

22. *Cancer*

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Goal:

Reduce the number of new cancer cases as well as the illness, disability, and death caused by cancer.

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Health Goal for the Year 2010: Reduce the number of new cancer cases as well as the illness, disability, and death caused by cancer.					
	Indicator	Alaska Data Source	U.S. Baseline	Alaska Baseline	Alaska Target Year 2010
1	Reduce the overall cancer death rate.	ABVS	203.0 (1999)	192.7 (1999)	162
	Alaska Native	ABVS		237.6 (1999)	162
2	Reduce the lung cancer death rate.	ABVS	56.0 (1999)	53.4 (1999)	48
	Alaska Native	ABVS		51.1 (1999)	48
3	Reduce the female breast cancer death rate (rate per 100,000 women).	ABVS	27.0 (1999)	23.9 (1997-99)	21
	Alaska Native	ABVS		20.9 (1997-99)	21
4	Reduce the death rate from cancer of the uterine cervix (rate per 100,000 women).	ABVS	2.9 (1999)	2.1 (1995-99)	1
	Alaska Native	ABVS		no rate, deaths <5	1
5	Reduce the colorectal cancer death rate.	ABVS	21.1 (1999)	19.4 (1997-99)	12
	Alaska Native	ABVS		39.2 (1997-99)	12
6	Reduce the oropharyngeal cancer death rate.	ABVS	2.8 (1999)	3.0 (1995-99)	3
	Alaska Native	ABVS		6.2 (1995-99) [†]	3
7	Reduce the prostate cancer death rate (rate per 100,000 men).	ABVS	30.9 (1999)	23.1 (1995-99)	22
	Alaska Native	ABVS		17.8 (1995-99) [†]	22
8	Increase the proportion of women aged 18 years and older who have received a Pap test within the preceding 3 years (women who have not had a hysterectomy).	BRFSS	85% (1999)	93% (1999)	95%
	Alaska Native	BRFSS		96% (1999)	95%
10	Increase the proportion of adults who receive colorectal screening examination (adults aged 50 years and older who have ever had a sigmoidoscopy).	BRFSS	52% (1999)	49% (1999)	64%
	Alaska Native	BRFSS		38% (1999)	64%
11	Increase the proportion of women aged 40 years and older who have received a mammogram within the preceding 2 years.	BRFSS	67% (1999) NHIS	72% (1999)	76%
	Alaska Native	BRFSS		63% (1999)	76%

Health Goal for the Year 2010: Reduce the number of new cancer cases as well as the illness, disability, and death caused by cancer.					
	Indicator	Alaska Data Source	U.S. Baseline	Alaska Baseline	Alaska Target Year 2010
12	Maintain the attainment of national standards of the state-wide population-based cancer registry to achieve at least 95 percent of the expected number of reportable cancers, data quality, and timeliness	ACR	21 States in 1999 at 95%	105% (2001)	98%
13	Increase the proportion of cancer survivors who are living 5 years or longer after diagnosis	ACR	59% (1989-95)	Data expected in 2002	

¹ Use caution - rate is based on fewer than 20 deaths

ABVS - Alaska Bureau of Vital Statistics

YRBS - Alaska Youth Risk Behavior Survey. Alaska sample for 1999 did not include Anchorage. High school data for 1999 are weighted and representative of the state student population excluding Anchorage.

BRFSS - Alaska Behavioral Risk Factor Surveillance System. All US BRFSS data are age-adjusted to the 2000 population; the Alaska BRFSS data have not been age adjusted, so direct comparisons are not advised. See Technical Notes.

NHIS - National Health Interview Survey

ACR - Alaska Cancer Registry

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Overview

Cancer is not a single disease, but rather a constellation of more than 100 related diseases. Out-of-control growth and spread of abnormal cells characterize all forms of cancer. Cancer can occur when there is an error in cell replication that accumulates in the genes; because of the body's defenses, it takes about 11,000 mutations per cell to lead to tumor formation.

Everyone is at risk of cancer. Cancer may strike at any age. Although there are certain specific childhood cancers that have an expected early age peak and are then rarely seen in the rest of the population, the occurrence of cancer generally increases with age and the majority of cancers occur among adults middle-aged or older.

In the United States, half of all men and one-third of all women will develop cancer during their lifetimes. Of the approximately 491,000 Americans who are diagnosed with cancer in any given year, four of every ten are expected to be alive five years after diagnosis. When adjusted for normal life expectancy (accounting for factors such as dying from heart disease, injuries, and diseases of old age), a "relative" five-year survival rate of 60 percent is seen for all cancers.¹

Estimates indicate that approximately 70 percent of all cancers are due to environmental factors. "Environmental" is broadly defined here as all the external factors that affect us and includes tobacco, viruses, radiation, individual exposures from sexual or occupational practices, diet and exercise, etc., and not just what is thought of as the environmental pollution of air, water, and food.

The ability to reduce cancer death rates depends, in part, on the existence and application of various types of resources. First, the means to provide culturally and linguistically appropriate information on prevention, early detection, and treatment to the public and to health professionals are essential. Second, mechanisms or systems must exist to provide people with access to state-of-the-art preventive services and treatment. Where suitable, participation in cancer trials should also be encouraged.

Evidence suggests that several types of cancer can be prevented and that the prospects for survival continue to improve. It is estimated that as much as 50 percent or more of cancer can be prevented through smoking cessation and improved dietary habits, such as reduc-

ing fat consumption and increasing fruit and vegetable consumption.^{2,3} Physical activity and weight control also can contribute to cancer prevention.^{4,5} Compliance with screening recommendations for cancer of the breast, cervix, colon/rectum could reduce deaths from these cancers.

Cancer treatment is aimed at the specific type of the disease. Improved access to state-of-the-art care needs to be widespread to increase survival. In addition to measurements of survival, indices of quality of life for both the short term and long term are regarded as important considerations.

Issues and Trends in Alaska

Cancer was rarely seen in Alaska during the 1950s, but in the 1990s cancer was the leading cause of death in Alaska. In 1999, an estimated 1,930 persons in Alaska were diagnosed with cancer and 630 were expected to die from cancer.⁶

In 1950, Alaskan deaths due to cancer were only 6 percent of total deaths. During the 1980s, cancer deaths had increased to 19 percent, and, during the 1990s, cancer deaths averaged 25 percent of total deaths. Of the total cancer deaths, 54 percent were of Alaskans 65 years of age and older.

Cancers of the lung, female breast, prostate, and colon are the most common sites of newly diagnosed cancers for all racial and ethnic populations in Alaska and together accounted for an average of 54 percent of all newly diagnosed cancers in 1996 and 1997. One half of new cancer cases occur in people aged 65 years and over in the United States; in Alaska 41 percent of new cancers are diagnosed in people aged 65 years and older.

In addition to the human toll of cancer, the financial costs of cancer are substantial.⁷ Treatment for breast cancer diagnosed at a localized stage (depending on type of cancer and age of the woman) can easily reach \$40,000 in Alaska. These are the direct costs and do not account for lost time at work or travel to distant cities for treatment. Overall United States estimates are at \$107 billion, with \$37 billion for direct medical costs (the total of health care expenditures), \$11 billion for costs of illness (the cost of low productivity due to illness), and \$59 billion for costs of death (the cost of productivity due to death). Treatment for lung, breast, and prostate cancers alone accounts for more than half of the direct medical costs.

Lung Cancer

Lung cancer is the most common cause of cancer death among both males and females in Alaska, and in 1998 accounted for 30 percent of all cancer deaths. Cigarette smoking is the most important risk factor for lung cancer, accounting for 68 percent to 78 percent of female lung cancer deaths and 88 percent to 91 percent of male lung cancer deaths.⁸ Other risk factors include occupational exposures (radon, asbestos) and indoor and outdoor air pollution (radon, environmental tobacco smoke).⁹ Only 1 percent to 2 percent of lung cancer deaths are attributable to air pollution.¹⁰ Smoking cessation decreases the risk of lung cancer to 30 percent to 50 percent of that of continuing smokers after 10 years of abstinence.²

Breast Cancer

Breast cancer is the most common newly diagnosed cancer among women and second most common cause of cancer deaths among females. Mammography screening has been proposed to reduce breast cancer mortality through early detection, especially in women over 50. The American Cancer Society and most health care professional societies recommend screening mammography, although recommendations for the age at which screening should begin and the interval between screenings have been inconsistent. Controversy continues, however, over the role of mammography in preventing breast cancer deaths and increasing survival time.¹¹

Many breast cancer risk factors, such as age, family history of breast cancer, reproductive history, previous breast disease, race and ethnicity, are not subject to intervention. However, being overweight is a well-established breast cancer risk for post-menopausal women that can be addressed.¹² Avoiding weight gain is one method by which older women may reduce their risk of developing breast cancer.

Cervical Cancer

Cervical cancer is the 8th most common cancer among females in Alaska. The cervical cancer death rate has decreased 60 percent from 1990 to 1998. Considerable evidence suggests that screening can reduce the number of deaths from cervical cancer. Invasive cervical cancer is preceded in a large proportion of cases by precancerous changes in cervical tissue that can be identified with a Pap test. If cervical cancer is detected early, the likelihood of survival is almost 100 percent with appropriate treatment and follow-up.

Infections of the cervix with certain types of sexually transmitted human papilloma virus increase the risk of cervical cancer. Cervical cancer risk is substantially decreased among former smokers in comparison to continuing smokers.²

Colorectal Cancer

Colorectal cancer is the fourth most commonly diagnosed cancer in Alaska but the second leading cause of cancer-related deaths. Colorectal cancer is the second leading cause of cancer deaths for men and the third leading cause for women.

Risk factors for colorectal cancer include age, personal and family history of polyps or colorectal cancer, inherited syndromes, physical inactivity (colon only), obesity, alcohol use, and a diet high in fat and/or low in fruits and vegetables.¹³ Detecting and removing precancerous colorectal polyps and detecting and treating the disease in its earliest stages will reduce deaths from colorectal cancer. Fecal occult blood tests and sigmoidoscopy are widely used to screen for colorectal cancer. Barium enema and colonoscopy are used as diagnostic tests.

Oral and Pharyngeal Cancers

Oral and pharyngeal cancers are malignant tumors that affect the oral mouth and throat. The overwhelming majority of these tumors are squamous cell carcinomas. Oropharyngeal cancer is the 10th most common cancer among Alaska men and the 14th most common among Alaska women. The risk of oral cancer is increased in current smokers and smokeless tobacco users. Alcohol consumption is an independent risk factor, and alcohol combined with use of tobacco products explains 90 percent of all oral cancers.¹⁴

Prostate Cancer

Prostate cancer is the most commonly diagnosed form of cancer (other than skin cancer) in males and the fourth leading cause of cancer death among Alaska males. Prostate cancer accounts for about 25 percent of new cases and 6 percent of deaths. Prostate cancer is most common in men aged 65 years and older, who account for more than 60 percent of all prostate cancer cases in Alaska.

Digital rectal examination (DRE) and the prostate-specific antigen (PSA) test are two commonly used methods for detecting prostate cancer. Clinical trials of the

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benefits of DRE and PSA screening are under way, with results expected within ten years.

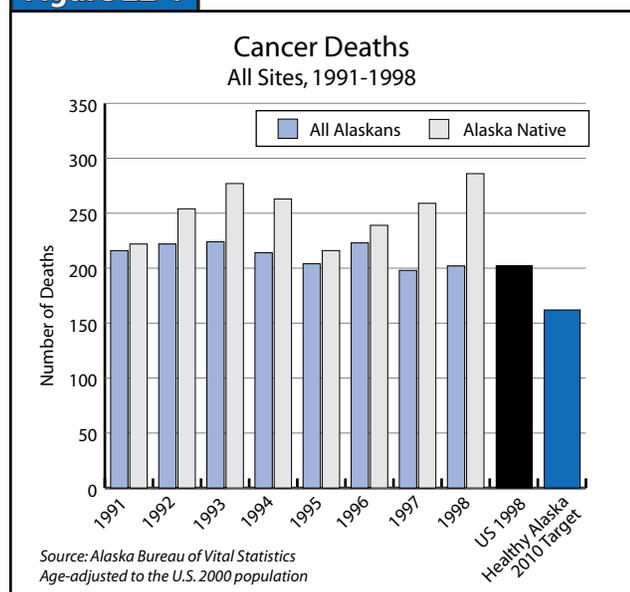
Although several treatments are available for prostate cancer, their impact on reducing death from prostate cancer when compared with no treatment in patients with operable cancer is uncertain.¹⁶ Efforts aimed at reducing deaths through screening and early detection remain controversial because of the uncertain benefits and potential risks of screening, diagnosis, and treatment. Educational efforts should be directed at men with a positive family history.

Disparities

Cancer death rates vary by gender, race and ethnicity. The 1998 age adjusted mortality rates for all sites were 134 per 100,000 for males and 108 per 100,000 for females in Alaska.¹⁵

In Alaska, Asian/Pacific Islanders have significantly lower cancer mortality rates for all sites than all races (99 per 100,000 population) with Hispanic ethnicity being comparable (106 per 100,000 population). The African American mortality rates are 235 per 100,000 population compared to the white rate of 205 per 100,000 population. The mortality rate for all cancer sites is higher for Alaska Natives than for all Alaskans during 1991-1998 (Figure 22-1). This disparity continued in 1999, with age adjusted cancer death rates of 193 per 100,000 for all Alaskans and 238 per 100,000 for Alaska Natives.¹⁶

Figure 22-1

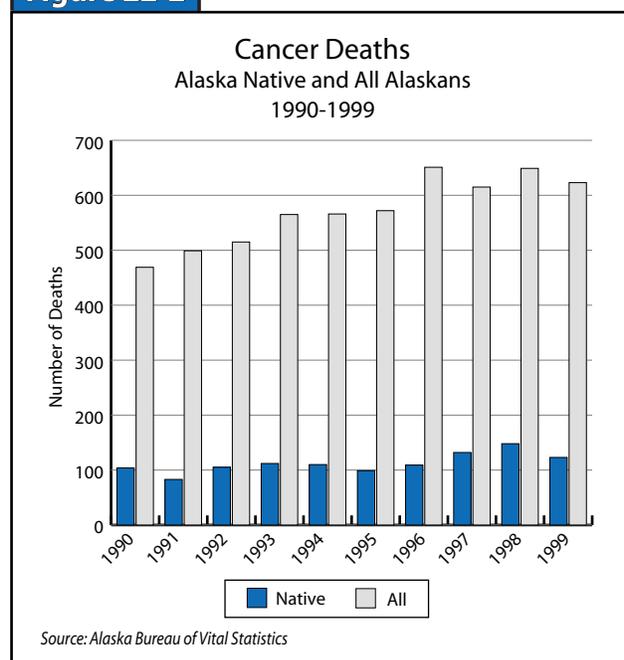


Compared to the white population of the United States, Alaska Natives have higher rates of cancer of the nasopharynx, stomach, liver, gallbladder, cervix and kidney but lower rates of cancer of the prostate, breast, uterus, bladder, and brain. Alaska Natives also have lower rates of leukemia and lymphoma.¹⁷

While overall cancer mortality rate in the United States and Alaska declined throughout the 1990s, Alaska Native rates increased. Lung cancer and other smoking-related cancers were the major contributors to the excess mortality rate. Alaska Natives were forty percent more likely to die of lung cancer than were United States whites.¹⁸

Cancer mortality increases with age. As the Alaska population ages, the total number of cancer deaths increases despite decreases in age-adjusted cancer mortality rates (Figure 22-2).

Figure 22-2



Current Strategies and Resources

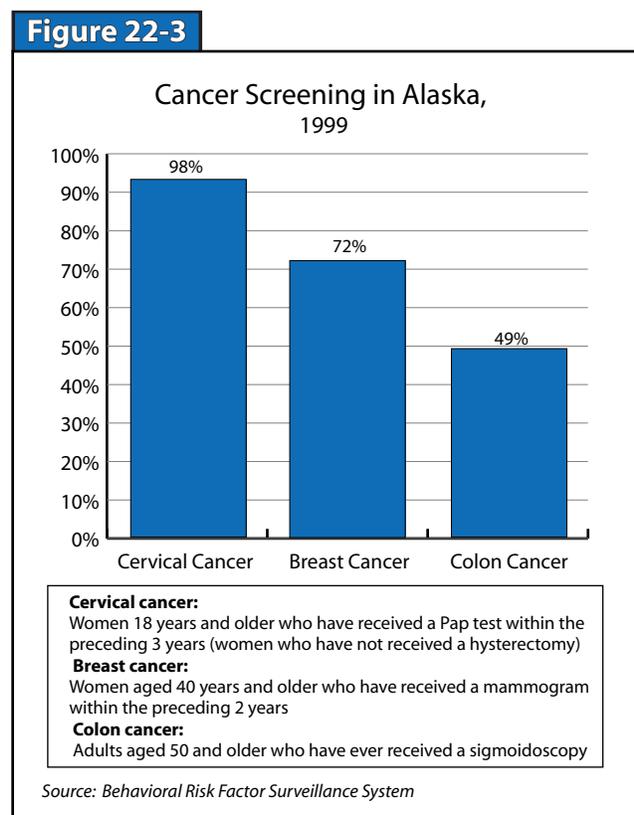
Education

Smoking cessation, adoption of healthy diets, increased physical activity, and increased cancer screening can all contribute to a reduced number of cancer deaths. Experts recommend that all primary care providers screen patients for breast, cervical, and colorectal cancers and counsel patients to prevent or reduce tobacco use, promote physical activity, and

promote a healthy diet.¹⁹ Education that focuses on protective measures, such as wearing sun-protective clothing when exposed to sunlight and avoiding artificial sources of ultraviolet light, may reduce the risk of skin cancer. Counseling should include information on Pap tests, protoscopic examinations, and mammograms. Provider counseling should be conducted in a linguistically and culturally appropriate manner.

Cancer Screening

In 1999, 93 percent of Alaska women 18 years and older reported having had a Pap test within the preceding 3 years (Figure 22-3). Pap test utilization has increased among women of low income and women with less than a high school education during the 1990s.



In 1999, 49 percent Alaskans 50 years and older had ever had a sigmoidoscopy. Colorectal cancer deaths could be prevented with increased utilization of the colorectal cancer screening recommendations. The 2010 goal is to increase the proportion of older adults who receive a colorectal screening examination by 15 percent (Figure 22-2).

In 1999, 72 percent of Alaska women 40 years of age and older reported they had a mammogram within the preceding 2 years (Figure 22-2). The 2010 goal is for 76 percent of women aged 40 years and older to have received a mammogram within the preceding 2 years.

Cancer Surveillance System

The Healthy Alaskans 2000 plan recommended development of a cancer surveillance system to include incidence data. This has been achieved through federal funding from the CDC - National Program of Cancer Registries (NPCR). The Alaska Cancer Registry (ACR) was established with a reference date of January 1, 1996. The ACR collects data on all newly diagnosed cancer cases, receives mortality data from the Bureau of Vital Statistics, and will report on survival statistics after at least five years of complete data accumulation.

The ACR complies with national standards proffered by the North American Association of Central Cancer Registries (NAACCR) and adopted by the NPCR. The first year of ACR data, 1996, was audited by NAACCR and found to be complete, timely, and to have excellent data quality particularly for a newly developed registry. The ACR relies on hospital reporting to provide the majority of its data. It is critical that hospitals collaborate with ACR and comply with the legislative reporting requirements to provide complete identification of their cases within the required timeframe. When data is received, it goes through several quality control processes before it is deemed that the case will be included in any, or all, statistical enumerations.

The ACR has developed from a planning and implementation program into an “enhanced” program in which it is expected to continue to meet national standards of completeness, timeliness and quality and to incorporate advanced activities. The Alaska Cancer Registry 1997 data was certified as 93 percent complete and meeting national standards of data quality and timeliness. The target for 2010 is to increase the attainment of national standards of the statewide population-based cancer registry to achieve at least 95 percent of the expected number of reportable cancers, data quality, and timeliness. Ability to meet this objective depends largely on complete and timely hospital reporting. The ACR will include non-hospital pathology laboratory reporting in 2001. Over-estimation of newly diagnosed cancer cases may be caused by the method utilized in measuring estimated completeness.

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Another 2010 objective is to increase the proportion of cancer survivors who are living five years or longer after diagnosis. Early detection and improved treatment increase survivorship. The ACR must accumulate at least five years of complete data before survival baseline data can be produced; this is expected to be available in 2002.

Data Issues and Needs

There is a need for development of measures for sun-protection in youth and adults. A question may be added on the Behavioral Risk Factor Surveillance System (BRFSS) about skin cancer and protective measures.

Survey to determine measures of counseling by specific primary care providers for proctoscopic examinations, mammograms, and Pap tests could provide important information for prevention programs.

Related Focus Areas

A variety of objectives in other *Healthy Alaskans* chapters are linked to objectives in *Cancer*.

- *Nutrition and Overweight*
- *Tobacco Use*
- *Environmental Health*
- *Sexually Transmitted Diseases/HIV*
- *Family Planning*
- *Immunization and Infectious Diseases*
- *Oral Health*

Indicators from Nutrition and Overweight, such as increasing fruit and vegetable intake and reducing total fat intake, can help reduce the chances of developing certain types of cancers. Tobacco is the leading cause of lung cancer. Eliminating and reducing tobacco use in adults and adolescents would substantially reduce new cancers. Overall cancer deaths and lung and skin cancer deaths are linked to the Environmental Health chapter. Pesticides and toxins in the environment increase cancer risks. Infections of the cervix with sexually transmitted human papilloma virus increase risk of cervical cancer, linking this chapter to the *HIV Infection and Sexually Transmitted Disease*, *Family Planning*, and *Immunization and Infectious Diseases* chapters. The oropharyngeal cancer indicator connects *Oral Health* to *Cancer*.

Endnotes

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Circle of Life:Colonrectal cancer screening for Alaska Natives	www.cdc.gov/cancer/colorctl/AK-circle-brochure.htm
DHSS: Section of Epidemiology, Cancer Program	www.epi.hss.state.ak.us/programs/chronic/cancer.stm

National

American Cancer Society	www.cancer.org/
National Cancer Institute	www.cancer.gov/
Cancer Progress Report 2000	progressreport.cancer.gov/

Chapter Notes

