Cancer Statistics for African Americans, 2013

Carol DeSantis, MPH1; Deepa Naishadham, MA, MS1; Ahmedin Jemal, DVM, PhD2

In this article, the American Cancer Society estimates the number of new cancer cases and deaths for African Americans and compiles the most recent data on cancer incidence, mortality, survival, and screening prevalence based upon incidence data from the National Cancer Institute, the Centers for Disease Control and Prevention, and the North American Association of Central Cancer Registries and mortality data from the National Center for Health Statistics. It is estimated that 176,620 new cases of cancer and 64,880 deaths will occur among African Americans in 2013. From 2000 to 2009, the overall cancer death rate among males declined faster among African Americans than whites (2.4% vs 1.7% per year), but among females, the rate of decline was similar (1.5% vs 1.4% per year, respectively). The decrease in cancer death rates among African American males was the largest of any racial or ethnic group. The reduction in overall cancer death rates since 1990 in men and 1991 in women translates to the avoidance of nearly 200,000 deaths from cancer among African Americans. Five-year relative survival is lower for African Americans than whites for most cancers at each stage of diagnosis. The extent to which these disparities reflect unequal access to health care versus other factors remains an active area of research. Overall, progress in reducing cancer death rates has been made, although more can and should be done to accelerate this progress through ensuring equitable access to cancer prevention, early detection, and state-of-the-art treatments. CA Cancer J Clin 2013;63:151-166. © 2013 American Cancer Society.

Keywords: cancer, African American, survival, mortality, health disparities

Introduction

African Americans bear a disproportionate share of the cancer burden in the United States, having the highest death rate and shortest survival of any racial or ethnic group for most cancers. In this article, we provide updated data for African Americans on cancer incidence, mortality, survival, and cancer screening. We also estimate the total number of deaths averted among African Americans as a result of the decline in cancer death rates since the early 1990s.

Materials and Methods

Incidence and Mortality Data

There are 2 sources for cancer incidence data reported in this article. The Surveillance, Epidemiology, and End Results (SEER) program of the National Cancer Institute (NCI) reports long-term, high-quality, population-based incidence data covering up to 28% of the US population. Long-term incidence trends (1975-2009) were based upon data from the SEER 9 registries.1 Five-year relative survival rates and stage at diagnosis were based upon data (2002-2008) from the SEER 18 registries and were previously published in the SEER Cancer Statistics Review, 1975-2009.2,3

The North American Association of Central Cancer Registries (NAACCR) compiles and reports incidence data for 1995 onward from cancer registries that participate in the SEER program or the Centers for Disease Control and Prevention’s National Program of Cancer Registries, covering up to 95% of the US population. Data for incidence rates for the most recent 5 years (2005-2009), trends for 10 years (2000-2009), and projections for newly diagnosed national cases in the current year (2013) were obtained from the NAACCR.4 Central cancer registries in the District of Columbia and 3 other states (Arkansas, Virginia, and Wisconsin) did not meet the NAACCR’s standard for high-quality data for all years during 2005 to 2009, and therefore incidence data for these states were excluded from cross-sectional rates. Incidence data from all sources exclude cases diagnosed from July through December 2005 in Alabama, Louisiana, Mississippi, and Texas due to the effect of large migrations of populations on these states as a result of Hurricane Katrina in September 2005. All cancer cases were classified according to the International Classification of Diseases for Oncology.5

1Epidemiologist, Surveillance and Health Services Research, American Cancer Society, Atlanta, GA; 2Vice President, Surveillance and Health Services Research, American Cancer Society, Atlanta, GA.

Corresponding author: Carol DeSantis, MPH, Surveillance and Health Services Research, American Cancer Society, 250 Williams St, NW, Atlanta, GA 30303; Carol.DeSantis@cancer.org

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Mortality data were obtained from the National Center for Health Statistics (NCHS) as reported by the SEER program.\(^6\) Mortality statistics for the leading causes of death are presented in Table 1. All cancer cases and deaths were accessed using SEER*Stat software.\(^7\) Population data were obtained from the US Census Bureau. Incidence and death rates were age-standardized to the 2000 US standard population and expressed per 100,000 persons. Ten-year trends in incidence and mortality rates are described in terms of average annual percent change and were previously published by Jemal et al.\(^8\)

### Projected Cancer Cases and Deaths in 2013

The precise number of new cancer cases diagnosed each year in the nation and in every state is unknown because cancer registration is incomplete in some states. Furthermore, the most recent year for which incidence and mortality data are available lags 3 to 4 years behind the current year due to the time required for data collection, compilation, and dissemination. Therefore, we projected the numbers of new cancer cases and deaths among African Americans in the United States in 2013 in order to provide an estimate of the contemporary cancer burden. The methods for projecting both new cases and deaths in 2013 were recently modified and should not be compared with estimates for previous years.

We projected the number of new malignant cancer cases that will be diagnosed in 2013 using a 2-step process. We first estimated complete incidence counts by state during the years for which observed data are available and then projected these counts 3 years ahead for the United States overall.\(^9\) To obtain estimated counts for each state through 2009, we used a spatiotemporal model based on incidence data for 1995 through 2009 from 49 states and the District of Columbia that met the NAACCR’s high-quality data standard for incidence, covering about 95% of the US population.\(^10\) This method accounts for expected delays in case reporting and considers geographic variations in sociodemographic and lifestyle factors, medical settings, and cancer screening behaviors as predictors of incidence. A temporal projection method (the vector autoregressive model) was then applied to the estimated counts to obtain the 2013 projections. For the complete details of this methodology, please refer to Zhu et al.\(^9\)

We estimated the number of cancer deaths expected to occur in 2013 in the United States overall using the joinpoint regression model based on the actual numbers of cancer deaths from 1994 through 2009 at the state and national levels as reported to the NCHS. For the complete details of this methodology, please refer to Chen et al.\(^11\)

### Other Statistics

The estimated numbers of cancer deaths averted in African American men and women due to the reduction in overall cancer death rates were calculated by applying the 5-year age-specific cancer death rates in the peak year for age-standardized cancer death rates (1990 in men and 1991 in women) to the corresponding age-specific populations in the subsequent years through 2009 to obtain the number of expected deaths in each calendar year if the death rates had not decreased. We then summed the difference between the number of expected and observed deaths in each age group and calendar year for African American men and women separately. The lifetime probability of developing cancer was estimated using the NCI’s DevCan software.

### Table 1. Leading Causes of Death Among African Americans and Whites, 2009

| ALL AGES | NUMBER OF DEATHS | DEATH RATE* | | |
| --- | --- | --- | --- | --- |
|  | AFRICAN AMERICAN | WHITE | AFRICAN AMERICAN | WHITE |
| Heart diseases | 69,681 | 24.3% | 515,566 | 24.7% | 235.1 | 175.8 |
| Cancer | 64,645 | 22.6% | 486,987 | 23.3% | 207.7 | 172.4 |
| Cerebrovascular diseases | 15,878 | 5.5% | 108,761 | 5.2% | 54.7 | 37.1 |
| Accidents (unintentional injuries) | 12,069 | 4.2% | 102,130 | 4.9% | 32.0 | 38.9 |
| Diabetes | 11,960 | 4.2% | 54,113 | 2.6% | 39.7 | 19.0 |
| All causes | 286,593 | 2,086,139 | 924.7 | 729.0 |

| CHILDREN AGES 1-14 | NUMBER OF DEATHS | DEATH RATE* | | |
| --- | --- | --- | --- | --- |
|  | AFRICAN AMERICAN | WHITE | AFRICAN AMERICAN | WHITE |
| Accidents | 686 | 28.9% | 2,301 | 32.2% | 7.3 | 5.1 |
| Homicide | 258 | 10.9% | 397 | 5.6% | 2.7 | 0.9 |
| Cancer | 192 | 8.1% | 977 | 13.7% | 2.1 | 2.2 |
| Congenital anomalies (birth defects) | 173 | 7.3% | 609 | 8.5% | 1.8 | 1.3 |
| Heart diseases | 114 | 4.8% | 228 | 3.2% | 1.2 | 0.5 |
| All causes | 2,377 | 7,146 | 25.3 | 15.9 |

*Rates are per 100,000 and age-adjusted to the 2000 US standard population.

Source: National Center for Health Statistics, Centers for Disease Control and Prevention as provided by the Surveillance, Epidemiology, and End Results (SEER) program in the SEER*Stat database.\(^6\)
based on the average experience of the general population and may over- or underestimate individual risk due to differences in exposures or genetic susceptibility. Data on screening prevalence were obtained from the National Health Interview Survey.

Selected Findings

Overall Cancer Occurrence

Incidence

About 176,620 new cancer cases are expected to be diagnosed among African Americans in 2013, including 94,540 cases among men and 82,080 cases among women (Fig. 1). Prostate cancer is expected to be the most commonly diagnosed cancer in men and breast cancer the most common in women. Cancers of the lung and colorectum will be the second and third most commonly diagnosed cancers in both African American men and women. The 4 most common cancers (breast, prostate, colorectal, and lung) account for more than one-half of all cancer cases among African Americans.

Differences in cancer incidence rates between African American and whites in the United States are described in Table 2. Among males, incidence rates are higher for all cancers combined (15% higher), and for the most common cancers (including prostate, lung, colorectal, kidney, and pancreas). However, African American females have lower overall incidence rates (6% lower) for all cancers combined and for many cancers, including the 2 most common: breast and lung.

Incidence rates for Kaposi sarcoma (KS), stomach cancer, and multiple myeloma are about twice as high in African Americans compared with whites (Table 2). Although now a relatively rare cancer, incidence rates of KS are 2.7 times higher in African American men compared with white men and 3.6 times higher in African American women.
Compared with white women. In the United States, KS primarily occurs among people infected with the human immunodeficiency virus. Higher rates of transmission among men who have sex with men and less access to advanced antiretroviral therapies may contribute to the higher rates among African Americans. Higher rates of stomach cancer in African Americans are limited to non-cardia gastric cancers (stomach cancers that do not occur in the uppermost portion of the stomach where it meets the esophagus) and may reflect higher rates of Helicobacter pylori infection and poorer dietary patterns in some African Americans, which are known risk factors for stomach cancer. Reasons for the higher rates of multiple myeloma noted among African Americans are not known. Incidence rates for all cancers combined increased from the mid-1970s to the early 1990s in African American males and females, although the rates were higher and increased faster in males than in females (Fig. 2). From 2000 to 2009, incidence rates decreased by 1.4% per year among African American men; however, rates have remained unchanged among African American women during this period (Table 3). The decrease in incidence rates in African American men, which was faster than the decrease in white men, largely involves cancers of the lung and prostate.

**Mortality**

About 64,880 African Americans are expected to die from cancer in 2013, including 32,970 men and 31,910 women. Cancer is the second-leading cause of death in African Americans.

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**TABLE 2. Comparison of Cancer Incidence Rates Between African Americans and Whites, United States, 2005-2009**

| CANCER             | MALE                  | FEMALE                |
|--------------------|-----------------------|-----------------------|
|                    | AFRICAN AMERICAN RATE*| WHITE RATE*           | DIFFERENCE† | RATE RATIO‡ |
| Kaposi sarcoma     | 1.8                   | 0.7                   | 1.1         | 2.66        |
| Myeloma            | 13.6                  | 6.6                   | 7.0         | 2.06        |
| Stomach            | 16.3                  | 8.4                   | 7.9         | 1.94        |
| Prostate           | 228.8                 | 140.3                 | 88.5        | 1.63        |
| Liver & intrahepatic bile duct | 14.9       | 9.2                   | 5.7         | 1.62        |
| Larynx             | 10.4                  | 6.6                   | 3.8         | 1.57        |
| Breast             | 1.9                   | 1.3                   | 0.6         | 1.40        |
| Pancreas           | 16.9                  | 13.4                  | 3.5         | 1.26        |
| Colorectum         | 65.1                  | 52.8                  | 12.3        | 1.23        |
| Lung & bronchus    | 99.3                  | 82.6                  | 16.7        | 1.20        |
| Kidney & renal pelvis | 23.3              | 21.2                  | 2.1         | 1.09        |
| Esophagus          | 9.2                   | 8.8                   | 0.4         | 1.04        |
| Oral cavity & pharynx | 15.7                  | 16.6                  | –0.9        | 0.95        |
| Hodgkin lymphoma   | 3.0                   | 3.3                   | –0.3        | 0.93        |
| Leukemia           | 12.2                  | 16.4                  | –4.2        | 0.75        |
| Non-Hodgkin lymphoma | 17.0                  | 23.8                  | –6.8        | 0.71        |
| Brain & other nervous system | 4.7              | 8.4                   | –3.7        | 0.56        |
| Thyroid            | 3.2                   | 6.3                   | –3.1        | 0.51        |
| Urinary bladder    | 19.4                  | 39.5                  | –20.1       | 0.49        |
| Testis             | 1.3                   | 6.2                   | –4.9        | 0.21        |
| Melanoma of the skin | 1.1                   | 27.2                  | –26.1       | 0.04        |
| All sites          | 613.1                 | 533.7                 | 79.4        | 1.15        |

* Rates are per 100,000 and age-adjusted to the 2000 US standard population.
† Difference is the rate in African Americans minus the rate in whites.
‡ Rate ratio is the unrounded rate in African Americans divided by the unrounded rate in whites.

**FIGURE 2. Age-Adjusted Cancer Incidence and Mortality Rates Among African Americans by Sex, 1975 to 2009.**

Source: North American Association of Central Cancer Registries.
TABLE 4. Comparison of Cancer Death Rates Between African Americans and Whites, United States, 2005 to 2009

| CANCER                      | AFRICAN AMERICAN RATE | WHITE RATE | DIFFERENCE† | RATE RATIO‡ | CANCER                      | AFRICAN AMERICAN RATE | WHITE RATE | DIFFERENCE† | RATE RATIO‡ |
|-----------------------------|-----------------------|------------|-------------|-------------|-----------------------------|-----------------------|------------|-------------|-------------|
| Prostate                    | 53.1                  | 21.7       | 31.4        | 2.44        | Stomach                     | 4.8                   | 2.2        | 2.6         | 2.16        |
| Stomach                     | 10.3                  | 4.3        | 6.0         | 2.37        | Myeloma                     | 5.4                   | 2.5        | 2.9         | 2.15        |
| Larynx                      | 4.2                   | 2.0        | 2.2         | 2.16        | Cervix uteri                | 4.3                   | 2.2        | 2.1         | 1.97        |
| Melanoma                    | 8.0                   | 4.1        | 3.9         | 1.95        | Corpus & uterus, NOS        | 7.3                   | 3.9        | 3.4         | 1.88        |
| Liver & intrahepatic bile duct | 11.9               | 7.4        | 4.5        | 1.60        | Colorectum                  | 19.8                  | 13.6       | 6.2         | 1.46        |
| Oral cavity & pharynx       | 5.7                   | 3.6        | 2.1        | 1.56        | Esophagus                   | 2.2                   | 1.6        | 0.6         | 1.42        |
| Colorectum                  | 29.8                  | 19.5       | 10.3       | 1.53        | Breast                      | 31.6                  | 22.4       | 9.2         | 1.41        |
| Lung & bronchus             | 82.6                  | 65.3       | 17.3       | 1.26        | Pancreas                    | 12.6                  | 9.3        | 3.3         | 1.35        |
| Pancreas                    | 15.5                  | 12.4       | 3.1        | 1.25        | Liver & intrahepatic bile duct | 4.0               | 3.1        | 0.9        | 1.30        |
| Esophagus                   | 8.2                   | 7.9        | 0.3        | 1.04        | Urinary bladder             | 2.6                   | 2.2        | 0.4        | 1.20        |
| Kidney & renal pelvis       | 6.0                   | 5.9        | 0.1        | 1.02        | Kidney & renal pelvis       | 2.6                   | 2.7        | -0.1        | 0.99        |
| Hodgkin lymphoma            | 0.5                   | 0.5        | 0.0        | 0.96        | Lung & bronchus             | 38.0                  | 40.8       | -2.8        | 0.93        |
| Leukemia                    | 8.5                   | 9.9        | -1.4       | 0.85        | Leukemia                    | 4.8                   | 5.5        | -0.7        | 0.88        |
| Uroinary bladder            | 5.6                   | 8.0        | -2.4       | 0.70        | Hodgkin lymphoma            | 0.3                   | 0.3        | 0.0         | 0.86        |
| Non-Hodgkin lymphoma        | 6.1                   | 8.7        | -2.6       | 0.70        | Ovary                       | 6.8                   | 8.6        | -1.8        | 0.80        |
| Brain & other nervous system | 3.1                   | 5.6        | -2.5       | 0.55        | Non-Hodgkin lymphoma        | 3.6                   | 5.4        | -1.8        | 0.67        |
| Melanoma of the skin        | 0.5                   | 4.6        | -4.1       | 0.12        | Brain & other nervous system | 2.1                   | 3.8        | -1.7        | 0.54        |

All sites 288.3 216.7 71.6 1.33 All sites 180.6 155.0 25.6 1.17

NOS indicates not otherwise specified.

* Rates are per 100,000 and age-adjusted to the 2000 US standard population.
† Difference is the rate in African Americans minus the rate in whites.
‡ Rate ratio is the unrounded rate in African Americans divided by the unrounded rate in whites.

Note: Sites are listed in descending order by rate ratio.

Source: National Center for Health Statistics, Centers for Disease Control and Prevention as provided by the Surveillance, Epidemiology, and End Results (SEER) program in the SEER*Stat database.

 Americans, accounting for 22.6% of all deaths in 2009 (Table 1). Lung cancer accounts for the largest number of cancer deaths among both men (29%) and women (21%), followed by prostate cancer in men (15%) and breast cancer in women (19%) (Fig. 1). For both men and women, colorectal cancer is expected to be the third-leading cause of cancer death. Death rates are higher in African Americans compared with whites for most cancers (Table 4).

Similar to whites, death rates among African Americans for all cancers combined have been decreasing since the early 1990s, with larger declines reported in men than women (Fig. 2). The reduction in overall cancer death rates since 1990 in men and 1991 in women translates to the avoidance of nearly 200,000 deaths from cancer among African Americans (Fig. 3).

From 2000 to 2009, the death rate among males declined faster among African Americans than whites (2.4% vs 1.7% per year), but among females, the rate of decline was similar (1.5% vs 1.4% per year, respectively) (Table 3). Despite these declines, death rates for all cancers combined continued to be substantially higher among African Americans than whites during 1975 to 2009, although the gap is much smaller among women. Notably, the higher death rate in African American women compared with white women...
occurs despite their lower incidence rate. The racial
difference in overall cancer death rates is due largely to
cancers of the breast and colorectum in women and cancers
of the prostate, lung and bronchus, and colorectum in men.
However, in recent years, death rates for lung and other
smoking-related cancers and for prostate cancer have
decreased faster in African American men than white men,
which has contributed to the recent narrowing of the racial
disparity in overall cancer death rates. In fact, death rates
from lung (male and female) and cervical cancer have
converged for young African Americans and whites.18,19 In
contrast, the racial disparity has widened for colorectal
cancer in both men and women and for breast cancer
in women, cancers that are most affected by access to
screening and treatment.20

Variations in cancer death rates among African Ameri-
cans for selected cancers by state are presented in Table 5.
For all cancers combined, the highest death rates among
African American men are found in Mississippi, Arkansas,
and Iowa. Among African American women, the highest
death rates are reported in Nebraska, Illinois, and Indiana.

Survival and Stage Distribution
Five-year relative survival rates are commonly used to
monitor progress in the early detection and treatment of
cancer. The 5-year relative survival rate is lower in African
Americans than in whites for every stage of diagnosis for
most cancer sites (Fig. 4).2 Much of the difference in
survival is believed to be due to barriers that limit access to
timely and high-quality medical care.21-26 Furthermore,
African Americans are more likely to be diagnosed at later
stages of the disease (Fig. 5),2 when treatment choices are
more limited and less effective. It is recognized that these
issues largely reflect socioeconomic disparities associated
with race. Some studies suggest that African Americans who
receive cancer treatment and medical care similar to that
of whites experience similar outcomes.22,26 However, other
studies report that racial disparities persist even after
controlling for socioeconomic factors and access to care.27-30
Higher rates of comorbid health conditions among African
American patients that can affect the delivery of optimal
treatment are also thought to contribute to differences in
survival.31,32 Although there is limited evidence that
differing responses to cancer therapy contribute to racial
disparities in survival, African Americans and other racial
minorities are underrepresented in clinical trials, which
makes it more difficult to assess the efficacy of cancer
therapies among different racial/ethnic groups.33,34

The overall 5-year relative survival rate among African
Americans has improved from approximately 27% during
1960 to 1963 to 60% from 2002 through 2008.2 The corre-
sponding survival rate in whites increased from 39% to 69%
during the same period. Increases in survival over time
reflect a combination of earlier diagnosis and improvements
in treatment. However, not all persons have benefited
equally from these advances.

Information for Selected Cancer Sites
Female Breast
Breast cancer is the most common cancer among African
American women and is the second-leading cause of cancer
death, with an estimated 27,060 new cases of breast cancer
and 6,080 deaths expected to occur in 2013. The average
annual breast cancer incidence rate in African American
women during 2005 to 2009 was 118.1 cases per 100,000
women, which was 4% lower than in white women (Table 2).
However, among younger women (age younger than 45 years), incidence rates are higher among African Americans than whites. The median age at diagnosis among African American women is 57 years, compared with 62 years among white women. One in 9 African American women is expected to be diagnosed with breast cancer in their lifetime, compared with 1 in 8 white women (Table 6).

Long-term breast cancer incidence trends are shown in Figure 6. Between 2000 and 2009, breast cancer incidence rates increased slightly (0.7% per year) among African American women and decreased (1.0% per year) among white women (Table 3). The decrease in white women during this time period in part reflects the sharp decline between 2002 and 2003 that was related to a drop in the use of menopausal hormones. A similar drop in incidence was not observed in African American women, among whom menopausal hormone use was historically lower.

Breast cancers diagnosed in African American women are more likely to have factors associated with poor prognosis, such as higher grade, distal stage, and negative hormone.
receptor (estrogen receptor and progesterone receptor) status. Furthermore, premenopausal African American women in particular appear to be at higher risk for triple-negative (estrogen receptor-negative, progesterone receptor-negative, and human epidermal growth factor receptor-2-negative) and basal-like breast cancers, which are distinct but overlapping aggressive subtypes of breast cancer that are associated with a shorter survival. Studies have shown that certain reproductive patterns, that are more common among African American women (including multiparity, younger age at menarche, and early age at first pregnancy) may protect against hormone receptor-positive breast cancer, but may also be associated with increased risk for aggressive subtypes of breast cancer.

Breast cancer death rates peaked among African American women in 1992 and declined thereafter (Fig. 7). This decrease was larger in women aged younger than 50 years (2.4% per year since 1995) than in...
TABLE 6. Lifetime Probability (%) of Developing or Dying of Invasive Cancers by Race and Sex, United States, 2007 to 2009

| Cancer Site          | DEVELOPING | Dying | DEVELOPING | Dying |
|----------------------|------------|-------|------------|-------|
|                      | AFRICAN AMERICAN | WHITE | AFRICAN AMERICAN | WHITE |
| **All sites**        | Male      | 42.77 (1 in 2) | 44.55 (1 in 2) | 23.67 (1 in 4) | 23.16 (1 in 4) |
|                      | Female    | 33.72 (1 in 3) | 38.87 (1 in 3) | 19.23 (1 in 5) | 19.58 (1 in 5) |
| **Prostate**         | Male      | 19.74 (1 in 5) | 15.39 (1 in 6) | 4.52 (1 in 22) | 2.58 (1 in 39) |
|                      | Female    | 10.87 (1 in 9) | 12.73 (1 in 8) | 3.25 (1 in 31) | 2.73 (1 in 37) |
| **Breast**           | Male      | 7.95 (1 in 13) | 7.82 (1 in 13) | 6.70 (1 in 15) | 6.81 (1 in 15) |
|                      | Female    | 5.40 (1 in 15) | 6.67 (1 in 15) | 4.11 (1 in 24) | 5.23 (1 in 19) |
| **Colorectum**       | Male      | 5.07 (1 in 20) | 5.11 (1 in 20) | 2.41 (1 in 41) | 2.08 (1 in 48) |
|                      | Female    | 5.04 (1 in 20) | 4.69 (1 in 21) | 2.27 (1 in 44) | 1.90 (1 in 53) |
| **Uterine corpus**   | Male      | 2.30 (1 in 44) | 2.72 (1 in 37) | 0.83 (1 in 120) | 0.51 (1 in 197) |
|                      | Female    | 1.90 (1 in 53) | 2.10 (1 in 48) | 0.49 (1 in 203) | 0.63 (1 in 160) |
| **Kidney**           | Male      | 1.24 (1 in 80) | 1.23 (1 in 81) | 0.32 (1 in 317) | 0.35 (1 in 285) |
|                      | Female    | 1.71 (1 in 59) | 4.13 (1 in 24) | 0.46 (1 in 216) | 0.94 (1 in 107) |
| **Urinary bladder**  | Male      | 0.76 (1 in 131) | 1.22 (1 in 82) | 0.34 (1 in 294) | 0.34 (1 in 292) |
|                      | Female    | 1.48 (1 in 68) | 1.48 (1 in 67) | 1.30 (1 in 77) | 1.33 (1 in 75) |
| **Pancreas**         | Male      | 1.59 (1 in 63) | 1.42 (1 in 70) | 1.50 (1 in 67) | 1.28 (1 in 78) |
|                      | Female    | 1.30 (1 in 77) | 2.46 (1 in 41) | 0.48 (1 in 210) | 0.93 (1 in 108) |
| **Non-Hodgkin lymphoma** | Male | 1.14 (1 in 88) | 2.03 (1 in 49) | 0.39 (1 in 259) | 0.75 (1 in 133) |
|                      | Female    | 0.84 (1 in 119) | 0.65 (1 in 153) | 0.40 (1 in 250) | 0.21 (1 in 479) |
| **Uterine cervix**   | Male      | 0.25 (1 in 398) | 0.56 (1 in 179) | 0.04 (1 in 2,846) | 0.06 (1 in 1,815) |
|                      | Female    | 0.86 (1 in 117) | 1.61 (1 in 62) | 0.07 (1 in 1,457) | 0.07 (1 in 1,484) |
| **Liver & bile duct** | Male | 1.28 (1 in 78) | 1.03 (1 in 97) | 1.00 (1 in 100) | 0.78 (1 in 129) |
|                      | Female    | 0.48 (1 in 209) | 0.43 (1 in 235) | 0.46 (1 in 220) | 0.41 (1 in 243) |
| **Leukemia**         | Male      | 1.00 (1 in 100) | 1.67 (1 in 60) | 0.70 (1 in 143) | 1.07 (1 in 94) |
|                      | Female    | 0.80 (1 in 125) | 1.18 (1 in 85) | 0.55 (1 in 180) | 0.74 (1 in 135) |

*All sites excludes basal cell and squamous cell skin cancers and in situ cancers except urinary bladder.

Note: Percentages and “1 in” numbers may not be equivalent due to rounding.

Source: DevCan: Probability of Developing or Dying of Cancer Software, Version 6.6.1. Bethesda, MD: Statistical Research and Applications Branch, National Cancer Institute; 2012. surveillance.cancer.gov/devcan/. 12
women aged 50 and older (1.2% per year since 1993). The steady decline in overall female breast cancer mortality since the early 1990s has been attributed to improvements in both early detection and treatment. However, breast cancer death rates have declined more slowly in African American women (1.4% per year during 2000–2009) compared with white women (2.1% per year), which has resulted in a growing disparity (Table 3). During the early 1980s, breast cancer death rates for white and African American women were similar; yet in the most recent period (2005–2009), African American women had a 41% higher death rate than white women, despite a slightly lower incidence rate. Factors that contribute to higher death rates among African American women include differences in access to and use of early detection and treatment, as well as differences in tumor characteristics; however, it is believed that a substantial part of these differences remains unexplained.45–47

The 5-year relative survival rate for breast cancer diagnosed between 2002 and 2008 among African American women was 78%, compared with 90% among white women (Fig. 4). This difference can be attributed to both a later stage at detection and poorer stage-specific survival among African American women. Despite similar mammography screening rates (Table 7), only about one-half (51%) of breast cancers diagnosed among African American women are diagnosed at a local stage, compared with 61% among white women (Fig. 5). Later stage at diagnosis among African American women has been largely attributed to a lower frequency of and longer intervals between mammograms, and a lack of

FIGURE 6. Age-Adjusted Incidence Rates for African Americans by Site and Sex, United States, 1975 to 2009.*
Rates are delay-adjusted and age-adjusted to the 2000 US standard population and are 2-year moving averages. Source: Surveillance, Epidemiology, and End Results (SEER) Program, SEER 9 Registries, Division of Cancer Control and Population Sciences, National Cancer Institute.
timely follow-up of suspicious results. Lower stage-specific survival has been explained in part by unequal receipt of prompt, high-quality treatment for African American women compared with white women. There is also evidence that aggressive tumor characteristics are more common in African American women than white women. Other studies suggest that factors associated with socio-economic status may influence the biologic behavior of breast cancer. Poverty likely influences disease pathology and genetic markers of disease through lifelong dietary and environmental exposures, physical activity, and reproductive patterns.

**Prostate**

Prostate cancer is the most commonly diagnosed cancer among African American men and the second-leading cause of cancer death. In 2013, approximately 35,430 cases of prostate cancer will be newly diagnosed and 4,980 prostate cancer deaths will occur among African American men. It is estimated that 1 in 5 African American men will be diagnosed with prostate cancer in their lifetime (Table 6).

From 2005 to 2009, the average annual prostate cancer incidence rate among African American men was 228.8 cases per 100,000 men, which was 63% higher than the rate
However, the contribution of PSA testing is not clear. Recently released long-term results from a large, US-based randomized trial indicated a lack of benefit of PSA testing in reducing deaths from prostate cancer, while 2 European trials showed a modest benefit.\(^{66-68}\) Mortality differences may also reflect variations in treatment patterns by race/ethnicity. For example, data from the Cancer of the Prostate Strategic Urologic Research Endeavor (CaPSURE) study found that African Americans were less likely to receive surgery compared with white patients with prostate cancer with similar disease characteristics.\(^{69}\)

The overall 5-year relative survival rate for prostate cancer among African Americans is 96%, compared with nearly 100% among whites (Fig. 4). Approximately 91% of all prostate cancers among African Americans are diagnosed at a local or regional stage, compared with 93% in whites (Fig. 5); the 5-year relative survival rate for African Americans whose tumors are diagnosed at these early stages approaches 100%. Among African American men, the 5-year survival rate drops to 27% when the cancer has spread to distant sites.

### Colorectum

Colorectal cancer (CRC) is the third most common cancer diagnosed among both African American men and women, and the second most common for both sexes combined, with 18,110 new cases expected to be diagnosed in 2013 (Fig. 1). CRC is also the third-leading cause of death in African American men and women, with 3,600 and 3,250 colorectal cancer deaths expected in men and women, respectively, in 2013.

Incidence rates for CRC are 23% higher in African American men and 22% higher in African American women compared with white men and women, respectively (Table 2). Similarly, CRC death rates are 53% higher in African American men and 46% higher in African American women (Table 4). Racial differences in CRC incidence and mortality reflect differences in risk factors, screening, and treatment. African Americans have higher rates of obesity, lower rates of physical activity, and poorer nutrition, which are known risk factors for colorectal cancer.\(^{70}\) Results from the National Institutes of Health-AARP Diet and Health Study found that health behaviors (diet, physical activity, and smoking) and body mass index explained more than one-third (36.2%) of the increased risk of CRC associated with low socioeconomic status.\(^{71}\) In addition, colorectal cancer screening, which can lead to the removal of precancerous polyps, has lagged behind and remains lower in African Americans compared with whites.\(^{72,73}\) In 2010, 56% of African Americans aged 50 years and older were up to date on guideline-recommended CRC screening compared with 62% of whites (Table 7). Incidence and death rates have decreased among African American and white men and women, with larger decreases observed in whites (Table 3) (Figs. 6 and 7). Prior to 1989, incidence rates were predominantly higher in white men
than in African American men and were similar for women of both races. Since 1989, however, incidence rates have been higher for African Americans than whites in both men and women. This crossover may reflect racial differences in the trends of risk factors for CRC and/or greater access to and use of recommended screening tests by whites. Similar to the pattern for incidence rates, CRC mortality rates were historically higher in whites compared with African Americans, with the crossover occurring around 1979 for women and 1984 for men. Although death rates for CRC have decreased in African American men and women over the past 2 decades, the declines have been slower and began later among African Americans compared with whites, and as a result the racial disparity is widening. Recently, American Cancer Society (ACS) researchers reported that the mortality gap is growing for each stage of the diagnosis, with the greatest disparity observed for distant-stage CRC. A recent model-based study estimated that differences in access to screening and treatment explains about 42% of the differences in incidence and 54% of the differences in CRC mortality between African Americans and whites. Colorectal cancer screening rates remain lower among African Americans compared to whites, 56% vs 62%, respectively (Table 7).

The 5-year relative survival rate for CRC among African Americans improved from 45% in 1975 to 1977 to 57% in 2002 to 2008; however, this improvement was smaller than that in whites (50% to 65% over the same period). Some of the disparity in survival is due to a later stage at diagnosis among African Americans; 36% of CRCs in African Americans are diagnosed at a localized stage, compared with 40% in whites (Fig. 5). However, lower 5-year relative survival rates are also seen in African Americans within each stage at diagnosis (Fig. 4), and thought largely to result from disparities in access to and receipt of high-quality treatment. For example, numerous studies document that African Americans with CRC are less likely than white patients to receive recommended surgical treatment and adjuvant chemotherapy. It has also been suggested that African Americans may be less responsive to treatment; however, recently released results from the Adjuvant Colon Cancer Endpoints (ACCENT) database indicate that chemotherapy was equally effective in preventing recurrence among African American and white patients with AJCC stage II or III colon cancer.

**Uterine Cervix**

An estimated 2,060 new cases of invasive cervical cancer and 720 deaths are expected to occur among African American women in 2013. The incidence rate for cervical cancer is 34% higher and the mortality rate for African American women is nearly double that for white women (Tables 2 and 4). However, the racial disparity narrowed substantially as rates for both incidence and mortality dropped faster among African American women than white women in recent years (Table 3). Indeed, among women aged younger than 50 years, incidence rates of cervical cancer have recently converged.

African American women are more likely to be diagnosed with regional- or distant-stage disease (Fig. 5), despite similar screening rates reported in national surveys (Table 7). The 5-year relative survival rate for cervical cancer is also lower among African American women compared with white women overall (59% vs 69%) and at every stage of diagnosis (Fig. 4). Racial differences in stage at diagnosis may be due to differences in the quality of screening and follow-up after abnormal results. Lower socioeconomic status is also associated with lower screening rates, an increased risk of late-stage diagnosis, and poorer survival.

Cervical cancer is caused by persistent infection with certain types of human papillomavirus (HPV), especially types 16 and 18. The US Food and Drug Administration has approved 2 vaccines for the prevention of the most common HPV infections: Gardasil (human papillomavirus quadrivalent [types 6, 11, 16, and 18] vaccine, recombinant), which protects against 4 HPV types and is approved for use in males and females, and Cervarix (human papillomavirus bivalent [types 16 and 18] vaccine, recombinant), which protects against 2 HPV types and is approved for use in females. The ACS Advisory Committee on Immunization Practices recommends routine HPV vaccination for all adolescent girls (aged 11 years–12 years) and as early as age 9 years. Girls aged 13 years to 26 years who have not yet started a vaccine series or who have started but have not completed the series should also be vaccinated. Data from the 2011 National Immunization Survey found that although HPV vaccine initiation was higher among African American adolescent girls (56%) compared with white girls (47.5%), completion of the 3-vaccine series was lower among African Americans (60.8% vs 74.8%). Vaccinated women need to continue getting Papanicolaou tests because these vaccines target only the most common strains of cancer-causing HPV and also do not provide protection for those women who are already infected with HPV.

**Lung and Bronchus**

More African Americans die from lung cancer than from any other cancer, with 9,430 men and 6,830 women expected to die of this disease in 2013 (Fig. 1). In addition, 13,110 men and 10,980 women will be newly diagnosed with lung cancer in 2013. The lung cancer incidence rate is 20% higher in African American men compared with white men; however, among women, the rate is 11% lower among African Americans compared with whites (Table 2).
From 2000 to 2009, lung cancer incidence rates decreased faster in African American men (2.4% per year) compared with white men (1.9%), and were stable in women of both races (Table 3).

The lung cancer mortality rate is higher among African American men than in any other racial or ethnic group. Lung cancer death rates in men began to decline in 1990, with an acceleration in the decline starting in 1994. Between 2000 and 2009, lung cancer death rates declined faster in African American men (3.0% per year) and women (1.0% per year) compared with white men and women (2.2% per year and 0.6% per year, respectively) (Table 3). The decline in lung cancer death rates are the result of decreases in smoking prevalence over the previous 40 years.

The disparity in lung cancer death rates between African American and white men has been substantially reduced overall (from an excess of 50% in 1990-1992 to 26% in 2005-2009) and has been eliminated in younger adults (aged younger than 40 years). The convergence of lung cancer death rates between young African Americans and whites is the result of faster declines in mortality rates in African Americans, likely reflecting the greater decrease in smoking initiation among African Americans since the late 1970s.18,91 Smoking prevalence decreased more rapidly in African Americans aged 25 years to 34 years compared with whites.22 African American adolescents also initiate smoking at a much lower rate than their white counterparts.91 If young African Americans continue to have low smoking prevalence as they age, racial differences in lung cancer death rates should be eliminated among men in the next 40 to 50 years.18

The 5-year overall relative survival rate for lung cancer is lower in African Americans than in whites: 13% and 16%, respectively (Fig. 4). When lung cancer is detected at a localized stage, the 5-year relative survival rate among African Americans is 44%; however, only 12% of lung cancer cases are detected at this early stage because symptoms generally do not appear until the disease is advanced (Fig. 5). Studies have shown that when lung cancer is diagnosed early, African Americans are less likely than whites to undergo surgery, the treatment with the best chance for cure, even after accounting for socioeconomic factors.93-95 A recent study of early-stage lung cancer treatment decisions found that perceptions of poorer patient-physician communication and less diagnostic certainty were associated with a lower likelihood of surgery in both African American and white patients with lung cancer, while a lack of a regular source of care and the presence of comorbid illness were associated with lower surgical rates for only African American patients.93

Data Limitations
The projected numbers of new cancer cases and cancer deaths should be interpreted cautiously because these estimates are model-based and may vary considerably from year to year for reasons other than changes in cancer occurrence. For instance, estimates are affected by changes in method, which occur regularly as modeling techniques improve over time and cancer registration becomes more complete. In addition, not all changes in cancer trends can be captured by modeling techniques. For these reasons, we discourage the use of these estimates to track year-to-year changes in cancer occurrence and death. The data sources used for tracking cancer trends are age-standardized or age-specific cancer death rates from the NCHS and cancer incidence rates from SEER, the NAACCR, or the National Program of Cancer Registries, even though these data are 3 or 4 years old by the time they become available. Nevertheless, the ACS projections of the numbers of new cancer cases and deaths provide a reasonably accurate estimate of the current cancer burden among African Americans.

Despite these limitations, our estimates highlight the disproportionate burden of cancer in African Americans, which may, in part, be related to unequal access to medical care and differences in the receipt of treatment. Overall, progress in reducing cancer death rates has been made, although more can and should be done to accelerate this progress through ensuring equitable access to cancer prevention, early detection, and treatments such as tobacco control efforts, screening for breast and colorectal cancer, and the dissemination of state-of-the-art cancer therapies.

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