OVERVIEW

BACKGROUND AND DATA SOURCES

There are three primary measures associated with assessing the impact of cancer in the general population. The **incidence rate** is the number of new cases per year per 100,000 persons. The **mortality rate** is the number of deaths per year per 100,000 persons. The **survival rate** is the proportion of patients alive at some point subsequent to the diagnosis of their cancer. All three measures are employed in this report, using both data from the Surveillance, Epidemiology, and End Results (**SEER**) Program, based within the Cancer Surveillance Research Program at the National Cancer Institute (**NCI**), and cancer mortality data provided by the National Center for Health Statistics (**NCHS**) for the entire United States (**US**). All incidence and mortality rates in this report are age-adjusted to the 1970 US standard million population (see Appendix) unless otherwise specified. Age adjustment minimizes the effect of a difference in age distributions when comparing rates. Data are presented for a wide spectrum of cancers.

The SEER *Cancer Statistics Review* (***CSR***), containing the most recent cancer incidence, mortality, and survival statistics, is published annually by the Cancer Statistics Branch of the NCI. The scope and purpose of this review follow a report to the Senate Appropriations Committee (Breslow, 1988) that recommended that a broad profile of cancer be presented regularly to the American public. This *CSR* includes incidence, mortality, and survival data from 1973 through 1997, the most recent year for which data are available. Incidence data for 1997 may not be 100% complete. Therefore, *caution must be exercised when comparing rates for 1997 with those for previous years.* A separate chapter has a discussion of the effect of delay in reporting of cancer incidence.

Since 1996, the *CSR* has also been available electronically on the SEER website (**http://seer.cancer.gov**) under *Publications*. The website allows timelier distribution of the *CSR*. Additional SEER data can be obtained via **CANQUES**, an interactive system on the SEER website under *Scientific Systems*, which allows the user to access over 10 million cancer statistics. The SEER public-use file with **SEER*Stat** software can be ordered through the *Scientific Systems* page of the SEER website. SEER*Stat provides an easy-to-use PC desktop system for the production of a myriad of cancer statistics, such as incidence rates and survival rates, for various demographic and medical variables. The SEER public-use data file contains information on over 2 million tumors with no personal identifiers.

THE SEER PROGRAM

The National Cancer Act of 1971 mandated the collection, analysis, and dissemination of data useful in the prevention, diagnosis, and treatment of cancer. This mandate led to the establishment of the SEER Program. A continuing project of the NCI, the SEER Program collects cancer data routinely from designated population-based cancer registries in various areas of the country. Trends in cancer incidence, mortality, and patient survival in the US are derived from this database.

The SEER Program is a sequel to two earlier NCI programs -- the End Results Program and the Third National Cancer Survey. The initial SEER reporting areas were the States of Connecticut, Iowa, New Mexico, Utah, and Hawaii; the metropolitan areas of Detroit, Michigan, and San Francisco-Oakland, California; and the Commonwealth of Puerto Rico. Case ascertainment began with January 1, 1973, diagnoses.

In 1974-1975, the program was expanded to include the metropolitan area of New Orleans, Louisiana, the thirteen-county Seattle-Puget Sound area in the State of Washington, and the metropolitan area of Atlanta, Georgia. New Orleans participated in the program only through the 1977 data collection year. In 1978 ten predominantly black rural counties in Georgia were added. American Indian residents of Arizona were added in 1980. In 1983, four counties in New Jersey were added with coverage retrospective to 1979. New Jersey and Puerto Rico participated in the program only until the end of the 1989 reporting year. Two areas of California, Los Angeles County and the San Jose-Monterey area (Monterey, San Benito, Santa Clara and Santa Cruz Counties) began reporting with 1992 diagnoses.

Both population-based cancer registries began data collection earlier than 1992 and they have provided earlier data from 1988 through 1991 for inclusion in the CSR. The incidence trends and survival data for this report are from five states: Connecticut, Hawaii, Iowa, New Mexico, and Utah and four metropolitan areas: Detroit SMSA, Atlanta SMSA, San Francisco-Oakland SMSA, and Seattle-Puget Sound (Fig. I-1). Incidence rates by SEER area including Los Angeles and San Jose-Monterey are shown for the most recent 5-year period along with area-specific mortality in each section.

The incidence trends and survival data for this report are from five states -- Connecticut, Hawaii, Iowa, New Mexico, and Utah -- and four standard metropolitan statistical areas -- Detroit, Atlanta, San Francisco-Oakland, and Seattle-Puget Sound (Fig. I-1). Incidence rates and area-specific mortality by SEER area -- including Los Angeles and San Jose-Monterey -- are shown in each section for the most recent time period. The participating regions were selected primarily for their ability to operate and maintain a population-based cancer reporting system and for their epidemiologically significant population subgroups. With respect to selected demographic and epidemiologic factors, they are when combined a reasonably representative subset of the US population. Data from the nine or eleven SEER geographic areas used in this report represent, respectively, an estimated 9.5 or 13.9 percent of the US population. By the end of 1997, the database contained information on over 2 million cases diagnosed since 1973; over 160,000 new cases are added yearly.

The goals of the SEER Program are:
(1) assembling and reporting, on a periodic basis, estimates of cancer incidence and mortality in the US;
(2) monitoring annual cancer incidence trends to identify unusual changes in specific forms of cancer occurring in population subgroups defined by geographic and demographic characteristics;
(3) providing continuing information on changes over time in the extent of disease at diagnosis, trends in therapy, and associated changes in patient survival; and
(4) promoting studies designed to identify factors amenable to cancer control interventions, such as: (a) environmental, occupational, socioeconomic, dietary, and health-related exposures; (b) screening practices, early detection and treatment; and (c) determinants of the length and quality of patient survival.

Incidence and survival data: The SEER Program is conducted under contract with nonprofit, medically oriented organizations having statutory responsibility for registering diagnoses of cancer among residents of their respective geographic coverage areas. Each contractor:
(1) maintains a cancer information reporting system;
(2) abstracts records for resident cancer patients seen in every hospital both inside and outside the coverage area;
(3) abstracts all death certificates on which cancer is listed as a cause of death for residents dying both inside and outside the coverage area;
(4) searches records of private laboratories, radiotherapy units, nursing homes, and other health services units that provide diagnostic service to ensure complete ascertainment of cases;
(5) registers all in situ and malignant neoplasms (with the exceptions of certain histologies for cancer of the skin and (since 1996) in situ neoplasms of the cervix uteri);
(6) records data on all newly diagnosed cancers, including selected patient demographics, primary site, morphology, diagnostic confirmation, extent of disease, and first course of cancer-directed therapy;
(7) provides active follow-up on all living patients except for those with in situ cancer of the cervix uteri;
(8) maintains confidentiality of patient records;
(9) semiannually, submits electronically to NCI data on all reportable diagnoses of cancer made in residents of the coverage area.

Since 1992, the SEER program has coded site and histology by the *International Classification of Diseases for Oncology*, second edition (**ICD-O-2**) (Percy, Van Holten, & Muir, 1990). All cases before 1992 were machine converted to ICD-O-2. The primary site groupings used for incidence are found in the Appendix. Follow-up rates are also in the Appendix.

Mortality data: A public use file containing information on all deaths occurring in the US by calendar year is obtained annually from the NCHS. Information on each death includes age at death, sex, geographic area of residence, and underlying and contributing causes of death. Only the underlying cause of death is used in the calculation of mortality rates for this publication. Mortality rates for the

SEER geographic areas, for each state, and for the total US are obtained from these data. A list of the mortality site groupings used in this publication is in the Appendix.

Number of estimated cancers and deaths in 2000: Projections of the number of cancer cases and number of cancer deaths in the US in 2000 have been obtained from the American Cancer Society (**ACS**). The ACS projected incidence in 2000 based on application of incidence rates from SEER for 1979-96 to the 2000 estimated total US population (Greenlee et al., 2000).

Population data: Population estimates are obtained each year from the US Bureau of the Census (**BOC**). Currently, revised estimates of the populations of US counties were obtained by five-year age group (0-4, 5-9,..., 85 and over), sex, and race (including white and black) for July estimates for each year from 1990 through 1998. SEER makes county estimates for each state available on the SEER website (*http://seer.cancer.gov*) for race (white, black, other), 5-year age group, sex, and year of diagnosis (1973 through 1997). Additional racial/ethnic (Asian/Pacific Islander, American Indian/Alaska Native, and Hispanic) populations for 1990-1998 by county can be obtained from the BOC website, *http://www.census.gov/population/www/estimates/countypop.html*.

BOC population estimates for Hawaii were altered according to independent estimates developed from sample survey data collected by the Health Surveillance Program (**HSP**) of the Hawaii Department of Health. For Hawaii, the all-races and black populations are the same as those of the BOC. Proportions of the population by different racial groups from the HSP were used to generate estimates for each race. Since the HSP survey was for all of Hawaii and not by county, population estimates were not broken down by county. The white population estimates for Hawaii provided by the BOC are generally larger than those generated by the HSP. Since whites in Hawaii account for less than 2% of the total white population represented by the SEER reporting areas, white incidence rates for the entire SEER Program are not noticeably affected. Procedures for calculating rates by race for Hawaii are currently under review.

DEFINITIONS

Several technical terms are used in presenting the data in this report. Their definitions are presented here in an attempt to clarify their use to the reader.

Incidence rate: The cancer incidence rate is the number of new cancers of a specific site/type occurring in a specified population during a year, usually expressed as the number of cancers per 100,000 population at risk. That is,

Incidence rate = (New cancers / Population) * 100,000.

The *numerator* of the fraction is the number of new cancers; its *denominator* is the size of the population. The number of new cancers can include multiple primary cancers occurring in one patient. *The population used will vary depending on the rate to be calculated.* For example, for female lung cancer, only the female population will be used; for cancer sites that only occur in one sex, the sex-specific population was used. An incidence rate can be computed for each type of cancer as well as for all cancers combined. Except for five-year age-specific rates, all incidence rates are age-adjusted (see below) either to the 1970 US standard population or to the world standard population. Incidence rates are for invasive cancer only, unless otherwise specified. (One exception is the incidence rate for cancer of the urinary bladder; there both in situ and invasive cancers are counted.)

Mortality rate: The cancer mortality rate is the number of deaths with cancer given as the underlying cause of death occurring in a specified population during a year, usually expressed as the number of deaths due to cancer per 100,000 population (see above). That is,

Mortality rate = (Cancer deaths / Population) * 100,000.

The *numerator* of the fraction is the number of deaths; its *denominator* is the size of the population. This rate can be computed for each type of cancer as well as for all cancers combined. Except for 5-year age-specific rates, all mortality rates are age-adjusted (see below) to the 1970 US standard million population or to the world standard million population.

Age-adjusted rate: An age-adjusted incidence or mortality rate is a weighted average of the age-specific incidence or mortality rates, where the weights are the proportions of persons in the corresponding age groups of a standard population. The potential confounding effect of age is reduced when comparing age-adjusted rates computed using the same standard population. For this report, the 1970 US standard million population and the world standard million population are used as the standards in computing age-adjusted rates, unless otherwise noted.

Standard million population: A standard population for a geographic area, such as the US or the world, is a table giving the proportions of the total population falling into the age groups 0-4, 5-9, ... , 80-84, and 85+. A standard million population for a geographic area is a table giving the number of people in each age group out of a theoretical cohort of 1,000,000 people that is distributed by age in the same proportions as the population. Table A-7 shows the US 1970 and world standard million populations.

Percent change: The percent change (**PC**) in a rate from 1973 to the last known year is given by

$$\text{Percent change} = \frac{(R_{last} + R_{last-1}) - (R_{1974} + R_{1973})}{R_{1974} + R_{1973}} \cdot 100$$

where R_i is the given rate for year i.

Estimated annual percent change: The estimated annual percent change (**EAPC**) is calculated by first fitting a regression line to the natural logarithm of the rates (r) using calendar year (x) as a regressor variable. If $\ln(r) = mx + b$ is the resulting regression equation (with slope m) and n is the number of years, then $m = \dfrac{n \cdot \sum[x \cdot \ln(r)] - \left(\sum x\right) \cdot \left(\sum \ln(r)\right)}{n \cdot \sum[x^2] - \left(\sum x\right)^2}$ and $EAPC = 100(e^m - 1)$, where

$e \approx 2.71828$ is the base of natural logarithms. Spreadsheets and scientific calculators generally have regression routines that make it easy to calculate m.

Testing the hypothesis that the actual mean annual percent change is 0 is equivalent to testing the hypothesis that the theoretical slope estimated by the slope m of the line representing the equation $\ln(r) = mx + b$ is 0. The latter hypothesis is tested using the t distribution of m / SE_m with $n - 2$ degrees of freedom. The standard error of m, SE_m, is obtained from the fit of the regression (Kleinbaum et al., 1988). This calculation assumes that the rates increased/decreased at a constant rate over the entire calendar year interval; the validity of this assumption was not assessed. In those few instances where at least one of the rates was 0, the linear regression was not calculated.

Because the methods used in their calculation are not directly related, *the signs of the PC and the EAPC may differ*, as occurs in a few of the tables presented.

Life table: A table for a given population listing, for each sex and each age from 0 to 120, how many members of the population die at that age and how many survive one more year.

Observed survival rate: The observed survival rate, which is obtained using standard life table procedures, represents the proportion of cancer patients surviving for a specified length of time after diagnosis.

Relative survival rate: The relative survival rate is calculated using a procedure (Ederer et al., 1961) whereby the observed survival rate is adjusted for expected mortality. The relative survival rate represents the likelihood that a patient will not die from causes associated specifically with the given cancer before some specified time (usually 5 years) after diagnosis. It is always larger than the observed survival rate for the same group of patients.

Standard error: The standard error of a rate is a measure of the sampling variability of the rate.

Person-years of life lost: The person-years of life lost (**PYLL**) is calculated as follows: For each individual who dies of the cancer of interest at a certain age, the number of years of expected life for an average person of that age and sex is obtained from life tables for the US population available from the NCHS. The PYLL in the general population associated with a particular cancer is simply the sum of this expectation over all those individuals who died of that cancer.

Average years of life lost: The average years of life lost (**AYLL**) associated with a particular cancer is the PYLL associated with that cancer in the general population divided by the number of deaths from that cancer in the general population.

Stage of disease at diagnosis: Stage of disease information is obtained from extent of disease information. The historical stage presented has four levels. An invasive neoplasm confined entirely to the organ of origin is said to be **localized**. A neoplasm that has extended beyond the limits of the organ of origin directly into surrounding organs or tissues, into regional lymph nodes, or both of the above is said to be **regional**. A neoplasm that has spread to parts of the body remote from the primary tumor either by direct extension or by discontinuous metastasis is said to be **distant**. When information is not sufficient to assign a stage, a neoplasm is said to be **unstaged**. In situ tumors (except cervix uteri) are also collected by SEER but generally are not published in this series. The extent of disease information can also be converted to Stages 0-IV as defined by the American Joint Committee on Cancer (Beahrs et al., 1988).

SUMMARY TABLES

While there are detailed tables in separate sections for each of the major cancer sites, information on some rare cancers can be found in the summary tables of section I. For a detailed list of primary sites, the summary tables provide incidence and mortality rates for the most recent 5-year period, trends (percent change and estimated annual percent change) from 1973 to the most recent year, median age at diagnosis, median age at death, and survival rates. The information is provided by race (all races, whites, blacks) and by sex.

LONG-TERM TRENDS, 1950-1997

Trends in cancer mortality from 1950 to 1997 are summarized by age both for all cancers combined and for all cancers except lung cancer (Table I-2). These mortality data are based on experience in the total US.

Summaries of long-term trends in cancer incidence, mortality, and survival are outlined in Table I-3. The table shows the estimated number of cancer cases and the reported number of cancer deaths for 1997; the next four columns show incidence and mortality changes from 1950 to 1997. Both the total percent change (PC) and the estimated annual percent change (EAPC) for incidence are based on incidence data from the five geographic areas for which data are available for each of three time periods: around 1950, 1969-71 and 1973-97. Due to the limited availability of incidence data from the early time periods and the change in the composition of the non-white population over time, the incidence trends are presented for whites only. The estimates for children are for children of all races combined in Connecticut only. Mortality data are for the entire US and are for whites only so that they are comparable to the incidence data. The last two columns display five-year relative survival figures for patients diagnosed during two time periods, 1950-54 and 1989-96; the figures are based on information from the End Results program for 1950-54 and SEER for 1989-96.

Caution should be exercised when interpreting these statistics. Evaluating trends over a long period of time may hide recent changes in the trends.

YEARS OF LIFE LOST DUE TO PREMATURE DEATH FROM VARIOUS CAUSES

Mortality rates alone give an incomplete picture of the burden deaths impose on the population. Another measure, which adds a different dimension, is the years of life lost due to premature death. This shows the extent to which life is cut short by a particular cause or disease.

This measure is estimated by linking life table data to each death of a person of given age and sex. The life table permits a determination of the number of additional years an average person of that age and sex would be expected to live. In this report, the ages used in the calculation were 1-year intervals. These remaining years of life left are summed over all deaths due to a particular cause, yielding the estimate of the number of person-years of life lost (PYLL). Also presented is the average years of life lost (AYLL), obtained by dividing the PYLL by the number of deaths. Both of these measures can be calculated for any cause of death.

CANCER PREVALENCE

The **cancer prevalence** is the number of living people who have been diagnosed with cancer -- either any cancer or a particular type of cancer. Long-term incidence and survival rates from the State of Connecticut back to 1940 were used to estimate age-specific prevalence rates for Connecticut for a recent year. The age-specific prevalence rates for Connecticut were applied to the total 1997 US population to estimate the total number of Americans alive in 1997 who have ever been diagnosed with invasive cancer (Feldman et al., 1986). There are several studies currently underway to evaluate the different methods of calculating prevalence and the reliability of using data from 9 SEER areas back to 1973 or data only for the State of Connecticut back to 1940. *Caution should be used in interpreting prevalence estimates. These estimates can not be compared to previous estimates.*

PROBABILITY OF BEING DIAGNOSED WITH OR DYING FROM CANCER

Each site-specific section of the book contains a table showing the probability (expressed as a percent) of a person of a specified race and sex and age 0, 10, ... , 60 being diagnosed with the specified cancer within 10, 20, or 30 years and within their total remaining lifetime. Lifetime risks of being diagnosed with cancer and lifetime risks of dying from cancer also appear (as percents) in each table. There are summary tables of lifetime risk in the overview.

Lifetime and interval risks of being diagnosed with cancer: The probability of being diagnosed with cancer is computed by applying cross-sectional age-specific 1995-97 incidence rates from 11 SEER areas and mortality rates from the total US to a hypothetical cohort of individuals. This hypothetical cohort, consisting of an arbitrarily specified number of live births (e.g., 10,000,000), is considered at risk for two mutually exclusive events: (1) developing the specified cancer; and (2) death due to other causes without developing the specified cancer. Using these two types of events, a standard **multiple decrement life table** (with five-year age intervals up to age 94 and a 95+ interval) is derived. For each age interval, the number alive and free of the specified cancer at the beginning of the interval is decremented by the number who develop the specified cancer and the number who die of other causes. The lifetime risk of being diagnosed with the specified cancer is derived by summing all cancer cases from age 0-4 through age 95+ and dividing by 10,000,000. This calculation does not assume an individual lives to any particular age; rather, it is the sum over all age intervals of the probability of living to the beginning of that interval times the probability of developing cancer in that interval. The probability of developing cancer during any time period (e.g., within 10 years of turning 50 years of age) is calculated by adding up all the cancers in the life table over the specified age range and dividing by the number of individuals alive and free of the specified cancer at the beginning of the period (Feuer et al., 1992; Feuer et al., 1993). To improve the precision of the calculations, rates were calculated for the age groups 85-89, 90-94, and 95+. The BOC provided populations for these age groups for 1990 to 1998.

Lifetime risk of dying from cancer: The lifetime risk of dying from a specified cancer is derived using a standard multiple decrement life table (Elandt-Johnson & Johnson, 1980). For each age, the risk of dying (1) from the specified cancer and (2) from all other causes is calculated, based on mortality data from the SEER registry areas. Although the lifetime risk of dying from cancer could have been derived for the entire US, these estimates were based only on data from SEER areas to allow comparison with the risk of diagnosis estimates.

U.S. CANCER MORTALITY RATES BY STATE

Each cancer-site-specific section of the book presents, for all 50 states and the District of Columbia, average annual mortality rates for the most recent 5-year period for all races by sex for selected cancers. The rates are per 100,000 and are age-adjusted to the US 1970 standard million population. The five states with the highest rates and the five states with the lowest rates are identified. The tates are also ranked from highest rate to lowest rate for each of the cancers for which rates are reported.

The **percent difference (PD)** between the individual state rates and the rate for the total US is given by the formula:

PD = 100 × (State rate – Total US rate) / Total US rate.

The **standard error** provided for each age-adjusted rate is calculated, based on the assumption that for each age-specific rate, the number of deaths is a Poisson random variable (Keyfitz, 1966) and the variance of the age-adjusted rate is a linear combination of the variances of the age-specific rates (Snedecor & Cochran, 1980; pp. 188-9). The difference between each age-adjusted state rate and the age-adjusted total US rate is also tested for statistical significance by calculating a *Z* (standard normal) statistic from the formula:

$$Z = (\text{State rate} - \text{Total US rate}) / SE_d$$

(While it is recognized that the two rates being compared are not independent because each state is part of the US, this should not compromise the statistical test since each state represents a small proportion of the total US.)

The **standard error of the difference** between two age-adjusted rates (SE_d) is given by the formula

$$SE_d = \sqrt{SE_s^{\,2} + SE_u^{\,2}} ,$$

where SE_s and SE_u are the standard errors of an individual state rate and of the total US rate respectively. The variance of each rate (i.e., the square of the standard error) is based on the Poisson assumption.

The standard error does not represent the total error that may be present in the age-adjusted rate; it is merely the square root of the variance associated with the rates. In addition to this variance, there also exist potential biases and errors in the measurement of the rate that are extremely difficult to assess accurately and probably impact differently on the error calculations for different states.

MEASUREMENT ERRORS

Errors in the estimation of death rates can occur in either the numerator (the number of reported deaths) or the denominator (the size of the population). One possible source of numerator error is the underregistration of deaths. Although investigation by the National Center for Health Statistics indicates that over 99% of all deaths in this country are registered, little is known about the possible existence of any differences in death registration by geographic area, age, sex, or race.

Numerator error also can occur due to misclassifications, especially of race, ethnicity, or cause of death. Recent research indicates that, for infant mortality, misclassification is highest for races other than white or black (Hahn et al., 1992). The true extent of racial or ethnic misclassifications in death certificate coding remains unknown.

In coding overall cancer mortality, misclassifications of cause of death would occur in those cases where the true cause of death was cancer but a cause other than cancer was coded, or vice versa. Even if a death is correctly attributed to cancer, the primary cancer may be incorrectly identified. It is already known, for example, that this is a problem with primary liver cancer (Percy, Ries, & Van Holten, 1990).

Denominator errors arise through under- and overenumeration in the decennial census (which is the basis of intercensal population estimates and population projections). To the extent that any over- or undercount is substantial and variable among subgroups or geographic areas, it may have important consequences on calculated death rate statistics. The effect of an *undercount* of population is that it decreases the denominator, leading to an *overestimate* of the rate. Conversely, an *overcount* of population would result in an *underestimate* of the rate.

In 1980, underenumeration varied by age group, with the greatest difference found for those 80 and older, who were undercounted by about five percent (US Bureau of the Census, 1986). All other age groups were either over- or undercounted by less than 3 percent. For age-sex-race groups, the coverage was lowest for black men aged 40-49, where the undercount was 19 percent. It is thought that no improvement was achieved with the 1990 census; in some instances, underenumeration may have been worse than in 1980.

The impact of any of these errors is that they alter the counts in either the numerator or the denominator, which in turn affect the calculated rate. Since the types of error encountered may differ by type of cancer, age group, race, sex, or even state, their impact is difficult to ascertain. *Caution is recommended when dealing with those areas where potential problems may be present.*

STATISTICAL SIGNIFICANCE

Errors can be made in the determination of a given statistic. In order to test whether two groups have the same or different *actual* rates, the *observed* rates for the groups (which will almost always be different) are compared. Statisticians consider that such a difference can be explained by one of two hypotheses: (H_0) The actual rates are really the same, but the observed rates are different because of some combination of error-causing factors, or (H_1) the actual rates of the regions are really different. H_0 is called the **null hypothesis** (because it says there is *no* real difference); H_1 is called the **alternate hypothesis**. Typically, H_0 is rejected only if there is strong evidence in favor of H_1.

How strong does the evidence in favor of H_1 have to be in order for us to reject H_0? That is called the **significance level** of the hypothesis test. A small positive number, which is called **alpha** (α), is chosen; usually, α is 0.05 or 0.01. Using statistical theory, limits for the difference in rates can be determined such that the probability of the difference being outside of those limits is α if H_0 is true. If the difference that is observed is *outside* of these theoretical limits, then the observed result is very *unlikely* to happen if H_0 is true, so H_0 is rejected.

Another way of looking at the same process is to calculate the probability that an observed difference or any greater observed difference would occur if H_0 is true; this number is called the ***P*-value** of the observed result. If the *P*-value of a test is less than α -- that is, the observed difference is very unlikely to happen if the null hypothesis is true -- H_0 will be rejected. If the *P*-value of a test is greater than the significance level α, H_0 will not be rejected. When a difference in rates is sufficiently large to cause the null hypothesis to be rejected for a given value of α, it is said to be a **statistically significant** difference.

When a null hypothesis is rejected, there remains a small chance that a wrong decision has been made. If many statistical comparisons are done, even with $\alpha = 0.01$, the chance of making at least one wrong decision becomes a concern. In testing the differences between the total US rate and the rate for each state (or for the District of Columbia) for a given cancer, 51 statistical comparisons of the type described above are performed. To account for multiple comparisons, the overall significance level was chosen so that the probability that at least one comparison would be statistically significant is 0.01.

Furthermore, based on one of Bonferroni's inequalities (if there are n events and p_i is the probability of success in event i, then P(at least 1 success) $\leq p_1 + ... + p_n$) (Snedecor & Cochran,1980; p. 115-117), the significance level α for each individual comparison was set equal to $0.01/51 \approx 0.0002$. Thus, only individual comparisons with an associated *P*-value less than 0.0002 are considered to be statistically significant. (That is, a *very small* significance level α is used in order to minimize the risk of falsely concluding that a pair of equal rates are different.)

Caution must be exercised in assessing statistically significant differences. Population size has an important role in any calculation of statistical significance. Some states may have estimated rates that are very close to the estimated total US rate, but because of their large population, the difference between their estimated rate and the estimated total US rate is found to be statistically significant. In this case, the true state rate and the true US rate are almost certainly different, because the observed difference is nearly impossible if the null hypothesis is true.

On the other hand, some smaller states may have estimated rates that differ substantially from the estimated total US rate, but because of their relatively small population, the differences are found to be statistically nonsignificant. When this happens, if the true state rate and the true US rate were equal, the probability of obtaining a difference at least as large as what has been observed is greater than α. Therefore, *the null hypothesis is not rejected because the evidence against it isn't strong enough.*

If the percent difference between the two rates is small, there may be some question as to the importance of the difference. It is difficult to specify a percent difference below which there would be no concern, because the relative difference observed will depend on the magnitudes of the rates involved. It may also be of value to consider the size of the absolute difference between a state rate and the national rate in assessing the importance of a statistically significant difference. To further assist in the interpretation of the data, the tables are footnoted to indicate absolute differences greater than 15 percent, depending on the magnitude of the cancer rates.

It is important to note that comparing individual state rates with the total US rate and assessing statistical significance is not an appropriate procedure for assessing geographic clustering of state rates. Identification of states which may represent regional clusters of high or low rates would require additional statistical and graphical analyses.

For a number of cancers, the District of Columbia is found to have the highest mortality rates. *Caution should be exercised when comparing cancer rates for the District with those from the 50 states.* The District is an entirely urban area whereas states are comprised of a combination of urban, suburban, and rural areas. Mortality rates for many cancers are higher in urban areas. Also, the District has a higher percentage of blacks (about two-thirds) than any state, and their higher mortality rates for several types of cancer elevate the overall rate for the District.

JOINPOINT REGRESSION ANALYSIS OF CANCER TRENDS

A new advance in the presentation of cancer trends is the use of joinpoint models (Kim et al., 2000). In past issues of the *Cancer Statistics Review*, certain ranges of years (e.g., 1973-1996) were specified and the estimated annual percent change (EAPC) was computed over those years. The choice of where to start and end the sequence is arbitrary and might not give an accurate picture of the trend for a given cancer site. For example, the rates might be going up and then down in this interval. For many sites, increases occurred in the earlier years, followed by declines in more recent years.

To achieve greater descriptive accuracy, for each trend the computer now statistically picks the number and location of places where the trend changes. The point (in time) where a trend changes is called a **joinpoint**. Trends may change in different ways at a joinpoint: from up to down, from down to up, from up to up at a different rate, or from down to down at a different rate. In order to find the most accurate set of joinpoints with corresponding fixed-rate intervals, we use a **joinpoint regression model**. Joinpoint regression models on the natural logarithms of the rates describe the trends by a sequence of connected straight line segments. Adjacent straight line segments are connected at a joinpoint. Each straight line segment has an associated EAPC. On the logarithmic scale, the segments are linear.

Joinpoint analysis first assumes no joinpoints are needed to describe the data accurately; joinpoints are added in turn if they are statistically significant. Thus, in the final model, each joinpoint represents a significant change in trend. Smoother polynomial models may provide a good fit overall, but are less sensitive to what is occurring at the ends of the data, especially for the most recent points.

A Windows-based program, *Joinpoint*, is freely available at *http://www-dccps.ims.nci.nih.gov/SRAB/software.html*; it accepts data from the SEER*Stat program.

Statistical details on joinpoint regression: To shorten the calculation, the following reasonable constraints are applied: the number of joinpoints is at most 3; each joinpoint occurs exactly on a year; there are at least 2 years between joinpoints; and the joinpoints are at least 2 years from either end of the data. For example, if the data cover 1973-1997, a span of 25 years, there would be no joinpoints before 1975 and none after 1995. There would be 1 possible way to choose 0 joinpoints, 21 possible ways to choose 1 joinpoint, 190 possible ways to choose 2 joinpoints, and 969 possible ways to choose 3 joinpoints.

For example, suppose there are 2 joinpoints located at j_1 and j_2, where $j_1 < j_2$. For the rate r and year x, the model for ln(r) is

$$\ln(r) \approx \hat{y} = b + m_0 x + m_1 \cdot \max(x - j_1, 0) + m_2 \cdot \max(x - j_2, 0)$$

This model has 3 segments with slopes m_0, $m_0 + m_1$, and $m_0 + m_1 + m_2$ respectively. The slope changes at the joinpoints j_1 and j_2. The EAPCs for the intervals $x < j_1$, $j_1 \le x \le j_2$, and $j_2 < x$ are respectively $100 \cdot (e^{m_0} - 1)$, $100 \cdot (e^{m_0 + m_1} - 1)$, and $100 \cdot (e^{m_0 + m_1 + m_2} - 1)$.

The testing process requires the following procedures or subroutines:
(P1) For a given set of joinpoints, find the best fitting model (defined by the parameters b, m_0, ...) by minimizing the sum of squared errors (SSE).
(P2) Of all models with a given number of joinpoints, determine which location of joinpoints yields the best-fitting model (has minimum SSE);
(P3) For a given set of points (x_1, y_1), ... , (x_n, y_n) and two continuous functions $f(x)$ and $g(x)$, calculate the

***T*-ratio** $T(f,g) = \dfrac{\sum (y_i - f(x_i))^2}{\sum (y_i - g(x_i))^2}$.

Each hypothesis test is of the form H_0: $k = k_0$ vs H_1: $k = k_1$, where $k_0 < k_1$, and is done by the following sequence of steps. Each test is carried out with a significance level of 0.05/3 ≈ 0.017, to ensure that the probability of ultimately choosing a model with 1 or more joinpoints when the true trend has 0 joinpoints is less than 0.05.

The hypothesis test consists of the following 5 steps:
(T1) If necessary (it may have already been done in a previous hypothesis test), determine the optimal model for k_0 joinpoints by considering each possible set of k_0 joinpoints, doing procedure *(P1)* to determine the best fitting model for that set as a "semifinalist," then doing procedure *(P2)* to choose the best "semifinalist" as the "finalist" $f(x)$.
(T2) If necessary (it may have already been done in a previous hypothesis test), determine the optimal model for k_1 joinpoints by considering each possible set of k_1 joinpoints, doing procedure *(P1)* to determine the best fitting model for that set as a "semifinalist," then doing procedure *(P2)* to choose the best "semifinalist" as the "finalist" $g(x)$.
(T3) Using procedure *(P3)*, calculate the *T*-ratio $T(f, g)$. Values of $T(f, g)$ close to 1 mean that the alternative is not much better than the null model, while larger values mean that the alternative is much better.
(T4) Do this 999 times, for i = 1 to i = 999: Randomly permute the errors from the null model and add them back onto the modeled values from the null model to create a **permutation data set**. For the permutation data set: Do procedures *(P1)* and *(P2)* to find a new "finalist" $f_i(x)$ for k_0 joinpoints. Do procedures *(P1)* and *(P2)* to find a new "finalist" $g_i(x)$ for k_1 joinpoints. Then do *(P3)* to calculate a new *T*-ratio $T(f_i, g_i)$. (Note that in the latter calculation, the x values are the same as the original x values but the y values are different.) Save the values $T(f_1, g_1)$, ... , $T(f_{999}, g_{999})$
(T5) If the true model is the null model $f(x)$, about half of the *T*-ratios calculated from the permutation data sets would be less than the original *T*-ratio $T(f, g)$. But if the true model is the alternative model $g(x)$, after permuting the errors most of the new *T*-ratios would be less than $T(f, g)$. In other words, the permuted data set would look less like the alternative model than the original data set does. Therefore, a

good test statistic is $M = d + 1$, where d is the number of those T-ratios that are greater than or equal to the original ratio $T(f, g)$. If H_0 is true, M is approximately uniformly distributed in {1, ... , 1000}. Since $\alpha \approx 0.017$, H_0 is rejected when $M < 17$; otherwise H_0 is not rejected.

The *Joinpoint* computer program mentioned above will perform more general joinpoint analyses than used here. In particular, the program does **weighted least squares** (**WLS**) regression for step 1 above as its default. This WLS regression method downweights rates that are more variable. It was not used here so that the EAPC calculated from the model with no joinpoint will agree with traditional EAPC calculations.

INTERPRETATION OF CANCER STATISTICS

In reviewing the various cancer incidence, mortality, and survival statistics provided in this report, the reader should be aware that a number of factors may affect the interpretation of many of these statistics.

Survival rates for all cancers combined: The mix of cancers is changing over time as the incidence of some cancers increases and the incidence of others decreases. Thus, in calculating the survival rate for all cancers combined, the component related to a specific cancer may not be constant over time. Because survival rates differ by site of cancer, the overall cancer survival rate can fluctuate even when the survival rates for site-specific cancers remain unchanged. (It is possible to adjust the survival rate for all cancers combined on the basis of the relative frequency of each specific cancer in some specified reference period; however, rates adjusted in this manner have been found to differ by only a small amount from unadjusted rates. In the future, such an adjustment may become more important if there are substantial changes in the incidence of various cancers.)

Early detection/screening: The detection and diagnosis of cancers earlier than otherwise expected may lead to an artifactual increase in patient survival rates as well as incidence rates. (These changes can occur as a result of the introduction of a new procedure to screen subgroups of the population for a specific cancer; they need not be related to whether use of the screening test results in a decrease in mortality from that cancer.) As the proportion of cancers detected at screening increases, presumably as a result of increased screening of the population, patient survival rates will *appear to* increase. The interval between the time a cancer is diagnosed by a screening procedure and the time at which the cancer would have been diagnosed in the absence of screening has been termed **lead-time** (Zelen, 1976). Lead-time results in an artifactual *increase* in patient survival. Screening for breast cancer -- it has been demonstrated -- results in increased survival over and above that resulting from lead-time alone. Screening for breast cancer has been demonstrated to reduce breast cancer mortality. The benefit of screening is being studied for some other cancers.

Screening may also result in a *decrease* in survival rates for invasive cancer if the screening procedure consistently detects cancer in a preinvasive phase. In this case, **length-biased sampling** (Zelen, 1976) may be operating; if so, it will result in those cancers that would have had a relatively good prognosis had they progressed to invasive disease being preferentially detected in a preinvasive phase. Therefore, there is the possibility of a systematic elimination of invasive cancers that would have had a relatively good prognosis. If this occurs, the mix of cancers that are not detected at screening and do progress to invasive becomes less prognostically favorable, resulting in a temporal *decrease* in survival rates for patients with invasive cancers. This effect of screening on patient survival rates may at least partially explain survival trends for cervical cancer. Other possible cancers affected include breast, colon, rectum, and prostate.

Changes in diagnostic criteria: Early detection of cancer resulting from screening or earlier response to symptoms may result in the increasing diagnosis of small tumors prior to their becoming life-threatening. This may have the effect of raising the incidence and survival rates with little or no change in mortality rates. Breast, colon, prostate, cervix uteri, bladder and skin (melanoma) are some of the cancers most likely to be affected.

Technological advances in diagnostic procedures: In this report, temporal trends in survival by stage at diagnosis are not presented for patients with specific cancers; temporal trends in stage

distributions are presented rarely. However, it is possible that the reader might compare survival by stage and stage distributions given here with those for earlier time periods as provided in previous reports or available from the SEER public-use data file. Thus, it is necessary to comment on the effect of technological advances on the diagnosis and staging of cancer.

The probability that a patient's cancer will be assigned to a particular stage may change over time due to advances in diagnostic technology. Utilization of new technology can give rise to a temporal phenomenon known as **stage migration**. Stage migration occurs when diagnostic procedures change over time, resulting in an increase in the probability that a given cancer will be diagnosed in a more advanced stage. For example, certain distant metastases that would have been undetectable a few years ago can now be diagnosed by a computer tomography (CAT) scan or by magnetic resonance imaging (MRI). Therefore, some of the patients who would have been diagnosed previously as having cancer in a localized or regional stage would now be classified as having cancer in a distant stage. The likely result would be to remove the worst survivors -- those with previously undetected distant metastases -- from the localized and regional categories and put them into the distant stage category. As a result, the stage distribution for a cancer may become less favorable over time, but the survival rates for each stage category may improve. The latter occurs because those patients shifted from early to advanced stage likely have poorer survival than early stage patients, as indicated previously, but better survival than advanced stage patients as identified in past time periods. However, overall survival would not change (Feinstein et al., 1985). This is an important concept to understand when examining temporal changes in survival by stage as well as temporal changes in stage distributions. This phenomenon could affect staging for virtually all solid tumors.

Evolution of stage classifications: Every few years, the American Joint Committee on Cancer has produced a new staging classification for many cancers. The evolution of such classifications reflects the identification of new prognostic factors which may influence choice of treatment. Because the SEER Program collects data on *extent of disease* rather than on determination of stage specified in the medical record, changes in stage definitions can be more easily accommodated; moreover, trends in the new stage over time can be calculated if the detailed extent of disease contains enough information to collapse to the new stage. For those cancers for which new prognostic variables are introduced into staging, so that previously collected detailed data on extent of disease cannot be collapsed into stage categories, there can be problems in assessing temporal trends in stage of disease. Only by reviewing the evolution of staging for a given cancer is it possible to determine what effect changes in staging have had on stage-specific survival and on stage distributions. Stage migration (mentioned above) and extent-of-disease migration need also be taken into account. One reason for using the historical categories of localized, regional, and distant is that these categories have been fairly comparable over time.

Interpreting relative survival rates: The relative survival rate is the ratio of the observed survival rate to the expected survival rate for a patient cohort. When the population used in calculating the expected survival is similar to the cohort of cancer patients except for the latter's cancer experience, the relative survival rate approximates the underlying cancer cause-specific survival. The expected rate is based on mortality rates for the total population, taking into account, as appropriate, the age, sex, race, and calendar year of diagnosis of the patients. Assuming that the presence of cancer is the only factor that distinguishes the cancer patient cohort from the general population, the relative survival rate indicates the probability that patients will *not* die due to causes associated with their diagnosed cancer within the given time period (usually 5 years).

A factor related to the risk of a cancer may also be related to the risk of dying from causes unrelated to the cancer. An example of such a factor is *smoking*. Smoking is a major risk factor for lung cancer; therefore, a cohort of lung cancer patients will contain a much higher proportion of smokers than does the general population. However, smoking is also a risk factor for other diseases, resulting in smokers having a shorter life expectancy than nonsmokers. Expected survival rates for lung cancer patients based on the general population will be unduly optimistic for this reason; they will result in relative rates that are *lower* than they should be. The problem cannot be easily corrected because life tables for smokers and nonsmokers are not readily available. The possibility that expected rates may not be appropriate for a given patient cohort should also be considered when examining relative survival rates

for patients with cancers of the cervix uteri or breast, because the risk of these cancers has been associated with socioeconomic status (Baquet et al., 1991), which may be related to life expectancy.

Previous to the *CSR* for 1973-1996, the expected rate tables used were for 1970 and 1980; there were separate tables for whites, blacks, American Indians, Chinese, Japanese, Filipinos, white Hispanics and Hawaiians. In updating the tables for 1990, several problems emerged. The US life tables are based on age, race, and sex information from death certificates. The information on race on the death certificate may not be accurate (Rosenberg et al., 1999). One reason is that funeral directors may inaccurately report race on a death certificate. Also, age at death, especially for those older than 85, may not be accurate because birth certificates were not issued with as much regularity in the early 1900s as they are today. Although race misclassification and age at death misreporting exist across all races, they may be more problematic for races other than white or black because of their relatively smaller population sizes. Therefore, life tables were generated for 1970, 1980, and 1990 for only white, black, and other; these life tables were used to produce the relative survival rates in this book. There may be small variations among survival rates calculated in this *CSR* and those in *CSR*s prior to 1973-1996.

Comparison with other databases: The SEER data are obtained from population-based cancer registries covering about 14 percent of the US population. It is sometimes of interest to compare cancer statistics for SEER areas with those from other registries both in the US and worldwide. In making such comparisons, it is essential that the factors considered above be carefully considered for both data sources. In addition, the following should all be assessed: completeness of case ascertainment, rules used to determine multiple primaries, follow-up, rules used in assigning and coding cause of death, and the sources and procedures used in obtaining population estimates. Depending on the rates being compared, there could be other confounding factors which should be adjusted for or otherwise considered. The same standard million population should be used for the age-adjustment of each group being compared.

It is sometimes interesting to compare survival data for cancer patients in SEER areas with that from clinical trials. *This must be done with great caution.* Survival data from clinical trials may have been obtained from a patient population that differs in regard to prognostic factors for the cancer in question from that of patients diagnosed in SEER areas. Any survival comparisons would have to adjust for such differences. Also, it is necessary to verify that the methodology used in computing survival rates is the same for both data sources. Patients from clinical trials may differ from patients diagnosed in SEER areas in regard to characteristics that may be related to survival but are not recorded in either database. If this were true for a given cancer, it would not be possible to make valid comparisons of the type discussed here.

Errors in data collection: In the process of registering cancer patients, errors may be made in abstracting and coding the data, including demographic information, cancer site or histology, extent of disease, treatment, and patient survival. Quality control studies are periodically carried out to detect and correct this type of error, but no attempt is made to incorporate this source of error into the variance estimates of cancer rates reported here.

Comparison of this report with previous reports: The cancer registries that participate in the SEER Program submit data on all cancers diagnosed in their coverage areas to the NCI each year. Because of the dynamic nature of the registries' data bases, *the numbers of cancer cases in a particular race-sex-age-cancer category may change for a calendar year for which data have already been reported in a previous publication.* One possible reason for this is that additional cancer cases that were previously overlooked for a given calendar year may be found and reported to the central registry. A second reason is follow-back of cancers diagnosed by death certificate only; successful efforts to establish the dates of diagnosis for such patients will change the number of patients reported in a given year. A third reason is possible code changes that may occur when a patient dies. For example, information on race is generally available on the death certificate and may be used to update a previously unknown value. A fourth reason is the elimination of duplicate records for the same patient, often due to name changes or misspellings.

Thus, a recent report may have a different number of cases for a given time period than an earlier report, with its resulting effect on incidence and possibly survival rates. Population estimates may also change from one report to another for some calendar years. This occurs because the NCI receives population estimates that are regularly updated by the BOC. For example, previous population estimates for 1990 and forward were replaced with new estimates from the BOC. Such changes may result in some differences between incidence and mortality rates for a calendar period as published in different reports.

STANDARD ERRORS OF RATES

Survival rates: In the tables presenting survival rates, the magnitude of the standard error is given as a clue to the reliability of a given rate: the greater the standard error, the less reliable the rate. In addition, if there were fewer than 25 total diagnoses in the first interval of the life table constructed to calculate survival, or if all cases became lost to follow-up within an interval, a valid survival rate could not be calculated, as noted in the table footnotes.

The **standard error** (**SE**) of a relative survival rate is obtained as follows (Ederer et al., 1961):

$$SE(CR_t) = CR_t \cdot \sqrt{\frac{q_1}{e_1 - d_1} + \frac{q_2}{e_2 - d_2} + \ldots + \frac{q_t}{e_t - d_t}}$$

where CR_t is the t-year relative survival rate, and for $i = 1, \ldots, t$, q_i is the probability of dying in year i, e_i is the effective number of patients at risk in year i, and d_i is the number of deaths in year i.

Incidence and mortality rates: The standard errors of age-adjusted incidence and mortality rates are often not specified. However, the reader can approximate the SE of a particular incidence or mortality rate by the following formula for the SE of a crude incidence or mortality rate (Keyfitz, 1966):

$$SE(\text{rate}) \approx \text{rate} / (\text{cancer cases or deaths})^{1/2}$$

Appendix Tables A-1 and A-2 provide numbers of cancer diagnoses within SEER and numbers of deaths in the total US, respectively, by race and sex for the most recent five-year period. These can be used to obtain approximations of the standard errors for associated age-adjusted rates for the same time period using the above formula. To approximate the standard error for a rate for a single year, the number of diagnoses or deaths in Tables A-1 or A-2 should be divided by five.

REFERENCES

Baquet CR, Horm JW, Gibbs T, Greenwald P. Socioeconomic factors and cancer incidence among blacks and whites. J Natl Cancer Inst 1991; 83:551-557.

Beahrs OH, Henson DE, Hutter RV, Myers MH, editors. Manual for Staging of Cancer, 3rd ed. Philadelphia (PA): Lippincott; 1988.

Breslow L (Chairman, Extramural Committee to Assess Measures of Progress Against Cancer). Measurement of progress against cancer: Final report to the Senate Appropriations Committee. Bethesda: National Cancer Institute; 1988.

Ederer F, Axtell LM, Cutler SJ. The relative survival rate: A statistical methodology. J Natl Cancer Inst Monogr 1961; 6:101-121.

Elandt-Johnson RC, Johnson NL. Survival Models and Data Analysis. New York (NY): Wiley; 1980.

Feinstein AR, Sosin DM, Wells CK. The Will Rogers phenomenon: Stage migration and new diagnostic techniques as a source of misleading statistics for survival of cancer. New Engl J Med 1985; 312:1604-1608.

Feldman AR, Kessler L, Myers M, Naughton MD. The prevalence of cancer: Estimates based on the Connecticut Tumor Registry. New Engl J Med 1986; 315:1394-1397.

Feuer EJ, Wun L-M, Boring CC. Probability of developing cancer. In: Miller BA, Ries LAG, Hankey BF, Kosary CL, Edwards BK, editors. Cancer Statistics Review: 1973-1989, National Cancer Institute, NIH Pub. No. 92-2789, 1992. p. XXX.1-8.

Feuer EJ, Wun L-M, Boring CC, Flanders WD, Timmel MJ, Tong T. The lifetime risk of developing breast cancer. J Natl Cancer Inst 1993; 85:892-897.

Greenlee RT, Murray T, Bolden S, Wingo PA. Cancer statistics, 2000. CA Cancer J Clin 2000; 50:7-33.

Hahn RA, Mulinare J, Teutsch SM. Inconsistencies in coding of race and ethnicity between birth and death in U.S. infants. JAMA 1992; 267:259-263.

Keyfitz N. Sampling variance of standardized mortality rates. Hum Biol 1966; 38:309-317.

Kim H-J, Fay MP, Feuer EJ, Midthune DN. Permutation tests for joinpoint regression with applications to cancer rates. Stat Med 2000; 19:335-351.

Kleinbaum DG, Kupper LL, Muller KE. Applied Regression Analysis and Other Multivariable Methods, 2nd ed. Boston (MA): PWS-Kent, 1988. p. 266-268.

Percy C, Ries LAG, Van Holten VD. The accuracy of liver cancer as the underlying cause of death on death certificates. Public Health Rep 1990; 105:361-368.

Percy C, Van Holten V, Muir C, editors. International Classification of Diseases for Oncology, 2nd ed. Geneva: World Health Organization; 1990.

Rosenberg HM, Maurer JD, Sorlie PD, Johnson NJ, MacDorman MF, Hoyert DL, Spitler JF, Scott C. Quality of Death Rates by Race and Hispanic Origin: A Summary of Current Research. Hyattsville (MD): National Center for Health Statistics; Vital and Health Statistics, Series 2, No. 128, 1999.

Snedecor GW, Cochran WG. Statistical Methods, 7th ed. Ames (IA): Iowa State University Press; 1980.

US Bureau of the Census. Current Population Reports; Series P-25 No. 985. Washington (DC): US Government Printing Office; 1986.

Zelen M. Theory of early detection of breast cancer in the general population. In: Heuson J-C, Mattheiem WH, Rozencweig M, editors. Breast Cancer: Trends in Research and Treatment. New York (NY): Raven Press; 1976. p. 287-299.

Table I-1

ESTIMATED NEW CANCER CASES AND DEATHS FOR 2000

All Races, By Sex

Primary Site	Estimated New Cases			Estimated Deaths		
	Total	Males	Females	Total	Males	Females
All Sites	1,220,100	619,700	600,400	563,100	291,100	272,000
Oral Cavity and Pharynx	30,200	20,200	10,000	7,800	5,100	2,700
Tongue	6,900	4,500	2,400	1,700	1,100	600
Mouth	10,900	6,500	4,400	2,300	1,300	1,000
Pharynx	8,200	5,900	2,300	2,100	1,500	600
Other Oral Cavity	4,200	3,300	900	1,700	1,200	500
Digestive System	226,600	117,600	109,000	129,800	69,300	60,500
Esophagus	12,300	9,200	3,100	12,100	9,200	2,900
Stomach	21,500	13,400	8,100	13,000	7,600	5,400
Small Intestine	4,700	2,300	2,400	1,200	600	600
Colon	93,800	43,400	50,400	47,700	23,100	24,600
Rectum	36,400	20,200	16,200	8,600	4,700	3,900
Anus, Anal Canal, and Anorectum	3,400	1,400	2,000	500	200	300
Liver and Intrahepatic Bile Duct	15,300	10,000	5,300	13,800	8,500	5,300
Gallbladder and Other Biliary	6,900	2,900	4,000	3,400	1,200	2,200
Pancreas	28,300	13,700	14,600	28,200	13,700	14,500
Other Digestive	4,000	1,100	2,900	1,300	500	800
Respiratory System	179,400	101,500	77,900	161,900	93,100	68,800
Larynx	10,100	8,100	2,000	3,900	3,100	800
Lung and Bronchus	164,100	89,500	74,600	156,900	89,300	67,600
Other Respiratory	5,200	3,900	1,300	1,100	700	400
Bones and Joints	2,500	1,500	1,000	1,400	800	600
Soft Tissues	8,100	4,300	3,800	4,600	2,200	2,400
Skin (excl. basal & squamous)	56,900	34,100	22,800	9,600	6,000	3,600
Melanomas of Skin	47,700	27,300	20,400	7,700	4,800	2,900
Other non-epithelial skin	9,200	6,800	2,400	1,900	1,200	700
Breast	184,200	1,400	182,800	41,200	400	40,800
Genital Organs	265,900	188,400	77,500	59,000	32,500	26,500
Cervix (uterus)	12,800		12,800	4,600		4,600
Endometrium (uterus)	36,100		36,100	6,500		6,500
Ovary	23,100		23,100	14,000		14,000
Vulva	3,400		3,400	800		800
Vagina and other genital organs, female	2,100		2,100	600		600
Prostate	180,400	180,400		31,900	31,900	
Testis	6,900	6,900		300	300	
Penis and other genital organs, male	1,100	1,100		300	300	
Urinary System	86,700	58,600	28,100	24,600	15,700	8,900
Urinary Bladder	53,200	38,300	14,900	12,200	8,100	4,100
Kidney and Renal Pelvis	31,200	18,800	12,400	11,900	7,300	4,600
Ureter and other urinary organs	2,300	1,500	800	500	300	200
Eye and Orbit	2,200	1,200	1,000	200	100	100
Brain and Other Nervous System	16,500	9,500	7,000	13,000	7,100	5,900
Endocrine System	20,200	5,600	14,600	2,100	1,000	1,100
Thyroid	18,400	4,700	13,700	1,200	500	700
Other Endocrine	1,800	900	900	900	500	400
Lymphoma	62,300	35,900	26,400	27,500	14,400	13,100
Hodgkin's Disease	7,400	4,200	3,200	1,400	700	700
Non-Hodgkin's Lymphoma	54,900	31,700	23,200	26,100	13,700	12,400
Multiple Myeloma	13,600	7,300	6,300	11,200	5,800	5,400
Leukemia	30,800	16,900	13,900	21,700	12,100	9,600
Lymphocytic Leukemias	11,300	6,400	4,900	6,100	3,500	2,600
Myeloid Leukemias	14,100	7,400	6,700	9,400	5,200	4,200
Other leukemia	5,400	3,100	2,300	6,200	3,400	2,800
All Other Sites	34,000	15,700	18,300	36,600	18,500	18,100

Source: Cancer Facts & Figures – 2000, American Cancer Society (ACS), Atlanta, Georgia, 2000.
Excludes basal and squamous cell skin and in situ carcinomas except urinary bladder.
Incidence projections are based on rates from the NCI SEER Program 1979-1996.

Table I-2

48-YEAR TRENDS IN U.S. CANCER MORTALITY RATES*

All Races, Males and Females

All Primary Cancer Sites Excluding Lung and Bronchus⊕

Age Group	1950	1975	1997	Estimated Annual Percent Change 1950-75	Estimated Annual Percent Change 1975-97	Total Percent Change 1950-97
0-4	11.0	5.1	2.8	-3.0	-2.9	-76.1
5-14	6.6	4.7	2.6	-0.9	-2.8	-58.7
15-24	8.4	6.5	4.4	-0.6	-1.8	-48.1
25-34	19.0	13.9	10.7	-1.3	-1.0	-42.7
35-44	59.6	43.1	33.2	-1.1	-1.0	-43.2
45-54	154.8	130.1	101.8	-0.6	-1.0	-33.5
55-64	344.8	299.7	261.3	-0.5	-0.6	-23.1
65-74	640.7	574.6	543.2	-0.5	-0.1	-13.5
75-84	1105.3	963.2	955.1	-0.5	0.1	-11.9
85+	1408.4	1302.4	1488.1	-0.6	0.6	5.8
All Ages	145.0	125.3	115.2	-0.6	-0.3	-19.3

All Primary Cancer Sites Combined

Age Group	1950	1975	1997	Estimated Annual Percent Change 1950-75	Estimated Annual Percent Change 1975-97	Total Percent Change 1950-97
0-4	11.1	5.2	2.8	-3.0	-2.9	-76.1
5-14	6.6	4.7	2.6	-1.0	-2.8	-59.0
15-24	8.5	6.6	4.5	-0.6	-1.8	-48.6
25-34	19.8	14.6	11.3	-1.2	-1.0	-41.9
35-44	64.2	53.9	39.7	-0.5	-1.3	-37.3
45-54	175.2	179.2	137.4	0.2	-1.1	-20.3
55-64	394.0	423.2	396.1	0.3	-0.2	1.8
65-74	700.0	769.8	836.5	0.4	0.5	20.9
75-84	1160.9	1156.0	1323.3	0.0	0.7	15.5
85+	1450.7	1437.9	1783.0	-0.3	0.9	22.4
All Ages	158.1	162.3	163.7	0.1	0.1	4.7

Source: NCHS public use tape.

* Rates are per 100,000 and are age-adjusted to the 1970 U.S. standard population. Each rate has been age-adjusted by 5-year age groups.

⊕ Due to coding changes throughout the years, Lung and Bronchus includes trachea and pleura.

Table I-3

SUMMARY OF CHANGES IN CANCER INCIDENCE AND MORTALITY, 1950-97 AND

5-YEAR RELATIVE SURVIVAL RATES, 1950-96

Males and Females, By Primary Cancer Site

Primary Site	All Races		Whites				
			Percent Change 1950-97☼				5-Year Relative Survival Rates (Percent)8
	Estimated Cancer Cases in 1997⊕	Actual Cancer Deaths in 1997*	Incidence§		U.S. MortalityN		
			Total	EAPC	Total	EAPC	1950-54 / 1989-96
Oral cavity and Pharynx	30,750	7,893	-38.0	-0.7	-38.5	-0.9	46 / 56.2
Esophagus	12,500	11,277	-2.3	0.2	22.9	0.4	4 / 13.2
Stomach	22,400	13,061	-78.4	-2.6	-80.9	-3.5	12 / 19.5
Colon and Rectum	131,200	56,694	-1.1	-0.1	-37.2	-0.9	37 / 62.1
Colon	94,100	48,726	13.6	0.2	-23.6	-0.4	41 / 62.6
Rectum	37,100	7,968	-25.2	-0.7	-67.9	-2.8	40 / 60.7
Liver and Intrahep	13,600	11,937	172.0	1.8	34.0	0.5	1 / 5.7
Pancreas	27,600	27,675	12.2	0.0	15.5	0.2	1 / 4.2
Larynx	10,900	3,810	33.6	0.3	-16.5	-0.3	52 / 66.2
Lung and Bronchus	178,100	153,199	249.8	2.3	255.5	2.9	6 / 14.4
Males	98,300	91,277	173.3	1.4	190.9	2.3	5 / 12.9
Females	79,800	61,922	593.8	4.4	614.5	5.3	9 / 16.6
Melanomas of skin	40,300	7,238	488.3	4.1	161.3	2.1	49 / 88.5
Breast(females)	180,200	41,943	59.4	1.3	-11.5	-0.1	60 / 86.4
Cervix uteri	14,500	4,499	-78.5	-2.9	-75.8	-3.6	59 / 71.6
Corpus and Uterus, NOS	34,900	6,188	2.3	-0.6	-68.2	-2.3	72 / 85.7
Ovary	26,800	13,507	3.9	0.2	-4.1	-0.2	30 / 50.1
Prostate	209,900	32,889	193.2	3.3	4.0	0.3	43 / 94.1
Testis	7,200	316	122.5	2.0	-72.9	-3.2	57 / 95.7
Urinary bladder	54,500	11,582	53.3	1.0	-35.1	-1.1	53 / 81.9
Kidney and Renal pelvis	28,800	11,294	126.0	1.9	36.5	0.6	34 / 61.5
Brain and Other nervous	17,600	12,474	70.9	1.2	45.0	0.7	21 / 30.0
Thyroid	16,100	1,223	154.1	1.8	-47.5	-1.8	80 / 95.5
Hodgkin's disease	7,500	1,443	15.3	0.2	-73.7	-3.4	30 / 82.8
Non-Hodgkin's lymphomas	53,600	23,577	191.3	2.9	139.1	1.6	33 / 52.6
Multiple myeloma	13,800	10,324	208.2	1.8	203.4	2.2	6 / 27.8
Leukemias	28,300	20,484	6.7	0.2	-4.5	-0.3	10 / 45.4
Childhood(0-14 yrs)	8,800	1,559	34.9	0.8	-67.3	-2.8	20 / 76.5
All sites excluding Lung and Bronchus	1,079,700	386,367	45.1	0.8	-19.3	-0.4	38 / 68.7
All Sites	1,257,800	539,566	58.0	1.0	4.7	0.2	35 / 61.5

The EAPC is the Estimated Annual Percent Change over the time interval.

⊕ Parker SL, Tong T, Bolden S, Wingo PA. Cancer Statistics 1996. CA Cancer J Clin 1996; 65:5-27. Excludes basal and squamous cell skin and in situ carcinomas except urinary bladder. Incidence projections are based on rates from the NCI SEER Program 1991-93.

* NCHS public use tape.

☼ All Sites, All sites excluding Lung & Bronchus, Liver & Intrahep, Brain & Other nervous and Childhood cancers are for all races as opposed to whites.

§ Data prior to 1973 are from Devesa, Silverman, Young, et al. Cancer Incidence and Mortality Trends Among Whites in the United States, 1947-84. JNCI 1987; 79:701-770 with the exception of All Sites, All sites excluding Lung & Bronchus, Liver & Intrahep, Brain & Other nervous and Childhood cancers which come from historical Connecticut data. Data for 1973-97 are from the same areas used in Devesa or the Connecticut registry of the SEER Program.

N NCHS public use tape. Due to coding changes throughout the years: Colon excludes other digestive tract; Rectum includes anal canal; Liver & Intrahep includes gallbladder & biliary tract, NOS; Lung & Bronchus includes trachea & pleura; Ovary includes fallopian tube; Urinary bladder includes other urinary organs; Kidney & Renal pelvis includes ureter; NHL and Multiple myeloma each include a small number of leukemias; NHL includes a small number of ill-defined sites.

8 Rates for 1950-54 are from NCI Survival Report 5 with the exception of All Sites, All sites excluding Lung & Bronchus, Oral cavity & Pharynx, Colon & Rectum, Non-Hodgkin's lymphomas and Childhood cancers which come from historical Connecticut data. Rates for 1989-96 are from the SEER Program with the exception of the sites just listed which come from the Connecticut registry of the SEER Program.

Table I-4

TRENDS IN SEER INCIDENCE§ AND U.S. MORTALITY* FOR SELECTED CANCER SITES, 1973-97

All Races, Males and Females⊕

Mortality EAPC Incidence EAPC

Decreasing Mortality

Decreasing Incidence	Mrt	Inc
Oral cavity & Pharynx	-1.6	-0.6
Stomach	-2.3	-1.6
Colon & Rectum	-1.2	-0.4
Pancreas	-0.2	-0.4
Larynx	-0.5	-0.8
Cervix uteri⊕	-2.6	-2.1
Corpus & Uterus, NOS⊕	-1.5	-1.6
Hodgkin's disease	-4.1	-0.3
Leukemias	-0.3	-0.2

Increasing Incidence	Mrt	Inc
Breast⊕	-0.3	1.5
Ovary⊕	-0.5	0.4
Testis⊕	-5.1	1.8
Urinary Bladder	-1.3	0.4
Thyroid	-1.1	1.5

Increasing Mortality

Increasing Incidence	Mrt	Inc
All sites	0.2	1.1
Esophagus	0.7	0.5
Liver & Intrahep	2.1	3.0
Lung & Bronchus	1.5	1.1
Melanomas of skin	1.2	3.7
Prostate⊕	0.7	4.2
Kidney & Renal pelvis	0.8	1.9
Brain & Other nervous	0.5	0.7
Non-Hodgkin's lymphomas	1.9	2.9
Multiple myeloma	1.3	0.8

Note: The EAPC is the Estimated Annual Percent Change over the time interval.

⊕ EAPCs for sex specific sites are only for the proper sex. EAPCs for breast cancer are for females only.

§ SEER Program. Rates are per 100,000 and are age-adjusted to the 1970 U.S. standard population.

* NCHS public use tape. Rates are per 100,000 and are age-adjusted to the 1970 U.S. standard population.

Table I-5

TRENDS IN SEER INCIDENCE§ AND U.S. MORTALITY* FOR SELECTED CANCER SITES, 1973-97

All Races, Males and Females⊕

		Decreasing Incidence		Increasing Incidence	
		Mortality PC	Incidence PC	Mortality PC	Incidence PC
Decreasing Mortality	Oral cavity & Pharynx	-30.4	-11.5		
	Stomach	-43.5	-34.0		
	Colon & Rectum	-24.7	-7.5		
	Pancreas	-3.5	-9.9		
	Larynx	-12.3	-17.8		
	Cervix uteri⊕	-47.7	-42.7		
	Corpus & Uterus, NOS⊕	-27.9	-26.4		
	Ovary⊕	-12.4	-0.5		
	Hodgkin's disease	-64.8	-16.0		
	Leukemias	-7.3	-7.6		
	Breast⊕			-11.2	28.4
	Testis⊕			-70.0	52.6
	Urinary Bladder			-23.8	8.1
	Thyroid			-19.7	49.1
Increasing Mortality	All sites			1.6	21.2
	Esophagus			19.9	13.2
	Liver & Intrahep			53.2	92.4
	Lung & Bronchus			37.1	27.3
	Melanomas of skin			36.4	145.5
	Prostate⊕			7.2	113.9
	Kidney & Renal pelvis			17.6	43.5
	Brain & Other nervous			11.2	18.4
	Non-Hodgkin's lymphomas			45.9	81.3
	Multiple myeloma			34.3	18.0

Note: PC is the Percent Change over the time interval.

⊕ PCs for sex specific sites are only for the proper sex. PCs for breast cancer are for females only.

§ SEER Program. Rates are per 100,000 and are age-adjusted to the 1970 U.S. standard population.

* NCHS public use tape. Rates are per 100,000 and are age-adjusted to the 1970 U.S. standard population.

Table I-6
AGE-ADJUSTED SEER INCIDENCE AND U.S. MORTALITY RATES AND 5-YEAR RELATIVE SURVIVAL RATES
By Primary Cancer Site, Sex and Time Period

All Races

Site	Incidence§ (1993-97) Total	Males	Females	US Mortality* (1993-97) Total	Males	Females	Survival§ (1989-96) Total	Males	Females
All Sites	400.6	475.5	347.8	168.3	209.7	139.8	60.0	58.4	61.7
Oral Cavity & Pharynx:	10.2	15.3	5.9	2.6	4.0	1.5	54.0	51.0	60.4
Lip	1.0	1.9	0.3	0.0	0.0	0.0	93.1	92.9	94.4
Tongue	2.2	3.2	1.4	0.6	0.9	0.3	50.4	46.2	58.7
Salivary gland	1.0	1.3	0.8	0.2	0.3	0.1	72.5	67.4	78.5
Floor of mouth	0.9	1.3	0.5	0.1	0.1	0.0	53.4	49.9	61.3
Gum & other oral cavity	1.7	2.2	1.3	0.4	0.6	0.3	49.4	40.6	63.5
Nasopharynx	0.7	0.9	0.4	0.2	0.3	0.1	54.0	53.7	54.8
Tonsil	1.1	1.8	0.5	0.2	0.3	0.1	48.6	47.9	50.2
Oropharynx	0.3	0.5	0.1	0.2	0.3	0.1	32.3	30.4	37.8
Hypopharynx	0.9	1.5	0.4	0.1	0.3	0.1	29.9	28.6	34.1
Other oral cavity & pharynx	0.3	0.6	0.2	0.5	0.9	0.3	26.9	27.9	24.6
Digestive System:	72.9	90.8	58.8	38.6	49.9	30.0	43.2	41.4	45.2
Esophagus	3.9	6.4	1.8	3.6	6.3	1.5	12.4	12.3	12.5
Stomach	6.9	10.2	4.3	4.1	5.9	2.8	21.3	18.9	25.1
Small intestine	1.4	1.7	1.2	0.3	0.4	0.3	49.7	48.0	51.8
Colon & Rectum:	43.9	52.4	37.2	17.2	21.0	14.4	61.3	61.4	61.2
Colon	31.5	36.4	27.8	-	-	-	61.8	62.4	61.3
Rectum	12.3	15.9	9.4	-	-	-	60.0	59.3	60.9
Anus, anal canal & anorectum	1.0	0.9	1.0	0.1	0.1	0.1	60.0	54.2	64.1
Liver & Intrahep:	4.0	6.1	2.3	3.5	5.1	2.3	5.3	4.5	6.9
Liver	3.3	5.3	1.7	2.8	4.3	1.7	5.7	4.6	8.1
Intrahep bile duct	0.7	0.8	0.5	0.7	0.8	0.6	3.2	3.8	2.6
Gallbladder	0.9	0.7	1.1	0.6	0.4	0.8	13.8	12.0	14.3
Other biliary	1.1	1.3	0.9	0.5	0.6	0.4	17.5	19.1	16.0
Pancreas	8.8	10.2	7.7	8.3	9.7	7.2	4.1	3.8	4.5
Retroperitoneum	0.4	0.4	0.4	0.1	0.1	0.1	47.8	48.0	47.3
Peritoneum, omentum & mesentery	0.4	0.2	0.6	0.1	0.1	0.2	29.9	19.3	34.7
Other digestive system	0.3	0.3	0.3	0.1	0.2	0.1	3.4	2.6	7.1
Respiratory System:	61.7	83.1	45.3	50.9	72.4	34.7	17.9	17.7	18.3
Nose, nasal cavity & middle ear	0.6	0.8	0.4	0.2	0.2	0.1	52.8	54.0	51.2
Larynx	3.8	6.8	1.4	1.3	2.4	0.5	64.7	66.0	59.8
Lung & bronchus	56.2	73.7	43.0	49.2	69.4	34.0	14.1	12.6	16.3
Pleura	0.8	1.5	0.3	0.1	0.2	0.1	6.8	4.1	17.1
Trachea & other respiratory organs	0.2	0.3	0.1	0.1	0.1	0.1	47.0	47.0	46.6
Bones & joints	0.9	1.1	0.7	0.4	0.5	0.3	66.8	64.4	70.1
Soft tissue (incl heart)	2.5	2.9	2.1	1.3	1.4	1.2	65.7	64.7	66.8
Skin (ex basal & squam):	16.7	21.9	12.4	2.9	4.2	1.8	71.2	59.7	91.3
Melanomas of skin	13.6	16.6	11.2	2.2	3.2	1.5	88.3	85.6	91.5
Other non-epithelial skin	3.1	5.3	1.1	0.6	1.1	0.3	28.7	20.8	89.5
Breast	60.8	1.0	111.9	13.9	0.3	24.8	85.0	81.3	85.0

Note: Incidence and mortality rates are per 100,000 and are age-adjusted to the 1970 U.S. standard population. Survival rates are expressed as percents.

§ SEER Program.
* NCHS public use tape.
- Statistic could not be calculated.

Table I-6 - continued
AGE-ADJUSTED SEER INCIDENCE AND U.S. MORTALITY RATES AND 5-YEAR RELATIVE SURVIVAL RATES
By Primary Cancer Site, Sex and Time Period

All Races

Site	Incidence§ (1993-97) Total	Males	Females	US Mortality* (1993-97) Total	Males	Females	Survival§ (1989-96) Total	Males	Females
Female Genital System:	25.3	-	47.0	8.0	-	14.3	69.8	-	69.8
Cervix uteri	4.1	-	7.8	1.5	-	2.7	69.9	-	69.9
Corpus uteri	11.5	-	21.3	1.0	-	1.7	84.6	-	84.6
Uterus, NOS	0.2	-	0.4	0.9	-	1.6	27.8	-	27.8
Ovary	7.8	-	14.6	4.2	-	7.5	50.4	-	50.4
Vagina	0.3	-	0.6	0.1	-	0.2	47.2	-	47.2
Vulva	1.0	-	1.7	0.2	-	0.3	75.6	-	75.6
Other female genital system	0.3	-	0.6	0.1	-	0.2	63.4	-	63.4
Male Genital System:	67.1	152.6	-	9.7	25.1	-	93.0	93.0	-
Prostate	64.4	147.0	-	9.5	24.7	-	93.1	93.1	-
Testis	2.3	4.6	-	0.1	0.2	-	95.4	95.4	-
Penis	0.3	0.6	-	0.1	0.2	-	67.9	67.9	-
Other male genital system	0.1	0.3	-	0.0	0.0	-	79.2	79.2	-
Urinary System:	26.8	42.7	14.6	6.9	10.7	4.1	73.5	76.1	67.8
Urinary bladder	16.7	28.7	7.6	3.2	5.5	1.7	81.0	83.3	74.5
Kidney & renal pelvis	9.4	12.8	6.5	3.5	5.0	2.3	60.8	61.1	60.4
Ureter	0.4	0.7	0.3	0.1	0.1	0.1	58.2	58.4	57.8
Other urinary system	0.3	0.4	0.1	0.1	0.1	0.0	62.3	68.2	53.0
Eye & Orbit	0.7	0.8	0.6	0.1	0.1	0.1	79.6	78.3	81.2
Brain & Nervous System:	6.0	7.2	4.9	4.1	5.0	3.4	30.8	31.3	30.2
Brain	5.6	6.8	4.6	4.1	4.9	3.3	28.3	28.8	27.7
Cranial nerves & other nervous system	0.4	0.4	0.3	0.1	0.1	0.1	69.6	71.6	67.0
Endocrine System:	6.0	3.7	8.3	0.7	0.7	0.6	91.7	85.6	94.0
Thyroid	5.4	3.0	7.7	0.3	0.3	0.4	95.1	91.3	96.3
Other endocrine & thymus	0.6	0.7	0.5	0.3	0.4	0.3	59.6	60.1	58.9
Lymphomas:	18.7	22.8	15.1	7.3	9.0	6.0	56.9	53.0	61.8
Hodgkin's disease	2.7	3.0	2.4	0.5	0.6	0.4	82.1	79.6	85.1
Non-Hodgkin's lymphomas	16.0	19.8	12.7	6.9	8.5	5.6	51.6	47.6	56.7
Multiple myeloma	4.5	5.5	3.7	3.1	3.8	2.6	28.5	29.7	27.2
Leukemias:	10.3	13.2	8.0	6.3	8.3	4.8	43.9	44.8	42.8
Lymphocytic:	4.6	5.9	3.4	1.8	2.6	1.3	66.8	66.3	67.5
Acute lymphocytic	1.5	1.7	1.2	0.5	0.6	0.4	60.1	58.3	62.5
Chronic lymphocytic	3.0	4.1	2.1	1.2	1.8	0.8	71.4	71.6	71.1
Other lymphocytic	0.1	0.2	0.1	0.1	0.1	0.1	44.5	43.8	45.4
Myeloid:	4.4	5.4	3.6	2.7	3.5	2.2	21.7	21.0	22.5
Acute myeloid	2.7	3.3	2.3	1.9	2.4	1.6	14.6	13.6	15.7
Chronic myeloid	1.4	1.9	1.1	0.7	0.9	0.6	32.7	31.8	33.9
Other myeloid	0.2	0.2	0.2	0.1	0.1	0.1	32.1	29.5	35.0
Monocytic:	0.2	0.3	0.2	0.1	0.1	0.1	18.0	19.6	15.8
Acute monocytic	0.2	0.2	0.2	0.1	0.1	0.0	19.4	22.5	15.3
Chronic monocytic	0.0	0.0	0.0	0.0	0.0	0.0	14.1	-	-
Other monocytic	0.0	0.0	0.0	0.0	0.0	0.0	-	-	-
Other:	1.1	1.6	0.8	1.7	2.2	1.3	35.2	41.8	25.4
Other acute	0.4	0.5	0.3	0.9	1.1	0.7	10.6	10.1	11.2
Other chronic	0.0	0.0	0.0	0.0	0.1	0.0	40.6	-	-
Aleukemic, subleuk & NOS	0.7	1.0	0.4	0.7	1.0	0.5	50.9	58.8	36.5
Ill-defined & unspecified	9.7	11.0	8.6	11.5	14.2	9.5	12.5	13.2	11.8

Note: Incidence and mortality rates are per 100,000 and are age-adjusted to the 1970 U.S. standard population. Survival rates are expressed as percents.

§ SEER Program.
* NCHS public use tape.
- Statistic could not be calculated.

Table I-7
AGE-ADJUSTED SEER INCIDENCE AND U.S. MORTALITY RATES AND 5-YEAR RELATIVE SURVIVAL RATES
By Primary Cancer Site, Sex and Time Period

Whites

Site	Incidence§ (1993-97) Total	Males	Females	US Mortality* (1993-97) Total	Males	Females	Survival§ (1989-96) Total	Males	Females
All Sites	401.9	469.9	355.0	165.0	203.8	138.5	61.5	60.1	63.0
Oral Cavity & Pharynx:	9.9	14.7	5.9	2.4	3.7	1.4	56.2	53.7	61.3
Lip	1.2	2.2	0.4	0.0	0.1	0.0	93.0	92.8	94.0
Tongue	2.3	3.2	1.4	0.6	0.8	0.3	52.5	48.7	59.6
Salivary gland	1.1	1.3	0.9	0.2	0.3	0.1	73.2	67.9	79.5
Floor of mouth	0.9	1.3	0.5	0.1	0.1	0.0	55.6	52.6	62.2
Gum & other oral cavity	1.7	2.1	1.3	0.4	0.6	0.3	51.3	42.8	64.5
Nasopharynx	0.4	0.5	0.2	0.2	0.3	0.1	45.0	46.0	43.7
Tonsil	1.1	1.7	0.5	0.2	0.3	0.1	51.1	51.4	50.4
Oropharynx	0.3	0.4	0.1	0.2	0.2	0.1	36.8	33.9	45.1
Hypopharynx	0.8	1.4	0.4	0.1	0.2	0.1	31.2	29.6	36.4
Other oral cavity & pharynx	0.3	0.5	0.2	0.5	0.8	0.2	27.5	28.2	25.9
Digestive System:	69.9	86.6	56.6	36.8	47.5	28.6	44.8	43.2	46.6
Esophagus	3.6	6.0	1.6	3.3	5.8	1.3	13.2	13.2	13.2
Stomach	5.8	8.8	3.5	3.6	5.3	2.4	19.5	17.1	23.6
Small intestine	1.3	1.6	1.1	0.3	0.4	0.3	51.0	48.2	54.2
Colon & Rectum:	43.5	52.0	36.8	16.8	20.6	13.9	62.1	62.2	62.0
Colon	31.2	36.2	27.3	-	-	-	62.6	63.2	62.1
Rectum	12.3	15.8	9.5	-	-	-	60.7	60.2	61.5
Anus, anal canal & anorectum	1.0	0.9	1.1	0.1	0.1	0.1	62.4	59.0	64.7
Liver & Intrahep:	3.2	4.9	1.8	3.2	4.6	2.1	5.7	4.6	7.5
Liver	2.5	4.0	1.3	2.5	3.8	1.5	6.2	4.7	9.4
Intrahep bile duct	0.6	0.8	0.5	0.7	0.8	0.6	3.4	4.4	2.5
Gallbladder	0.9	0.6	1.1	0.6	0.4	0.8	13.5	10.0	14.5
Other biliary	1.0	1.3	0.8	0.5	0.6	0.4	18.2	20.6	15.9
Pancreas	8.4	9.7	7.4	8.1	9.5	7.0	4.2	3.8	4.5
Retroperitoneum	0.4	0.4	0.4	0.1	0.1	0.1	49.7	49.0	50.2
Peritoneum, omentum & mesentery	0.5	0.2	0.7	0.1	0.1	0.2	29.0	17.7	33.9
Other digestive system	0.3	0.3	0.3	0.1	0.2	0.1	2.2	1.1	7.0
Respiratory System:	61.8	81.7	46.8	50.5	70.6	35.4	18.3	18.1	18.5
Nose, nasal cavity & middle ear	0.6	0.7	0.4	0.1	0.2	0.1	55.1	55.6	54.5
Larynx	3.8	6.7	1.4	1.2	2.1	0.4	66.2	67.6	60.8
Lung & bronchus	56.4	72.3	44.5	48.9	67.9	34.7	14.4	12.9	16.6
Pleura	0.8	1.6	0.3	0.1	0.3	0.1	6.7	4.2	16.7
Trachea & other respiratory organs	0.2	0.3	0.1	0.1	0.1	0.1	47.4	49.1	43.3
Bones & joints	1.0	1.1	0.8	0.4	0.5	0.3	66.8	64.7	69.8
Soft tissue (incl heart)	2.4	2.8	2.1	1.2	1.4	1.2	66.9	66.1	67.9
Skin (ex basal & squam):	18.7	24.2	14.1	3.2	4.6	2.0	73.0	62.0	91.6
Melanomas of skin	15.6	18.9	13.0	2.5	3.5	1.7	88.5	85.8	91.7
Other non-epithelial skin	3.1	5.3	1.1	0.6	1.1	0.3	28.3	20.7	90.5
Breast	62.2	0.9	115.3	13.6	0.3	24.4	86.3	84.4	86.4

Note: Incidence and mortality rates are per 100,000 and are age-adjusted to the 1970 U.S. standard population. Survival rates are expressed as percents.

§ SEER Program.
* NCHS public use tape.
- Statistic could not be calculated.

Table I-7 - continued
AGE-ADJUSTED SEER INCIDENCE AND U.S. MORTALITY RATES AND 5-YEAR RELATIVE SURVIVAL RATES
By Primary Cancer Site, Sex and Time Period

Whites

Site	Incidence§ (1993-97) Total	Males	Females	US Mortality* (1993-97) Total	Males	Females	Survival§ (1989-96) Total	Males	Females
Female Genital System:	25.7	-	48.0	7.8	-	14.0	71.0	-	71.0
Cervix uteri	3.7	-	7.1	1.3	-	2.4	71.6	-	71.6
Corpus uteri	12.0	-	22.3	0.9	-	1.6	86.4	-	86.4
Uterus, NOS	0.2	-	0.3	0.8	-	1.5	24.5	-	24.5
Ovary	8.2	-	15.4	4.3	-	7.8	50.1	-	50.1
Vagina	0.3	-	0.5	0.1	-	0.2	49.3	-	49.3
Vulva	1.0	-	1.8	0.2	-	0.3	75.2	-	75.2
Other female genital system	0.3	-	0.6	0.1	-	0.1	63.0	-	63.0
Male Genital System:	65.2	147.3	-	8.9	23.0	-	94.0	94.0	-
Prostate	62.2	141.1	-	8.7	22.6	-	94.1	94.1	-
Testis	2.7	5.3	-	0.1	0.3	-	95.7	95.7	-
Penis	0.3	0.6	-	0.1	0.1	-	69.3	69.3	-
Other male genital system	0.1	0.3	-	0.0	0.0	-	77.1	77.1	-
Urinary System:	28.2	45.1	15.1	7.0	11.0	4.1	74.7	77.4	68.8
Urinary bladder	18.1	31.1	8.2	3.3	5.7	1.7	81.9	84.0	75.7
Kidney & renal pelvis	9.4	12.9	6.5	3.6	5.1	2.4	61.5	62.2	60.4
Ureter	0.5	0.7	0.3	0.1	0.1	0.1	58.6	59.1	57.7
Other urinary system	0.2	0.4	0.1	0.0	0.1	0.0	63.6	67.5	56.1
Eye & Orbit	0.8	0.9	0.7	0.1	0.1	0.1	79.9	79.1	80.9
Brain & Nervous System:	6.5	7.8	5.3	4.4	5.3	3.6	30.0	30.2	29.8
Brain	6.1	7.3	5.0	4.3	5.2	3.6	27.5	27.6	27.4
Cranial nerves & other nervous system	0.4	0.5	0.3	0.1	0.1	0.1	72.2	74.7	68.9
Endocrine System:	6.1	3.7	8.4	0.7	0.7	0.6	92.4	86.9	94.5
Thyroid	5.5	3.1	7.9	0.3	0.3	0.3	95.5	91.9	96.7
Other endocrine & thymus	0.6	0.6	0.5	0.3	0.4	0.3	58.5	60.7	55.9
Lymphomas:	19.4	23.5	15.8	7.6	9.3	6.2	57.9	54.2	62.5
Hodgkin's disease	2.9	3.2	2.7	0.5	0.6	0.4	82.8	80.6	85.5
Non-Hodgkin's lymphomas	16.5	20.3	13.2	7.1	8.7	5.8	52.6	48.7	57.5
Multiple myeloma	4.1	5.1	3.3	2.9	3.6	2.4	27.8	28.8	26.7
Leukemias:	10.6	13.6	8.2	6.4	8.4	4.8	45.4	46.5	43.8
Lymphocytic:	4.8	6.2	3.6	1.9	2.6	1.3	68.3	68.0	68.8
Acute lymphocytic	1.6	1.8	1.3	0.5	0.7	0.4	60.5	59.2	62.4
Chronic lymphocytic	3.1	4.3	2.2	1.2	1.8	0.8	72.9	73.1	72.6
Other lymphocytic	0.1	0.2	0.1	0.1	0.1	0.1	48.0	46.2	50.7
Myeloid:	4.4	5.5	3.6	2.8	3.5	2.2	21.4	21.1	21.8
Acute myeloid	2.8	3.4	2.3	2.0	2.5	1.6	14.0	13.1	15.0
Chronic myeloid	1.4	1.9	1.1	0.7	0.9	0.6	33.0	32.8	33.2
Other myeloid	0.2	0.2	0.2	0.1	0.1	0.1	32.3	31.8	32.9
Monocytic:	0.2	0.3	0.2	0.1	0.1	0.1	18.5	19.3	17.0
Acute monocytic	0.2	0.3	0.2	0.1	0.1	0.0	19.4	21.6	16.5
Chronic monocytic	0.0	0.0	0.0	0.0	0.0	0.0	18.3	-	-
Other monocytic	0.0	0.0	0.0	0.0	0.0	0.0	-	-	-
Other:	1.2	1.6	0.8	1.7	2.2	1.3	37.6	44.8	26.7
Other acute	0.4	0.5	0.3	0.9	1.2	0.7	10.8	10.2	11.6
Other chronic	0.0	0.0	0.0	0.0	0.1	0.0	44.7	-	-
Aleukemic, subleuk & NOS	0.7	1.0	0.5	0.7	1.0	0.5	53.9	62.0	38.5
Ill-defined & unspecified	9.5	10.9	8.3	11.2	13.8	9.3	12.8	13.8	11.8

Note: Incidence and mortality rates are per 100,000 and are age-adjusted to the 1970 U.S. standard population. Survival rates are expressed as percents.

§ SEER Program.
* NCHS public use tape.
- Statistic could not be calculated.

Table I-8
AGE-ADJUSTED SEER INCIDENCE AND U.S. MORTALITY RATES AND 5-YEAR RELATIVE SURVIVAL RATES
By Primary Cancer Site, Sex and Time Period

Blacks

Site	Incidence§ (1993-97) Total	Males	Females	US Mortality* (1993-97) Total	Males	Females	Survival§ (1989-96) Total	Males	Females
All Sites	455.2	615.5	340.9	219.1	299.6	166.9	48.9	48.5	49.3
Oral Cavity & Pharynx:	13.0	21.4	6.3	4.6	8.0	2.0	34.6	29.0	49.5
Lip	0.1	0.2	0.1	0.0	0.0	0.0	-	-	-
Tongue	2.6	4.2	1.3	1.0	1.7	0.4	30.7	27.1	42.6
Salivary gland	0.9	1.2	0.7	0.2	0.3	0.1	70.2	57.5	81.0
Floor of mouth	1.4	2.3	0.7	0.2	0.3	0.1	38.9	34.4	52.3
Gum & other oral cavity	2.4	3.7	1.3	0.7	1.1	0.4	38.6	28.3	61.1
Nasopharynx	0.7	1.1	0.4	0.3	0.5	0.1	42.4	36.3	54.7
Tonsil	1.9	3.4	0.7	0.4	0.7	0.2	29.9	26.5	38.1
Oropharynx	0.6	1.0	0.2	0.4	0.8	0.2	12.1	15.1	-
Hypopharynx	1.9	3.3	0.7	0.3	0.6	0.1	23.8	22.8	29.0
Other oral cavity & pharynx	0.7	1.2	0.3	1.2	2.1	0.5	20.4	21.7	-
Digestive System:	95.4	119.8	77.1	56.6	74.8	43.7	33.7	31.3	36.4
Esophagus	8.0	13.0	4.2	7.2	12.6	3.2	9.1	8.7	10.1
Stomach	11.5	17.5	7.2	7.9	11.9	5.2	21.6	20.5	23.3
Small intestine	2.5	3.0	2.1	0.5	0.6	0.4	45.7	47.2	43.8
Colon & Rectum:	50.2	57.8	44.7	22.8	27.5	19.7	52.2	52.7	51.9
Colon	38.6	43.2	35.4	-	-	-	52.2	52.8	51.8
Rectum	11.6	14.6	9.4	-	-	-	52.3	52.4	52.2
Anus, anal canal & anorectum	1.2	1.3	1.1	0.2	0.2	0.2	45.9	33.8	60.2
Liver & Intrahep:	5.3	8.5	2.7	4.8	7.3	3.0	2.6	1.6	5.3
Liver	4.8	7.9	2.5	4.3	6.6	2.5	2.5	1.7	5.0
Intrahep bile duct	0.4	0.6	0.3	0.6	0.7	0.5	2.6	0.0	6.9
Gallbladder	1.1	0.8	1.2	0.7	0.5	0.9	10.0	14.6	7.2
Other biliary	0.8	0.9	0.8	0.4	0.4	0.3	15.3	15.4	15.1
Pancreas	13.9	16.1	12.1	11.7	13.5	10.4	3.8	4.0	3.6
Retroperitoneum	0.4	0.3	0.5	0.1	0.1	0.1	34.3	46.8	24.1
Peritoneum, omentum & mesentery	0.2	0.2	0.3	0.1	0.1	0.1	34.3	-	-
Other digestive system	0.3	0.4	0.2	0.2	0.3	0.2	0.0	0.0	-
Respiratory System:	80.8	124.5	49.0	62.4	102.7	34.5	15.2	14.8	16.0
Nose, nasal cavity & middle ear	0.7	1.1	0.5	0.2	0.3	0.1	36.5	39.0	33.0
Larynx	6.4	11.7	2.3	2.7	5.4	0.9	53.7	53.7	54.0
Lung & bronchus	72.9	110.5	45.7	59.2	96.7	33.4	11.3	10.1	13.5
Pleura	0.6	0.9	0.3	0.1	0.1	0.0	6.9	4.1	-
Trachea & other respiratory organs	0.2	0.3	0.1	0.1	0.2	0.1	38.6	23.9	-
Bones & joints	0.8	1.0	0.6	0.5	0.6	0.4	66.0	60.3	70.7
Soft tissue (incl heart)	2.8	3.3	2.4	1.6	1.5	1.8	60.8	58.9	62.8
Skin (ex basal & squam):	4.3	7.5	1.7	1.0	1.5	0.7	33.2	23.0	82.4
Melanomas of skin	0.9	1.3	0.7	0.4	0.4	0.4	70.0	62.0	78.5
Other non-epithelial skin	3.4	6.1	1.1	0.7	1.1	0.3	28.8	20.2	84.0
Breast	58.7	1.4	102.8	18.4	0.5	31.3	71.3	59.3	71.4

Note: Incidence and mortality rates are per 100,000 and are age-adjusted to the 1970 U.S. standard population. Survival rates are expressed as percents.

§ SEER Program.
* NCHS public use tape.
- Statistic could not be calculated.

Table I-8 - continued
AGE-ADJUSTED SEER INCIDENCE AND U.S. MORTALITY RATES AND 5-YEAR RELATIVE SURVIVAL RATES
By Primary Cancer Site, Sex and Time Period

Blacks

Site	Incidence§ (1993-97) Total	Males	Females	US Mortality* (1993-97) Total	Males	Females	Survival§ (1989-96) Total	Males	Females
Female Genital System:	22.9	-	40.4	10.8	-	18.4	55.5	-	55.5
Cervix uteri	6.4	-	11.4	3.2	-	5.6	58.6	-	58.6
Corpus uteri	8.3	-	14.5	1.6	-	2.8	58.6	-	58.6
Uterus, NOS	0.4	-	0.8	1.8	-	3.0	24.9	-	24.9
Ovary	6.0	-	10.5	3.7	-	6.3	47.5	-	47.5
Vagina	0.6	-	1.0	0.2	-	0.3	38.4	-	38.4
Vulva	0.9	-	1.6	0.2	-	0.2	75.9	-	75.9
Other female genital system	0.3	-	0.6	0.1	-	0.2	61.2	-	61.2
Male Genital System:	101.0	241.1	-	20.1	54.0	-	86.6	86.6	-
Prostate	100.0	238.9	-	19.9	53.6	-	86.7	86.7	-
Testis	0.5	1.0	-	0.1	0.1	-	87.5	87.5	-
Penis	0.4	0.9	-	0.1	0.2	-	62.1	62.1	-
Other male genital system	0.1	0.3	-	0.0	0.0	-	-	-	-
Urinary System:	21.9	32.1	14.5	6.7	9.6	4.8	60.3	61.0	59.3
Urinary bladder	9.7	15.3	5.8	3.0	4.3	2.3	63.7	67.3	57.7
Kidney & renal pelvis	11.5	15.9	8.1	3.5	5.1	2.4	58.0	55.5	61.7
Ureter	0.1	0.2	0.1	0.0	0.1	0.0	-	-	-
Other urinary system	0.5	0.7	0.4	0.1	0.1	0.1	54.8	64.6	43.5
Eye & Orbit	0.2	0.2	0.2	0.0	0.0	0.0	80.3	77.8	-
Brain & Nervous System:	3.8	4.4	3.3	2.5	3.0	2.1	37.7	40.9	34.3
Brain	3.4	4.0	2.9	2.4	2.9	2.0	36.2	39.9	32.3
Cranial nerves & other nervous system	0.3	0.3	0.3	0.1	0.1	0.1	52.3	50.5	52.5
Endocrine System:	3.8	2.3	5.0	0.7	0.6	0.7	86.8	80.4	89.2
Thyroid	3.0	1.5	4.3	0.3	0.2	0.4	91.1	89.2	91.7
Other endocrine & thymus	0.8	0.8	0.7	0.4	0.4	0.3	69.6	63.7	72.7
Lymphomas:	15.0	20.1	10.8	5.3	7.0	4.1	49.4	43.7	58.0
Hodgkin's disease	2.4	2.8	2.0	0.5	0.6	0.3	76.7	71.0	83.2
Non-Hodgkin's lymphomas	12.6	17.3	8.8	4.9	6.3	3.8	41.9	37.4	49.4
Multiple myeloma	9.7	11.4	8.6	6.2	7.4	5.4	30.9	34.2	28.0
Leukemias:	8.2	10.7	6.4	5.9	7.8	4.6	34.0	31.9	36.2
Lymphocytic:	3.4	4.8	2.3	1.8	2.6	1.3	49.6	47.4	51.8
Acute lymphocytic	0.9	1.1	0.7	0.4	0.5	0.3	51.0	49.5	52.2
Chronic lymphocytic	2.4	3.6	1.5	1.3	1.9	0.9	50.2	47.0	53.9
Other lymphocytic	0.1	0.2	0.1	0.1	0.1	0.1	-	-	-
Myeloid:	3.8	4.6	3.3	2.5	3.0	2.1	23.1	19.5	26.6
Acute myeloid	2.2	2.4	2.1	1.6	1.9	1.4	14.4	12.7	16.0
Chronic myeloid	1.4	2.0	1.0	0.8	1.1	0.7	32.1	25.7	39.9
Other myeloid	0.2	0.2	0.2	0.1	0.1	0.0	40.1	-	-
Monocytic:	0.1	0.1	0.1	0.0	0.1	0.0	-	-	-
Acute monocytic	0.1	0.1	0.1	0.0	0.1	0.0	-	-	-
Chronic monocytic	0.0	0.0	0.0	0.0	0.0	0.0	-	-	-
Other monocytic	0.0	0.0	0.0	0.0	0.0	0.0	-	-	-
Other:	0.9	1.2	0.6	1.6	2.1	1.2	20.0	18.9	19.3
Other acute	0.3	0.4	0.3	0.7	0.9	0.6	11.1	9.7	0.0
Other chronic	0.0	0.0	0.0	0.1	0.1	0.0	-	-	-
Aleukemic, subleuk & NOS	0.5	0.7	0.3	0.8	1.1	0.6	26.4	26.1	23.9
Ill-defined & unspecified	12.9	14.3	11.8	15.8	20.6	12.4	10.9	9.3	12.4

Note: Incidence and mortality rates are per 100,000 and are age-adjusted to the 1970 U.S. standard population. Survival rates are expressed as percents.

§ SEER Program.
* NCHS public use tape.
- Statistic could not be calculated.

Table I-9

MESOTHELIOMAS (Invasive)

AGE-ADJUSTED CANCER SEER INCIDENCE RATES§, 1975-97

By Race, Sex and Year of Diagnosis

Year of Diagnosis

Race/Sex	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
All Races																							
Males & Females	0.5	0.6	0.5	0.6	0.7	0.8	0.6	0.7	0.9	0.9	0.8	0.8	0.8	0.8	1.0	0.9	0.9	1.0	0.9	0.9	0.9	0.9	0.8
Males	0.9	0.9	0.9	1.2	1.2	1.5	1.2	1.2	1.5	1.7	1.4	1.3	1.4	1.5	1.8	1.7	1.7	1.9	1.6	1.7	1.7	1.7	1.5
0-54	0.3	0.2	0.3	0.3	0.2	0.3	0.2	0.3	0.2	0.3	0.2	0.1	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.3	0.1	0.2	0.1
55-64	2.7	2.8	1.7	3.9	2.6	4.1	3.5	3.6	3.6	4.2	4.8	3.9	3.1	2.9	3.4	4.4	4.4	4.7	2.7	3.8	2.8	4.5	3.9
65-74	3.7	4.2	4.8	6.0	7.9	9.5	6.5	5.7	8.6	8.6	8.4	7.2	8.9	9.3	14.2	8.6	10.1	9.5	11.3	8.6	11.6	8.4	8.5
75-84	4.9	6.1	5.5	7.1	9.4	10.4	9.8	7.6	15.6	15.0	9.2	13.5	11.4	14.4	10.9	17.4	17.1	17.7	14.0	18.6	16.5	17.1	12.3
85+	0.0	7.2	1.7	5.0	9.7	6.3	3.1	6.1	6.0	11.8	5.8	7.1	8.3	9.5	14.6	12.9	11.1	24.9	15.8	8.6	14.3	13.7	16.8
Females	0.3	0.3	0.3	0.2	0.3	0.3	0.2	0.3	0.4	0.3	0.3	0.4	0.3	0.3	0.3	0.4	0.3	0.3	0.3	0.4	0.4	0.4	0.3
0-54	0.1	0.1	0.2	0.1	0.0	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1
55-64	0.9	1.2	0.8	0.6	0.9	1.3	0.6	0.8	1.1	0.7	0.8	1.5	0.6	0.4	1.1	1.2	0.8	1.0	0.9	1.5	0.6	1.4	0.5
65-74	0.8	0.9	0.9	0.8	1.9	1.3	0.5	2.3	1.9	1.2	1.7	2.0	0.7	1.5	1.9	1.6	1.2	1.4	1.2	1.5	1.6	1.5	1.5
75-84	1.5	1.3	0.8	1.8	0.9	1.0	2.5	1.3	2.6	3.3	2.7	1.8	2.7	2.0	1.5	2.6	3.4	2.3	3.5	2.2	3.1	2.4	2.2
85+	1.7	0.0	0.0	0.0	0.0	2.0	0.0	1.3	1.2	1.2	0.6	0.6	3.2	2.1	1.5	1.0	1.9	2.3	1.8	1.3	2.9	2.8	1.6
Whites																							
Males & Females	0.5	0.6	0.6	0.7	0.7	0.9	0.7	0.8	0.9	1.0	0.8	0.8	0.8	0.9	1.0	1.0	1.0	1.1	0.9	1.0	1.0	1.0	0.8
Males	0.9	1.0	0.9	1.3	1.3	1.7	1.3	1.3	1.6	1.8	1.5	1.5	1.5	1.6	1.9	1.9	1.8	2.1	1.8	1.8	1.8	1.9	1.6
Females	0.3	0.3	0.3	0.2	0.2	0.4	0.2	0.4	0.4	0.3	0.3	0.4	0.4	0.3	0.4	0.4	0.4	0.4	0.3	0.4	0.4	0.4	0.3
Blacks																							
Males & Females	0.4	0.3	0.2	0.2	0.6	0.3	0.2	0.2	0.8	0.3	0.7	0.4	0.6	0.5	0.6	0.6	0.5	0.6	0.5	0.8	0.6	0.4	0.7
Males	0.7	0.3	0.3	0.2	0.8	0.7	0.5	0.6	1.3	0.7	1.4	0.7	0.9	0.9	0.9	1.1	1.1	1.2	1.0	1.4	1.2	0.7	1.0
Females	0.2	0.4	0.1	0.3	0.4	0.0	0.0	0.0	0.4	0.0	0.2	0.2	0.3	0.3	0.4	0.3	0.2	0.1	0.3	0.4	0.2	0.1	0.5

§ SEER Program. Rates are per 100,000 and are age-adjusted to the 1970 U.S. standard population.

Table I-10
SEER INCIDENCE AND U.S. MORTALITY TRENDS BY PRIMARY CANCER SITE AND SEX
All Races, 1973-97

	Incidence§						US Mortality*					
	Total		Males		Females		Total		Males		Females	
Site	PC	EAPC	PC	EAPC	PC	EAPC	PC	EAPC	PC	EAPC	PC	EAPC
All Sites	21.2	1.1★	24.7	1.3★	15.7	0.8★	1.6	0.2★	-1.1	0.1	4.9	0.3★
Oral Cavity & Pharynx:	-11.5	-0.6★	-15.2	-0.8★	-6.3	-0.4★	-30.4	-1.6★	-34.4	-1.9★	-23.8	-1.3★
Lip	-56.6	-3.4★	-61.2	-3.9★	-14.6	-0.3	-69.3	-5.1★	-74.6	-5.8★	-26.7	-1.8★
Tongue	6.5	0.4★	11.1	0.5★	-5.4	0.3	-32.4	-1.7★	-37.7	-2.0★	-22.2	-1.3★
Salivary gland	29.0	0.7★	36.6	1.1★	21.6	0.2	-31.9	-1.4★	-27.8	-1.3★	-37.5	-1.7★
Floor of mouth	-25.5	-1.9★	-26.8	-1.9★	-24.4	-1.9★	-67.6	-5.0★	-71.1	-5.6★	-57.4	-3.9★
Gum & other oral cavity	-14.3	-0.2	-21.1	-0.3	-6.7	-0.4	-26.5	-1.6★	-31.9	-2.0★	-20.4	-1.1★
Nasopharynx	10.1	0.3	13.4	0.3	-0.5	0.1	-20.1	-1.0★	-22.6	-1.1★	-14.8	-0.7★
Tonsil	-1.7	0.0	14.2	0.4★	-34.7	-1.5★	-43.0	-2.7★	-44.0	-2.8★	-45.9	-2.8★
Oropharynx	15.8	0.1	5.6	0.1	44.6	0.3	41.7	1.3★	31.7	1.1★	64.9	1.8★
Hypopharynx	-1.3	-0.5	-4.0	-0.5	7.7	-0.8	-45.4	-3.0★	-45.2	-3.1★	-50.8	-2.9★
Other oral cavity & pharynx	50.7	0.7	65.3	0.8	23.6	0.4	-17.9	-0.6★	-22.3	-0.7★	-10.6	-0.5★
Digestive System:	-6.4	-0.3★	-4.7	-0.2★	-9.8	-0.5★	-17.3	-0.8★	-14.9	-0.7★	-21.3	-1.0★
Esophagus	13.2	0.5★	16.8	0.7★	-0.8	-0.1	19.9	0.7★	23.8	0.9★	4.2	0.0
Stomach	-34.0	-1.6★	-33.7	-1.6★	-35.1	-1.8★	-43.5	-2.3★	-43.5	-2.3★	-44.3	-2.4★
Small intestine	65.5	2.6★	75.7	2.9★	54.7	2.3★	9.6	0.6★	12.9	0.8★	4.6	0.3★
Colon & Rectum:	-7.5	-0.4★	-4.6	-0.2	-11.6	-0.7★	-24.7	-1.2★	-20.2	-1.0★	-29.8	-1.6★
Colon	-4.0	-0.2	1.2	0.0	-10.0	-0.6★	-	-	-	-	-	-
Rectum	-15.1	-0.9★	-15.5	-0.8★	-15.6	-1.1★	-	-	-	-	-	-
Anus, anal canal & anorectum	71.4	2.1★	103.2	2.5★	50.1	1.7★	416.2	7.9★	388.9	7.8★	417.2	8.0★
Liver & Intrahep:	92.4	3.0★	104.9	3.2★	62.5	2.6★	53.2	2.1★	62.1	2.4★	37.3	1.7★
Liver	74.2	2.4★	90.4	2.6★	37.6	1.6★	28.6	1.3★	41.3	1.7★	6.5	0.5★
Intrahep bile duct	361.6	9.1★	348.4	9.6★	359.1	8.8★	727.7	9.4★	734.6	9.4★	723.1	9.6★
Gallbladder	-44.7	-2.2★	-36.1	-1.9★	-48.3	-2.2★	-46.5	-2.7★	-42.1	-2.4★	-47.4	-2.7★
Other biliary	-13.6	-0.7★	2.6	-0.5★	-27.0	-0.8★	-44.6	-2.6★	-43.5	-2.5★	-45.0	-2.7★
Pancreas	-9.9	-0.4★	-17.0	-0.8★	-3.1	0.1	-3.5	-0.2★	-12.4	-0.6★	6.2	0.3★
Retroperitoneum	-25.7	-0.8★	-20.6	-1.0	-27.7	-0.6	-61.3	-4.5★	-61.1	-4.8★	-61.6	-4.3★
Peritoneum, omentum & mesentery	183.2	5.2★	-3.8	1.2	365.0	7.4★	8.0	0.1	-45.4	-2.3★	44.3	1.3
Other digestive system	18.3	-0.3	4.6	-0.1	37.7	-0.7	-55.9	-4.1★	-53.2	-3.9★	-59.1	-4.3★
Respiratory System:	22.8	0.9★	-5.7	-0.2	114.0	3.4★	33.7	1.4★	4.6	0.3	140.7	4.0★
Nose, nasal cavity & middle ear	-10.7	-0.2	-14.1	-0.3	-8.1	0.1	-45.0	-2.6★	-44.8	-2.8★	-45.6	-2.2★
Larynx	-17.8	-0.8★	-22.3	-1.1★	5.3	0.5	-12.3	-0.5★	-20.4	-0.9★	36.6	1.2★
Lung & bronchus	27.3	1.1★	-4.5	-0.2	126.7	3.6★	37.1	1.5★	6.5	0.3★	149.2	4.1★
Pleura	71.0	2.7★	94.1	3.1★	28.1	1.9★	3.2	0.1	20.4	0.8★	-29.3	-1.5★
Trachea & other respiratory organs	-15.8	-0.8★	-31.2	-1.2★	8.9	-0.4	-67.6	-4.7★	-70.5	-5.2★	-62.3	-4.0★
Bones & joints	13.8	0.5★	9.5	0.5★	18.9	0.5	-51.3	-3.0★	-53.4	-3.2★	-49.2	-2.8★
Soft tissue (incl heart)	25.3	0.9★	17.5	0.8★	34.6	1.0★	66.1	2.3★	52.9	2.1★	80.5	2.6★
Skin (ex basal & squam):	161.7	4.6★	210.2	5.8★	115.7	3.0★	25.4	1.0★	37.2	1.5★	8.4	0.2
Melanomas of skin	145.5	3.7★	181.8	4.4★	113.7	2.9★	36.4	1.2★	50.2	1.8★	19.9	0.5★
Other non-epithelial skin	337.2	10.0★	494.6	12.1★	138.4	4.3★	-3.3	0.3	7.6	1.0★	-26.1	-1.2★
Breast	27.7	1.5★	14.5	0.9★	28.4	1.5★	-11.1	-0.3★	-17.7	-0.6	-11.2	-0.3★

The PC is the Percent Change over the time interval.
The EAPC is the Estimated Annual Percent Change over the time interval.
§ SEER Program. Rates are per 100,000 and are age-adjusted to the 1970 U.S. standard population.
* NCHS public use tape. Rates are per 100,000 and are age-adjusted to the 1970 U.S. standard population.
★ The EAPC is significantly different from zero (p<.05).
- Statistic could not be calculated.

Table I-10 - continued
SEER INCIDENCE AND U.S. MORTALITY TRENDS BY PRIMARY CANCER SITE AND SEX
All Races, 1973-97

	Incidence§						US Mortality*					
	Total		Males		Females		Total		Males		Females	
Site	PC	EAPC	PC	EAPC	PC	EAPC	PC	EAPC	PC	EAPC	PC	EAPC
Female Genital System:	-22.3	-1.0★	-	-	-22.6	-1.1★	-25.9	-1.2★	-	-	-26.3	-1.2★
Cervix uteri	-43.5	-2.2★	-	-	-42.7	-2.1★	-48.7	-2.7★	-	-	-47.7	-2.6★
Corpus uteri	-25.4	-1.5★	-	-	-26.3	-1.6★	-6.3	-0.6★	-	-	-6.5	-0.6★
Uterus, NOS	-31.5	-1.9★	-	-	-29.8	-1.8★	-41.9	-2.2★	-	-	-42.1	-2.2★
Ovary	-0.7	0.4★	-	-	-0.5	0.4★	-11.2	-0.4★	-	-	-12.4	-0.5★
Vagina	-18.6	-1.0★	-	-	-19.1	-0.9★	-31.5	-1.6★	-	-	-31.5	-1.6★
Vulva	16.1	0.4	-	-	18.4	0.4	-22.8	-0.9★	-	-	-23.4	-0.9★
Other female genital system	-18.6	-0.5	-	-	-20.5	-0.5	-24.3	-1.0★	-	-	-25.9	-1.1★
Male Genital System:	123.4	4.4★	109.0	4.0★	-	-	1.7	0.5★	4.2	0.6★	-	-
Prostate	129.9	4.5★	113.9	4.2★	-	-	5.1	0.6★	7.2	0.7★	-	-
Testis	54.3	1.9★	52.6	1.8★	-	-	-69.7	-5.1★	-70.0	-5.1★	-	-
Penis	-37.0	-1.6★	-37.3	-1.7★	-	-	-34.1	-2.0★	-35.0	-2.0★	-	-
Other male genital system	41.1	1.6★	41.5	1.5★	-	-	-37.0	-3.3★	-38.9	-3.5★	-	-
Urinary System:	17.7	0.9★	14.2	0.7★	25.3	1.1★	-6.9	-0.3★	-9.4	-0.5★	-1.7	-0.1
Urinary bladder	8.1	0.4★	6.6	0.4★	11.9	0.4★	-23.8	-1.3★	-24.9	-1.4★	-19.4	-1.1★
Kidney & renal pelvis	43.5	1.9★	37.9	1.7★	51.7	2.2★	17.6	0.8★	16.8	0.8★	19.2	0.9★
Ureter	-16.7	-1.1★	-14.4	-1.1★	-20.8	-1.1★	-4.3	-0.5★	-7.2	-0.5★	-2.5	-0.6★
Other urinary system	8.5	-0.5	21.5	-0.1	-10.6	-1.2	-40.9	-2.4★	-36.7	-2.5★	-42.6	-2.2★
Eye & Orbit	-18.5	-0.8★	-27.6	-0.7★	-4.1	-0.8★	-45.0	-2.7★	-42.6	-2.6★	-48.6	-2.9★
Brain & Nervous System:	18.4	0.7★	20.5	0.7★	16.0	0.7★	11.2	0.5★	10.1	0.5★	12.8	0.5★
Brain	18.5	0.7★	20.3	0.7★	16.7	0.7★	36.0	1.4★	35.4	1.4★	36.9	1.4★
Cranial nerves & other nervous system	16.1	1.0★	24.7	0.9★	6.4	1.1	-87.8	-9.2★	-88.8	-9.4★	-86.5	-8.9★
Endocrine System:	48.7	1.5★	31.7	1.0★	57.5	1.7★	-13.0	-0.7★	-1.2	-0.2★	-20.7	-1.0★
Thyroid	49.1	1.5★	32.7	1.0★	57.1	1.7★	-19.7	-1.1★	3.9	-0.2	-31.1	-1.7★
Other endocrine & thymus	44.4	1.6★	27.6	1.1★	63.8	2.1★	-3.8	-0.1	-5.8	-0.2	-1.7	0.0
Lymphomas:	55.3	2.3★	58.2	2.5★	51.3	2.0★	22.5	1.2★	22.2	1.2★	23.3	1.2★
Hodgkin's disease	-16.0	-0.3★	-25.5	-0.8★	-2.6	0.3	-64.8	-4.1★	-68.0	-4.4★	-59.9	-3.8★
Non-Hodgkin's lymphomas	81.3	2.9★	90.3	3.3★	69.2	2.4★	45.9	1.9★	47.7	2.0★	43.6	1.8★
Multiple myeloma	18.0	0.8★	20.4	0.9★	14.4	0.7★	34.3	1.3★	35.2	1.3★	34.1	1.3★
Leukemias:	-7.6	-0.2	-9.2	-0.2	-6.7	-0.2	-7.3	-0.3★	-6.8	-0.3★	-7.7	-0.3★
Lymphocytic:	-10.7	-0.1	-16.9	-0.2	-4.1	-0.1	-16.4	-0.5★	-16.7	-0.5★	-15.7	-0.6★
Acute lymphocytic	19.4	1.3★	8.5	1.1★	33.9	1.4★	-33.0	-1.5★	-37.3	-1.7★	-27.0	-1.3★
Chronic lymphocytic	-19.4	-0.6★	-22.4	-0.6★	-17.4	-0.7★	11.3	0.7★	11.6	0.7★	10.1	0.6★
Other lymphocytic	-43.7	-2.7★	-54.1	-2.3★	-28.9	-3.5★	-70.9	-5.1★	-70.5	-5.0★	-71.6	-5.3★
Myeloid:	-2.0	-0.1	1.6	-0.2	-6.1	-0.2	-5.9	-0.6★	-4.4	-0.6★	-7.7	-0.7★
Acute myeloid	9.5	0.3	14.9	0.3	5.1	0.2	4.2	-0.3	6.4	-0.2	2.2	-0.4★
Chronic myeloid	-11.4	-0.2	-5.4	0.0	-19.8	-0.4	-10.4	-0.5★	-9.4	-0.5★	-12.5	-0.5★
Other myeloid	-40.5	-3.4★	-51.5	-4.2★	-28.6	-2.6★	-71.3	-5.5★	-70.5	-5.4★	-72.3	-5.7★
Monocytic:	-27.0	-1.1★	-22.5	-1.4★	-35.7	-1.0	-74.0	-5.4★	-73.9	-5.7★	-74.0	-5.2★
Acute monocytic	1.4	0.3	16.1	0.2	-18.2	0.3	-70.2	-4.8★	-68.6	-4.7★	-72.0	-4.9★
Chronic monocytic	-64.4	-2.8	-80.8	-	-46.5	-	-54.6	-1.9★	-59.8	-2.4★	-46.5	-1.0
Other monocytic	-91.8	-	-95.0	-	-88.9	-	-88.3	-9.7★	-90.2	-10.8★	-85.9	-8.4★
Other:	-11.1	-0.2	-9.9	-0.2	-11.9	-0.2	14.4	0.9★	15.2	0.8★	13.9	1.0★
Other acute	-28.6	-0.4	-30.6	-0.3	-20.2	-0.3	3.5	0.6★	3.2	0.6★	5.1	0.8★
Other chronic	-34.8	-1.9	-63.3	-2.4	21.5	-1.8	-21.4	-0.8★	-10.2	-0.3	-31.4	-1.2★
Aleukemic, subleuk & NOS	4.5	0.1	9.2	0.0	-6.6	0.0	35.5	1.3★	35.7	1.2★	33.9	1.4★
Ill-defined & unspecified	-14.1	-0.5★	-16.2	-0.6★	-11.6	-0.5★	11.2	0.5★	16.7	0.8★	5.2	0.3

PC The PC is the Percent Change over the time interval.
EAPC The EAPC is the Estimated Annual Percent Change over the time interval.
§ SEER Program. Rates are per 100,000 and are age-adjusted to the 1970 U.S. standard population.
* NCHS public use tape. Rates are per 100,000 and are age-adjusted to the 1970 U.S. standard population.
★ The EAPC is significantly different from zero ($p<.05$).
- Statistic could not be calculated.

Table I-11
SEER INCIDENCE AND U.S. MORTALITY TRENDS BY PRIMARY CANCER SITE AND SEX
Whites, 1973-97

	Incidence§						US Mortality*					
	Total		Males		Females		Total		Males		Females	
Site	PC	EAPC	PC	EAPC	PC	EAPC	PC	EAPC	PC	EAPC	PC	EAPC
All Sites	21.1	1.1★	22.9	1.2★	16.9	0.8★	1.4	0.2★	-2.0	0.0	5.1	0.3★
Oral Cavity & Pharynx:	-13.8	-0.7★	-19.2	-0.9★	-6.3	-0.3★	-33.3	-1.8★	-38.4	-2.1★	-24.8	-1.4★
Lip	-54.5	-3.2★	-59.3	-3.7★	-15.5	-0.3	-68.5	-5.0★	-74.3	-5.7★	-14.0	-1.6★
Tongue	7.6	0.5★	10.5	0.5★	-3.6	0.4	-33.6	-1.8★	-39.9	-2.2★	-22.4	-1.4★
Salivary gland	37.2	0.8★	44.6	1.1★	30.4	0.4	-32.3	-1.4★	-28.3	-1.2★	-38.2	-1.7★
Floor of mouth	-26.8	-1.9★	-27.2	-2.0★	-29.0	-1.9★	-68.1	-5.0★	-71.8	-5.7★	-58.0	-3.8★
Gum & other oral cavity	-15.6	-0.2	-25.3	-0.4	-3.8	-0.2	-27.3	-1.7★	-33.2	-2.2★	-21.5	-1.2★
Nasopharynx	-20.4	-1.0★	-17.7	-1.1★	-30.3	-1.1	-28.9	-1.6★	-33.0	-1.9★	-19.4	-1.0★
Tonsil	-4.0	0.0	5.5	0.3	-28.9	-1.2★	-44.9	-2.8★	-47.0	-3.0★	-45.9	-2.8★
Oropharynx	8.2	-0.2	-3.9	-0.1	39.1	-0.2	29.0	1.0★	16.1	0.6★	59.1	1.7★
Hypopharynx	-7.3	-0.7★	-11.0	-0.8★	0.1	-0.8	-48.2	-3.2★	-50.0	-3.4★	-45.9	-2.8★
Other oral cavity & pharynx	52.0	0.6	60.8	0.5	33.2	0.5	-23.5	-0.9★	-29.2	-1.1★	-13.5	-0.7★
Digestive System:	-8.8	-0.4★	-7.4	-0.3★	-12.3	-0.6★	-19.1	-0.9★	-16.4	-0.8★	-23.6	-1.2★
Esophagus	23.3	1.0★	28.6	1.2★	-1.1	0.0	33.5	1.2★	38.3	1.5★	10.4	0.2★
Stomach	-39.7	-2.0★	-38.5	-1.9★	-43.2	-2.3★	-46.4	-2.5★	-46.2	-2.5★	-48.1	-2.7★
Small intestine	53.4	2.4★	58.6	2.6★	47.4	2.1★	7.3	0.4★	10.4	0.7★	2.4	0.1
Colon & Rectum:	-9.6	-0.5★	-7.5	-0.4★	-13.2	-0.8★	-27.1	-1.4★	-22.8	-1.1★	-32.2	-1.7★
Colon	-6.1	-0.3★	-1.3	-0.1	-12.0	-0.7★	-	-	-	-	-	-
Rectum	-17.2	-1.0★	-18.9	-1.0★	-16.4	-1.1★	-	-	-	-	-	-
Anus, anal canal & anorectum	70.4	2.1★	100.7	2.3★	50.9	1.9★	416.5	7.9★	340.3	7.6★	460.5	8.1★
Liver & Intrahep:	77.6	2.7★	94.7	2.9★	42.3	2.0★	50.3	2.1★	60.0	2.4★	33.4	1.5★
Liver	56.1	1.8★	77.6	2.2★	14.3	0.8★	23.8	1.2★	37.4	1.6★	1.0	0.2
Intrahep bile duct	376.8	9.2★	345.7	9.7★	387.3	9.0★	743.8	9.5★	765.1	9.5★	719.5	9.6★
Gallbladder	-48.0	-2.4★	-37.9	-2.3★	-51.7	-2.4★	-49.2	-2.9★	-45.1	-2.6★	-49.7	-2.9★
Other biliary	-13.6	-0.8★	6.3	-0.6	-30.6	-0.9★	-45.3	-2.7★	-44.1	-2.5★	-45.8	-2.7★
Pancreas	-10.9	-0.5★	-18.4	-1.0★	-4.2	0.0	-4.8	-0.2★	-13.4	-0.7★	4.5	0.2★
Retroperitoneum	-17.9	-0.6	-10.7	-0.8	-21.4	-0.5	-60.0	-4.5★	-59.8	-4.8★	-60.4	-4.3★
Peritoneum, omentum & mesentery	197.6	5.3★	5.6	1.2	375.7	7.7★	10.9	0.3	-43.4	-2.0★	48.1	1.5
Other digestive system	19.8	-0.2	1.7	0.0	43.3	-0.5	-53.6	-4.0★	-50.8	-3.8★	-57.0	-4.2★
Respiratory System:	25.2	1.0★	-6.9	-0.3	125.3	3.5★	34.8	1.4★	3.7	0.2	145.2	4.1★
Nose, nasal cavity & middle ear	-9.6	-0.3	-12.7	-0.5	-6.4	-0.1	-45.1	-2.6★	-44.1	-3.0★	-46.9	-2.2★
Larynx	-18.5	-0.8★	-24.3	-1.2★	7.5	0.5	-17.0	-0.8★	-25.9	-1.2★	34.6	1.1★
Lung & bronchus	30.0	1.2★	-5.8	-0.2	138.9	3.8★	38.4	1.5★	5.8	0.3★	153.8	4.2★
Pleura	78.7	2.8★	98.9	3.3★	34.7	1.8★	9.4	0.3	25.7	1.0★	-24.9	-1.3★
Trachea & other respiratory organs	-15.4	-0.9★	-29.2	-1.3★	3.7	-0.4	-68.6	-4.9★	-72.1	-5.4★	-62.2	-4.1★
Bones & joints	19.0	0.6★	15.2	0.6★	23.3	0.7	-50.9	-2.9★	-53.0	-3.2★	-49.2	-2.7★
Soft tissue (incl heart)	21.9	0.9★	11.9	0.7★	34.1	1.0★	63.4	2.2★	51.9	2.0★	75.9	2.4★
Skin (ex basal & squam):	169.6	4.7★	213.7	5.8★	127.4	3.3★	29.0	1.1★	40.2	1.6★	12.0	0.3★
Melanomas of skin	156.6	3.9★	191.3	4.6★	125.7	3.2★	40.6	1.4★	54.5	1.9★	23.3	0.7★
Other non-epithelial skin	329.1	10.5★	460.6	12.4★	150.1	4.7★	-3.5	0.2	5.9	0.8★	-24.8	-1.2★
Breast	27.0	1.5★	17.4	0.8★	29.1	1.5★	-13.8	-0.4★	-20.6	-0.7★	-13.4	-0.4★

The PC is the Percent Change over the time interval.
The EAPC is the Estimated Annual Percent Change over the time interval.
§ SEER Program. Rates are per 100,000 and are age-adjusted to the 1970 U.S. standard population.
* NCHS public use tape. Rates are per 100,000 and are age-adjusted to the 1970 U.S. standard population.
★ The EAPC is significantly different from zero (p<.05).
- Statistic could not be calculated.

Table I-11 - continued
SEER INCIDENCE AND U.S. MORTALITY TRENDS BY PRIMARY CANCER SITE AND SEX
Whites, 1973-97

	Incidence§						US Mortality*					
	Total		Males		Females		Total		Males		Females	
Site	PC	EAPC	PC	EAPC	PC	EAPC	PC	EAPC	PC	EAPC	PC	EAPC
Female Genital System:	-22.1	-1.0★	-	-	-21.6	-1.0★	-24.5	-1.1★	-	-	-24.4	-1.1★
Cervix uteri	-45.1	-2.2★	-	-	-43.5	-2.0★	-47.3	-2.6★	-	-	-45.8	-2.5★
Corpus uteri	-26.4	-1.6★	-	-	-26.5	-1.6★	-7.7	-0.8★	-	-	-7.1	-0.7★
Uterus, NOS	-41.7	-2.7★	-	-	-39.6	-2.6★	-43.3	-2.3★	-	-	-43.1	-2.3★
Ovary	0.5	0.4★	-	-	1.8	0.5★	-10.9	-0.4★	-	-	-11.6	-0.4★
Vagina	-18.8	-1.1★	-	-	-18.5	-1.0★	-31.4	-1.6★	-	-	-30.8	-1.6★
Vulva	20.4	0.5★	-	-	24.6	0.6★	-19.3	-0.8★	-	-	-19.1	-0.8★
Other female genital system	-9.7	-0.2	-	-	-10.9	-0.2	-21.0	-0.7★	-	-	-22.3	-0.8★
Male Genital System:	122.6	4.4★	103.8	4.0★	-	-	-0.3	0.4★	1.5	0.5★	-	-
Prostate	128.9	4.6★	108.1	4.1★	-	-	3.4	0.6★	4.6	0.6★	-	-
Testis	68.1	2.2★	65.1	2.1★	-	-	-69.4	-5.0★	-69.8	-5.1★	-	-
Penis	-39.0	-1.6★	-40.4	-1.7★	-	-	-25.5	-1.4★	-27.4	-1.5★	-	-
Other male genital system	4.2	1.0★	3.4	0.9★	-	-	-25.2	-3.0★	-27.9	-3.1★	-	-
Urinary System:	19.0	0.9★	14.6	0.7★	26.2	1.2★	-6.4	-0.3★	-9.4	-0.5★	-0.8	0.0
Urinary bladder	11.0	0.6★	8.5	0.5★	15.0	0.6★	-22.3	-1.2★	-23.9	-1.3★	-17.7	-1.0★
Kidney & renal pelvis	42.3	1.9★	36.3	1.6★	49.4	2.2★	16.3	0.8★	14.8	0.7★	18.3	0.9★
Ureter	-16.5	-1.1★	-17.7	-1.1★	-15.6	-1.0★	-4.3	-0.5★	-8.7	-0.6★	-0.3	-0.6★
Other urinary system	-1.4	-0.8	5.3	-0.4	-15.5	-1.5★	-39.3	-2.4★	-24.5	-2.0★	-48.9	-2.7★
Eye & Orbit	-23.8	-0.8★	-28.7	-0.6★	-16.2	-0.9★	-42.9	-2.6★	-39.9	-2.5★	-47.2	-2.8★
Brain & Nervous System:	20.5	0.8★	21.7	0.8★	18.6	0.8★	13.3	0.6★	12.0	0.5★	14.9	0.6★
Brain	20.8	0.8★	21.1	0.8★	20.1	0.8★	38.6	1.5★	37.6	1.5★	39.6	1.5★
Cranial nerves & other nervous system	16.3	0.9★	31.7	0.8	-0.6	0.9	-88.4	-9.3★	-89.4	-9.6★	-87.1	-9.0★
Endocrine System:	57.6	1.7★	39.6	1.4★	67.9	1.9★	-13.5	-0.7★	-0.8	-0.2★	-21.7	-1.1★
Thyroid	59.6	1.8★	43.5	1.5★	68.5	2.0★	-19.0	-1.2★	8.0	-0.1	-32.1	-1.8★
Other endocrine & thymus	40.3	1.4★	23.6	0.9★	58.8	1.8★	-6.2	-0.2★	-8.6	-0.3	-3.6	-0.1
Lymphomas:	55.0	2.3★	56.4	2.5★	52.2	2.0★	22.5	1.2★	22.1	1.2★	23.2	1.2★
Hodgkin's disease	-14.0	-0.2	-24.3	-0.7★	0.3	0.4★	-65.5	-4.2★	-68.5	-4.5★	-61.0	-3.9★
Non-Hodgkin's lymphomas	80.7	2.9★	87.9	3.3★	69.9	2.4★	46.3	1.9★	47.8	2.0★	44.0	1.8★
Multiple myeloma	18.0	0.8★	23.7	0.9★	9.9	0.5★	32.9	1.2★	35.5	1.3★	31.1	1.2★
Leukemias:	-7.7	-0.1	-11.0	-0.2	-4.5	-0.1	-7.5	-0.3★	-7.1	-0.3★	-8.2	-0.4★
Lymphocytic:	-10.1	-0.1	-18.0	-0.2	-1.1	0.0	-16.9	-0.6★	-17.3	-0.6★	-16.5	-0.6★
Acute lymphocytic	21.4	1.3★	9.3	1.2★	37.1	1.4★	-33.9	-1.6★	-37.6	-1.7★	-28.9	-1.4★
Chronic lymphocytic	-19.2	-0.5★	-24.3	-0.6★	-14.3	-0.5★	11.8	0.7★	11.7	0.7★	10.7	0.6★
Other lymphocytic	-42.5	-2.6★	-52.4	-2.4★	-28.0	-3.3★	-71.3	-5.1★	-71.5	-5.1★	-71.2	-5.3★
Myeloid:	-3.4	-0.1	-1.4	-0.2	-5.9	-0.1	-6.1	-0.6★	-4.8	-0.6★	-7.8	-0.7★
Acute myeloid	8.9	0.3	11.7	0.2	7.3	0.3	4.3	-0.3	6.5	-0.2	1.9	-0.4★
Chronic myeloid	-13.7	-0.2	-8.7	-0.1	-21.9	-0.4	-11.5	-0.5★	-11.6	-0.6★	-12.5	-0.5★
Other myeloid	-43.2	-3.5★	-53.8	-4.4★	-31.4	-2.6★	-71.2	-5.5★	-70.0	-5.5★	-72.8	-5.7★
Monocytic:	-21.6	-1.0★	-20.9	-1.3	-25.5	-0.8	-73.2	-5.4★	-72.7	-5.6★	-73.8	-5.2★
Acute monocytic	15.6	0.6	24.4	0.5	0.2	0.7	-69.1	-4.7★	-67.6	-4.6★	-71.0	-4.7★
Chronic monocytic	-73.7	-3.8★	-89.8	-	-44.0	-	-50.1	-1.8★	-50.4	-2.1★	-47.8	-1.1
Other monocytic	-94.1	-	-	-	-87.7	-	-88.2	-9.7★	-89.4	-10.8★	-87.1	-8.6★
Other:	-10.6	-0.2	-11.4	-0.3	-7.0	-0.1	14.8	0.9★	15.9	0.8★	13.1	1.0★
Other acute	-27.9	-0.5	-31.7	-0.5	-13.6	-0.2	4.3	0.7★	3.5	0.6★	5.8	0.8★
Other chronic	-34.2	-2.2	-61.7	-2.4	24.8	-2.6	-22.3	-0.8★	-10.5	-0.4	-32.9	-1.2★
Aleukemic, subleuk & NOS	4.8	0.1	7.5	-0.1	-3.6	0.1	36.3	1.3★	38.0	1.2★	31.0	1.4★
Ill-defined & unspecified	-15.8	-0.6★	-16.3	-0.6★	-15.2	-0.6★	13.6	0.6★	18.6	0.9★	7.8	0.4★

PC The PC is the Percent Change over the time interval.
EAPC The EAPC is the Estimated Annual Percent Change over the time interval.
§ SEER Program. Rates are per 100,000 and are age-adjusted to the 1970 U.S. standard population.
* NCHS public use tape. Rates are per 100,000 and are age-adjusted to the 1970 U.S. standard population.
★ The EAPC is significantly different from zero (p<.05).
- Statistic could not be calculated.

Table I-12
SEER INCIDENCE AND U.S. MORTALITY TRENDS BY PRIMARY CANCER SITE AND SEX
Blacks, 1973-97

Site	Incidence§						US Mortality*					
	Total		Males		Females		Total		Males		Females	
	PC	EAPC	PC	EAPC	PC	EAPC	PC	EAPC	PC	EAPC	PC	EAPC
All Sites	25.4	1.3★	33.4	1.6★	19.0	0.9★	9.0	0.5★	11.9	0.6★	10.3	0.6★
Oral Cavity & Pharynx:	11.2	0.2	20.4	0.6	-1.5	-0.6	-12.9	-0.6★	-8.2	-0.5	-18.1	-0.7★
Lip	-33.2	-	-62.2	-	27.2	-	-83.5	-	-92.4	-	-78.1	-
Tongue	2.5	0.1	2.0	0.4	7.6	-0.5	-22.2	-1.0★	-18.3	-0.9★	-24.3	-0.6
Salivary gland	-29.4	0.3	-31.2	1.2	-26.1	0.1	-30.2	-1.9★	-28.1	-1.6★	-24.8	-1.7★
Floor of mouth	22.5	-0.6	4.2	-0.7	117.3	0.1	-62.6	-4.7★	-65.6	-4.8★	-43.1	-3.8★
Gum & other oral cavity	-12.4	-0.2	-2.6	0.5	-24.4	-1.0	-18.4	-1.0★	-21.1	-1.1★	-8.0	-0.6
Nasopharynx	68.3	0.5	93.2	1.8★	27.4	-1.6	-12.9	-0.5	-2.7	-0.1	-28.4	-1.1
Tonsil	21.7	0.3	81.4	1.5★	-59.0	-3.4★	-31.2	-1.8★	-25.6	-1.5★	-42.7	-2.3★
Oropharynx	131.4	2.7★	102.7	1.7	-	-	130.7	3.2★	150.6	3.3★	104.9	3.5★
Hypopharynx	56.2	0.9	54.4	1.3	92.5	-0.5	-24.1	-2.2★	-5.4	-1.8★	-71.7	-3.5★
Other oral cavity & pharynx	73.4	2.4★	129.1	2.8★	0.7	-	23.2	1.3★	27.2	1.5★	23.7	1.2★
Digestive System:	4.7	0.2	3.8	0.2	7.3	0.3★	-4.9	-0.1★	-3.7	-0.1	-4.2	-0.1
Esophagus	-25.0	-1.2★	-25.7	-1.3★	-13.8	-0.4	-19.7	-1.0★	-17.4	-0.9★	-17.1	-0.7★
Stomach	-25.3	-1.2★	-25.7	-1.1★	-22.0	-1.1★	-36.4	-1.7★	-34.5	-1.6★	-35.3	-1.5★
Small intestine	145.7	4.9★	136.8	5.4★	155.8	4.4★	31.3	1.7★	44.9	2.2★	19.5	1.5★
Colon & Rectum:	17.1	0.6★	25.3	0.9★	10.5	0.3	6.4	0.3★	18.5	0.8★	-3.0	-0.1
Colon	21.7	0.8★	25.3	1.0★	18.7	0.6★	-	-	-	-	-	-
Rectum	4.9	0.1	25.2	0.6★	-10.0	-0.4	-	-	-	-	-	-
Anus, anal canal & anorectum	111.9	2.7★	141.1	3.9★	96.0	1.8	438.2	8.8★	1456.1	-	220.6	-
Liver & Intrahep:	60.4	2.2★	54.2	2.4★	78.2	1.9★	28.8	1.2★	32.3	1.2★	27.5	1.5★
Liver	54.9	2.0★	50.8	2.2★	65.0	1.6	16.2	0.8★	22.7	0.9★	9.0	0.8★
Intrahep bile duct	162.3	-	117.3	-	373.6	-	501.0	8.0★	405.3	7.3★	698.8	9.6★
Gallbladder	-20.0	-0.2	-33.8	-0.8	-11.3	0.2	-10.2	-0.4	-1.2	-0.4	-15.6	-0.5
Other biliary	60.0	1.1	2.8	0.1	262.7	-	-38.6	-2.1★	-38.8	-2.3★	-37.8	-2.0★
Pancreas	-4.7	-0.1	-10.8	-0.4	1.1	0.3	12.3	0.5★	1.8	0.1	24.7	1.0★
Retroperitoneum	-56.9	-1.9	-61.9	-1.9	-48.2	-1.6	-66.3	-4.4★	-67.6	-4.9★	-63.4	-4.0★
Peritoneum, omentum & mesentery	181.9	-	37.4	-	363.5	-	-3.7	-1.4	-47.9	-4.0★	20.6	-0.4
Other digestive system	-19.6	-1.4	-16.7	-	-11.6	-	-65.9	-4.7★	-61.4	-4.3★	-69.6	-5.1★
Respiratory System:	16.5	0.9★	0.4	0.2	99.7	3.4★	36.5	1.5★	19.7	0.9★	134.9	3.9★
Nose, nasal cavity & middle ear	-21.6	0.0	-27.3	-1.0	-2.7	-	-43.8	-2.0★	-51.1	-2.1★	-21.9	-1.4★
Larynx	-2.0	0.2	-2.0	0.1	16.5	1.3	20.9	0.9★	21.4	0.9★	57.9	2.1★
Lung & bronchus	19.3	1.0★	1.1	0.2	112.7	3.6★	39.1	1.6★	20.7	1.0★	144.1	4.1★
Pleura	3.7	2.9★	35.1	4.1★	-22.3	-	-46.0	-2.0★	-36.2	-0.6	-52.6	-4.2★
Trachea & other respiratory organs	-27.8	-1.1	-45.6	-1.7	52.1	-	-57.4	-3.2★	-53.1	-3.3★	-62.5	-3.2★
Bones & joints	2.7	0.9	19.8	1.7	-21.1	-0.1	-47.9	-2.7★	-49.7	-2.7★	-45.2	-2.5★
Soft tissue (incl heart)	73.6	1.6★	109.1	2.1★	45.2	1.1	92.7	3.0★	62.6	2.2★	117.9	3.4★
Skin (ex basal & squam):	238.0	6.2★	526.3	9.4★	47.4	0.9	10.2	1.2★	24.5	2.1★	-6.3	-0.1
Melanomas of skin	45.5	0.6	232.8	2.9	-16.4	-1.1	0.5	-0.4	-14.7	-1.0★	15.7	0.2
Other non-epithelial skin	443.8	9.1★	700.7	12.0★	131.5	2.4★	18.0	2.3★	53.3	3.8★	-26.3	-0.5
Breast	43.3	2.0★	-32.4	1.0	39.1	1.9★	21.6	1.2★	11.9	0.7	17.2	1.0★

The PC is the Percent Change over the time interval.
The EAPC is the Estimated Annual Percent Change over the time interval.
§ SEER Program. Rates are per 100,000 and are age-adjusted to the 1970 U.S. standard population.
* NCHS public use tape. Rates are per 100,000 and are age-adjusted to the 1970 U.S. standard population.
★ The EAPC is significantly different from zero ($p<.05$).
- Statistic could not be calculated.

Table I-12 - continued
SEER INCIDENCE AND U.S. MORTALITY TRENDS BY PRIMARY CANCER SITE AND SEX
Blacks, 1973-97

	Incidence§						US Mortality*					
	Total		Males		Females		Total		Males		Females	
Site	PC	EAPC	PC	EAPC	PC	EAPC	PC	EAPC	PC	EAPC	PC	EAPC
Female Genital System:	-28.7	-1.4★	-	-	-31.6	-1.6★	-32.7	-1.4★	-	-	-35.9	-1.7★
Cervix uteri	-57.4	-3.9★	-	-	-58.8	-4.0★	-56.1	-3.2★	-	-	-57.4	-3.3★
Corpus uteri	13.6	0.2	-	-	8.8	0.1	7.4	0.3	-	-	1.4	0.0
Uterus, NOS	-10.4	-1.0	-	-	-13.5	-1.1	-34.5	-1.6★	-	-	-38.0	-1.9★
Ovary	-6.0	0.4	-	-	-9.7	0.2	-4.1	0.1	-	-	-9.3	-0.2
Vagina	-45.5	-1.9★	-	-	-48.5	-2.1★	-27.1	-1.3★	-	-	-31.3	-1.6★
Vulva	-4.9	-0.3	-	-	-6.0	-0.5	-46.0	-1.5★	-	-	-49.1	-1.8★
Other female genital system	-62.8	-1.7	-	-	-64.6	-2.0★	-42.6	-2.3★	-	-	-45.2	-2.6★
Male Genital System:	102.5	3.8★	109.9	3.9★	-	-	15.1	0.9★	28.5	1.4★	-	-
Prostate	105.0	3.8★	112.1	4.0★	-	-	17.0	1.0★	30.7	1.5★	-	-
Testis	-4.4	0.7	-2.2	0.8	-	-	-49.1	-3.6★	-50.8	-3.7★	-	-
Penis	-34.0	-1.7	-24.2	-1.2	-	-	-65.4	-4.7★	-62.6	-4.2★	-	-
Other male genital system	166.6	-	194.0	-	-	-	-73.7	-5.6★	-74.7	-5.6★	-	-
Urinary System:	42.4	1.6★	51.2	1.8★	38.1	1.6★	1.4	0.1	4.0	0.2	2.6	0.2★
Urinary bladder	19.2	0.5	26.5	0.6	19.0	0.5	-27.2	-1.4★	-25.9	-1.4★	-24.2	-1.2★
Kidney & renal pelvis	71.5	3.0★	71.7	3.2★	76.9	3.0★	57.6	2.1★	62.5	2.2★	57.1	2.1★
Ureter	-51.2	-	-	-	-90.5	-	22.2	0.3	31.6	0.1	8.9	0.7
Other urinary system	49.8	1.3	1447.0	-	-47.6	-1.2	-44.7	-2.1★	-71.1	-4.3★	-13.0	-0.5
Eye & Orbit	82.7	-0.6	-17.4	-	499.4	-	-57.1	-3.2★	-59.2	-4.0★	-52.4	-2.2
Brain & Nervous System:	12.9	0.7	23.3	0.5	7.0	1.2	9.4	0.4★	5.7	0.2	14.9	0.7★
Brain	13.1	0.7	27.4	0.4	3.3	1.2	35.6	1.4★	35.6	1.3★	37.4	1.6★
Cranial nerves & other nervous system	11.5	1.7	-20.5	-	40.7	-	-80.1	-7.6★	-86.1	-8.3★	-73.1	-7.5★
Endocrine System:	29.9	0.9★	25.9	0.8	30.5	0.9★	-8.9	-0.2	-6.5	-0.2	-11.9	-0.2
Thyroid	22.8	0.6	20.6	0.6	22.7	0.5	-26.8	-1.3★	-25.8	-1.1	-29.3	-1.5★
Other endocrine & thymus	80.0	2.1★	39.7	0.6	143.9	-	22.8	1.3★	14.6	0.7	32.8	2.0★
Lymphomas:	71.3	3.2★	72.2	3.3★	73.1	3.2★	35.7	1.5★	30.0	1.4★	48.1	1.8★
Hodgkin's disease	-2.2	0.7	-17.0	-0.5	24.7	2.6★	-49.2	-2.8★	-56.3	-3.1★	-34.9	-2.1★
Non-Hodgkin's lymphomas	99.3	3.9★	108.8	4.3★	89.2	3.4★	58.8	2.3★	55.5	2.3★	67.2	2.4★
Multiple myeloma	3.2	0.7★	-9.3	0.5	19.9	1.1★	44.5	1.6★	40.9	1.6★	51.4	1.8★
Leukemias:	-20.0	-0.5★	-18.2	-0.5	-21.8	-0.7★	3.3	0.2★	4.2	0.4★	6.1	0.1
Lymphocytic:	-28.3	-0.8	-26.8	-0.8	-30.5	-0.9	-0.2	0.3	2.9	0.6★	0.7	0.0
Acute lymphocytic	34.0	2.7★	71.4	3.5★	3.1	2.4	-19.8	-0.7★	-28.9	-0.9★	-4.4	-0.5
Chronic lymphocytic	-34.2	-1.3★	-32.7	-1.3★	-35.8	-1.5★	23.8	1.3★	29.0	1.6★	21.9	0.9★
Other lymphocytic	-77.9	-	-85.2	-	-66.8	-	-62.5	-4.7★	-49.6	-4.1★	-75.1	-5.3★
Myeloid:	0.5	-0.1	5.0	0.0	0.0	-0.1	4.4	-0.1	6.2	0.0	4.2	-0.1
Acute myeloid	22.2	0.8	27.1	0.8	17.7	0.8	14.3	0.1	10.4	0.1	21.7	0.3
Chronic myeloid	-12.4	-0.6	3.2	-0.2	-19.0	-1.0	5.1	0.2	17.8	0.6	-7.7	-0.2
Other myeloid	-56.8	-4.0★	-74.6	-4.6★	-19.3	-	-70.9	-5.1★	-75.4	-5.0★	-66.5	-5.4★
Monocytic:	-52.2	-3.3	-62.8	-4.6★	-47.8	-	-80.0	-5.9★	-84.7	-6.4★	-70.3	-5.1★
Acute monocytic	-50.4	-	-67.2	-	-40.6	-	-79.7	-5.8★	-80.2	-	-78.2	-5.6★
Chronic monocytic	12.0	-	-	-	-64.9	-	-74.3	-	-	-	-43.1	-
Other monocytic	-	-	-	-	-	-	-83.8	-	-93.5	-	16.8	-
Other:	-45.8	-0.7	-41.9	0.1	-53.3	-2.5★	17.4	1.0★	17.0	1.1★	24.8	1.0★
Other acute	-42.7	-0.2	-31.2	-	-53.8	-2.1	1.5	0.6	7.2	0.7★	0.3	0.5
Other chronic	-	-	-	-	-	-	-19.5	0.3	-14.7	1.5	-21.3	-1.0
Aleukemic, subleuk & NOS	-47.6	-0.9	-47.7	-1.1	-53.0	-2.3	37.7	1.4★	28.9	1.4★	61.8	1.7★
Ill-defined & unspecified	0.8	0.0	-15.5	-0.4	22.1	0.4	0.1	0.0	9.9	0.4	-8.5	-0.4★

The PC is the Percent Change over the time interval.
The EAPC is the Estimated Annual Percent Change over the time interval.
§ SEER Program. Rates are per 100,000 and are age-adjusted to the 1970 U.S. standard population.
* NCHS public use tape. Rates are per 100,000 and are age-adjusted to the 1970 U.S. standard population.
★ The EAPC is significantly different from zero ($p<.05$).
- Statistic could not be calculated.

Table I-13

AGE DISTRIBUTION (%) OF INCIDENCE CASES BY SITE, 1993-97

All Races, Both Sexes

Site	<20	20-34	35-44	45-54	55-64	65-74	75-84	85+	All Ages	Cases
All Sites	1.0	3.2	6.3	11.9	18.6	29.8	22.2	7.0	100.0%	561,297
Oral cavity & Pharynx	0.7	3.3	7.6	17.4	23.0	26.2	16.9	4.9	100.0%	13,858
Esophagus	0.0	0.5	3.0	11.4	22.8	33.6	22.0	6.7	100.0%	5,314
Stomach	0.1	1.3	4.2	8.6	16.2	28.6	28.7	12.4	100.0%	10,041
Colon & Rectum	0.0	0.9	3.1	8.2	16.5	29.9	29.5	11.9	100.0%	63,810
Males	0.0	1.0	3.4	9.0	18.7	32.4	27.6	7.9	100.0%	32,102
Females	0.0	0.9	2.8	7.3	14.3	27.3	31.4	16.0	100.0%	31,708
Colon	0.0	0.8	2.7	7.1	15.4	29.7	31.2	13.1	100.0%	46,453
Rectum	0.0	1.3	4.1	11.0	19.6	30.3	25.0	8.7	100.0%	17,357
Liver & Intrahep	1.3	1.3	5.2	11.6	19.2	30.0	23.8	7.5	100.0%	5,585
Pancreas	0.0	0.4	2.4	8.3	16.0	31.2	29.4	12.1	100.0%	12,799
Larynx	0.1	0.6	4.1	14.0	26.4	34.3	17.5	3.0	100.0%	5,080
Lung & Bronchus	0.0	0.3	2.3	9.1	21.0	36.8	25.1	5.3	100.0%	77,413
Males	0.0	0.3	2.3	8.8	21.4	37.6	24.7	4.9	100.0%	44,544
Females	0.0	0.4	2.4	9.6	20.5	35.7	25.6	5.9	100.0%	32,869
Melanomas of skin	0.8	10.7	16.9	18.9	16.7	18.9	12.8	4.2	100.0%	19,233
Breast(females)	0.0	2.1	11.0	20.7	19.7	23.6	17.3	5.6	100.0%	84,111
Cervix uteri	0.2	18.1	25.5	20.9	13.4	11.7	7.5	2.7	100.0%	5,988
Corpus & Uterus, NOS	0.0	1.1	6.0	16.3	23.6	28.4	19.4	5.2	100.0%	15,987
Ovary	1.3	6.2	10.8	18.0	18.1	22.5	16.9	6.2	100.0%	10,976
Prostate	0.0	0.0	0.3	5.3	21.9	43.0	24.3	5.2	100.0%	87,946
Testis	4.8	49.9	30.4	10.2	2.7	1.5	0.6	0.0	100.0%	3,455
Urinary bladder	0.1	0.7	2.6	8.1	16.8	33.3	28.6	9.7	100.0%	23,978
Kidney & Renal pelvis	2.2	1.5	6.1	14.7	21.1	29.1	19.8	5.5	100.0%	12,790
Brain & Other nervous	13.0	10.4	11.5	13.1	15.7	19.9	13.1	3.3	100.0%	7,914
Thyroid	2.3	23.1	23.4	20.2	12.8	11.0	5.6	1.7	100.0%	7,676
Hodgkin's disease	11.9	37.8	16.6	10.8	8.0	7.1	6.3	1.5	100.0%	3,592
Non-Hodgkin's lymphomas	1.7	6.5	10.4	13.5	15.7	24.3	21.2	6.7	100.0%	22,819
Multiple myeloma	0.0	0.5	3.2	10.2	17.4	31.2	28.2	9.4	100.0%	6,402
Leukemias	9.5	5.0	5.9	9.6	13.2	24.5	22.4	9.9	100.0%	14,303
Acute lymphocytic	61.7	10.6	5.4	4.9	4.8	6.2	4.0	2.3	100.0%	1,641
Chronic lymphocytic	0.0	0.4	2.3	9.2	16.3	32.2	27.7	12.0	100.0%	4,289
Acute myeloid	5.3	6.5	7.3	10.5	13.3	26.1	22.8	8.3	100.0%	3,833
Chronic myeloid	1.9	7.8	9.8	11.4	13.3	23.2	22.6	10.1	100.0%	2,076
All other leukemias	4.3	4.6	7.1	10.4	13.0	21.8	24.8	14.0	100.0%	2,464

Source: SEER Program.

Table I-14
MEDIAN AGE OF CANCER PATIENTS AT DIAGNOSIS§, 1993-97
By Primary Cancer Site, Race and Sex

Site	All Races			Whites			Blacks		
	Total	Males	Females	Total	Males	Females	Total	Males	Females
All Sites	68.0	68.0	67.0	68.0	69.0	68.0	64.0	65.0	63.0
Oral Cavity & Pharynx:	64.0	63.0	66.0	65.0	64.0	68.0	57.0	56.0	58.0
Lip	69.0	69.0	72.0	69.0	69.0	74.0	67.5	67.0	68.0
Tongue	63.0	61.0	65.0	63.0	62.0	66.0	57.0	56.5	59.0
Salivary gland	64.0	66.0	60.5	65.0	66.0	63.0	55.0	61.0	46.0
Floor of mouth	63.0	62.0	67.0	64.0	63.0	68.0	55.0	55.0	57.5
Gum & other oral cavity	66.0	63.0	70.0	67.0	64.0	71.0	58.0	57.0	60.0
Nasopharynx	55.0	55.0	57.0	60.0	59.0	64.0	50.0	49.0	57.0
Tonsil	59.0	58.0	64.0	60.0	58.0	65.0	55.0	55.0	56.0
Oropharynx	64.0	62.0	67.5	65.0	65.0	67.0	57.0	56.0	65.5
Hypopharynx	65.0	64.0	66.0	66.0	65.0	68.0	58.5	58.0	60.0
Other oral cavity & pharynx	66.0	66.0	70.0	68.0	66.0	71.0	62.0	60.0	63.0
Digestive System:	71.0	70.0	73.0	72.0	70.0	74.0	67.0	65.0	69.0
Esophagus	68.0	67.0	72.0	70.0	68.0	73.0	63.0	62.0	64.0
Stomach	72.0	71.0	74.0	73.0	71.0	75.0	69.0	67.0	72.0
Small intestine	67.0	65.0	69.0	69.0	67.0	71.0	59.0	58.0	60.0
Colon & Rectum:	72.0	70.0	74.0	73.0	71.0	74.0	68.0	67.0	69.0
Colon	73.0	71.0	74.0	73.0	72.0	75.0	69.0	67.0	70.0
Rectum	69.0	68.0	71.0	70.0	69.0	72.0	65.0	64.0	66.0
Anus, anal canal & anorectum	65.0	60.0	68.0	66.0	62.5	68.0	53.0	47.0	60.0
Liver & Intrahep:	69.0	67.0	72.0	71.0	69.0	74.0	63.0	60.0	71.0
Liver	68.0	66.0	71.0	70.0	69.0	72.0	63.0	59.0	70.0
Intrahep bile duct	73.0	71.0	76.0	73.5	71.0	76.0	71.0	68.5	74.0
Gallbladder	73.0	72.0	74.0	74.0	73.0	74.0	69.0	67.5	71.0
Other biliary	73.0	72.0	74.0	74.0	73.0	75.0	66.0	64.0	69.0
Pancreas	72.0	70.0	74.0	73.0	71.0	75.0	69.0	66.0	72.0
Retroperitoneum	60.0	60.5	59.0	61.0	62.0	60.0	44.0	22.0	55.5
Peritoneum, omentum & mesentery	67.0	65.0	68.0	67.5	65.0	68.0	64.0	69.0	62.0
Other digestive system	76.0	73.0	78.0	76.0	73.5	78.0	68.5	66.0	77.0
Respiratory System:	69.0	69.0	69.0	70.0	69.0	70.0	65.0	65.0	65.0
Nose, nasal cavity & middle ear	66.0	64.0	68.0	67.0	66.0	69.0	61.0	59.5	64.0
Larynx	66.0	66.0	65.5	66.0	66.0	66.0	62.0	62.0	62.0
Lung & bronchus	69.0	69.0	70.0	70.0	70.0	70.0	66.0	66.0	66.0
Pleura	72.0	72.0	72.0	72.0	72.0	72.0	69.5	70.0	68.5
Trachea & other respiratory organs	48.0	44.0	59.5	53.0	47.0	61.0	45.0	42.0	60.5
Bones & joints	36.0	33.0	40.0	38.0	35.0	41.0	31.0	29.0	34.0
Soft tissue (incl heart)	56.0	54.0	57.0	58.0	57.0	59.0	48.0	45.0	51.0
Skin (ex basal & squam):	53.0	54.0	52.0	54.0	55.0	53.0	39.0	37.0	46.5
Melanomas of skin	56.0	59.0	52.0	56.0	60.0	52.0	63.0	63.0	63.0
Other non-epithelial skin	43.0	41.0	63.0	44.0	42.0	67.0	37.0	36.0	44.0
Breast	63.0	68.0	63.0	64.0	68.0	64.0	57.0	66.0	57.0

§ SEER Program.
- Statistic could not be calculated.

Table I-14 - continued
MEDIAN AGE OF CANCER PATIENTS AT DIAGNOSIS§, 1993-97
By Primary Cancer Site, Race and Sex

Site	All Races			Whites			Blacks		
	Total	Males	Females	Total	Males	Females	Total	Males	Females
Female Genital System:	63.0	-	63.0	64.0	-	64.0	60.0	-	60.0
Cervix uteri	47.0	-	47.0	46.0	-	46.0	48.0	-	48.0
Corpus uteri	66.0	-	66.0	66.0	-	66.0	65.0	-	65.0
Uterus, NOS	68.0	-	68.0	70.0	-	70.0	66.0	-	66.0
Ovary	62.0	-	62.0	63.0	-	63.0	60.5	-	60.5
Vagina	70.0	-	70.0	71.0	-	71.0	68.5	-	68.5
Vulva	72.0	-	72.0	73.0	-	73.0	61.0	-	61.0
Other female genital system	63.0	-	63.0	64.0	-	64.0	59.0	-	59.0
Male Genital System:	69.0	69.0	-	70.0	70.0	-	68.0	68.0	-
Prostate	70.0	70.0	-	70.0	70.0	-	68.0	68.0	-
Testis	33.0	33.0	-	33.0	33.0	-	31.0	31.0	-
Penis	68.0	68.0	-	69.0	69.0	-	67.0	67.0	-
Other male genital system	67.0	67.0	-	67.0	67.0	-	62.5	62.5	-
Urinary System:	70.0	69.0	71.0	70.0	70.0	71.0	66.0	65.0	68.0
Urinary bladder	71.0	71.0	73.0	71.0	71.0	73.0	71.0	69.0	73.0
Kidney & renal pelvis	66.0	65.0	68.0	67.0	66.0	69.0	61.0	60.0	62.5
Ureter	72.5	71.5	74.0	73.0	72.0	74.0	74.0	75.0	74.0
Other urinary system	72.0	71.0	73.0	73.0	73.0	76.0	66.0	66.0	66.0
Eye & Orbit	59.0	60.0	58.5	62.0	62.0	61.0	2.0	1.0	2.0
Brain & Nervous System:	56.0	54.0	58.0	57.0	55.0	59.0	45.0	43.5	46.5
Brain	56.0	55.0	59.0	57.0	55.0	60.0	44.0	44.5	44.0
Cranial nerves & other nervous system	48.0	44.0	52.0	47.0	44.5	49.0	53.0	40.5	56.0
Endocrine System:	45.0	50.0	43.0	45.0	50.0	43.0	46.0	50.0	46.0
Thyroid	45.0	50.0	43.0	45.0	50.0	43.0	46.0	50.0	45.0
Other endocrine & thymus	48.0	44.0	52.0	48.0	43.0	53.0	47.5	50.0	47.0
Lymphomas:	63.0	59.0	67.0	64.0	60.0	68.0	47.0	45.0	52.0
Hodgkin's disease	35.0	36.0	33.0	35.0	36.0	34.0	31.0	33.0	30.0
Non-Hodgkin's lymphomas	66.0	62.0	69.0	67.0	63.0	70.0	50.0	47.0	58.0
Multiple myeloma	71.0	70.0	72.0	71.0	70.0	73.0	68.0	67.0	69.0
Leukemias:	68.0	67.0	69.0	69.0	68.0	71.0	61.0	61.0	62.5
Lymphocytic:	67.0	66.0	70.0	68.0	66.0	71.0	63.0	61.0	65.0
Acute lymphocytic	11.0	12.0	10.0	12.0	13.0	10.0	10.0	9.0	11.0
Chronic lymphocytic	72.0	70.0	74.0	72.0	71.0	74.0	69.0	67.0	72.5
Other lymphocytic	70.0	69.0	73.0	72.5	70.0	74.0	68.0	68.0	68.0
Myeloid:	67.0	67.0	68.0	68.0	68.0	69.0	58.0	58.0	57.5
Acute myeloid	68.0	68.0	67.5	69.0	69.0	69.0	57.5	61.5	54.5
Chronic myeloid	68.0	66.0	69.0	69.0	67.0	71.0	59.0	57.0	62.0
Other myeloid	61.0	61.0	58.0	62.0	64.0	59.5	43.0	36.5	56.0
Monocytic:	68.0	69.0	66.0	69.0	69.0	67.0	67.5	55.0	85.0
Acute monocytic	66.0	67.0	64.0	67.0	68.0	66.0	65.0	43.0	75.0
Chronic monocytic	71.5	70.0	86.5	70.0	69.5	74.0	85.0	72.0	87.5
Other monocytic	80.0	76.0	88.0	80.0	78.0	88.0	-	-	-
Other:	72.0	70.0	75.0	72.0	70.0	76.0	65.0	64.0	70.0
Other acute	75.0	74.0	76.0	76.0	74.0	77.0	65.0	63.5	71.0
Other chronic	79.5	80.0	74.5	80.0	80.0	75.5	74.0	74.0	-
Aleukemic, subleuk & NOS	68.0	65.0	72.0	69.0	66.0	74.0	65.0	64.0	70.0
Ill-defined & unspecified	73.0	71.0	75.0	73.0	71.0	75.0	68.0	64.5	71.0

§ SEER Program.
- Statistic could not be calculated.

Table I-15

AGE DISTRIBUTION (%) OF DEATHS BY SITE, 1993-97

All Races, Both Sexes

Site	<20	20-34	35-44	45-54	55-64	65-74	75-84	85+	All Ages	Cases
All Sites	0.4	1.1	3.2	8.2	16.4	30.1	28.3	12.2	100.0%	2,681,682
Oral cavity & Pharynx	0.2	0.9	4.0	12.9	22.1	29.3	21.2	9.4	100.0%	39,961
Esophagus	0.0	0.3	2.4	10.2	21.9	33.3	24.0	7.9	100.0%	54,741
Stomach	0.0	1.1	3.5	7.7	14.7	27.3	30.0	15.7	100.0%	67,460
Colon & Rectum	0.0	0.6	2.1	6.2	13.8	27.7	31.3	18.2	100.0%	285,897
Males	0.0	0.7	2.3	7.1	16.2	31.3	30.1	12.3	100.0%	141,140
Females	0.0	0.5	2.0	5.4	11.5	24.2	32.4	24.0	100.0%	144,757
Colon	0.0	0.5	2.0	6.0	13.4	27.5	31.9	18.6	100.0%	245,958
Rectum	0.0	0.9	3.0	7.9	16.1	28.8	27.8	15.5	100.0%	39,939
Liver & Intrahep	0.5	1.0	3.6	9.1	17.2	30.6	27.4	10.6	100.0%	55,199
Pancreas	0.0	0.2	1.9	6.9	15.8	30.7	30.9	13.5	100.0%	134,973
Larynx	0.0	0.1	2.0	10.5	24.3	34.2	22.5	6.3	100.0%	19,527
Lung & Bronchus	0.0	0.2	1.7	7.8	20.2	36.6	26.7	6.8	100.0%	754,274
Males	0.0	0.2	1.7	7.8	20.8	37.4	26.2	6.0	100.0%	458,937
Females	0.0	0.2	1.8	7.8	19.2	35.4	27.6	8.0	100.0%	295,337
Melanomas of skin	0.2	4.0	10.4	14.7	17.0	24.0	20.9	8.8	100.0%	34,812
Breast(females)	0.0	1.3	7.3	14.8	17.7	24.4	22.3	12.2	100.0%	216,074
Cervix uteri	0.0	6.9	17.0	20.0	16.8	18.1	14.2	7.0	100.0%	22,726
Corpus & Uterus, NOS	0.0	0.4	1.9	6.1	15.0	30.7	30.4	15.5	100.0%	30,995
Ovary	0.1	0.9	3.6	10.5	17.6	29.2	27.2	10.9	100.0%	66,379
Prostate	0.0	0.0	0.1	1.0	6.6	26.4	41.9	24.0	100.0%	171,252
Testis	3.0	39.7	27.3	11.8	6.4	6.1	4.2	1.5	100.0%	1,698
Urinary bladder	0.0	0.1	0.9	3.5	9.6	26.6	36.9	22.4	100.0%	56,248
Kidney & Renal pelvis	0.5	0.7	3.1	10.3	18.9	29.9	26.3	10.3	100.0%	54,543
Brain & Other nervous	4.5	5.0	8.4	13.8	18.9	26.6	18.3	4.5	100.0%	61,217
Thyroid	0.1	1.0	2.6	7.4	14.9	27.7	30.5	15.9	100.0%	5,718
Hodgkin's disease	2.2	19.1	14.5	11.7	11.3	18.1	17.0	6.1	100.0%	7,296
Non-Hodgkin's lymphomas	0.6	2.8	4.9	8.0	14.0	27.3	30.1	12.4	100.0%	111,096
Multiple myeloma	0.0	0.2	1.5	6.3	15.4	31.5	32.5	12.6	100.0%	50,526
Leukemias	3.8	4.1	4.3	6.7	12.1	25.2	29.0	14.8	100.0%	100,840
Acute lymphocytic	24.7	15.6	8.8	8.4	9.6	13.6	12.9	6.4	100.0%	6,920
Chronic lymphocytic	0.0	0.1	0.6	3.5	10.7	26.8	34.8	23.5	100.0%	21,017
Acute myeloid	3.3	4.8	5.5	8.2	14.1	27.8	27.0	9.2	100.0%	30,160
Chronic myeloid	1.6	5.8	7.8	10.9	14.9	23.8	24.2	10.9	100.0%	11,453
All other leukemias	3.1	2.8	3.2	5.5	10.7	24.8	32.4	17.5	100.0%	31,290

Source: NCHS public use tape.

Table I-16
MEDIAN AGE OF CANCER PATIENTS AT DEATH*, 1993-97
By Primary Cancer Site, Race and Sex

Site	All Races			Whites			Blacks		
	Total	Males	Females	Total	Males	Females	Total	Males	Females
All Sites	72.0	71.0	72.0	72.0	72.0	73.0	68.0	68.0	68.0
Oral Cavity & Pharynx:	68.0	66.0	72.0	69.0	67.0	73.0	60.0	60.0	64.0
Lip	76.0	74.5	82.0	76.0	74.5	82.0	76.0	78.0	70.0
Tongue	67.0	65.0	71.0	68.0	67.0	72.0	60.0	59.0	62.0
Salivary gland	72.0	72.0	74.0	73.0	72.0	75.0	66.0	66.0	67.0
Floor of mouth	66.0	64.0	71.0	67.0	65.0	71.0	60.0	59.0	65.0
Gum & other oral cavity	71.0	67.0	77.0	73.0	68.0	78.0	62.0	60.0	69.0
Nasopharynx	63.0	62.0	67.0	66.0	64.5	68.0	58.0	56.0	61.0
Tonsil	64.0	63.0	68.0	66.0	64.0	69.0	58.0	58.0	61.0
Oropharynx	67.0	65.0	71.0	69.0	67.0	72.0	60.0	59.0	63.0
Hypopharynx	67.0	66.0	68.0	68.0	67.0	69.0	61.0	61.0	64.0
Other oral cavity & pharynx	68.0	67.0	71.0	69.0	68.0	72.0	61.0	60.0	63.0
Digestive System:	73.0	71.0	76.0	74.0	72.0	76.0	69.0	67.0	72.0
Esophagus	69.0	68.0	73.0	70.0	69.0	75.0	64.0	64.0	66.0
Stomach	73.0	71.0	76.0	74.0	72.0	77.0	71.0	69.0	74.0
Small intestine	71.0	70.0	73.0	72.0	70.0	73.0	67.0	65.0	68.0
Colon & Rectum	74.0	72.0	77.0	75.0	73.0	77.0	71.0	69.0	73.0
Anus, anal canal & anorectum	68.0	63.0	70.0	68.0	64.0	71.0	61.0	56.0	64.0
Liver & Intrahep:	71.0	69.0	74.0	72.0	70.0	74.0	66.0	64.0	71.0
Liver	71.0	69.0	74.0	72.0	70.0	75.0	66.0	63.0	71.0
Intrahep bile duct	72.0	71.0	74.0	73.0	72.0	74.0	69.0	68.0	71.0
Gallbladder	74.0	74.0	75.0	75.0	74.0	75.0	71.0	71.0	71.0
Other biliary	76.0	74.0	78.0	76.0	75.0	78.0	73.0	70.0	76.0
Pancreas	73.0	71.0	75.0	73.0	71.0	75.0	70.0	68.0	72.0
Retroperitoneum	70.0	69.0	72.0	71.0	70.0	72.0	65.0	61.5	67.0
Peritoneum, omentum & mesentery	70.0	68.0	71.0	70.0	69.0	71.0	69.0	63.5	71.0
Other digestive system	79.0	75.0	82.0	79.0	75.5	83.0	74.0	71.0	78.0
Respiratory System:	70.0	70.0	71.0	71.0	70.0	71.0	67.0	67.0	68.0
Nose, nasal cavity & middle ear	70.0	68.0	74.0	71.0	69.0	74.0	65.0	65.0	72.0
Larynx	68.0	68.0	69.0	69.0	69.0	70.0	64.0	63.5	65.0
Lung & bronchus	70.0	70.0	71.0	71.0	70.0	71.0	67.0	67.0	68.0
Pleura	72.0	72.0	73.0	72.0	72.0	73.0	68.0	67.0	70.0
Trachea & other respiratory organs	68.0	66.0	72.0	69.0	67.0	72.0	63.0	60.0	70.0
Bones & joints	61.0	58.0	65.0	63.0	59.0	67.0	55.0	55.0	56.0
Soft tissue (incl heart)	66.0	64.0	67.0	67.0	66.0	68.0	57.0	50.0	61.0
Skin (ex basal & squam):	68.0	67.0	70.0	68.0	67.0	70.0	63.0	59.0	70.0
Melanomas of skin	66.0	65.0	68.0	66.0	65.0	68.0	70.0	66.0	73.0
Other non-epithelial skin	73.0	70.0	79.0	74.0	72.0	79.0	60.0	58.0	67.0
Breast	68.0	71.0	68.0	69.0	71.0	69.0	62.0	69.0	62.0

* U.S. Mortality, NCHS public use tape.
\- Statistic could not be calculated.

Table I-16 - continued
MEDIAN AGE OF CANCER PATIENTS AT DEATH*, 1993-97
By Primary Cancer Site, Race and Sex

Site	All Races			Whites			Blacks		
	Total	Males	Females	Total	Males	Females	Total	Males	Females
Female Genital System:	70.0	-	70.0	71.0	-	71.0	68.0	-	68.0
Cervix uteri	58.0	-	58.0	58.0	-	58.0	58.0	-	58.0
Corpus uteri	73.0	-	73.0	73.0	-	73.0	70.0	-	70.0
Uterus, NOS	74.0	-	74.0	75.0	-	75.0	71.0	-	71.0
Ovary	71.0	-	71.0	71.0	-	71.0	69.0	-	69.0
Vagina	75.0	-	75.0	76.0	-	76.0	72.0	-	72.0
Vulva	79.0	-	79.0	79.0	-	79.0	72.0	-	72.0
Other female genital system	70.0	-	70.0	71.0	-	71.0	65.0	-	65.0
Male Genital System:	78.0	78.0	-	79.0	79.0	-	76.0	76.0	-
Prostate	78.0	78.0	-	79.0	79.0	-	76.0	76.0	-
Testis	37.0	37.0	-	37.0	37.0	-	37.0	37.0	-
Penis	70.0	70.0	-	70.0	70.0	-	69.0	69.0	-
Other male genital system	72.0	72.0	-	73.0	73.0	-	56.5	56.5	-
Urinary System:	74.0	73.0	76.0	74.0	73.0	76.0	71.0	69.0	73.0
Urinary bladder	77.0	76.0	79.0	77.0	76.0	80.0	75.0	74.0	77.0
Kidney & renal pelvis	70.0	69.0	73.0	71.0	69.0	73.0	67.0	65.0	69.0
Ureter	76.0	74.0	78.0	76.0	74.0	78.0	75.0	69.0	77.5
Other urinary system	74.0	74.0	74.0	76.0	75.0	77.0	69.0	72.0	68.0
Eye & Orbit	70.0	68.0	73.0	71.0	69.0	73.0	57.0	57.0	57.5
Brain & Nervous System:	64.0	62.0	66.0	65.0	63.0	67.0	58.0	57.0	60.0
Brain	64.0	62.0	66.0	65.0	63.0	67.0	58.0	57.0	60.0
Cranial nerves & other nervous system	65.0	62.0	70.0	66.5	63.0	70.0	58.0	49.5	63.0
Endocrine System:	68.0	65.0	72.0	69.0	65.0	72.0	63.0	53.0	67.0
Thyroid	73.0	70.0	76.0	74.0	70.0	76.0	71.5	67.0	73.0
Other endocrine & thymus	56.0	54.0	58.0	57.0	56.0	58.0	47.0	37.5	55.0
Lymphomas:	72.0	69.0	74.0	72.0	70.0	75.0	62.0	58.0	66.0
Hodgkin's disease	57.0	53.0	62.0	59.0	55.0	65.0	41.0	41.0	41.0
Non-Hodgkin's lymphomas	72.0	70.0	74.0	73.0	70.0	75.0	63.0	60.0	67.0
Multiple myeloma	73.0	72.0	74.0	74.0	73.0	75.0	71.0	69.0	71.0
Leukemias:	72.0	71.0	74.0	73.0	72.0	75.0	66.0	65.0	68.0
Lymphocytic:	74.0	72.0	77.0	75.0	73.0	78.0	69.0	67.0	71.0
Acute lymphocytic	46.0	40.0	53.0	48.0	42.0	57.0	32.0	30.0	37.5
Chronic lymphocytic	77.0	75.0	80.0	77.0	75.0	80.0	73.0	71.0	75.0
Other lymphocytic	77.0	75.0	80.0	77.0	75.0	80.0	73.0	72.0	75.0
Myeloid:	70.0	69.0	71.0	71.0	70.0	72.0	62.0	62.0	63.0
Acute myeloid	70.0	70.0	71.0	71.0	70.0	71.0	64.0	64.0	64.0
Chronic myeloid	69.0	68.0	70.0	70.0	69.0	72.0	60.0	57.5	61.0
Other myeloid	76.0	75.0	78.0	77.0	76.0	78.0	72.0	65.0	75.0
Monocytic:	74.0	73.0	76.0	75.0	74.0	76.0	69.0	69.0	66.0
Acute monocytic	73.0	72.0	74.0	74.0	72.0	74.0	62.0	65.0	59.0
Chronic monocytic	79.0	79.0	80.0	79.0	79.0	81.0	73.0	78.5	73.0
Other monocytic	78.0	75.0	80.0	78.5	76.0	81.0	71.0	74.0	60.0
Other:	74.0	73.0	76.0	75.0	73.0	77.0	69.0	67.0	71.0
Other acute	73.0	72.0	75.0	74.0	73.0	75.0	69.5	68.0	71.0
Other chronic	79.0	77.0	81.0	80.0	78.0	82.0	72.0	71.0	76.0
Aleukemic, subleuk & NOS	75.0	73.0	77.0	76.0	74.0	78.0	68.0	66.0	71.0
Ill-defined & unspecified	72.0	71.0	75.0	73.0	71.0	75.0	68.0	66.0	71.0

* U.S. Mortality, NCHS public use tape.
\- Statistic could not be calculated.

Table I-17

Lifetime Risk (Percent) of Being Diagnosed With Cancer By Site, Race and Sex

9 SEER Areas, 1995-97

Site	All Races		Whites		Blacks	
	Males	Females	Males	Females	Males	Females
All Sites	43.48	38.34	43.53	39.22	40.38	32.43
Invasive and In Situ	44.73	43.09	44.86	43.90	40.88	36.35
Oral cavity and Pharynx	1.47	0.72	1.47	0.74	1.43	0.57
Esophagus	0.71	0.27	0.69	0.26	0.94	0.43
Stomach	1.19	0.69	1.06	0.57	1.39	1.04
Colon and Rectum	5.78	5.55	5.87	5.59	4.37	5.14
Invasive and In Situ	6.08	5.80	6.18	5.84	4.58	5.39
Liver and Intrahepatic bile duct	0.70	0.36	0.58	0.30	0.67	0.41
Pancreas	1.19	1.26	1.17	1.22	1.31	1.59
Larynx	0.70	0.18	0.71	0.18	0.84	0.23
Invasive and In Situ	0.77	0.19	0.78	0.19	0.91	0.24
Lung and Bronchus	8.09	5.78	8.13	6.08	8.57	4.80
Melanomas of skin	1.68	1.25	1.93	1.44	0.14	0.07
Invasive and In Situ	2.50	1.84	2.85	2.11	0.18	0.10
Breast	0.11	12.83	0.11	13.36	0.12	9.98
Invasive and In Situ	0.12	14.85	0.12	15.41	0.13	11.61
Cervix uteri	-	0.78	-	0.69	-	1.15
Invasive and In Situ	-	2.86	-	2.62	-	3.40
Corpus and Uterus, NOS	-	2.73	-	2.88	-	1.69
Invasive and In Situ	-	2.78	-	2.94	-	1.71
Ovary	-	1.73	-	1.85	-	1.04
Prostate	15.89	-	15.54	-	17.77	-
Testis	0.35	-	0.40	-	0.08	-
Urinary bladder(Invasive and In Situ)	3.40	1.18	3.76	1.26	1.20	0.77
Kidney and Renal pelvis	1.36	0.85	1.39	0.86	1.21	0.88
Brain and Other nervous system	0.67	0.52	0.73	0.57	0.34	0.27
Thyroid	0.28	0.76	0.29	0.77	0.11	0.39
Hodgkin's disease	0.24	0.20	0.26	0.22	0.19	0.15
Non-Hodgkin's lymphomas	2.11	1.74	2.20	1.82	1.38	0.98
Multiple myeloma	0.64	0.56	0.61	0.51	0.90	1.00
Leukemias	1.42	1.05	1.50	1.10	0.82	0.67

Note: Invasive cancer only unless specified otherwise.

Table I-18

Lifetime Risk (Percent) of Dying From Cancer By Site, Race and Sex

9 SEER Areas, 1995-97

Site	All Races		Whites		Blacks	
	Males	Females	Males	Females	Males	Females
All Sites	23.24	20.39	23.51	20.78	22.62	19.94
Oral cavity and Pharynx	0.41	0.22	0.39	0.22	0.49	0.19
Esophagus	0.67	0.25	0.66	0.25	0.84	0.35
Stomach	0.75	0.46	0.66	0.38	0.83	0.71
Colon and Rectum	2.41	2.40	2.47	2.41	2.15	2.49
Liver and Intrahepatic bile duct	0.63	0.37	0.54	0.33	0.59	0.41
Pancreas	1.13	1.21	1.12	1.19	1.15	1.53
Larynx	0.21	0.06	0.21	0.06	0.35	0.07
Lung and Bronchus	6.73	4.62	6.84	4.84	6.90	3.96
Melanomas of skin	0.33	0.19	0.39	0.22	0.03	0.02
Breast	0.03	3.34	0.03	3.41	0.06	3.68
Cervix uteri	-	0.23	-	0.21	-	0.42
Corpus and Uterus, NOS	-	0.51	-	0.51	-	0.55
Ovary	-	1.03	-	1.12	-	0.63
Prostate	3.43	-	3.36	-	4.42	-
Testis	0.02	-	0.02	-	0.00	-
Urinary bladder	0.72	0.32	0.80	0.33	0.33	0.31
Kidney and Renal pelvis	0.55	0.34	0.57	0.35	0.41	0.28
Brain and Other nervous system	0.49	0.40	0.54	0.43	0.24	0.27
Thyroid	0.04	0.06	0.04	0.05	0.02	0.03
Hodgkin's disease	0.06	0.04	0.07	0.04	0.05	0.02
Non-Hodgkin's lymphomas	0.97	0.93	1.03	0.99	0.54	0.48
Multiple myeloma	0.46	0.42	0.47	0.40	0.52	0.71
Leukemias	0.94	0.75	1.00	0.78	0.65	0.57

Table I-19

ESTIMATED UNITED STATES CANCER PREVALENCE,1997

All Races, By Sex

Primary Site	Estimated Prevalence		
	Total	Males	Females
All Sites	8,918,000	3,756,000	5,162,000
Brain and Other Nervous System	99,000	54,000	45,000
Breast	2,181,000	14,000	2,167,000
Cervix Uteri	209,000	0	209,000
Colon	853,000	394,500	458,500
Corpus Uteri	569,000	0	569,000
Hodgkin's Disease	168,000	89,000	79,000
Kidney and Renal Pelvis	224,000	136,000	88,000
Larynx	126,000	100,000	26,000
Leukemias	168,000	88,000	70,000
Lung and Bronchus	413,000	206,000	207,000
Melanomas of Skin	544,000	266,000	278,000
Non-Hodgkin's Lymphoma	332,000	166,000	166,000
Oral Cavity and Pharynx	208,000	127,000	81,000
Ovary	203,000	0	203,000
Pancreas	27,000	13,500	13,500
Prostate	1,247,000	1,247,000	0
Rectum	370,000	196,000	174,000
Stomach	77,000	43,000	34,000
Testis	142,000	142,000	0
Thyroid	233,000	57,000	176,000
Urinary Bladder	619,000	450,000	169,000
Childhood (0-14 yrs)	174,000	89,000	85,000

Source: U.S. 1997 cancer prevalence rates are based on 1997 cancer prevalence rates from the Connecticut registry of the SEER program and 1/1/1997 population estimates based on the average of 1996 and 1997 population estimates from the U.S. Bureau of the Census. Connecticut prevalence rates are based on 1940-1996 cancer incidence and survival rates. These estimates can not be compared to previous estimates.

Surveillance, Epidemiology, and End Results Program, 2000
National Cancer Institute
U.S.A.

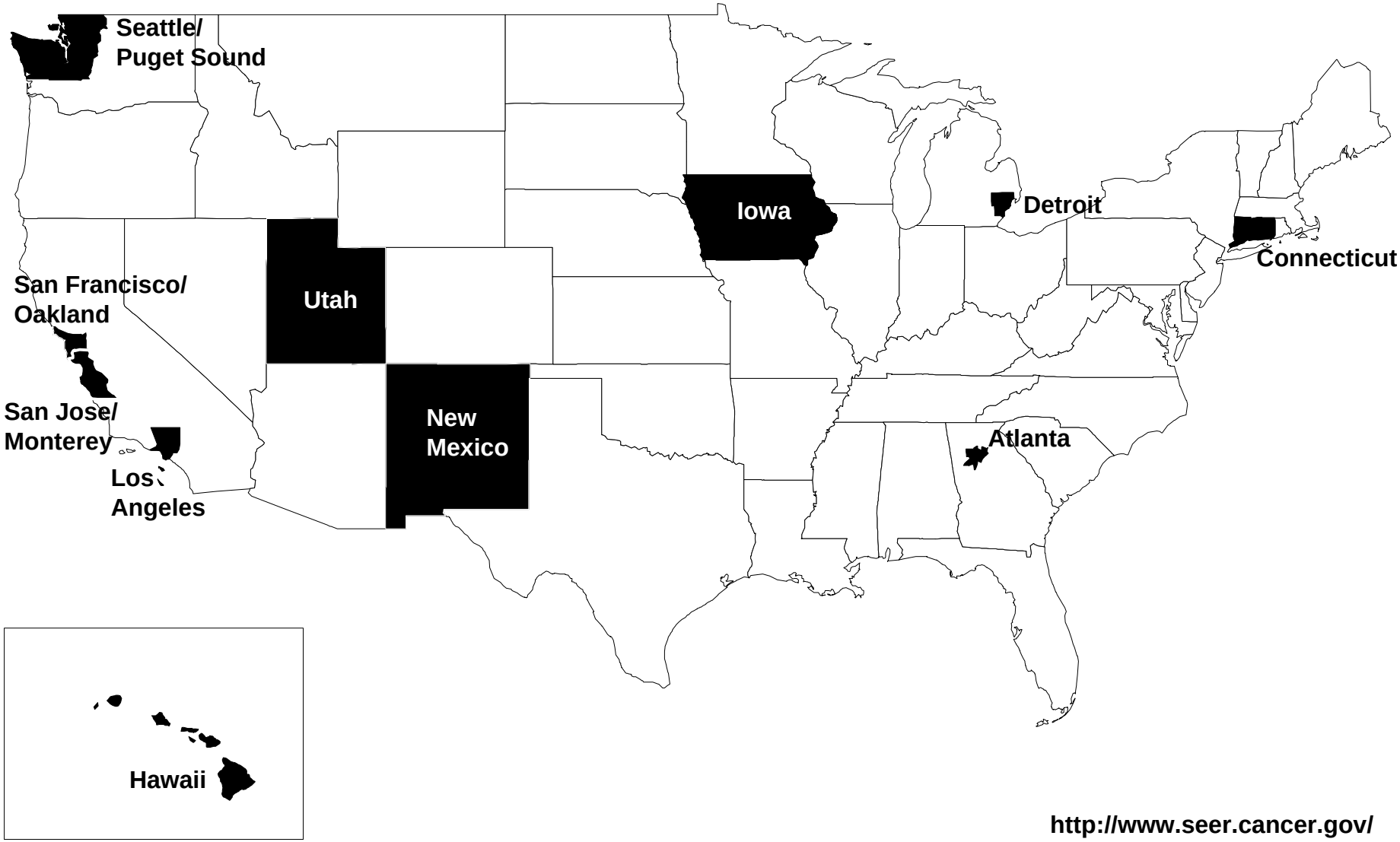
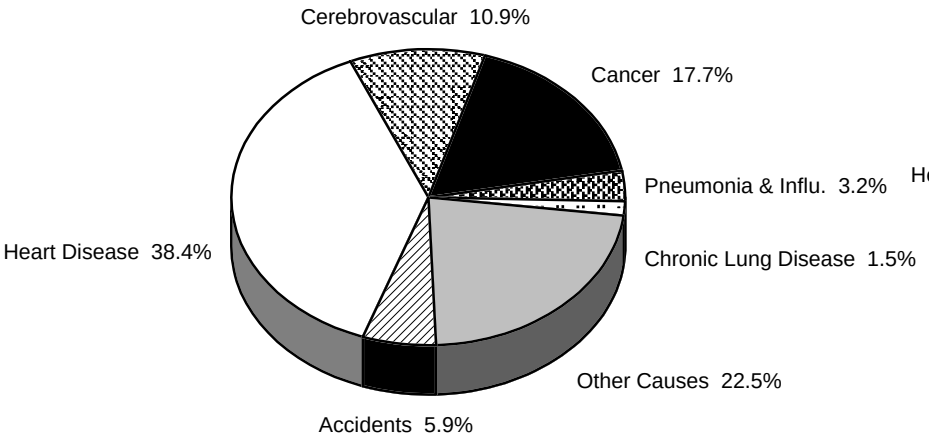


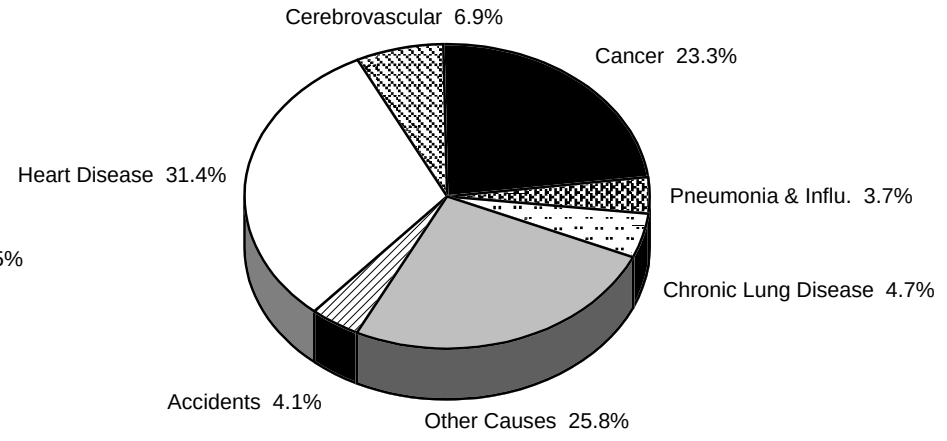
Figure I-1

http://www.seer.cancer.gov/

Leading Causes of Death in U.S.
Percent of All Causes of Death
1973 vs. 1997



1973

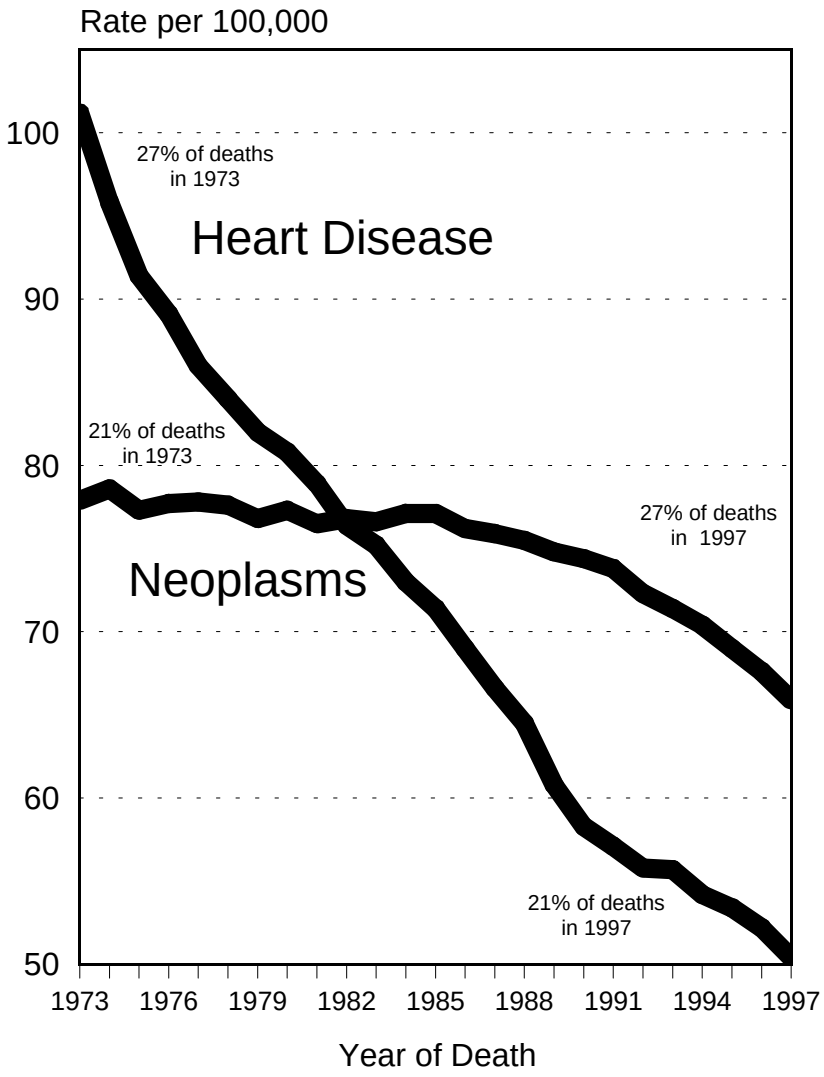


1997

Figure I-2

U.S. Mortality Rates
1973 - 1997

Ages Less Than 65



Ages 65 and Over

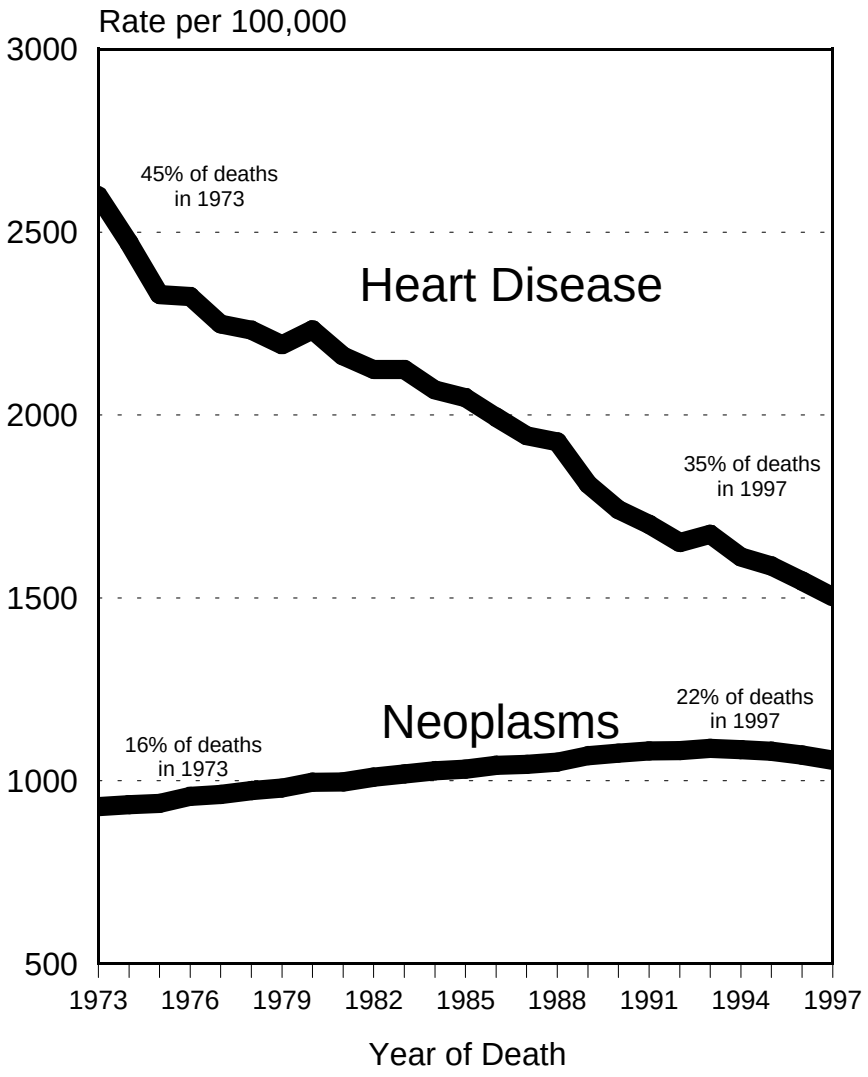
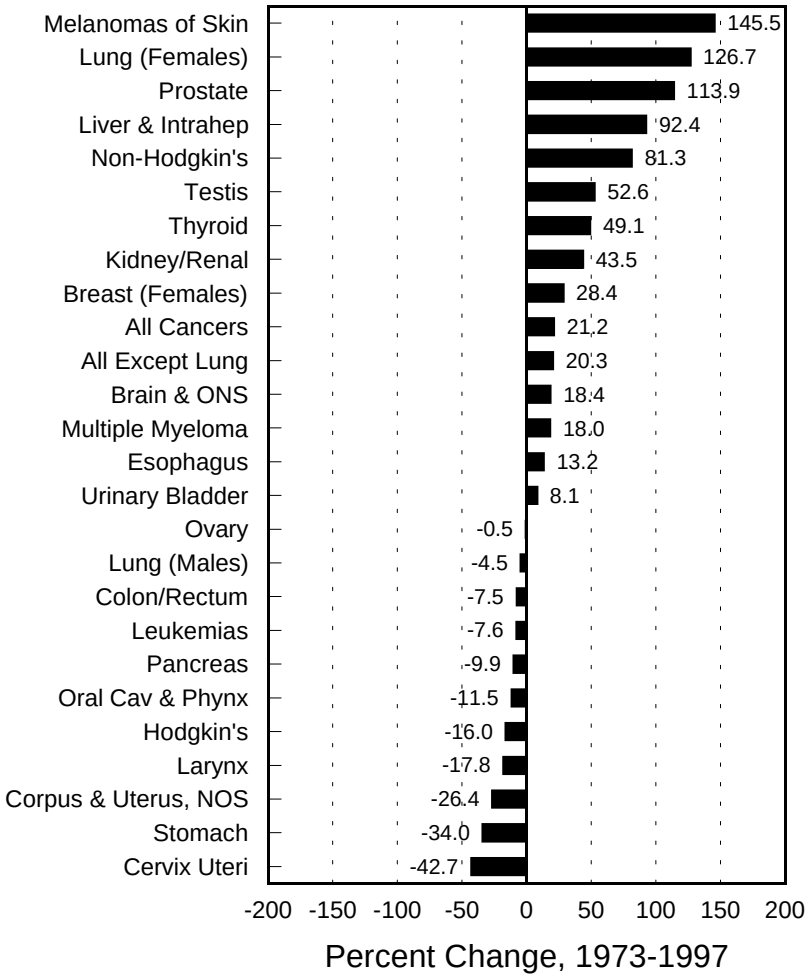


Figure I-3

Trends in SEER Incidence & U.S. Mortality Rates by Primary Cancer Site 1973-1997

Trends in SEER Incidence Rates



Trends in U.S. Cancer Mortality Rates

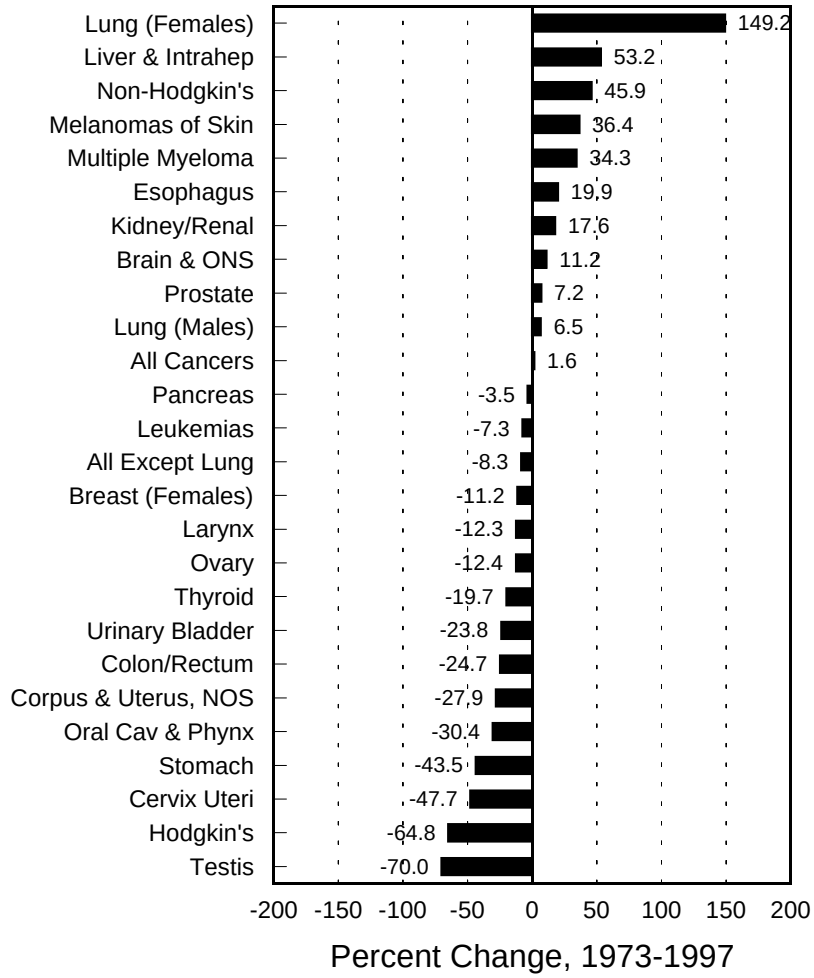
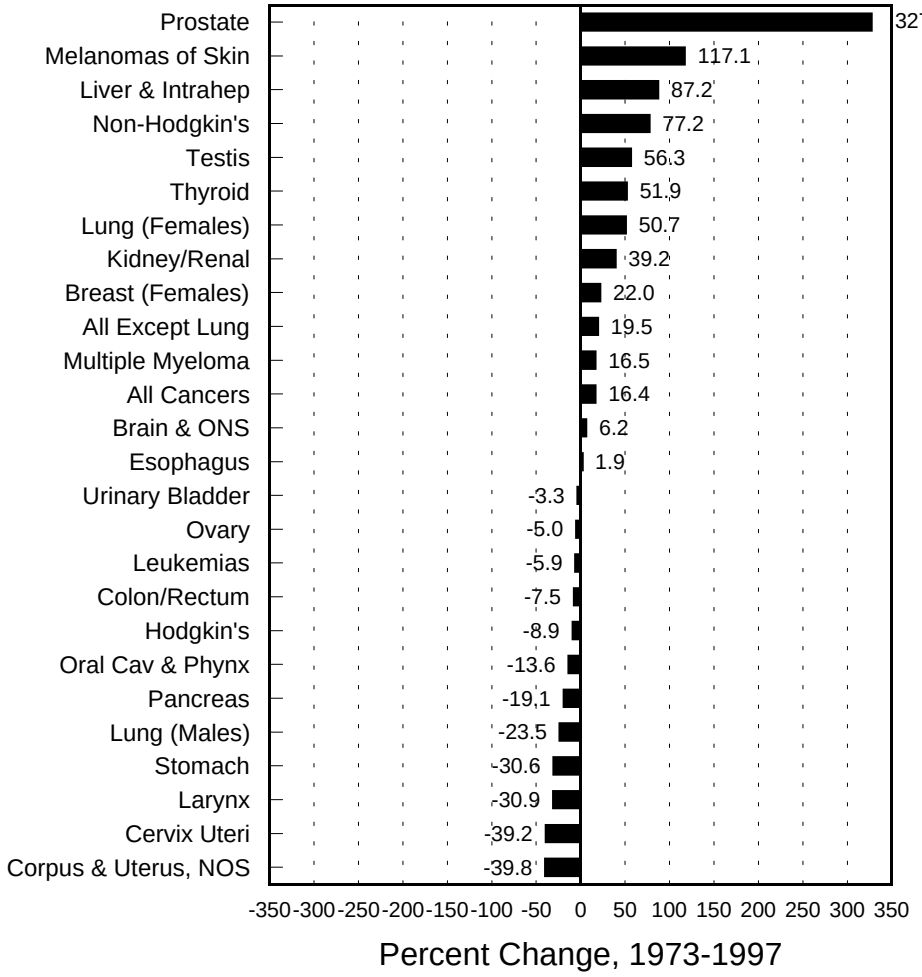


Figure I-4

Trends in SEER Incidence Rates by Primary Cancer Site 1973-1997

Ages Less Than 65



Ages 65 and Over

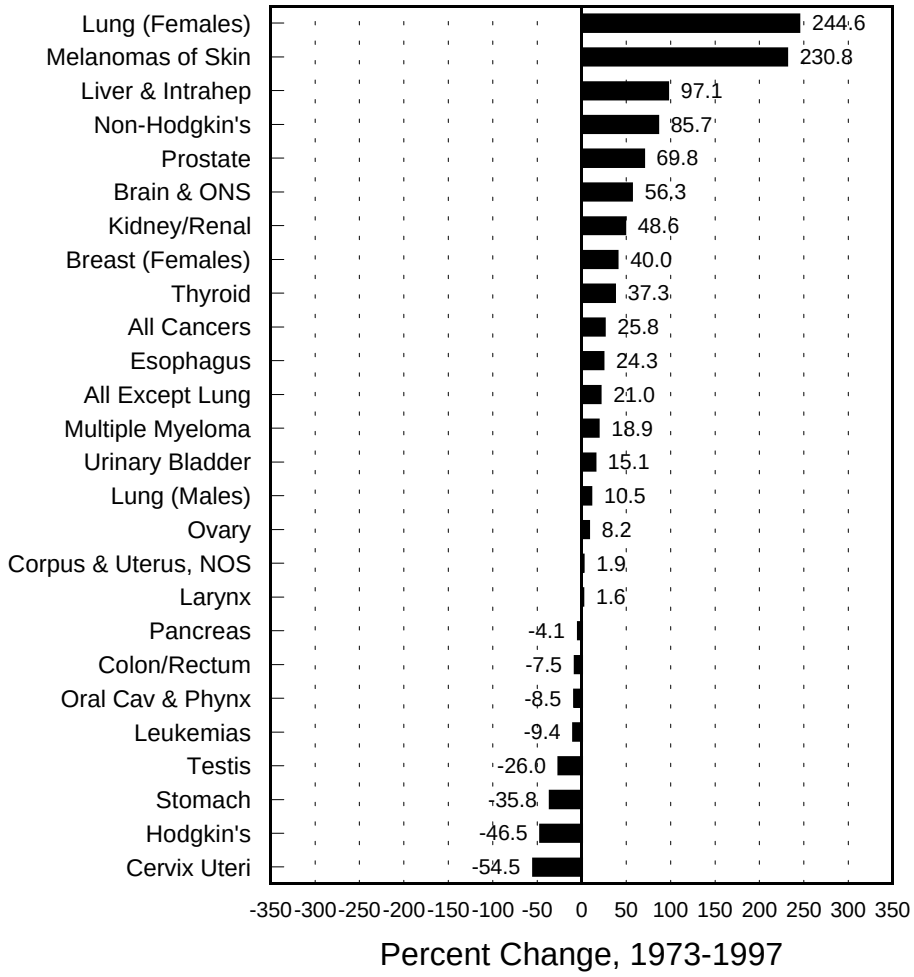
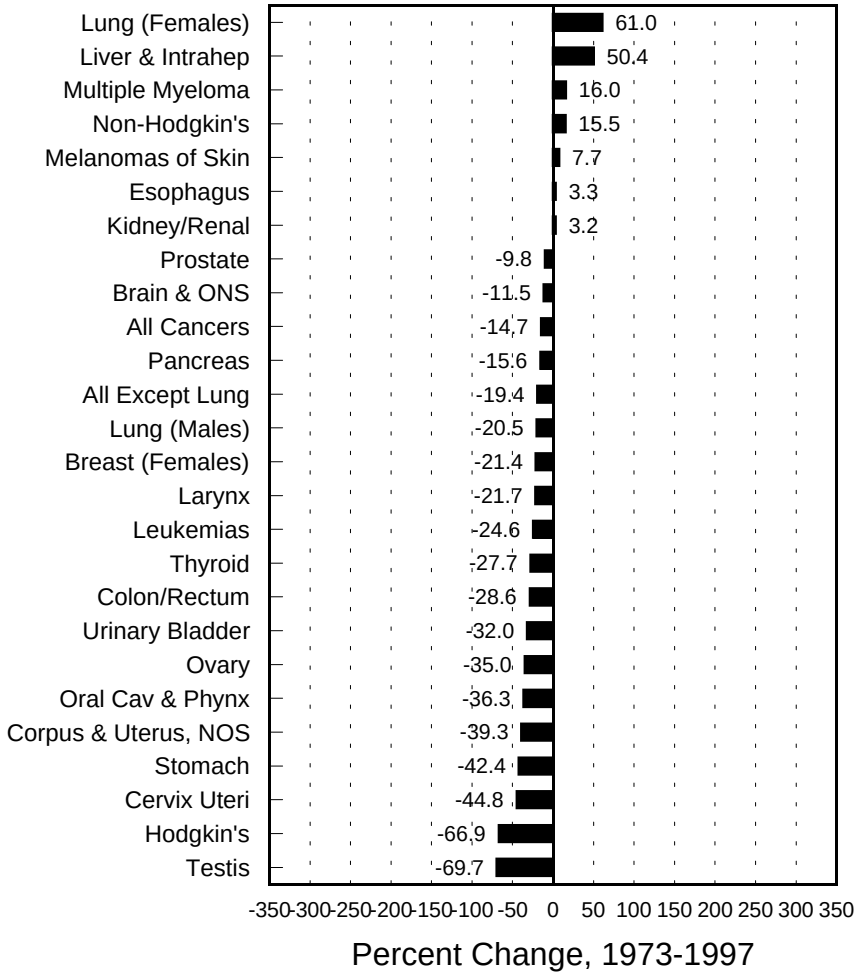


Figure I-5

Trends in U.S. Mortality Rates by Primary Cancer Site 1973-1997

Ages Less Than 65



Ages 65 and Over

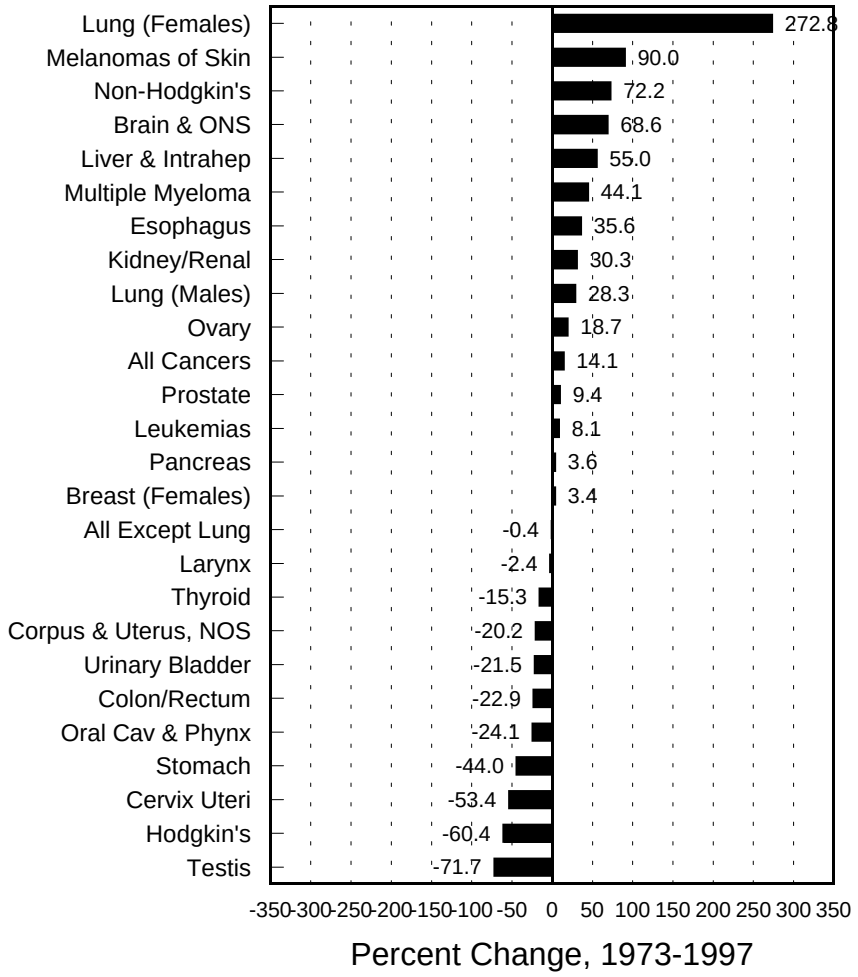
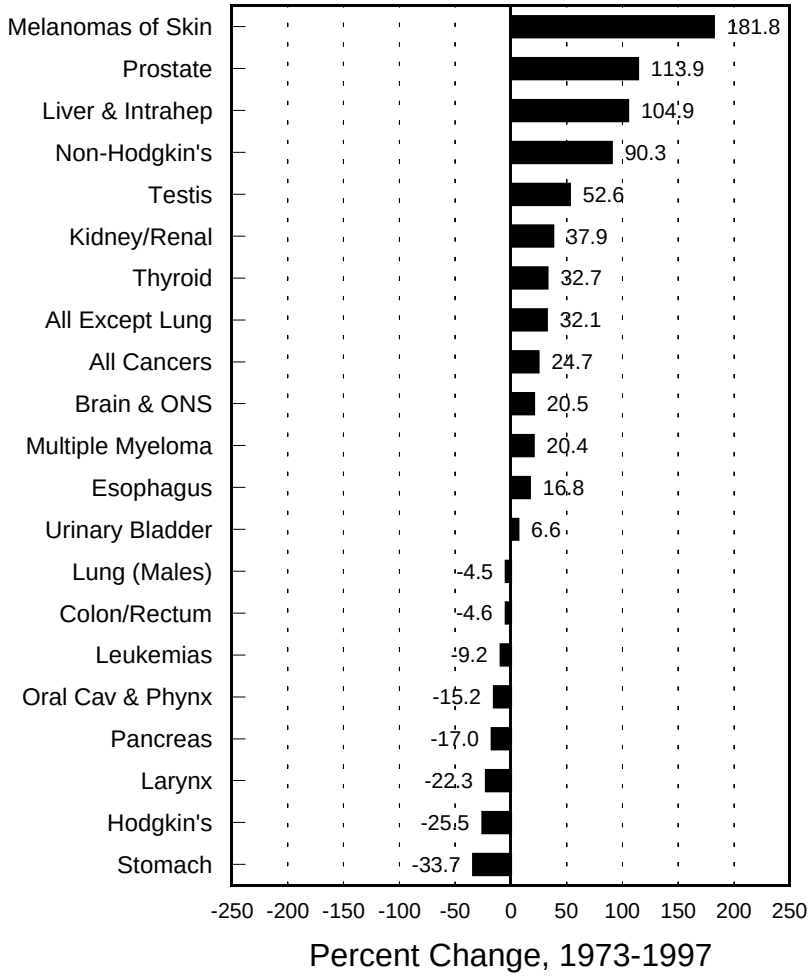


Figure I-6

Trends in SEER Incidence Rates by Primary Cancer Site 1973-1997

All Races, Males



All Races, Females

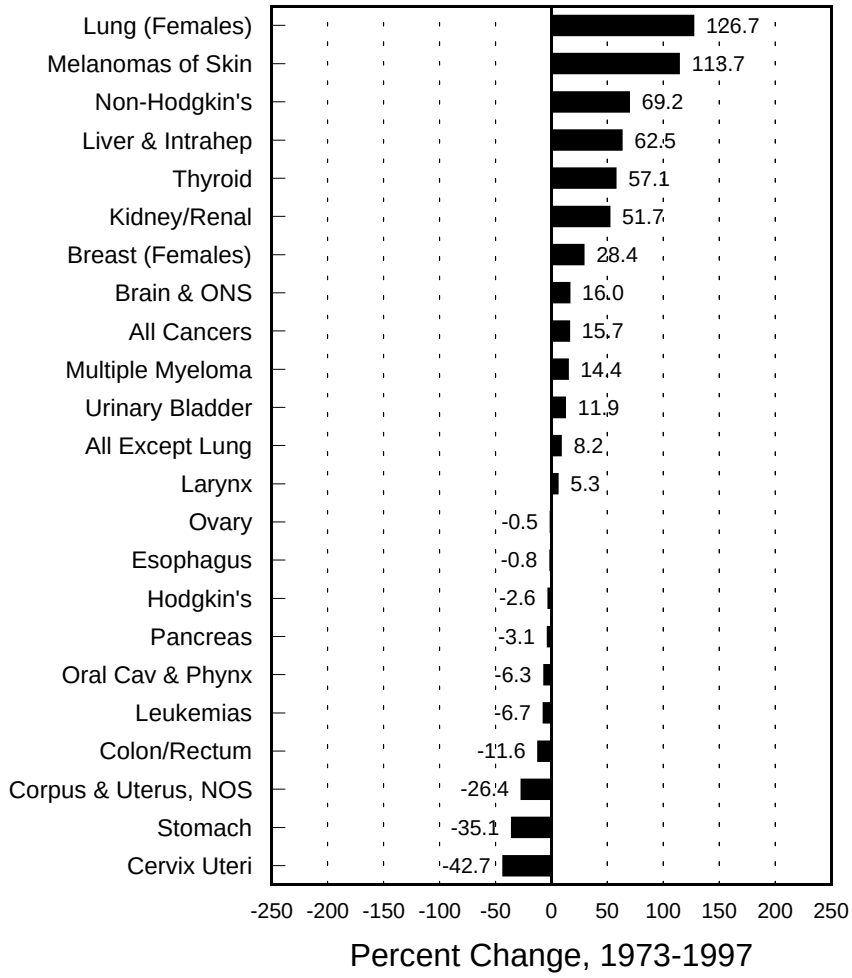
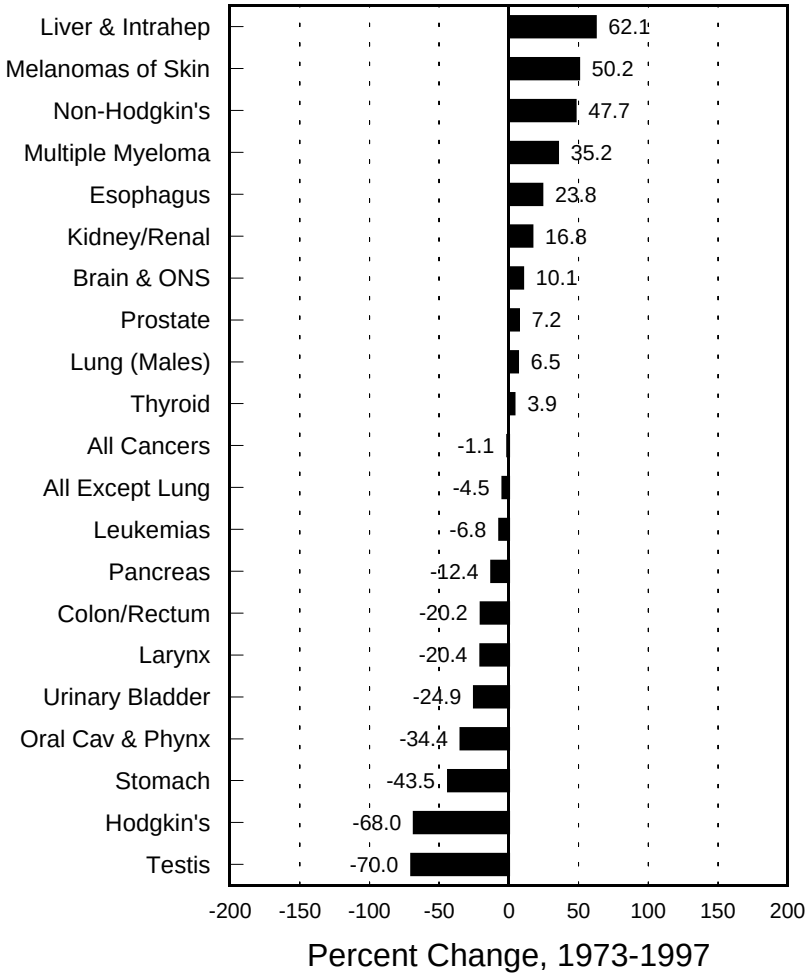


Figure I-7

Trends in U.S. Mortality Rates by Primary Cancer Site 1973-1997

All Races, Males



All Races, Females

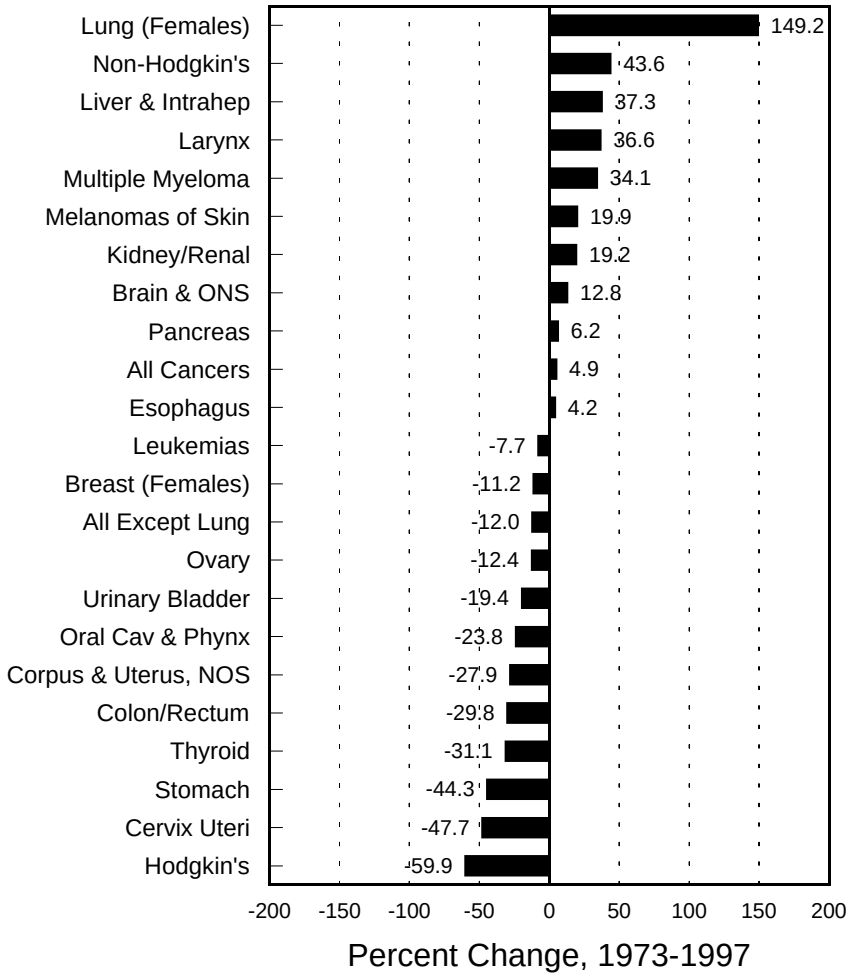
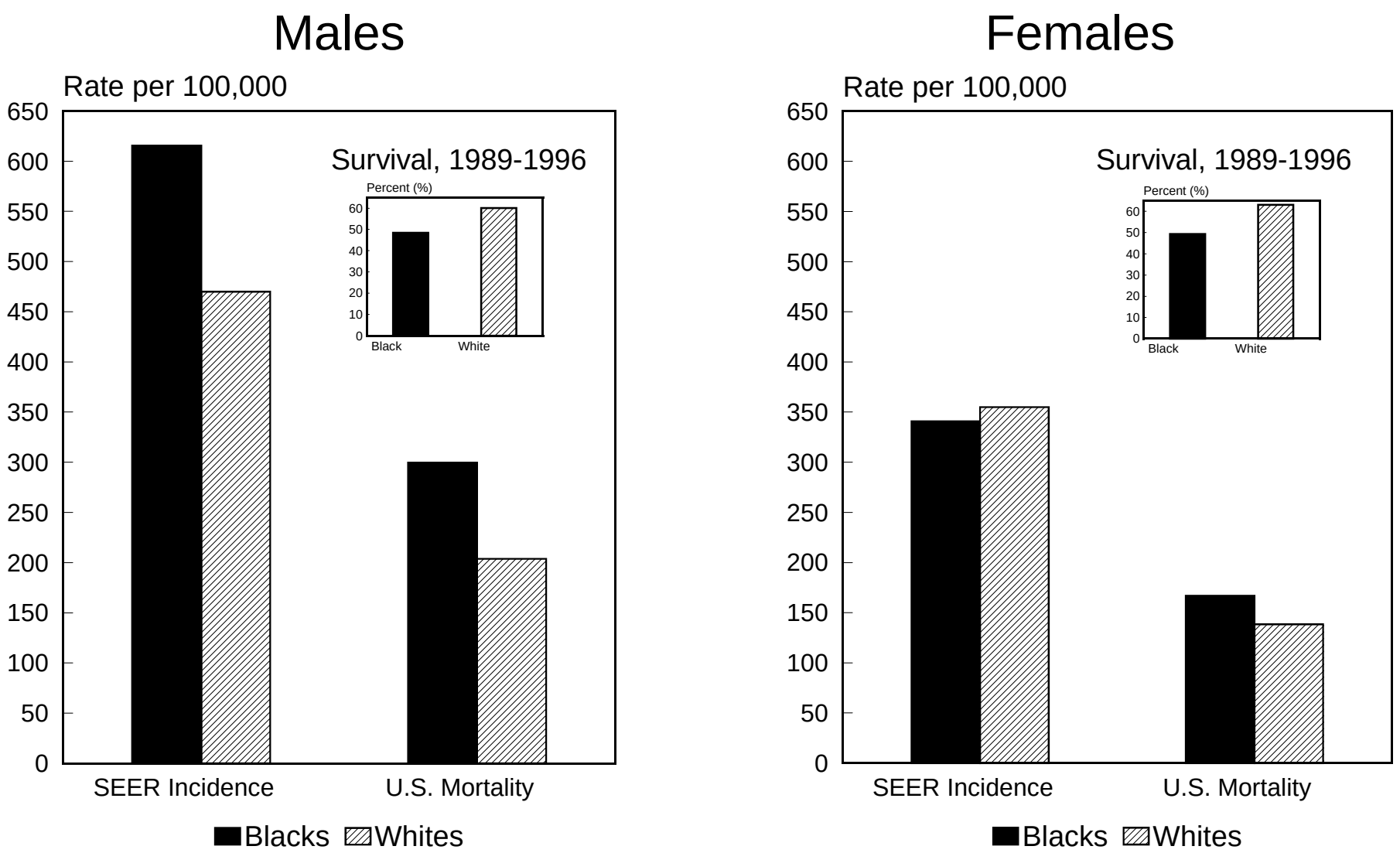


Figure I-8

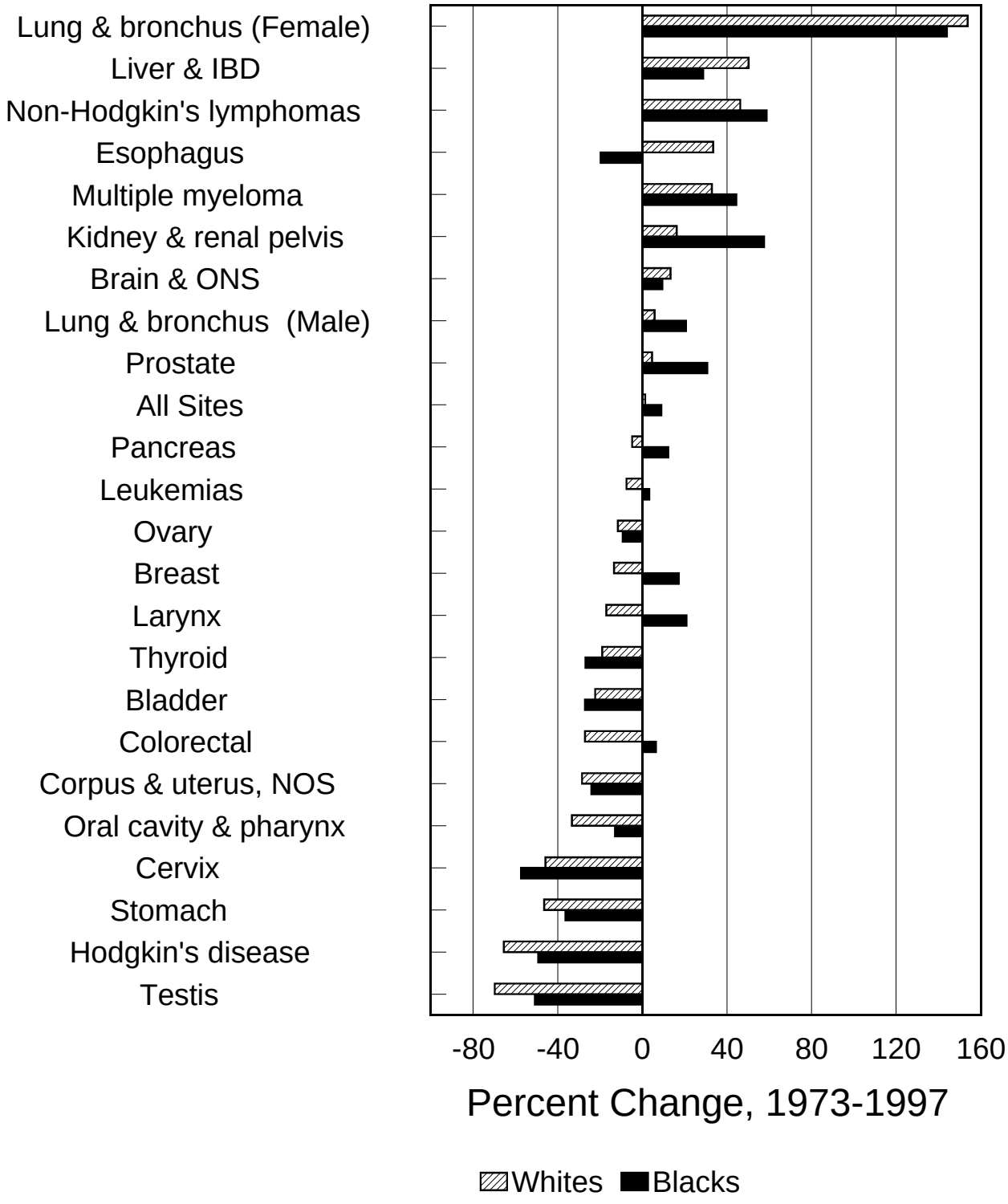
SEER Incidence and U.S. Mortality Rates (1993-1997)
5-Year Relative Survival Rates (1989-1996)
All Cancers Combined, by Race and Sex



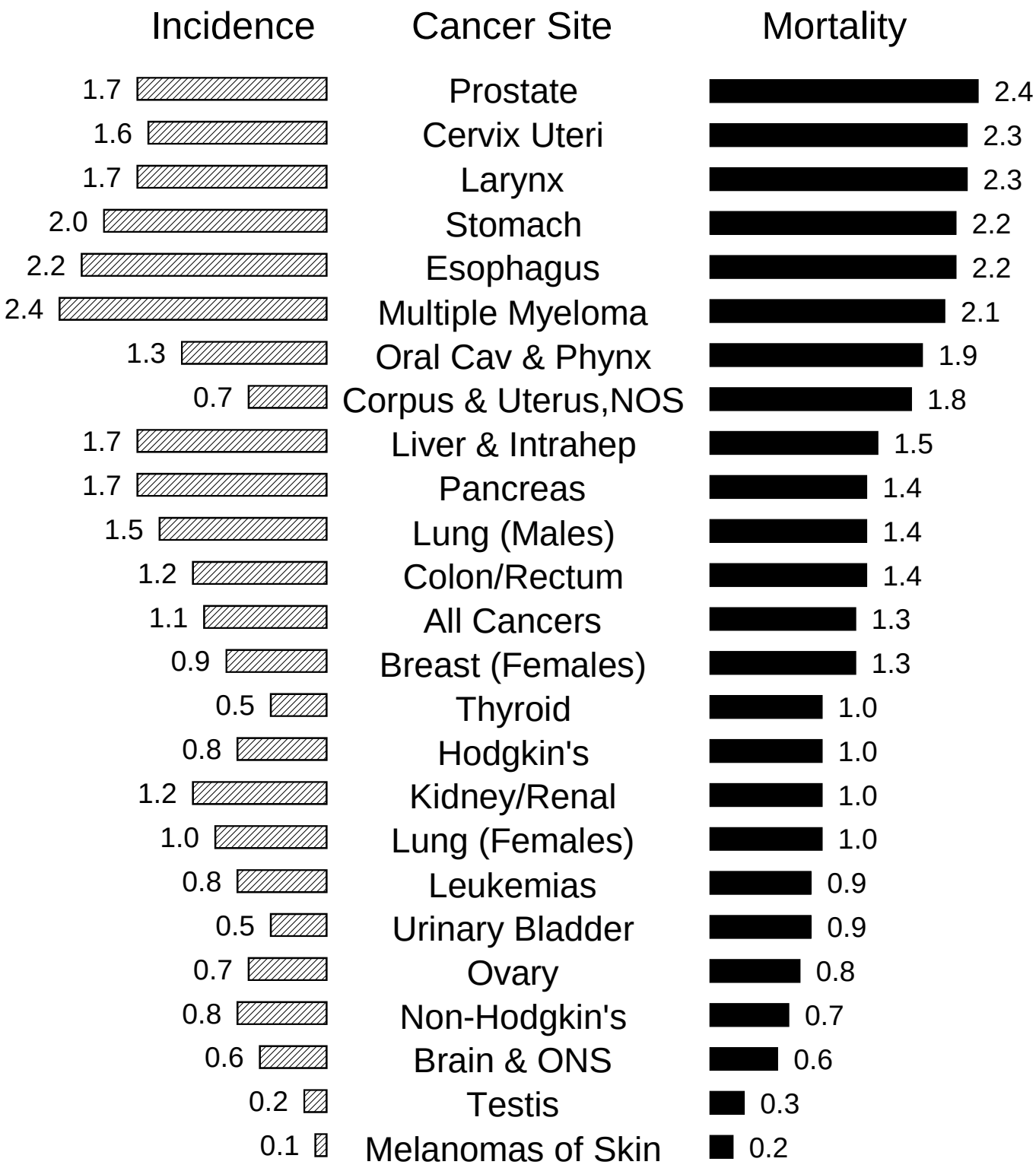
Rates are per 100,000 persons and age-adjusted to 1970
Relative survival rates are expressed as percents

Figure I-9

Trends in U.S. Mortality Rates, 1973-1997 by Primary Cancer Site Whites and Blacks, All Ages

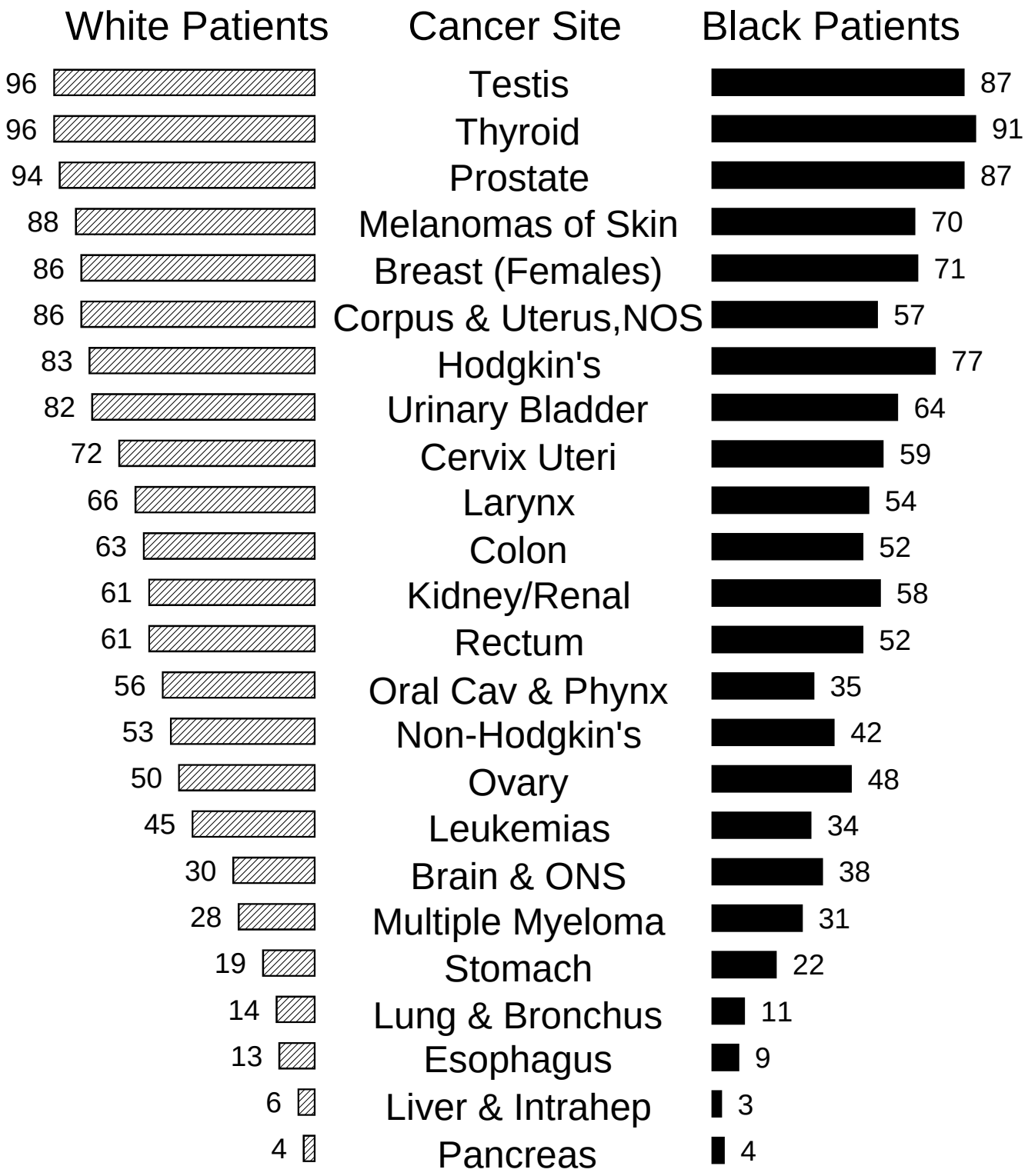


SEER Cancer Incidence and U.S. Mortality Rates, 1993-1997
Ratio of Black Rate to White Rate
All Ages

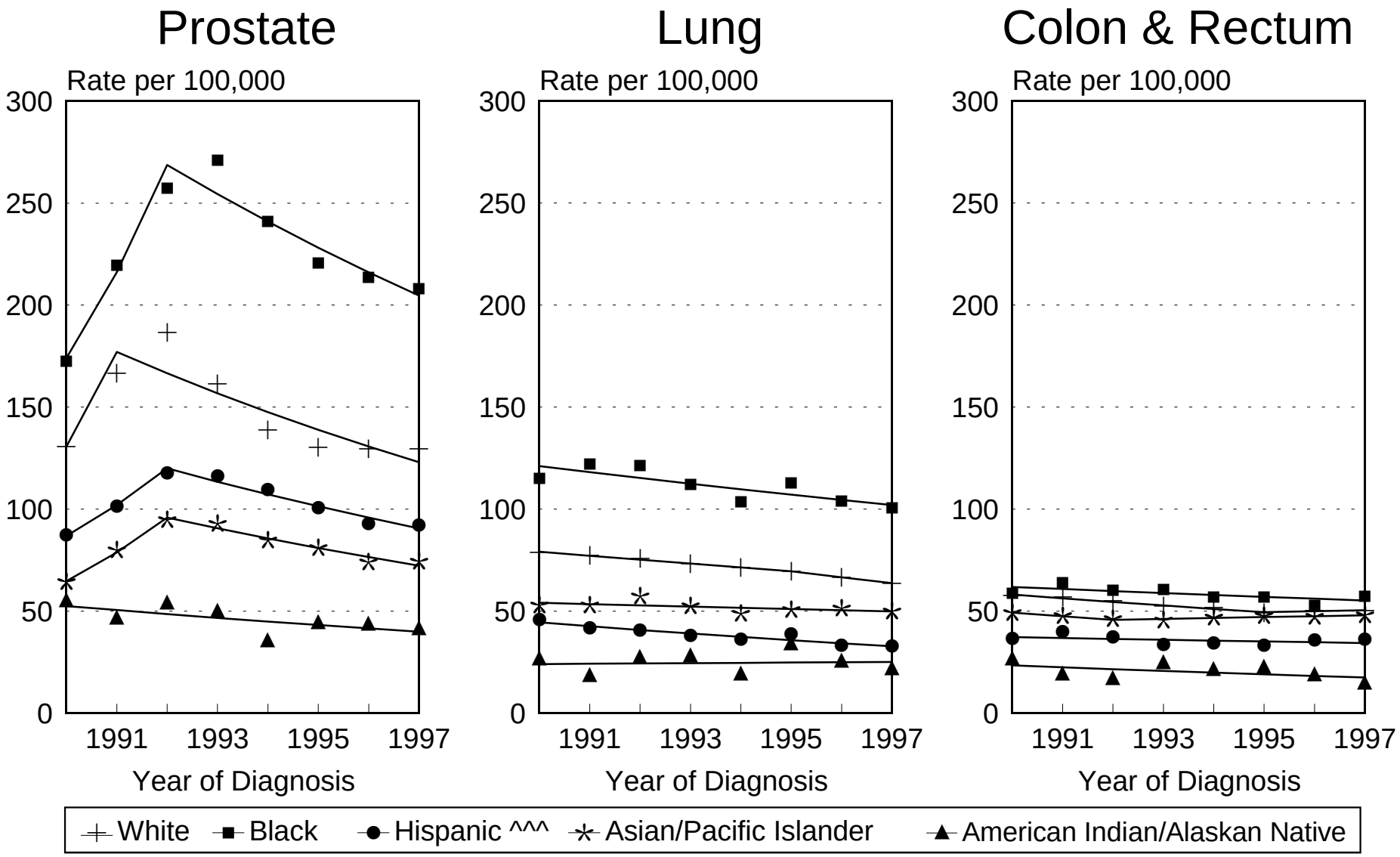


Ratio: (Black Rate)/(White Rate)
Rates are Age-adjusted to 1970 Standard.

5-Year Relative Survival Rates
SEER Program, 1989-1996
Males and Females



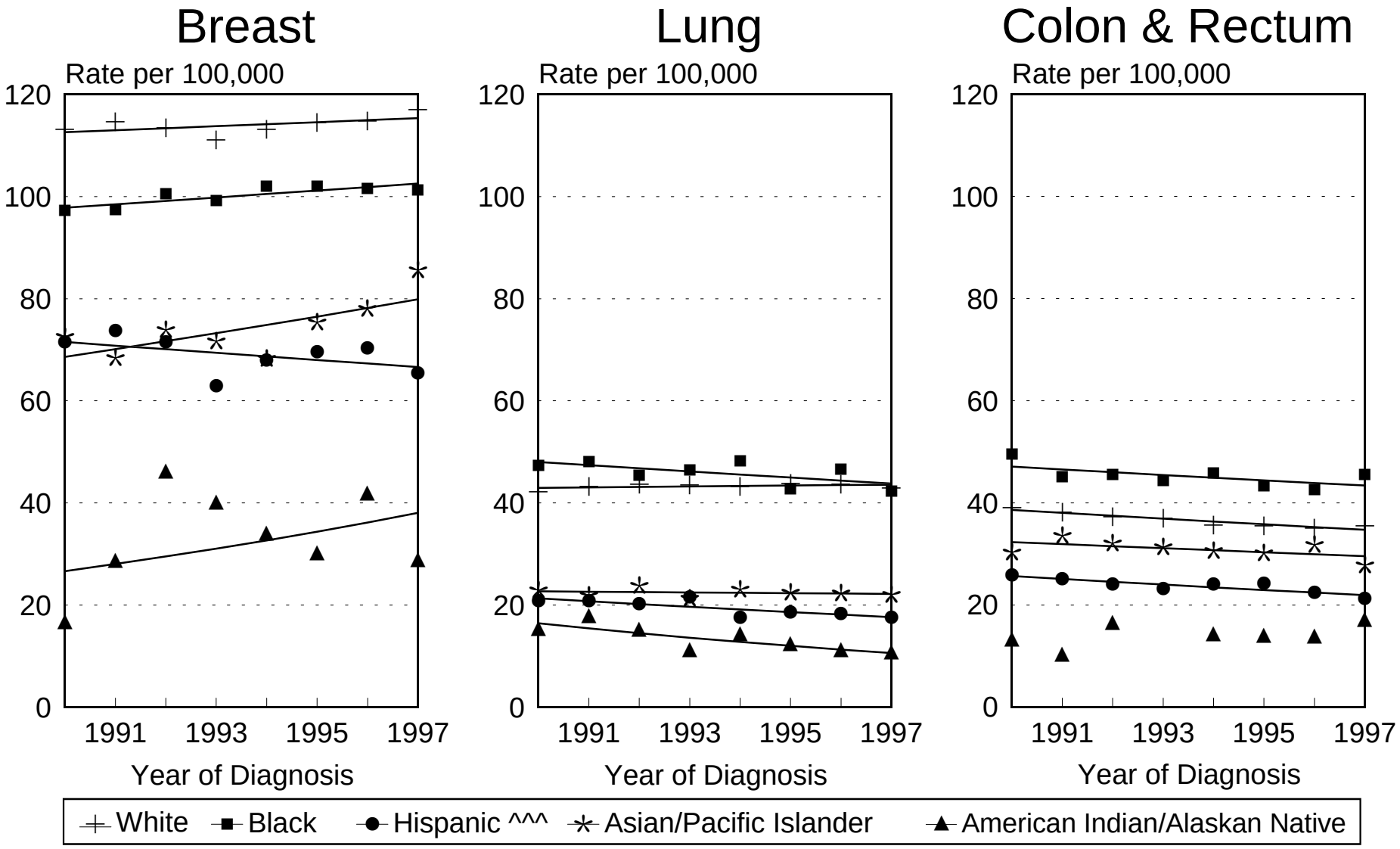
SEER Incidence 1990-1997
Males by Race/Ethnicity



^^^ Hispanic is not mutually exclusive from whites, blacks, Asian/Pacific Islanders, and American Indians/Alaskan Natives.
Data Source: SEER 11(San Francisco, Connecticut, Detroit, Hawaii, Iowa, New Mexico, Seattle, Utah, Atlanta, San Jose-Monterey, and Los Angeles).
Regression lines are calculated using the Joinpoint Regression Program.

Figure I-13

SEER Incidence 1990-1997
Females by Race/Ethnicity



^^^ Hispanic is not mutually exclusive from whites, blacks, Asian/Pacific Islanders, and American Indians/Alaskan Natives.
Data Source: SEER 11(San Francisco, Connecticut, Detroit, Hawaii, Iowa, New Mexico, Seattle, Utah, Atlanta, San Jose-Monterey, and Los Angeles). Rate not shown for less than ten cases.
Regression lines are calculated using the Joinpoint Regression Program. Regression line can not be calculated if any rates were not shown.

Figure I-14

U.S. Mortality 1990-1997
Males by Race/Ethnicity

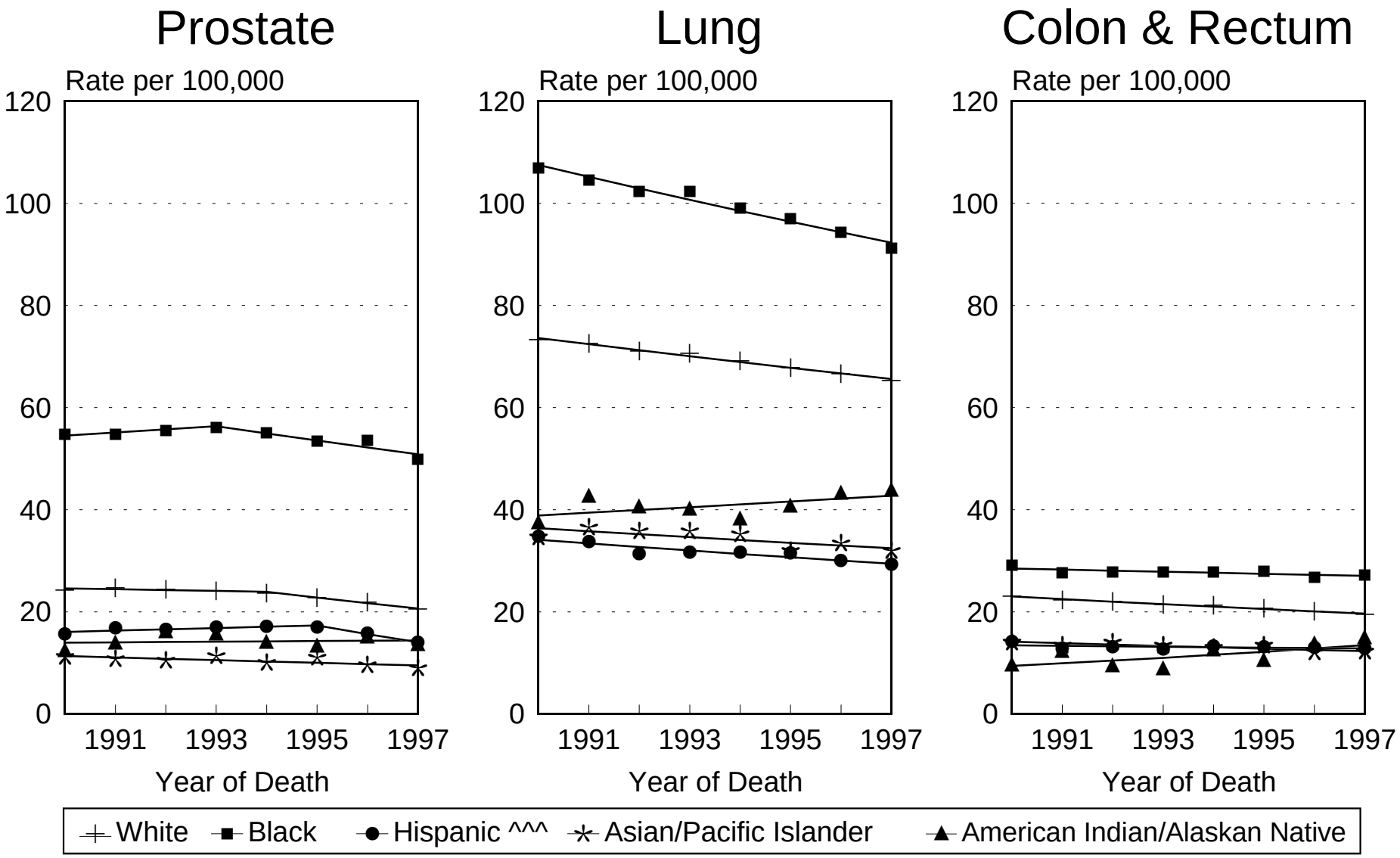


Figure I-15

^^^ Hispanic is not mutually exclusive from whites, blacks, Asian/Pacific Islanders, and American Indians/Alaskan Natives.
Data Source: Mortality data for Hispanics does not include data from Connecticut, Oklahoma, Louisiana, and New Hampshire.
Mortality data for all other races are from all U.S. States.
Regression lines are calculated using the Joinpoint Regression Program.

U.S. Mortality 1990-1997
Females by Race/Ethnicity

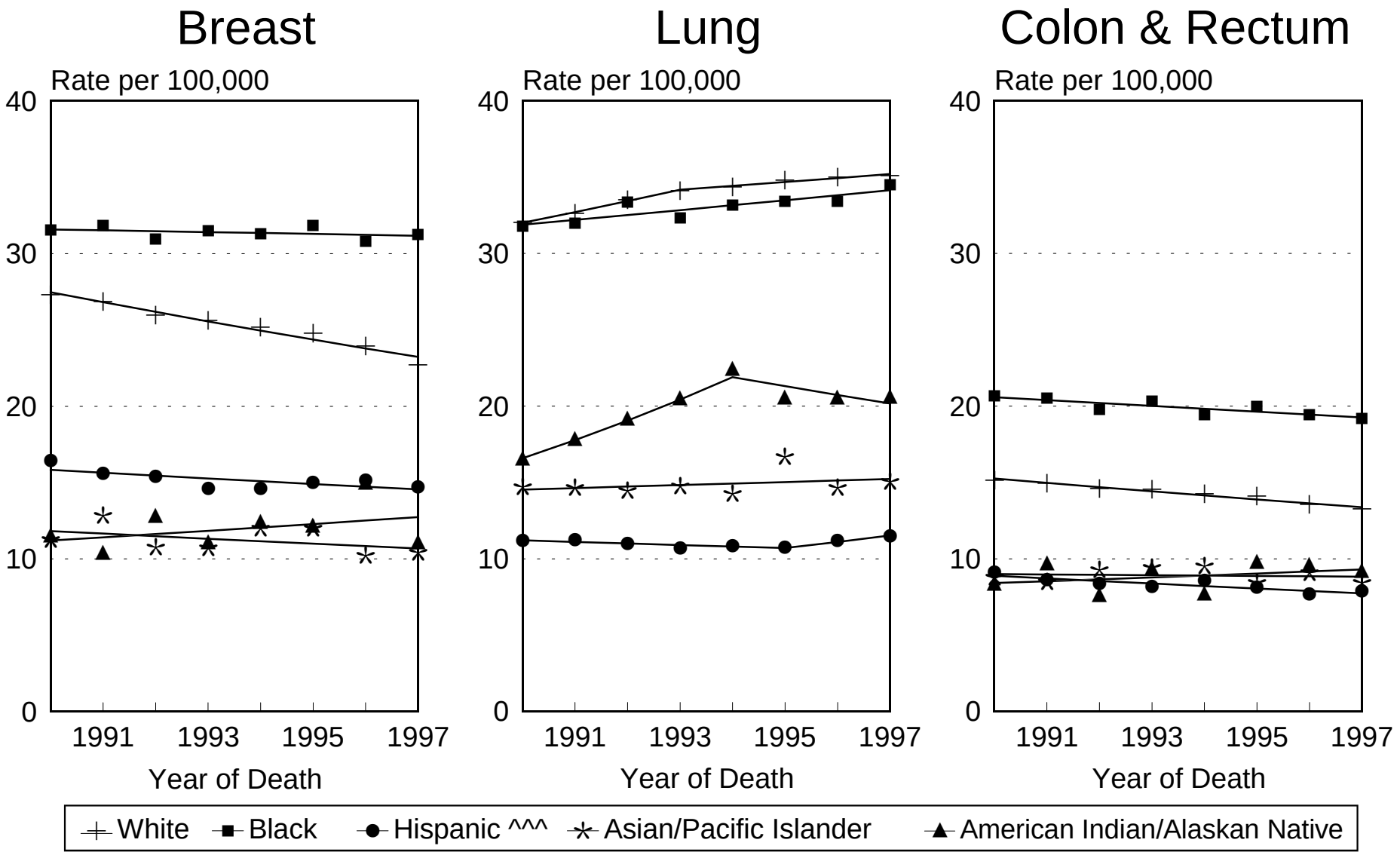
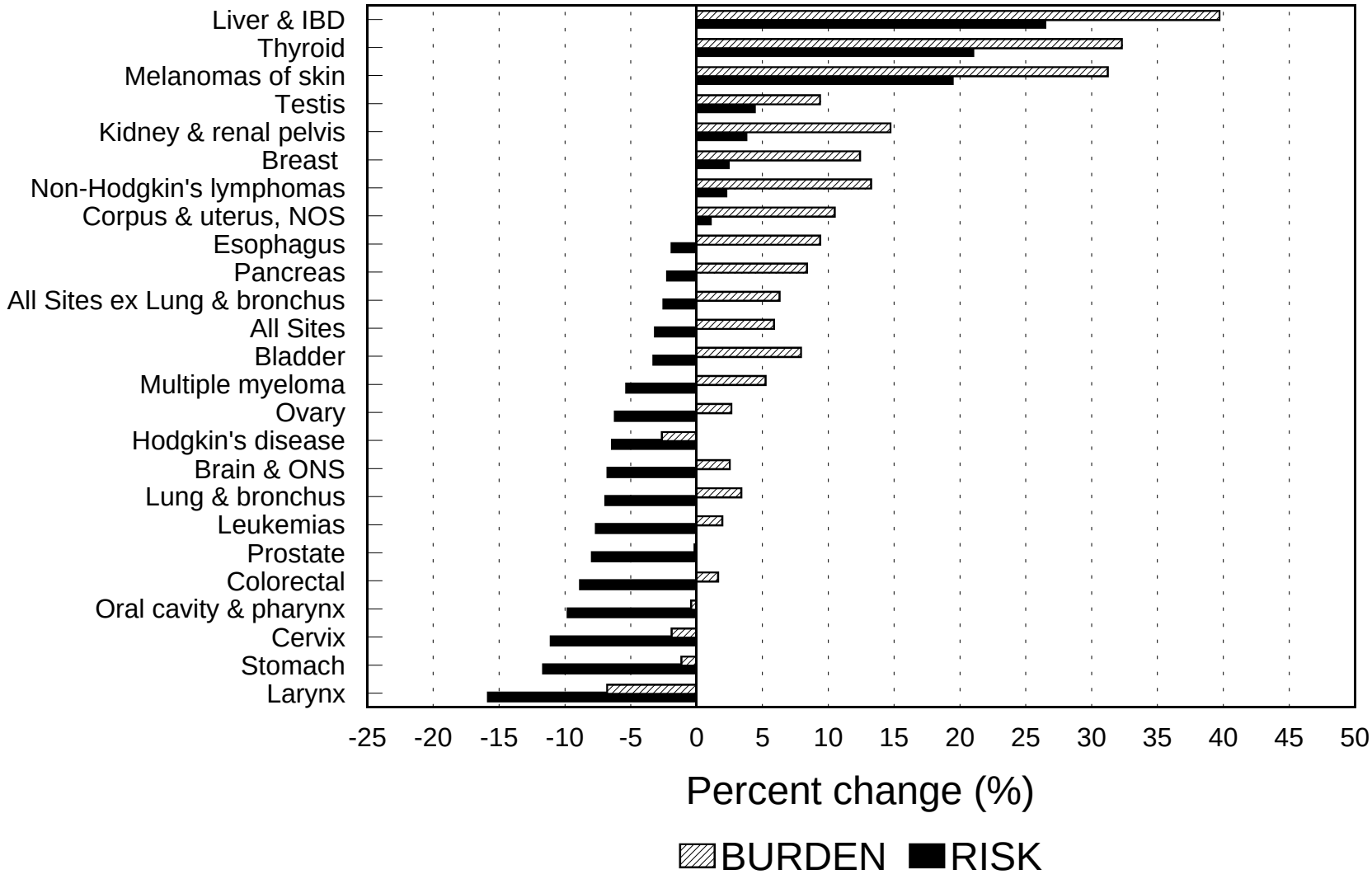


Figure I-16

^^^ Hispanic is not mutually exclusive from whites, blacks, Asian/Pacific Islanders, and American Indians/Alaskan Natives.
Data Source: Mortality data for Hispanics does not include data from Connecticut, Oklahoma, Louisiana, and New Hampshire.
Mortality data for all other races are from all U.S. States.
Regression lines are calculated using the Joinpoint Regression Program.

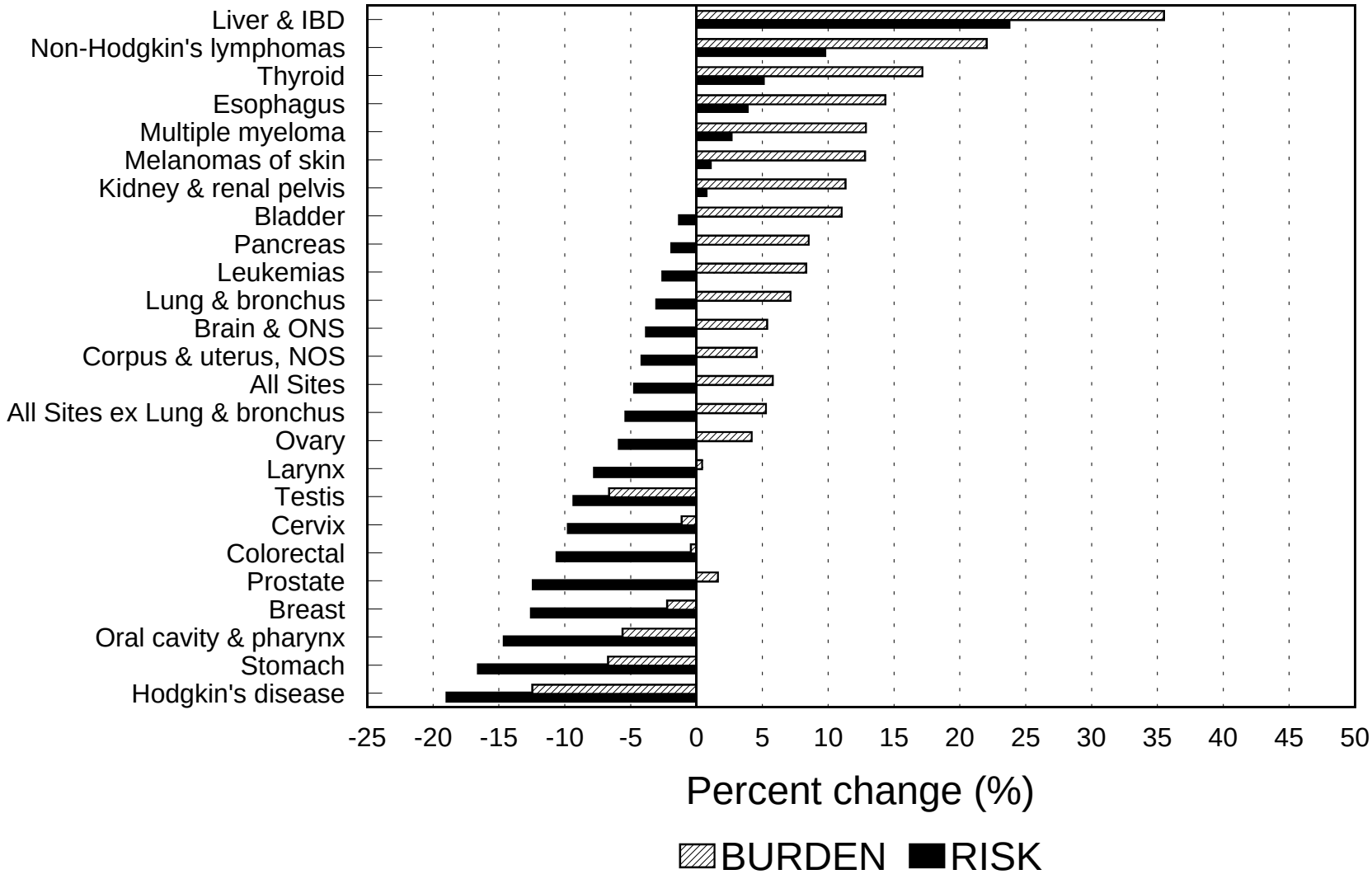
Incidence Percent Change, 1990 to 1997
Numbers (burden) vs. Rates (risk)
All Ages



U.S. Incidence estimates based on SEER age-specific rates applied to U.S. population

Figure I-17

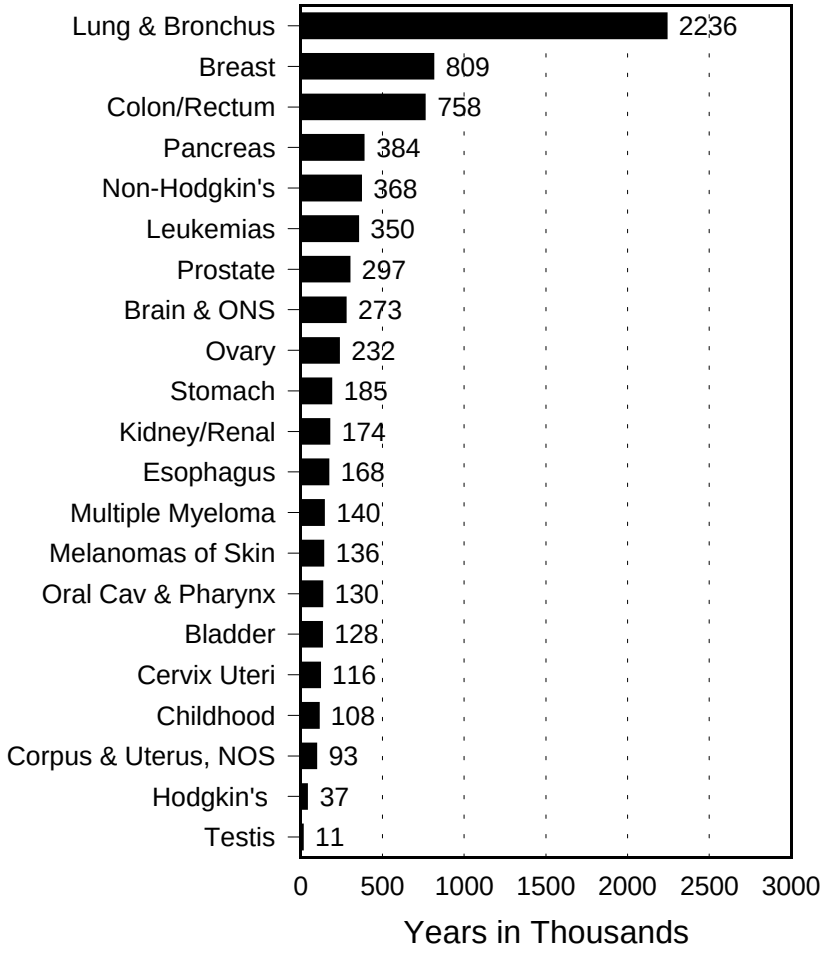
Mortality Percent Change, 1990 to 1997
Numbers (burden) vs. Rates (risk)
All Ages



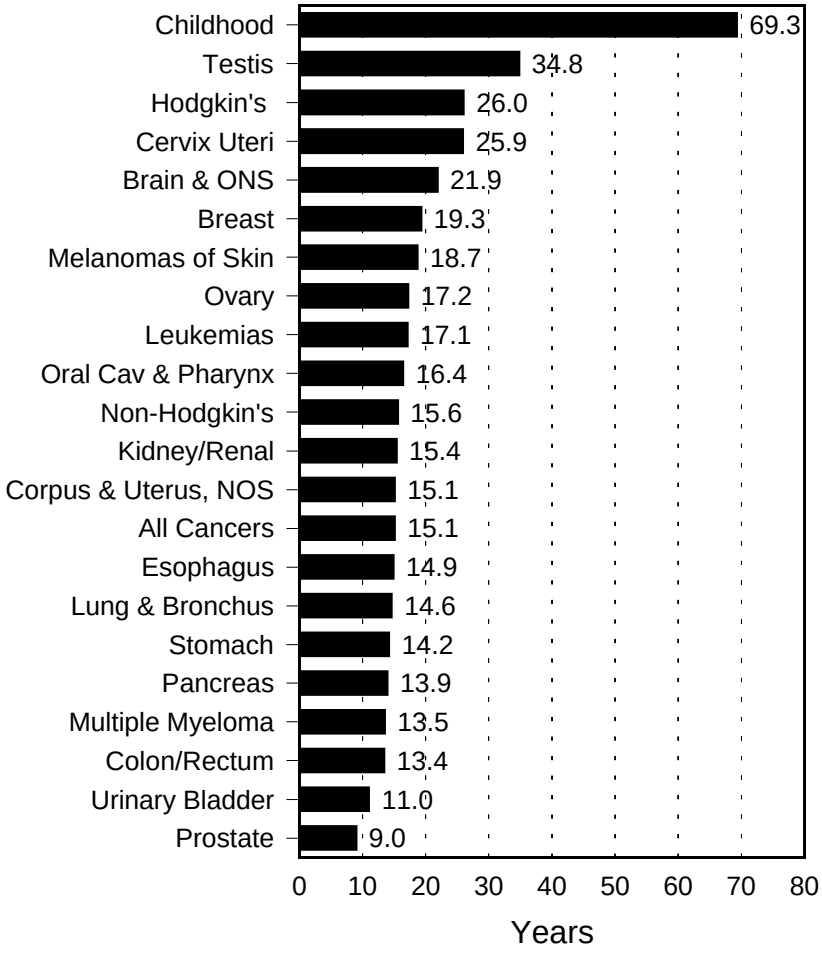
U.S. Incidence estimates based on SEER
age-specific rates applied to U.S. population

Figure I-18

Person-Years of Life Lost Due to Cancer, All Races Both Sexes, 1997



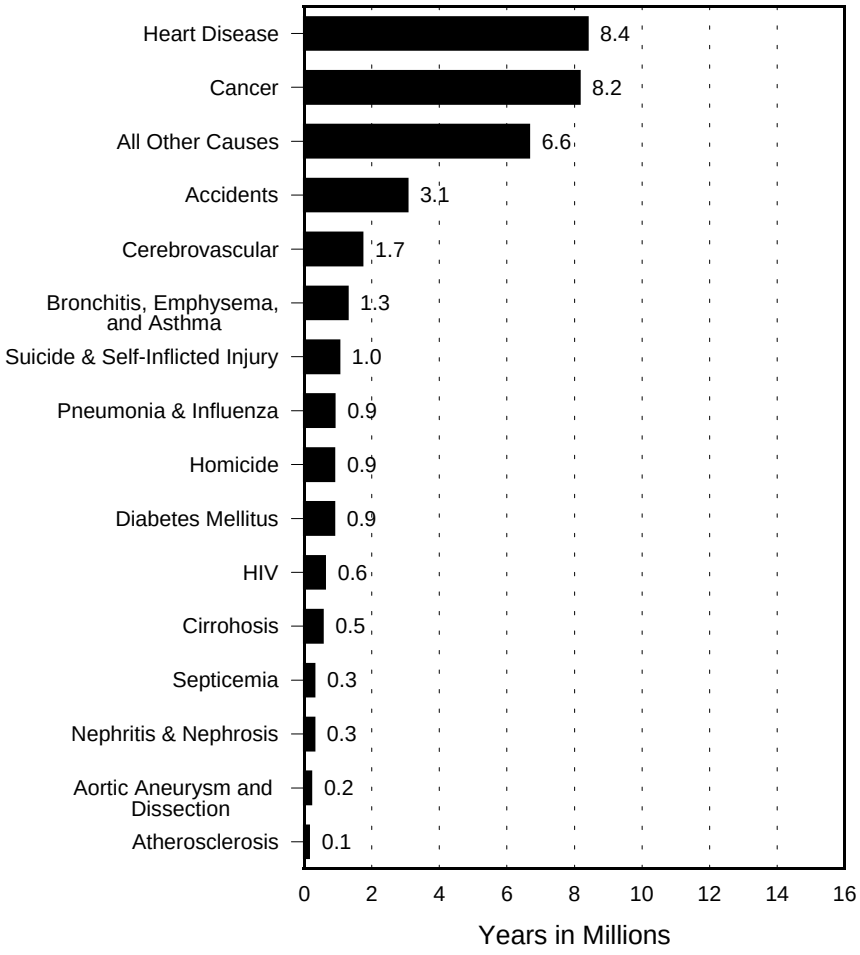
Average Years of Life Lost Per Person Dying of Cancer All Races, Both Sexes, 1997



Estimates produced using 1996 Life Tables

Figure I-19

Person-Years of Life Lost Due to Major Causes of Death in U.S. All Races, Both Sexes, 1997



Average Years of Life Lost Per Person Due to Major Causes of Death in U.S. All Races, Both Sexes, 1997

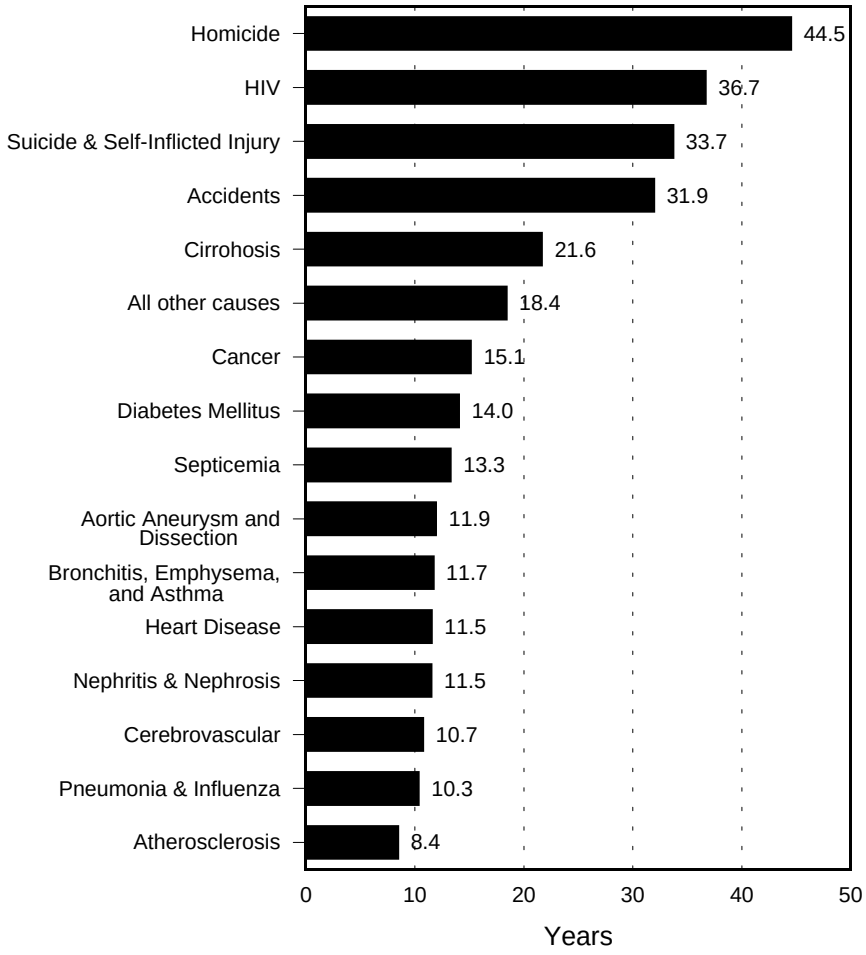


Figure I-20

Estimates produced using 1996 Life Tables