Methods

Cancer Incidence

Data about cancer incidence in this report come from the largest population-based source of cancer cases in the United States, the Centers for Disease Control and Prevention’s (CDC’s) National Program of Cancer Registries (NPCR) dataset (1). This dataset includes cancer incidence data from central cancer registries funded by NPCR in 45 states, the District of Columbia, and Puerto Rico (2). Data about all new diagnoses of cancer from patient records at such medical facilities as hospitals, physicians' offices, therapeutic radiation facilities, freestanding surgical centers, and pathology laboratories are reported to central cancer registries which collate these data and use state vital records to collect information about any cancer deaths that were not reported as cases. The central cancer registries use uniform data items and codes as documented by the North American Association of Central Cancer Registries. These data are submitted annually to CDC and combined into one dataset (3). Cancer registries demonstrate that data were of high quality by meeting six USCS publication criteria (1); during [YEARX–YEARY], data from [X] cancer registries met these criteria, covering [X%] of the United States population. This report includes new cases of primary invasive [CANCER TYPE] cancer (International Classification of Diseases for Oncology, Third Edition code [CXX.X–CXX.X]) (4) diagnosed during [YEARX–YEARY]; [IF APPLICABLE] excluding histology codes 9050–9055, 9140, and 9590–9992 [OR] restricted to histology codes [XXXX–XXXX].

[IF APPLICABLE] Race and Ethnicity

Data were analyzed by five major racial/ethnic groups: white, black, American Indian and Alaska Native (AI/AN), Asian/Pacific Islander (A/PI), and Hispanic. Information about race and Hispanic ethnicity were collected separately. An algorithm was applied to Hispanic ethnicity data to reduce misclassification of Hispanic persons as being of unknown ethnicity (5).

To reduce misclassification of AI/AN race, some central cancer registries link case data with the Indian Health Service (IHS) patient registration database, which contains records of individuals who are members of federally recognized tribes; cases linked with the IHS database were coded as AI/AN (6). [IF APPLICABLE] Additionally, rates for AI/AN were based on cases in counties covered by IHS Contract Health Service Delivery Area (CHSDA) because linkage studies have identified less misclassification of AI/AN race in CHSDA counties (6). Information about CHSDA counties was not available for cases diagnosed in Kansas and Minnesota.

Because states can opt not to present state-specific counts and rates for [AS APPLICABLE: A/PI, Hispanic, and AI/AN populations], these data are not shown for the following states [CHECK STATE LIST AT www.cdc.gov/cancer/npcr/uscs/technical_notes/interpreting/race.htm. FOR EXAMPLE, Because states can opt not to present state-specific counts and rates for AI/AN populations, these data are not shown for Delaware, Illinois, Kansas, Kentucky, New Jersey, and New York.]

[IF APPLICABLE] Histology

Analyses by histology included only cases that were microscopically confirmed ([X%] of cases).

[IF APPLICABLE] Stage

Stage was classified using SEER Summary Stage 2000 for cases diagnosed between 2001 and 2003. [IF APPLICABLE: Stage was classified using Derived Summary Stage 2000 for cases diagnosed in 2004 or later.] OR [IF APPLICABLE: Stage was classified using a variable that combined SEER Summary Stage 2000 (for cases diagnosed from 2001 to 2003) and Derived Summary Stage 2000 (for cases diagnosed in 2004 or later).] The staging criteria characterizes cancers as localized, regional, distant, or unknown stage; localized cancer is confined to the primary site, regional cancer has spread directly beyond the primary site (regional extension) or to regional lymph nodes, and distant cancer has spread to other organs (distant extension) or remote lymph nodes (7). Analyses by stage excluded cases that were diagnosed only by death certificate or autopsy ([X%] of cases).
Population Estimates

Population denominators were race-specific, ethnicity-specific, and sex-specific county population estimates from the U.S. Census, modified by SEER and aggregated to the state and national levels (8). Modifications incorporated bridged, single-race estimates that were derived from multiple-race categories in the Census and accounted for known issues in certain counties (8). The modified county-level population estimates, summed to the state and national levels, were used as denominators in rate calculations (8).

Statistical Analysis

Incidence and Death Rates

Average annual rates for [YEARX–YEARY] per 100,000 population were age-adjusted (using 19 age groups) by the direct method to the 2000 U.S. standard population (9). Corresponding 95% confidence intervals (CIs) were calculated as modified gamma intervals (10). Rates based on fewer than 16 cases tend to have poor reliability and were not presented. To determine differences between subgroups, rate ratios were calculated; rates were considered statistically different if the 95% CIs of the rate ratios excluded 1 (11). Rates were calculated using SEER*Stat software version X.X.X (12).

[IF APPLICABLE] Trends in Rates

Annual percentage change (APC) was used to quantify the change in rates during [YEARX–YEARY] and was calculated using weighted least squares regression (13). A two-sided t-test was used to test whether the APC was statistically different from zero ($P < .05$). Rates were considered to increase or decrease if $P < .05$; otherwise rates were considered stable. APCs were calculated using SEER*Stat software version X.X.X (12).

[OR]

Change in rates during [YEARX–YEARY] was calculated using joinpoint regression which involves fitting a series of joined straight lines on a logarithmic scale to the trends in the annual age-standardized rates (14); up to [X] joinpoints ([X] line segments) were allowed. The trend of the line segment was used to quantify the annual percent change (APC). A two-sided t-test was used to test whether the APC was statistically different from zero ($P < .05$). The average annual percent change (AAPC) for [YEARX–YEARY] was calculated using a weighted average of the slope coefficients of the underlying joinpoint regression line with the weights equal to the length of each segment over the interval. A two-sided Z test was used to test whether the AAPC was statistically different from zero ($P < .05$). Rates were considered to increase or decrease if $P < .05$; otherwise rates were considered stable. Trends were calculated using Joinpoint regression program version X.X.X (15).

FOOTNOTES for Tables

It is recommended that standard footnotes from USCS or slight derivations be used for tables and figures.

[FOR POPULATION COVERAGE]

Data are from population-based registries that participate in the National Program of Cancer Registries and meet high-quality data criteria. These registries cover approximately [XX]% of the US population.

[FOR AGE-ADJUSTED RATES]

Rates are per 100,000 persons and are age-adjusted to the 2000 U.S. standard population (19 age groups – Census P25–1130).
References


