

17. CANCER

Number	Objective
1	Cancer deaths
2	Lung cancer deaths
3	Breast cancer deaths
4	Cervical cancer deaths
5	Colorectal cancer deaths
6	Oropharyngeal cancer deaths
7	Prostate cancer deaths
8	Sun exposure
9	Provider counseling about preventive measures
10	Pap tests
11	Colorectal screening examination
12	Oral, skin, and digital rectal examinations
13	Breast examination and mammogram
14	Physician counseling of high-risk patients
15	Statewide cancer registries
16	Cancer survival rates

Cancer

Goal

Reduce the burden of cancer on the U.S. population by decreasing cancer incidence, morbidity, and mortality rates.

Terminology

(A listing of all acronyms used in this publication appears on page 27 of the Introduction.)

Benign: Not cancerous; does not invade nearby tissue or spread to other parts of the body.

Biopsy: The removal of a sample of tissue, which is then examined under a microscope to check for cancer cells.

Cancer: A term for diseases in which abnormal cells divide without control. Cancer cells can invade nearby tissue and can spread through the bloodstream and lymphatic system to other parts of the body.

Carcinogen: A substance or agent that is known to cause cancer.

Carcinoma: Cancer that begins in the epithelial tissue that lines or covers an organ.

Clinical trials: Research studies that evaluate the effectiveness of new interventions on patients.

Fecal occult blood test (FOBT): A test to check for small amounts of hidden blood in stool.

Malignant: Cancerous.

Mammogram: An x-ray of the breast.

Melanoma: Cancer of the cells that produce pigment in the skin.

Metastasis: The spread of cancer from one part of the body to another. Cells in the metastatic (secondary) tumor are like those in the original (primary) tumor.

Pap test: Microscopic examination of cells collected from the cervix. The Pap test is used to detect changes that may be cancer and can show noncancerous conditions, such as infection or inflammation.

Risk factor: Something that increases a person's chance of developing a disease.

Screening: Checking for a disease when there are no symptoms.

Sigmoidoscopy: A procedure in which the physician or health provider looks inside the rectum and the lower part of the colon (sigmoid colon) through a flexible lighted tube. The physician or health provider may collect samples of tissues or cells for closer examination.

Stage: The extent of a cancer, especially whether the disease has spread from the original site to other parts of the body.

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Overview

Cancer is the second leading cause of death in the United States. According to American Cancer Society (ACS) estimates, 1,228,600 Americans will be diagnosed with cancer in 1998, and approximately 564,800 people will die of cancer during the year. These numbers do not include carcinoma in situ included with basal and squamous cell carcinomas; the incidence of these types of cancer is estimated to exceed 1 million per year. The ACS estimates are based on an increase in the number of older Americans, who are at higher risk for developing cancer—one-half of the cases occur in persons aged 65 and over.

Cancer death rates for all sites combined decreased on average 0.5 percent per year from 1990 to 1995 but that was only after significantly increasing 0.4 percent per year from 1973 to 1990. Death rates for the four major cancers (lung, female breast, prostate, and colon/rectum) decreased significantly during 1990-95.¹ Cancers of the lung and bronchus, prostate, female breast, and colon/rectum were the four leading cancer sites for all racial and ethnic populations in the United States and together accounted for approximately 54 percent of all newly diagnosed cancers.² The top four causes of cancer death in the U.S. during 1990-95 for all racial and ethnic groups were the same for sites as for incidence: More than 50 percent of all cancer deaths involved the lung, female breast, prostate, or colon/rectum. Persons 65 years and older bear the major burden of these malignancies. The percentage of deaths for this age group are lung at 68.6, female breast cancer at 58.6 percent, prostate at 91.8 percent and colon/rectum at 77.0 percent.^{2a}

Examination of cancer death rates for each of these sites by gender, race, and ethnicity revealed (with the exception of female lung cancer) that African Americans had higher cancer death rates than whites, Asians and Pacific Islanders, or Hispanics. Among the top 10 sites that were common to all four racial and ethnic groups were cancers of the pancreas, stomach, and ovary. Otherwise, the causes of cancer death among the top 10 leading sites varied by racial and ethnic group. Deaths due to cancer of the brain and central nervous system (CNS) were among the top 10 mortality sites only in whites; deaths due to cancer of the esophagus, cervix, and multiple myeloma were among the top 10 sites only in African Americans; and liver cancer deaths were among the top 10 sites only in Asians and Pacific Islanders and Hispanics. Overall, 70 percent of cancer deaths occur in the age group 65 years and older.

For Healthy People 2010, subobjectives selected for various ethnic and racial groups were developed based on the disproportionately high rates of cancer mortality that these populations experience. Racial and ethnic groups that are not identified for each objective are not listed because their mortality rates are at or below general population levels. This does not mean that these groups do not need attention, but rather that they need to continue in a positive direction and should be monitored closely for any changes.

Statistics reflect only a portion of the enormous health problem of cancer, yet there is evidence that the prospect of preventing and surviving cancer continues to improve. Perhaps 50 percent or more of cancer incidence can be prevented through smoking cessation and changed dietary habits. The scientific evidence for smoking as a cause of cancer has been recognized for over 30 years. The evidence for diet and cancer has emerged over the past decade and has progressed to the extent that recommendations for prudent dietary changes can now be made.

Healthy People 2010 Objectives: Draft for Public Comment

1 About 30 percent of all cancer deaths (over 175,000 deaths per year) are related to smoking, and smoking
2 is related to over 420,000 U.S. deaths per year from various causes (e.g., heart disease). Progress has been
3 made in reducing the percentage of adult smokers since the 1964 *Surgeon General's Report on Smoking*
4 *and Health*. In 1965, 52.1 percent of men were smokers; in 1990, the figure was 28 percent. In 1965,
5 34.2 percent of women were smokers; in 1990, the figure was 23 percent, which represents a decrease, but
6 not as great as that shown for men. A sharper decline in women smoking is needed, otherwise women will
7 face more lung cancer than men at the start of the 21st century. Lung cancer mortality rates for women
8 continue to exceed the mortality rates for breast cancer. In contrast, white males who have reduced or
9 stopped smoking have begun to experience a decline in lung cancer incidence, which is a strong indicator
10 that reduced smoking is having a significant effect. The 1993 Youth Risk Behavior Survey found that 14
11 percent of high school students are frequent smokers, and white students are more likely than African-
12 American or Hispanic students to smoke frequently. More than 100,000 youths aged 12 and under are
13 habitual smokers.

14
15 Many cancers related to dietary factors also can be prevented. Scientific evidence suggests that
16 approximately one-third of the cancer deaths that will occur this year are related to diet. In addition, many
17 of the skin and lip cancers diagnosed this year could be prevented by limiting exposure to the sun and by
18 wearing protective clothing and using sunscreens.

19
20 The most recent figures from the Surveillance, Epidemiology, and End Results (SEER) Program of the
21 National Cancer Institute (NCI) indicate that the likelihood of a person surviving cancer for at least 5 years
22 from the point of detection, compared with the survival of the general population, is now about 51 percent
23 for patients diagnosed in 1981 through 1987. This survival rate is significantly higher than the 38 percent
24 rate for patients diagnosed in 1960-63 (as estimated by the SEER Program). However, these figures do not
25 take into account the increased incidence of lung cancer. If lung cancer incidence is removed from the
26 most recent figures, the chance of survival for more than 5 years, which for many cancer sites indicates
27 cure, is 56 percent.

28
29 In addition to the human toll of cancer, the financial costs of cancer are enormous. NCI estimates that the
30 overall costs for cancer are \$107 billion, with \$37 billion for direct medical costs, \$11 billion for morbidity
31 costs, and \$59 billion for mortality costs. Treatment for lung, breast, and prostate cancers account for more
32 than half of the direct medical costs.

33
34 African Americans have a vastly different cancer experience from whites. Statistics show that African
35 Americans have higher age-adjusted incidence and mortality rates for many cancers and lower survival
36 rates than do whites for all but 6 of 25 primary cancer sites. This difference between the races represents
37 both a challenge to understand the reasons, and an opportunity to lower morbidity and mortality and to
38 raise survival rates.

39
40 The Hispanic cancer experience also differs from that of the white population, with Hispanics having
41 higher rates of cervical, esophageal, gallbladder, and stomach cancers. The incidence of breast and lung
42 cancers is increasing among Hispanics, who are diagnosed at later stages and have lower survival rates.

43
44 The ability to reduce cancer mortality depends in part on the existence and application of many types of
45 resources. First, the means to provide information on prevention, early detection, and treatment to the
46 public and to health care professionals is essential. Second, there must be mechanisms or systems for
47 providing patients with access to state-of-the-art cancer treatment and, as appropriate, encouraging their
48 participation in cancer clinical trials. Third, the mechanism for maintaining continued research progress
49 and for fostering new research is essential. These needs can be met in part with the network of cancer
50 control resources now in place. The current network has the organizational and personnel capabilities for

1 various cancer interventions. However, despite the extent of these resources, they alone are not sufficient to
2 reduce cancer mortality. Gaps in the network exist, and it is imperative that these gaps in information
3 transfer, optimal practice patterns, research capability, and other areas be recognized and filled to meet
4 cancer prevention and control needs.

6 **Progress Toward Year 2000 Objectives**

7
8 Cancer remains a major health problem in the United States. However, there is evidence that many types
9 of cancer can be prevented and that the prospects for surviving cancer continue to improve. It is estimated
10 that as much as 50 percent or more of cancer incidence can be prevented through smoking cessation and
11 improved dietary habits such as reducing fat consumption and increasing fruit and vegetable consumption.

12
13 Trends for Healthy People 2000 objectives related to cancer mortality (16.1-16.5 and 16.17) all improved
14 for the total population in 1995. For all cancer (16.1), the mortality rate in 1995 reached the year 2000
15 target. Until 1991, the trend for lung cancer mortality (16.2) had been rising at a rate that would surpass
16 the target. However, the rate in 1991 declined for the first time in 50 years and declined again in 1992.
17 Lung cancer mortality remained level in 1993 and then dropped again in 1994 and 1995. The age-adjusted
18 death rate for colorectal cancer continued to decline in 1995 and has gone beyond the year 2000 target.
19 However, the improvement in the rate of colorectal cancer mortality has not been observed for all
20 population subgroups, and in fact, the rates increased in 1995 for some subgroups. Improvement was also
21 observed in cancer risk factors such as tobacco use and dietary fat intake. Data from 1994 indicate that
22 there has been a substantial improvement in the number of women receiving mammograms and Pap tests.
23 In addition, for both mammograms and Pap tests, the disparity in use rates for most of the population
24 subgroups and those for all women has either been reduced or eliminated.

25
26 The recent decrease in mortality from breast cancer in white women is thought to be due to the widespread
27 diffusion of breast cancer screening into regular medical care. The increased use of adjuvant therapies is
28 also thought to have contributed to the recent decline in breast cancer mortality. While the gap between
29 African-American and white women's self-reported use of mammography has narrowed, the mortality
30 benefits have yet to be observed in African American women. Breast cancer incidence in African-
31 American women continues to increase, and mortality trends are not decreasing due in part to the fact that
32 breast cancer is diagnosed at later stages in African American women.

34 **Draft 2010 Objectives**

35
36 **Note:** Targets for Healthy People 2010 were determined based on a set of assumptions related to
37 evidence-based effects of intervention, e.g., 20 to 33 percent benefit of mammography. Because effects for
38 interventions are imprecise and are generally reported as a possible range of effects, a midpoint was chosen
39 for selecting a 2010 target. In addition, anticipated lag times of current and future interventions for
40 specific cancer sites were also incorporated. Projections for setting targets can also be made based on level
41 of activity. That is, projections based on an existing level of activity, a moderate level of increased
42 activity, and a high level of increased activity. Because Healthy People 2010 is an ambitious blueprint for
43 action for Federal, State, and community action, a moderate level of activity was used for setting targets.

- 44
45 **1. (Former 16.1) Reduce cancer deaths to a rate of no more than 103 per 100,000 people.** (Age-
46 adjusted baseline: 130 per 100,000 in 1995)

Select Populations	1995
African American	171.6

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American Indian/Alaska Native	80.8
Asian/Pacific Islander	81.1
Hispanic	79.7
White	127.0

1
2 **Target Setting Method:** 21 percent improvement.

3
4 **Data Source:** National Vital Statistics System (NVSS), CDC, NCHS.

- 5
6 **2. (Former 16.2) Reduce lung cancer deaths to a rate of no more than 33 per 100,000 people.**
7 (Age-adjusted baseline: 38.3 per 100,000 in 1995)
8

Select Populations	1995
African American	47.2
American Indian/Alaska Native	22.7
Asian/Pacific Islander	18.0
Hispanic	14.6
White	38.0

9
10 **Target Setting Method:** 14 percent improvement.

11
12 **Data Source:** National Vital Statistics System (NVSS), CDC, NCHS.

13
14 **Lung cancer** is the most common cause of cancer mortality among both men and women in the United
15 States. In 1998, an estimated 171,500 persons (91,400 men and 80,100 women) will die from lung cancer,
16 accounting for 28 percent of all cancer deaths.³ Among men, lung cancer mortality rates have declined
17 since 1990. In contrast, lung cancer mortality rates have continued to increase among women. Since
18 1987, more women have died each year from lung cancer than breast cancer.⁴ Age-adjusted lung cancer
19 mortality rates are approximately 40 percent higher among African-American men than white men. Little
20 difference in age-adjusted lung cancer mortality rates has been observed between African-American
21 women and white women.⁵

22
23 Cigarette smoking is the most important risk factor for lung cancer, accounting between 88 to 91 percent of
24 lung cancer deaths among men and 68 to 78 percent of lung cancer deaths among women.⁶ Other risk
25 factors include occupational exposures (radon, asbestos, etc.) and indoor and outdoor air pollution (radon,
26 environmental tobacco smoke, etc.).⁷ It has been estimated that 1 to 2 percent of lung cancer deaths were
27 attributable to air pollution.⁸

28
29 In addition to lung cancer, the Surgeon General has also concluded that cigarette smoking is a risk factor
30 for cancers of the oral cavity and pharynx, esophagus, larynx, pancreas, cervix uteri, urinary bladder, and
31 kidney and other urinary organs.⁹ In 1997, an estimated 80,590 persons (46,160 men and 34,430 women)
32 would die from other smoking-related cancers, accounting for 14 percent of all cancer deaths.¹⁰ The
33 attributable fractions for smoking vary considerably by cancer site, ranging from 89 to 92 percent for
34 cancers of the oral cavity and pharynx among men to 8 to 12 percent for cancers of the kidney and other
35 urinary organs among women.¹¹ Overall, it is estimated that smoking accounts for 53 percent of the deaths
36 among men and 32 percent of these deaths among women from other smoking-related cancers.¹² The first
37 NCI Monograph¹³ used forecasting techniques to project age-adjusted other smoking-related cancer
38 mortality rates (oral, bladder, kidney, pancreatic, esophageal) among persons 55 to 84 years of age.

1 Assuming no change in current patterns of smoking initiation and cessation, these projections estimated
2 that age-adjusted other cancer mortality rates would change very little from 1995 to 2010.

3
4 **3. (Former 16.3) Reduce breast cancer deaths to no more than 16.6 per 100,000 females.** (Age-
5 adjusted baseline: 21 per 100,000 in 1995)
6

Select Populations	1995
African American female	27.5
American Indian/Alaska Native female	10.4
Asian/Pacific Islander female	11.0
Hispanic female	12.7
White female	20.5

7
8 **Target Setting Method:** 7 percent improvement.
9

10 **Data Source:** National Vital Statistics System (NVSS), CDC, NCHS, 1988-92 update.
11

12 **Breast cancer** is the most common cancer among women in the United States, with an estimated 178,700
13 new cases expected in 1998. An estimated 43,500 U.S. women will die from breast cancer in 1998,
14 accounting for about 16.5 percent of cancer deaths among women. Mortality from breast cancer can be
15 substantially reduced if the tumor is discovered at an early stage. Mammography is the most effective
16 method for detecting these early malignancies. Randomized trials have demonstrated that mammography
17 can reduce; that is, breast cancer mortality by 20 to 39 percent in women who are 50 to 74 years of age¹⁴;
18 that is, up to 39 percent of breast cancer deaths in that age group might be avoided if all women complied
19 with screening recommendations. The benefits of screening mammography for women who are 40 to 49
20 years of age have generated controversy. An NIH Consensus Development Panel stated that there was
21 insufficient evidence to support screening.¹⁵ More recently, however, both the ACS and the NCI's Board
22 of Scientific Advisors endorsed universal screening for women in their forties. Recent reviews and meta-
23 analyses suggest that breast cancer mortality may be reduced by 7 percent¹⁶ or up to 17 percent¹⁷ or 18
24 percent¹⁸ among younger women. The value of breast self-examinations and of clinical breast exams in
25 addition to mammography remains controversial.

26
27 Established risk factors for breast cancer, and possible risk factors for which an association with breast
28 cancer remains to be established, have been recently reviewed by Henderson et al.¹⁹ and by the *Harvard*
29 *Report on Cancer Prevention*.²⁰ Many established breast cancer risk factors, such as age, family history of
30 breast cancer, mammographic densities, previous breast disease and race/ethnicity, are not amenable to
31 intervention. Age at first full-term pregnancy and parity are both well-established behavioral risk factors,
32 but recommendations for women to have more children at an earlier age are not consistent with other
33 public health concerns. Weight gain and overweight are commonly recognized risk factors, with
34 overweight women most commonly observed to be at increased risk of postmenopausal breast cancer and
35 at reduced risk of the much less common premenopausal breast cancer. However, there is some
36 inconsistency between cohort and case-control studies concerning the magnitude of effects. There has
37 been substantial interest recently in other potentially modifiable risk factors such as physical activity, oral
38 contraceptive use, alcohol consumption, and diet, but there is no consensus on the consistency of
39 associations with these risk factors or the adequacy of the evidence. Projections of breast cancer mortality
40 would ideally take into account probable changes in reproductive experiences (later ages at first birth and
41 fewer children) over time.
42

1 With respect to an intervention that would be necessary to achieve a reduction in breast cancer mortality,
2 the goal is to get a high percentage of women in the United States who are 40 years of age or older to
3 comply with screening recommendations put forth by the NCI and the ACS. The U.S. Preventive Services
4 Task Force (USPSTF) recommendations include routine screening every 1 to 2 years, with mammography
5 alone or mammography and annual clinical breast examination for women ages 50 to 69. The NCI's Early
6 Detection Guidelines, which until recently recommended that, beginning at age 50, all women should be
7 encouraged to have a mammogram every 1 to 2 years until age 60 and then afterwards on an annual basis,
8 have been revised to encourage screening mammography beginning at age 40. In this respect, the NCI
9 guidelines are now closer to those put forth by the ACS. The ACS has recommended that all women
10 should do monthly breast self-examinations, have a physician breast examination every 3 years between
11 the ages of 20 and 40 and annually thereafter, and have a mammogram for baseline purposes between the
12 ages of 40 and 50 and annually thereafter.

13
14 With respect to the timing of these interventions, or when these interventions would need to be
15 implemented to achieve a reduction in breast cancer mortality, evidence from randomized preventive trials
16 of screening mammography indicates that a beneficial impact on breast cancer mortality could be expected
17 to occur after a delay of roughly 7 years.²¹

18
19 **4. (Former 16.1) Reduce deaths from cancer of the uterine cervix to no more than 1 per 100,000**
20 **women.** (Age-adjusted baseline: 2.5 per 100,000 in 1995)

21

Select Populations	1995
African American female	5.2
American Indian/Alaska Native female	2.4
Asian/Pacific Islander female	2.5
Hispanic female	3.1
White female	2.2

22
23 **Target Setting Method:** 60 percent improvement.

24
25 **Data Source:** National Vital Statistics System (NVSS), CDC, NCHS.

26
27 **Cervical cancer** is the 10th most common cancer among women in the United States, with an estimated
28 13,700 new cases in 1998. The incidence is higher among racial and ethnic minority women than among
29 white women. An estimated 4,900 U.S. women will die from cervical cancer in 1998. Cervical cancer
30 accounts for about 1.8 percent of cancer deaths among women. Considerable evidence has accumulated
31 that screening can reduce mortality from cervical cancer. Invasive cervical cancer is preceded in a large
32 proportion of cases by carcinoma in situ and dysplasia. If cervical cancer is detected while the malignancy
33 is still in situ, the likelihood of survival is almost 100 percent with appropriate treatment and followup; that
34 is, almost all cervical cancer deaths could be avoided if all women complied with screening and followup
35 recommendations. An updated review of established risk factors for cervical cancer, including human
36 papilloma virus infection, was provided by Schiffman et al.²² Although there is no proven method for the
37 primary prevention of cervical neoplasia, the public health recommendations to reduce HIV and other
38 sexually transmitted diseases are likely to have a beneficial impact on cervical cancer risk.

1 With respect to the intervention that would be necessary to achieve a reduction in cervical cancer mortality,
2 the goal is to get a high percentage of women in the United States who are 18 years of age or older to
3 comply with screening, recommendations put forth by the NCI and the ACS. The USPSTF recommends
4 routine screening, with Pap testing beginning with the age of sexual activity and repeated every 3 years
5 until the age of 65, provided the smears have been consistently normal. The NCI has recommended that
6 all women who are or have been sexually active or have reached 18 years of age have an annual Pap test
7 and pelvic examination. After a woman has had three or more consecutive satisfactory normal
8 examinations, the Pap test may be performed less frequently at the discretion of her physician.
9

10 With respect to when these interventions would need to be implemented to achieve a reduction in cervical
11 cancer mortality, evidence from randomized preventive trials is unavailable, but expert opinion suggests
12 that a beneficial impact on cervical cancer mortality would be expected to occur after a delay of a few
13 years.
14

15 **5. (Former 16.5) Reduce colorectal cancer deaths to no more than 8.8 per 100,000 people.** (Age-
16 adjusted baseline: 12.8 per 100,000 in 1995)
17

Select Populations	1995
African American	17.4
American Indian/Alaska Native	7.6
Asian/Pacific Islander	8.3
Hispanic	7.7
White	12.4

18 **Target Setting Method:** 31 percent improvement.
19
20

21 **Data Source:** National Vital Statistics System (NVSS), CDC, NCHS.
22

23 **Colorectal cancer (CRC)** is the third leading cause of nondermatologic cancer morbidity and mortality in
24 U.S. men and women, accounting for an estimated 131,600 cases (64,600 in men, 67,000 in women) and
25 54,900 deaths (27,900 in men, 28,600 in women) in 1998, or about 9 percent and 10 percent, respectively.

26 Recent data show a decline in incidence and mortality in white males and females, stable incidence rates
27 in African Americans, and a continued rise in mortality rates in African-American men. The decline in
28 death rates may have resulted from early detection practices and better treatment. Five-year survival rates
29 are 62 percent in whites and 53 percent in African Americans (1986-92). These rates are enhanced by
30 detection and treatment in early stages, resulting in tumors that are 91 percent localized, 63 percent
31 regional, and 7 percent distant.²³ Studies of risk have been summarized by Potter et al.,²⁴ Winawer and
32 Shike,²⁵ and Schottenfeld and Winawer²⁶ to include nonmodifiable factors of age, male gender, personal
33 and family history of polyps or colorectal cancer, inflammatory bowel disease, inherited syndromes (FAP
34 and HNPCC), and other cancer (breast, ovary, and endometrium) and modifiable factors of physical
35 inactivity (colon only), obesity, alcohol use, and a diet high in fat and low in fiber, fruits, and vegetables.
36

37 Digital rectal examination (DRE), fecal occult blood test (FOBT), and sigmoidoscopy are widely used to
38 screen for CRC, while barium enema and colonoscopy are generally used as diagnostic tests. The DRE,
39 most commonly used in screening (43 percent, >50, BRFSS, 1993), may detect less than 10 percent of
40 CRC. The FOBT (29 to 34 percent, >50, BRFSS, 1992) has variable sensitivity and specificity and a low
41 predictive value for carcinoma. Sigmoidoscopy screening (28 percent, >50, BRFSS, 1993) detects 1 to 4
42 cancers per 1,000 examinations. A detailed review of the evidence regarding the effectiveness of these
43 tests and recommendations regarding CRC screening and surveillance are found in the article by Winawer
44 et al.²⁷

1
2 The findings from three randomized controlled trials indicate that biennial screening with FOBT can
3 reduce mortality from CRC in age groups 45 to 80 by 15 to 21 percent.²⁸⁻³⁰ One trial³¹ reported a 33
4 percent reduction in mortality with annual screening in the same age groups, and a simulation model³²
5 shows a 56 percent reduction. Efficacy of sigmoidoscopy has been supported by three case-control
6 studies³³⁻³⁵ and a simulation model³⁶ that show a 59 to 79 percent reduction in mortality in the distal colon
7 in age groups 45 and over. There is insufficient evidence to recommend for or against screening with
8 DRE, whereas the new ACS and expert panel recommendations include barium enema and colonoscopy as
9 options for screening.³⁷

10
11 Evidence exists that a reduction in CRC mortality can be achieved through detection and removal of the
12 precancerous polyps (polypectomy reduces CRC incidence) and treatment of cancer in its earliest stages.
13 Therefore, a strategy of increased screening with annual FOBT and flexible sigmoidoscopy every 5 years
14 for all persons 50 to 75 years of age by 2008 will realize a certain reduction in mortality by the year 2010
15 that could only be roughly estimated. Public and professional education efforts should be intensified
16 regarding the effectiveness of screening using agreed-upon guidelines. A second strategy involves dietary
17 changes and exercise. This strategy includes a reduction in fat intake to no more than 20 to 30 percent of
18 total calories, consumption of about 25 g of fiber per day, overweight reduction to a prevalence of 20
19 percent in adults,^{38,39} increase in moderate levels of activity (brisk walking 3 hours/week), and reduction in
20 alcohol consumption. The amount of risk reduction associated with these recommendations remains
21 uncertain.⁴⁰
22

- 1 **6. (Former 16.17) Reduce deaths due to cancer of the oral cavity and pharynx to no more than 9**
2 **per 100,000 men aged 45 through 74 and 3 per 100,000 women aged 45 through 74.** (Baseline:
3 males aged 45-74, 11; females aged 45-74, 3.9 in 1995)
4

Select Populations	1995
African American male aged 45-74	23.4
American Indian/Alaska Native male aged 45-74	Not available
Asian/Pacific Islander male aged 45-74	Not available
Hispanic male aged 45-74	Not available
White male aged 45-74	Not available
African-American female aged 45-74	6.4
American Indian/Alaska Native female aged 45-74	Not available
Asian/Pacific Islander female aged 45-74	Not available
Hispanic female aged 45-74	Not available
White female aged 45-74	Not available

5
6 **Data Source:** National Vital Statistics System (NVSS), CDC, NCHS.
7

- 8 **7. Reduce prostate cancer-related deaths to 17.1 per 100,000.** (Age-adjusted baseline: 15.5 per
9 100,000 in 1995)
10

Select Populations	1995
African American male	38.0
American Indian/Alaska Native male	8.8
Asian/Pacific Islander male	7.4
Hispanic male	10.9
White male	14.0

11
12 **Target Setting Method:** 1 percent improvement.
13

14 **Data Source:** National Vital Statistics System (NVSS), CDC, NCHS.
15

16 **Prostate cancer** is the leading cause of nondermatologic cancer morbidity and the second leading cause of
17 cancer mortality in U.S. men, accounting for an estimated 184,500 cases and 39,200 deaths in 1998, or
18 about 27 percent and 14 percent of the cases and deaths, respectively. Recent trends show an 84 percent
19 rise in incidence (1987-92), followed by an 11 percent decline (1992-93)^{40a, 41} and a 6.2 percent decrease
20 in age-adjusted mortality during 1991-95.⁴² Causes of the trends are unclear but may be attributed to
21 increased awareness of the disease and efforts in early detection. Studies of risk factors have been
22 summarized by Nomura and Kolonel,⁴³ Pienta and Esper,⁴⁴ and Dijkman and Debruyne.⁴⁵ The risks
23 include age, especially the high prevalence of latent prostate cancer in the elderly, excess in African
24 Americans, family history, and a diet high in fat. The clinical importance of these lesions is not clear due
25 to the poor understanding of the natural history of prostate cancer.
26

1 Coley et al.^{46,47} reviewed relevant studies from 1966-95 regarding the prevalence of clinically important
2 prostate cancer and evaluated the effectiveness of digital rectal examination and prostate-specific antigen
3 (PSA) in the early detection of prostate cancer. They concluded that DRE and PSA have not been shown
4 to reduce mortality or improve the quality of life. Transrectal ultrasonography (TRUS) when used with
5 DRE and PSA is a useful diagnostic test. DRE and PSA suffer from variable sensitivity and specificity and
6 low specificity, especially in older men with benign prostatic hyperplasia. Furthermore, the sensitivity and
7 specificity of the screening tests cannot be determined with certainty because biopsies are not performed
8 on negative screenees. Medical consensus on the use and interpretation of PSA has not been reached.
9 Considerations of cost-effectiveness and quality of survival make the problem even more complex. These
10 same conclusions are shared by other groups.^{48-50a}

11
12 The impact on mortality and morbidity of surgery compared to watchful waiting in patients with operable
13 cancer is uncertain.⁵¹⁻⁵⁵ Randomized clinical trials of the benefits of DRE and PSA screening are under
14 way, but the results will not be available for 10 to 15 years (PLCO, NCI and ERSPC Trials). Meanwhile,
15 indirect evidence suggests that survival is better for early stage and that more prostate cancer has been
16 detected in early stages as a result of screening. About 58 percent, 15 percent, and 16 percent of prostate
17 cancers are detected in early, regional, and distant stages, respectively.⁵⁶

18
19 The absence of modifiable risk factors for prostate cancer precludes any effective primary
20 prevention approach at this time. Secondary prevention to reduce mortality through screening
21 and early detection remains controversial. The USPSTF and NCI make no recommendations for
22 routine screening with either the DRE or PSA; however, the ACS recommends annual DRE and
23 PSA testing in men aged 50 and older with 10 years of life expectancy and to younger men who
24 are at high risk. Widespread prostate cancer screening should be approached with caution until
25 results of clinical trials provide evidence that screening does more good than harm. A few
26 advocates favor screening programs targeting high-risk groups among the elderly, African
27 Americans, and family members with history of prostate cancer.

28
29 **8. (Former 16.9) Increase to at least 75 percent the proportion of people of all ages who limit sun**
30 **exposure, use sunscreens and protective clothing when exposed to sunlight, and avoid artificial**
31 **sources of ultraviolet light (e.g., sun lamps, tanning booths).** (Baseline: limit sun exposure, 32
32 percent; use sunscreen, 29 percent; wear protective clothing, 28 percent in 1992)

33
34 **Target Setting Method:** 134-168 percent improvement.

35
36 **Data Source:** National Health Interview Survey (NHIS), CDC, NCHS.

37
38 **9. (Former 16.10) Increase to at least 85 percent the proportion of primary care providers who**
39 **routinely counsel patients about tobacco use cessation, diet modification, and cancer screening**
40 **recommendations.** (Baseline: about 50 percent of internists and 43 percent of family physicians
41 reported counseling their smoking patients about smoking cessation, 49 percent for digital rectal, 56
42 percent for blood stool, 23 percent for proctoscopic, 78 percent for breast physical, 37 percent for
43 mammogram, 55 percent for Pap tests in 1989)

44
45 **Target Setting Method:** Better than the best.

46
47 **Data Source:** Survey of Physicians' Attitudes and Practices in Early Cancer Detection, NCI.

- 1 **10. Increase to at least 95 percent the proportion of women aged 18 and older who have ever**
2 **received a Pap test and to at least 85 percent those who received a Pap test within the preceding**
3 **3 years.** (Baseline: 94 percent “ever” and 77 percent “within the preceding 3 years” in 1994)
4

Select Populations

Pap Test Ever Received	1994
African American female aged 18 and older	Not available
American Indian/Alaska Native female aged 18 and older	Not available
Asian/Pacific Islander female aged 18 and older	Not available
Hispanic female aged 18 and older	91%
White female aged 18 and older	Not available
Female aged 70 and older	90%
Female aged 18 and older with less than high school	91%
Female aged 18 and older below household poverty threshold	91%
Received Within Preceding 3 Years	
African American female aged 18 and older	Not available
American Indian/Alaska Native female aged 18 and older	Not available
Asian/Pacific Islander female aged 18 and older	Not available
Hispanic female aged 18 and older	74%
White female aged 18 and older	Not available
Female aged 70 and older	53%
Female aged 18 and older with less than high school	62%
Female aged 18 and older below household poverty threshold	72%

5
6 **Target Setting Method:** Better than the best.
7

8 **Data Source:** National Health Interview Survey (NHIS), CDC, NCHS.
9

- 10 **11. (Former 16.13) Increase to at least 75 percent the proportion of people aged 50 and older who**
11 **have received a colorectal screening examination (fecal occult blood testing within the preceding**
12 **1 to 2 years) and to at least 50 percent those who have ever received proctosigmoidoscopy.**
13 (Baseline: 30 percent received fecal occult blood testing during the preceding 2 years in 1992; 33
14 percent had ever received proctosigmoidoscopy in 1992)
15

16 **Target Setting Method:** 150 percent improvement for fecal occult testing and 50 percent
17 improvement for proctosigmoidoscopy.
18

19 **Data Source:** National Health Interview Survey (NHIS), CDC, NCHS.
20

- 21 **12. (Former 16.14) Increase to at least 50 percent the proportion of people aged 50 and older who**
22 **have received oral, skin, and digital rectal examinations in the preceding year.** (Baseline: an
23 estimated 38 percent received a digital rectal exam, 9 percent oral exam, and 17 percent skin exam
24 during a physician visit within the preceding year in 1992)
25

26 **Target Setting Method:** Better than the best.
27

28 **Data Source:** National Health Interview Survey (NHIS), CDC, NCHS.
29

1 **13. (Developmental) Increase to ___ percent the proportion of women aged 40 and older who have**
2 **received a breast examination and a mammogram within the preceding 2 years.**
3

Select Populations

African American female aged 40 and over	Not available
American Indian/Alaska Native female aged 40 and over	Not available
Asian/Pacific Islander female aged 40 and over	Not available
Hispanic female aged 40 and over	Not available
White female aged 40 and over	Not available
Female aged 40 and over	Not available
Female aged 40 and over with less than high school education	Not available
Female aged 40 and over below household poverty threshold	Not available

4
5 **Potential Data Source:** National Health Interview Survey (NHIS), CDC, NCHS.
6

7 **14. (Developmental) Increase to at least 40 percent the proportion of physicians who appropriately**
8 **counsel or refer their genetically high-risk patients.**
9

10 **15. (Developmental) Increase to at least 40 the number of States that have a statewide**
11 **population-based cancer registry that captures case information on at least 95 percent of the**
12 **expected number of reportable cancers and publishes incidence data annually within 18 months**
13 **of the close of the diagnosis year.**
14

15 **16. (Developmental) Increase the number of cancer survivors who are living 5 years or longer after**
16 **diagnosis.**
17

18 In the early 1900s, few cancer patients had any hope of long-term survival. In the 1930s, about one in four
19 was alive 5 years after treatment. About 491,400 Americans, or 4 of 10 patients who get cancer this year,
20 are expected to be alive 5 years after diagnosis. This 4 in 10 rate, or about 40 percent, is called the
21 “observed” survival rate. When adjusted for normal life expectancy (factors such as dying of heart disease,
22 accidents, and diseases of old age), a “relative” 5-year survival rate of 58 percent is seen for all cancers.
23 Five-year relative survival rates, commonly used to monitor progress in early detection and treatment of
24 cancer, include persons who are living 5 years after diagnosis, whether in remission, disease free, or under
25 treatment.
26

27 Although these rates provide some indication about the average survival experience of cancer patients in a
28 given population, they are less informative when used to predict individual prognosis. Clearly, treatments
29 designed to increase survival are needed as well as improved access to state-of-the-art care. Finally, the
30 measurement of survival must include measures of quality of life for both the short and long term.
31

32 **Related Objectives From Other Focus Areas**
33

34 **Nutrition**

35 5 Fat intake

36 7 Vegetable and fruit intake

37 **Tobacco Use**

38 1 Adult tobacco use

- 1 3 Adolescent tobacco use
- 2 6 Smoking cessation
- 3 10 Advice to quit smoking
- 4 11 Treatment of nicotine addiction
- 5 12 Providers advising smoking cessation

6

7 **Oral Health**

- 8 8 Stage I oropharyngeal cancer lesions (adults)
- 9 21 Screening for oropharyngeal cancer

10

11 **References**

- 12
- 13 1. Wingo, P.A.; Ries, L.A.G; Rosenberg, H.M.; Miller, D.S.; Edwards, B.K. Cancer incidence and mortality 1973-
14 1995: A report card for the U.S. *Cancer* 82:1197-1207, 1998.
 - 15 2. Landis, S.; Murray, T.; Bolden, S.; Wingo, PA. Cancer statistics, 1998. *CA – A Cancer Journal for Clinicians*
16 48:6-29, 1998.
 - 17 2a. Ries, L.A.G.; Kosary, C.L.; Hankey, B.I., Miller, B.A.; Edwards, B., eds. *SEER Cancer Statistics Review,*
18 *1973-1995.* Bethesda, MD: NCI, 1998.
 - 19 3. American Cancer Society (ACS). *Cancer Facts & Figures, 1998.* Atlanta, GA: ACS, 1998.
 - 20 4. National Center for Health Statistics. *Health, United States, 1995.* Hyattsville, MD: Public Health Service,
21 1996.
 - 22 5. Ibid.
 - 23 6. Centers for Disease Control and Prevention (CDC). Cigarette smoking-attributable mortality and years of
24 potential life lost—United States, 1990. *Morbidity and Mortality Weekly Report* 42:645-649, 1993.
 - 25 7. Greenwald, P.; Kramer, B.S.; Weed, D.L., eds. *Cancer Prevention and Control.* New York: Marcel Dekker,
26 1995.
 - 27 8. Doll, R. and Peto, R. *The Causes of Cancer. Quantitative Estimates of Avoidable Risks of Cancer in the United*
28 *States Today.* New York: Oxford University Press, 1981.
 - 29 9. U.S. Department of Health and Human Services. *The Health Benefits of Smoking Cessation.* DHHS
30 publication no. (CDC) 90-8416. Atlanta, GA: U.S. Department of Health and Human Services, Public Health
31 Service, Centers of Disease Control, Center for Chronic Disease Prevention and Health Promotion, Office of
32 Smoking and Health, 1990.
 - 33 10. ACS, *Cancer Facts & Figures, 1997.* Atlanta, GA: ACS, 1997.
 - 34 11. CDC, op. cit.
 - 35 12. Ibid.
 - 36 13. U.S. Department of Health and Human Services. *Strategies to Control Tobacco Use in the United States: A*
37 *Blueprint for Public Health Action in the 1990's.* NIH publication no. 92-3316. Bethesda, MD: U.S.
38 Department of Health and Human Services, Public Health Service, National Institutes of Health, National
39 Cancer Institute, 1991.
 - 40 14. Kerlikowske, K.; Grady, D.; Rubin, S.M.; et al. Efficacy of screening mammography. A meta-analysis.
41 *Journal of American Medical Association* 273:149-154, 1995.
 - 42 15. National Institutes of Health Consensus Development Conference Statement: Breast cancer screening for
43 women ages 40-49, January 21-23, 1997. *Journal of the National Cancer Institute* 89:1015-1026, 1997.
 - 44 16. Kerlikowske, et al., op. cit.
 - 45 17. Bailar, J.C., III and Gornik, H.L. Cancer undefeated. *New England Journal of Medicine* 336:1569-1574, 1997.
 - 46 18. Hendrick, et al., 1997.
 - 47 19. Henderson, B.E.; Pike, M.C.; Bernstein, L.; Ross, R.K. Breast cancer. In: Schottenfeld, D. and Fraumeni, J.F.,
48 Jr., eds. *Cancer Epidemiology and Prevention, 2nd Edition.* New York: Oxford University Press. 1996 pp.
49 1022-1039.
 - 50 20. Harvard report on cancer prevention. Volume 1. Causes of human cancer. *Cancer Causes & Control* 7:1-59,
51 1996
 - 52 21. Fletcher, S.W.; Black, W.; Harris, R; et al. Report of the International Workshop on Screening for Breast
53 Cancer. *Journal of the National Cancer Institute* 85:1644-1656, 1993.

Healthy People 2010 Objectives: Draft for Public Comment

- 1 22. Schiffman M.H.; Brinton, L.A.; Devesa, S.S.; Fraumeni, J.F., Jr. Cervical cancer. In: Schottenfeld, D. and
2 Fraumeni, J.F., Jr., eds. *Cancer Epidemiology and Prevention, 2nd Edition*. New York: Oxford University
3 Press, 1996. pp. 1090-1016.
- 4 23. ACS, 1997, op. cit.
- 5 24. Potter, J.D.; Slatter, M.L.; Bostick, R.M.; Gapstur SM. Colon cancer: A review of the epidemiology.
6 *Epidemiologic Reviews* 15:499-545, 1993.
- 7 25. Winawer, S.J. and Shike, M. Prevention and control of colorectal cancer. In: Greenwald P.; Kramer, B.S.;
8 Weed, D.L., eds. *Cancer Prevention and Control*. New York: Marcel-Dekker, 1995. pp. 537-560.
- 9 26. Schottenfeld, D. and Winawer, S.J. Cancer of the large intestine. In: Schottenfeld, D. and Fraumeni, J.F., Jr.,
10 eds. *Cancer Epidemiology and Prevention, 2nd Edition*. New York: Oxford University Press, 1996. pp. 813-
11 840.
- 12 27. Winawer, S.J.; Fletcher, R.H.; Miller, L.; et al. Colorectal cancer screening: Clinical guidelines and rationale.
13 *Gastroenterology* 112:594-642, 1997.
- 14 28. Kronborg, O.; Fenger, C.; Olsen, J.; Jorgensen O.D.; Sondergaard. Randomized study of screening for
15 colorectal cancer with faecal-occult-blood test. *Lancet* 348:1467-1471, 1996.
- 16 29. Hardcastle, J.D.; Chamberlain, J.O.; Robinson, M.H.E.; et al. Randomized controlled trial of fecal-occult-blood
17 screening for colorectal cancer. *Lancet* 348:1472-1477, 1996.
- 18 30. Mandel, J.S. Reducing mortality from colorectal cancer by screening for fecal occult blood: Update, personal
19 communication, 1997.
- 20 31. Mandel, J.S.; Bond, J.H.; Church T.R.; et al. Reducing mortality from colorectal cancer by screening for fecal
21 occult blood. *New England Journal of Medicine* 328:1365-1371, 1993.
- 22 32. Winawer, et al., op. cit.
- 23 33. Selby, J.V.; Freidman, G.D.; Quesenberry, C.P., Jr.; Weiss, N.S. A case-control study of screening
24 sigmoidoscopy and mortality from colorectal cancer. *New England Journal of Medicine* 326:653-657, 1992.
- 25 34. Muller, A.D. and Sonnenberg, A. Protection by endoscopy against death from colorectal cancer. *Archives of*
26 *Internal Medicine* 155:1741-1748, 1995.
- 27 35. Newcomb, P.A.; Norfleet, R.G.; Storer, B.E.; Surawicz T.S.; Marcus P.M. Screening sigmoidoscopy and
28 colorectal cancer mortality. *Journal of the National Cancer Institute* 84:1572-1575, 1992.
- 29 36. Winawer, et al., op. cit.
- 30 37. Ibid.
- 31 38. American Cancer Society. *Cancer Risk Report: Prevention & Control 1995*. Atlanta, GA: ACS, 1995.
- 32 39. Winawer and Shike, op. cit.
- 33 40. Harvard Report on Cancer Prevention, op. cit.
- 34 40a. ACS, 1997. op. cit.
- 35 41. Wingo, P.A.; Landis, S.; Ries, L.A.G. An adjustment to the 1997 estimate for new prostate cancer cases. *CA –*
36 *A Cancer Journal for Clinicians* 47:239-242, 1997.
- 37 42. Cole, P. and Rodu, B. Declining cancer mortality in the United States. *Cancer* 78:2045-2048, 1996.
- 38 43. Nomura, A.M.Y. and Kolonel, L.N. Prostate cancer: A current perspective. *American Journal of*
39 *Epidemiology* 13:200-227, 1991.
- 40 44. Pienta, K.J. and Esper, P.S. Risk factors for prostate cancer. *Annals of Internal Medicine* 18:793-803, 1993.
- 41 45. Dijkman, G.A. and Debruyne, F.M.J. Epidemiology of prostate cancer. *European Urology* 30:281-295,
42 1996.
- 43 46. Coley, C.M.; Barry, M.J.; Fleming, G.; Mulley, A.G. Early detection of prostate cancer. Part I: Prior
44 probability and effectiveness of tests. *Annals of Internal Medicine* 126(5):394-406, 1997.
- 45 47. Coley, C.M.; Barry, M.J.; Fleming, G.; Mulley, A.G. Early detection of prostate cancer. Part II: Estimating the
46 risks, benefits, and costs. *Annals of Internal Medicine* 26(6):468-479, 1997.
- 47 48. Schroder, F.H. Screening, early detection, and treatment of prostate cancer: A European view. *Urology* 46
48 (Supplement 3A):62-70, 1995.
- 49 49. Mandelson, M.T.; Wagner, E.H.; Thompson, R.S. PSA screening: A public health dilemma. *Annual Review of*
50 *Public Health* 16:283-306, 1995.
- 51 50. U.S. Preventive Services Task Force. *Guide to Clinical Preventive Services, 2nd Edition*. Baltimore: Williams
52 & Wilkins, 1996
- 53 50a. Ross and Schottenfeld. In: Schottenfeld, D., Fraumeni, J.F., Jr., eds. *Cancer Epidemiology and Prevention, 2nd*
54 *ed.* New York: Oxford University Press, 1996.

Healthy People 2010 Objectives: Draft for Public Comment

- 1 51. Chodak, G.W.; Thisted, R.A.; Gerber, G.S.; Johansson, J.E.; Adolfsson J.; Jones, G.W.; et al. Results of
2 conservative management of clinically localized prostate cancer. *New England Journal of Medicine* 330:242-
3 248, 1994.
- 4 52. Coley, et al., Part II, op. cit.
- 5 53. Gerber, G.S.; Thisted, R.A.; Scardino, P.T.; et al. Results of radical prostatectomy in men with clinically
6 localized prostate cancer: Multi-institutional pooled analysis. *Journal of the American Medical Association*
7 276(8):615-619, 1996.
- 8 54. Mandelson, Wagner, and Thompson, op. cit.
- 9 55. U.S. Preventive Services Task Force, op. cit.
- 10 56. American Cancer Society, 1997, op. cit.

11 12 **Additional Sources**

- 13
- 14 Brown, C.C. and Kessler, L.G. Projections of lung cancer mortality in the United States: 1985-2025. *Journal of the*
15 *National Cancer Institute* 80:43-51, 1988.
- 16
- 17 Brown, H.G. and Seffrin, J.R., eds. *Horizons 2013. Longer, Better Life Without Cancer*. Atlanta, GA: American
18 Cancer Society, 1996.
- 19
- 20 Eddy, D.M. *A Computer-Based Model for Designing Cancer Control Strategies*. NCI Monographs. *Cancer*
21 *Control Objectives for the Nation: 1985-2000*. NIH publication no. 86-2880:75-82. Bethesda, MD: National
22 Cancer Institute, 1986.
- 23
- 24 Feuer, Rocky, Biostatistician, National Cancer Institute, 1997 (personal communication).
- 25
- 26 Greenwald, P. and Clifford, C. Dietary prevention. In: Greenwald, P.; Kramer, B.S.; Weed, D.L.; eds. *Cancer*
27 *Prevention and Control*. New York: Marcel-Dekker, 1995. pp. 303-328.
- 28
- 29 Greenwald, P.; Cullen, J.W.; McKenna, J.W. Cancer prevention and control: From research through applications.
30 *Journal of the National Cancer Institute* 79:389-400, 1987.
- 31
- 32 Landrigan, P.J.; Markowitz, S.B.; Nicholson, W.J.; Baker, D.B. Cancer prevention in the workplace. In:
33 Greenwald, P.; Kramer, B.S.; Weed, D.L.; eds. *Cancer Prevention and Control*. New York: Marcel-Dekker, 1995.
34 pp. 393-410.
- 35
- 36 Martin, L.M.; Parker, S.L.; Wingo, P.A.; Heath, C.W., Jr. Cervical cancer incidence and screening: Status report on
37 women in the United States. *Cancer Practice* 4:135-140, 1996.
- 38
- 39 Trichopoulos, D.; Li, F.P.; Hunter, D.J. What causes cancer? *Scientific American* 80-87, 1996.
- 40
- 41 U.S. Centers for Disease Control and Prevention. *Implementation of the Breast and Cervical Cancer Mortality*
42 *Prevention Act. 1992 Progress Report to Congress*. Atlanta, GA: U.S. Department of Health and Human Services,
43 Public Health Service, CDC, 1993.
- 44
- 45 U.S. Department of Health and Human Services. Public Health Service. *The National Strategic Plan for the Early*
46 *Detection and Control of Breast and Cervical Cancers*.