United States Cancer Statistics: 2004 Incidence and Mortality

Executive Summary

The Centers for Disease Control and Prevention (CDC) and the National Cancer Institute (NCI), in collaboration with the North American Association of Central Cancer Registries, Inc. (NAACCR), are pleased to release the sixth annual *United States Cancer Statistics* (*USCS*) report. This report provides official federal government cancer statistics for cases diagnosed in 2004 and for cancer deaths that occurred in 2004. Cancer incidence statistics included in this report come from CDC's National Program of Cancer Registries (NPCR) and NCI's Surveillance, Epidemiology, and End Results (SEER) Programs. Cancer mortality statistics are from CDC's National Vital Statistics System (NVSS).

Incidence data from 49 states, 6 metropolitan areas, and the District of Columbia are included in the report. The data obtained from NPCR and SEER registries in these areas cover approximately 98% of the U.S. population. Mortality data from NVSS are presented for all 50 states and the District of Columbia and therefore cover 100% of the U.S. population.

Cancer incidence and mortality statistics are reported for 68 selected primary cancer sites and subsites for men of all ages and 72 selected primary cancer sites and subsites for women of all ages. These data are presented in tables and graphs in the following categories: 1) by geography: all U.S. combined, U.S. Census regions and divisions, states, and selected metropolitan areas; and 2) by race and ethnicity: all races combined, whites, blacks, Asians/Pacific Islanders, American Indians/Alaska Natives, and Hispanics/Latinos. Incidence data for American Indians/Alaska Natives are classified according to information on race obtained from medical records and recorded in the registry. To address the racial misclassification that exists in the registries, all NPCR and SEER registries linked their registry records with those of the Indian Health Service (IHS), which provides medical services to approximately 55% of the American Indian/Alaska Native population. American Indian/Alaska Native race is reported for mortality data as recorded on the death certificate.

The section on childhood cancer includes incidence data for more than 13,000 cancer cases and 2,000 cancer deaths among children and adolescents aged 19 years or younger. These data are presented by race, sex, age, and primary site as well as by specific cancer types, classified according to the *International Classification of Childhood Cancer, Third Edition* (ICCC-3).

This year, incidence data for nonmalignant tumors of the brain and other nervous system from approximately 97% of the U.S. population have been added to the report; these data are categorized by histologic subtype, age, and sex.

A companion *USCS* Web site is available at http://www.cdc.gov/uscs. The *USCS* Web site is a comprehensive source of 2004 data and contains: 1) tables of age-adjusted incidence and death rates for all U.S. combined, U.S. Census regions and divisions, states, and selected metropolitan areas by sex and race and ethnicity; 2) figures of the most commonly diagnosed cancers and the leading causes of cancer death by state, sex, and race and ethnicity; 3) tables with information on cancer cases and cancer deaths among children and adolescents aged 19 years or younger; 4) tables of detailed data on malignant and nonmalignant tumors of the brain and other nervous system presented by age, sex, and specific cancer type and subtype; 5) combined data for the years 2002-2004 for all tables and graphs (which results in more stable incidence and death rates); 6) age-adjusted rates (age adjusted to the 2000 U.S. standard population), crude rates, incidence and death counts, and 95% confidence intervals for all rates presented; and 7) tables of age-specific incidence and death rates for 27 cancer sites. The *USCS* Web site also contains updated information for 1999-2003 diagnoses.

All rates in this report are age-adjusted to the 2000 U.S. standard population. Age adjustment allows researchers to compare data across populations by controlling for the effect of age on populations with different age distributions. In this report, population estimates for 2004 were obtained from the 2000 U.S. Census and slightly modified by SEER for the Native Hawaiian population. These modified population estimates improve the accuracy of the rates for some racial and geographic populations. Because of differences in the population coverage for incidence (approximately 98%) and mortality (100%), readers should be cautious when interpreting comparisons between incidence rates and death rates at the national and regional levels; state comparisons are valid**.**

In addition, readers should not compare the rates published in this report with cancer rates that were calculated using different methods or standardized to different populations. Incidence rates for all ages are coded according to the third revision of the *International Classification of Diseases for Oncology* (ICD–O–3). Incidence rates for cancer among children and adolescents (ages 0-19 years) are coded according to the third revision of the ICCC. Readers should be cautious when comparing cases coded according to earlier versions of the ICD–O (cases diagnosed before 2001) and ICCC (cases diagnosed before 2003) with ICD–O–3- or ICCC-3-coded cases, respectively. The *USCS* Web site contains updated statistics for 1999-2003 diagnoses; all cases on the Web site are coded according to the current ICD–O–3 and ICCC-3 classifications so that readers can accurately compare cancer cases from all diagnosis years (1999-2004) listed on the *USCS* Web site.

Major Findings

Rates are presented in parentheses where appropriate and are per 100,000 persons.

*Cancer Among Men**

Most commonly diagnosed cancers among men:

- **Prostate cancer** (145.3)
  - ➤ First among men of all races and Hispanic origin.
- **Lung cancer** (85.3)
  - ➤ Second among white (84.4), black (104.5), Asian/Pacific Islander (49.7), and American Indian/Alaska Native (51.1) men.
  - ➤ Third among Hispanic men (48.5).
- **Colorectal cancer** (58.2)
  - ➤ Second among Hispanic men (50.3).
  - ➤ Third among white (57.0), black (67.6), Asian/Pacific Islander (42.0), and American Indian/Alaska Native (32.6) men.

Leading causes of cancer death among men:

- **Lung cancer** (70.3)
  - ➤ First among men of all races and Hispanic origin.
- **Prostate cancer** (25.4)
  - ➤ Second among white (23.4), black (56.1), American Indian/Alaska Native (16.5), and Hispanic (19.3) men.
- **Colorectal cancer** (21.6)
  - ➤ Third among men of all races and Hispanic origin.
- **Liver cancer**
  - ➤ Second among Asian/Pacific Islander men (15.1).

*Cancer Among Women**

Most commonly diagnosed cancers among women:

- **Breast cancer** (117.7)
  - ➤ First among women of all races and Hispanic origin.
- **Lung cancer** (54.2)
  - ➤ Second among white (55.5) and American Indian/Alaska Native (35.3) women.
  - ➤ Third among black (50.4), Asian/Pacific Islander (26.9), and Hispanic (26.7) women.
- **Colorectal cancer** (42.7)
  - ➤ Second among black (50.6), Asian/Pacific Islander (32.1), and Hispanic (34.2) women.

* The combined rate for all races is presented when the ranking of cancer sites did not differ across race and ethnicity; race- or ethnicity-specific rates are presented when ranking differed by race or ethnicity.

- ➤ Third among white (41.6) and American Indian/Alaska Native women (28.7).

Leading causes of cancer death among women:

- **Lung cancer** (40.9)
  - ➤ First among white (41.9), black (40.0), Asian/Pacific Islander (18.1), and American Indian/Alaska Native (30.2) women.
  - ➤ Second among Hispanic women (14.4).
- **Breast cancer** (24.4)
  - ➤ First among Hispanic women (15.7).
  - ➤ Second among white (23.8), black (32.3), Asian/Pacific Islander (12.6), and American Indian/Alaska Native (15.0) women.
- **Colorectal cancer** (15.2)
  - ➤ Third among women of all races and Hispanic origin.

Cancer Among Children

The most commonly diagnosed cancers and leading causes of cancer death in children aged 0-19 years:

- **Leukemias**
  - ➤ Highest incidence rate (8.7) found among children aged 1-4 years.
  - ➤ Highest death rate (1.0) found among children aged 15-19 years.
- **Brain and other nervous system cancer**
  - ➤ Highest incidence rate (4.1) found among children aged 1-4 years.
  - ➤ Highest death rate (0.9) found among children aged 5-9 years.

Benign and Borderline (Nonmalignant) Brain and Other Nervous System Tumors†

- The incidence rate among boys aged 0-19 years is 1.3; the incidence rate among girls aged 0-19 years is 1.6.
- The incidence rate among men aged 20 years and older is 10.9; the incidence rate among women aged 20 years and older is 16.5.
- Among men aged 20 years or older, the most common nonmalignant brain tumor is meningioma (4.5), followed by tumors of the pituitary (2.7).
- Among women aged 20 years and older, the most common nonmalignant brain tumor is meningioma (10.3), followed by tumors of the pituitary (2.7).

† The data included cover approximately 97% of the U.S. population.

Racial or Ethnic Variations‡

All cancers combined, men:

- Incidence rates are highest among black (607.3), followed by white (527.2), Hispanic (415.5), Asian/Pacific Islander (325.8), and American Indian/Alaska Native (288.6) men.
- Death rates are highest among black (303.5), followed by white (224.8), Hispanic (152.8), American Indian/Alaska Native (151.2), and Asian/Pacific Islander (137.0) men.

All cancers combined, women:

- Incidence rates are highest among white (405.9), followed by black (379.7), Hispanic (318.6), Asian/Pacific Islander (267.4), and American Indian/Alaska Native (242.2) women.
- Death rates are highest among black (182.8), followed by white (156.4), American Indian/Alaska Native (110.7), Hispanic (101.9), and Asian/Pacific Islander (92.3) women.

Among four races and Hispanic origin:

- American Indian/Alaska Native men have the lowest incidence rates of cancer; however, Asian/Pacific Islander men have the lowest death rates from cancer.
- White women have the highest incidence rates of cancer; however, black women have the highest death rates from cancer.
- American Indian/Alaska Native women have the lowest incidence rates of cancer and the third-highest cancer death rates.

Geographic Variations§

Breast cancer:

- The incidence rate for the United States is 117.7.
  - ➤ Incidence rates are highest in the Northeast U.S. Census region (125.9), followed by the Midwest (117.7), West (117.4), and South (113.2).
  - ➤ Registry incidence rates range from 102.9 to 135.8.
- The death rate for the United States is 24.4.
  - ➤ Death rates are highest in the Northeast U.S. Census region (25.1), followed by the Midwest and South (both 24.6) and the West (22.9).
  - ➤ State death rates range from 15.6 to 27.6.

Prostate cancer:

- The incidence rate for the United States is 145.3.
  - ➤ Incidence rates are highest in the Northeast U.S. Census region (151.6), followed by the West (148.9), Midwest (147.9), and South (138.1).
  - ➤ Registry incidence rates range from 109.7 to 196.6.
- The death rate for the United States is 25.4.
  - ➤ Death rates are highest in the South U.S. Census region (26.4), followed by the Midwest (26.0), Northeast (24.4), and West (24.3).

‡ Race- or ethnicity-specific rates are presented for all cancer sites combined.

§ Geographic variations are presented for the four most common cancers.

- ➤ State death rates range from 18.9 to 44.8.

Lung cancer:

Men

- The incidence rate for the United States is 85.3.
  - ➤ Incidence rates are highest in the South U.S. Census region (97.9), followed by the Midwest (88.6), Northeast (81.0), and West (66.0).
  - ➤ Registry incidence rates range from 37.5 to 133.2.
- The death rate for the United States is 70.3.
  - ➤ Death rates are highest in the South U.S. Census region (80.1), followed by the Midwest (75.2), Northeast (64.3), and West (54.2).
  - ➤ State death rates range from 35.6 to 106.0.

Women

- The incidence rate for the United States is 54.2.
  - ➤ Incidence rates are highest in the South U.S. Census region (56.4), followed by the Midwest (55.7), Northeast (55.3), and West (48.1).
  - ➤ Registry incidence rates range from 20.6 to 75.5.
- The death rate for the United States is 40.9.
  - ➤ Death rates are highest in the South U.S. Census region (42.8), followed by the Midwest (42.7), Northeast (39.9), and West (36.5).
  - ➤ State death rates range from 18.5 to 57.0.

Colorectal cancer:

Men

- The incidence rate for the United States is 58.2.
  - ➤ Incidence rates are highest in the Northeast U.S. Census region (61.7), followed by the Midwest (60.8), South (58.9), and West (51.0).
  - ➤ Registry incidence rates range from 45.7 to 69.4.
- The death rate for the United States is 21.6.
  - ➤ Death rates are highest in the Midwest U.S. Census region (22.7), followed by the South (22.1), Northeast (21.9), and West (19.2).
  - ➤ State death rates range from 15.0 to 27.3.

Women

- The incidence rate for the United States is 42.7.
  - ➤ Incidence rates are highest in the Northeast U.S. Census region (46.2), followed by the Midwest (44.0), South (42.5), and West (38.2).
  - ➤ Registry incidence rates range from 29.0 to 50.6.
- The death rate for the United States is 15.2.
  - ➤ Death rates are highest in the Northeast and Midwest U.S. Census regions (both 15.8), followed by the South (15.3) and West (13.5).
  - ➤ State death rates range from 9.4 to 18.5.

Two points should be kept in mind when interpreting the data in this report. First, race and ethnicity specific data should be interpreted with caution. Recent studies show that overall agreement of the race data in cancer registries is excellent compared with self-reported race data for most races, with the exception of American Indian/Alaska Natives, who were substantially under-classified in registry data. Hispanic ethnicity data were slightly under-classified in the registries compared with self-reported data. Therefore, incidence and mortality data published in this report may be underestimated for some populations. Also, specific subpopulations, which are not presented in this report due to small numbers and possible misclassification, may have higher cancer incidence or death rates than the U.S. population. For example, overall cancer mortality among American Indians/Alaska Natives residing in Alaska and the Northern Plains regions is higher compared to the U.S. population; the American Indian/Alaska Native population as a whole has lower cancer mortality than the U.S. general population.

Second, geographic variations may be influenced by several factors, such as the following: 1) areas in which a high percentage of the population is screened for cancer will have more cancer cases diagnosed than areas in which a low percentage of the population is screened; 2) rates for certain cancers are different for different racial and ethnic populations (e.g., black men have higher rates of prostate cancer rates than other racial and ethnic groups), and thus when comparing cancer rates across geographic areas the racial and ethnic makeup of that area should be considered; 3) the population burden of cancer in a geographic area is determined by the number of cases diagnosed and the number of cancer deaths in the population, not by the age-adjusted rate; therefore, a relatively high or low age-adjusted rate may not be a reflection of the true cancer burden within that geographic area. Crude rates, which are a reflection of the cancer burden within a population, are available on the *USCS* Web site.

United States Cancer Statistics: 2004 Incidence and Mortality provides a basis for states and researchers to describe the variability in cancer incidence and death rates across different populations and to identify certain populations for evidence-based measures in cancer control. Work continues to ensure the receipt of high-quality data from all NPCR and SEER registries. Since the publication of our first report covering diagnosis year 1999, additional registries have contributed high-quality data every year, resulting in increased coverage of the U.S. population with every new report. We expect that future reports will include high-quality data from all state registries, thus allowing a more comprehensive description of the cancer burden across racial, ethnic, and geographic populations in the United States.