.2	(0.1-0.4)	0.5
Testis	0.3	(0.1-0.7)	0.3	—	—	—	—	—	—
Thyroid	0.5	(0.2-1.0)	0.4	0.3	(0.1-0.6)	0.3	0.3	(0.2-0.6)	0.4

▮ Significantly higher than U.S. White rate   ▮ Significantly lower than U.S. White rate

Note: All rates are age-adjusted to the 1970 U.S. standard population.
Maine mortality data provided by: Maine Department of Human Services, Bureau of Health Office of Data, Research and Vital Statistics.
U.S. mortality data provided by: CDC Wonder.

*US rates for Whites only

Mortality Rates by County

Maine Age-Adjusted Mortality Rates by County with 95% Confidence Intervals
Most Common Sites, 1997-1998

County	All Sites	Lung	Colorectal	Prostate (Males)	Breast (Females)
Androscoggin	179.1 (162.9-195.3)	56.8 (47.7-66.0)	18.7 (13.7-24.9)	22.3 (14.9-32.0)	25.3 (17.6-35.2)
Aroostook	154.9 (138.4-171.5)	49.3 (39.9-58.6)	16.0 (11.2-22.2)	14.9 (8.5-24.2)	13.3 (7.3-22.4)
Cumberland	160.7 (150.9-170.4)	45.0 (39.7-50.2)	17.1 (14.0-20.2)	20.5 (15.6-26.6)	23.7 (18.9-29.4)
Franklin	164.9 (135.8-194.0)	52.4 (37.2-71.6)	15.1 (7.5-26.9)	14.4 (4.7-33.6)	22.8 (10.4-43.2)
Hancock	183.5 (161.4-205.6)	55.3 (43.6-69.1)	16.9 (11.1-24.8)	29.4 (18.0-45.4)	22.8 (13.5-36.0)
Kennebec	174.4 (159.6-189.2)	53.6 (45.2-62.0)	17.9 (13.6-23.0)	22.3 (15.2-31.7)	20.6 (14.3-28.8)
Knox	140.5 (119.0-161.9)	39.1 (28.4-52.5)	11.7 (6.5-19.3)	19.6 (10.1-34.3)	5.4 (2.0-11.7)
Lincoln	169.4 (144.3-194.4)	33.3 (23.1-46.5)	16.1 (9.4-25.8)	17.4 (8.0-33.0)	37.0 (21.9-58.4)
Oxford	166.1 (145.8-186.4)	55.6 (44.5-68.7)	15.7 (10.4-22.9)	21.0 (12.0-34.1)	13.8 (6.6-25.5)
Penobscot	171.6 (157.9-185.2)	50.6 (43.1-58.0)	17.5 (13.4-22.4)	19.8 (13.4-28.2)	18.9 (13.2-26.4)
Piscataquis	196.8 (159.6-234.1)	68.7 (47.9-95.6)	18.0 (8.6-33.2)	26.5 (10.7-54.7)	34.7 (15.9-65.9)
Sagadahoc	149.7 (123.2-176.1)	50.3 (35.8-68.8)	17.2 (9.6-28.4)	15.2 (5.6-33.1)	14.6 (5.4-31.8)
Somerset	183.0 (160.2-205.8)	59.2 (46.7-74.1)	22.9 (15.8-32.2)	13.2 (5.7-25.9)	18.6 (10.2-31.3)
Waldo	157.9 (132.4-183.3)	51.0 (37.6-67.6)	11.4 (5.7-20.4)	18.6 (8.1-36.7)	14.3 (6.2-28.3)
Washington	204.8 (177.6-231.9)	60.0 (45.9-77.0)	27.3 (18.7-38.6)	19.4 (9.3-35.8)	23.4 (11.7-41.9)
York	167.6 (155.7-179.5)	53.5 (46.7-60.3)	17.7 (14.1-21.9)	18.4 (13.0-25.3)	23.8 (18.0-30.9)
Maine	**168.6 (164.2-173.0)**	**51.1 (48.6-53.5)**	**17.4 (16.0-18.8)**	**19.8 (17.6-22.0)**	**21.1 (18.9-23.2)**

■ Significantly higher than the Maine rate   ■ Significantly lower than the Maine rate

Note: All rates are age-adjusted to the 1970 U.S. standard population.
Maine mortality data provided by: Maine Department of Human Services, Bureau of Health Office of Data, Research and Vital Statistics.

Technical Notes

Reportable Cancers and Site Definitions

Not all cancers diagnosed in Maine are reported to the MCR. Cancers that are reported include all malignant cancers that are in situ or invasive with the exception of basal and squamous cell carcinoma of the skin. The MCR also collects data concerning benign tumors of the brain. Site definitions are consistent with those used by the National Institute of Health's Surveillance, Epidemiology and End Results (SEER) Program for calculating rates. Therefore, this report excludes all in situ cancers, with the exception of in situ bladder cancer. For a complete listing of site and histology codes used for calculating rates, see ICD-O Codes on page 50 -51.

Age-adjusted rates

Why age adjust?

Different communities have different age structures. The age structure of a community determines what kind of health problems will be more common. A community made up of more families with young children will have more bicycle accidents than a community with more individuals who are older. Likewise, a community with more individuals who are older will have more chronic disease, including cancer. Age adjustment allows rates of disease to be compared between different communities with different age structures.

How is age-adjustment done?

Age adjustment is done using a statistical procedure called the direct method. The steps for age-adjustment are:

1. The number of cases and population of new cancer cases are divided into 5-year age grouping (i.e. 0-4, 5-9, 10-14 …80-84, 85+).

2. Incidence rates are calculated for each age group (called age-specific rates) by dividing the number of cases in an age group by the population in that age group.

3. A standard population is chosen (we used the 1970 United States Standard population). The proportion of the standard population is determined for each age group. This is the weight.

4. The age-specific rate is multiplied by the weight of the respective age group, making a weighted rate.

5. The weighted rates are added together, giving the age-adjusted rate.

Here's an example using all cancers reported in Maine that were diagnosed in 1995:

Age Group	Number of New Cancer Cases (a)	Population in Maine (b)	Rates per 100,000 ((a/b) x 100,000)	Weights (d)	Weighted rate (c x d)
0 - 4 yrs.	11	74513	14	0.084	1.2
5 - 9 yrs.	9	86918	10.4	0.098	1.0
10 - 14 yrs.	11	90552	12.1	0.102	1.2
15 - 19 yrs.	15	85510	17.5	0.094	1.6
20 - 24 yrs.	22	80002	27.5	0.081	2.2
25 - 29 yrs.	44	79689	55.2	0.066	3.7
30 - 34 yrs.	87	100104	86.9	0.056	4.9
35 - 39 yrs.	120	109492	109.6	0.055	6.0
40 - 44 yrs.	190	102875	184.7	0.059	10.9
45 - 49 yrs.	279	89702	311	0.060	18.5
50 - 54 yrs.	379	66641	568.7	0.055	31.1
55 - 59 yrs.	499	53207	937.8	0.049	46.0
60 - 64 yrs.	638	50032	1275.2	0.042	54.1
65 - 69 yrs.	942	50711	1857.6	0.034	63.9
70 - 74 yrs.	1001	44140	2267.9	0.027	60.8
75 - 79 yrs.	886	33773	2623.4	0.019	49.5
80 - 84 yrs.	553	22873	2417.7	0.011	27.2
85+ yrs.	396	20648	1917.9	0.007	14.3
Total	6082	1241382	**489.9**	1.000	**398.1**

In the above example, the rate before age adjustment (the crude rate) is 489.9 per 100,000 people and the age adjusted rate is 398.1 per 100,000 people.

A Few Words about County Rates

The number of new cancers in a county varies from year to year. Cancer rates therefore also vary from year to year. With a smaller number of cases, there is more variation from year to year. Here is an example of random variation in the number of cases: One county might have 4 cases of brain cancer one year, 9 cases the next year, no cases the next year, 8 the next and 3 the next year. Over the five years there are an average of 5 cases. In general, when there are less than 30 cases a year it can be difficult to distinguish between such normal variation in the number of cases and meaningful changes in the cancer rates. The limited number of years presented in this report (two) and the small population of Maine counties mean caution must be used when presenting rates of cancer in some counties. To avoid presenting unstable numbers (with lots of variation), this report presents county-level data for the four most common cancer sites — lung, breast (female only), prostate and colon-rectum, as well as all cancers combined.

U.S. SEER Rates

What is SEER?

The National Cancer Institute funds the Surveillance, Epidemiology and End Results (SEER) cancer registries. SEER collects information on cancers from a statistical sample of the United States population composed of 13 population-based registries. These registries represent approximately 14 percent of the US population. The sample is designed to be fairly representative of the U.S. population. Because the non-white population of Maine is less than 2%, the SEER rates for Whites only were used for all comparisons in this report.

Why is caution needed in interpreting comparisons using an all-white population?

Rates of cancer vary by race. These differences are due to cultural differences in personal habits, dietary practices, and environmental exposures that may change the risk of cancer in a population. In addition, many ethnic and racial minorities are at a disadvantage relative to access and availability of health care, preventative services and health education in part due to language differences as well as low income and education. Thus minorities may experience increased cancer incidence and mortality. In the U.S., people of white race have a higher risk of female breast cancer, melanoma and bladder cancer than persons of other races. Whites have a lower risk compared to other races for prostate, colorectal and cervical cancer. Because the non-white population of Maine is relatively small, in the future we will need to combine a number of years of data to be able to reliably report rates in these groups.

Changes in Case-Finding Starting in 1995

Beginning in 1995, physicians, non-hospital facilities, and pathology labs were added to the list of reporting sources for the registry. In that year, the Maine Cancer Registry also began using death clearance death certificates as an additional method of case-finding.

Glossary of Terms

Age: The person's age at the time of diagnosis (incidence rates) or death (mortality rates).

Age-Adjusted Rates: A rate that has been statistically modified to eliminate the effect of varying age distributions in different populations. Age adjustment is a statistical method that is used to allow health measures (like rates of disease, death, or injuries) to be compared between communities with different age structures.

Age-Specific Incidence Rates: The number of new cases diagnosed per 100,000 people, over a given time period for a specific age group. In this report, all rates are reported as an average for 1997 and 1998 and age groups are divided into ten-year groupings (i.e. 0-9, 10-19 …80+).

Burden: For this report, burden is the average number of new cases and deaths that occurred during a given time period.

Confidence Interval: A range around a measurement conveying the amount of precision. In general, the wider the range, the less precise the number.

Death Clearance: The process in which death certificates with a cause of death related to cancer are used to identify cases not already reported to the Maine Cancer Registry. This process also provides vital status information for cases already in the registry.

Family History: The occurrence of a disease in a close blood relative, such as a parent, sibling, or child, that may increase one's risk of being diagnosed with that disease.

Five-Year Relative Survival Rates: The proportion of people, when other causes of death are taken into account, who are alive five years after diagnosis.

ICD-9: The Ninth Revision of the International Classification of Diseases, the classification system used for all mortality data included in this report. The ICD-9 is published by the World Health Organization.

ICD-O: The International Classification of Diseases for Oncology, the standards reference for classifying cancers. The ICD-O is a further classification of the ICD-9 that is specifically for classifying cancer. All cancers diagnosed for this report were classified using the second edition. The ICD-O is published by the World Health Organization.

Incidence Rate: The number of new cases of a disease occurring in a period of time divided by the size of the population at risk of becoming a case during that period of time. The result is often multiplied by a base number, such as 1,000 or 100,000.

Mortality Rate: The number of deaths attributed to a disease during a specific period of time divided by the size of the population during that period of time. The result is often multiplied by a base number, such as 1,000 or 100,000.

Prevalence: The proportion of a defined population affected by a disease at a specified point in time. The numerator of the proportion comprises all those who have the disease at that instant, regardless of whether it was diagnosed recently or long ago. Diseases with a long duration tend to have a higher prevalence than short-term illnesses.

SEER: SEER is the Surveillance, Epidemiology and End Results, of the National Cancer Institute. SEER collects information on cancers from a statistical sample of the United States population composed of 13 population-based registries representing 14% of the U.S. population.

Site: The anatomical site (organ or organ system) in which the cancer starts, for example, the lungs, colon or bone marrow.

Stage: The extent to which a cancer has progressed.

Statistically Significant: The difference between two rates is considered statistically significant if the difference would have occurred by chance less than five times out of 100. If a difference is statistically significant, it is not likely due to random chance.

ICD-O Codes

Site Category	ICD-O-2 Site Codes	
Oral Cavity and Pharynx	**C000-C148**	**Excludes histologies 9590-9989**
Lip	C000-C009	
Tongue	C019-C029	
Major Salivary Gland	C079-C089	
Floor of Mouth	C040-C049	
Gum and Other Mouth	C030-C039, C050-C059, and C060-069	
Nasopharynx	C110-C119	
Tonsil	C090-C099	
Oropharynx	C100-C109	
Hypopharynx	C129, C130-C139, and C141	
Pharynx	C140 and C142-C148	
Digestive System	**C150-C269,** **C480-C482, and C488**	**Excludes histologies 9590-9989**
Esophagus	C150-C159	
Stomach	C160-C169	
Small Intestine	C170-C179	
Colon	C180-C189	
Rectum and Rectosigmoid	C199-C209 and C260	
Anus and Anocanal	C210-C212 and C218	
Liver	C220	
Intrahepatic Bile Duct	C221	
Gallbladder	C239	
Other Biliary	C240-C249	
Pancreas	C250-C259	
Retroperitoneum	C480	
Peritoneum	C481-C482	
Other Digestive Organs	C268-C269 and C488	
Respiratory System	**C300-C399**	**Excludes histologies 9590-9989**
Nasal Cavity and Sinuses	C300-C301 and C310-C319	
Larynx	C320-C329	
Lung and Bronchus	C340-C349	
Trachea and Pleura	C339 and C381-C399	
Bones and Joints	**C400-C419**	**Excludes histologies 9590-9989**
Soft Tissue (including Heart)	**C380, C470-C479,** **C490-C499**	**Excludes histologies 9590-9989**
Melanoma of Skin	**C440-C449**	**Includes histologies 8720-8790 only**
Breast	**C500-C509**	**Excludes histologies 9590-9989**
Eye	**C690-C699**	**Excludes histologies 9590-9989**

Site Category	ICD-O-2 Site Codes	
Female Genital System	**C530-C589**	**Excludes histologies 9590-9989**
Cervix	C530-C539	
Uterus	C540-C559	
Ovary	C569	
Vagina	C529	
Vulva	C510-C519	
Other Female Genital Organs	C570-C589	
Male Genital System	**C619-C639**	**Excludes histologies 9590-9989**
Prostate	C619	
Testis	C620-C629	
Penis	C600-C609	
Other Male Genital Organs	C630-C639	
Urinary System	**C670-C689**	**Excludes histologies 9590-9989**
Bladder	C670-C679	
Kidney and Renal Pelvis	C649-C659	
Ureter	C669	
Other Urinary Organs	C680-C689	
Brain & Other Nervous System	**C710-C729**	**Excludes histologies 9590-9989**
Brain	C710-C719	
Other Nervous System	C710-C719 (meningioma), C700-C709, C720-C729	
Endocrine System	**C379, C739, C740-749, and C750-C759**	**Excludes histologies 9590-9989**
Thyroid	C739	
Other Endocrine	C379, C740-C759	
Lymphomas		
Hodgkins Disease	Includes histologies 9650-9667 only	
Non-Hodgkins Lymphoma	Includes histologies 9590-9595 and 9670-9715 only	
Multiple Myeloma	**Includes histologies 9731-9732 only**	
Leukemias	**Includes histologies 9800-9941 only**	
Acute Lymphocytic	Includes histologies 9821 and 9828 only	
Chronic Granulocytic	Includes histologies 9863 and 9868 only	
Acute Myeloid	Includes histologies 9861, 9867, and 9871-9874 only	
Chronic Myeloid	Includes histologies 9863 and 9868 only	
Other Leukemia	Includes histologies 9823, 9820, 9822, 9824-9826, 9860, 9862, 9864, 9866, 9891, 9893, 9890, 9892, 9894, 9801, 9841, 9803, 9842, 9931, 9800, 9802, 9804, 9827, 9830, 9840, 9850, 9870, 9880, 9900, 9910, and 9930-9941 only	
Unknown and Ill-Defined Sites	**Excludes histologies 9690-9989**	
	Includes histologies 9720-9723, 9740, 9741, 9760-9764, 9950-9989 only	
	Includes C760-C768, C809 for histologies 8000-9589 only	
	Includes C420-C424 for histologies 8000-9589 only	
	Includes C770-C779 for histologies 8000-9589 only	

References

American Cancer Society. *Cancer Prevention and Early Detection: Facts and Figures 2000.* Atlanta, GA: American Cancer Society, Inc., 1999.

American Cancer Society. *Cancer Facts and Figures – 1998 and 2003.* Atlanta, GA: American Cancer Society, Inc., 2001.

Devesa SS, Grauman DG, Blot WJ, Pennello G, Hoover RN, Fraumeni JF Jr., *Atlas of Cancer Mortality in the United States, 1950-1994.* Washington, DC; US Government Print Off; 1990 [NIH Publication No. (NIH) 99-4564].

National Cancer Institute. *Cancer Rates and Risks, 4th Edition.* U.S. Department of Health and Human Services, 1996.

Office of Data, Research, and Vital Statistics. Maine Bureau of Health. Augusta, Maine.

Percy C., Van Holten V, Muir C. *International Classification of Diseases for Oncology.* 2nd Edition, Geneve, Switzerland: World Health Organizaiton; 1990.

Ries LAG, Eisner MP, Kosary CL, Hankey BF, Miller BA, Clegg L, Edwards BK, (eds). *SEER Cancer Statistics Review, 1973-1998.* Bethesda, MD: National Cancer Institute, 2001.

Schottenfeld D, Fraumeni, JF (eds). *Cancer Epidemiology and Prevention.* New York: Oxford University Press, 1996.

U.S. Department of Commerce, Bureau of the Census. *1970 Census of Population.*

U.S. Department of Commerce, Bureau of the Census. *1990 Census of Population.*

U.S. Preventive Services Task Force. *Guide to Clinical Preventive Services, 2nd Ed.* U.S. Department of Health and Human Services, 2001.

Informational Resources

Internet Sites

- American Cancer Society (ACS) — **http://www.cancer.org**
- International Association of Cancer Registries (IACR) — **http://www-dep.iarc.fr/**
- National Cancer Registrars Association (NCRA) — **http://www.ncra-usa.org**
- CDC Cancer Prevention and Control Program — **http://www.cdc.gov**
- National Library of Medicine — **http://www.nlm.nih.gov**
- North American Association of Central Cancer Registries (NAACCR) — **http://www.naaccr.org**
- National Cancer Institute (NCI) — **http://www.nci.nih.gov/**
- SEER Program of National Cancer Institute — **http://www-seer.ims.nci.nih.gov**
- CancerNet — **http://www.cancernet.com**
- Oncolink (extensive cancer information and links to other sites) — **http://www.oncolink.upenn.edu**
- Post Office (zip codes for known addresses) — **http://www.usps.gov/ncsc/lookups/lookup_citystzip.html**
- Switchboard (addresses and phone numbers) — **http://www.switchboard.com**
- The American College of Surgeons — **http://www.facs.org**
- Breast Cancer Information Service — **http://bcis.org**
- National Breast Cancer Foundation — **http://nationalbreastcancer.org**
- American Association for Cancer Research — **http://www.aacr.org**
- Wiley Interscience Publications Online (Journals) — **http://www.interscience.wiley.com**
- Oxford University Press (Professional books and journals) — **http://www.oup.co.uk/**
- International Agency for Research on Cancer (IARC) — **http://www.iarc.fr**
- National Cancer Policy Board — **http://www.nas.edu/cancerbd**
- U.S. Department of Health and Human Services — **http://www.dhhs.gov**
- National Center for Health Statistics (NCHS) — **http://www.cdc.gov/nchs**
- World Health Organization (WHO) — **http://www.who.int**

Publications

North American Association of Central Registries (NAACCR) Publications:

- **Annual Incidence and Mortality monographs**
  - Cancer in North America, Volume One: Incidence
  - Cancer in North America, Volume Two: Mortality
- **Standards for Cancer Registries:**
  - Volume I: Data Exchange Standards and Record Description
  - Volume II: Data Standards and Data Dictionary
  - Volume III: Standards for Completeness, Quality Analysis, and Management of Data
  - Volume IV: Standard Data Edits

Organizations

- Centers for Disease Control and Prevention (CDC)
- National Cancer Registrars Association (NCRA)
- National Cancer Institute (NCI)
- American College of Surgeons (ACoS)
- American Joint Committee on Cancer (AJCC)
- American Cancer Society (ACS)
- North American Association of Central Cancer Registries (NAACCR)
- Surveillance Epidemiology and End Results (SEER)