

CANCER FACTS & FIGURES

For African Americans

Pennsylvania, 2008



*Pennsylvania Cancer Registry
Bureau of Health Statistics and Research*



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Introduction

In an effort to improve risk assessment needs of cancer prevention programs, the Pennsylvania Department of Health has highlighted racial disparities among African Americans and Whites. The focus of this report includes a detailed comparison of cancer and behavioral risk statistics among African Americans and Whites, projected cancer cases and deaths, and analysis of age-adjusted cancer rates for Pennsylvania as compared to the U.S. The overall findings are summarized in the Data Highlights section. A Technical Notes section appears at the end of this report and includes information on the data sources, statistical methods, and data limitations.

The Bureau of Health Statistics and Research was inspired to generate this report by the American Cancer Society's publication *Cancer Facts and Figures for African Americans*. Although the basic concepts were similar, this report focuses on Pennsylvania cancer statistics in more detail. In particular, race disparities were identified by type of cancer, stage at the time of diagnosis, and behavioral risk factors. According to the American Cancer Society, race disparities among cancer statistics may actually represent socioeconomic disparities and unequal access to health care services.

The Bureau welcomes comments and suggestions on the content and format of this report. Staff members are available to answer questions regarding the report, including utilization and limitations of the data. Please address all comments, questions, requests for data, etc. to:

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This report and many other cancer and health statistics can be downloaded from the Department's health statistics web pages at www.health.state.pa.us/stats

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The Pennsylvania Department of Health is an equal opportunity provider of grants, contracts, services, and employment.

Data were collected by the Pennsylvania Cancer Registry (PCR) located in the Bureau of Health Statistics and Research. The PCR is a full participant in the National Program of Cancer Registries (NPCR) of the Centers for Disease Control and Prevention (CDC).

Data Highlights

● How Many African Americans Were Diagnosed With Cancer?

In 2005, there were 5,818 cases of invasive cancer diagnosed among African Americans in Pennsylvania for an age-adjusted incidence rate of 530.9 per 100,000. Among African American men there were 2,968 cases for an age-adjusted rate of 675.0, and among women there were 2,850 cases for a rate of 442.1.

● How Many African Americans Died of Cancer?

In 2006, there were 2,679 deaths due to cancer among African Americans in Pennsylvania for an age-adjusted mortality rate of 250.9 per 100,000. Among African men there were 1,347 deaths due to cancer for an age-adjusted mortality rate of 335.1, and among women there were 1,332 deaths due to cancer for an age-adjusted rate of 204.3.

● What are the Most Common Cancers Diagnosed Among African Americans?

The top four cancers diagnosed among African American residents in Pennsylvania during 2005 include lung/bronchus (1,028 cases), colon/rectum (647 cases), prostate (974 cases), and female breast (769 cases). These four sites combined represent 59 percent of all cases diagnosed among African Americans in 2005.

● How Do Cancer Rates of African Americans Compare to Whites?

In Pennsylvania, annual age-adjusted incidence rates for all cancers among African Americans were consistently higher than the rates for Whites during the eleven-year period 1995-2005. The cancer incidence rate for 2005 among African Americans (530.9) was 9.6 percent higher than the rate for Whites (484.2). Incidence rates for liver, myeloma, stomach, and larynx cancers among African Americans in Pennsylvania were approximately twice the rates among White residents. Mortality rates for larynx, prostate, stomach and myeloma cancers among African American residents were over twice the rates among Whites.

● How Do Cancer Rates Among Pennsylvanians Compare to the United States?

In 2005, the age-adjusted incidence rate (530.9 per 100,000) for African Americans in Pennsylvania was nearly 11 percent higher than the rate (480.2) recorded for African Americans by the National Cancer Institute's SEER Program. Pennsylvania rates among African Americans were also higher among residents diagnosed with lung/bronchus, colon/rectum and female breast cancers, but slightly lower among men with prostate cancer.

● How Many Cancer Cases and Deaths are Projected for 2008?

The number of cancer cases among African Americans in Pennsylvania is expected to decline by about 1 percent from 5,818 cases reported in 2005 to 5,745 cases in 2008. In addition, the number of cancer deaths among residents is expected to decline slightly from 2,679 deaths in 2006 to 2,635 deaths in 2008 — a decrease of about 2 percent since 2006.

● At What Stage of the Disease are Cancers Diagnosed?

During the three-year period of 2003-2005, cancers among African Americans were most commonly diagnosed at the local stage (38.0 percent). Compared to Whites, African Americans had a lower percentage of cancers diagnosed at early stages (45.1 vs. 50.7) and a higher percentage of cancers diagnosed at late stages (45.5 vs. 40.5). When compared to African American males, females had a higher percentage of cancers diagnosed at the in situ stage (10.4 vs. 3.6) but a lower percentage of cancers diagnosed for both early (in situ and local) stages combined (42.3 vs. 47.9).

● What are the Disparities for Behavioral Risk Factors?

According to the 2006 and 2007 Behavioral Risk Factor surveys, African Americans in Pennsylvania were significantly more likely to be overweight, obese and quit smoking for one or more days in the past year than Whites. African Americans were also more likely to be a current smoker than Whites.

Cancer Rates for African Americans vs. Whites

Cancer Incidence – Rate ratios were used to identify cancer sites among African American Pennsylvanians with higher or lower age-adjusted rates than White residents (see table on page 3). For the five-year period of 2001-2005, incidence rates among African American males with liver, myeloma, stomach, larynx and prostate cancers were roughly twice the rates for White males. However, incidence rates among Black males with brain, urinary bladder, testis and skin melanoma cancers were lower than the rates among White males. Incidence rates among African American females with myeloma, esophagus, liver, stomach and larynx cancers were approximately twice the rates for White females. Rates for African American females with ovary, corpus uteri, urinary bladder, thyroid, non-hodgkin lymphomas, brain and skin melanoma cancers were much lower than rates among White females.

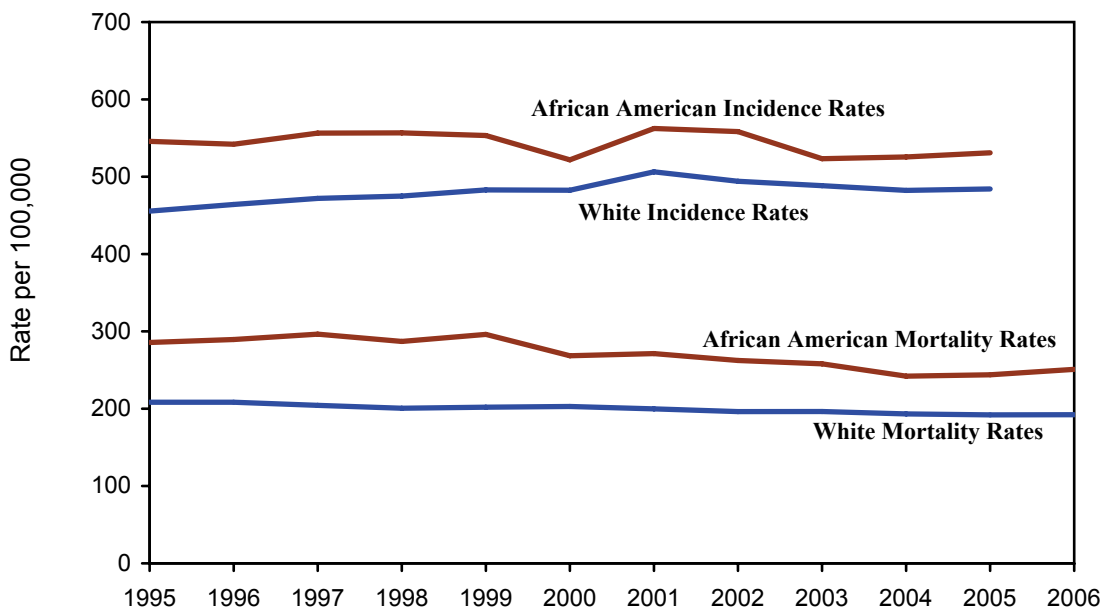
Cancer Mortality – In Pennsylvania, age-adjusted mortality rates among African American males during 2002-2006 were at least twice the rates for White males who died of prostate, stomach, liver and larynx cancers. Mortality rates among African American females who died of larynx, stomach, cervix uteri and myeloma cancers were also at least twice the mortality rates among White females.

Incidence and Mortality Trends By Race

Cancer Incidence – During the period 1995 to 2005, the age-adjusted cancer incidence rate for African Americans has varied from 545.7 in 1995 to a high of 562.4 in 2001, with lows of 521.8 in 2000 and 523.3 in 2003. The 2005 rate (530.9 per 100,000) was 2.7 percent lower than the 1995 rate (545.7). Incidence rates among African American residents were consistently higher than rates for White residents during the eleven-year period of 1995-2005. Among White residents, the age-adjusted incidence rate increased from 1995 to 2001 followed by some declines. Nonetheless, the 2005 rate (484.2) was 6.3 percent higher than the 1995 rate (455.5).

Cancer Mortality – Among African Americans, the age-adjusted cancer mortality rates between 1995 and 2005 showed an overall decline, with a high of 296.4 in 1997 and a low of 242.1 in 2004. However, in 2006, the cancer death rate for African Americans was approximately 31 percent higher than the rate for White residents. The age-adjusted cancer mortality rates for White residents have generally been on the decline since 1995. The 2006 rate of 192.2 was nearly 8 percent lower than the 1995 rate of 208.4. During the twelve-year period of 1995-2006, the highest mortality rate for Whites occurred in 1995 and 1996 (208.4) and the lowest rate occurred in 2005 (192.0).

Trends: Cancer Incidence and Mortality Age-Adjusted Rates by Race, Pennsylvania Residents



NOTES: Age-adjusted rates are computed by the direct method using the 2000 U.S. standard million population. Incidence rates are based on all invasive and in situ urinary bladder cancers.

Cancer Rates for African Americans and Whites

INCIDENCE - MALES 2001-2005				MORTALITY - MALES 2002-2006			
Cancer	RATES*		African American/ White Ratio	Cancer	RATES*		African American/ White Ratio
	African American	White			African American	White	
Liver and Intrahepatic Bile Duct	18.3	7.3	2.5	Prostate	60.0	25.5	2.4
Myeloma	11.7	6.1	1.9	Stomach	11.2	5.1	2.2
Stomach	17.9	9.8	1.8	Liver and Intrahepatic Bile Duct	13.7	6.5	2.1
Larynx	13.1	7.4	1.8	Larynx	4.8	2.3	2.1
Prostate	249.7	149.3	1.7	Myeloma	8.1	4.2	1.9
Lung and Bronchus	124.6	88.9	1.4	Oral Cavity and Pharynx	6.3	3.5	1.8
Pancreas	16.9	13.5	1.3	Lung and Bronchus	99.2	71.6	1.4
Oral Cavity and Pharynx	18.6	14.9	1.2	Colon and Rectum	33.0	24.8	1.3
Kidney and Renal Pelvis	25.0	20.1	1.2	Pancreas	15.6	13.2	1.2
Esophagus	11.7	9.8	1.2	Hodgkin Lymphoma	0.8	0.7	1.1
Colon and Rectum	74.9	68.0	1.1	Esophagus	10.0	9.4	1.1
Hodgkin Lymphoma	3.4	3.7	0.9	Kidney and Renal Pelvis	6.2	6.1	1.0
Non-Hodgkin Lymphoma	19.1	24.8	0.8	Leukemia	8.5	10.5	0.8
Leukemia	10.6	16.1	0.7	Non-Hodgkin Lymphoma	6.8	10.4	0.7
Thyroid	3.7	6.0	0.6	Urinary Bladder	5.6	8.9	0.6
Brain and Other Nervous System	4.8	8.3	0.6	Brain and Other Nervous System	2.6	5.2	0.5
Urinary Bladder	23.1	46.1	0.5	Melanoma of the Skin	–	4.6	–
Testis	1.9	7.0	0.3	Testis	–	0.3	–
Melanoma of the Skin	0.8	–	–	Thyroid	–	0.5	–
All Cancers	700.7	575.7	1.2	All Cancers	328.6	243.7	1.3

INCIDENCE - FEMALES 2001-2005				MORTALITY - FEMALES 2002-2006			
Cancer	RATES*		African American/ White Ratio	Cancer	RATES*		African American/ White Ratio
	African American	White			African American	White	
Myeloma	9.0	3.9	2.3	Larynx	1.3	0.5	2.6
Esophagus	4.2	2.0	2.1	Stomach	5.6	2.4	2.3
Liver and Intrahepatic Bile Duct	4.6	2.3	2.0	Cervix Uteri	4.7	2.1	2.2
Stomach	8.5	4.3	2.0	Myeloma	5.9	2.9	2.0
Larynx	3.0	1.6	1.9	Esophagus	3.5	1.8	1.9
Cervix Uteri	11.4	7.5	1.5	Liver and Intrahepatic Bile Duct	4.3	2.7	1.6
Pancreas	14.9	9.9	1.5	Corpus Uteri	7.3	4.7	1.6
Lung and Bronchus	71.5	53.3	1.3	Urinary Bladder	3.6	2.4	1.5
Oral Cavity and Pharynx	6.4	5.5	1.2	Pancreas	13.4	9.4	1.4
Kidney and Renal Pelvis	11.5	10.4	1.1	Oral Cavity and Pharynx	1.7	1.2	1.4
Colon and Rectum	53.0	48.8	1.1	Lung and Bronchus	53.4	39.2	1.4
Female Breast	120.0	124.8	1.0	Female Breast	34.3	25.8	1.3
Hodgkin Lymphoma	2.6	3.1	0.8	Colon and Rectum	21.0	16.4	1.3
Leukemia	7.4	9.5	0.8	Kidney and Renal Pelvis	3.4	2.9	1.2
Ovary	10.1	14.2	0.7	Leukemia	4.9	5.9	0.8
Corpus Uteri	21.9	30.8	0.7	Ovary	7.1	9.5	0.7
Urinary Bladder	8.1	11.5	0.7	Non-Hodgkin Lymphoma	4.6	6.4	0.7
Thyroid	13.8	19.8	0.7	Brain and Other Nervous System	1.7	3.6	0.5
Non-Hodgkin Lymphoma	11.3	17.4	0.6	Hodgkin Lymphoma	–	0.4	–
Brain and Other Nervous System	3.6	6.0	0.6	Melanoma of the Skin	–	2.1	–
Melanoma of the Skin	0.7	15.2	0.0	Thyroid	–	0.5	–
All Cancers	438.9	437.1	1.0	All Cancers	207.3	162.9	1.3

*Incidence and mortality rates are per 100,000 and age-adjusted to the 2000 US standard million population using 18 five-year age groups.

NOTES: In situ cancers were excluded for all cancer sites with the exception of urinary bladder. Ratios and age-adjusted rates were not calculated for cancer sites with less than 20 events due to unreliability of rates based on small numbers.

Sources: Cancer incidence data were obtained from the Pennsylvania Cancer Registry. Cancer death data were obtained from Pennsylvania's Certificate of Death.

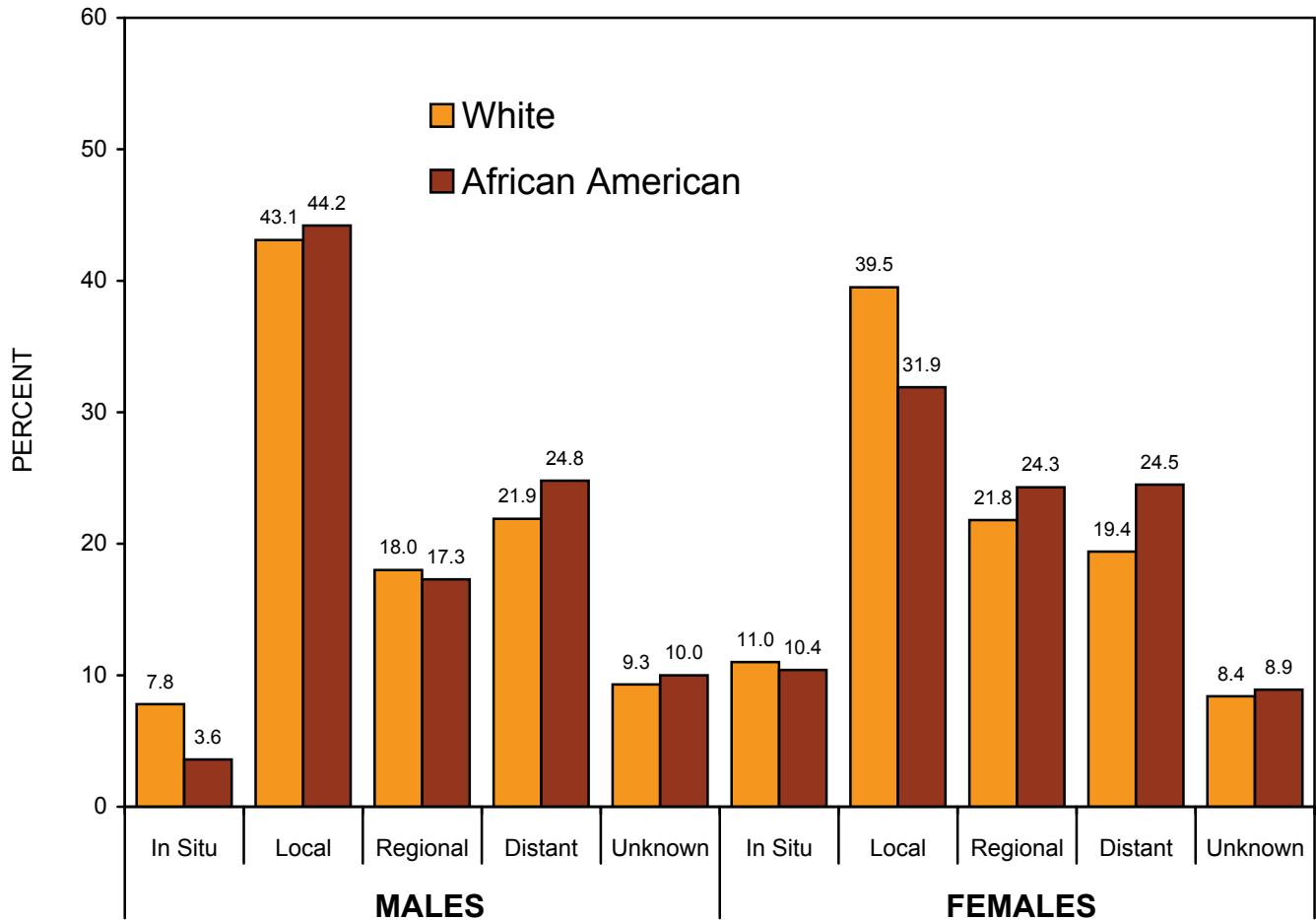
Racial Disparities for Stage at Diagnosis

Stage of Disease – An early diagnosis of cancer increases the effectiveness of treatment and improves the chances of survival. Unfortunately, many cancers are not detected until the regional or distant stage of the disease. At these late stages, cancers have already spread to secondary sites. The chart below was used to highlight the racial disparities of stage at time of diagnosis among White and African American residents in Pennsylvania for the three-year period of 2003-2005. A higher percentage of late stage diagnoses among African Americans may represent less access to health care services and screening.

Males – During the period of 2003-2005, the percent of cancer cases diagnosed at the in situ and regional stages were lower among African American males and the percentage of local and distant stage diagnoses were higher. African American males also had a slightly higher percentage of cancer cases diagnosed at an unknown stage than White males. The most common stage diagnosis among both African American and White males occurred at the local stage (about 43-44 percent), while the least common stage occurred at the in situ stage (about 4 to 8 percent). The most obvious stage disparities between White and African American men occurred for in situ and distant stages.

Females – Among women in Pennsylvania, the percentage of cancer cases diagnosed at early stages was lower for African Americans and the percentage of late stage diagnoses was higher. The largest disparity occurred for cancers diagnosed at the local stage (about 40 percent for Whites vs. 32 percent for African Americans). The majority of cancer cases among both African American and White women were diagnosed at the local stage. Compared to males of both races, a larger percent of female cancer cases were diagnosed at the in situ and regional stages.

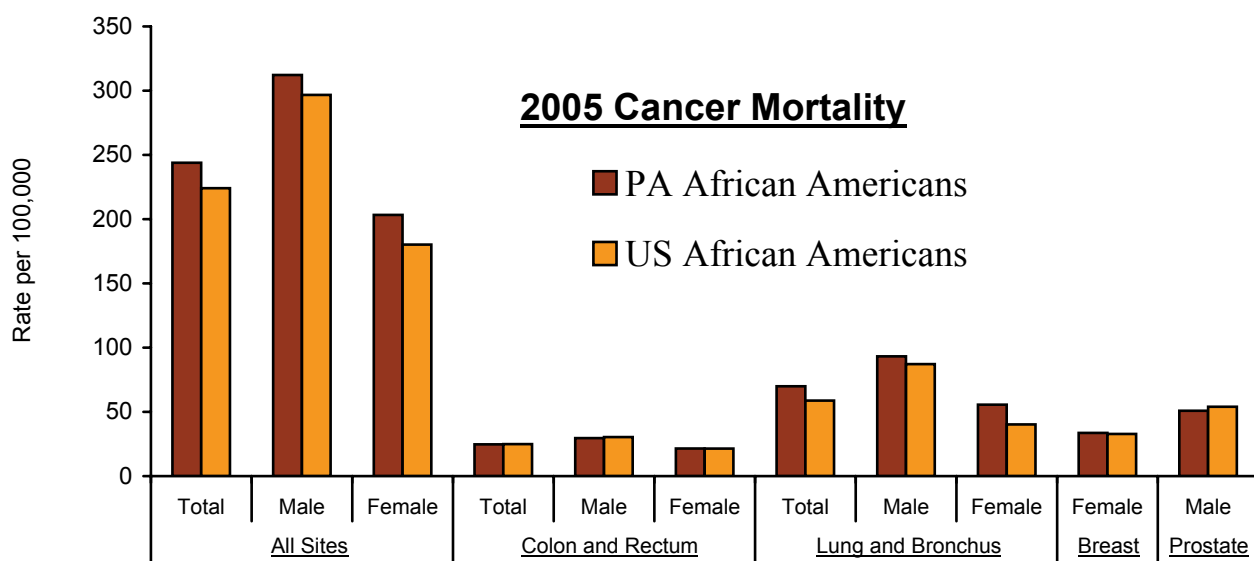
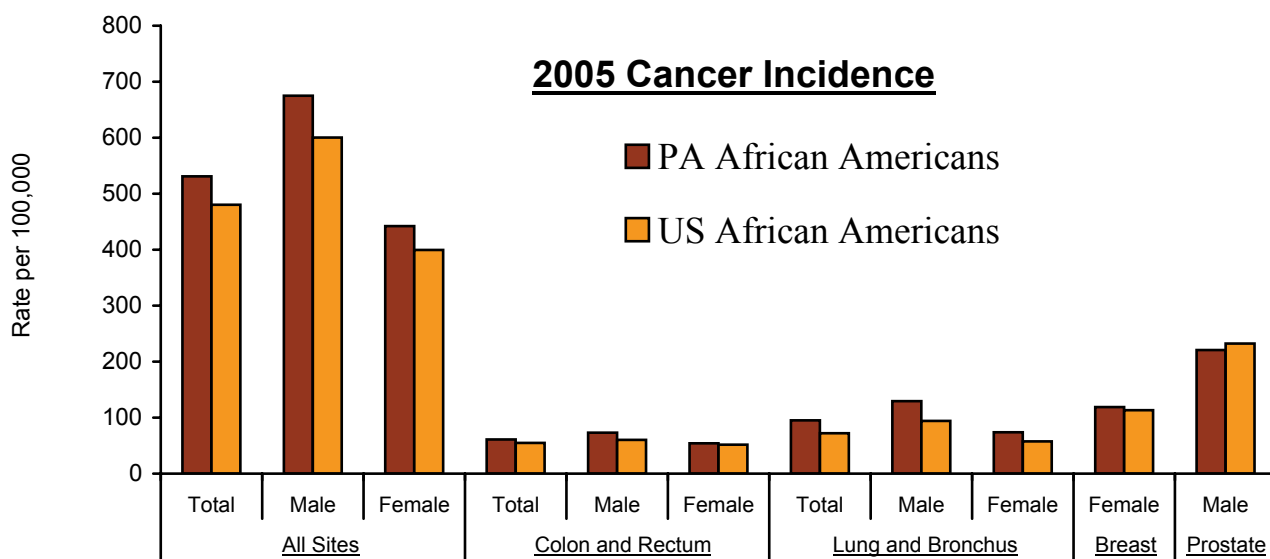
Percent of Cancer Cases by Stage of Disease at Diagnosis All Cancers by Race, Pennsylvania Residents, 2003-2005



PENNSYLVANIA and UNITED STATES: Comparison of Age-Adjusted Cancer Rates Among African Americans

Cancer Incidence – Age-adjusted incidence rates for 2005 were higher among African American males and females in Pennsylvania compared to rates for African Americans in the United States. The incidence rate for all cancers among Pennsylvania African Americans was 10.6 percent higher than the rate for African Americans in the United States (530.9 vs. 480.2 per 100,000). Pennsylvania rates were also higher than the United States rates among African American residents for the major cancer sites of colon/rectum, lung/bronchus and female breast, but slightly lower among men with prostate cancer.

Cancer Mortality – In 2005, age-adjusted mortality rates for Pennsylvania African American males and females were higher than comparable rates in the United States for all cancers and lung/bronchus cancers. The mortality rate for all cancers among Pennsylvania African Americans was 8.8 percent higher than the rate for African Americans in the United States (243.9 vs. 224.1 of 100,000). Deaths due to colon/rectum and female breast cancer had nearly identical rates in Pennsylvania compared to the United States. Age-adjusted death rates for prostate cancer were slightly lower in Pennsylvania compared to the United States.



NOTES: Age-adjusted rates are per 100,000 and were computed by the direct method using 2000 U.S. standard million population. Incidence rates were based on invasive (and in situ urinary bladder) cancers. The U.S. incidence figures are based on data reported by the National Cancer Institute's SEER program.

2008 Projected Cancer Cases and Deaths

Projected Figures – The tables below present projections for cancer incidence and mortality among African American residents in Pennsylvania for the year 2008. Projections were only calculated for all cancers and the top four cancers: colon/rectum, female breast, lung/bronchus and prostate. These projections were based on the five most recent years of data available from the Pennsylvania Cancer Registry and death certificates. Cancer incidence projections were calculated using 2001 through 2005 data while cancer mortality projections were calculated using 2002 through 2006 data. However, the projections were based on relatively small numbers of events with potentially high variability, thereby, making accurate and reliable projections difficult.

Cancer Incidence – Among African American residents in Pennsylvania, the 2008 projected number of invasive cancer cases was 5,745 (about 1 percent lower than the 5,818 cases recorded in 2005). The projected number of new cancers among African American men is expected to decrease from 2,968 cases in 2005 to 2,915 cases in 2008. Among African American women the number of new cancers is expected to increase from 2,850 cases in 2005 to 2,910 cases in 2008.

Cancer Mortality – The 2008 projected number of cancer deaths among African American residents in Pennsylvania was 2,635 – a 2 percent decrease from the 2,679 deaths recorded in 2006. As with incidence, the projected figures indicate that the percent changes for deaths from 2006 to 2008 are expected to be small among African American men and women. The largest numerical difference, for example, is expected for female lung/bronchus cancer deaths – increasing from 350 deaths in 2006 to 385 deaths in 2008. Overall, cancer deaths among African American males are expected to decrease by about 2 percent while females decrease by about 1 percent.

Pennsylvania Cancer Incidence Among African Americans									
	Total			Male			Female		
	Actual 2005	Projected 2008	Percent Change	Actual 2005	Projected 2008	Percent Change	Actual 2005	Projected 2008	Percent Change
All Cancers	5,818	5,745*	-1%	2,968	2,915	-2%	2,850	2,910	2%
Colon and Rectum	647	635*	-2%	302	305*	1%	345	330*	-4%
Female Breast	769	815	6%	-	-	-	769	815	6%
Lung and Bronchus	1,028	965*	-6%	552	515*	-7%	476	450*	-5%
Prostate	974	925	-5%	974	925	-5%	-	-	-

Pennsylvania Cancer Mortality Among African Americans									
	Total			Male			Female		
	Actual 2006	Projected 2008	Percent Change	Actual 2006	Projected 2008	Percent Change	Actual 2006	Projected 2008	Percent Change
All Cancers	2,679	2,635*	-2%	1,347	1,315*	-2%	1,332	1,325*	-1%
Colon and Rectum	281	265*	-6%	156	130*	-17%	125	125	0%
Female Breast	203	175	-14%	-	-	-	203	175	-14%
Lung and Bronchus	743	745*	0%	393	370	-6%	350	385	10%
Prostate	212	205*	-3%	212	205*	-3%	-	-	-

NOTES: Males and Females may not sum to the total due to independent analysis by sex and by total. Projections were rounded to the nearest whole five and the percent change was rounded to the nearest whole percentage. Pennsylvania cancer primary site groupings match the primary site definitions used by the National Cancer Institute's SEER program.

* The arithmetic mean for the five-year period was used to estimate the number of cases or deaths.

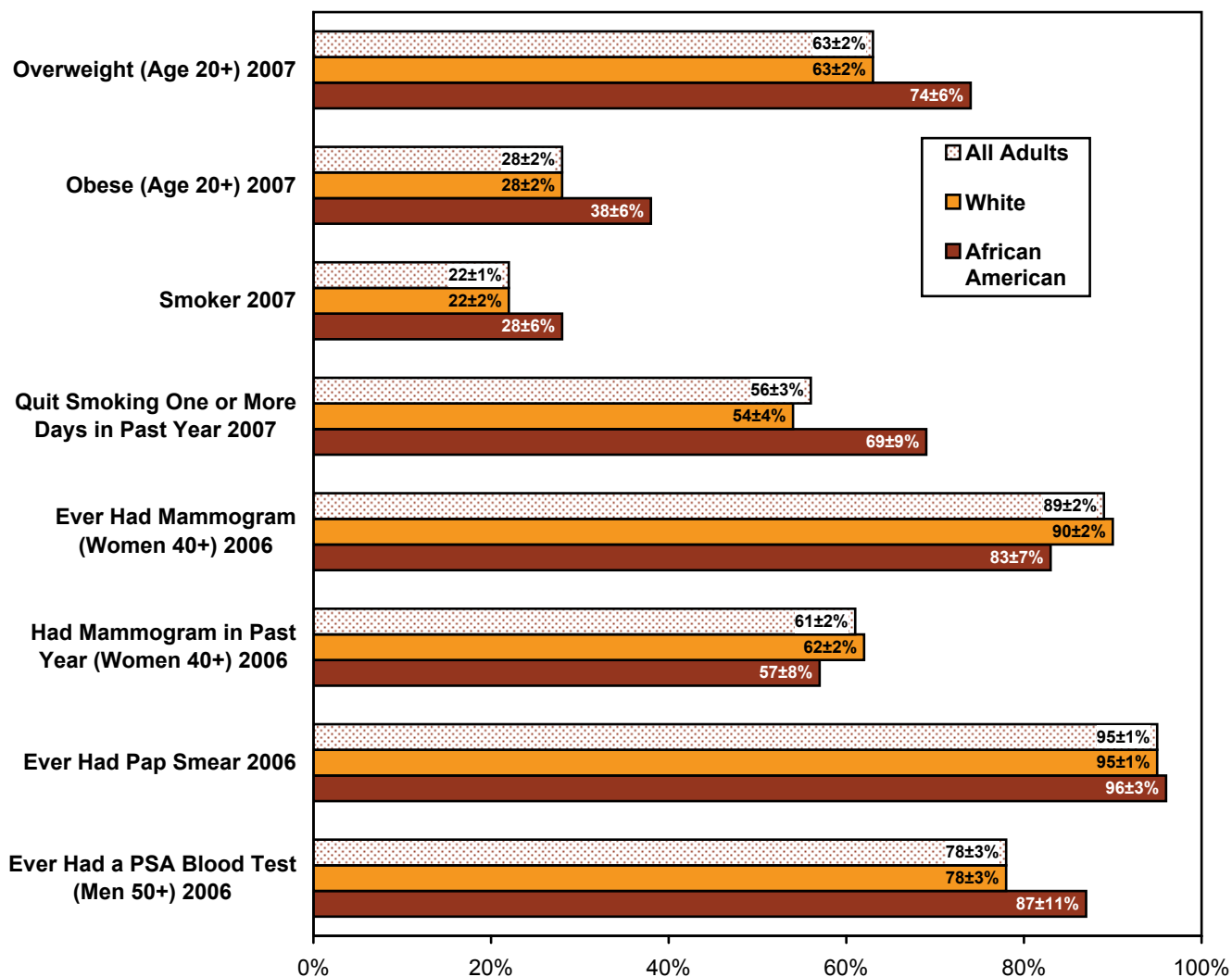
Behavioral Risk Factors

The Pennsylvania Department of Health conducts an annual telephone sample survey of adult residents as part of its Behavioral Risk Factor Surveillance System (BRFSS). Results from the 2006 and 2007 surveys for selected risk factors that impact on cancer incidence are shown below for all adults, Whites (non-Hispanic), and African Americans (non-Hispanic).

In 2007, 63 percent of all adults (age 20+) surveyed were considered to be overweight and 28 percent were obese. Twenty-two percent of the respondents smoked cigarettes regularly in 2007. Fifty-six percent of all smokers surveyed quit smoking for at least one day in the past year. In 2006, the percentage of women who had ever had a mammogram (age 40+) was relatively high at 89 percent. However, a significantly lower percentage (61) was reported for women age 40 and older who had had a mammogram in the past year. The 2006 survey also indicated that 95 percent of adult women ever had a pap smear and 78 percent of adult men (age 50+) ever had a PSA blood test.

The chart below highlights some differences between the races. Significantly more African Americans were overweight (74 vs. 63 percent) and obese (38 vs. 28 percent). African Americans were also significantly more likely to quit smoking for at least one day in the past year compared to Whites in 2007. A higher percentage of African Americans smoked compared to Whites, although the difference was not statistically significant.

Selected Behavioral Risk Factors by Race, Pennsylvania Adults, 2006 and 2007



NOTES: The estimated percent prevalences were calculated using weighted data (i.e., the age, sex and race distribution of the estimated 2006/7 Pennsylvania population) and were age-adjusted to the 2000 U.S. standard million population in order to match the Healthy People 2010 data. Data include 95% confidence intervals (±). Hispanics are excluded from the White and African American categories.

TECHNICAL NOTES

Important: It is highly recommended that any user of the data presented in this report read the information provided in this Technical Notes section carefully and review as many of the cited references as possible.

Cancer incidence data was obtained from the Pennsylvania Cancer Registry (PCR) and the National Cancer Institute's (NCI) SEER program. Cancer mortality data was obtained from the Pennsylvania Certificate of Death and NCI's SEER data as compiled by the National Center for Health Statistics. African American as defined for this report includes those whose race was reported as "Black" on the PCR Report Form and the Pennsylvania Certificate of Death.

The projections of new cancer cases in this report were obtained by producing a regression line using the method of least squares. This approach utilized the actual number of cases reported to the PCR with a diagnosis year of 2001 through 2005. This method constructed the regression line that minimizes the sum of the squared residuals. A residual is the difference between each data point (actual or observed event) and the regression line (predicted event). Once a regression line has been computed, an estimate of the population standard error of the estimate is computed. This estimate measures the variability of the line. Also computed is the estimate of the population standard deviation of the dependent variable (year of diagnosis). This is a measure of the variability of projected cancer cases based on the arithmetic mean of cancer cases for the five years of 2001 through 2005. The estimate of the population standard error of the estimates was then compared to the estimate of the population standard deviation of the mean to identify which method had less variability. If the population standard deviation was lower, then the arithmetic mean for the five-year period was used as the projected number of cancer cases. This same method was applied to projecting the number of cancer deaths. However, since the cancer mortality file is more current, the five-year period of 2002 through 2006 was used to project the number of cancer deaths. The projected numbers of new cancer cases and new cancer deaths have been rounded to the nearest whole five. The projected figures should be used cautiously. Considerable variation may occur, particularly with estimates of small numbers. Of primary concern when using forecasted values is the high probability of chance variation due to unknown (or uncontrollable) factors.

Age-adjusted rates were calculated using the direct method. Specifically, age-specific rates for a selected population are applied to a standard population (in this report the 2000 U.S. standard million population) in order to calculate what rate would be expected if the selected population had the same age distribution as the standard. The total of these expected events divided by the total of the standard population and multiplied by 100,000 yields the age-adjusted rate per 100,000. It is important to use the same standard population in the computation of each age-adjusted rate to allow comparability. Age-adjusted rates should never be compared with any other type of rate or be used as absolute measurements of vital events. All state population figures used for calculating rates were either enumerated population figures produced by the U.S. Census Bureau (2000) or estimates produced jointly by the U.S. Census Bureau and the State Data Center of Penn State at Harrisburg (1995-1999, and 2001-2006).

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