Cancer Incidence and Mortality in Delaware

Prepared by Delaware's Division of Public Health

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Delaware Cancer Incidence and Mortality, 2000-2004
Summary Statistics

Incidence:

During 2000-2004, a total of 21,379 cancers were diagnosed among Delaware residents. Of these, 11,253 (52.6%) occurred among men; 10,126 (47.4%) occurred among women. The large majority of cases (17,489, 81.8%) were diagnosed among Caucasians; 3,176 cases (14.9%) were diagnosed among African Americans. The remaining cases (714, 3.3%) were diagnosed among Delawareans of other races.

The four most commonly occurring cancers among Delawareans (lung/bronchus, colorectal, breast and prostate) accounted for over half (55.3%) of all cancers diagnosed during 2000-2004. As depicted below in Table 1, of cancers occurring among both men and women, lung/bronchus cancer was the most commonly diagnosed, accounting for 3,307 (15.5%) of all cancer cases. It was the second most commonly diagnosed cancer among both men and women, accounting for 1,815 (16.1% of) cases among men and 1,492 (14.7% of) cases among women. Prostate cancer was the most commonly diagnosed cancer overall and among men, with 3,328 cases accounting for 15.6% of all cancer cases and 29.6% of cases diagnosed among men. Among women, breast cancer was the most commonly diagnosed, with 2,882 cases accounting for 28.5% of all cancers diagnosed among women, and 13.5% of all cancer cases. Colorectal cancer was the fourth most commonly diagnosed cancer overall (2,308 cases; 10.8%), and the third most commonly diagnosed for both men and women, accounting for 1,206 cases (10.7%) among men, and 1,102 cases (10.9%) among women.

Table 1. Ranking, most frequently diagnosed cancers among Delawarean men and women, 2000-2004

Cancer	Rank Overall	# (%) Overall	Rank Men	# (%) Men	Rank Women	# (%) Women
Prostate	1	3,328 (15.6)	1	3,328 (29.6)	---	---
Lung/bronchus	2	3,307 (15.5)	2	1,815 (16.1)	2	1,492 (14.7)
Breast	3	2,882 (13.5)	---	---	1	2,882 (28.5)
Colorectal	4	2,308 (10.8)	3	1,206 (10.7)	3	1,102 (10.9)

Data source: Delaware Division of Public Health; Cancer Incidence and Mortality in Delaware, 2007

Comparing Caucasian and African-American Delawareans (see Table 2, below), prostate cancer was the most commonly diagnosed cancer among African Americans, accounting for 642 (38.0% of) cases diagnosed among African-American men, and 20.2% of cancers diagnosed among African Americans overall. Prostate cancer accounted for 2,549 (27.8% of) cases diagnosed among Caucasian men, and 14.6% of cancers diagnosed among Caucasians overall. Lung/bronchus cancer was the most commonly diagnosed cancer of those cancers occurring among both men and women. Lung/bronchus cancer accounted for 483 (15.2% of) cases diagnosed among African Americans, and 2,772 (15.8% of) cancer cases diagnosed among Caucasians. Breast cancer was the most commonly diagnosed cancer among women, accounting for 434 (29.2% of) cases diagnosed among African-American women (and 13.7% of cancers diagnosed among all African Americans), and 2,371 (28.5% of) cases diagnosed among Caucasian women (and 13.6% of all cancers diagnosed among Caucasians). A total of 333 colorectal cancer cases was diagnosed among African Americans, accounting for 10.5% of all cancer cases diagnosed within this racial group; 1,896 colorectal cancer

cases were diagnosed among Caucasians, accounting for 10.8% of all cases diagnosed among Caucasians.

Table 2. Ranking, most frequently diagnosed cancers among Caucasian and African-American Delawareans, 2000-2004

Cancer	Rank African-Americans	# (%) African-Americans	Rank Caucasians	# (%) Caucasians
Lung/bronchus	2	483 (15.2)	1	2,772 (15.8)
Prostate	1	642 (20.2)	2	2,549 (14.6)
Breast	3	434 (13.7)	3	2,371 (13.6)
Colorectal	4	333 (10.5)	4	1,896 (10.8)

Data source: Delaware Division of Public Health; Cancer Incidence and Mortality in Delaware, 2007

Age-adjusted 2000-2004 incidence rates for Delaware, for selected cancers, appear in Table 3. The 1999-2003 rates for Delaware and 2000-2004 rates for the U.S. also are provided, for comparison purposes. Excepting for cervical cancer, the incidence rates for these selected cancers declined in Delaware between the 1999-2003 and 2000-2004 time periods; for cervical cancer, the rates stayed the same. Delaware's rates continue to exceed those of the U.S., except for cervical cancer, where Delaware's rate is slightly (but not significantly) lower than that of the U.S.

Table 3. Delaware cancer incidence, 2000-2004 and 1999-2003; U.S. cancer incidence 2000-2004

Cancer	DE Rate* 2000-2004	DE Rate* 1999-2003	US Rate* 2000-2004
All sites	501.3	503.5	473.6
Breast (female)	125.3	129.2	131.0
Cervical	8.6	8.6	7.4
Colorectal	54.3	56.7	51.5
Lung/bronchus	76.9	77.8	63.0
Prostate	173.0	176.2	147.9

Data sources: Delaware Division of Public Health; Cancer Incidence and Mortality in Delaware, 2007 (2000-2004 rates; US rates per SEER 9)
Delaware Division of Public Health; Cancer Incidence and Mortality in Delaware, 2006 (1999-2003 rates)

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

In Table 4 (next page), the incidence rates for five specific cancers and for all cancer sites combined were compared across two time periods: 1990-1994 v. 1995-1999, and 1995-1999 v. 2000-2004; the percent change between the two time periods was calculated for each comparison. In only one comparison did a rate increase between the earlier and current time period: Prostate cancer showed a minor (0.01%, not significant) increase in incidence between 1995-1999 and 2000-2004; in all other cases, the current rate is lower than the one occurring in an earlier time period. The percent change between the later comparison time periods (1995-1999 v. 2000-2004) typically is larger than is the change between the earlier comparison time periods (1990-1994 v. 1995-1999); for example, colorectal cancer incidence declined 11.3% between 1995-1999 and 2000-2004; the rate declined by less than half that percentage (4.5%) between 1990-1994 and 1995-1999.

Table 4. Delaware cancer incidence, 2000-2004, 1995-1999 and 1990-1994

Cancer	DE Rate* 2000-2004	DE Rate* 1995-1999	DE Rate* 1990-1994	% Change from 1990-1995 to 1995-1999	% Change from 1995-1999 to 2000-2004
All sites	501.3	508.0	525.5	↓ 3.3%	↓ 1.3%
Breast (female)	125.3	137.0	138.2	↓ 0.9%	↓ 8.5%
Cervical	8.6	10.9	13.4	↓ 18.7%	↓ 21.1%
Colorectal	54.3	61.2	64.1	↓ 4.5%	↓11.3%
Lung/bronchus	76.9	83.9	86.1	↓ 2.6%	↓ 8.3%
Prostate	173.0	172.8	206.3	↓ 16.2%	↑ 0.1%

Data sources: Delaware Division of Public Health; Cancer Incidence and Mortality in Delaware, 2007 (2000-2004 rates)
Delaware Division of Public Health; Cancer Incidence data files (historic rates)

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

Mortality:

During 2000-2004, 8,553 Delawareans died of cancer. Of these cancer-related deaths, 4,465 (52.2%) occurred among men, and 4,088 (47.8%) occurred among women. The large majority of deaths (7,116, 83.2%) occurred among Caucasians; 1,295 (15.1%) occurred among African Americans. The remaining deaths (142, 1.7%) occurred among Delawareans of other races.

Over half of all cancer-related deaths (52.4%) were due to the four cancers most commonly occurring among Delawareans: lung/bronchus, colorectal, breast and prostate. As depicted below in Table 5, lung/bronchus cancer was the most commonly occurring among cancer deaths, accounting for 2,588 (30.3%) of all cancer-related deaths. It also was the leading cause of cancer-related deaths among both men and women, accounting for 1,458 (32.7% of) deaths among men, and 1,130 (27.6% of) deaths among women. Breast cancer and prostate cancer were the second most commonly occurring among cancer-related deaths for women and men, respectively. Breast cancer accounted for 623 (15.2% of) deaths among women (and 7.3% of cancer-related deaths overall); prostate cancer accounted for 442 (9.9% of) deaths among men (and 5.2% of deaths overall). Colorectal cancer was the second most common cause of cancer-related deaths overall, accounting for 828 (9.7% of) deaths; it was the third most commonly occurring cause of cancer-related death among both men and women, accounting for 424 (9.5% of) deaths among men, and 404 (9.9% of) deaths among women.

Table 5. Leading causes of cancer-related deaths among Delawarean men and women, 2000-2004

Cancer	Rank Overall	# (%) Overall	Rank Men	# (%) Men	Rank Women	# (%) Women
Lung/bronchus	1	2,588 (30.3)	1	1,458 (32.7)	1	1,130 (27.6)
Prostate	4	442 (5.2)	2	442 (9.9)	---	---
Breast	3	623 (7.3)	---	---	2	623 (15.2)
Colorectal	2	828 (9.7)	3	424 (9.5)	3	404 (9.9)

Data source: Delaware Division of Public Health; Cancer Incidence and Mortality in Delaware, 2007

Lung/bronchus cancer was the leading cause of cancer-related death among both African-American and Caucasian Delawareans (see Table 6, below), accounting for 359 (27.7% of) deaths among African Americans, and 2,195 (30.8% of) deaths among Caucasians. Breast cancer was the third leading cause of death among both African-Americans and Caucasians, accounting for 115 (8.9% of) all cancer-related deaths occurring among African Americans, and for 495 (7.0% of) all cancer-related deaths occurring among Caucasians. Prostate cancer was the second leading cause of cancer-related death among men, accounting for 88 (13.3%) of 663 deaths among African-American men (and 6.8% of all cancer-related deaths occurring among African Americans), and for 344 (9.2%) of 3,730 deaths among Caucasian men (4.8% of cancer-related deaths occurring among Caucasians). Colorectal cancer was the second leading cause of cancer-related deaths among both African Americans and Caucasians, accounting for 145 (11.2% of) these deaths among African Americans, and 675 (9.5% of) cancer deaths among Caucasians.

Table 6. Leading causes of cancer-related deaths among Caucasian and African-American Delawareans, 2000-2004

Cancer	Rank Over-all	# (%) Overall	Rank African-Americans	# (%) African-Americans	Rank Caucasians	# (%) Caucasians
Lung/bronchus	1	2,588 (30.3)	1	359 (27.7)	1	2,195 (30.8)
Colorectal	4	442 (5.2)	2	145 (11.2)	2	675 (9.5)
Breast	3	623 (7.3)	3	115 (8.9)	3	495 (7.0)
Prostate	2	828 (9.7)	4	88 (6.8)	4	344 (4.8)

Data source: Delaware Division of Public Health; Cancer Incidence and Mortality in Delaware, 2007

Lung/bronchus cancer also was the leading cause of death among both African-American and Caucasian men and women (see Table 7, next page), accounting for 211 (31.8%) and 148 (23.4%) of all cancer-related deaths among African-American men and women, respectively, and for 1,227 (32.9%) and 968 (28.6%) of all cancer-related deaths among Caucasian men and women, respectively. Breast cancer was the second leading cause of cancer-related death among both African-American and Caucasian women, accounting for 115 (18.2% of) deaths occurring among African-American women and for 495 (14.6% of) deaths occurring among Caucasian women. Prostate cancer was the second leading cause of cancer-related death among African-American men, accounting for 88 (13.3% of) deaths among these men, and the third leading cause of cancer-related death among Caucasian men, accounting for 344 (9.2% of) deaths among these men. Colorectal cancer was the second leading cause of cancer-related death among Caucasian men, accounting for 348 (9.3% of) deaths among that population. It was the third leading cause of cancer-related death among African-American men and among both African-American and Caucasian women, accounting for 71 (10.7%), 74 (11.7%) and 327 (9.7%) of deaths within these populations, respectively.

Table 7. Leading causes of cancer-related deaths among Delaware's African-American and Caucasian Men and Women, 2000-2004

Cancer	Rank AA Men	# (%) AA Men	Rank Cauc Men	# (%) Cauc Men	Rank AA Women	# (%) AA Women	Rank Cauc Women	# (%) Cauc Women
Lung/ bronchus	1	211 (31.8)	1	1,227 (32.9)	1	148 (23.4)	1	968 (28.6)
Colorectal	3	71 (10.7)	2	348 (9.3)	3	74 (11.7)	3	327 (9.7)
Breast	---	---	---	---	2	115 (18.2)	2	495 (14.6)
Prostate	2	88 (13.3)	3	344 (9.2)	---	---	---	---

Data source: Delaware Division of Public Health; Cancer Incidence and Mortality in Delaware, 2007

Age-adjusted 2000-2004 mortality rates for Delaware, for selected cancers, appear in Table 8. The 1999-2003 rates for Delaware and 2000-2004 rates for the U.S. also are provided, for comparison purposes. Although Delaware's rates continue to exceed those of the U.S., the mortality rates for all of these cancers did decline in Delaware between the 1999-2003 and 2000-2004 time periods.

Table 8. Delaware cancer mortality, 2000-2004 and 1999-2003; U.S. cancer mortality 2000-2004

Cancer	DE Rate* 2000-2004	DE Rate* 1999-2003	US Rate* 2000-2004
All sites	201.7	206.9	192.7
Breast (female)	26.2	26.7	25.5
Cervical	2.9	3.5	2.6
Colorectal	19.7	21.0	19.4
Lung/bronchus	60.4	61.5	54.7
Prostate	28.1	28.5	27.9

Data source: Delaware Division of Public Health; Cancer Incidence and Mortality in Delaware, 2007 (2000-2004 rates)
Delaware Division of Public Health; Cancer Incidence and Mortality in Delaware, 2006 (1999-2003 rates)

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

Percentage decline and rate of decline in mortality:

Because Delaware's population is relatively small, minor fluctuations in the number of cancer cases or deaths for a given year may result in large changes to rates based on a single year's experience. To smooth rates that otherwise could appear erratic, rates for small populations – such as Delaware's – commonly are calculated for five-year periods v. individual years. These five-year rates, v. individual, annual rates, are also more appropriate for use in examining rate changes over time, as they are more stable and reliable than would be those for single years. For these reasons, for Delaware, we calculated and compared five-year annual average rates to examine changes in mortality rates, v. using specific, annual rates such as those appearing in Espey et al's recently published article, *Overall Cancer Incidence and Mortality Rates in the U.S.*

In Table 9 (next page), the mortality rates for five specific cancers and for all cancer sites combined were compared across two time periods: 1990-1994 v. 1995-1999, and 1995-1999 v. 2000-2004; the percent change between the two time periods was calculated for each comparison. In only one case did the rate increase between the earlier and later

time period compared: Mortality for cervical cancer increased 0.1% (not significantly) between the 1990-1994 and 1995-1999 time period. The percent change between the later comparison time periods (1995-1999 v. 2000-2004) typically is larger than is the change between the earlier time periods (1990-1994 v. 1995-1999); for example, prostate cancer mortality declined 10.1% between 1990-1994 and 1995-1999; it declined by nearly three times that (28.4%) between 1995-1999 and 2000-2004..

Table 9. Delaware cancer mortality, 2000-2004, 1995-1999 and 1990-1994

Cancer	DE Rate* 2000-2004	DE Rate* 1995-1999	DE Rate* 1990-1994	% Change from 1990-1994 to 1995-1999	% Change from 1995-1999 to 2000-2004
All sites	201.7	228.4	243.4	↓ 6.2%	↓ 11.7%
Breast (female)	26.2	31.7	35.9	↓ 11.7%	↓ 17.3%
Cervical	2.9	4.8	4.5	↑ 0.1%	↓ 39.6%
Colorectal	19.7	23.5	26.8	↓ 12.2%	↓ 16.4%
Lung/bronchus	60.4	67.3	71.1	↓ 5.4%	↓ 10.3%
Prostate	28.1	39.2	43.6	↓ 10.1%	↓ 28.3%

Data source: Delaware Division of Public Health; Cancer Incidence and Mortality in Delaware, 2007 (2000-2004 rates)
Delaware Division of Public Health; Cancer Mortality data files (historic rates)

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

In Table 10, the annual average percent change between two sets of five-year rates is presented. These figures were calculated be comparing the rates for 1990-1994 to those for 1995-1999, and the rates for 1995-1999 to those for 2000-2004; an overall percent change was calculated for each comparison. That percentage was then divided by the number of years between the first year of the earlier time period and the last year of the later time period, inclusive, (i.e., by 10) to produce an average annual percent change.

The rate of reduction between the later time periods (1995-1999 v. 2000-2004) was always more rapid than between the earlier two time periods (1990-1994 v. 1995-1999). For example, for prostate cancer, the average annual percent decline in mortality between 1990 and 1999 was 1.0%; between 1995 and 2004, the average annual percent decline was 2.8%. For the United States, the mortality rate always declined between the time periods compared, and the rate of reduction was usually more rapid between the later time periods than between the earlier time periods. The average annual percent decline in Delaware typically exceeded that of the United States.

Table 10. Cancer mortality: Average annual percent change, Delaware and United States

	Delaware		**United States**	
Cancer	1995-1999 to 2000-2004	1990-1994 to 1995-1999	1995-1999 to 2000-2004	1990-1994 to 1995-1999
All sites	↓ 1.2%	↓ 0.6%	↓ 0.6%	↓ 0.4%
Breast (female)	↓ 1.7%	↓ 1.2%	↓ 1.1%	↓ 1.1%
Cervical	↓ 4.0%	↑ 0.7%	↓ 1.6%	↓ 1.1%
Colorectal	↓ 1.6%	↓ 1.2%	↓ 1.0%	↓ 0.9%
Lung/bronchus	↓ 1.0%	↓ 0.5%	↓ 0.5%	↓ 0.3%
Prostate	↓ 2.8%	↓ 1.0%	↓ 1.9%	↓ 1.2%

Data source: Delaware Division of Public Health; Cancer Incidence and Mortality in Delaware, 2007 (2000-2004 rates)
Delaware Division of Public Health; Cancer Mortality data files (historic rates used in comparisons)

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1. INTRODUCTION

1.1. DELAWARE CANCER REGISTRY

The Delaware Cancer Registry (DCR) is the state's central cancer information center. It is part of the Health Information and Science section in Delaware's Division of Public Health. Delaware is one of 45 states supported by the National Program of Cancer Registries (NPCR) of the Centers for Disease Control and Prevention.

The DCR was founded in 1972 and was legally established in 1980 under the Delaware Cancer Control Act. The registry was established to ensure accurate, timely and routine surveillance of cancer and certain benign tumors. The act stipulated that all hospitals, clinical laboratories and cancer treatment centers in the state should report all new cancer cases to the DCR. In 1996, the Delaware Cancer Control Act was amended to require "any physician, surgeon, dentist, podiatrist, or other health care practitioner who diagnoses or provides treatment" to report cancer cases to the DCR. Further enhancements of the act took effect in 2002 when Senate Bill 372 was passed. The new law requires physicians to provide additional information on their cancer patients, including their place and duration of residence in Delaware and occupational history. The bill also extended the reporting deadline to 180 days from initial diagnosis or treatment.

1.1.1. Reporting Facilities

There are 29 facilities that submit reports to the DCR. Data are collected from eight hospitals, eight in-state and out-of-state diagnostic laboratories, nine state central registries and hundreds of physician offices. Demographic and medical information is collected on all newly diagnosed patients. Incidence data are reported by facilities to the DCR electronically or using the DCR reporting form. The DCR has established reciprocal agreements for data exchange with state central registries in Alaska, Florida, Maryland, New Jersey, Pennsylvania, South Carolina, Texas, Washington, Wyoming and the District of Columbia to identify new cases of cancer in Delaware residents that were diagnosed or treated in other states.

1.1.2. Data Confidentiality

The DCR maintains the confidentiality of incidence data using a combination of techniques. Data are submitted from reporting facilities using computerized data encryption techniques. Published reports or data requests are limited to the presentation of aggregated data. The release of datasets is permitted only after the removal of all personal identifiers. Researchers using data from the registry or conducting research that involves patient contact must comply with the regulations stated in the formal data-use agreement or obtain clearance from Delaware's Human Subjects Review Board.

1.1.3. Data Quality

Quality control procedures have been implemented internally at the DCR to check for consistency of coded demographic and medical information according to standards set by the North American Association of Central Cancer Registries (NAACCR). Visual reviews of coded data items are performed, and electronic text submissions are also checked for consistency.

Record consolidation using a computerized matching program is conducted to identify multiple reports on the same individual received from facilities that are required to submit cases. An example of this is when a patient is diagnosed and treated in separate hospitals, and each hospital submits a cancer case abstract to the DCR. Plans are being implemented to conduct routine offsite audits of reporting facilities in Delaware. Criteria are being established to identify and select reporting facilities at which onsite quality assessments or audits will be conducted. Auditors will assess completeness and timeliness of reporting at those facilities, and data quality will be evaluated through re-abstracting.

1.1.4. NAACCR Certification and NPCR Standard Status

NAACCR certifies registry data on an annual basis. Gold or silver certifications are awarded after an evaluation of the quality and completeness of data and the timeliness of reporting. The DCR's incidence data were certified by NAACCR as meeting standards for high-quality data in 1997, 1998, 1999, 2002, 2003 and 2004.

Additionally, NPCR provides an annual Standard Status Report to central registries supported by this program. Delaware's 2006 submission of data from diagnosis years 1997–2004 met the standard levels for all indices measuring quality, completeness and timeliness.

1.1.5. Data Uses

DCR data are used to support various programs and initiatives in Delaware's Division of Public Health, including the Breast and Cervical Cancer Control Program, the Delaware Cancer Consortium and other advisory committees involved in the state's cancer control program. Other uses of DCR data include responding to citizen inquiries, routine reporting of cancer statistics and by research programs at universities, federal agencies and research institutes within the state.

1.2. ORGANIZATION OF THIS REPORT

This report describes cancer incidence and mortality in Delaware by sex, race and county. The body of the report discusses the results for all cancer sites combined and site-specific cancers. The site-specific cancer sites selected for this report include cancers that can be prevented or detected early, can be treated or contribute significantly to the burden of cancer mortality in Delaware. Race-specific data were limited to Caucasians and African-Americans due to the small sample size and the need to protect the confidentiality of individuals. Incidence and mortality rates were age-adjusted to the year 2000 standard population. The methodological challenges in analyzing Hispanic cancer rates in Delaware and the results of such analyses are presented in appendix A. In appendix B, the methodological approach and data sources used to produce incidence and mortality statistics are discussed. Incidence and mortality counts and rates for all cancer sites combined and site-specific cancers are presented in the results section (chapters 3–14). Site-specific cancer statistics were limited to the following cancers and are presented in this order: female breast, cervical, colorectal, kidney and renal pelvis, leukemia, liver and bile duct, lung and bronchial, non-Hodgkin's lymphoma, oral cavity and pharynx, prostate, and testicular. The data for all other cancer sites excluding the site-specific cancers included in this report are presented in appendix C. Behavioral risk factor data and stage at diagnosis are also presented in the relevant chapters.

2. GUIDELINES FOR THE INTERPRETATION OF INCIDENCE AND MORTALITY RATES

2.1. INCIDENCE AND MORTALITY RATES

Rates are expressed per 100,000 of the population in Delaware or the United States. Ninety-five-percent confidence intervals were computed to facilitate comparison of rates in the different subpopulations in Delaware. The results of these comparisons were deemed significant only if the confidence intervals for the rates compared did not overlap. Differences in rates are also expressed using percentages. For example, to compare the rate of cancer for males with that for females, the rate is expressed as a ratio, and the extent of the difference is expressed as a percentage.

3. All Cancer Sites

Data Highlights

New Cancer Cases and Deaths (Tables 3.1 and 3.4)

- A total of 21,379 cancer cases were diagnosed among Delaware residents during 2000–2004, 11,253 cases (52.6 percent) in males and 10,126 cases (47.4 percent) in females.
- The 12,798 cases diagnosed among New Castle County residents made up 59.9 percent of Delaware's total 2000–2004 incident cancer case count; 5,454 cancer cases (25.5 percent) were Sussex County residents, and 3,126 (14.6 percent) were Kent County residents.
- Eighty-two percent (17,489) of cancer cases in 2000–2004 were diagnosed among Caucasians and 14.8 percent (3,176) among African-Americans. Cancer cases among Hispanics accounted for 1.1 percent (245) of the total incident cases in Delaware in 2000–2004.
- The proportion of cancer cases diagnosed among other race groups was 1.1 percent (226). Approximately 1 percent (243 cases) of people of unknown racial origin were diagnosed with cancer in 2000–2004.
- During 2000–2004, 8,553 Delaware residents died from cancer; 52.2 percent (4,465) were male, and 47.8 percent (4,088) were female.
    - Of the 8,553 cancer deaths, 83.2 percent (7,116) of decedents were Caucasian, and 15.1 percent (1,295) were African-American. Sixty-three decedents belonged to other race groups, and 1.0 percent (78) of the decedents were of Hispanic ethnicity.
- A total of 4,941 (57.7 percent) deaths occurred among residents of New Castle County, followed by 2,287 (26.7 percent) among Sussex County residents and 1,325 (15.5 percent) among Kent County residents.

Incidence and Mortality Rates (Tables 3.2 and 3.5)

Significant Findings *(The* results *reported in this section reflect rates in which the confidence intervals did not overlap. This means that differences in observed rates were unlikely to be due to chance variation.)*

- Delaware's 2000–2004 overall cancer incidence rate was 5.8 percent higher than the U.S. estimate.
- Overall, Delaware's African-American residents had a higher all-cancer incidence rate (533.7 per 100,000 in 2000–2004) than Caucasian residents (484.7 per 100,000).
- In Delaware, the incidence rate among African-American males was 20.4 percent higher than their Caucasian counterparts.
- The five-year average age-adjusted all-cancer incidence rate among males in Delaware (595.8 per 100,000) was higher than that among Delaware females (434.7 per 100,000) in 2000–2004.
- Similarly, the overall incidence rates among Caucasian (568.7 per 100,000) and African-American (684.6 per 100,000) males in Delaware were higher than overall rates among Caucasian (426.4 per 100,000) and African-American (429.1 per 100,000) females in 2000–2004.
- Caucasian males in Kent, New Castle and Sussex Counties had higher rates of cancer diagnoses than Caucasian females diagnosed with cancer in the same counties in 2000–2004.
- By comparison, only African-American males in New Castle County had a higher incidence rate (727.1 per 100,000) than African-American females in New Castle County (452.4 per 100,000) in 2000–2004.
- The all-cancer gender-specific incidence rates were higher in Delaware in 2000–2004, compared with the United States.

- African-American females (429.1 per 100,000) in Delaware had higher cancer incidence rates, compared with African-American females in the United States (400.3 per 100,000) in 2000–2004.
- In Delaware in 2000–2004, the overall cancer mortality rate was 4.6 percent higher than the U.S. estimate.
- Overall cancer mortality in 2000–2004 was about 48 percent higher among Delaware males (250.7 per 100,000) than among females (169.4 per 100,000).
- The overall cancer mortality rate in Delaware was 21.5 percent higher among African-American residents (236.6 per 100,000) than among Caucasian residents (194.8 per 100,000) during 2000–2004. Similarly, African-American males and females in Delaware died from cancer at rates higher than their Caucasian counterparts.

Suggestive Findings *(The results reported in this section reflect rates in which the confidence intervals overlap. This means that observed differences may be due simply to chance variation.)*

- African-American males in Delaware and the counties had higher incidence rates (727.1 per 100,000) than Caucasian males in those regions in 2000–2004.
- Caucasians in Delaware had higher all-cancer mortality rates (194.8 per 100,000) compared with Caucasians in the United States. (190.7 per 100,000).
- African-American males in New Castle County had the highest incidence rate (727.1 per 100,000) of any sex-race-county category in Delaware during 2000–2004.
- The overall cancer mortality rate was highest in Kent County during 2000–2004 (211.6 per 100,000), and African-American males in Sussex County had the highest age-adjusted all-cancer mortality rate (337.0 per 100,000).

Trends in Cancer Incidence and Mortality Rates (Figures 3.1–3.2 and 3.4–3.5)

- The all-cancer incidence rate declined within the population of Delaware. The rate among males declined 10.9 percent since 1990–94 (compared to a decline of 9.0% among males in the United States as a whole), whereas the rate among females – in both Delaware and the United States - remained relatively stable during the same time period.
- In Delaware, the rate of decline in cancer among Caucasians (5.5 percent) since 1990–94 was less than half of that for African-Americans (14.5 percent) during the same time period.
- All cancer mortality in Delaware declined by 20.7 percent between intervals 1990–94 and 2000–2004.

Age-Specific Incidence and Mortality (Tables 3.3 and 3.6, Figures 3.3 and 3.6)

- Cancer risk generally increased with age until ages 75–84. The exception was among African-Americans, where people ages 85 and older had the highest age-specific incidence rates.
- Mortality rates rose with increasing age and peaked at ages 85 and older in all race, age and sex groups.

Table 3.1. Number of All-Cancer Cases in Delaware and Counties, by Race and Sex: 2000–2004

REGION	All Races			Caucasian			African-American		
	All	Male	Female	All	Male	Female	All	Male	Female
Delaware	21,379	11,253	10,126	17,489	9,184	8,305	3,176	1,688	1,488
Kent	3,126	1,676	1,450	2,522	1,332	1,190	478	272	206
New Castle	12,798	6,596	6,202	10,150	5,214	4,936	2,188	1,140	1,048
Sussex	5,454	2,980	2,474	4,816	2,637	2,179	510	276	234

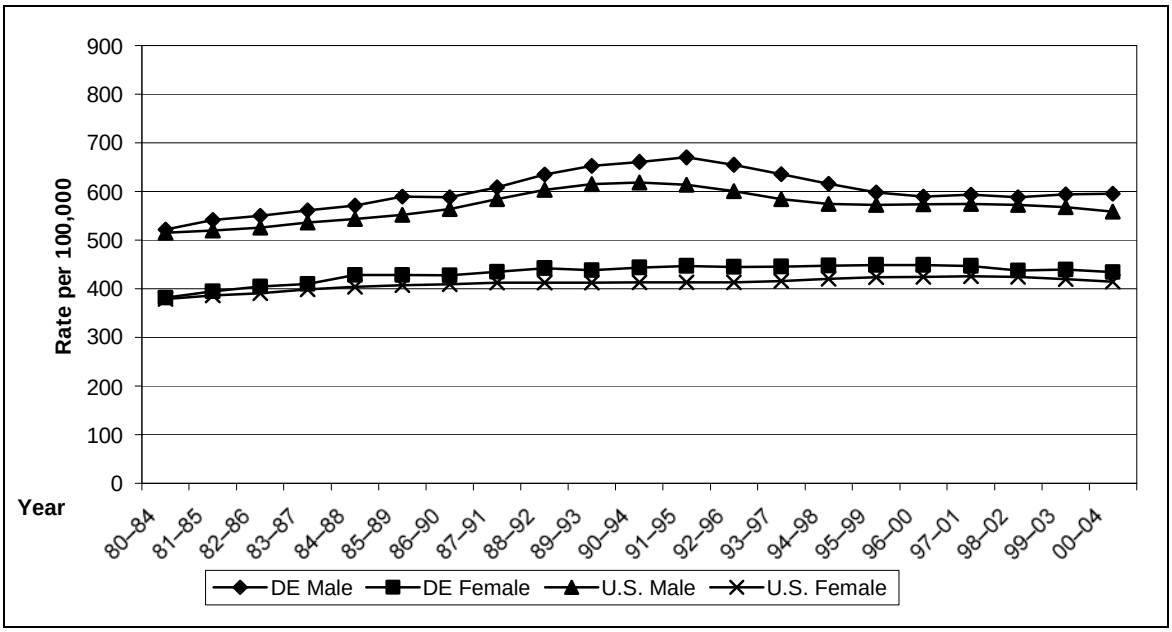
SOURCE: Delaware Cancer Registry, Delaware's Division of Public Health, 2006.

Table 3.2. Five-Year Average Age-Adjusted All-Cancer Incidence Rates* in the United States (Estimates), Delaware and Counties, by Race and Sex: 2000–2004

RACE AND REGION	SEX		
	All	Male	Female
ALL RACES			
United States	473.6 (472.5–474.8)	558.7 (556.8–560.7)	415.0 (413.5–416.5)
Delaware	501.3 (494.6–508.0)	595.8 (584.7–606.8)	434.7 (426.3–443.2)
Kent	488.9 (448.3–529.6)	592.7 (514.5–670.9)	414.3 (367.9–460.7)
New Castle	515.1 (494.1–536.2)	615.3 (575.0–655.6)	448.5 (424.7–472.7)
Sussex	478.6 (448.8–508.5)	558.2 (505.0–611.5)	416.4 (380.9–451.9)
CAUCASIAN			
United States	483.5 (482.2–484.9)	563.0 (560.9–565.2)	429.3 (427.6–431.0)
Delaware	484.7 (477.5–491.9)	568.7 (557.0–580.4)	426.4 (417.2–435.6)
Kent	483.0 (439.0–527.0)	576.0 (490.6–661.4)	419.5 (368.9–470.2)
New Castle	495.5 (473.2–517.8)	583.4 (541.3–625.4)	438.2 (412.2–464.2)
Sussex	465.6 (434.7–496.4)	540.5 (485.4–595.6)	406.9 (370.0–443.8)
AFRICAN-AMERICAN			
United States	509.5 (505.3–513.8)	671.6 (663.7–679.5)	400.3 (395.5–405.2)
Delaware	533.7 (514.8–552.7)	684.6 (650.1–719.1)	429.1 (407.1–451.1)
Kent	452.9 (350.5–555.3)	565.0 (391.9–738.1)	353.3 (233.0–473.5)
New Castle	558.3 (495.0–621.7)	727.1 (587.8–866.4)	452.4 (383.7–521.0)
Sussex	518.7 (409.0–628.3)	672.2 (469.0–875.4)	410.9 (287.5–534.4)

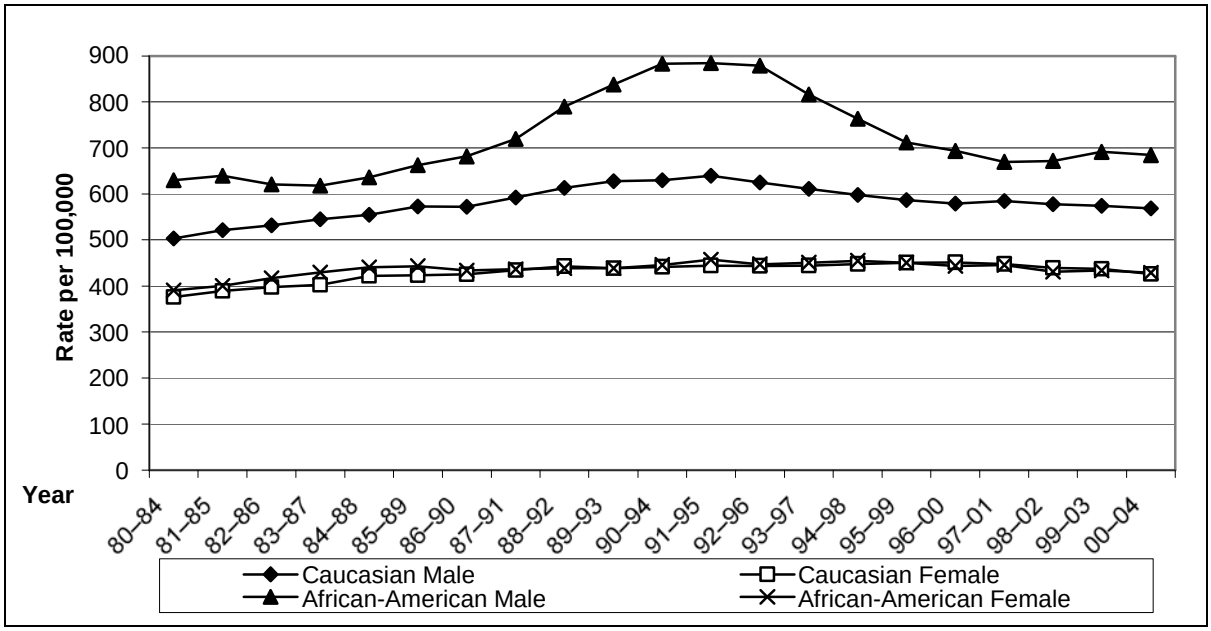
* = Rates are per 100,000 population and age-adjusted to the 2000 U.S. standard population.
SOURCES: Delaware: Delaware Cancer Registry, Delaware's Division of Public Health, 2006; U.S.: Surveillance, Epidemiology, and End Results Program, National Cancer Institute, 2007.

Figure 3.1. Five-Year Average Age-Adjusted All-Cancer Incidence Rates* in the United States (Estimates) and Delaware, by Sex: 1980–2004



* = Rates are per 100,000 population and are age-adjusted to the 2000 U.S. standard population.
SOURCES: Delaware: Delaware Cancer Registry, Delaware's Division of Public Health, 2006; U.S.: Surveillance, Epidemiology, and End Results Program, National Cancer Institute, 2007.

Figure 3.2. Five-Year Average Age-Adjusted All-Cancer Incidence Rates* in Delaware, by Race and Sex: 1980–2004



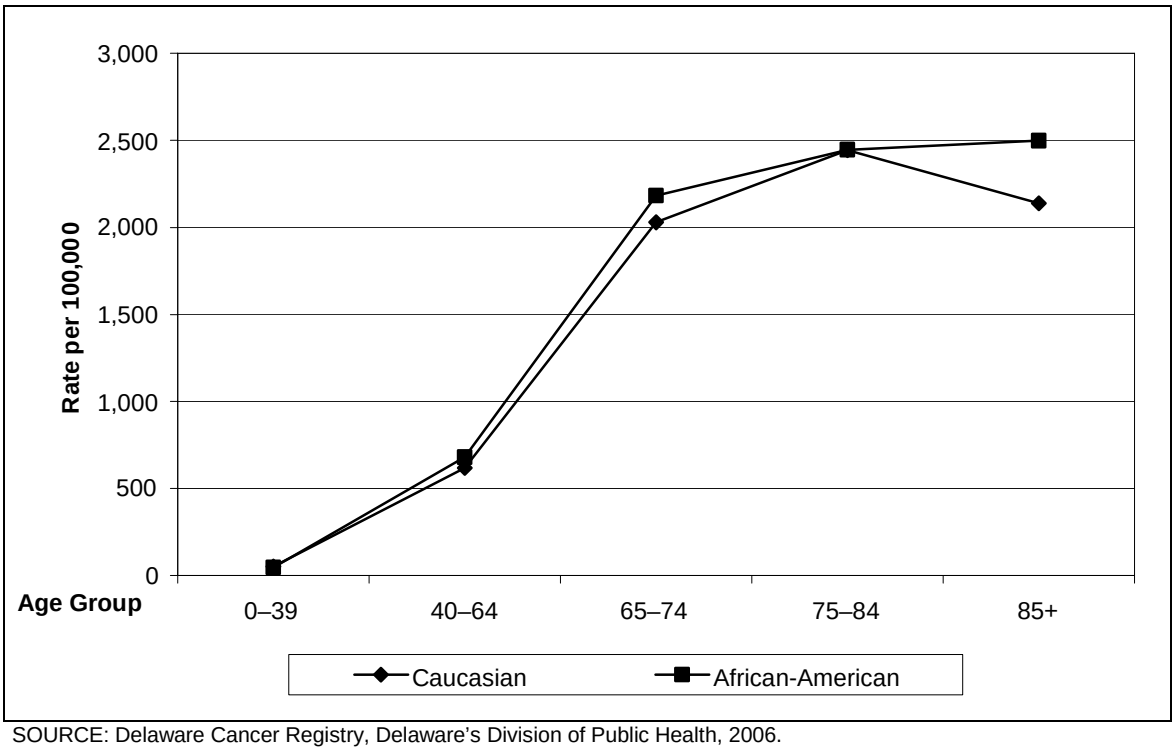
* = Rates are per 100,000 population and are age-adjusted to the 2000 U.S. standard population.
SOURCES: Delaware: Delaware Cancer Registry, Delaware's Division of Public Health, 2006; U.S.: Surveillance, Epidemiology, and End Results Program, National Cancer Institute, 2007.

Table 3.3. Age-Specific All-Cancer Incidence Rates* in Delaware, by Race and Sex: 2000–2004

Age Group	All Races			Caucasian			African-American		
	All	Male	Female	All	Male	Female	All	Male	Female
0–39	52.2	41.5	63.0	51.9	42.1	61.9	43.4	32.8	53.7
40–64	640.3	670.2	612.4	618.4	631.6	605.7	684.2	792.1	593.2
65–74	2,074.4	1,863.9	1,388.2	2,029.4	2,575.1	1,553.6	2,122.9	3,031.5	1,426.9
75–84	2,484.1	3,284.3	1,939.7	2,444.4	3,198.8	1,924.7	2,441.2	3,410.3	1,854.9
85+	2,207.5	3,236.5	1,792.4	2,137.6	3,151.2	1,724.2	2,432.4	3,456.8	2,070.6

* = Rates are per 100,000 population.
SOURCE: Delaware Cancer Registry, Delaware's Division of Public Health, 2006.

Figure 3.3. Age-Specific All-Cancer Incidence Rates in Delaware, by Race: 2000–2004



SOURCE: Delaware Cancer Registry, Delaware's Division of Public Health, 2006.

Table 3.4. Number of All-Cancer Deaths in Delaware and Counties, by Race and Sex: 2000–2004

REGION	All Races			Caucasian			African-American		
	All	Male	Female	All	Male	Female	All	Male	Female
Delaware	8,553	4,465	4,088	7,116	3,730	3,386	1,295	663	632
Kent	1,325	712	613	1,063	567	496	232	129	103
New Castle	4,941	2,512	2,429	4,034	2,062	1,972	814	403	411
Sussex	2,287	1,241	1,046	2,019	1,101	918	249	131	118

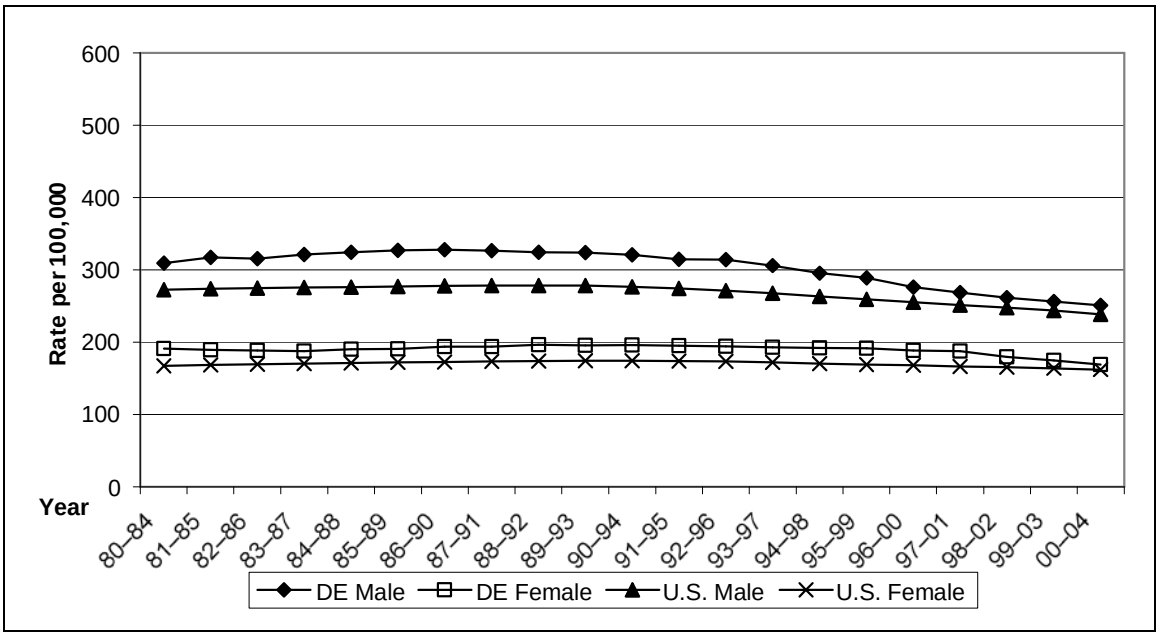
SOURCE: Delaware Health Statistics Center, 2006.

Table 3.5. Five-Year Average Age-Adjusted All-Cancer Mortality Rates* in the United States, Delaware and Counties, by Race and Sex: 2000–2004

RACE AND REGION	SEX		
	All	Male	Female
ALL RACES			
United States	192.7 (192.5–192.9)	238.7 (238.3–239.1)	162.2 (161.9–162.4)
Delaware	201.7 (197.4–205.9)	250.7 (243.2–258.2)	169.4 (164.2–174.6)
Kent	211.6 (180.0–243.2)	270.6 (206.4–334.8)	172.7 (137.5–207.8)
New Castle	201.8 (186.2–217.5)	250.8 (219.5–282.0)	171.4 (153.6–189.2)
Sussex	197.1 (174.4–219.8)	241.3 (198.7–283.9)	164.4 (138.1–190.7)
CAUCASIAN			
United States	190.7 (190.5–190.9)	234.7 (234.2–235.1)	161.4 (161.1–161.7)
Delaware	194.8 (190.3–199.3)	241.7 (233.9–249.6)	163.6 (158.0–169.1)
Kent	204.6 (171.0–238.3)	260.2 (191.3–329.1)	168.7 (131.0–206.3)
New Castle	195.2 (178.6–211.9)	242.4 (209.6–275.2)	165.4 (146.3–184.4)
Sussex	190.7 (167.3–214.1)	233.6 (189.4–277.7)	158.9 (131.8–186.0)
AFRICAN-AMERICAN			
United States	238.8 (237.9–239.6)	321.8 (320.1–323.4)	189.3 (188.4–190.3)
Delaware	236.6 (223.4–249.7)	304.8 (280.0–329.6)	194.5 (179.2–209.8)
Kent	239.0 (148.1–329.9)	299.9 (135.0–464.8)	190.1 (86.2–293.9)
New Castle	227.9 (180.8–275.0)	296.9 (189.2–404.5)	191.2 (140.3–242.0)
Sussex	261.1 (171.6–350.6)	337.0 (171.2–502.8)	210.4 (108.9–311.9)

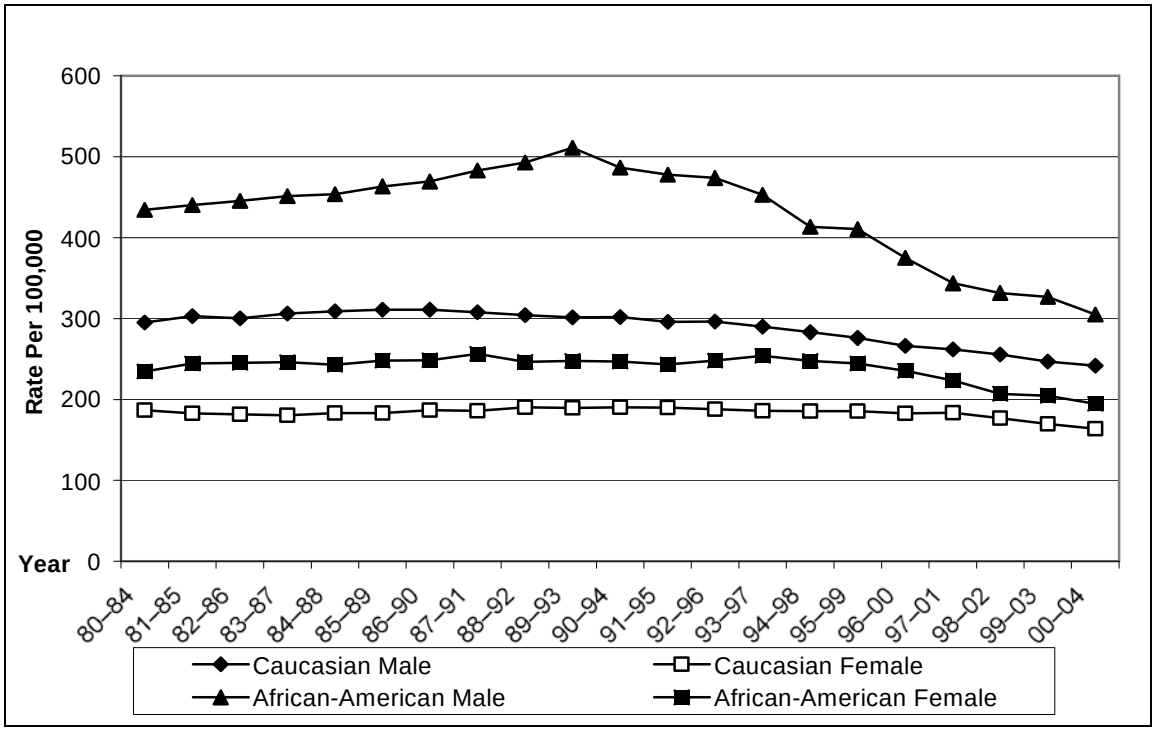
* = Rates are per 100,000 population and age-adjusted to the 2000 U.S. standard population.
SOURCES: Delaware: Delaware Health Statistics Center, 2006; U.S.: National Center for Health Statistics, 2007.

Figure 3.4. Five-Year Average Age-Adjusted All-Cancer Mortality Rates* in the United States and Delaware, by Sex: 1980–2004



* = Rates are per 100,000 population and are age-adjusted to the 2000 U.S. standard population.
SOURCES: Delaware: Delaware Health Statistics Center, 2006; U.S.: National Center for Health Statistics, 2007.

Figure 3.5. Five-Year Average Age-Adjusted All-Cancer Mortality Rates* in Delaware, by Race and Sex: 1980–2004



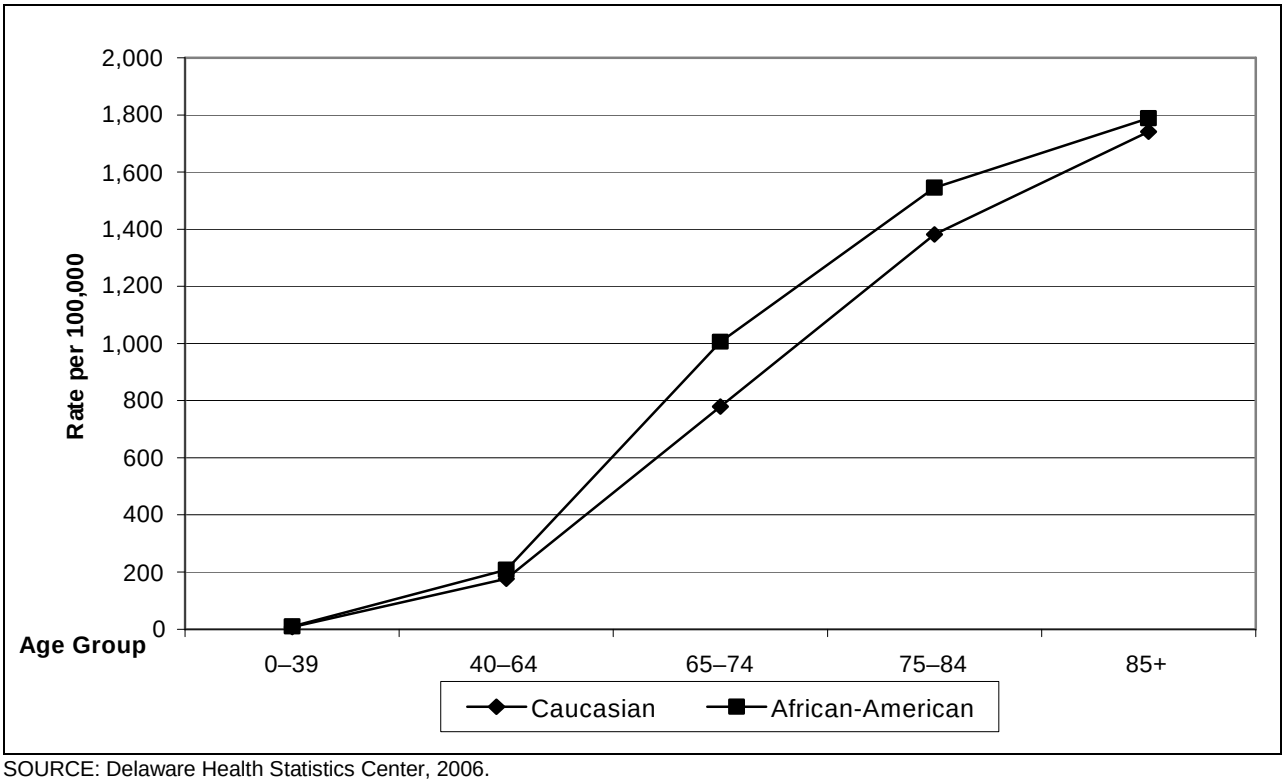
* = Rates are per 100,000 population and age-adjusted to the 2000 U.S. standard population.
SOURCE: Delaware Health Statistics Center, 2006.

Table 3.6. Age-Specific All-Cancer Mortality Rates* in Delaware, by Race and Sex: 2000–2004

Age Group	All Races			Caucasian			African-American		
	All	Male	Female	All	Male	Female	All	Male	Female
0–39	8.2	7.1	9.2	7.6	6.5	8.7	9.5	9.4	9.5
40–64	182.0	195.2	169.8	176.2	188.2	164.7	208.2	228.5	191.0
65–74	811.5	998.6	651.0	779.5	963.1	619.4	1,005.7	1,265.3	806.9
75–84	1,401.8	1,822.4	1,115.7	1,381.6	1,771.1	1,113.3	1,544.5	2,214.0	1,139.6
85+	1,761.9	2,638.9	1,408.1	1,741.5	2,609.5	1,387.5	1,788.0	2,592.6	1,503.9

* = Rates are per 100,000 population.
SOURCE: Delaware Health Statistics Center, 2006.

Figure 3.6. Age-Specific All-Cancer Mortality Rates in Delaware, by Race: 2000–2004



SOURCE: Delaware Health Statistics Center, 2006.

4. Female Breast Cancer

Risk Factors and Early Detection

Risk Factors for Female Breast Cancer

- Increasing age
- Mother, daughter and/or sister with breast cancer
- Inherited mutation in BRCA1 or BRCA2 genes
- Personal history of breast cancer
- Previous abnormal breast biopsy
- Race. Caucasian females are slightly more likely to develop breast cancer than African-American females.
- High-dose radiation therapy to chest
- Early age at menarche and/or late age at menopause
- Obesity
- First childbirth after age 30
- Never giving birth
- Estrogen replacement therapy
- More than three alcoholic drinks per day

Possible Risk Factors for Female Breast Cancer

- Having taken diethylstilbestrol (DES) during pregnancy
- High-fat diet

Under Consideration as Risk Factors for Female Breast Cancer

- Use of oral contraceptives
- Pesticide and other exposures

Early Detection of Female Breast Cancer

Females at increased risk should talk with their doctors about the benefits and limitations of starting mammograms when they are younger, having additional tests or having more frequent exams.

Regular clinical breast exams and mammography can detect female breast cancer at an earlier stage, resulting in improved chances for survival. The American Cancer Society (ACS) recommendations for appropriate breast cancer screening are age-specific as follows:

Type of Exam	Ages 20–39	Ages 40 and Older
Breast self-exam	Monthly	Monthly
Clinical breast exam	Every three years	Annual
Mammogram	Baseline by age 40	Annual

The Behavioral Risk Factor Surveillance System (BRFSS) survey included several questions related to breast cancer screening practices:

- Have you ever had a mammogram?
- How long has it been since your last mammogram?
- Was your last mammogram done as part of a routine checkup, because of a breast problem other than cancer or because you've already had breast cancer?

Delaware Females Ages 40 and Older With Mammogram Within the Past Two Years

- In 2006, 83.7 percent of Delaware females ages 40 and older reported having a mammography exam within the previous two years, compared with 76.5 percent in the United States.
- Delaware females ages 50 and older were most likely to have received a mammogram within the past two years, with about 86.4 percent reporting they had done so.
- In Delaware, 77.8 percent of females in their 40s said that they had received a mammogram within the past two years, compared with 87.7 percent of females ages 50–59, 90.9 percent of females ages 60–64 and 83.6 percent of females ages 65 and older. Among U.S. females, 69.0 percent of those in their 40s reported having a mammogram in the past two years.
- African-American females ages 40 and older in Delaware were more likely to have had a mammogram in the previous two years than were their Caucasian counterparts—91.1 percent among African-Americans, compared with 82.8 percent among Caucasians. The proportions are higher for females ages 50 and older—94.0 percent of African-Americans and 85.5 percent of Caucasians received mammograms in the past two years.
- Equal proportions of females of all education levels received a mammogram in the past two years.

Data Highlights

New Cancer Cases and Deaths (Tables 4.1 and 4.6)

- Breast cancer was the most frequently diagnosed cancer among females. There were 2,882 new cases in Delaware during 2000–2004, accounting for 28.5 percent of all cancer cases diagnosed during that time period among females.
- Nearly 83 percent (2,371) of female breast cancer cases in Delaware diagnosed from 2000–2004 were Caucasian residents, and 15.1 percent (434) were African-American residents; 39 cases were other race groups, and 26 were residents of Hispanic ethnicity.
- The majority of female breast cancer cases during 2000–2004 were New Castle County residents (1,789 or 62.1 percent), followed by Sussex County (686 or 23.8 percent) and Kent County (407 or 14.1 percent) residents.
- Breast cancer was the second leading cause of cancer death among females in Delaware, surpassed only by lung and bronchial cancer. Breast cancer accounted for 15.2 percent of all cancer deaths among females in 2000–2004.
- During 2000–2004, 623 female Delaware residents died from breast cancer; 495 (79.4 percent) decedents were Caucasian, and 115 (18.5 percent) were African-American; six decedents were of other race groups.
- A total of 388 (62.3 percent) decedents were from New Castle County, 143 (23.0 percent) were from Sussex County, and 92 (14.8 percent) were from Kent County.

Incidence and Mortality Rates (Tables 4.2 and 4.7)

Significant Findings *(The results reported in this section reflect rates in which the confidence intervals did not overlap. This means that differences in observed rates were unlikely to be due to chance variation.)*

- In 2000–2004, the breast cancer mortality rate was 35.2 percent higher among African-American females (33.8 per 100,000) than among Caucasian females (25.0 per 100,000) in Delaware.

Suggestive Findings *(The results reported in this section reflect rates in which the confidence intervals overlap. This means that observed differences may be due simply to chance variation.)*

- Caucasian females (123.9 per 100,000) in Delaware had a higher overall breast cancer incidence, compared with African-American females (117.6 per 100,000).
- In 2000–2004, the breast cancer incidence rate was highest in New Castle County among both Caucasian females (129.1 per 100,000) and African-American females (126.0 per 100,000).

Trends in Cancer Incidence and Mortality Rates (Figures 4.1–4.2 and 4.6–4.7)

- Delaware's female breast cancer incidence rate decreased 10.3 percent from 1990–94 to 2000–2004.
- From 1980–84 to 1984–88, Delaware's female breast cancer incidence rates were similar to U.S. estimates. In 1987–91, Delaware's rate surpassed the U.S. rate; the rate leveled off but remained above the U.S. rate. Since 1996–2000, Delaware's rate has fallen below that of the United States.
- The breast cancer mortality rate decreased from 1988–92 to 2000–2004 among Delaware's Caucasian females. The mortality rate among African-American females, which declined in 1987–91, increased in 1992–96 and has remained stable since that time.

Age-Specific Incidence and Mortality Rates (Tables 4.3 and 4.8, Figure 4.3)

- The incidence of female breast cancer increased with age and peaked at ages 75–84.
- Mortality from female breast cancer increased with age and reached an age-specific rate of 198.1 per 100,000 among females ages 85 and older.

Stage at Diagnosis of Female Breast Cancer (Tables 4.4–4.5, Figures 4.4–4.5)

- A total of 869 cases (32.4 percent of all female breast cancers) were late stage at the time of diagnosis (i.e., either regional or distant). The proportion of late-stage breast cancers was higher among African-American females (39.6 percent) than among Caucasian females (30.81 percent).
- There was an increase in the proportion of female breast cancer cases diagnosed in the local stage, from 46.2 percent in 1983–87 to 63.2 percent in 1992–96. The increase in the proportion of breast cancer cases diagnosed at local stage among females in Delaware increased until 1999–2003, but at a lower rate. Cancers diagnosed at the local stage decreased in 2000–2004. This trend in local-stage disease was complemented by a decrease in the proportion of cases diagnosed in the regional stage (from 40.4 percent in 1983–87 to 27.7 percent in 1992–96). Both proportions in local and regional stage of disease, however, remained constant from 1991–95 to 2000–2004.
- The proportion of breast cancer cases diagnosed in the distant stage decreased from 1980–84 to 2000–2004. Over this time period, the proportion of breast cancer cases diagnosed in the distant stage decreased by approximately 50 percent.
- In the United States during 2000–2004, 62.0 percent, 31.0 percent and 5.0 percent of female breast cancers were diagnosed in the local, regional and distant stage, respectively.

Female Breast Cancer Incidence

Table 4.1. Number of Female Breast Cancer Cases in Delaware and Counties, by Race: 2000–2004

	All Female	Caucasian Female	African-American Female
Delaware	2,882	2,371	434
Kent	407	340	57
New Castle	1,789	1,431	312
Sussex	686	600	65

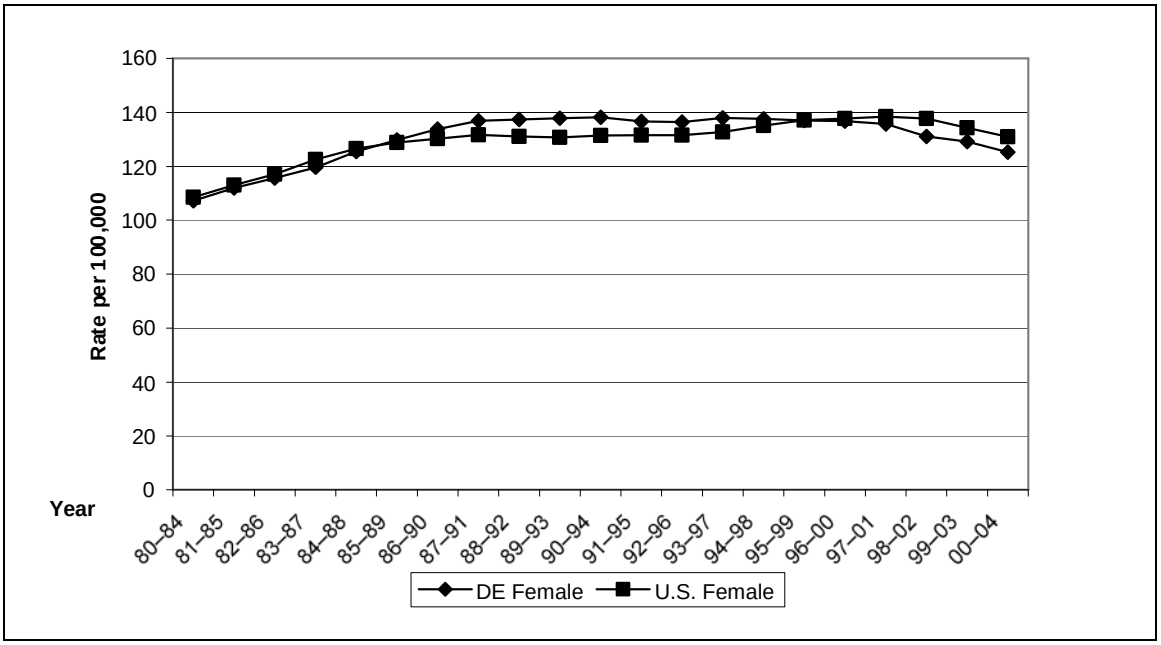
SOURCES: Delaware: Delaware Cancer Registry, Delaware's Division of Public Health, 2006; U.S.: Surveillance, Epidemiology, and End Results Program, National Cancer Institute, 2007.

Table 4.2. Five-Year Average Age-Adjusted Female Breast Cancer Incidence Rates* in the United States (Estimates), Delaware and Counties, by Race: 2000–2004

	All Female	Caucasian Female	African-American Female
U.S. Estimates	131.0 (130.1–131.8)	136.5 (135.5–137.4)	117.8 (115.3–120.4)
Delaware	125.3 (120.7–129.9)	123.9 (118.9–128.9)	117.6 (106.4–128.8)
Kent	117.1 (94.6–139.6)	120.9 (95.6–146.3)	92.6 (48.9–136.2)
New Castle	130.0 (118.0–142.0)	129.1 (116.0–142.2)	126.0 (93.9–158.1)
Sussex	118.2 (101.0–135.3)	112.9 (95.1–130.8)	111.8 (63.9–159.7)

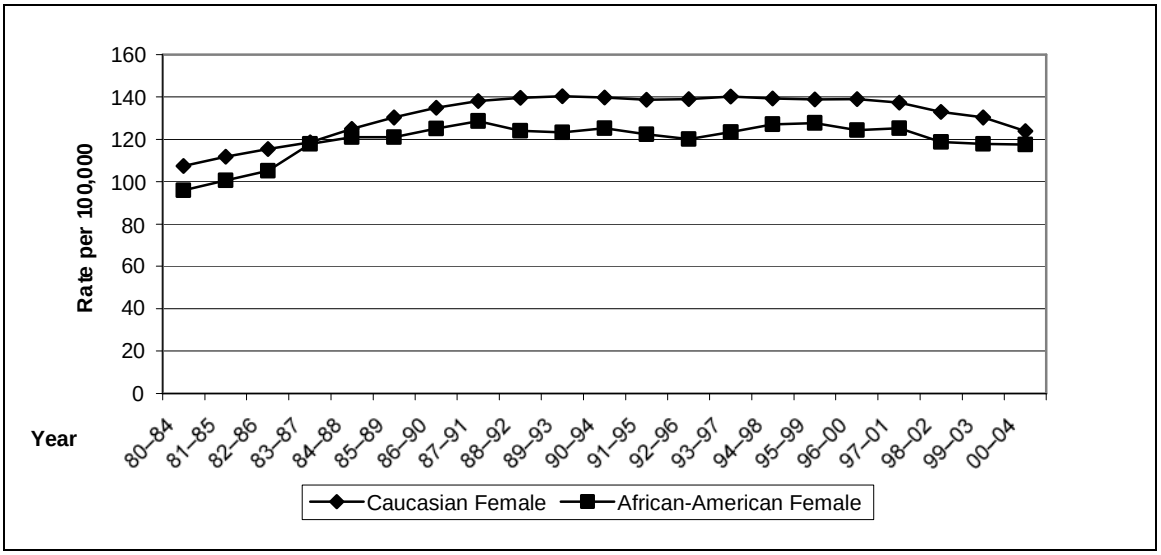
* = Rates are per 100,000 population and age-adjusted to the 2000 U.S. standard population.
SOURCES: Delaware: Delaware Cancer Registry, Delaware's Division of Public Health, 2006; U.S.: Surveillance, Epidemiology, and End Results Program, National Cancer Institute, 2007.

Figure 4.1. Five-Year Average Age-Adjusted Female Breast Cancer Incidence Rates* in the United States (Estimates) and Delaware: 1980–2004



* = Rates are per 100,000 and are age-adjusted to the 2000 U.S. standard population.
SOURCES: Delaware: Delaware Cancer Registry, Delaware's Division of Public Health, 2006; U.S.: Surveillance, Epidemiology, and End Results Program, National Cancer Institute, 2007.

Figure 4.2. Five-Year Average Age-Adjusted Female Breast Cancer Incidence Rates* in Delaware, by Race: 1980–2004



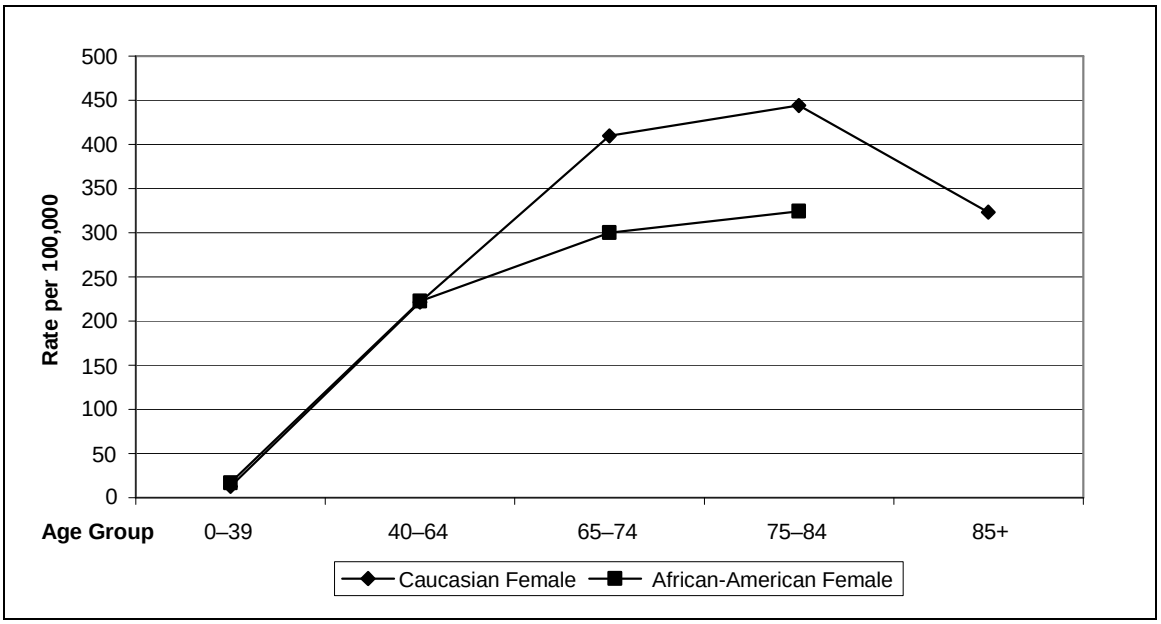
* = Rates are per 100,000 population and are age-adjusted to the 2000 U.S. standard population.
SOURCE: Delaware Cancer Registry, Delaware's Division of Public Health, 2006.

Table 4.3. Age-Specific Female Breast Cancer Incidence Rates* in Delaware, by Race: 2000–2004

Age Group	All Female	Caucasian Female	African-American Female
0–39	13.9	12.5	16.8
40–64	223.5	221.3	222.6
65–74	397.6	409.4	300.1
75–84	436.1	443.9	324.4
85+	324.6	323.3	---

* = Rates are per 100,000 population.
--- = Rate based on fewer than 25 cases.
SOURCE: Delaware Cancer Registry, Delaware's Division of Public Health, 2006.

Figure 4.3. Age-Specific Female Breast Cancer Incidence Rates in Delaware, by Race: 2000–2004



NOTE: Rate for African-American females ages 85+ is not displayed because of patient confidentiality rules.
SOURCE: Delaware Cancer Registry, Delaware's Division of Public Health, 2006.

Female Breast Cancer by Stage at Diagnosis

Table 4.4. Number of Female Breast Cancer Cases in Delaware, by Stage at Diagnosis and Race: 2000–2004

Stage at Diagnosis	All Female	Caucasian Female	African-American Female
Local	1,748	1,492	222
Regional	776	610	140
Distant	93	76	15
Unknown	65	46	14
Total	2,682	2,224	391

SOURCE: Delaware Cancer Registry, Delaware's Division of Public Health, 2006.

Table 4.5. Percentage of Female Breast Cancer Cases in Delaware, by Stage at Diagnosis and Race: 2000–2004

Stage at Diagnosis	All Female	Caucasian Female	African-American Female
Local	65.2	67.1	56.8
Regional	28.9	27.4	35.8
Distant	3.5	3.4	3.8
Unknown	2.4	2.1	3.6
Total	100.0	100.0	100.0

SOURCE: Delaware Cancer Registry, Delaware's Division of Public Health, 2006.

Figure 4.4. Percentage of Female Breast Cancer Cases in Delaware and the United States (Estimates), by Stage at Diagnosis: 2000–2004

Figure 4.4a. Delaware: 2000–2004

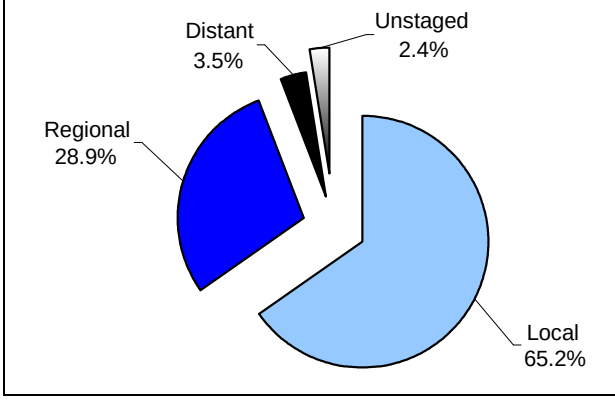
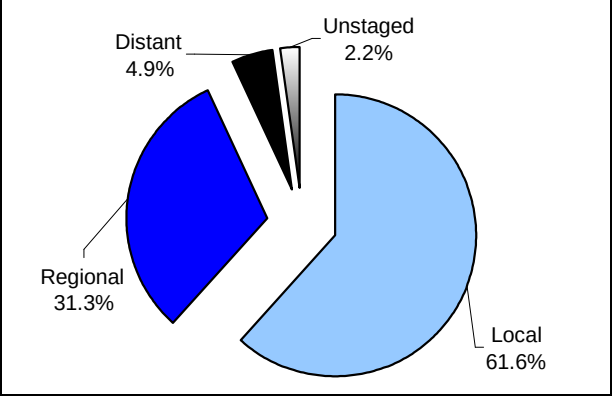
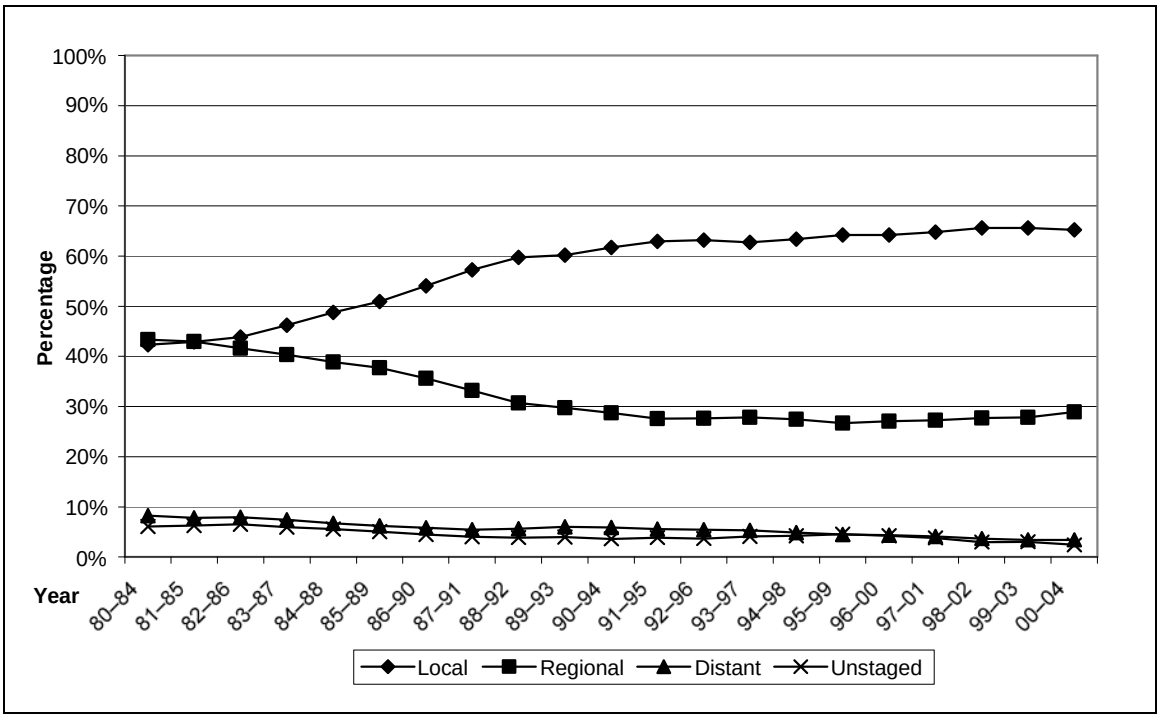


Figure 4.4b. U.S. Estimates: 2000–2004



SOURCES: Delaware: Delaware Cancer Registry, Delaware's Division of Public Health, 2006; U.S.: Surveillance, Epidemiology, and End Results Program, National Cancer Institute, 2007.

Figure 4.5. Percentage of Female Breast Cancer Cases in Delaware, by Stage at Diagnosis: 1980–2004



SOURCE: Delaware Cancer Registry, Delaware's Division of Public Health, 2006.

Female Breast Cancer Mortality

Table 4.6. Number of Female Breast Cancer Deaths in Delaware and Counties, by Race: 2000–2004

Region	All Female	Caucasian Female	African-American Female
Delaware	623	495	115
Kent	92	76	14
New Castle	388	297	82
Sussex	143	122	19

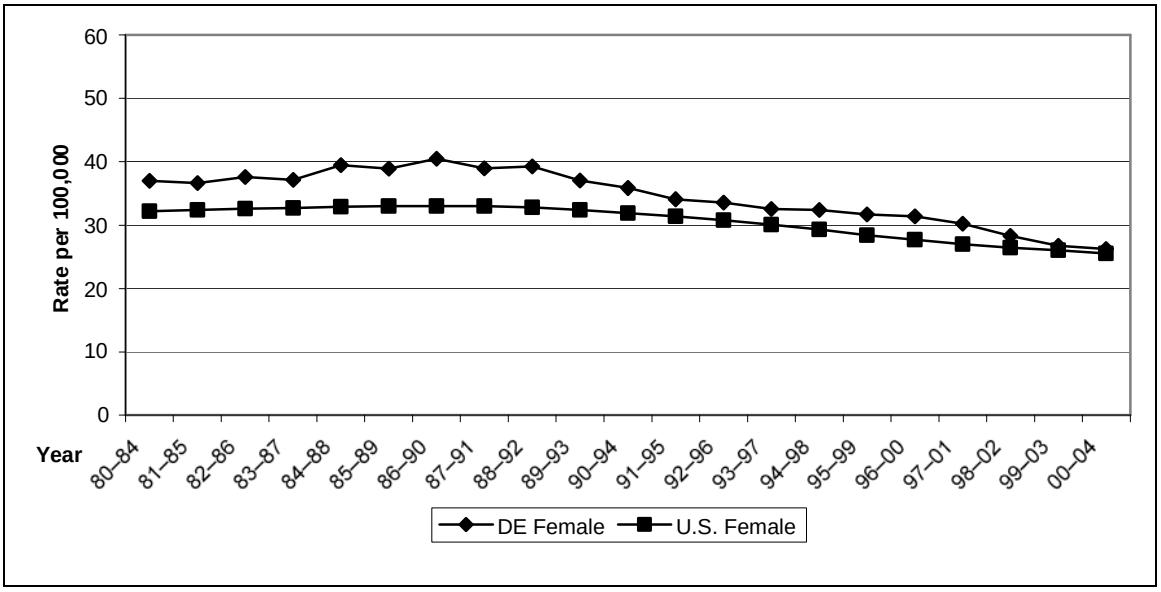
SOURCE: Delaware Health Statistics Center, 2006.

Table 4.7. Five-Year Average Age-Adjusted Female Breast Cancer Mortality Rates* in the United States, Delaware and Counties, by Race: 2000–2004

Region	All Female	Caucasian Female	African-American Female
United States	25.5 (25.4–25.6)	25.0 (24.8–25.1)	33.8 (33.4–34.2)
Delaware	26.2 (24.6–28.8)	24.4 (22.5–27.0)	32.9 (28.7–41.6)
Kent	26.2 (12.7–36.9)	26.4 (10.7–36.6)	---
New Castle	27.4 (20.6–34.4)	25.1 (18.3–33.2)	35.3 (15.1–52.2)
Sussex	23.6 (16.6–36.3)	21.8(13.2–33.5)	---

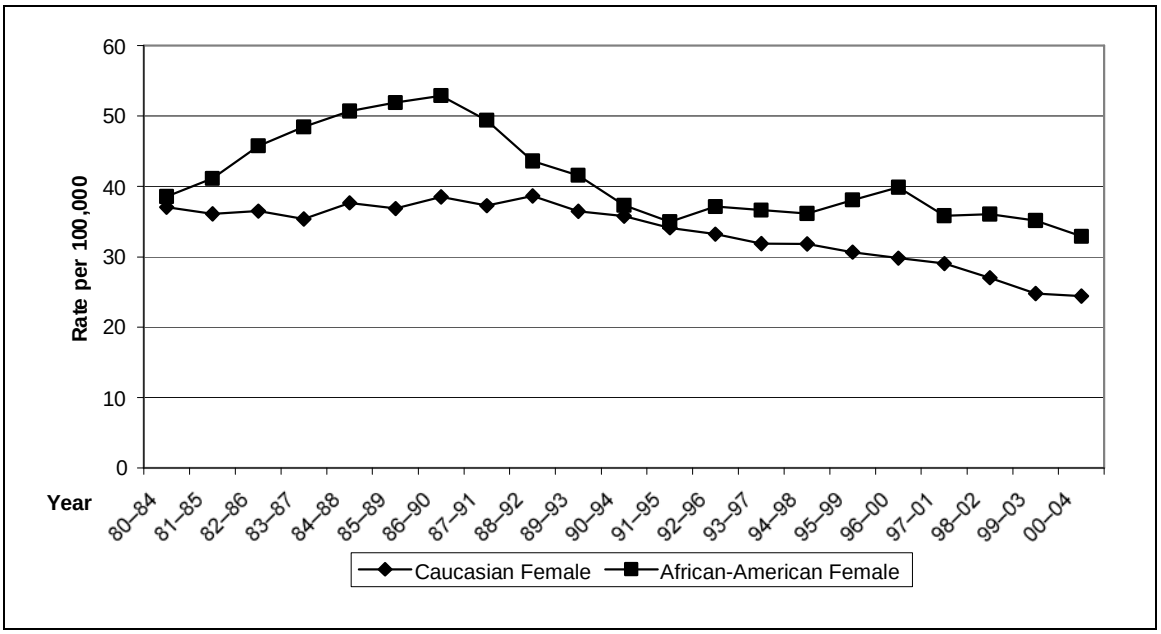
* = Rates are per 100,000 population and age-adjusted to the 2000 U.S. standard population.
--- = Rate based on fewer than 25 deaths.
SOURCES: Delaware: Delaware Health Statistics Center, 2006; U.S.: National Center for Health Statistics, 2007.

Figure 4.6. Five-Year Average Age-Adjusted Female Breast Cancer Mortality Rates* in the United States and Delaware: 1980–2004



* = Rates are per 100,000 population and age-adjusted to the 2000 U.S. standard population.
SOURCES: Delaware: Delaware Health Statistics Center, 2006; U.S.: National Center for Health Statistics, 2007.

Figure 4.7. Five-Year Average Age-Adjusted Female Breast Cancer Mortality Rates* in Delaware, by Race: 1980–2004



* = Rates are age-adjusted to the 2000 U.S. standard population.
SOURCE: Delaware Health Statistics Center, 2006.

Table 4.8. Age-Specific Female Breast Cancer Mortality Rates* in Delaware, by Race: 2000–2004

Age Group	All Female	Caucasian Female	African-American Female
0–39	---	---	---
40–64	33.8	29.7	50.2
65–74	86.2	80.4	113.2
75–84	141.8	147.0	---
85+	198.1	191.3	---

* = Rates are per 100,000 population.
--- = Rate based on fewer than 25 deaths.
SOURCE: Delaware Health Statistics Center, 2006.

Figure 4.8. Age-Specific Female Breast Cancer Mortality Rates in Delaware, by Race: 2000–2004

NOTE: Figure is not displayed because of patient confidentiality rules; the small number of cases precludes the display of data.

SOURCE: Delaware Health Statistics Center, 2006.

5. Cervical Cancer

Risk Factors and Early Detection

Risk Factors for Cervical Cancer

- Infection by the human papillomavirus (HPV)
- Sexual intercourse at a young age
- Multiple sexual partners
- Long-term use of oral contraceptives
- Mother who took diethylstilbestrol (DES) during pregnancy (associated with vaginal clear cell adenocarcinoma, a form of cervical and vaginal cancer)
- Cigarette smoking
- Low socioeconomic status
- Multiple pregnancies
- Family history of cervical cancer

Possible Risk Factors for Cervical Cancer

- Having a weakened immune system (e.g., through HIV, AIDS, or receiving drugs to suppress the immune system)
- History of sexually transmitted disease(s), such as chlamydia
- Diet low in fruits and vegetables

Early Detection of Cervical Cancer

Routine Pap tests can detect cervical cancer at an earlier stage, generally the in situ stage, resulting in greatly improved chances for survival.

ACS recommends that all females who are or have been sexually active and all females ages 18 and older have an annual Pap test. After three or more consecutive normal tests, the Pap test can be performed less frequently.

Current recommendations for cervical cancer screening are:

- All females should begin having the Pap test about three years after they start having sex, but no later than age 21.
- Beginning at age 30, females who have had three normal test results in a row may get the test every two to three years.
- Females should follow the same guidelines in regard to having pelvic exams.

The BRFSS survey asked several questions related to cervical cancer screening:

- Have you ever had a Pap test?
- How long has it been since your last Pap test?
- Was your last Pap test done as part of a routine exam, or to check a current or previous problem?
- Have you ever had a hysterectomy?

In Delaware

- In 2006, 89.0 percent of Delaware females ages 18 and older reported that they had had a Pap test within the previous three years, compared with 84.0 percent in the United States.

- Fewer African-American females (87.0 percent) than Caucasian females (89.6 percent) reported that they had had a Pap test within the last three years.
- The percentage of females who had not had a Pap test in the last three years was highest in the 18–24 and 65 and older age groups (14.4 and 25.9 percent, respectively).
- Females in the 25–34 age group had the highest prevalence of having had a Pap test within the past three years (94.3 percent).
- College graduates were the most likely to have had a Pap test within the past three years. In 2006, 93.2 percent of college graduates reported having had a Pap test, compared with 87.1 percent of females with less than a high school education.
- Among income strata, females with incomes between $15,000 and $24,999 were the least likely to have had a Pap test within the past three years (78.2 percent).

Data Highlights

New Cancer Cases and Deaths (Tables 5.1 and 5.6)

- Cervical cancer accounted for 1.8 percent of all cancer cases among females. There were 187 newly diagnosed cases during 2000–2004 in Delaware.
- Caucasian females made up 68.4 percent (128) of cervical cancer cases in 2000–2004, and African-American females made up 23.0 percent (43); 12 cases diagnosed were Hispanic females.
- The majority of cervical cancer cases diagnosed in 2000–2004 were among New Castle County residents (100 or 53.5 percent), followed by Sussex County (47 or 25.1 percent) and Kent County (40 or 21.4 percent) residents.
- Deaths from cervical cancer accounted for 1.6 percent of all cancer deaths among Delaware females during 2000–2004.
- During 2000–2004, 65 Delaware females died from cervical cancer; 41 (63.1 percent) decedents were Caucasian, and 21 (32.3 percent) were African-American.
- A total of 30 (46.2 percent) cervical cancer deaths were New Castle County residents, 21 (32.3 percent) were Sussex County residents and 14 (21.5 percent) were Kent County residents.

Incidence and Mortality Rates (Tables 5.2 and 5.7)

Significant Findings *(The results reported in this section reflect rates in which the confidence intervals did not overlap. This means that differences in observed rates were unlikely to be due to chance variation.)*

- There are no significant findings to report for cervical cancer incidence and mortality rates in Delaware in 2000–2004.
- During 2000–2004, cervical cancer mortality was twice as high among African-American females (4.9 per 100,000) than among Caucasian females (2.3 per 100,000) in the United States.

Suggestive Findings *(The results reported in this section reflect rates in which the confidence intervals overlap. This means that observed differences may be due simply to chance variation.)*

- Cervical cancer incidence in African-American females in Delaware (11.1 per 100,000) was 48 percent higher than in Caucasian females (7.5 per 100,000).

Trends in Cancer Incidence and Mortality (Figures 5.1–5.2 and 5.6–5.7)

- Although Delaware's cervical cancer incidence rate was 16.2 percent higher than the U.S. estimate in 2000–2004, the difference between the two rates has decreased since the 1990s.
- Delaware's cervical cancer incidence rate decreased from 1988–92 through 2000–2004.
- Delaware's cervical cancer mortality rate was higher than the U.S. rate, but recently the disparity has decreased. In 2000–2004, Delaware's mortality rate was 11.5 percent higher than the U.S. rate.

Age-Specific Incidence and Mortality Rates (Tables 5.3 and 5.8)

- The overall age-specific incidence rate of cervical cancer was higher among females ages 40–64, compared with those younger than age 40.

Stage at Diagnosis of Cervical Cancer (Tables 5.4–5.5, Figures 5.4–5.5)

- A total of 68 cases (38.8 percent of all cervical cancers) were diagnosed in the late stages (i.e., regional or distant) during 2000–2004. The proportion of late-stage diagnoses was higher among Caucasian females (40.3 percent) than African-American females (35.0 percent). This was due to a higher percentage of regional-stage diagnoses among Caucasian females (35.3 percent) than among African-American females (20.0 percent) in 2000–2004.
- The proportion of local-stage cervical cancer cases was higher among African-American females (57.5 percent) than among Caucasian females (51.3 percent).
- In Delaware during 2000–2004, a higher proportion of cases were diagnosed in the local stage (52.6 percent), compared with the U.S. estimates for 2000–2004 (47.0 percent).
- A smaller proportion of cervical cancer cases were diagnosed in the regional and distant stages in Delaware (31.4 percent and 7.4 percent, respectively), compared with U.S. estimates of 37.0 percent and 11.0 percent, respectively.
- In Delaware, the percentage of cervical cancer cases diagnosed in the local stage increased from 32.4 percent in 1980–84 to 53.8 percent in 2000–2004. The percentage of local-stage cancers declined in 2000–2004.
- There was a decline in the percentage of regional-stage cases from 48.9 percent in 1980–84 to 31.4 percent in 2000–2004.
- The overall percentage of distant-stage cervical cancer cases did not change during 1980–2004.

Cervical Cancer Incidence

Table 5.1. Number of Cervical Cancer Cases in Delaware and Counties, by Race: 2000–2004

	All Female	Caucasian Female	African-American Female
Delaware	187	128	43
Kent	40	32	7
New Castle	100	57	30
Sussex	47	39	6

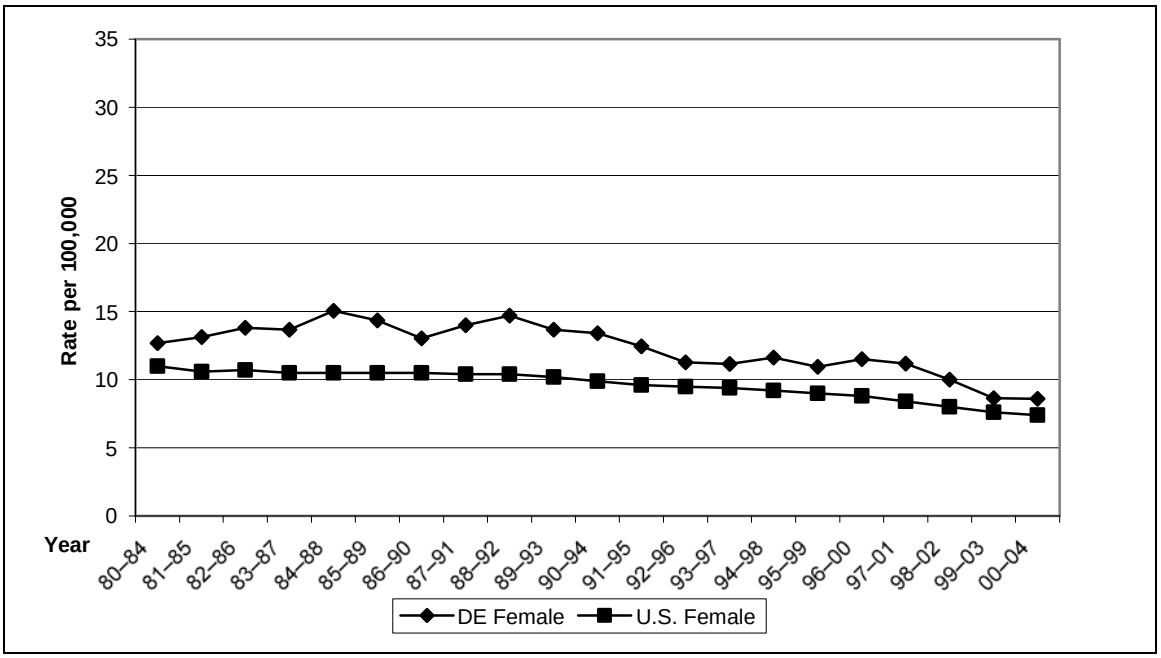
SOURCE: Delaware Cancer Registry, Delaware's Division of Public Health, 2006.

Table 5.2. Five-Year Average Age-Adjusted Cervical Cancer Incidence Rates* in the United States (Estimates), Delaware and Counties, by Race: 2000–2004

	All Female	Caucasian Female	African-American Female
U.S. Estimates	7.4 (7.2–7.6)	7.0 (6.8–7.2)	10.4 (9.7–11.2)
Delaware	8.6 (7.4–9.8)	7.5 (6.2–8.8)	11.1 (7.7–14.4)
Kent	11.7 (5.8–17.5)	12.0 (5.7–18.3)	---
New Castle	7.4 (5.1–9.6)	5.4 (3.3–7.6)	11.3 (2.3–20.2)
Sussex	10.0 (6.3–13.7)	10.1 (6.4–13.8)	---

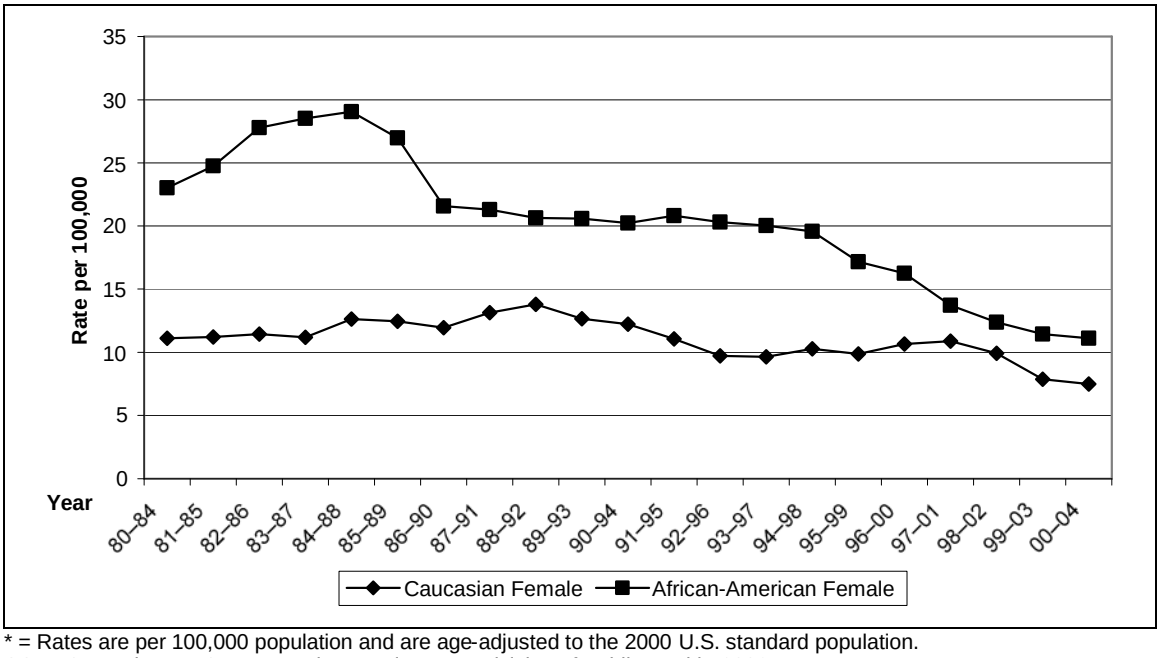
* = Rates are per 100,000 population and age-adjusted to the 2000 U.S. standard population.
--- = Rate based on fewer than 25 cases.
SOURCES: Delaware: Delaware Cancer Registry, Delaware's Division of Public Health, 2006; U.S.: Surveillance, Epidemiology, and End Results Program, National Cancer Institute, 2007.

Figure 5.1. Five-Year Average Age-Adjusted Cervical Cancer Incidence Rates* in the United States (Estimates) and Delaware: 1980–2004



* = Rates are per 100,000 population and are age-adjusted to the 2000 U.S. standard population.
SOURCES: Delaware: Delaware Cancer Registry, Delaware's Division of Public Health, 2006; U.S.: Surveillance, Epidemiology, and End Results Program, National Cancer Institute, 2007.

Figure 5.2. Five-Year Average Age-Adjusted Cervical Cancer Incidence Rates* in Delaware, by Race: 1980–2004



* = Rates are per 100,000 population and are age-adjusted to the 2000 U.S. standard population.
SOURCE: Delaware Cancer Registry, Delaware's Division of Public Health, 2006.

Table 5.3. Age-Specific Cervical Cancer Incidence Rates* in Delaware, by Race: 2000–2004

Age Group	All Female	Caucasian Female	African-American Female
0–39	3.9	3.3	---
40–64	16.0	14.3	20.2
65–74	---	---	---
75–84	---	---	---
85+	---	---	---

* = Rates are per 100,000 population.
--- = Rate based on fewer than 25 cases.
SOURCE: Delaware Cancer Registry, Delaware's Division of Public Health, 2006.

Figure 5.3. Age-Specific Cervical Cancer Incidence Rates in Delaware, by Race: 2000–2004

NOTE: Figure is not displayed because of patient confidentiality rules; the small number of cases precludes the display of data.

SOURCE: Delaware Cancer Registry, Delaware's Division of Public Health, 2006.

Cervical Cancer by Stage at Diagnosis

Table 5.4. Number of Cervical Cancer Cases in Delaware, by Stage at Diagnosis and Race: 2000–2004

Stage at Diagnosis	All Female	Caucasian Female	African-American Female
Local	92	61	23
Regional	55	42	8
Distant	13	6	6
Unknown	15	10	< 6
Total	175	119	40

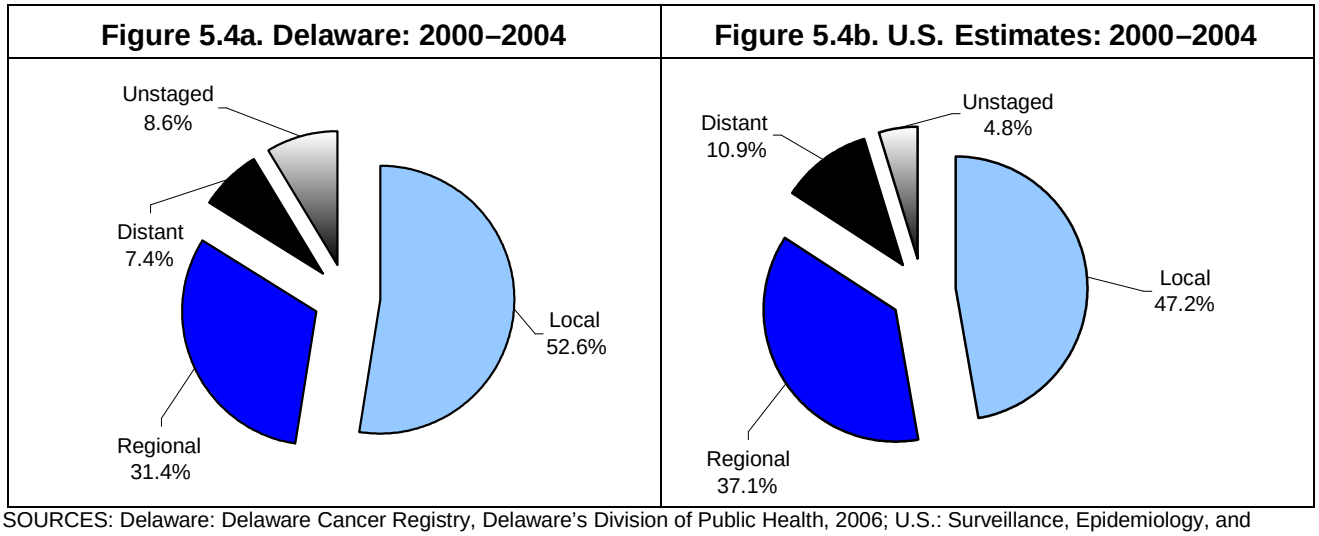
SOURCE: Delaware Cancer Registry, Delaware's Division of Public Health, 2006.

Table 5.5. Percentage of Cervical Cancer Cases in Delaware, by Stage at Diagnosis and Race: 2000–2004

Stage at Diagnosis	All Female	Caucasian Female	African-American Female
Local	52.6	51.3	57.5
Regional	31.4	35.3	20.0
Distant	7.4	5.0	15.0
Unknown	8.6	8.4	---
Total	100.0	100.0	100.0

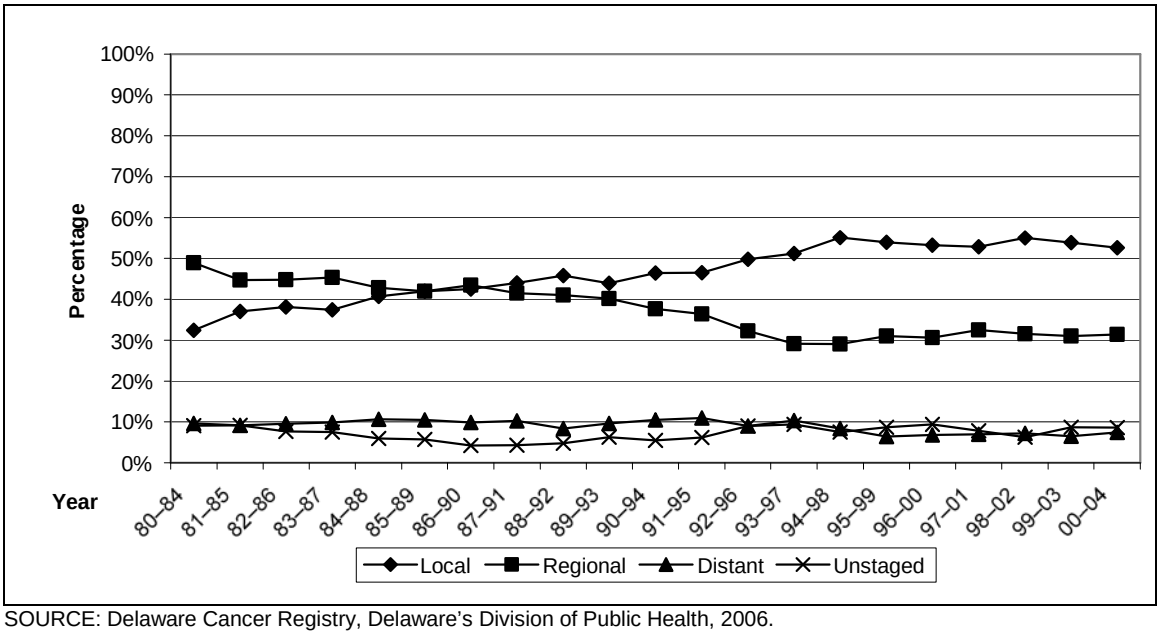
--- = Percentage based on fewer than six cases.
SOURCE: Delaware Cancer Registry, Delaware's Division of Public Health, 2006.

Figure 5.4. Percentage of Cervical Cancer Cases in Delaware and the United States (Estimates), by Stage at Diagnosis: 2000–2004



SOURCES: Delaware: Delaware Cancer Registry, Delaware's Division of Public Health, 2006; U.S.: Surveillance, Epidemiology, and End Results Program, National Cancer Institute, 2007.

Figure 5.5. Percentage of Cervical Cancer Cases in Delaware, by Stage at Diagnosis: 1980–2004



SOURCE: Delaware Cancer Registry, Delaware's Division of Public Health, 2006.

Table 5.6. Number of Cervical Cancer Deaths in Delaware and Counties, by Race: 2000–2004

	All Female	Caucasian Female	African-American Female
Delaware	65	41	21
Kent	14	10	< 6
New Castle	30	15	14
Sussex	21	16	< 6

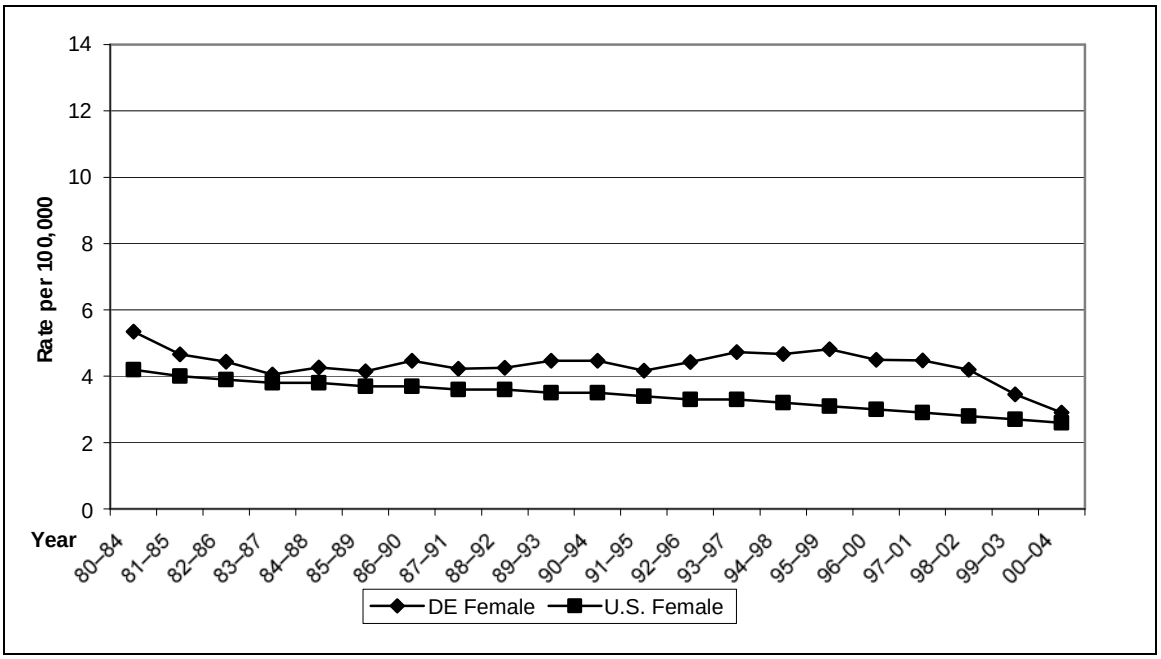
SOURCE: Delaware Health Statistics Center, 2006.

Table 5.7. Five-Year Average Age-Adjusted Cervical Cancer Mortality Rates* in the United States, Delaware and Counties, by Race: 2000–2004

	All Female	Caucasian Female	African-American Female
U.S. Estimates	2.6 (2.5–2.6)	2.3 (2.3–2.4)	4.9 (4.7–5.0)
Delaware	2.9 (2.2–3.6)	2.2 (1.5–2.9)	---
Kent	---	---	---
New Castle	2.2 (0.7–3.7)	---	---
Sussex	---	---	---

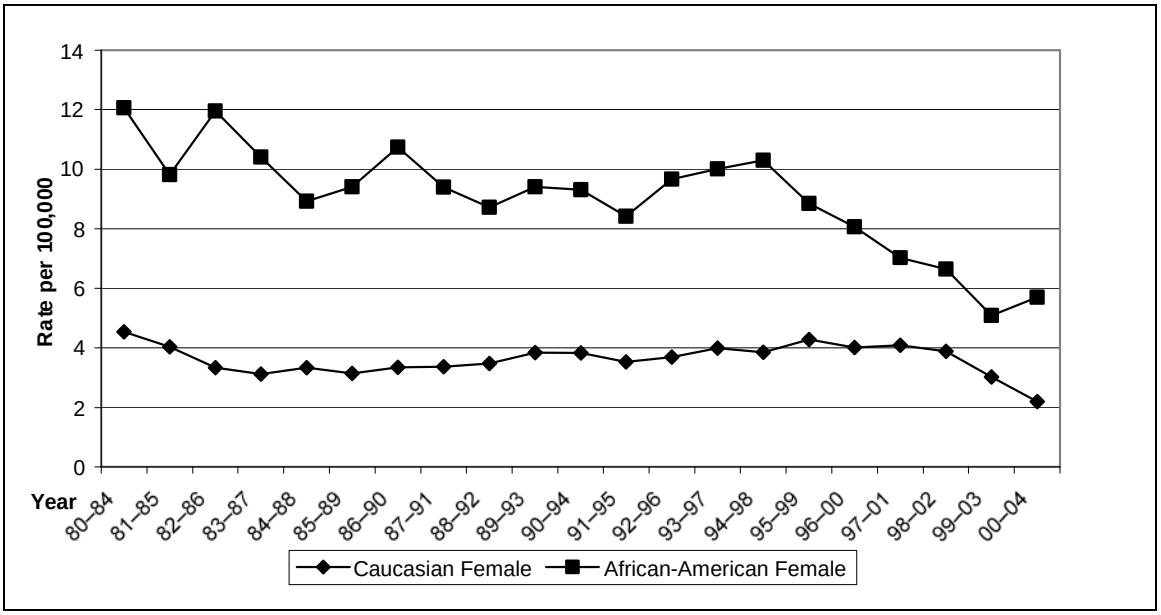
* = Rates are per 100,000 population and age-adjusted to the 2000 U.S. standard population.
--- = Rate based on fewer than 25 deaths.
SOURCES: Delaware: Delaware Health Statistics Center, 2006; U.S.: National Center for Health Statistics, 2007.

Figure 5.6. Five-Year Average Age-Adjusted Cervical Cancer Mortality Rates* in the United States and Delaware: 1980–2004



* = Rates are per 100,000 population and are age-adjusted to the 2000 U.S. standard population.
SOURCES: Delaware: Delaware Health Statistics Center, 2006; U.S.: National Center for Health Statistics, 2007.

Figure 5.7. Five-Year Average Age-Adjusted Cervical Cancer Mortality Rates* in Delaware, by Race: 1980–2004



* = Rates are per 100,000 population and are age-adjusted to the 2000 U.S. standard population.
SOURCE: Delaware Health Statistics Center, 2006.

Table 5.8. Age-Specific Cervical Cancer Mortality Rates* in Delaware, by Race: 2000–2004

Age Group	All Female	Caucasian Female	African-American Female
0–39	---	---	---
40–64	6.4	---	---
65–74	---	---	---
75–84	---	---	---
85+	---	---	---

* = Rates are per 100,000 population.
--- = Rate based on fewer than 25 deaths.
SOURCE: Delaware Health Statistics Center, 2006.

Figure 5.8. Age-Specific Cervical Cancer Mortality Rates in Delaware, by Race: 2000–2004

NOTE: Figure is not displayed because of patient confidentiality rules; the small number of cases precludes the display of data.

SOURCE: Delaware Health Statistics Center, 2006.

6. Colorectal Cancer

Risk Factors and Early Detection

Risk Factors for Colorectal Cancer

- Increasing age
- Personal history of colorectal polyps or colorectal cancer
- Family history of colorectal cancer or polyps, including familial adenomatous polyposis
- Personal history of inflammatory bowel disease, such as ulcerative colitis or Crohn's disease
- Personal history of ovarian, breast or endometrial cancer
- Diet high in red meat and other high-fat foods
- Diet low in fruits, vegetables and folic acid
- Physical inactivity

Possible Risk Factors for Colorectal Cancer

- Consumption of alcohol, especially beer
- Cigarette smoking

Early Detection of Colorectal Cancer

ACS colorectal cancer screening guidelines are:

- Beginning at age 50, both males and females should follow one of the five screening options below:
  - Yearly fecal occult blood test. The take-home multiple sample method should be used, and all positive tests should be followed up with colonoscopy.
  - Flexible sigmoidoscopy every five years
  - Yearly fecal occult blood test, plus flexible sigmoidoscopy every five years*
  - Double contrast barium enema every five years
  - Colonoscopy every 10 years

Results are shown below for the following questions in the BRFSS survey:

- A blood stool test is a test that may use a special kit at home to determine whether the stool contains blood. Have you ever had this test using a home kit?
- A sigmoidoscopy or colonoscopy is when a tube is inserted in the rectum to view the bowel for signs of cancer and other health problems. Have you ever had this exam?

In Delaware in 2006

- A home blood stool test had been used by 22.5 percent of Delaware respondents ages 50 and older. Comparable percentages of males (24.4 percent) and females (21.0 percent) in Delaware reported that they had used a home blood stool test.
- Nearly 69 percent of Delaware residents ages 50 and older reported that they had had a sigmoidoscopy or a colonoscopy; males were as likely as females to have had the exam (68.1 percent and 68.7 percent, respectively).

* "The ACS recommends more intensive surveillance for individuals at higher risk for colorectal cancer, including those with a history of adenomatous polyps; those with a personal history of curative-intent resection of colorectal cancer; those with a family history of either colorectal cancer or colorectal adenomas diagnosed in a first-degree relative before age 60; those with a history of inflammatory bowel disease of significant duration; or those with a family history or genetic testing indicating the presence of 1 of 2 hereditary syndromes, such as hereditary nonpolyposis colorectal cancer and familial adenomatous polyposis."

- Approximately two-thirds (69.7 percent) of Caucasians in Delaware ages 50 and older reported having had a colonoscopy or sigmoidoscopy. Rates for African-Americans were not available for 2006 as a relatively small sample size precluded publication of rates for that racial group.
- The percentage of Delaware residents who had had a colonoscopy or sigmoidoscopy increased as age increased. Among those ages 65 and older, 76.6 percent had had a colonoscopy or sigmoidoscopy, compared with 56.5 percent in the 50–59 age group.
- Delaware residents with more than a high school diploma were more likely to have had a colonoscopy or sigmoidoscopy: 64.9 percent of residents with a high school diploma or GED, 72.6 percent of residents with some post-high school education, and 72.3 percent of residents that are college graduates reported having had this exam.

Data Highlights

New Colorectal Cancer Cases and Deaths (Tables 6.1 and 6.6)

- Colorectal cancer was the third most frequently diagnosed cancer among both males and females.
- Colorectal cancer accounted for 10.8 percent of all cases diagnosed during 2000–2004 in Delaware.
- A total of 2,308 colorectal cancer cases were diagnosed among Delaware residents during 2000–2004, 1,206 in males and 1,102 in females.
- The majority of colorectal cancer cases during 2000–2004 were New Castle County residents (1,325 or 57.4 percent), followed by Sussex County (586 or 25.4 percent) and Kent County (397 or 17.2 percent) residents.
- A total of 1,896 (82.1 percent) cases were diagnosed among Caucasian residents in 2000–2004 in Delaware, and 14.4 percent (333) of cases were diagnosed among African-Americans. Less than 1 percent of colorectal cancer cases occurred among Hispanics, and 31 cases were diagnosed in other races.
- Colorectal cancer was the third most common cancer-related death among both males and females.
- Deaths from colorectal cancer accounted for about 9.6 percent of all cancer deaths during 2000–2004 in Delaware.
- During 2000–2004, 828 Delaware residents died from colorectal cancer, and the majority of deaths (51.2 percent) was among males.
- Most of the colorectal cancer deaths occurred among Caucasian residents (81.5 percent or 675); 145 (17.5 percent) decedents were African-American.
- A total of 480 (58.0 percent) decedents were from New Castle County, 236 (28.5 percent) were from Sussex County, and 112 (13.5 percent) were from Kent County.

Incidence and Mortality Rates (Tables 6.2 and 6.7)

Significant Findings *(The results reported in this section reflect rates in which the confidence intervals did not overlap. This means that differences in observed rates were unlikely to be due to chance variation.)*

- Colorectal cancer incidence in Delaware was higher among males (65.5 per 100,000) than females (45.7 per 100,000) in 2000–2004.
- Delaware's 2000–2004 colorectal cancer mortality rate was higher among males (24.4 per 100,000) than among females (16.5 per 100,000).
- The colorectal cancer mortality rate was higher among African-American residents (27.4 per 100,000) than among Caucasian residents (18.5 per 100,000) during 2000–2004.

Suggestive Findings *(The results reported in this section reflect rates in which the confidence intervals did overlap. This means that observed differences in rates may simply be due to chance variation.)*

- In 2000–2004, African-Americans in Delaware had a higher age-adjusted colorectal cancer incidence rate (60.1 per 100,000) than Caucasians (52.0 per 100,000).
- Overall incidence rates in Delaware among African-American females were higher than among their Caucasian counterparts (52.8 per 100,000 v. 43.1 per 100,000).
- Incidence rates among African-American males (74.0 per 100,000) were higher than among Caucasian males (61.6 per 100,000) in New Castle County. A similar pattern of race-specific rates was shown for Sussex County, but lower rates among African-Americans were observed in Kent County.
- Colorectal cancer incidence was highest in Kent County among Caucasian males (82.1 per 100,000) and among African-American females (58.1 per 100,000).
- The overall county-specific colorectal cancer mortality rate was lowest in Kent County (18.1 per 100,000) during 2000–2004; New Castle and Sussex Counties had comparable rates of colorectal cancer mortality.

Trends in Incidence and Mortality Rates (Figures 6.1–6.2 and 6.6–6.7)

- Although Delaware's colorectal cancer incidence during 1980–84 to 2000–2004 was higher than the U.S. estimates, recently the gap has narrowed. In 2000–2004, Delaware's colorectal cancer incidence was 5.4 percent higher than the U.S. estimate (8.6 percent higher in males and 2.5 percent higher in females).
- Colorectal cancer incidence has decreased overall since the mid-1980s among Caucasian Delaware residents. Since 1997–2001, the rates among African-American females and Caucasian males have remained steady.
- Although Delaware's colorectal cancer mortality rate has been higher than the U.S. rate since 1980–84, the gap between the two rates has narrowed since the early 1990s.
- Colorectal cancer mortality declined among Caucasian and African-American females. Mortality, however, has increased among African-American males since 1994–98 and stabilized among Caucasian males since 1997–2001.

Age-Specific Incidence and Mortality Rates (Tables 6.3 and 6.8, Figures 6.3 and 6.8)

- The incidence of colorectal cancer increased with age.
- Mortality from colorectal cancer peaked at ages 85 and older in both males and females.

Stage at Diagnosis of Colorectal Cancer (Tables 6.4–6.5, Figures 6.4–6.5)

- A total of 1,345 cases (62.4 percent of all colorectal cancers) were diagnosed in the late stages (i.e., regional or distant), compared with the U.S. estimate of 55.1 percent in 2000–2004.
- In Delaware, fewer colorectal cancers were diagnosed in the local stage in 2000–2004 (30.9 percent), compared with the U.S. estimate for 2000–2004 (39.0 percent). Delaware, however, had a greater proportion of cases diagnosed in the regional stage (45.8 percent) than the U.S. estimate (36.0 percent).
- In 1985–89, the proportions of local- and regional-stage diagnoses of colorectal cancer were almost the same. Since that time, the proportion of local-stage cancers has decreased (from 37.9 percent to 30.9 percent in 2000–2004), while the proportion of regional-stage cancers has increased (38.8 percent to 45.8 percent in 2000–2004).
- The percentage of colorectal cancer cases diagnosed at distant stage has decreased approximately 2–3 percent since 1988–92.
- Fewer African-American Delaware residents, on average, were diagnosed in the local stage (29.6 percent), compared with Caucasian residents (31.4 percent), and more African-Americans were diagnosed in the distant stage (19.8 percent) than Caucasians (16.1 percent).

Table 6.1. Number of Colorectal Cancer Cases in Delaware and Counties, by Race and Sex: 2000–2004

	All Races			Caucasian			African-American		
	All	Male	Female	All	Male	Female	All	Male	Female
Delaware	2,308	1,206	1,102	1,896	1,004	892	333	162	171
Kent	397	216	181	325	180	145	62	30	32
New Castle	1,325	679	646	1,050	547	503	219	102	117
Sussex	586	311	275	521	277	244	52	30	22

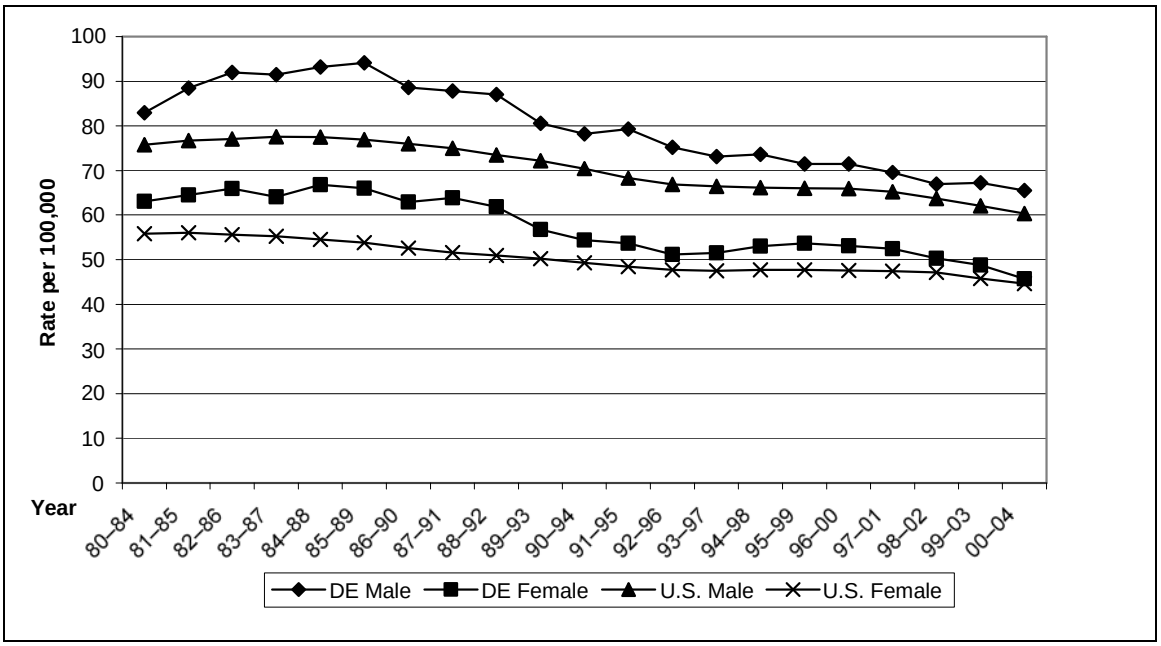
SOURCE: Delaware Cancer Registry, Delaware's Division of Public Health, 2006.

Table 6.2. Five-Year Average Age-Adjusted Colorectal Cancer Incidence Rates* in the United States (Estimates), Delaware and Counties, by Race and Sex: 2000–2004

RACE AND REGION	SEX		
	All	Male	Female
ALL RACES			
United States	51.5 (51.1–51.9)	60.3 (59.6–60.9)	44.6 (44.1–45.1)
Delaware	54.3 (52.1–56.5)	65.5 (61.8–69.3)	45.7 (43.0–48.4)
Kent	63.5 (46.4–80.6)	80.7 (47.1–114.3)	51.1 (31.6–70.7)
New Castle	53.8 (46.2–61.5)	64.5 (50.4–78.5)	45.7 (36.6–54.8)
Sussex	50.9 (39.6–62.1)	60.2 (39.4–80.5)	43.5 (30.1–56.9)
CAUCASIAN			
United States	50.9 (50.5–51.4)	59.6 (58.9–60.3)	44.0 (43.5–44.6)
Delaware	52.0 (49.7–54.3)	63.3 (59.4–67.3)	43.1 (40.3–46.0)
Kent	62.9 (44.4–81.5)	82.1 (44.6–119.6)	49.4 (28.3–70.4)
New Castle	50.8 (42.8–58.9)	61.6 (47.2–76.1)	42.2 (32.7–51.8)
Sussex	49.3 (37.7–61.0)	58.5 (37.2–79.7)	42.3 (28.3–56.2)
AFRICAN-AMERICAN			
United States	61.6 (60.0–63.1)	72.4 (69.8–75.2)	54.5 (52.7–56.4)
Delaware	60.1 (53.4–66.7)	71.7 (59.7–83.6)	52.8 (44.8–60.8)
Kent	62.8 (18.4–107.1)	67.2 (-5.4–139.8)	58.1 (3.3–112.9)
New Castle	61.5 (36.6–86.3)	74.0 (18.6–129.5)	55.5 (27.2–83.8)
Sussex	53.7 (13.6–93.9)	72.1 (1.0–143.2)	---

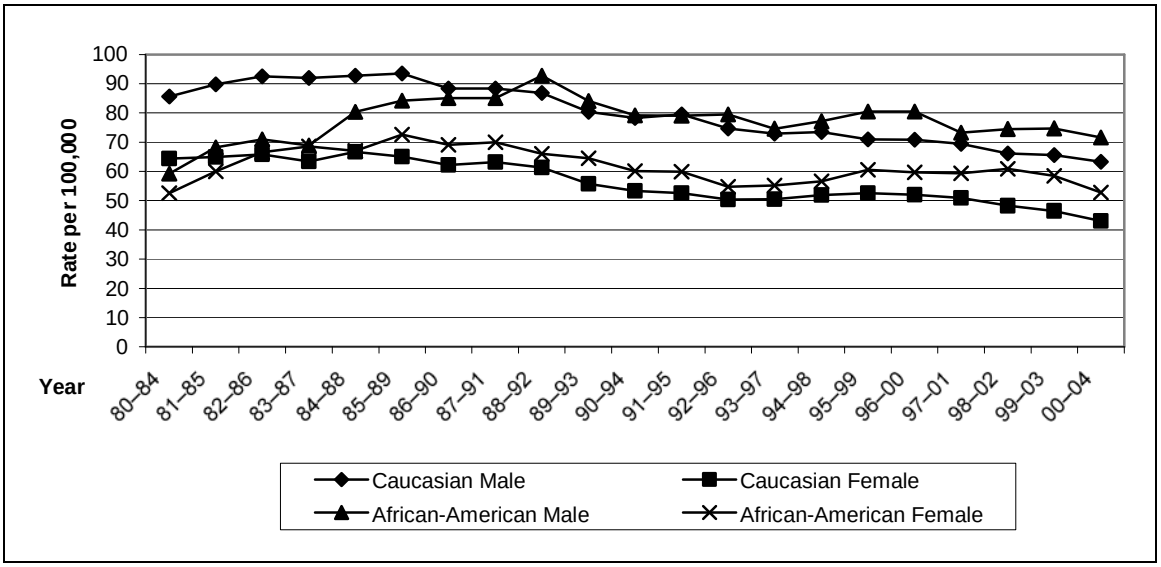
* = Rates are per 100,000 population and age-adjusted to the 2000 U.S. standard population.
--- = Rate based on fewer than 25 cases.
SOURCES: Delaware: Delaware Cancer Registry, Delaware's Division of Public Health, 2006; U.S.: Surveillance, Epidemiology, and End Results Program, National Cancer Institute, 2007.

Figure 6.1. Five-Year Average Age-Adjusted Colorectal Cancer Incidence Rates* in the United States (Estimates) and Delaware, by Sex: 1980–2004



* = Rates are per 100,000 population and are age-adjusted to the 2000 U.S. standard population.
SOURCES: Delaware: Delaware Cancer Registry, Delaware's Division of Public Health 2006; U.S.: Surveillance, Epidemiology, and End Results Program, National Cancer Institute 2007.

Figure 6.2. Five-Year Average Age-Adjusted Colorectal Cancer Incidence Rates* in Delaware, by Race and Sex: 1980–2004



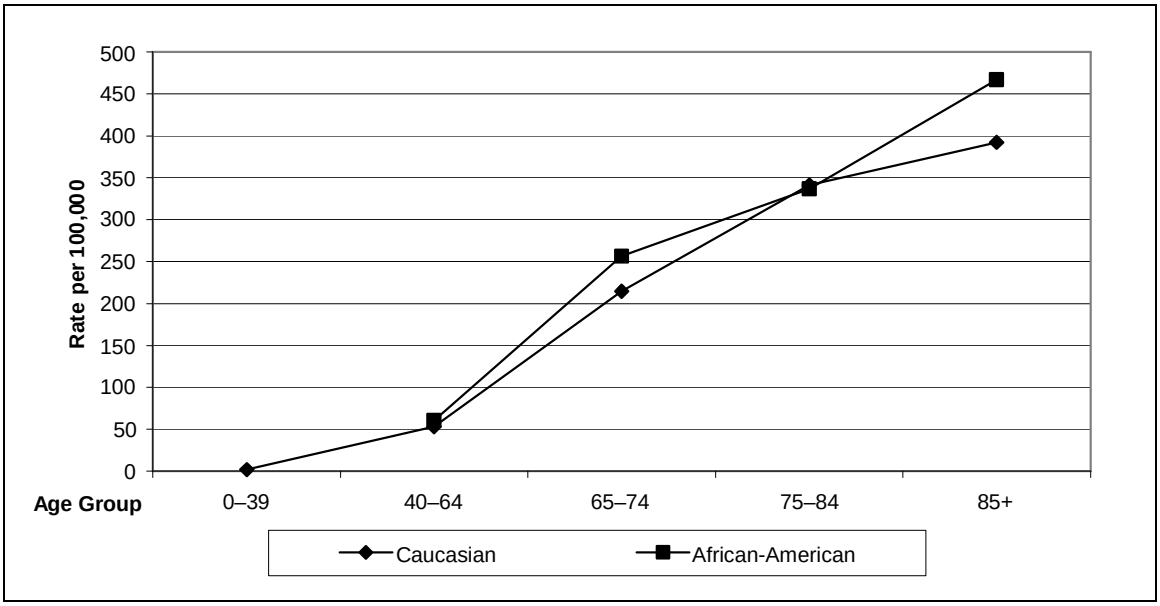
* = Rates are per 100,000 population and are age-adjusted to the 2000 U.S. standard population.
SOURCE: Delaware Cancer Registry, Delaware's Division of Public Health, 2006.

Table 6.3. Age-Specific Colorectal Cancer Incidence Rates* in Delaware, by Race and Sex: 2000–2004

Age Group	All Races			Caucasian			African-American		
	All	Male	Female	All	Male	Female	All	Male	Female
0–39	2.1	2.3	1.8	2.0	---	---	---	---	---
40–64	55.9	68.2	44.5	53.2	66.1	41.0	60.2	69.1	52.6
65–74	225.0	273.1	183.8	214.8	265.5	170.5	256.3	301.9	221.4
75–84	346.6	394.6	313.9	341.5	388.7	309.0	336.9	371.3	316.1
85+	403.1	532.5	350.8	392.3	515.3	342.2	467.1	---	---

* = Rates are per 100,000 population.
--- = Rate based on fewer than 25 cases.
SOURCE: Delaware Cancer Registry, Delaware's Division of Public Health, 2006.

Figure 6.3. Age-Specific Colorectal Cancer Incidence Rates in Delaware, by Race: 2000–2004



NOTE: Rates for African-Americans ages 0–39 are not displayed due to patient confidentiality rules.
SOURCE: Delaware Cancer Registry, Delaware's Division of Public Health, 2006.

Colorectal Cancer by Stage at Diagnosis

Table 6.4. Number of Colorectal Cancer Cases in Delaware, by Stage at Diagnosis, Race and Sex: 2000–2004

Stage at Diagnosis	All Races			Caucasian			African-American		
	All	Male	Female	All	Male	Female	All	Male	Female
Local	666	374	292	556	314	242	93	54	39
Regional	987	498	489	821	425	396	143	63	80
Distant	358	190	168	286	153	133	62	28	34
Unknown	144	65	79	110	51	59	16	6	10
Total	2,155	1,127	1,028	1,773	943	830	314	151	163

SOURCE: Delaware Cancer Registry, Delaware's Division of Public Health, 2006.

Table 6.5. Percentage of Colorectal Cancer Cases in Delaware, by Stage at Diagnosis, Race and Sex: 2000–2004

Stage at Diagnosis	All Races			Caucasian			African-American		
	All	Male	Female	All	Male	Female	All	Male	Female
Local	30.9	33.2	28.4	31.4	33.3	29.2	29.6	35.8	23.9
Regional	45.8	44.2	47.6	46.3	45.1	47.7	45.5	41.7	49.1
Distant	16.6	16.9	16.3	16.1	16.2	16.0	19.8	18.5	20.9
Unknown	6.7	5.8	7.7	6.2	5.4	7.1	5.1	4.0	6.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

--- = Percentage based on fewer than six cases.
SOURCE: Delaware Cancer Registry, Delaware's Division of Public Health, 2006.

Figure 6.4. Percentage of Colorectal Cancer Cases in Delaware and the United States (Estimates), by Stage at Diagnosis: 2000–2004

Figure 6.4a. Delaware: 2000–2004

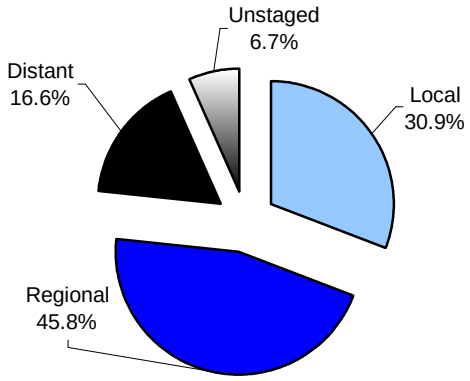
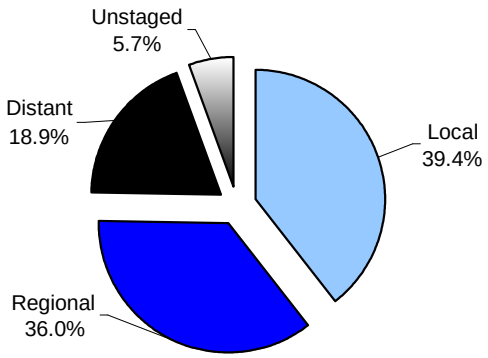
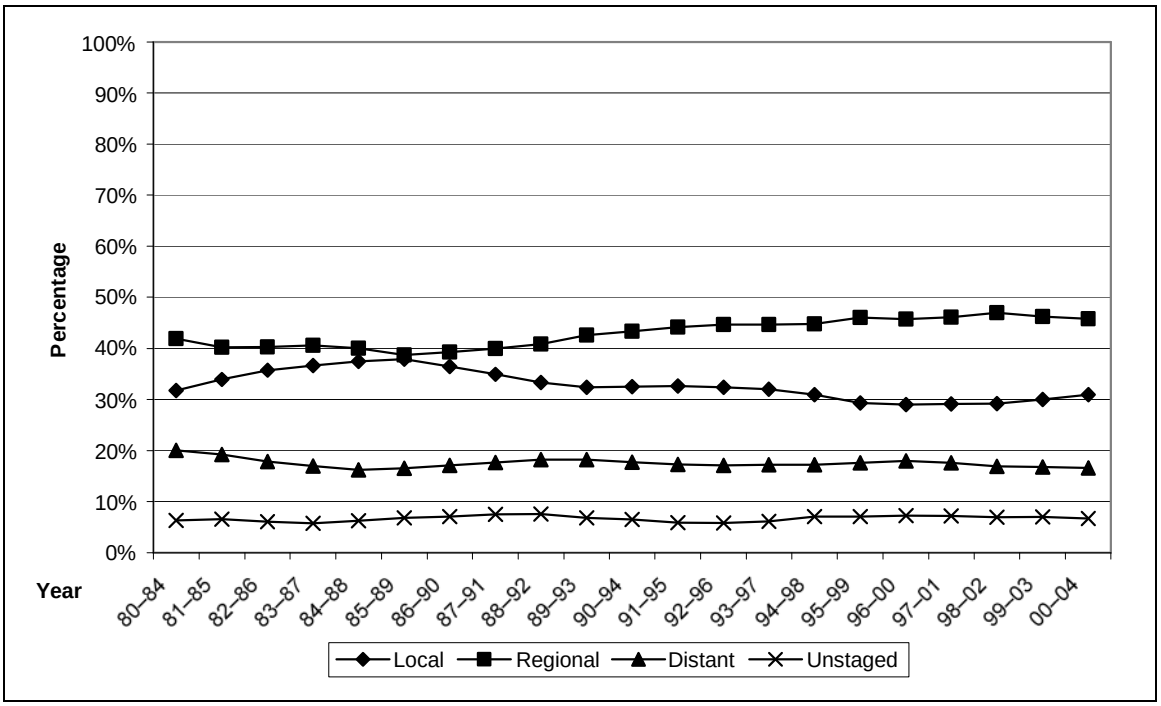


Figure 6.4b. U.S. Estimates: 2000–2004



SOURCES: Delaware: Delaware Cancer Registry, Delaware's Division of Public Health, 2006; U.S.: Surveillance, Epidemiology, and End Results Program, National Cancer Institute, 2007.

Figure 6.5. Percentage of Colorectal Cancer Cases in Delaware, by Stage at Diagnosis: 1980–2004



SOURCE: Delaware Cancer Registry, Delaware's Division of Public Health, 2006.

Colorectal Cancer Mortality

Table 6.6. Number of Colorectal Cancer Deaths in Delaware and Counties, by Race and Sex: 2000–2004

	All Races			Caucasian			African-American		
	All	Male	Female	All	Male	Female	All	Male	Female
Delaware	828	424	404	675	348	327	145	71	74
Kent	112	57	55	84	44	40	26	11	15
New Castle	480	238	242	386	193	193	88	42	46
Sussex	236	129	107	205	111	94	31	18	13

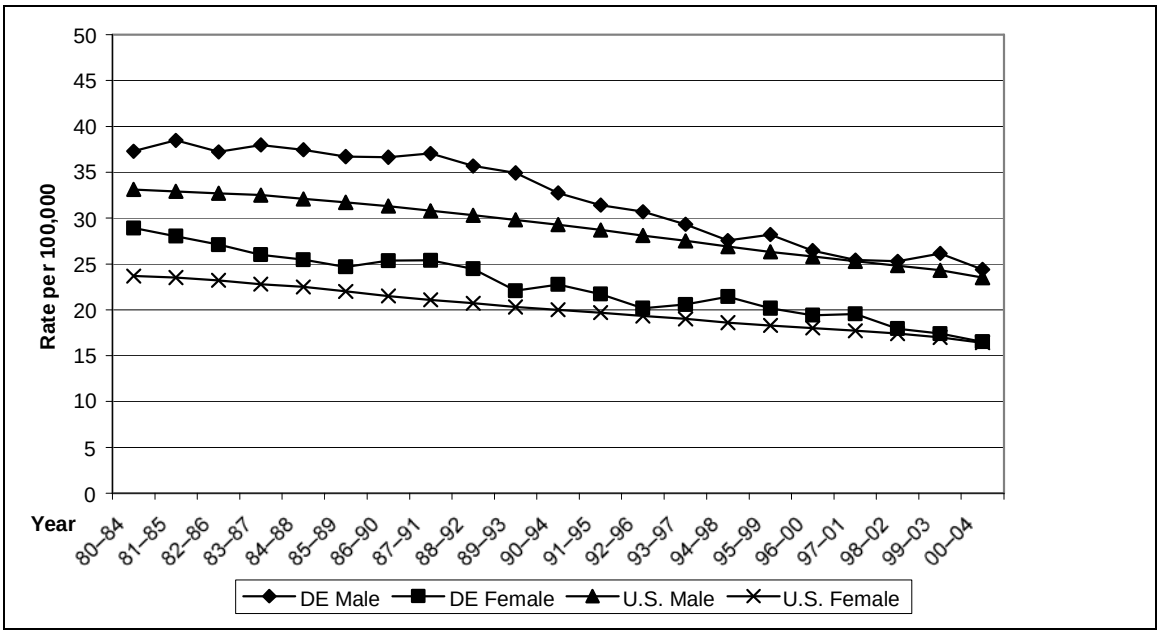
SOURCE: Delaware Health Statistics Center, 2006.

Table 6.7. Five-Year Average Age-Adjusted Colorectal Cancer Mortality Rates* in the United States, Delaware and Counties, by Race and Sex: 2000–2004

RACE AND REGION	SEX		
	All	Male	Female
ALL RACES			
United States	19.4 (19.4–19.5)	23.5 (23.4–23.6)	16.4 (16.3–16.5)
Delaware	19.7 (18.3–21.0)	24.4 (21.9–26.8)	16.5 (14.9–18.1)
Kent	18.1 (8.5–27.6)	21.9 (3.0–40.8)	15.6 (4.8–26.3)
New Castle	19.7 (14.4–25.0)	24.3 (13.8–34.8)	16.7 (10.6–22.8)
Sussex	20.6 (12.7–28.5)	25.6 (10.8–40.6)	16.9 (7.9–25.9)
CAUCASIAN			
United States	18.9 (18.8–19.0)	22.9 (22.8–23.1)	15.9 (15.8–16.0)
Delaware	18.5 (17.1–19.9)	23.1 (20.6–25.6)	15.5 (13.8–17.1)
Kent	16.3 (6.7–25.9)	20.0 (1.2–38.8)	13.8 (3.0–24.5)
New Castle	18.6 (13.0–24.2)	23.3 (12.1–34.4)	15.6 (9.1–22.0)
Sussex	19.6 (11.5–27.6)	24.0 (8.7–39.3)	16.4 (7.1–25.6)
AFRICAN-AMERICAN			
United States	26.7 (26.5–27.0)	32.7 (32.2–33.2)	22.9 (22.6–23.3)
Delaware	27.4 (22.8–32.0)	33.8 (25.4–42.2)	23.2 (17.8–28.5)
Kent	27.7 (-5.5–61.0)	27.0 (-33.5–87.5)	29.0 (-11.9–70.0)
New Castle	25.5 (8.5–42.4)	31.5 (-1.9–64.9)	21.5 (2.6–40.5)
Sussex	33.1 (-1.95–68.2)	47.8 (-20.1–115.7)	23.3 (-15.2–61.7)

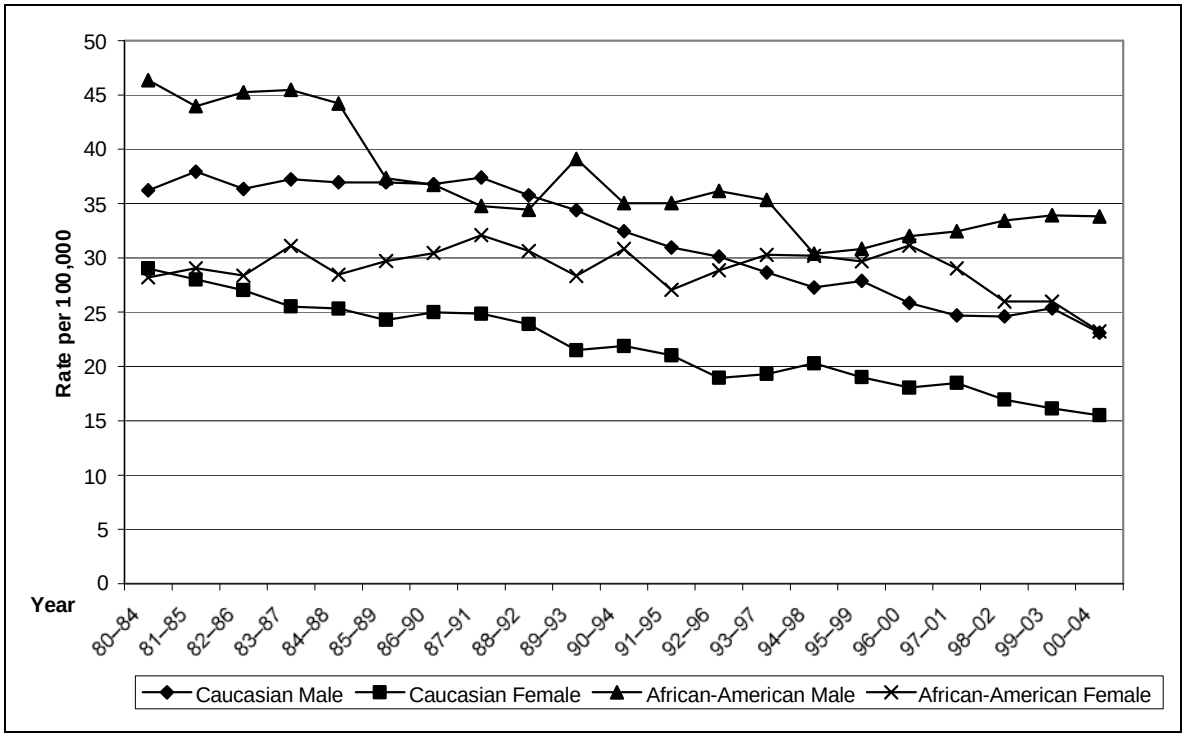
* = Rates are per 100,000 population and age-adjusted to the 2000 U.S. standard population.
--- = Rate based on fewer than 25 deaths.
SOURCES: Delaware: Delaware Health Statistics Center, 2006; U.S.: National Center for Health Statistics, 2007.

Figure 6.6. Five-Year Average Age-Adjusted Colorectal Cancer Mortality Rates* in the United States and Delaware, by Sex: 1980–2004



* = Rates are per 100,000 population and are age-adjusted to the 2000 U.S. standard population.
SOURCES: Delaware: Delaware Health Statistics Center, 2006; U.S.: National Center for Health Statistics, 2007.

Figure 6.7. Five-Year Average Age-Adjusted Colorectal Cancer Mortality Rates* in Delaware, by Race and Sex: 1980–2004



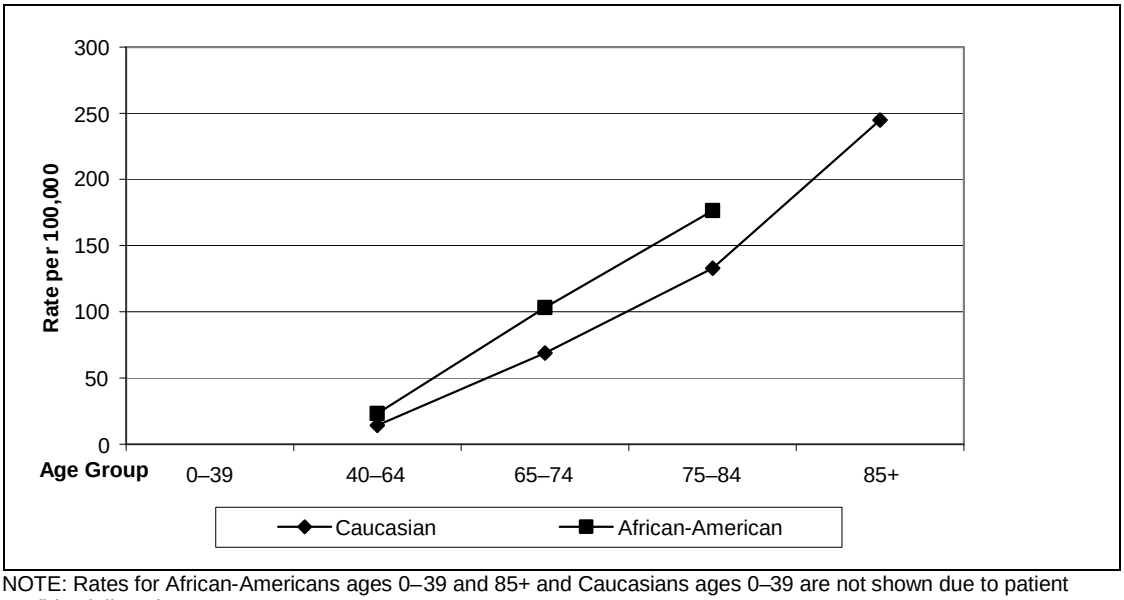
* = Rates are per 100,000 population and are age-adjusted to the 2000 U.S. standard population.
SOURCE: Delaware Health Statistics Center, 2006.

Table 6.8. Age-Specific Colorectal Cancer Mortality Rates* in Delaware, by Race and Sex: 2000–2004

Age Group	All Races			Caucasian			African-American		
	All	Male	Female	All	Male	Female	All	Male	Female
0–39	---	---	---	---	---	---	---	---	---
40–64	15.5	17.1	14.0	14.2	16.0	12.6	23.3	25.0	21.9
65–74	72.5	93.8	54.3	68.8	90.5	49.9	103.1	---	---
75–84	137.5	170.4	115.0	132.9	159.3	114.8	176.2	---	---
85+	250.0	331.3	217.2	245.0	336.9	207.4	---	---	---

* = Rates are per 100,000 population.
--- = Rate based on fewer than 25 deaths.
SOURCE: Delaware Health Statistics Center, 2006.

Figure 6.8. Age-Specific Colorectal Cancer Mortality Rates* in Delaware, by Race: 2000–2004



NOTE: Rates for African-Americans ages 0–39 and 85+ and Caucasians ages 0–39 are not shown due to patient confidentiality rules.
SOURCE: Delaware Cancer Registry, Delaware's Division of Public Health, 2006.

7. Kidney and Renal Pelvis Cancer

Risk Factors and Early Detection

Possible Risk Factors for Kidney and Renal Pelvis Cancer

- Cigarette smoking
- Obesity
- Occupational exposures to carcinogens in the iron and steel industry and exposure to asbestos and cadmium
- High blood pressure
- Long-term dialysis
- Von Hippel-Lindau (VHL) Syndrome
- Males are more likely to be diagnosed than females.

Early Detection of Cancer of the Kidney and Renal Pelvis

- No early detection tests are used to screen for kidney and renal pelvis cancer, but those that are at high risk of developing cancer based on their risk factor profile should talk with their doctors about regular endoscopies and biopsies.

Data Highlights

New Cancer Cases and Deaths (Tables 7.1 and 7.6)

- During 2000–2004, there were 642 newly diagnosed cases of kidney and renal pelvis cancer, accounting for 3.0 percent of all new cancer cases diagnosed during 2000–2004 in Delaware.
- In Delaware there were 397 (61.8 percent) newly diagnosed kidney and renal pelvis cancer cases in males and 245 cases (38.2 percent) in females. Kidney and renal pelvis cancer accounted for 3.5 percent of all newly diagnosed cancer cases in males and 2.4 percent in females.
- Approximately 58 percent of newly diagnosed kidney and renal pelvis cancer cases in 2000–2004 were among residents of New Castle County (373), 15.0 percent among Kent County residents (96) and 26.9 percent among Sussex County residents (173).
- At least 82 percent of cases were diagnosed among Caucasians (529) and 15.7 percent among African-Americans (101). Kidney and renal pelvis cancer accounted for 3.0 percent all newly diagnosed cancer cases in Caucasians and 3.2 percent in African-Americans.
- Deaths from kidney and renal pelvis cancer accounted for 1.9 percent of all cancer deaths in Delaware during 2000–2004.
- In 2000–2004, 102 males and 64 females died from kidney and renal pelvis cancer in Delaware. Kidney and renal pelvis cancer accounted for 2.3 percent of cancer deaths in males and 1.6 percent in females.
- A total of 91 (54.8 percent) decedents were residents of New Castle County, 54 (32.5 percent) were from Sussex County and 21 (12.7 percent) were from Kent County.
- Caucasians made up 90.0 percent (149) of kidney and renal pelvis cancer decedents, and African-Americans made up 9.6 percent (16).

Incidence and Mortality Rates (Tables 7.2 and 7.7)

Significant Findings *(The results reported in this section reflect rates in which the confidence intervals did not overlap. This means that differences in observed rates were unlikely to be due to chance variation.)*

- Overall, the age-adjusted incidence rates in Delaware were 20.8 per 100,000 in males and 10.5 per 100,000 in females. Males in Delaware were almost twice as likely to be diagnosed with kidney and renal pelvis cancer when compared with females.
- In 2000–2004, Delaware's kidney and renal pelvis cancer incidence rate was 17 percent higher than the U.S. estimate.
- The kidney and renal pelvis cancer mortality rate among males was more than two times higher than females. Overall, the age-adjusted mortality rates for kidney and renal pelvis cancer during 2000–2004 in Delaware were 5.8 per 100,000 in males and 2.7 per 100,000 in females.

Suggestive Findings *(The results reported in this section reflect rates in which the confidence intervals overlap. This means that observed differences may be due simply to chance variation.)*

- There were no significant geographic differences in the incidence rate of kidney and renal pelvis cancer in 2000–2004. The overall county-specific incidence rates were 15.1 per 100,000, 14.9 per 100,000 and 15.2 per 100,000 in Kent, New Castle and Sussex Counties, respectively.
- African-Americans in Delaware had a higher age-adjusted kidney and renal pelvis cancer incidence rate (16.3 per 100,000) than Caucasians (14.6 per 100,000) in 2000–2004. This amounted to a difference of 11.6 percent.
- The overall kidney and renal pelvis cancer mortality rate in Delaware in 2000–2004 was less than the U.S. rate. This gender-specific rates followed a similar pattern.

Trends in Cancer Incidence and Mortality Rates (Figures 7.1–7.2 and 7.6–7.7)

- In Delaware, the age-adjusted incidence rates of kidney and renal pelvis cancer doubled in both males and females from 1980–84 to 2000–2004.
- Kidney and renal pelvis cancer mortality among males in Delaware peaked in 1989–93 and declined until 1994–98. Mortality rates have remained steady since that time period.

Age-Specific Incidence and Mortality Rates (Tables 7.3 and 7.8)

- Kidney and renal pelvis cancer is a disease that is diagnosed more frequently in individuals ages 65 and older. The age-specific incidence of kidney and renal pelvis cancer increased with age, with the highest rate among individuals ages 75–84.
- The age-specific mortality rates from kidney and renal pelvis cancer followed a similar pattern to those for incidence, with rates rising with age after age 65.

Stage at Diagnosis of Kidney and Renal Pelvis Cancer (Tables 7.4–7.5, Figures 7.4–7.5)

- A total of 174 cases (29.8 percent) of kidney and renal pelvis cancer were diagnosed in the late stages (i.e., either regional or distant) in Delaware in 2000–2004.
- In Delaware, more kidney and renal pelvis cancer cases were diagnosed in the local stage in 2000–2004 (66.6 percent) compared with the U.S. estimate for 2000–2004 (61.1 percent).
- Fewer cases were diagnosed in the late stages in Delaware (29.5 percent) compared with the U.S. estimate (34.2 percent) in 2000–2004.
- More African-Americans in Delaware were diagnosed with kidney and renal pelvis cancer in the local stage (74.2 percent) than Caucasians (64.7 percent). Fewer African-Americans in Delaware were diagnosed with kidney and renal pelvis cancer in the distant stage (9.7 percent) than Caucasians (15.7 percent).

- The percentage of kidney and renal pelvis cancer cases diagnosed in the local stage has increased in Delaware since 1984–88.
- The proportions of regional- and distant-stage diagnoses of kidney and renal pelvis cancer were similar in Delaware from 1985–89 to 1994–98. Since 1995–99 the percentage of late-stage cancers declined.

Table 7.1. Number of Kidney and Renal Pelvis Cancer Cases in Delaware and Counties, by Race and Sex: 2000–2004

	All Races			Caucasian			African-American		
	All	Male	Female	All	Male	Female	All	Male	Female
Delaware	642	397	245	529	327	202	101	63	38
Kent	96	55	41	81	45	36	13	10	< 6
New Castle	373	231	142	292	181	111	73	44	29
Sussex	173	111	62	156	101	55	15	9	6

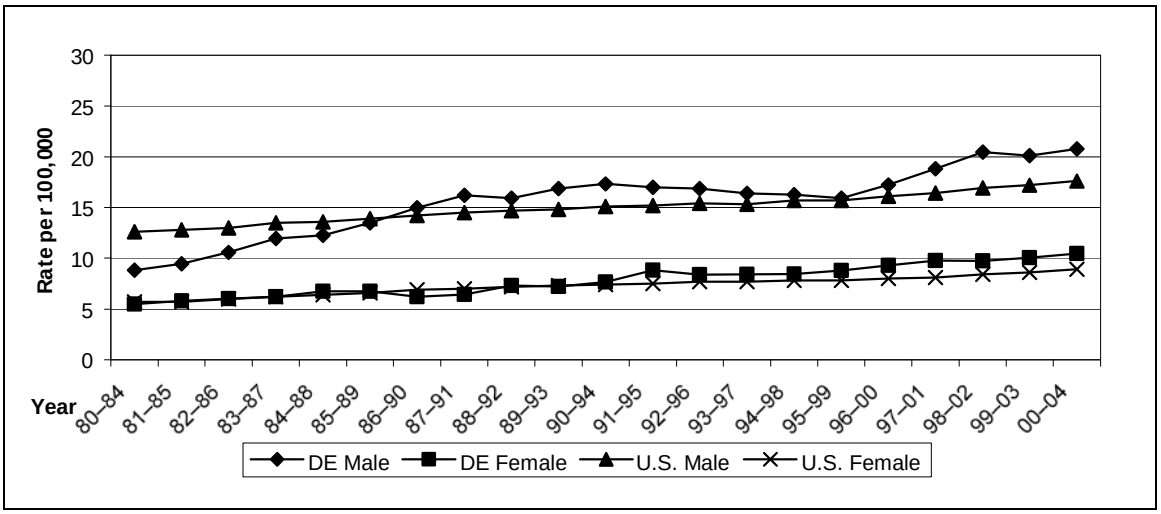
SOURCE: Delaware Cancer Registry, Delaware's Division of Public Health, 2006.

Table 7.2. Five-Year Average Age-Adjusted Kidney and Renal Pelvis Cancer Incidence Rates* in the United States (Estimates), Delaware and Counties, by Race and Sex: 2000–2004

RACE AND REGION	SEX		
	All	Male	Female
ALL RACES			
United States	12.8 (12.6–13.0)	17.6 (17.2–17.9)	8.9 (8.7–9.1)
Delaware	15.0 (13.9–16.2)	20.8 (18.7–22.9)	10.5 (9.1–11.8)
Kent	15.1 (7.4–22.8)	20.0 (3.5–36.5)	11.7 (3.0–20.3)
New Castle	14.9 (11.5–18.4)	21.1 (14.0–28.1)	10.3 (6.7–13.9)
Sussex	15.2 (10.1–20.3)	20.4 (11.6–29.2)	10.5 (4.8–16.3)
CAUCASIAN			
United States	13.1 (12.8–13.3)	17.9 (17.5–18.3)	9.1 (8.8–9.3)
Delaware	14.6 (13.4–15.9)	20.2 (18.0–22.4)	10.3 (8.9–11.7)
Kent	15.6 (7.1–24.1)	20.6 (1.1–40.2)	12.6 (3.3–21.8)
New Castle	14.2 (10.6–17.9)	20.0 (12.5–27.5)	9.8 (6.0–13.7)
Sussex	15.2 (9.8–20.5)	20.3 (11.0–29.6)	10.7 (4.8–16.6)
AFRICAN-AMERICAN			
United States	14.9 (14.2–15.7)	21.3 (20.0–22.8)	10.3 (9.5–11.1)
Delaware	16.3 (13.0–19.5)	22.7 (16.8–28.7)	11.0 (7.4–14.5)
Kent	---	---	---
New Castle	17.4 (7.5–27.3)	25.1 (3.1–47.1)	12.0 (1.7–22.3)
Sussex	---	---	---

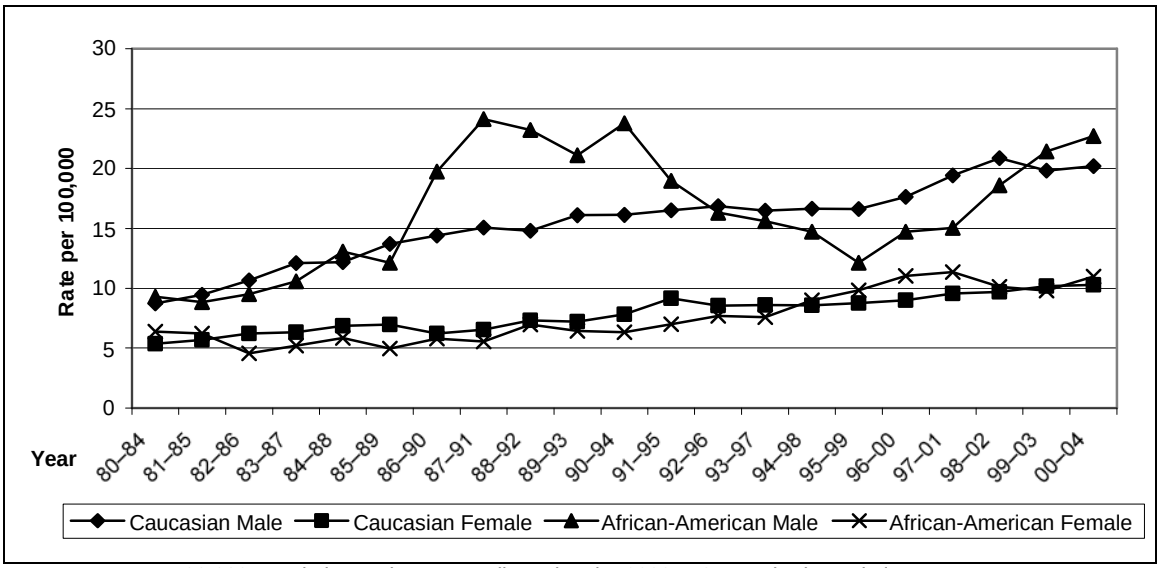
= Rates are per 100,000 population and age-adjusted to the 2000 U.S. standard population.
--- = Rate based on fewer than 25 cases.
SOURCES: Delaware: Delaware Cancer Registry, Delaware's Division of Public Health, 2006; U.S.: Surveillance, Epidemiology, and End Results Program, National Cancer Institute, 2007.

Figure 7.1. Five-Year Average Age-Adjusted Kidney and Renal Pelvis Cancer Incidence Rates* in the United States (Estimates) and Delaware, by Sex: 1980–2004



* = Rates are per 100,000 population and are age-adjusted to the 2000 U.S. standard population.
SOURCES: Delaware: Delaware Cancer Registry, Delaware's Division of Public Health, 2006; U.S.: Surveillance, Epidemiology, and End Results Program, National Cancer Institute, 2007.

Figure 7.2. Five-Year Average Age-Adjusted Kidney and Renal Pelvis Cancer Incidence Rates* in Delaware, by Race and Sex: 1980–2004



* = Rates are per 100,000 population and are age-adjusted to the 2000 U.S. standard population.
SOURCES: Delaware: Delaware Cancer Registry, Delaware's Division of Public Health, 2006; U.S.: Surveillance, Epidemiology, and End Results Program, National Cancer Institute, 2007.

Table 7.3. Age-Specific Kidney and Renal Pelvis Cancer Incidence Rates* in Delaware, by Race and Sex: 2000–2004

Age Group	All Races			Caucasian			African-American		
	All	Male	Female	All	Male	Female	All	Male	Female
0–39	1.2	---	---	---	---	---	---	---	---
40–64	21.7	28.0	15.8	20.3	25.8	15.1	27.7	39.4	---
65–74	60.1	82.6	40.8	61.6	81.1	44.7	---	---	---
75–84	69.0	104.9	44.6	69.7	109.6	42.3	---	---	---
85+	54.4	---	---	53.6	---	---	---	---	---

* = Rates are per 100,000 population.
--- = Rate based on fewer than 25 cases.
SOURCE: Delaware Cancer Registry, Delaware's Division of Public Health, 2006.

Figure 7.3. Age-Specific Kidney and Renal Pelvis Cancer Incidence Rates in Delaware, by Race: 2000–2004

NOTE: Figure is not displayed because of patient confidentiality rules; the small number of cases precludes the display of data.

SOURCE: Delaware Cancer Registry, Delaware's Division of Public Health, 2006.

Kidney and Renal Pelvis Cancer by Stage at Diagnosis

Table 7.4. Number of Kidney and Renal Pelvis Cancer Cases in Delaware, by Stage at Diagnosis, Race and Sex: 2000–2004

Stage at Diagnosis	All Races			Caucasian			African-American		
	All	Male	Female	All	Male	Female	All	Male	Female
Local	392	242	150	314	192	122	69	45	24
Regional	88	54	34	77	47	30	10	6	< 6
Distant	86	55	31	76	49	27	9	6	< 6
Unknown	23	11	12	18	9	9	< 6	< 6	< 6
Total	589	362	227	485	297	188	93	59	34

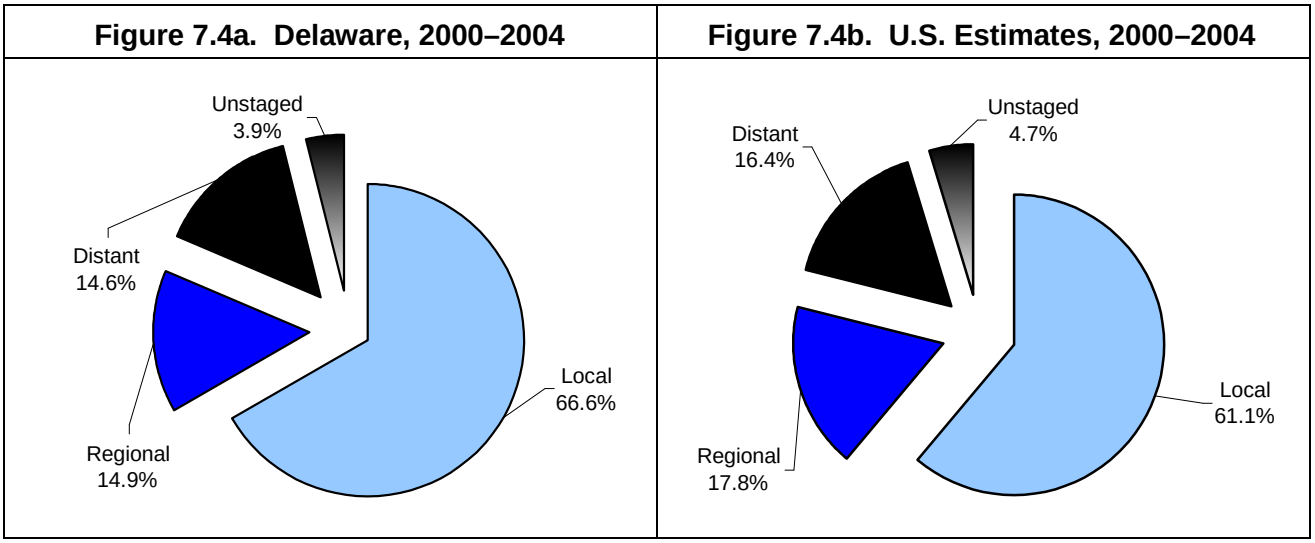
SOURCE: Delaware Cancer Registry, Delaware's Division of Public Health, 2006.

Table 7.5. Percentage of Kidney and Renal Pelvis Cancer Cases in Delaware, by Stage at Diagnosis, Race and Sex: 2000–2004

Stage at Diagnosis	All Races			Caucasian			African-American		
	All	Male	Female	All	Male	Female	All	Male	Female
Local	66.6	66.9	66.1	64.7	64.7	64.9	74.2	76.3	70.6
Regional	14.9	14.9	15.0	15.9	15.8	16.0	10.8	10.2	---
Distant	14.6	15.2	13.7	15.7	16.5	14.4	9.7	10.2	---
Unknown	3.9	3.0	5.3	3.7	3.0	4.8	---	---	---
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

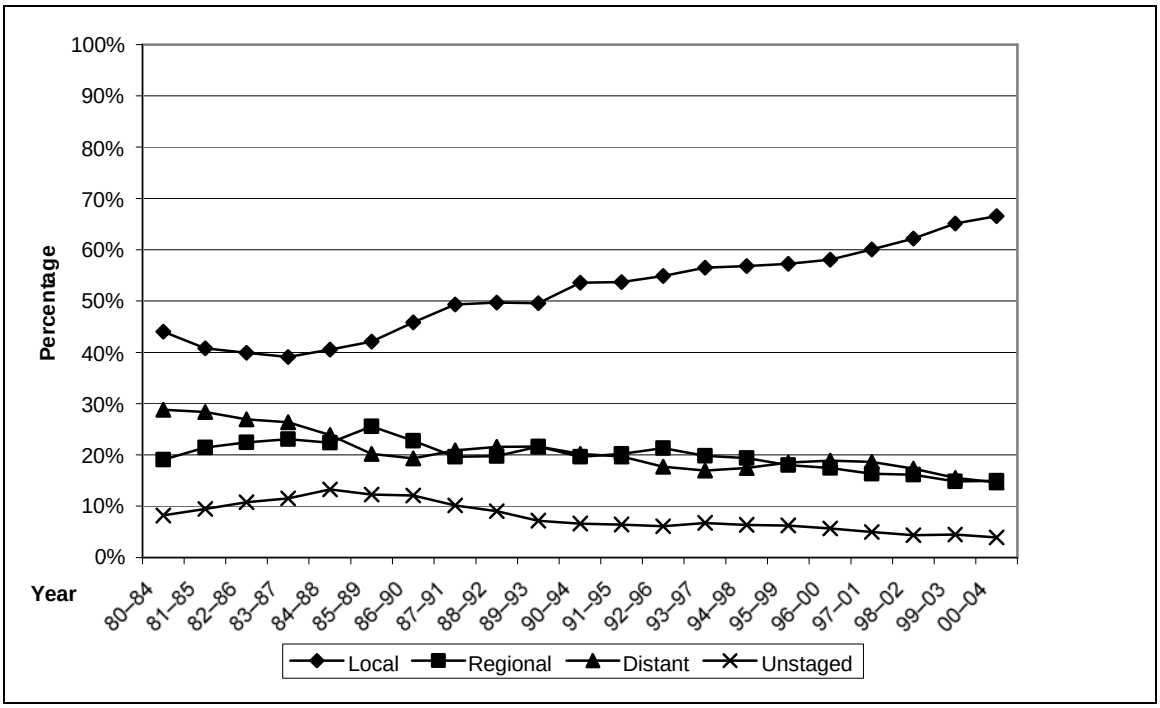
---- = Percentage based on fewer than six cases.
SOURCE: Delaware Cancer Registry, Delaware's Division of Public Health, 2006.

Figure 7.4. Percentage of Kidney and Renal Pelvis Cancer Cases in Delaware and the United States (Estimates), by Stage at Diagnosis: 2000–2004



SOURCES: Delaware: Delaware Cancer Registry, Delaware's Division of Public Health, 2006; U.S.: Surveillance, Epidemiology, and End Results Program, National Cancer Institute, 2007.

Figure 7.5. Percent of Kidney and Renal Pelvis Cancer Cases in Delaware, by Stage at Diagnosis: 1980–2004



SOURCE: Delaware Cancer Registry, Delaware's Division of Public Health, 2006.

Table 7.6. Number of Kidney and Renal Pelvis Cancer Deaths in Delaware and Counties, by Race and Sex: 2000–2004

	All Races			Caucasian			African-American		
	All	Male	Female	All	Male	Female	All	Male	Female
Delaware	166	102	64	149	94	55	16	8	8
Kent	21	12	9	19	12	7	< 6	< 6	< 6
New Castle	91	52	39	79	45	34	12	7	< 6
Sussex	54	38	16	51	37	14	< 6	< 6	0

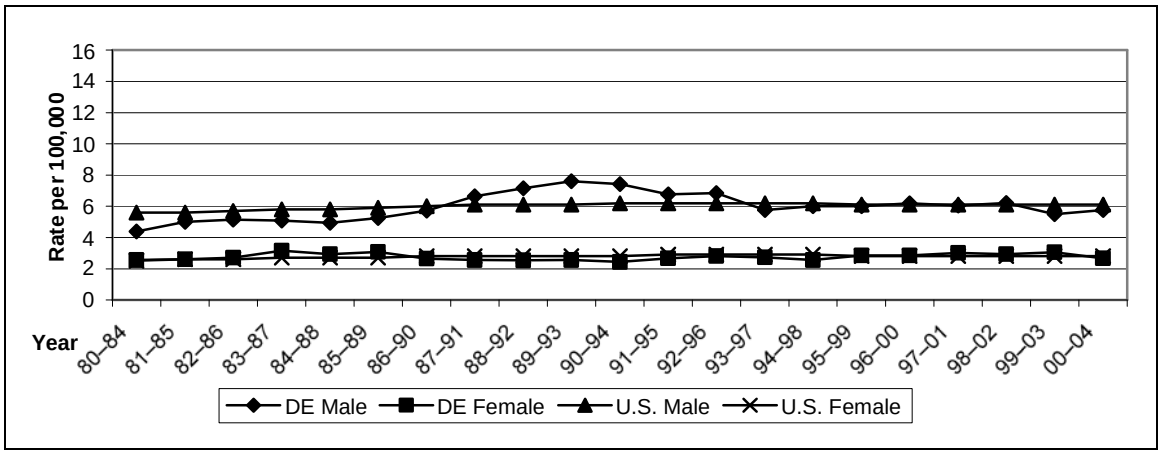
SOURCE: Delaware Health Statistics Center, 2006.

Table 7.7. Five-Year Average Age-Adjusted Kidney and Renal Pelvis Cancer Mortality Rates* in the United States, Delaware and Counties, by Race and Sex: 2000–2004

RACE AND REGION	SEX		
	All	Male	Female
ALL RACES			
United States	4.2 (4.2–4.2)	6.1 (6.0–6.2)	2.8 (2.7–2.8)
Delaware	3.9 (3.3–4.5)	5.8 (4.6–6.9)	2.7 (2.0–3.3)
Kent	---	---	---
New Castle	3.7 (1.5–5.8)	5.3 (0.4–10.1)	2.7 (0.5–5.0)
Sussex	4.4 (1.2–7.6)	7.0 (0.5–13.4)	2.3 (-0.9–5.6)
CAUCASIAN			
United States	4.3 (4.2–4.3)	6.2 (6.1–6.3)	2.8 (2.8–2.8)
Delaware	4.1 (3.4–4.7)	6.1 (4.8–7.3)	2.7 (2.0–3.4)
Kent	---	---	---
New Castle	3.8 (1.5–6.1)	5.4 (0.1–10.6)	2.9 (0.4–5.3)
Sussex	4.5 (1.2–7.9)	7.2 (1.0–13.4)	---
AFRICAN-AMERICAN			
United States	4.1 (4.0–4.2)	6.1 (5.9–6.3)	2.8 (2.6–2.9)
Delaware	---	---	---
Kent	---	---	---
New Castle	---	---	---
Sussex	---	---	---

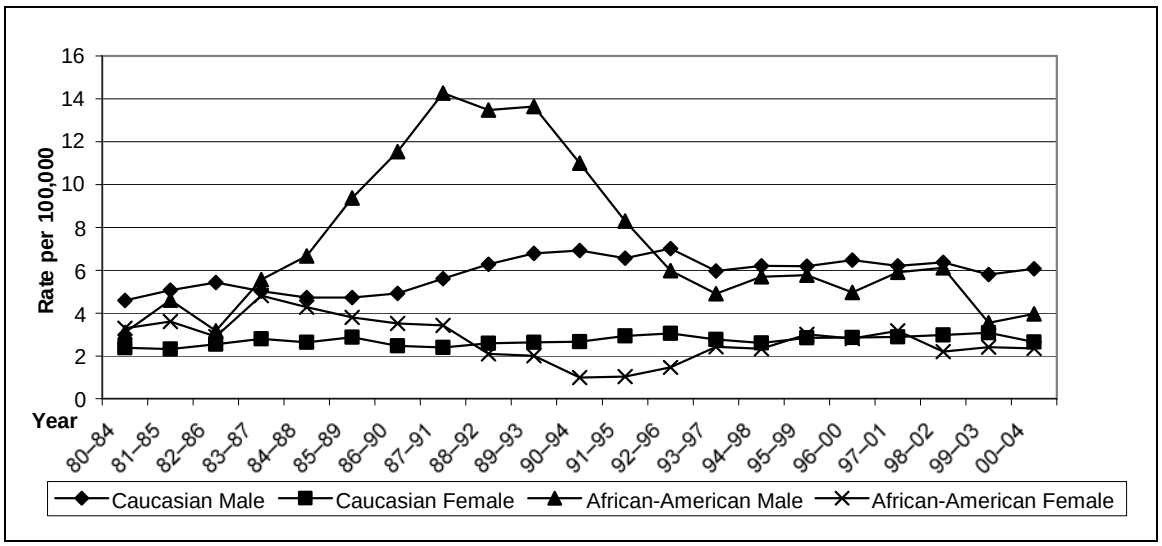
* = Rates are per 100,000 population and age-adjusted to the 2000 U.S. standard population.
--- = Rate based on fewer than 25 deaths.
SOURCES: Delaware: Delaware Health Statistics Center, 2006; U.S.: National Center for Health Statistics, 2007.

Figure 7.6. Five-Year Average Age-Adjusted Kidney and Renal Pelvis Cancer Mortality Rates* in the United States and Delaware, by Sex: 1980–2004



* = Rates are per 100,000 and are age-adjusted to the 2000 U.S. standard population.
SOURCES: Delaware: Delaware Health Statistics Center, 2006; U.S.: National Center for Health Statistics, 2007.

Figure 7.7. Five-Year Average Age-Adjusted Kidney and Renal Pelvis Cancer Mortality Rates* in Delaware, by Race and Sex: 1980–2004



* = Rates are per 100,000 population and are age-adjusted to the 2000 U.S. standard population.
SOURCES: Delaware: Delaware Health Statistics Center, 2006; U.S.: National Center for Health Statistics, 2007.

Table 7.8. Age-Specific Kidney and Renal Pelvis Cancer Mortality Rates* in Delaware, by Race and Sex: 2000–2004

Age Group	All Races			Caucasian			African-American		
	All	Male	Female	All	Male	Female	All	Male	Female
0–39	---	---	0.0	---	---	0.0	0.0	0.0	0.0
40–64	4.1	5.0	---	2.1	5.2	---	---	---	---
65–74	14.1	20.8	---	5.2	23.1	---	---	---	0.0
75–84	26.0	38.0	---	11.9	42.4	---	---	---	---
85+	---	---	---	---	---	---	---	---	---

* = Rates are per 100,000 population.
--- = Rate based on fewer than 25 deaths.
SOURCE: Delaware Health Statistics Center, 2006.

Figure 7.8. Age-Specific Kidney and Renal Pelvis Cancer Mortality Rates in Delaware, by Race and Sex: 2000–2004

NOTE: Figure is not displayed because of patient confidentiality rules; the small number of cases precludes the display of data.

SOURCE: Delaware Health Statistics Center, 2006.

8. Leukemia

Risk Factors and Early Detection

Risk Factors for Leukemia

- Exposure to ionizing radiation
- Exposure to benzene
- Chemotherapy
- Certain genetic conditions, such as Down syndrome

Possible Risk Factors for Leukemia

- Cigarette smoking

Under Investigation as Risk Factors for Leukemia

- Exposure to electromagnetic fields (e.g., from power lines)

Early Detection of Leukemia

There is currently no recommended screening test for leukemia. The best method of early detection is for individuals to report any symptoms to their doctors.

Data Highlights

New Cancer Cases and Deaths (Tables 8.1 and 8.4)

- Leukemia accounted for 1.9 percent of all cancer cases diagnosed during 2000–2004 in Delaware.
- A total of 403 leukemia cases were diagnosed among Delaware residents during 2000–2004, 222 cases (55.1 percent) in males and 181 cases (44.9 percent) in females.
- The majority of leukemia cases (2000–2004) were diagnosed among New Castle County residents (224 or 55.6 percent), followed by Sussex County (112 or 27.8 percent) and Kent County (67 or 16.6 percent) residents.
- Caucasian residents made up 82.9 percent (334) of all leukemia cases during 2000–2004, and African-American residents made up 13.6 percent (55).
- Deaths from leukemia accounted for 4.1 percent of all cancer deaths in Delaware during 2000–2004.
- During 2000–2004, 347 Delaware residents died from leukemia, and 53.9 percent (187) of deaths occurred among males.
- Caucasians made up 86.7 percent (301) of decedents, and African-Americans made up 11.2 percent (39).
- A total of 204 (58.8 percent) decedents were from New Castle County, 83 (23.9 percent) were from Sussex County, and 60 (17.3 percent) were from Kent County.

Incidence and Mortality Rates (Tables 8.2 and 8.5)

Significant Findings *(The results reported in this section reflect rates in which the confidence intervals did not overlap. This means that differences in observed rates were unlikely to be due to chance variation.)*

- The 2000–2004 leukemia incidence rate in Delaware was 23.6 percent lower than the rate in the United States (9.7 and 12.7 per 100,000, respectively).
- The leukemia incidence rate in the United States was 68 percent higher among males (16.5 per 100,000) than females (9.8 per 100,000) in 2000–2004.
- Delaware's 2000–2004 leukemia mortality rate was 54 percent higher among males (12.2 per 100,000) than among females (7.9 per 100,000).
- The 2000–2004 leukemia incidence rate among Delaware males was 26 percent lower than the U.S. rate; among females, Delaware's rate was 19.4 percent lower than the U.S. rate.

Suggestive Findings *(The results reported in this section reflect rates in which the confidence intervals overlap. This means that observed differences may be due simply to chance variation.)*

- The overall leukemia incidence rates were comparable in Kent and Sussex Counties; rates were lowest in New Castle County.
- Delaware's 2000–2004 leukemia mortality rate (8.3 per 100,000) was comparable to that of the United States (7.5 per 100,000).
- The leukemia mortality rate was 18.6 percent higher among Caucasian residents (8.3 per 100,000), compared with African-American residents (7.0 per 100,000) during 2000–2004.
- The overall, county-specific leukemia mortality rate was highest in Kent County during 2000–2004 (9.8 per 100,000).

Trends in Cancer Incidence and Mortality (Figures 8.1–8.2 and 8.4–8.5)

- The incidence rate of leukemia was stable from 1980–84 to 2000–2004 in Delaware and the United States.
- Mortality rates from leukemia declined among male Delawareans; there were were stable among females in Delaware and among both males and females in the United States.

Age-Specific Incidence and Mortality Rates (Tables 8.3 and 8.6)

- The age-specific rates for Delaware showed that the incidence of leukemia increased as age increased.
- Mortality from leukemia peaked at ages 85 and older in both males and females.

Stage at Diagnosis of Leukemia

- Leukemia was not staged as local, regional or distant.

Leukemia Incidence

Table 8.1. Number of Leukemia Cases in Delaware and Counties, by Race and Sex: 2000–2004

	All Races			Caucasian			African-American		
	All	Male	Female	All	Male	Female	All	Male	Female
Delaware	403	222	181	334	187	147	55	26	29
Kent	67	33	34	51	26	25	13	< 6	8
New Castle	224	125	99	186	105	81	31	15	16
Sussex	112	64	48	97	56	41	11	6	< 6

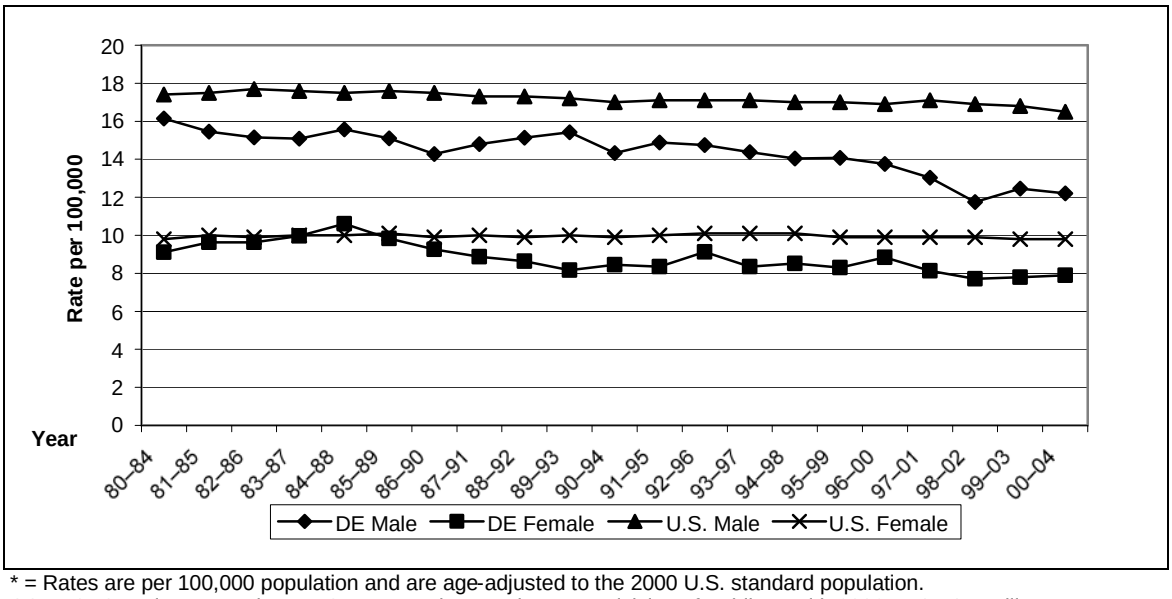
SOURCE: Delaware Cancer Registry, Delaware's Division of Public Health, 2006.

Table 8.2. Five-Year Average Age-Adjusted Leukemia Incidence Rates* in the United States (Estimates), Delaware and Counties, by Race and Sex: 2000–2004

RACE AND REGION	SEX		
	All	Male	Female
ALL RACES			
United States	12.7 (12.5–12.9)	16.5 (16.1–16.8)	9.8 (9.6–10.0)
Delaware	9.7 (8.7–10.6)	12.2 (10.6–13.8)	7.9 (6.7–9.0)
Kent	10.7 (3.8–17.7)	12.7 (-1.7–27.1)	9.8 (2.1–17.6)
New Castle	9.0 (2.1–16.0)	11.8 (-2.6–26.1)	7.1 (-0.6–14.9)
Sussex	10.5 (3.5–17.4)	13.3 (-1.1–27.7)	8.1 (0.4–15.9)
CAUCASIAN			
United States	13.4 (13.1–13.6)	17.4 (17.0–17.8)	10.3 (10.0–10.6)
Delaware	9.6 (8.6–10.6)	12.2 (10.4–14.0)	7.7 (6.4–9.0)
Kent	10.1 (2.8–17.4)	12.1 (-3.1–27.2)	9.0 (0.9–17.2)
New Castle	9.2 (1.9–16.5)	12.0 (-3.2–27.1)	7.2 (-0.9–15.3)
Sussex	10.3 (3.0–17.6)	13.4 (-1.8–28.6)	7.7 (-0.4–15.8)
AFRICAN-AMERICAN			
United States	10.1 (9.6–10.8)	12.8 (11.7–13.9)	8.3 (7.6–9.0)
Delaware	8.7 (6.3–11.1)	10.9 (6.2–15.7)	7.8 (4.9–10.8)
Kent	---	---	---
New Castle	6.6 (-14.3–27.6)	---	---
Sussex	---	---	---

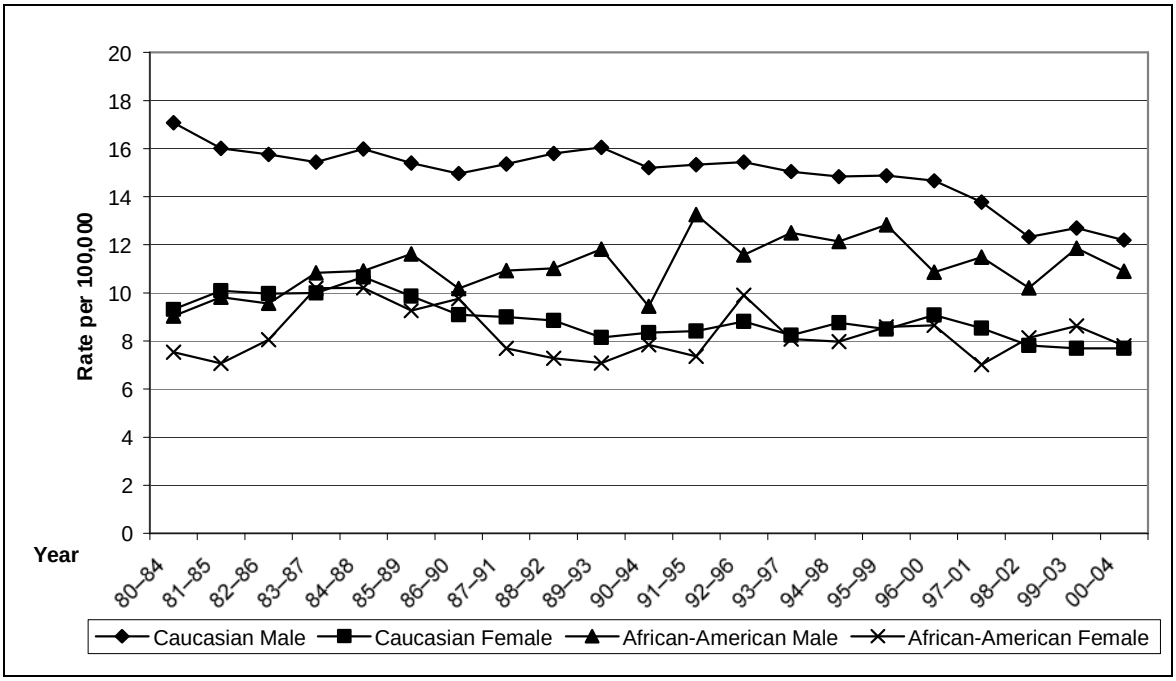
* = Rates are per 100,000 population and age-adjusted to the 2000 U.S. standard population.
--- = Rate based on fewer than 25 cases.
SOURCES: Delaware: Delaware Cancer Registry, Delaware's Division of Public Health, 2006; U.S.: Surveillance, Epidemiology, and End Results Program, National Cancer Institute, 2007.

Figure 8.1. Five-Year Average Age-Adjusted Leukemia Incidence Rates* in the United States (Estimates) and Delaware, by Sex: 1980–2004



* = Rates are per 100,000 population and are age-adjusted to the 2000 U.S. standard population.
SOURCES: Delaware: Delaware Cancer Registry, Delaware's Division of Public Health 2006; U.S.: Surveillance, Epidemiology, and End Results Program, National Cancer Institute, 2007.

Figure 8.2. Five-Year Average Age-Adjusted Leukemia Incidence Rates* in Delaware, by Race and Sex: 1980–2004



* = Rates are per 100,000 population and are age-adjusted to the 2000 U.S. standard population.
SOURCE: Delaware Cancer Registry, Delaware's Division of Public Health, 2006.

Table 8.3. Age-Specific Leukemia Incidence Rates* in Delaware, by Race and Sex: 2000–2004

Age Group	All Races			Caucasian			African-American		
	All	Male	Female	All	Male	Female	All	Male	Female
0–39	3.2	3.4	2.9	3.2	3.6	---	---	---	---
40–64	9.4	10.5	8.3	8.9	10.0	7.8	---	---	---
65–74	28.9	38.7	20.4	30.6	41.8	20.8	---	---	---
75–84	45.7	62.9	33.9	45.3	62.8	33.2	---	---	---
85+	73.1	---	---	74.6	---	---	---	---	---

* = Rates are per 100,000 population.
--- = Rate based on fewer than 25 cases.
SOURCE: Delaware Cancer Registry, Delaware's Division of Public Health, 2006.

Figure 8.3. Age-Specific Leukemia Incidence Rates in Delaware, by Race: 2000–2004

NOTE: Figure is not displayed because of patient confidentiality rules; the small number of cases precludes the display of data.

SOURCE: Delaware Cancer Registry, Delaware's Division of Public Health, 2006.

Leukemia Mortality

Table 8.4. Number of Leukemia Deaths in Delaware and Counties, by Race and Sex: 2000–2004

	All Races			Caucasian			African-American		
	All	Male	Female	All	Male	Female	All	Male	Female
Delaware	347	187	160	301	158	143	39	22	17
Kent	60	29	31	45	20	25	13	7	6
New Castle	204	116	88	181	99	82	19	13	6
Sussex	83	42	41	75	39	36	7	< 6	< 6

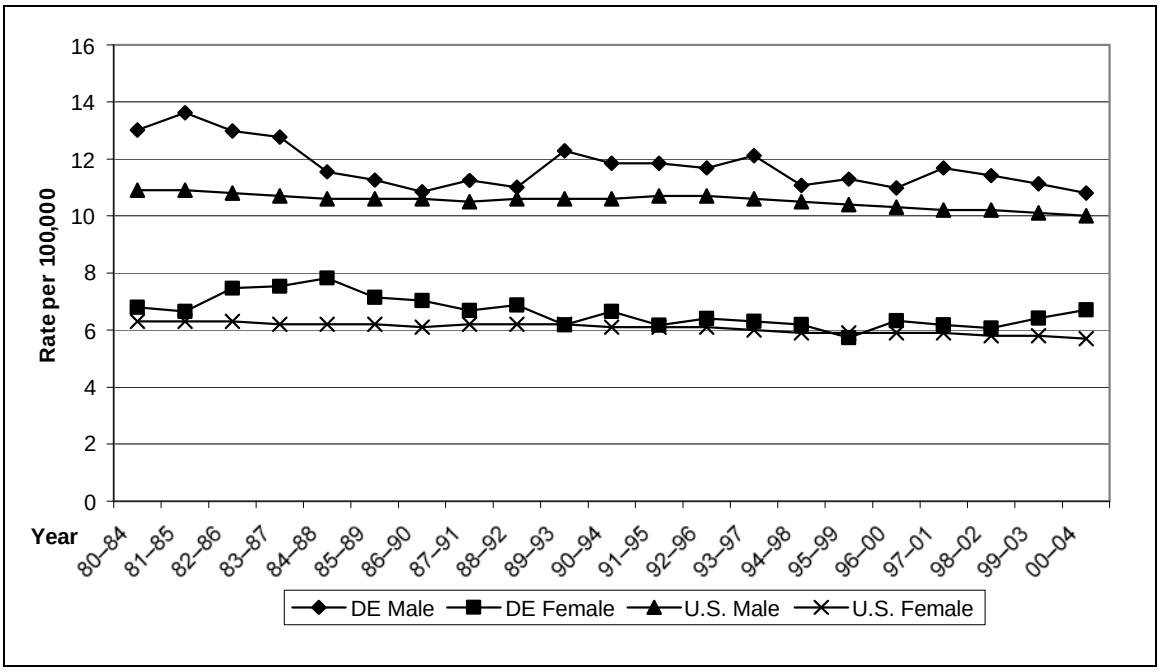
SOURCE: Delaware Health Statistics Center, 2006.

Table 8.5. Five-Year Average Age-Adjusted Leukemia Mortality Rates* in the United States, Delaware and Counties, by Race and Sex: 2000–2004

RACE AND REGION	SEX		
	All	Male	Female
ALL RACES			
United States	7.5 (7.4–7.5)	10.0 (9.9–10.1)	5.7 (5.7–5.8)
Delaware	8.3 (7.4–9.1)	10.8 (9.2–12.4)	6.7 (5.6–7.7)
Kent	9.8 (2.1–17.4)	12.1 (-4.4–28.5)	9.0 (0.4–17.6)
New Castle	8.4 (5.2–11.6)	11.9 (4.7–19.0)	6.3 (2.9–9.6)
Sussex	7.1 (2.4–11.7)	7.8 (0.6–15.0)	6.2 (0.4–12.0)
CAUCASIAN			
United States	7.7 (7.6–7.7)	10.3 (10.2–10.4)	5.8 (5.8–5.9)
Delaware	8.3 (7.4–9.3)	10.4 (8.7–12.1)	7.0 (5.9–8.2)
Kent	8.8 (0.9–16.8)	10.3 (-7.0–27.6)	8.4 (-0.7–17.6)
New Castle	8.8 (5.3–12.4)	11.8 (4.3–19.3)	7.1 (3.3–10.9)
Sussex	6.9 (2.0–11.8)	7.7 (-0.1–15.4)	6.0 (-0.01–12.1)
AFRICAN-AMERICAN			
United States	6.7 (6.5–6.8)	8.8 (8.5–9.0)	5.3 (5.2–5.5)
Delaware	7.0 (4.7–9.2)	10.7 (5.6–15.8)	5.2 (2.7–7.7)
Kent	13.2 (-11.2–37.6)	17.3 (-30.9–65.4)	10.6 (-16.3–37.5)
New Castle	5.0 (-2.5–12.5)	10.7 (-17.2–38.5)	2.6 (-1.5–6.7)
Sussex	7.2 (-6.2–20.7)	4.3 (-7.2–15.9)	9.0 (-11.7–29.6)

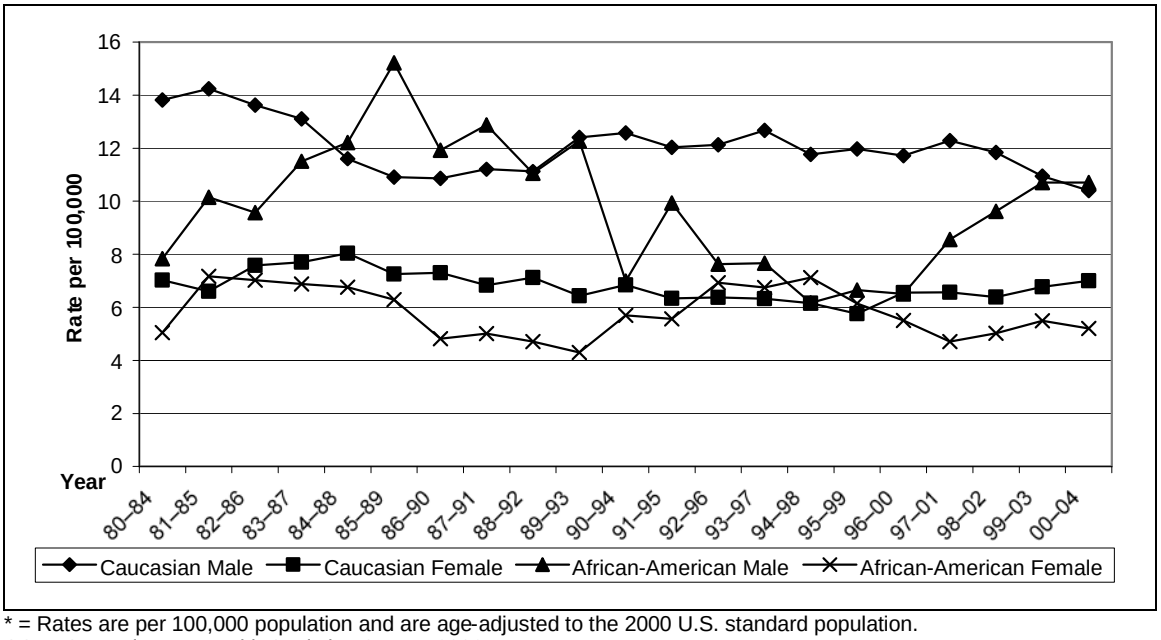
* = Rates are per 100,000 population and age-adjusted to the 2000 U.S. standard population.
--- = Rate based on fewer than 25 deaths.
SOURCES: Delaware: Delaware Health Statistics Center, 2006; U.S.: National Center for Health Statistics, 2007.

Figure 8.4. Five-Year Average Age-Adjusted Leukemia Mortality Rates* in the United States and Delaware, by Sex: 1980–2004



* = Rates are per 100,000 population and are age-adjusted to the 2000 U.S. standard population.
SOURCES: Delaware: Delaware Health Statistics Center, 2006; U.S.: National Center for Health Statistics, 2007.

Figure 8.5. Five-Year Average Age-Adjusted Leukemia Mortality Rates* in Delaware, by Race and Sex: 1980–2004



* = Rates are per 100,000 population and are age-adjusted to the 2000 U.S. standard population.
SOURCE: Delaware Health Statistics Center, 2006.

Table 8.6. Age-Specific Leukemia Mortality Rates* in Delaware, by Race and Sex: 2000–2004

Age Group	All Races			Caucasian			African-American		
	All	Male	Female	All	Male	Female	All	Male	Female
0–39	---	---	---	---	---	---	---	---	---
40–64	5.7	5.7	5.7	6.0	5.6	6.3	---	---	---
65–74	32.0	41.7	23.6	33.0	43.5	23.8	---	---	---
75–84	55.7	78.7	40.1	57.2	80.4	41.3	---	---	---
85+	90.1	---	69.2	91.9	---	75.4	---	---	---

* = Rates are per 100,000 population.
--- = Rate based on fewer than 25 deaths.
SOURCE: Delaware Health Statistics Center, 2006.

Figure 8.6. Age-Specific Leukemia Mortality Rates in Delaware, by Race: 2000–2004

NOTE: Figure is not displayed because of patient confidentiality rules; the small number of cases precludes the display of data.

SOURCE: Delaware Health Statistics Center, 2006.

9. Liver and Bile Duct Cancer

Risk Factors and Early Detection

Possible Risk Factors for Cancer of the Liver and Bile Duct

Studies have shown that the presence of one or more of the following risk factors increase an individual's chance of developing the disease:

- Chronic infection with hepatitis B virus and hepatitis C virus
- Cirrhosis of the liver due to abuse of alcohol, certain drugs and chemicals and infection with certain viruses or parasites
- Exposure to aflatoxin (usually from mold on grains)
- Males are more likely than females to develop liver cancer, especially Chinese-American males.
- Individuals with family history develop the disease more often than those with no family history.
- A higher occurrence of the disease among people ages 60 and older
- Medical history of primary sclerosing cholangitis, chronic ulcerative colitis, choledochal cysts and certain metabolic disorders (e.g., hemochromatosis—excess accumulation of iron in the liver)

Data Highlights

New Cancer Cases and Deaths (Tables 9.1 and 9.6)

- During 2000–2004, there were 192 cases of liver cancer, accounting for 0.9 percent of all newly diagnosed cancer cases in Delaware.
- A total of 142 liver cancer cases were diagnosed among male Delaware residents during 2000–2004 and 50 in females. This was 1.2 percent of all newly diagnosed cancers in males and 0.5 percent in females.
- The majority of liver cancer cases diagnosed during 2000–2004 were New Castle County residents (122 or 63.5 percent), followed by Sussex County residents (47 or 24.5 percent) and Kent County residents (23 or 12.0 percent).
- Caucasian residents of Delaware made up 80.7 percent of all liver cancer cases (155) during 2000–2004, and African-American residents made up 16.7 percent (32).
- During 2000–2004, 170 residents of Delaware died from liver cancer; 72.9 percent (124) were males, and 27.1 percent (46) were females.
- Deaths from liver cancer accounted for 1.9 percent of all cancer deaths during 2000–2004 in Delaware. Liver cancer accounted for 3.0 percent of all cancer deaths among males and 1.1 percent among females.
- Caucasians made up 80.0 percent (136) of decedents; 17.1 percent (29) of liver cancer deaths occurred among African-Americans.
- A total of 107 (62.9 percent) decedents were from New Castle County, 41 (24.1 percent) were from Sussex County and 22 (12.9 percent) were from Kent County.

Incidence and Mortality Rates (Tables 9.2 and 9.7)
Significant Findings *(The results reported in this section reflect rates in which the confidence intervals did not overlap. This means that differences in observed rates were unlikely to be due to chance variation.)*

- The age-adjusted liver cancer incidence rate was 4.5 per 100,000 in Delaware during 2000–2004. In 2000–2004, the age-adjusted rate for the United States (5.8 per 100,000) was 28.9 percent higher than the overall incidence rate for Delaware.

- The age-adjusted incidence rate for liver cancer was 7.3 per 100,000 for males and 2.1 per 100,000 in females in Delaware during 2000–2004. The rate for males in the United States (8.9 per 100,000) was 21.9 percent higher than the rate in Delaware.
- The regional disparities in age-adjusted incidence rates (Delaware versus the United States) were greater among African-American males. The rates in the United States were 95.5 percent higher (12.9 and 6.6 per 100,000, respectively).
- Similar to the pattern of age-adjusted incidence rates during 2000–2004, the age-adjusted mortality rates in Delaware were generally lower than the U.S. rates. Among females, the mortality rate in the United States was 63.2 percent higher than the rate in Delaware (3.1 and 1.9 per 100,000, respectively).
- The age-adjusted liver cancer mortality rates during 2000-04 for male Delawareans (6.6 per 100,000) were higher than for female Delawareans (1.9 per 100,000).
- In 2000–2004, the U.S. age-adjusted mortality rate for liver cancer was 22.5 percent higher than the rate for Delaware.
- The age-adjusted liver cancer mortality rate among Caucasian females in the United States was 64.7 percent higher than the rate among Caucasian females in Delaware during 2000–2004 (2.8 and 1.7 per 100,000, respectively).

Suggestive Findings *(The results reported in this section reflect rates in which the confidence intervals overlap. This means that observed differences may be due simply to chance variation.)*

- The overall liver cancer mortality rate was 21.1 percent higher among African-American Delaware residents (4.6 per 100,000) than among Caucasian residents (3.8 per 100,000) during 2000–2004.
- During 2000–2004, Caucasian males in Delaware and the United States had similar age-adjusted incidence rates (7.1 and 7.2 per 100,000, respectively). African-American females in Delaware and the United States also had similar rates (3.8 and 3.5 per 100,000, respectively).

Trends in Cancer Incidence and Mortality Rates (Figures 9.1–9.2 and 9.6–9.7)

- Delaware's liver cancer incidence rates among males have been lower than the U.S. estimates since 1980–84 and rates among females have generally been lower than the U.S. estimates since 1980–84, except for the period from 1988–92 to 1990–94.
- U.S. estimates showed that liver cancer incidence rates increased in males and females from 1980–84 to 2000–2004. The rate of increase among females was more gradual.
- In Delaware, the incidence rates for males increased from 1980–84 to 1990–94 and also from 1995–99 to 2000–2004. The rates for females decreased from 1997–2001 to 2000–2004.
- In Delaware, mortality rates among males increased from 1980–84 to 1985–89, then decreased overall from that time to 1989–93. In 1993–97 the mortality rate increased. The overall mortality rate among females has decreased since 1996–2000.

Age-Specific Incidence and Mortality Rates (Tables 9.3 and 9.8)

- The age-specific incidence and mortality rates for liver cancer increased steadily with age.

Stage at Diagnosis of Liver Cancer (Tables 9.4–9.5, Figures 9.4–9.5)

- In Delaware, somewhat fewer cancers were diagnosed at the local stage in 2000–2004 (36.0 percent) compared with the U.S. estimate (39.0 percent) for the same time period.
- A smaller proportion (20.6 percent) of cases were diagnosed at the regional stage in Delaware than the U.S. estimate (25.1 percent).
- Within the past 10 years, the percentage of regional- and local-stage cancer increased, whereas the proportion of distant-stage cancer decreased.
- In Delaware, more African-Americans were diagnosed with liver cancer in the local stage (37.9 percent) when compared with Caucasians (35.5 percent).

Liver and Bile Duct Cancer Incidence

Table 9.1. Number of Liver and Bile Duct Cancer Cases in Delaware and Counties, by Race and Sex: 2000–2004

	All Races			Caucasian			African-American		
	All	Male	Female	All	Male	Female	All	Male	Female
Delaware	192	142	50	155	118	37	32	21	11
Kent	23	19	< 6	20	16	< 6	< 6	< 6	0
New Castle	122	87	35	90	67	23	27	17	10
Sussex	47	36	11	45	35	10	< 6	< 6	< 6

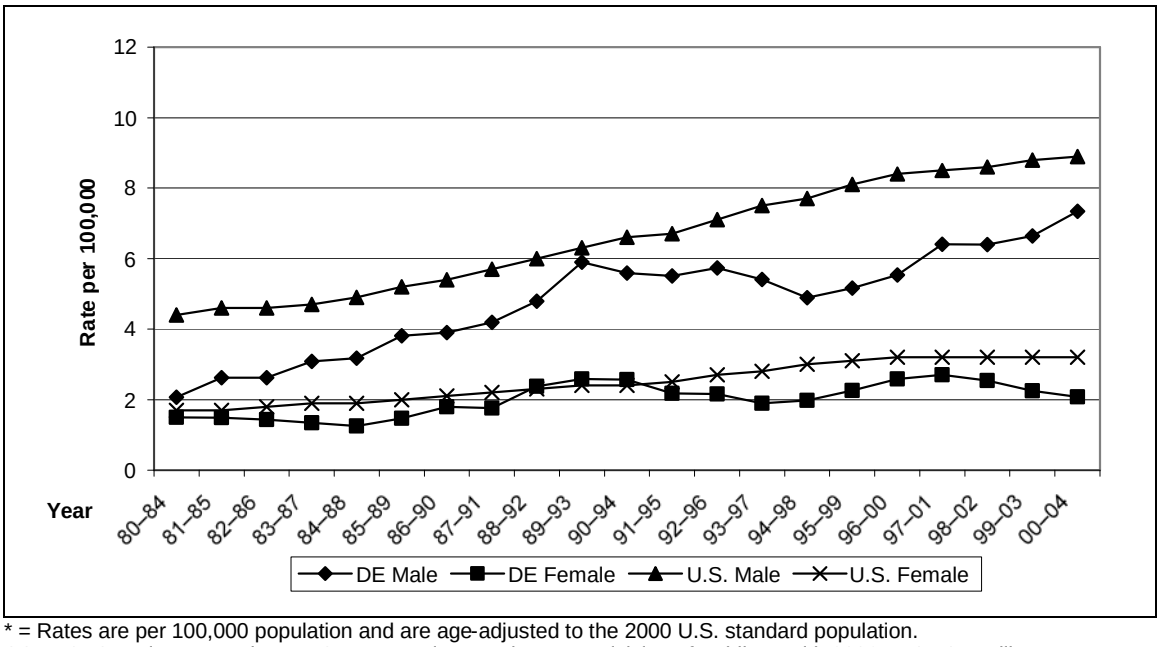
SOURCE: Delaware Cancer Registry, Delaware's Division of Public Health, 2006.

Table 9.2. Five-Year Average Age-Adjusted Liver and Bile Duct Cancer Incidence Rates* in the United States (Estimates), Delaware and Counties, by Race and Sex: 2000–2004

RACE AND REGION	SEX		
	All	Male	Female
ALL RACES			
United States	5.8 (5.7–5.9)	8.9 (8.7–9.1)	3.2 (3.1–3.3)
Delaware	4.5 (3.9–5.1)	7.3 (6.1–8.6)	2.1 (1.5–2.7)
Kent	---	---	---
New Castle	4.5 (2.6–6.4)	7.7 (4.0–11.5)	2.5 (0.4–4.6)
Sussex	4.2 (1.6–6.8)	7.0 (1.6–12.4)	---
CAUCASIAN			
United States	4.7 (4.5–4.8)	7.1 (6.9–7.4)	2.6 (2.5–2.7)
Delaware	4.3 (3.6–5.0)	7.2 (5.9–8.5)	1.8 (1.2–2.4)
Kent	---	---	---
New Castle	4.4 (2.3–6.5)	7.3 (3.2–11.4)	---
Sussex	4.5 (1.8–7.3)	7.6 (1.8–13.5)	---
AFRICAN-AMERICAN			
United States	7.8 (7.3–8.3)	12.9 (11.9–14.0)	3.8 (3.3–4.3)
Delaware	4.9 (3.2–6.7)	6.6 (3.7–9.6)	3.5 (1.4–5.5)
Kent	---	---	---
New Castle	6.2 (1.2–11.1)	---	---
Sussex	---	---	---

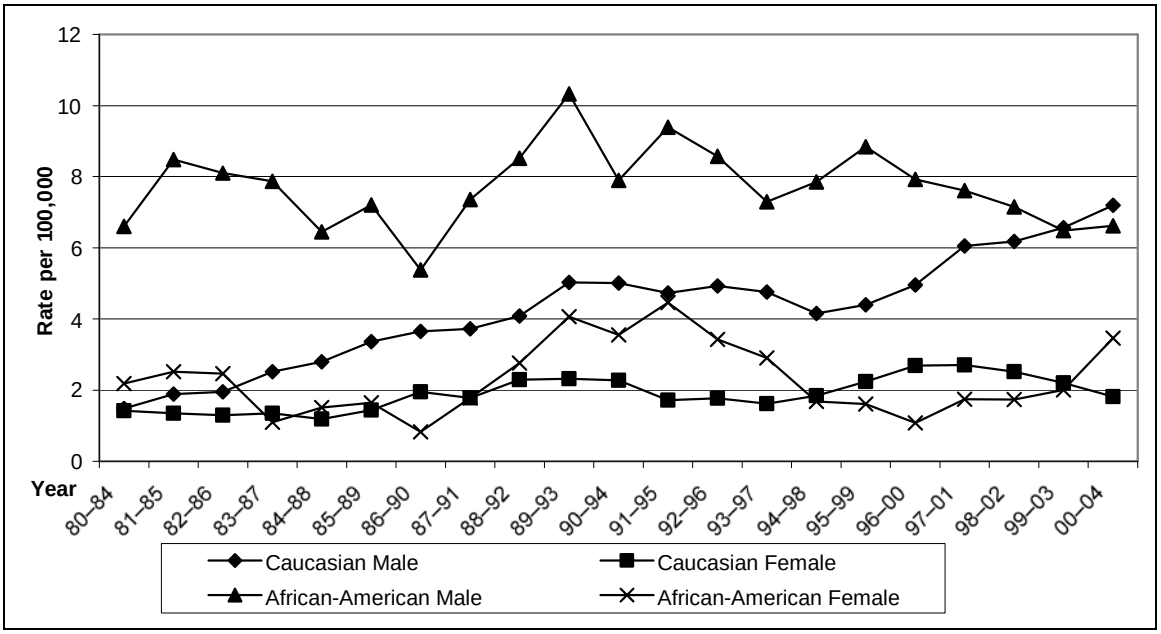
* = Rates are per 100,000 population and age-adjusted to the 2000 U.S. standard population.
--- = Rate based on fewer than 25 cases.
SOURCES: Delaware: Delaware Cancer Registry, Delaware's Division of Public Health, 2006; U.S.: Surveillance, Epidemiology, and End Results Program, National Cancer Institute, 2007.

Figure 9.1. Five-Year Average Age-Adjusted Liver and Bile Duct Cancer Incidence Rates* in the United States (Estimates) and Delaware, by Sex: 1980–2004



* = Rates are per 100,000 population and are age-adjusted to the 2000 U.S. standard population.
SOURCES: Delaware: Delaware Cancer Registry, Delaware's Division of Public Health 2006; U.S.: Surveillance, Epidemiology, and End Results Program, National Cancer Institute 2007.

Figure 9.2. Five-Year Average Age-Adjusted Liver and Bile Duct Cancer Incidence Rates* in Delaware, by Race and Sex: 1980–2004



* = Rates are per 100,000 population and are age-adjusted to the 2000 U.S. standard population.
SOURCE: Delaware Cancer Registry, Delaware's Division of Public Health, 2006.

Table 9.3. Age-Specific Liver and Bile Duct Cancer Incidence Rates* in Delaware, by Race and Sex: 2000–2004

Age Group	All Races			Caucasian			African-American		
	All	Male	Female	All	Male	Female	All	Male	Female
0–39	---	---	---	---	0.0	---	---	---	0.0
40–64	6.6	11.8	1.8	6.1	11.0	---	---	---	---
65–74	18.2	26.0	11.5	17.9	28.2	---	---	---	---
75–84	20.7	36.7	9.8	21.5	39.5	---	---	---	---
85+	---	---	---	---	---	---	0.0	0.0	0.0

* = Rates are per 100,000 population.
--- = Rate based on fewer than 25 cases.
SOURCE: Delaware Cancer Registry, Delaware's Division of Public Health, 2006.

Figure 9.3. Age-Specific Liver and Bile Duct Cancer Incidence Rates in Delaware, by Race: 2000–2004

NOTE: Figure is not displayed because of patient confidentiality rules; the small number of cases precludes the display of data.

SOURCE: Delaware Cancer Registry, Delaware's Division of Public Health, 2006.

Liver and Bile Duct Cancer by Stage at Diagnosis

Table 9.4. Number of Liver Cancer and Bile Duct Cases in Delaware, by Stage at Diagnosis, Race and Sex: 2000–2004

Stage at Diagnosis	All Races			Caucasian			African-American		
	All	Male	Female	All	Male	Female	All	Male	Female
Local	63	53	10	50	42	8	11	9	< 6
Regional	36	25	11	23	16	7	11	8	< 6
Distant	32	25	7	30	25	< 6	< 6	0	< 6
Unknown	44	25	19	38	23	15	< 6	< 6	< 6
Total	175	128	47	141	106	35	29	19	10

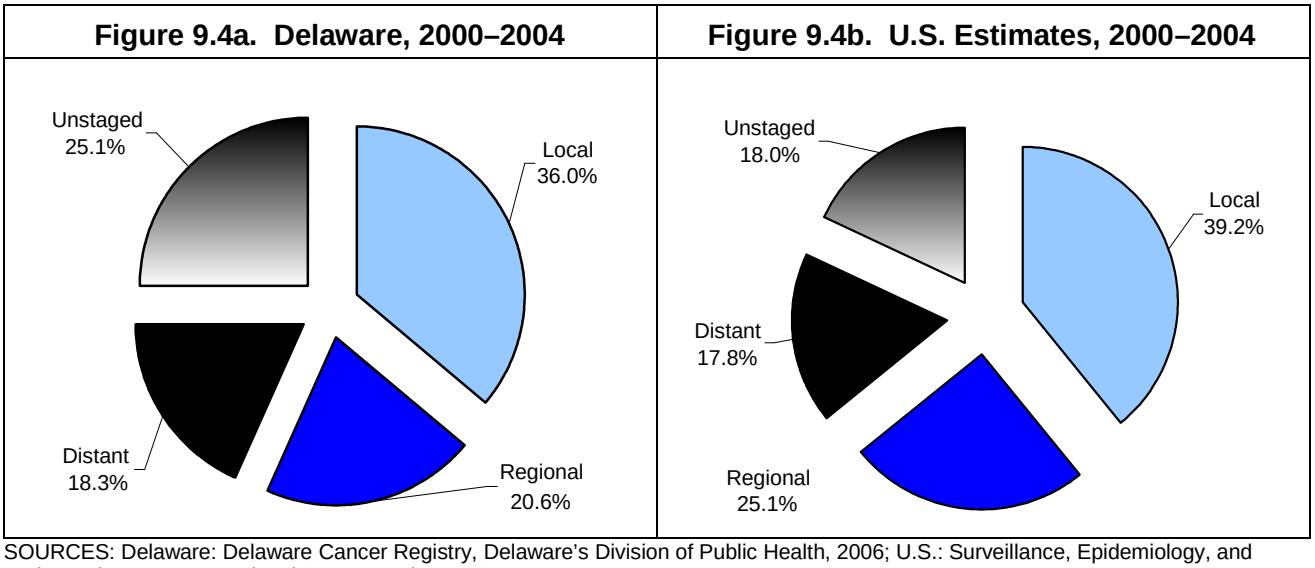
SOURCE: Delaware Cancer Registry, Delaware's Division of Public Health, 2006.

Table 9.5. Percentage of Liver and Bile Duct Cancer Cases in Delaware, by Stage at Diagnosis, Race and Sex: 2000–2004

Stage at Diagnosis	All Races			Caucasian			African-American		
	All	Male	Female	All	Male	Female	All	Male	Female
Local	36.0	41.4	21.3	35.5	39.6	22.9	37.9	47.4	---
Regional	20.6	19.5	23.4	16.3	15.1	20.0	37.9	42.1	---
Distant	18.3	19.5	14.9	21.3	23.6	---	---	0.0	---
Unknown	25.1	19.5	40.4	27.0	21.7	42.9	---	---	---
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

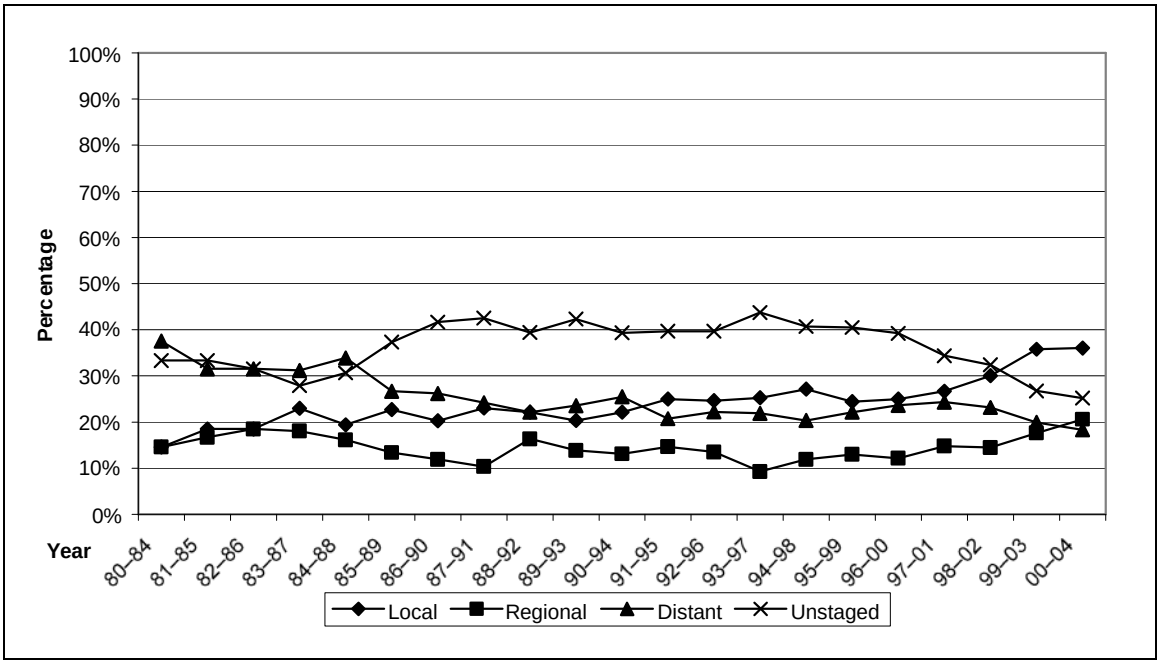
--- = Percentage based on fewer than six cases.
SOURCE: Delaware Cancer Registry, Delaware's Division of Public Health, 2006.

Figure 9.4. Percentage of Liver and Bile Duct Cancer Cases in Delaware and the United States (Estimates), by Stage at Diagnosis: 2000–2004



SOURCES: Delaware: Delaware Cancer Registry, Delaware's Division of Public Health, 2006; U.S.: Surveillance, Epidemiology, and End Results Program, National Cancer Institute, 2007.

Figure 9.5. Percentage of Liver and Bile Duct Cancer Cases in Delaware, by Stage at Diagnosis: 1980–2004



SOURCE: Delaware Cancer Registry, Delaware's Division of Public Health, 2006.

Table 9.6. Number of Liver and Bile Duct Cancer Deaths in Delaware and Counties, by Race and Sex: 2000–2004

	All Races			Caucasian			African-American		
	All	Male	Female	All	Male	Female	All	Male	Female
Delaware	170	124	46	136	100	36	29	22	7
Kent	22	17	< 6	18	14	< 6	< 6	< 6	< 6
New Castle	107	76	31	81	56	25	21	18	< 6
Sussex	41	31	10	37	30	7	< 6	< 6	< 6

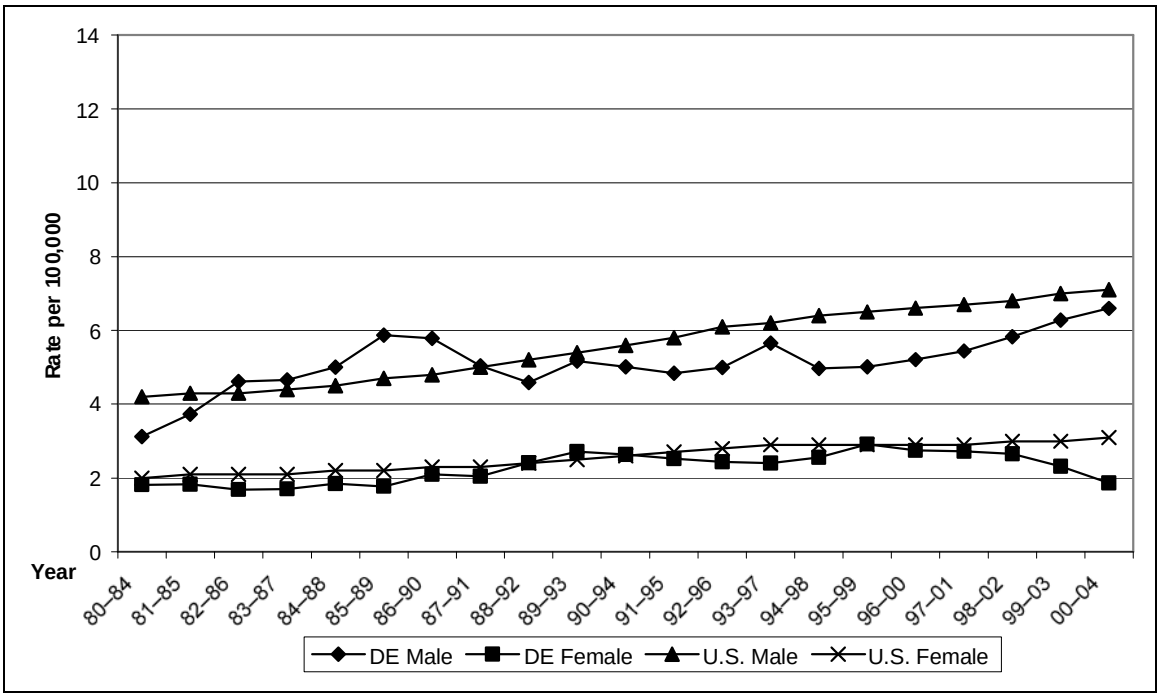
SOURCE: Delaware Health Statistics Center, 2006

Table 9.7. Five-Year Average Age-Adjusted Liver and Bile Duct Cancer Mortality Rates* in the United States, Delaware and Counties, by Race and Sex: 2000–2004

RACE AND REGION	SEX		
	All	Male	Female
ALL RACES			
United States	4.9 (4.8–4.9)	7.1 (7.1–7.2)	3.1 (3.0–3.1)
Delaware	4.0 (3.4–4.6)	6.6 (5.4–7.8)	1.9 (1.3–2.4)
Kent	---	---	---
New Castle	4.3 (2.2–6.5)	7.1 (2.4–11.7)	2.2 (0.0–4.4)
Sussex	3.6 (1.0–6.2)	5.8 (1.9–9.6)	---
CAUCASIAN			
United States	4.5 (4.4–4.5)	6.5 (6.4–6.6)	2.8 (2.8–2.9)
Delaware	3.8 (3.1–4.4)	6.3 (5.0–7.5)	1.7 (1.1–2.2)
Kent	---	---	---
New Castle	3.9 (1.6–6.2)	6.4 (1.4–11.4)	2.0 (-0.3–4.4)
Sussex	3.6 (1.1–6.1)	6.2 (2.0–10.4)	---
AFRICAN-AMERICAN			
United States	6.5 (6.3–6.6)	10.0 (9.7–10.2)	3.9 (3.7–4.0)
Delaware	4.6 (2.9–6.4)	---	---
Kent	---	---	---
New Castle	---	---	---
Sussex	---	---	---

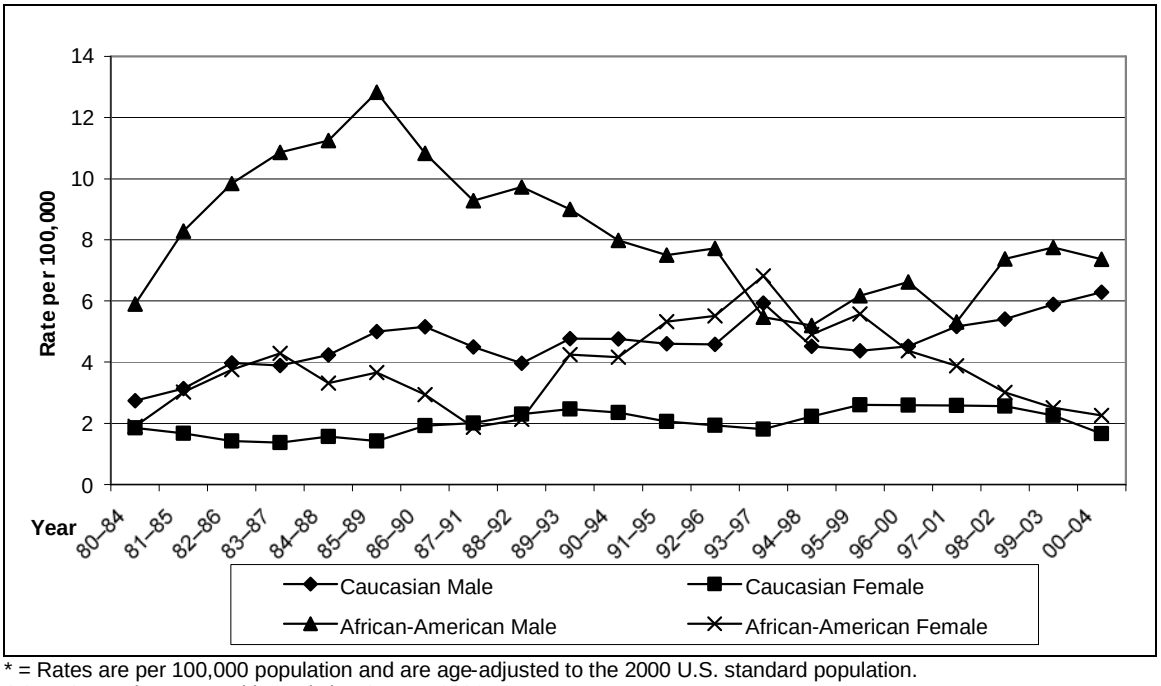
* = Rates are per 100,000 population and age-adjusted to the 2000 U.S. standard population.
--- = Rate based on fewer than 25 deaths.
SOURCES: Delaware: Delaware Health Statistics Center, 2006; U.S.: National Center for Health Statistics, 2007.

Figure 9.6. Five-Year Average Age-Adjusted Liver and Bile Duct Cancer Mortality Rates* in the United States and Delaware, by Sex: 1980–2004



* = Rates are per 100,000 population and are age-adjusted to the 2000 U.S. standard population.
SOURCES: Delaware: Delaware Health Statistics Center, 2006; U.S.: National Center for Health Statistics, 2007.

Figure 9.7. Five-Year Average Age-Adjusted Liver and Bile Duct Cancer Mortality Rates* in Delaware, by Race and Sex: 1980–2004



* = Rates are per 100,000 population and are age-adjusted to the 2000 U.S. standard population.
SOURCE: Delaware Health Statistics Center, 2006.

Table 9.8. Age-Specific Liver and Bile Duct Cancer Mortality Rates* in Delaware, by Race and Sex: 2000–2004

Age Group	All Races			Caucasian			African-American		
	All	Male	Female	All	Male	Female	All	Male	Female
0–39	---	---	---	0.0	0.0	0.0	---	---	0.0
40–64	5.2	9.7	---	4.9	9.0	---	---	---	---
65–74	13.7	20.8	---	13.1	---	---	---	---	---
75–84	20.7	34.1	---	20.9	---	---	---	0.0	---
85+	---	---	---	---	---	---	---	---	---

* = Rates are per 100,000 population.
--- = Rate based on fewer than 25 deaths.
SOURCE: Delaware Health Statistics Center, 2006.

Figure 9.8. Age-Specific Liver and Bile Duct Cancer Mortality Rates in Delaware, by Race: 2000–2004

NOTE: Figure is not displayed because of patient confidentiality rules; the small number of cases precludes the display of data.

SOURCE: Delaware Cancer Registry, Delaware's Division of Public Health, 2006.

10. Lung and Bronchial Cancer

Risk Factors and Early Detection

Risk Factors for Lung Cancer

- Tobacco use: cigarette, cigar and pipe smoking. (Eighty-seven percent of lung cancers are estimated to be caused by smoking cigarettes, cigars or pipes.)
- Occupational or environmental exposures to asbestos, chromium, mustard gas, nickel or other metals
- Exposure to secondhand smoke
- Exposure to radon gas
- Marijuana use
- Radiation therapy to the lungs
- Personal history of lung cancer

Possible Risk Factors for Lung Cancer

- Low intake of fruits and vegetables

Early Detection of Lung Cancer

There is currently no effective screening test for lung cancer. ACS recommends that people at higher risk for lung cancer be aware of their risk.

Cigarette smoking is recognized as a risk factor in the development of numerous other cancers, including cervical, esophagus, kidney, larynx, oral cavity and pharynx, pancreas and urinary bladder. Although this document is about cancer in Delaware, it is important to note that cigarette smoking is the single most preventable cause of both morbidity and mortality from chronic diseases in the United States.

In the BRFSS survey, a “current cigarette smoker” was defined as a respondent who answered “every day” or “some days” to the question: “Do you now smoke cigarettes every day, some days, or not at all?”

Current Trends in Smoking in Delaware and the United States

Note: Current trends in smoking may be predictive of cancer rates in the 2030s. In the 1980s (i.e., the time period relevant to current lung and bronchial cancer rates), Delaware had smoking prevalence rates among the highest in the country; about one-third of Delaware adults smoked in the period 1979–82. This rate declined to about 25–26 percent in the 1990s and is now approaching 20 percent.

Smoking Trends in Delaware in 2006

- The prevalence of cigarette smoking in Delaware (21.7 percent) was comparable with prevalence in the United States (20.0 percent).
- More males in Delaware (23.3 percent) than females (20.0 percent) were cigarette smokers, and the same was true for the United States (22.0 percent and 18.4 percent, respectively).
- In Delaware, the prevalence of smoking is comparable between African-Americans and Caucasians: 22.1 and 20.0 percent, respectively. For the United States, 19.6 percent of African-Americans and 22.3 percent of Caucasians were current smokers.
- The prevalence of cigarette smoking was similar across all age groups between the ages of 18 and 54 in Delaware, with rates ranging from 25.3 to 27.3 percent. Prevalence was somewhat lower in the 55–64 age group (14.8 percent) and lowest in the 65 and older age group (8.6 percent).

- Smoking was highest in prevalence among those Delaware residents with less than a high school education (27.7 percent), followed by those with a high school education (22.1 percent), and it was lowest among college graduates (11.6 percent). U.S. data similarly showed that the prevalence of cigarette smoking decreased as level of education increased.
- In Delaware, smoking prevalence was comparable across all income groups under $15,000 and between $25,000 and $34,999. Smoking prevalence in Delaware was highest among residents with incomes between $15,000 and $24,999 (35.2 percent). Prevalence was lowest in the $50,000 and greater income groups (19.4 percent).

Data Highlights

New Cancer Cases and Deaths (Tables 10.1 and 10.6)

- Lung cancer was the second most commonly diagnosed cancer among both males and females in Delaware.
- The 3,307 lung cancer cases during 2000–2004 in Delaware accounted for 15.5 percent of all cancer cases.
- The majority of lung cancer cases diagnosed during 2000–2004 were New Castle County residents (1,834 or 55.5 percent), followed by Sussex County (949 or 28.7 percent) and Kent County (524 or 15.8 percent) residents.
- Fifty-five percent (1,815) of lung cancer cases were males, and 45.1 percent (1,492) were females during 2000–2004.
- Caucasian residents made up 83.8 percent (2,772) of lung cancer cases in 2000–2004, and African-American residents made up 14.6 percent (483); 26 cases were Hispanic residents, and 25 were from other race groups.
- Lung cancer was a major cause of cancer deaths among Delaware males and females. It accounted for about 30.3 percent of all cancer deaths during 2000–2004.
- During 2000–2004, 2,588 Delaware residents died from lung cancer; 1,458 (56.3 percent) deaths occurred among males and 1,130 (43.7 percent) among females.
- Caucasian residents made up 2,195 (84.8 percent) decedents, and African-American residents made up 359 (13.9 percent); Hispanic residents made up 16 decedents, and 18 were from other race groups.
- Most decedents (1,377 or 53.2 percent) were residents of New Castle County, followed by Sussex County (755 or 29.2 percent) and Kent County (456 or 17.6 percent).

Incidence and Mortality Rates (Tables 10.2 and 10.7)

Significant Findings *(The results reported in this section reflect rates in which the confidence intervals did not overlap. This means that differences in observed rates were unlikely to be due to chance variation.)*

- Lung cancer incidence in Delaware was 54 percent higher among males (96.4 per 100,000) than females (62.6 per 100,000) in 2000–2004.
- Delaware's overall lung cancer incidence rate was 22.1 percent higher than the U.S. estimate in 2000–2004 (76.9 and 63.0 per 100,000, respectively).

- Age-adjusted incidence rates among male Delawareans were racially disparate: African-American males (114.1 per 100,000) had a 22.2 percent higher incidence rate, compared with Caucasian males (93.4 per 100,000).
- The 2000–2004 lung cancer mortality rate was 68.8 percent higher among males (79.0 per 100,000) than females (46.8 per 100,000) in Delaware.

Suggestive Findings *(The results reported in this section reflect rates in which the confidence intervals overlap. This means that observed differences may be due simply to chance variation.)*

- Lung cancer mortality was 10.8 percent higher among African-Americans (65.8 per 100,000) than among Caucasians (59.4 per 100,000) in Delaware during 2000–2004.
- Kent and Sussex Counties had similar overall lung cancer incidence rates (81.8 and 79.1 per 100,000, respectively); the rate in New Castle County was somewhat lower (74.6 per 100,000).
- Among males overall, incidence was highest in Kent County (106.0 per 100,000); among Delaware females overall, rates varied little across the three counties.
- African-Americans in Delaware had a higher lung cancer incidence rate (85.6 per 100,000 in 2000–2004) than Caucasians (75.2 per 100,000).
- Overall lung cancer mortality was highest in Kent County during 2000–2004 (72.0 per 100,000). However, African-American males living in Sussex County had a higher lung cancer mortality rate (134.6 per 100,000) than any other race/sex group in any county.

Trends in Cancer Incidence and Mortality (Figures 10.1–10.2 and 10.6–10.7)

- Lung cancer incidence in Delaware has decreased in recent years among males, particularly among African-Americans.
- Lung cancer incidence rates in Delaware among females, however, increased or remained the same.
- Lung cancer mortality rates have decreased among Caucasian and African-American males in Delaware and the United States since 1990–94.
- Delaware's mortality rates were higher than those for the United States for both males and females. In 2000–2004, the rates were 10.4 percent higher than the overall U.S. rates.

Age-Specific Incidence and Mortality Rates (Tables 10.3 and 10.8, Figures 10.3 and 10.8)

- The incidence of lung cancer increased as age increased, with a peak incidence at ages 75–84.
- The age-specific mortality rates from lung cancer peaked at ages 75–84 among both males and females in Delaware.

Stage at Diagnosis of Lung Cancer (Tables 10.4–10.5, Figures 10.4–10.5)

- A total of 2,225 cases (72.2 percent of all lung cancers) were diagnosed in the late stages (i.e., regional or distant).
- In Delaware, a greater proportion of lung cancers were diagnosed in the local stage (18.9 percent), compared with the U.S. estimate (16.2 percent). Fewer lung cancers were diagnosed in the distant stage in Delaware (45.0 percent) than in the U.S. estimate (53.6 percent).
- African-American females were the most likely (22.9 percent) and African-American males the least likely (16.3 percent) to be diagnosed with lung cancer in the local stage.
- Caucasians were somewhat less likely than African-Americans to be diagnosed with lung cancer in the late stages (71.6 percent and 74.7 percent, respectively).

Table 10.1. Number of Lung and Bronchial Cancer Cases in Delaware and Counties, by Race and Sex: 2000–2004

	All Races			Caucasian			African-American		
	All	Male	Female	All	Male	Female	All	Male	Female
Delaware	3,307	1,815	1,492	2,772	1,516	1,256	483	269	214
Kent	524	299	225	445	253	192	73	42	31
New Castle	1,834	963	871	1,476	771	705	323	170	153
Sussex	949	553	396	851	492	359	87	57	30

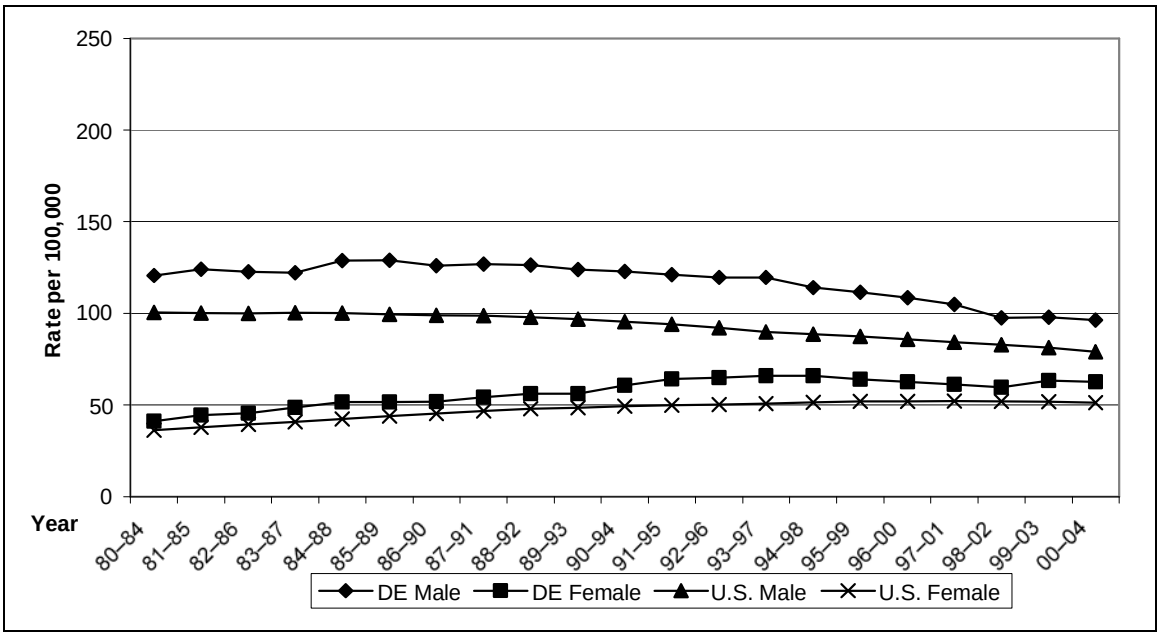
SOURCE: Delaware Cancer Registry, Delaware's Division of Public Health, 2006.

Table 10.2. Five-Year Average Age-Adjusted Lung and Bronchial Cancer Incidence Rates* in the United States (Estimates), Delaware and Counties, by Race and Sex: 2000–2004

RACE AND REGION	SEX		
	All	Male	Female
ALL RACES			
United States	63.0 (62.5–63.4)	79.1 (78.4–79.9)	51.3 (50.8–51.8)
Delaware	76.9 (74.3–79.5)	96.4 (91.9–100.9)	62.6 (59.4–65.8)
Kent	81.8 (65.9–98.7)	106.0 (72.9–139.0)	63.7 (44.9–82.5)
New Castle	74.6 (66.2–82.9)	91.3 (75.1–107.5)	63.0 (53.3–72.8)
Sussex	79.1 (66.6–91.5)	101.2 (77.5–125.0)	61.6 (47.5–75.7)
CAUCASIAN			
United States	63.8 (63.3–64.2)	78.3 (77.5–79.1)	53.4 (52.8–54.0)
Delaware	75.2 (72.4–78.0)	93.4 (88.7–98.2)	61.9 (58.5–65.3)
Kent	84.0 (65.5–102.5)	108.0 (71.7–144.3)	66.1 (45.3–86.8)
New Castle	71.8 (62.8–80.7)	87.1 (70.1–104.1)	61.3 (50.8–71.8)
Sussex	77.8 (64.9–90.6)	98.0 (73.5–122.5)	61.9 (47.3–76.6)
AFRICAN-AMERICAN			
United States	78.2 (76.6–80.0)	110.7 (107.5–114.0)	56.5 (54.6–58.4)
Delaware	85.6 (77.8–93.4)	114.1 (99.5–128.6)	66.1 (57.1–75.0)
Kent	74.8 (28.9–120.8)	98.3 (12.3–184.4)	56.2 (8.0–104.4)
New Castle	86.3 (60.7–111.9)	109.1 (53.8–164.3)	71.5 (42.5–100.5)
Sussex	91.2 (41.2–141.3)	143.6 (40.8–246.4)	54.1 (4.8–103.4)

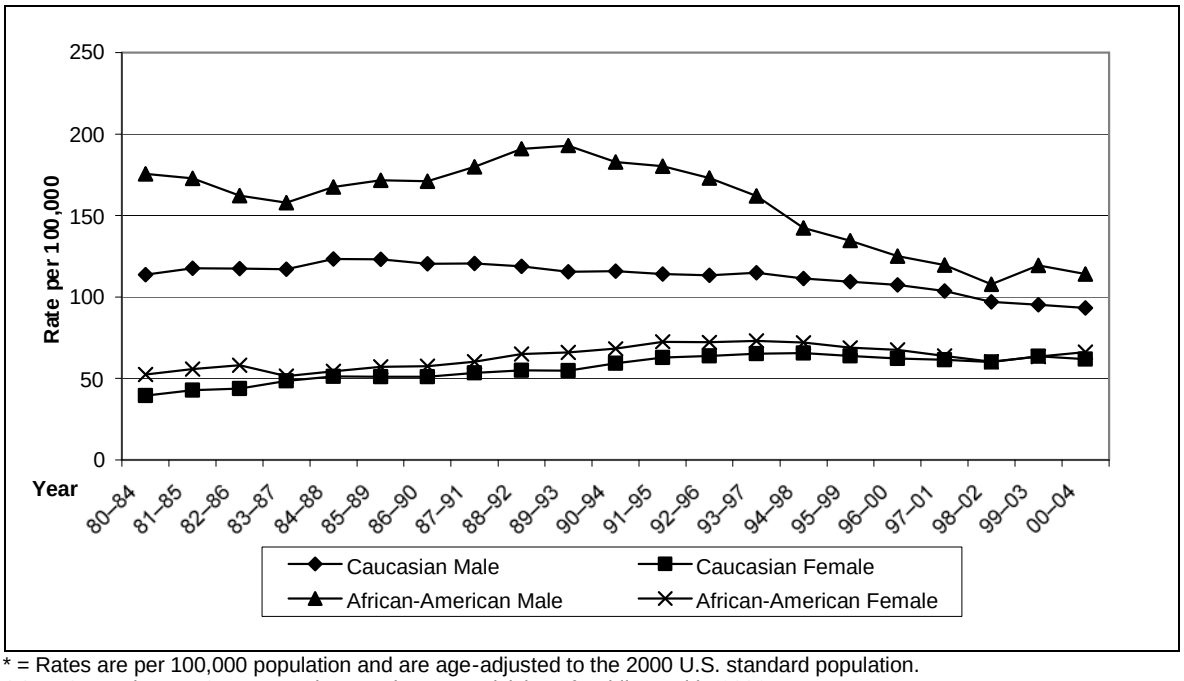
* = Rates are per 100,000 population and age-adjusted to the 2000 U.S. standard population.
SOURCES: Delaware: Delaware Cancer Registry, Delaware's Division of Public Health, 2006; U.S.: Surveillance, Epidemiology, and End Results Program, National Cancer Institute, 2007.

Figure 10.1. Five-Year Average Age-Adjusted Lung and Bronchial Cancer Incidence Rates* in the United States (Estimates) and Delaware, by Sex: 1980–2004



* = Rates are per 100,000 population and are age-adjusted to the 2000 U.S. standard population.
SOURCES: Delaware: Delaware Cancer Registry, Delaware's Division of Public Health, 2006; U.S.: Surveillance, Epidemiology, and End Results Program, National Cancer Institute, 2007.

Figure 10.2. Five-Year Average Age-Adjusted Lung and Bronchial Cancer Incidence Rates* in Delaware, by Race and Sex: 1980–2004



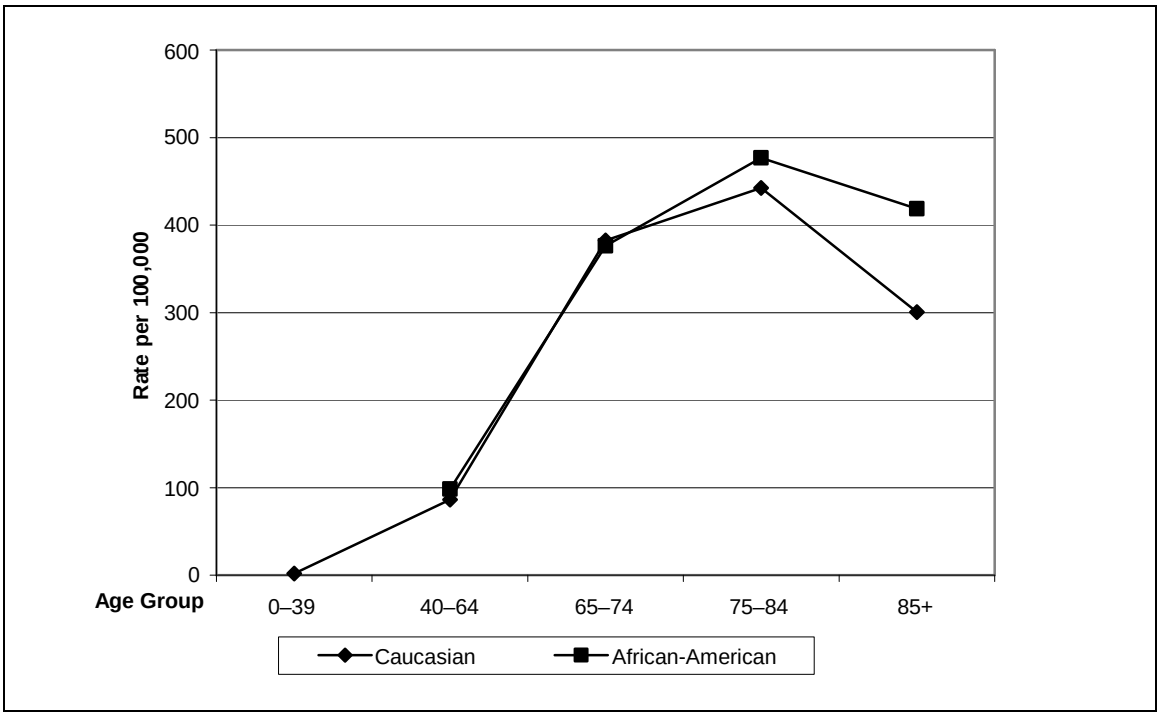
* = Rates are per 100,000 population and are age-adjusted to the 2000 U.S. standard population.
SOURCE: Delaware Cancer Registry, Delaware's Division of Public Health, 2006.

Table 10.3. Age-Specific Lung and Bronchial Cancer Incidence Rates* in Delaware, by Race and Sex: 2000–2004

Age Group	All Races			Caucasian			African-American		
	All	Male	Female	All	Male	Female	All	Male	Female
0–39	1.6	---	---	1.7	---	---	---	---	---
40–64	88.1	103.4	73.8	86.2	98.8	74.2	98.4	128.7	72.8
65–74	383.1	460.6	316.6	382.6	455.9	318.6	376.1	462.4	310.0
75–84	446.9	583.5	354.1	442.3	569.9	354.3	476.8	701.3	341.0
85+	314.6	556.2	217.2	300.5	548.3	199.4	418.8	---	---

* = Rates are per 100,000 population.
--- = Rate based on fewer than 25 cases.
SOURCE: Delaware Cancer Registry, Delaware's Division of Public Health, 2006.

Figure 10.3. Age-Specific Lung and Bronchial Cancer Incidence Rates in Delaware, by Race: 2000–2004



NOTE: Rates for African-Americans ages 0–39 are not displayed due to patient confidentiality rules.
SOURCE: Delaware Cancer Registry, Delaware's Division of Public Health, 2006.

Lung and Bronchial Cancer by Stage at Diagnosis

Table 10.4. Number of Lung and Bronchial Cancer Cases in Delaware, by Stage at Diagnosis, Race and Sex: 2000–2004

Stage at Diagnosis	All Races			Caucasian			African-American		
	All	Male	Female	All	Male	Female	All	Male	Female
Local	583	280	303	492	236	256	87	42	45
Regional	838	447	391	694	363	331	133	77	56
Distant	1,387	831	556	1,154	692	462	205	123	82
Unknown	274	141	133	241	123	118	28	15	13
Total	3,082	1,699	1,383	2,581	1,414	1167	453	257	196

SOURCE: Delaware Cancer Registry, Delaware's Division of Public Health, 2006.

Table 10.5. Percentage of Lung and Bronchial Cancer Cases in Delaware, by Stage at Diagnosis, Race and Sex: 2000–2004

Stage at Diagnosis	All Races			Caucasian			African-American		
	All	Male	Female	All	Male	Female	All	Male	Female
Local	18.9	16.5	21.9	19.1	16.7	21.9	19.2	16.3	22.9
Regional	27.2	26.3	28.3	26.9	25.7	28.4	29.4	29.9	28.6
Distant	45.0	48.9	40.2	44.7	48.9	39.6	45.3	47.9	41.8
Unknown	8.9	8.3	9.6	9.3	8.7	10.1	6.2	5.8	6.6
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

SOURCE: Delaware Cancer Registry, Delaware's Division of Public Health, 2006.

Figure 10.4. Percentage of Lung and Bronchial Cancer Cases in Delaware and the United States (Estimates), by Stage at Diagnosis: 2000–2004

Figure 10.4a. Delaware: 2000–2004

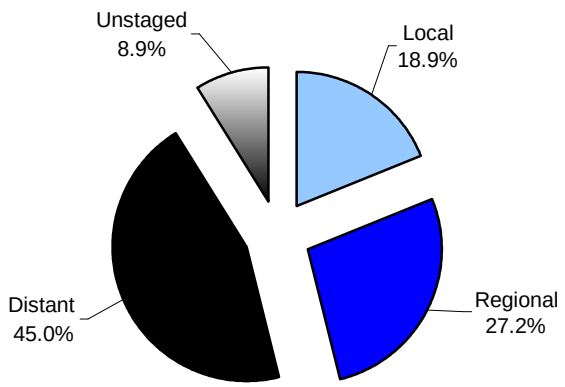
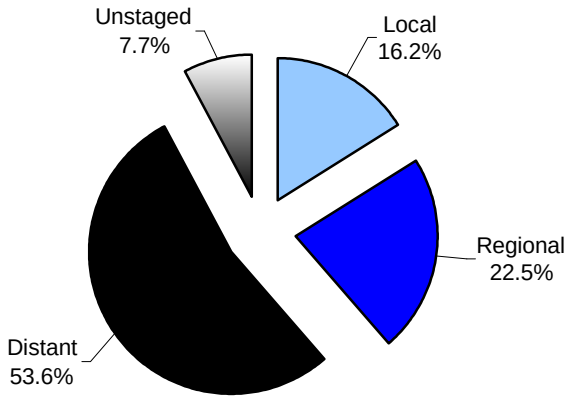
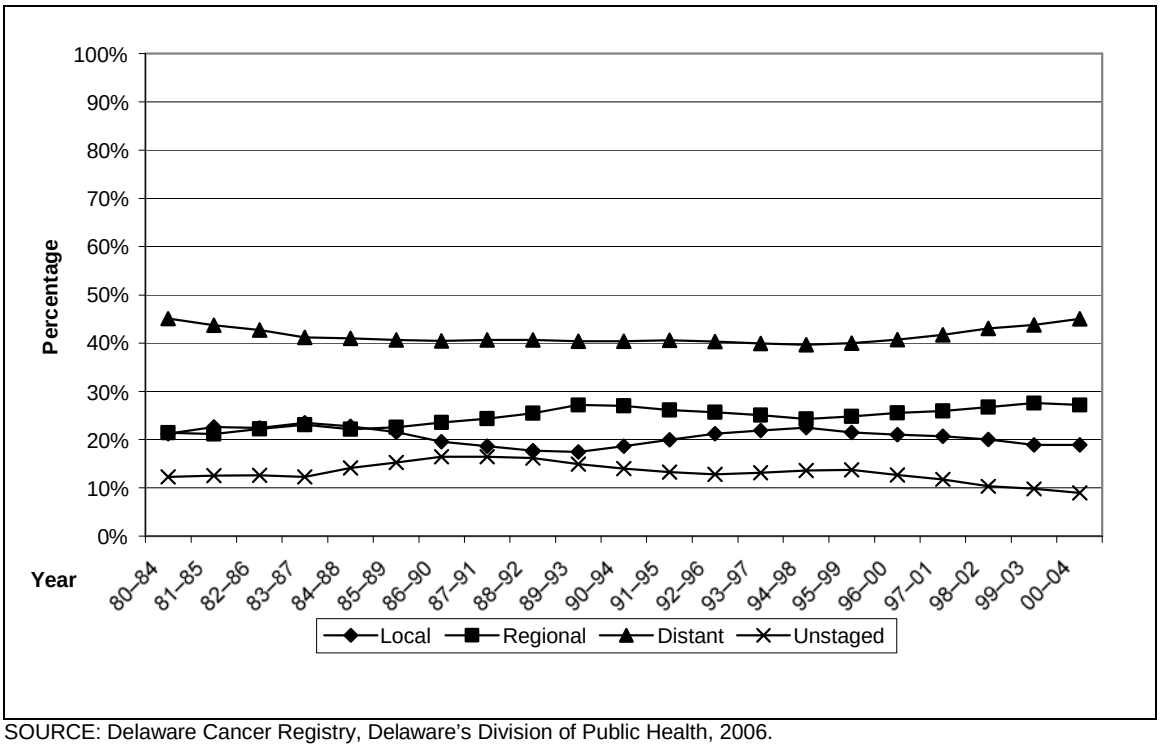


Figure 10.4b. U.S. Estimates: 2000–2004



SOURCES: Delaware: Delaware Cancer Registry, Delaware's Division of Public Health, 2006; U.S.: Surveillance, Epidemiology, and End Results Program, National Cancer Institute, 2007.

Figure 10.5. Percentage of Lung and Bronchial Cancer Cases in Delaware, by Stage at Diagnosis: 1980–2004



SOURCE: Delaware Cancer Registry, Delaware's Division of Public Health, 2006.

Lung and Bronchial Cancer Mortality

Table 10.6. Number of Lung and Bronchial Cancer Deaths in Delaware and Counties, by Race and Sex: 2000–2004

	All Races			Caucasian			African-American		
	All	Male	Female	All	Male	Female	All	Male	Female
Delaware	2,588	1,458	1,130	2,195	1,227	968	359	211	148
Kent	456	279	177	389	232	157	62	43	19
New Castle	1,377	746	631	1,143	617	526	214	116	98
Sussex	755	433	322	663	378	285	83	52	31

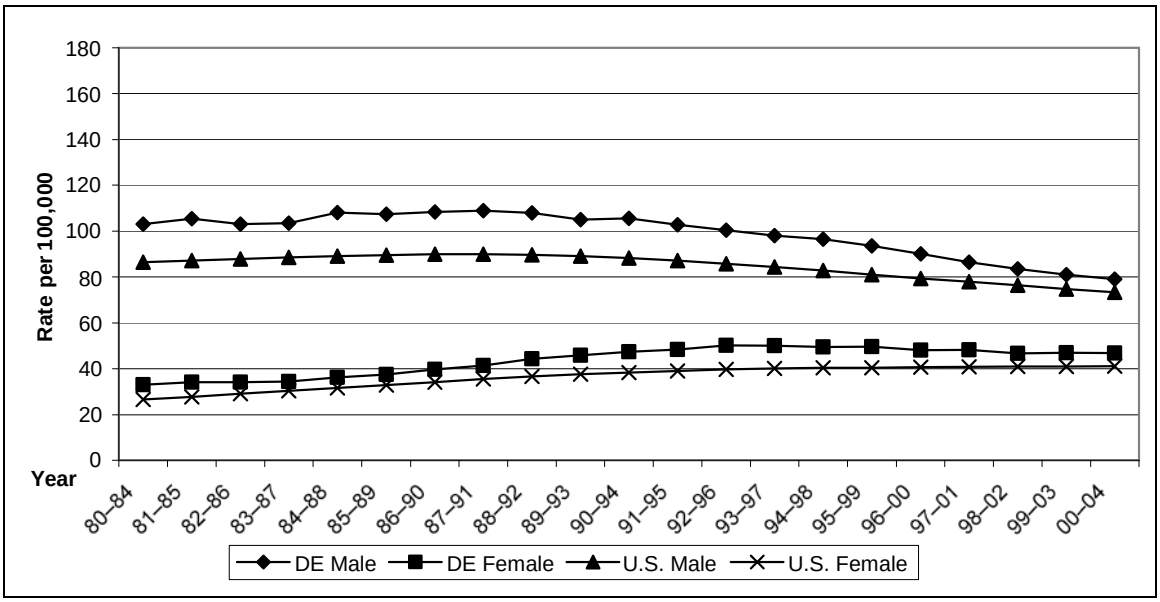
SOURCE: Delaware Health Statistics Center, 2006.

Table 10.7. Five-Year Average Age-Adjusted Lung and Bronchial Cancer Mortality Rates* in the United States, Delaware and Counties, by Race and Sex: 2000–2004

RACE AND REGION	SEX		
	All	Male	Female
ALL RACES			
United States	54.7 (54.6–54.8)	73.4 (73.2–73.6)	41.1 (41.0–41.3)
Delaware	60.4 (58.1–62.7)	79.0 (74.9–83.1)	46.8 (44.0–49.5)
Kent	72.0 (54.6–89.3)	102.9 (66.3–139.5)	49.8 (31.6–67.9)
New Castle	56.3 (48.5–64.0)	71.7 (56.8–86.7)	45.0 (36.1–54.0)
Sussex	63.0 (51.0–75.1)	81.1 (57.8–104.3)	49.3 (35.8–62.8)
CAUCASIAN			
United States	55.0 (54.8–55.1)	72.6 (72.4–72.8)	42.1 (42.0–42.3)
Delaware	59.4 (56.9–61.9)	76.9 (72.5–81.3)	46.6 (43.7–49.6)
Kent	74.0 (54.9–93.1)	103.5 (63.1–143.8)	53.3 (33.2–73.5)
New Castle	55.4 (47.0–63.7)	70.3 (54.4–86.2)	44.5 (34.8–54.2)
Sussex	60.6 (48.3–72.9)	77.1 (53.2–101.0)	48.1 (34.2–62.0)
AFRICAN-AMERICAN			
United States	62.0 (61.5–62.4)	95.8 (94.9–96.7)	39.8 (39.4–40.3)
Delaware	65.8 (58.8–72.7)	92.1 (79.0–105.3)	47.0 (39.4–54.7)
Kent	63.5 (20.1–106.9)	97.4 (13.5–181.2)	35.9 (-7.6–79.5)
New Castle	59.2 (37.7–80.8)	76.2 (33.0–119.4)	47.2 (22.4–72.0)
Sussex	88.0 (35.3–140.6)	134.6 (29.8–239.4)	55.7 (1.5–109.8)

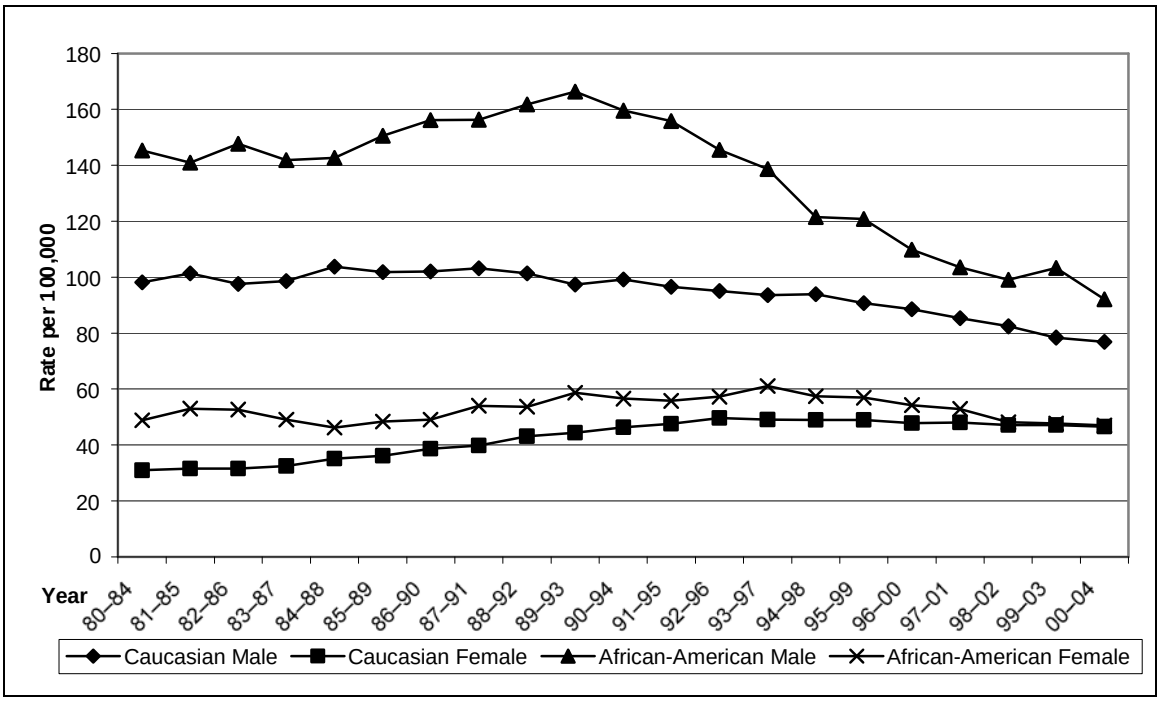
* = Rates are per 100,000 population and age-adjusted to the 2000 U.S. standard population.
--- = Rate based on fewer than 25 deaths.
SOURCES: Delaware: Delaware Health Statistics Center, 2006; U.S.: National Center for Health Statistics, 2007.

Figure 10.6. Five-Year Average Age-Adjusted Lung and Bronchial Cancer Mortality Rates* in the United States and Delaware, by Sex: 1980–2004



* = Rates are per 100,000 population and are age-adjusted to the 2000 U.S. standard population.
SOURCES: Delaware: Delaware Health Statistics Center, 2006; U.S.: National Center for Health Statistics, 2007.

Figure 10.7. Five-Year Average Age-Adjusted Lung and Bronchial Cancer Mortality Rates* in Delaware, by Race and Sex: 1980–2004



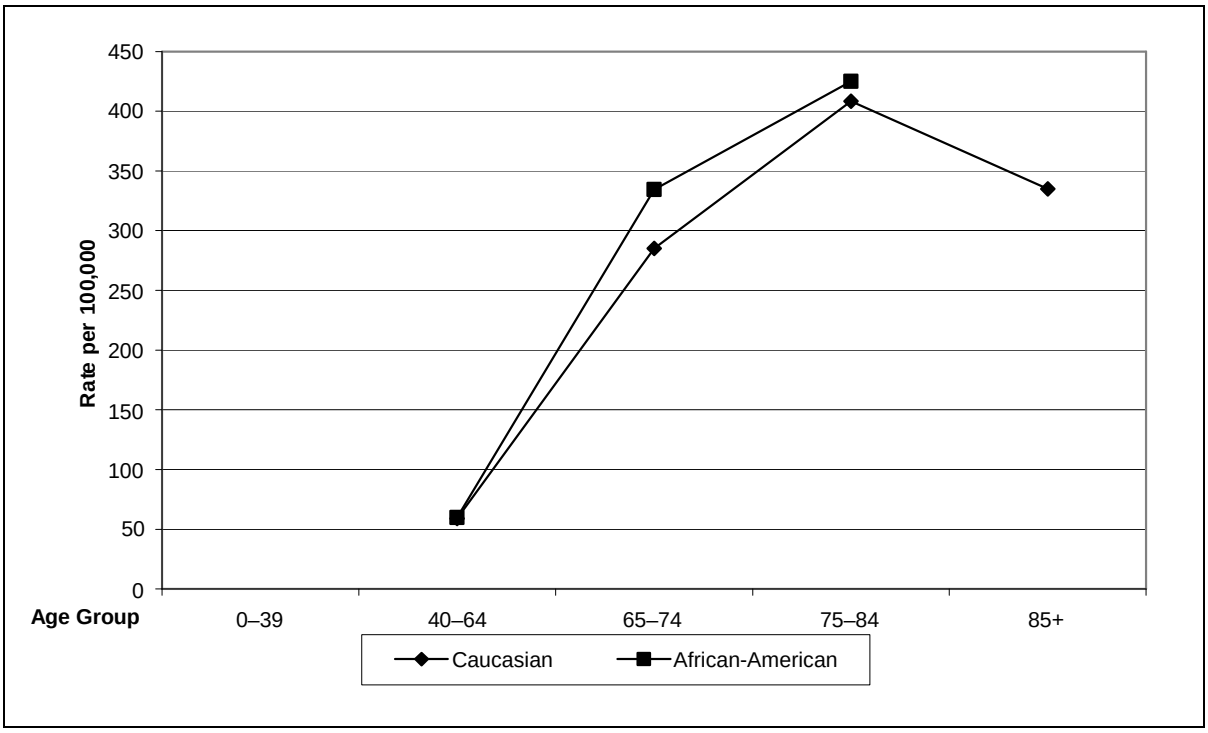
* = Rates are per 100,000 population and are age-adjusted to the 2000 U.S. standard population.
SOURCE: Delaware Health Statistics Center, 2006

Table 10.8. Age-Specific Lung and Bronchial Cancer Mortality Rates* in Delaware, by Race and Sex: 2000–2004

Age Group	All Races			Caucasian			African-American		
	All	Male	Female	All	Male	Female	All	Male	Female
0–39	---	---	---	---	---	---	---	---	---
40–64	59.07	71.58	47.39	59.10	69.07	49.57	59.72	84.49	38.85
65–74	291.00	369.81	223.39	285.14	359.45	220.35	334.32	449.58	246.01
75–84	409.76	546.73	316.59	408.29	536.30	320.11	425.00	646.31	291.13
85+	335.03	544.35	250.60	334.90	554.93	245.16	---	---	---

* = Rates are per 100,000 population.
--- = Rate based on fewer than 25 deaths.
SOURCE: Delaware Health Statistics Center, 2006.

Figure 10.8. Age-Specific Lung and Bronchial Cancer Mortality Rates in Delaware, by Race: 2000–2004



NOTE: Rates for African-Americans ages 85+ and Caucasians and African-Americans ages 0–39 are not displayed due to patient confidentiality rules.
SOURCE: Delaware Health Statistics Center, 2006.

11. Non-Hodgkin's Lymphoma

Risk Factors and Early Detection

Risk Factors for Non-Hodgkin's Lymphoma

Non-Hodgkin's lymphoma occurs most often in individuals:

- More than 60 years of age
- With abnormalities of the immune system (either congenital or from therapeutic immunosuppression and the use of certain drugs)
- Infected with HIV, Epstein-Barr virus, helicobacter pylori, human-T-cell leukemia/lymphoma virus or hepatitis C virus

Possible risk factors for Non-Hodgkin's Lymphoma

- Exposure to radiation or chemotherapy, certain herbicides and other chemical exposures such as hair dyes

Data Highlights

New Cancer Cases and Deaths (Tables 11.1 and 11.4)

- Non-Hodgkin's lymphoma accounted for 2.8 percent of all newly diagnosed cancer cases diagnosed during 2000–2004 in Delaware.
- A total of 604 non-Hodgkin's lymphoma cases were diagnosed among Delaware residents during 2000–2004; there were 327 (54.1 percent) newly diagnosed cases among males and 277 (45.9 percent) among females.
- There were 380 newly diagnosed cases of non-Hodgkin's lymphoma cases during 2000–2004 among New Castle County residents (62.9 percent), 161 among Sussex County residents (26.7 percent) and 63 among Kent County residents (10.4 percent).
- During 2000–2004 in Delaware, 85.8 percent of newly diagnosed non-Hodgkin's lymphoma cases were among Caucasians, (518) and 10.8 percent were among African-Americans (65).
- In Delaware during 2000–2004, a total of 336 deaths from non-Hodgkin's lymphoma occurred. These deaths accounted for 3.9 percent of all cancer deaths during this period.
- In Delaware during 2000–2004, 191 males (56.8 percent) died from non-Hodgkin's lymphoma, and there were 145 deaths among females (43.2 percent).
- During 2000–2004, 297 (88.4 percent) deaths from non-Hodgkin's lymphoma occurred among Caucasians and 33 (9.8 percent) occurred among African-Americans in Delaware.
- Of the 336 deaths from non-Hodgkin's lymphoma in 2000–2004, 208 were among New Castle County residents, 86 were among Sussex County residents and 42 were among Kent County residents.

Incidence and Mortality Rates (Tables 11.2 and 11.5)

Significant Findings *(The results reported in this section reflect rates in which the confidence intervals did not overlap. This means that differences in observed rates were unlikely to be due to chance variation.)*

- In Delaware, the overall age-adjusted non-Hodgkin's lymphoma incidence rate was 14.2 per 100,000 during 2000–2004. This was 28.6% lower than the U.S. estimate of 19.9 per 100,000 during the same period.

Suggestive Findings *(The results reported in this section reflect rates in which the confidence intervals overlap. This means that observed differences may be due simply to chance variation.)*

- The age-adjusted non-Hodgkin's lymphoma incidence rate was 44.9% higher among males in Delaware (17.1 per 100,000) than among females (11.8 per 100,000) during 2000–2004.
- Among males, the incidence of non-Hodgkin's lymphoma was highest in Sussex County residents (19.0 per 100,000). Among females, the incidence rate was highest in residents of New Castle County (13.9 per 100,000).
- During 2000–2004, African-Americans in Delaware had a lower overall non-Hodgkin's lymphoma incidence rate (10.1 per 100,000) than Caucasians (14.4 per 100,000).
- During 2000–2004, the overall age-adjusted mortality rate for non-Hodgkin's lymphoma in Delaware was 8.0 per 100,000; this was just slightly higher than the U.S. estimate of 7.6 per 100,000.
- During 2000–2004, the age-adjusted mortality rate for non-Hodgkin's lymphoma was 10.8 per 100,000 for males and 5.8 per 100,000 for females in Delaware (86.2 percent difference).
- In Delaware the non-Hodgkin's lymphoma mortality rate was 30.6 percent higher among Caucasian residents (8.1 per 100,000) than African-American residents (6.2 per 100,000) during 2000–2004.

Trends in Cancer Incidence and Mortality Rates (Figures 11.1–11.2 and 11.4–11.5)

- Since 1980–84, the non-Hodgkin's lymphoma incidence rates among male and female Delaware residents have been lower than the corresponding U.S. estimates.
- In Delaware, the overall incidence rate of non-Hodgkin's lymphoma among males and females increased since 1980–84.
- Since 1980–84, the incidence rates among African-American males have varied. Following a peak incidence rate in 1993–97, the rate declined until 1997–2001. Since that time period, the incidence rates increased until 2000–2004.
- The incidence rate among African-American females declined between 1982–86 and 1989–2003. The rates increased after that time period and remained steady from 1997–2001 to 1999–2003.
- In Delaware, the mortality rate among Caucasian males increased and the rate among African-American males decreased from 1995–99. In contrast, the mortality rate among Caucasian females has been steady since 1990–94, except that it declined from 1998–2002.
- In Delaware, the mortality rates among African-American females declined between 1994–98 and 1996–2000. Since that time period, the mortality rate has increased among African-American females.

Age-Specific Incidence and Mortality Rates (Tables 11.3 and 11.6)

- The age-specific incidence rate increased with age, with the highest rate in the 75–84 age group. The rate declined at ages 85 and older.
- Age-specific mortality rates increased as age increased. The highest age-specific mortality rate occurred among individuals ages 85 and older.

Stage at Diagnosis of Non-Hodgkin's Lymphoma

- Non-Hodgkin's lymphoma is not staged as local, regional and distant.

Non-Hodgkin's Lymphoma Incidence

Table 11.1. Number of Non-Hodgkin's Lymphoma Cases in Delaware and Counties, by Race and Sex: 2000–2004

	All Races			Caucasian			African-American		
	All	Male	Female	All	Male	Female	All	Male	Female
Delaware	604	327	277	518	280	238	65	34	31
Kent	63	38	25	54	30	24	< 6	< 6	0
New Castle	380	188	192	314	154	160	53	26	27
Sussex	161	101	60	150	96	54	7	< 6	< 6

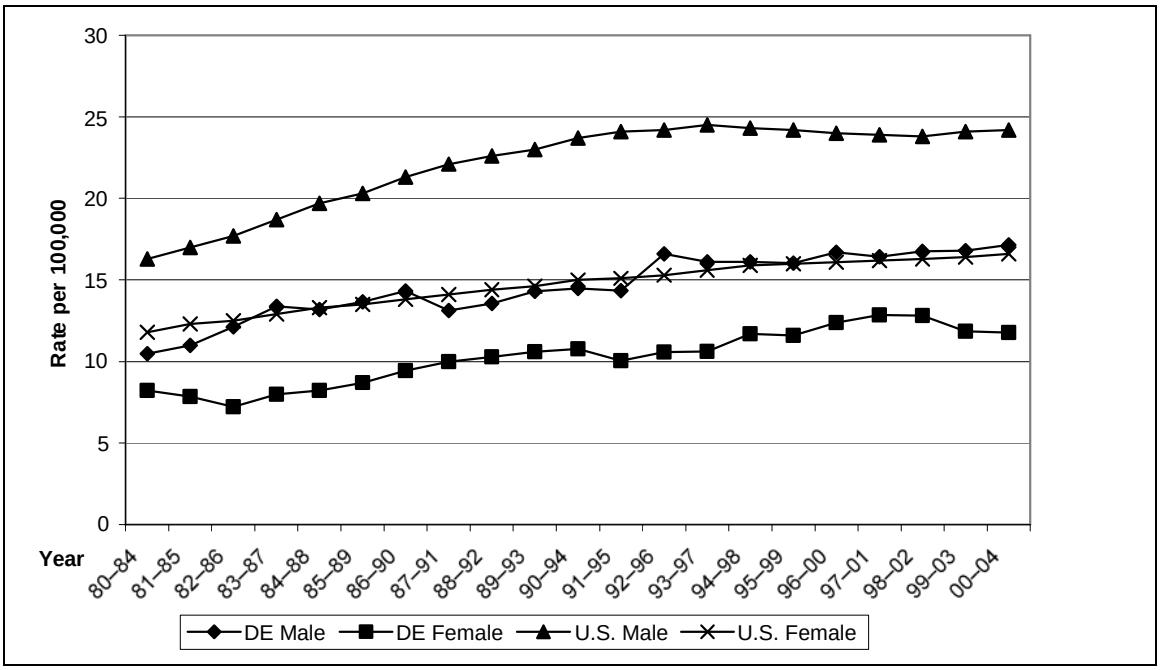
SOURCE: Delaware Cancer Registry, Delaware's Division of Public Health, 2006.

Table 11.2. Five-Year Average Age-Adjusted Non-Hodgkin's Lymphoma Incidence Rates* in the United States (Estimates), Delaware and Counties, by Race and Sex: 2000–2004

RACE AND REGION	SEX		
	All	Male	Female
ALL RACES			
United States	19.9 (19.7–20.2)	24.2 (23.8–24.6)	16.6 (16.3–16.9)
Delaware	14.2 (11.6–16.9)	17.1 (12.5–21.8)	11.8 (8.5–15.0)
Kent	9.7 (4.0–15.3)	12.7 (2.5–22.9)	7.0 (0.4–13.6)
New Castle	15.3 (11.7–18.8)	16.9 (10.8–23.0)	13.9 (9.4–18.3)
Sussex	13.7 (8.4–19.1)	19.0 (9.6–28.3)	9.1 (3.0–15.2)
CAUCASIAN			
United States	20.9(20.7–21.2)	25.3(24.8–25.7)	17.4(17.1–17.8)
Delaware	14.4 (11.5–17.4)	17.4 (12.2–22.5)	12.0 (8.4–15.5)
Kent	10.2 (3.7–16.7)	12.5 (0.8–24.3)	---
New Castle	15.4 (11.5–19.3)	16.9 (10.2–23.7)	14.1 (9.2–19.1)
Sussex	14.1 (8.5–19.8)	19.8 (9.8–29.8)	9.0 (2.5–15.4)
AFRICAN-AMERICAN			
United States	15.3(14.6–16.0)	18.9(17.7–20.2)	12.5(11.7–13.4)
Delaware	10.1 (4.2–16.0)	11.8 (3.4–20.2)	8.5 (1.2–15.8)
Kent	---	---	---
New Castle	12.3 (3.6–20.9)	13.6 (1.9–25.3)	10.8 (0.3–21.4)
Sussex	---	---	---

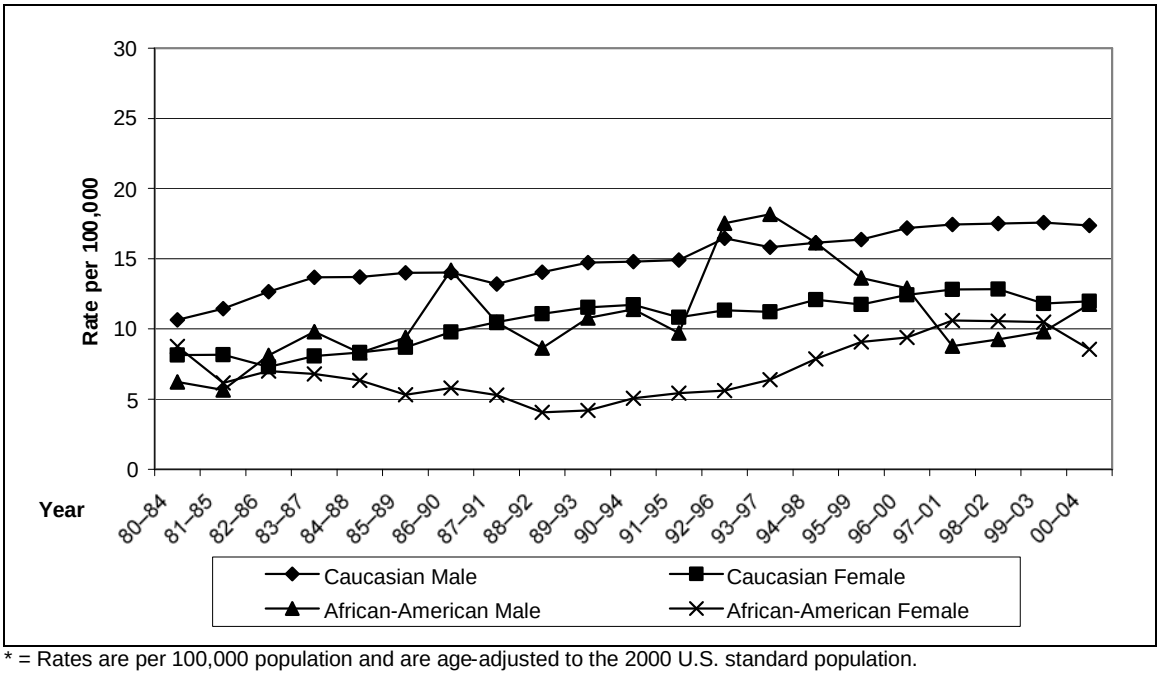
* = Rates are per 100,000 population and age-adjusted to the 2000 U.S. standard population.
--- = Rate based on fewer than 25 cases.
SOURCES: Delaware: Delaware Cancer Registry, Delaware's Division of Public Health, 2006; U.S.: Surveillance, Epidemiology, and End Results Program, National Cancer Institute, 2007.

Figure 11.1. Five-Year Average Age-Adjusted Non-Hodgkin's Lymphoma Incidence Rates* in United States (Estimates) and Delaware, by Sex: 1980–2004



* = Rates are per 100,000 population and are age-adjusted to the 2000 U.S. standard population.
SOURCES: Delaware: Delaware Cancer Registry, Delaware's Division of Public Health 2006; U.S.: Surveillance, Epidemiology, and End Results Program, National Cancer Institute, 2007.

Figure 11.2. Five-Year Average Age-Adjusted Non-Hodgkin's Lymphoma Incidence Rates* in Delaware, by Race and Sex: 1980–2004



* = Rates are per 100,000 population and are age-adjusted to the 2000 U.S. standard population.
SOURCE: Delaware Cancer Registry, Delaware's Division of Public Health, 2006.

Table 11.3. Age-Specific Non-Hodgkin's Lymphoma Incidence Rates* in Delaware, by Race and Sex: 2000–2004

Age Group	All Races			Caucasian			African-American		
	All	Male	Female	All	Male	Female	All	Male	Female
0–39	2.3	2.8	---	2.3	---	---	---	---	---
40–64	17.0	20.8	13.4	17.0	21.6	12.6	14.9	---	---
65–74	57.7	69.9	47.2	61.2	71.7	52.1	---	---	---
75–84	70.6	81.3	63.3	72.7	81.8	66.4	---	---	---
85+	59.5	---	---	61.2	---	---	---	---	---

* = Rates are per 100,000 population.
--- = Rate based on fewer than 25 cases.
SOURCE: Delaware Cancer Registry, Delaware's Division of Public Health, 2006.

Figure 11.3. Age-Specific Non-Hodgkin's Lymphoma Incidence Rates in Delaware, by Race: 2000–2004

NOTE: Figure is not displayed because of patient confidentiality rules; the small number of cases precludes the display of data.

SOURCE: Delaware Cancer Registry, Delaware's Division of Public Health, 2006.

Non-Hodgkin's Lymphoma Mortality

Table 11.4. Number of Non-Hodgkin's Lymphoma Deaths in Delaware and Counties, by Race and Sex: 2000–2004

	All Races			Caucasian			African-American		
	All	Male	Female	All	Male	Female	All	Male	Female
Delaware	336	191	145	297	175	122	33	14	19
Kent	42	25	17	35	21	14	6	< 6	< 6
New Castle	208	114	94	178	102	76	25	11	14
Sussex	86	52	34	84	52	32	< 6	0	< 6

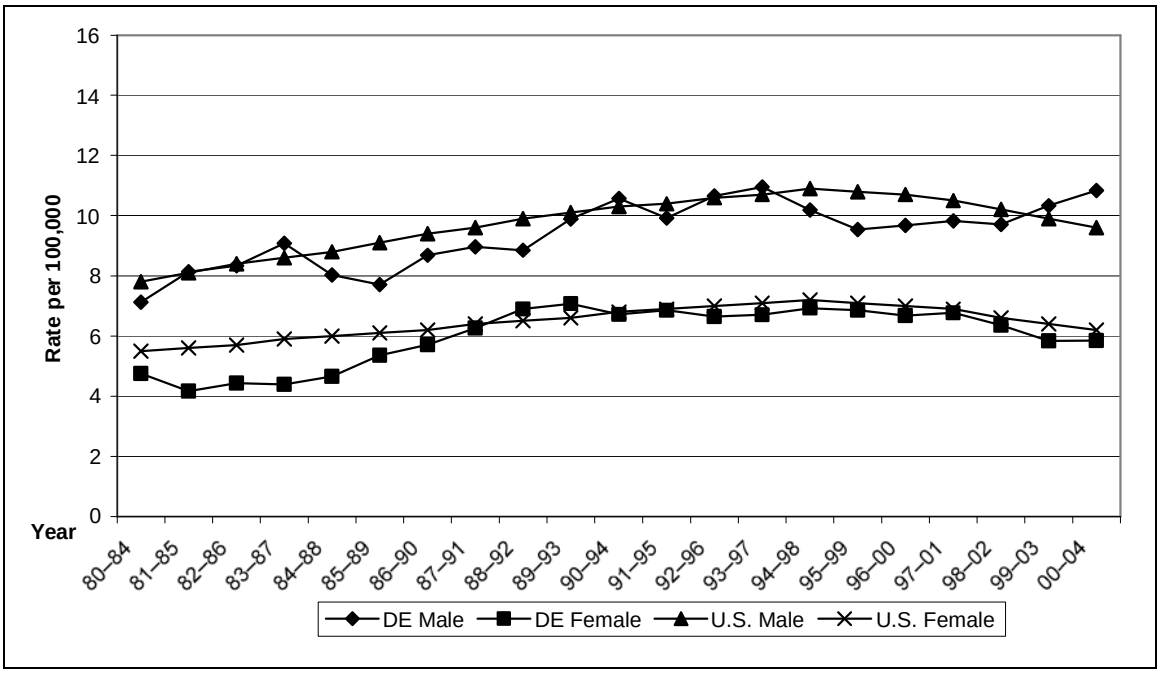
SOURCE: Delaware Health Statistics Center, 2006.

Table 11.5. Five-Year Average Age-Adjusted Non-Hodgkin's Lymphoma Mortality Rates* in the United States, Delaware and Counties, by Race and Sex: 2000–2004

RACE AND REGION	SEX		
	All	Male	Female
ALL RACES			
United States	7.6 (7.6–7.6)	9.6 (9.5–9.6)	6.2 (6.1–6.2)
Delaware	8.0 (5.4–10.5)	10.8 (5.8–15.9)	5.8 (3.0–8.7)
Kent	7.0 (0.0–14.0)	10.6 (-5.2–26.3)	---
New Castle	8.6 (5.2–12.0)	11.5 (4.7–18.3)	6.5 (2.6–10.3)
Sussex	7.3 (2.7–11.8)	10.0 (1.6–18.5)	4.9 (-0.3–10.2)
CAUCASIAN			
United States	7.9 (7.9–8.0)	9.9 (9.9–10.0)	6.4 (6.3–6.5)
Delaware	8.1 (5.4–10.9)	11.4 (5.9–16.8)	5.6 (2.6–8.7)
Kent	7.0 (-0.7–14.7)	---	---
New Castle	8.6 (4.9–12.3)	12.0 (4.7–19.3)	6.1 (2.0–10.2)
Sussex	7.8 (2.8–12.7)	10.9 (1.8–20.1)	5.1 (-0.5–10.7)
AFRICAN-AMERICAN			
United States	5.2 (5.1–5.3)	6.5 (6.3–6.8)	4.3 (4.1–4.4)
Delaware	6.2 (-0.5–12.8)	---	---
Kent	---	---	---
New Castle	7.5 (-2.2–17.1)	---	---
Sussex	---	---	---

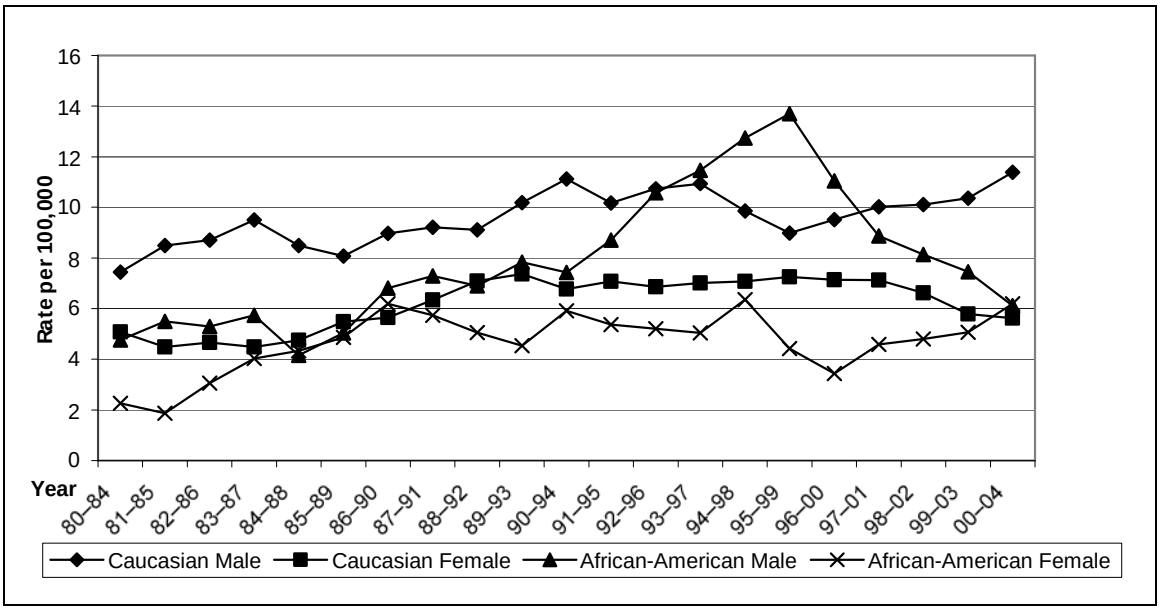
* = Rates are per 100,000 population and age-adjusted to the 2000 U.S. standard population.
--- = Rate based on fewer than 25 deaths.
SOURCES: Delaware: Delaware Health Statistics Center, 2006; U.S.: National Center for Health Statistics, 2007.

Figure 11.4. Five-Year Average Age-Adjusted Non-Hodgkin's Lymphoma Mortality Rates* in the United States and Delaware, by Sex: 1980–2004



* = Rates are per 100,000 population and are age-adjusted to the 2000 U.S. standard population.
SOURCES: Delaware: Delaware Health Statistics Center, 2006; U.S.: National Center for Health Statistics, 2007.

Figure 11.5. Five-Year Average Age-Adjusted Non-Hodgkin's Lymphoma Mortality Rates* in Delaware, by Race and Sex: 1980–2004



* = Rates are per 100,000 population and are age-adjusted to the 2000 U.S. standard population.
SOURCE: Delaware Health Statistics Center, 2006.

Table 11.6. Age-Specific Non-Hodgkin's Lymphoma Mortality Rates* in Delaware, by Race and Sex: 2000–2004

Age Group	All Races			Caucasian			African-American		
	All	Male	Female	All	Male	Female	All	Male	Female
0–39	---	---	---	---	---	---	---	---	0.0
40–64	5.4	7.6	---	5.4	8.2	---	---	---	---
65–74	29.5	43.9	37.7	30.6	47.0	---	---	---	---
75–84	64.2	76.0	51.7	66.8	80.4	57.4	---	---	---
85+	88.4	---	50.1	89.9	---	75.4	---	---	---

* = Rates are per 100,000 population.
--- = Rate based on fewer than 25 deaths.
SOURCE: Delaware Health Statistics Center, 2006.

Figure 11.6 Age-Specific Non-Hodgkin's Lymphoma Mortality Rates in Delaware, by Race: 2000–2004

NOTE: Figure is not displayed because of patient confidentiality rules; the small number of cases precludes the display of data.

SOURCE: Delaware Health Statistics Center, 2006.

12. Oral Cavity and Pharynx Cancer

Risk Factors and Early Detection

Risk Factors for Oral Cavity and Pharynx Cancer

- Sunlight exposure to the lip
- Use of marijuana and tobacco (cigarette, pipe, cigar and smokeless tobacco)
- Chronic and/or heavy use of alcohol, particularly beer and hard liquor
- Infection with human papillomavirus and Epstein-Barr virus
- Plummer-Vinson (Paterson-Kelly) syndrome as a result of poor nutrition, especially chronic iron deficiency
- Occupational exposure to asbestos and inhalation of wood dust and nickel dust
- Chronic irritation of mouth due to ill-fitting dentures or broken teeth; poor oral hygiene and the use of mouthwash with high alcohol content are possible risk factors.

Data Highlights

New Cancer Cases and Deaths (Tables 12.1 and 12.6)

- In Delaware, a total of 496 cases of cancer of the oral cavity and pharynx were diagnosed among Delaware residents during 2000–2004; there were 345 cases (69.6 percent) among males and 151 cases (30.4 percent) among females.
- During 2000–2004, there were 401 newly diagnosed cases of cancer of the oral cavity and pharynx among Caucasian residents (80.8 percent) of Delaware and 79 among African-American residents (15.9 percent).
- During 2000–2004, the overall death rate for oral cavity and pharynx cancer in Delaware was 2.4 per 100,000.
- There were 304 (61.3 percent) newly diagnosed cases of cancer of the oral cavity and pharynx during 2000–2004 among New Castle County residents, 120 among Sussex County residents (24.2 percent) and 72 among Kent County residents (14.5 percent).
- During 2000–2004, 104 deaths occurred from cancer of the oral cavity and pharynx in Delaware residents. There were 70 deaths (67.3 percent) from oral cavity and pharynx cancer in males and 34 in females (32.7 percent).
- Deaths from oral cavity and pharynx cancer accounted for 1.2 percent of all cancer deaths.
- In Delaware, 78.8 percent (82) of decedents were Caucasian and 18.3 percent (19) were African-American during 2000–2004.
- During 2000–2004, 61 decedents were residents of New Castle County (58.6 percent), 27 were Sussex County residents (30.0 percent) and 16 were Kent County residents (15.4 percent).

Incidence and Mortality Rates (Tables 12.2 and 12.7)

Significant Findings *(The results reported in this section reflect rates in which the confidence intervals did not overlap. This means that differences in observed rates were unlikely to be due to chance variation.)*

- Overall, males had a higher age-adjusted incidence rate for oral cavity and pharynx cancer than females. During 2000–2004, the age-adjusted incidence rate for oral cavity and pharynx cancer was 17.5 per 100,000 for males and 6.5 per 100,000 for females in Delaware.
- In the United States the age-adjusted mortality rate for oral cavity and pharynx cancer was higher among African-Americans (3.9 per 100,000) compared with Caucasians (2.5 per 100,000). There were too few cases among African-Americans in Delaware to compare race-specific rates.

Suggestive Findings *(The results reported in this section reflect rates in which the confidence intervals overlap. This means that observed differences may be due simply to chance variation.)*

- African-Americans in Delaware and New Castle county had higher incidence rates for oral cavity and pharynx cancer than Caucasians during 2000–2004.
- The incidence rates for oral cavity and pharynx cancer in Delaware were higher than the U.S. estimates. The overall rates were 8.4 percent higher, the rate among males 11.5 percent higher, and the rate among females 1.5 percent higher than the U.S. estimates.
- The incidence rate for oral cavity and pharynx cancer was highest among New Castle County residents (12.6 per 100,000).
- The mortality rate was 3.7 per 100,000 among male residents of Delaware and 1.4 per 100,000 among females.
- The age-adjusted mortality rate for oral cavity and pharynx cancer in Delaware was lower than the rate in the United States during 2000–2004. The overall mortality rate for the United States (2.7 per 100,000) was 12.5 percent higher than the rate in Delaware (2.4 per 100,000).

Trends in Cancer Incidence and Mortality Rates (Figures 12.1–12.2 and 12.6–12.7)

- In Delaware, the incidence rate for oral cavity and pharynx cancer among males has declined since 1989–93. From 1992–96 to 1996–2000, the rate for males was the same as the U.S. estimate for males. Since that time period, the rate for Delaware males was higher than the rate for U.S. males.
- The incidence rate among females in Delaware decreased from 1989–92 to 1997–2001. During 1995–1999 the rate among females in Delaware was similar to the rate among females in the United States. Between 1982–86 and 1994–98, the rate among females in Delaware was higher than the U.S. rate.
- The incidence rate for oral cavity and pharynx cancer showed a sharp decline (44.3 percent) among African-American males until 1998–2002. A similar decline was not observed among Caucasian males, whose incidence rates have been stable since 1992–96.
- The incidence rate among Caucasian females in Delaware was the same in 2000–2004 as it was in 1980–84, although the rate has varied in the interim. Among African-American females in Delaware, the incidence rate declined over this same time period.
- In Delaware, the mortality rate for oral cavity and pharynx cancer decreased among African-American males from 1981-85 to 1988-92, 1990-94 to 1992-96, and 1993-97 to 2000-04. The mortality rate declined in Caucasian males since 1980–84.

Age-Specific Incidence and Mortality Rates (Tables 12.3 and 12.8)

Data were suppressed due to patient confidentiality rules.

Stage at Diagnosis of Oral Cavity and Pharynx Cancer (Tables 12.4–12.5, Figures 12.4–12.5)

- A total of 291 cases (63.0 percent) of all oral cavity and pharynx cancer were diagnosed in the late stages (i.e., regional or distant) in Delaware during 2000–2004.
- In Delaware, fewer cases of oral cavity and pharynx cancer were diagnosed in the local stage (32.5 percent) compared with the U.S. estimate (34.7 percent).
- A larger percentage of cases of oral cavity and pharynx cancer were diagnosed in the regional stage in Delaware (54.3 percent) compared with the U.S. estimate (44.0 percent). Conversely, Delaware had fewer cases diagnosed in the distant stage (8.7 percent) than the United States (16.1 percent).
- In Delaware, cases of oral cavity and pharynx cancer were more frequently diagnosed in the late stage in African-Americans than in Caucasians. Among African-Americans, 61.3 percent and 16.0 percent of oral cavity and pharynx cancers were diagnosed on the regional and distant stage, respectively. In contrast, among Caucasians 52.8 percent and 6.5 percent were diagnosed in the regional and distant stage, respectively.

- The percentage of cases of oral cavity and pharynx cancer diagnosed in the local stage increased in Delaware from 1980–84 to 1994–98. Since this period, the percentage of cancers diagnosed at the local stage has decreased.
- The percentage of cases of oral cavity and pharynx cancer diagnosed in the regional stage decreased from 1980–84 to 1994–98. Since this period, the percentage of cancer diagnosed at the regional stage has increased.
- The percentage of cases of oral cavity and pharynx cancer diagnosed in the distant stage decreased from 1980–84 to 1991–95. Recently, following an increase between 1992–96 and 1995–99, the percentage has remained steady.

Table 12.1. Number of Oral Cavity and Pharynx Cancer Cases in Delaware and Counties, by Race and Sex: 2000–2004

	All Races			Caucasian			African-American		
	All	Male	Female	All	Male	Female	All	Male	Female
Delaware	496	345	151	401	277	124	79	57	22
Kent	72	52	20	56	40	16	13	10	< 6
New Castle	304	203	101	236	155	81	58	41	17
Sussex	120	90	30	109	82	27	8	6	< 6

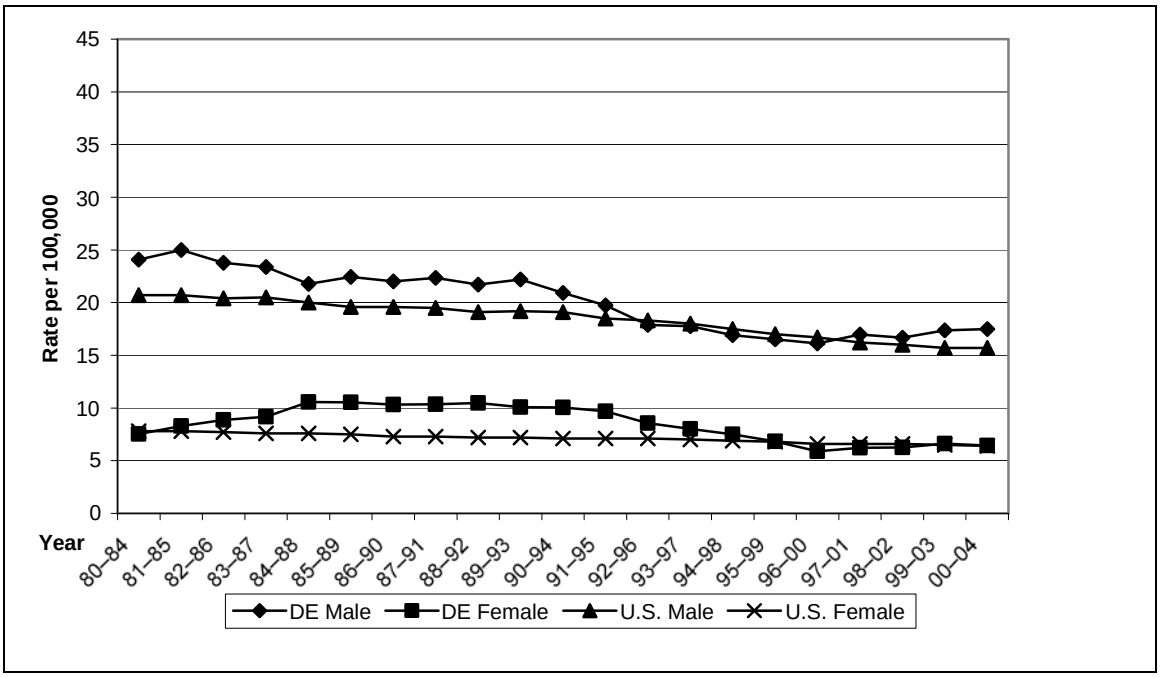
SOURCE: Delaware Cancer Registry, Delaware's Division of Public Health, 2006.

Table 12.2. Five-Year Average Age-Adjusted Oral Cavity and Pharynx Cancer Incidence Rates* in the United States (Estimates), Delaware and Counties, by Race and Sex: 2000–2004

RACE AND REGION	SEX		
	All	Male	Female
ALL RACES			
United States	10.7 (10.5–10.8)	15.7 (15.4–16.0)	6.4 (6.2–6.6)
Delaware	11.6 (10.6–12.6)	17.5 (15.6–19.4)	6.5 (5.4–7.5)
Kent	11.1 (6.0–16.1)	19.0 (8.0–30.0)	---
New Castle	12.6 (9.7–15.5)	17.8 (12.1–23.5)	7.3 (4.0–10.6)
Sussex	11.4 (7.9–14.9)	18.2 (11.9–24.6)	5.1 (1.6–8.6)
CAUCASIAN			
United States	10.7 (10.5–10.9)	15.7 (15.4–16.1)	6.4 (6.2–6.6)
Delaware	11.3 (10.2–12.4)	16.8 (14.8–18.8)	6.3 (5.2–7.4)
Kent	10.8 (5.6–15.9)	16.4 (5.7–27.0)	---
New Castle	11.5 (8.3–14.7)	16.7 (10.6–22.7)	7.1 (3.5–10.6)
Sussex	11.7 (8.0–15.5)	18.7 (12.0–25.4)	5.2 (1.5–8.9)
AFRICAN-AMERICAN			
United States	11.3 (10.7–11.9)	17.8 (16.6–19.0)	6.3 (5.7–6.9)
Delaware	12.3 (9.5–15.1)	20.2 (14.6–25.9)	---
Kent	---	---	---
New Castle	13.3 (5.1–21.6)	21.3 (3.0–39.7)	---
Sussex	---	---	---

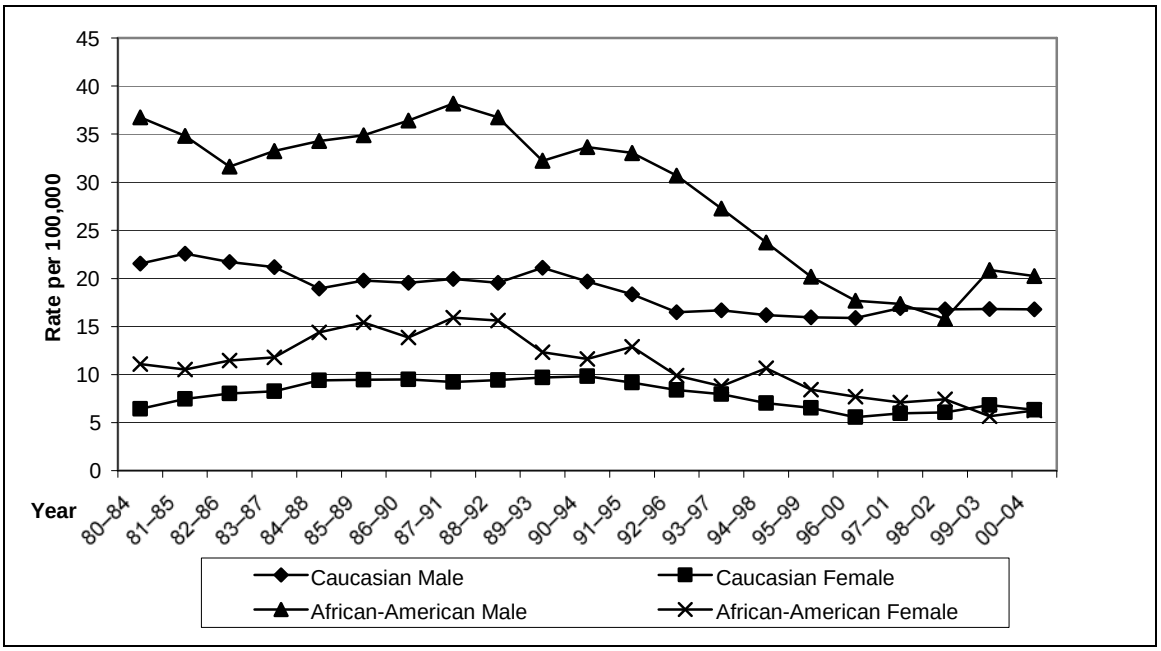
Rates are per 100,000 population and age-adjusted to the 2000 U.S. standard population.
--- = Rate based on fewer than 25 cases.
SOURCES: Delaware: Delaware Cancer Registry, Delaware's Division of Public Health, 2006;
U.S.: Surveillance, Epidemiology, and End Results Program, National Cancer Institute, 2007.

Figure 12.1. Five-Year Average Age-Adjusted Oral Cavity and Pharynx Cancer Incidence Rates* in the United States (Estimates) and Delaware, by Sex: 1980–2004



* = Rates are per 100,000 population and are age-adjusted to the 2000 U.S. standard population.
SOURCES: Delaware: Delaware Cancer Registry, Delaware's Division of Public Health, 2006; U.S.: Surveillance, Epidemiology, and End Results Program, National Cancer Institute, 2007.

Figure 12.2. Five-Year Average Age-Adjusted Oral Cavity and Pharynx Cancer Incidence Rates* in Delaware, by Race and Sex: 1980–2004



* = Rates are per 100,000 population and are age-adjusted to the 2000 U.S. standard population.
SOURCE: Delaware Cancer Registry, Delaware's Division of Public Health, 2006.

Table 12.3. Age-Specific Oral Cavity and Pharynx Cancer Incidence Rates* in Delaware, by Race and Sex: 2000–2004

Age Group	All Races			Caucasian			African-American		
	All	Male	Female	All	Male	Female	All	Male	Female
0–39	1.3	---	---	---	---	---	---	---	---
40–64	19.9	33.0	7.7	20.0	32.1	8.4	18.4	34.6	---
65–74	45.0	61.8	30.6	40.6	56.4	26.8	66.9	89.9	49.2
75–84	31.8	44.6	23.2	34.0	46.8	25.2	---	---	---
85+	---	---	---	---	---	---	---	---	---

* = Rates are per 100,000 population.
--- = Rate based on fewer than 25 cases.
SOURCE: Delaware Cancer Registry, Delaware's Division of Public Health, 2006.

Figure 12.3. Age-Specific Oral Cavity and Pharynx Cancer Incidence Rates in Delaware, by Race: 2000–2004

NOTE: Figure is not displayed because of patient confidentiality rules; the small number of cases precludes the display of data.

SOURCE: Delaware Cancer Registry, Delaware's Division of Public Health, 2006.

Oral Cavity and Pharynx Cancer by Stage at Diagnosis

Table 12.4. Number of Oral Cavity and Pharynx Cancer Cases in Delaware, by Stage at Diagnosis, Race and Sex: 2000–2004

Stage at Diagnosis	All Races			Caucasian			African-American		
	All	Male	Female	All	Male	Female	All	Male	Female
Local	150	93	57	132	85	47	17	8	9
Regional	251	183	68	196	142	54	46	36	10
Distant	40	30	10	24	17	7	12	9	< 6
Unknown	21	12	9	19	10	9	0	0	0
Total	462	318	144	371	254	117	75	53	22

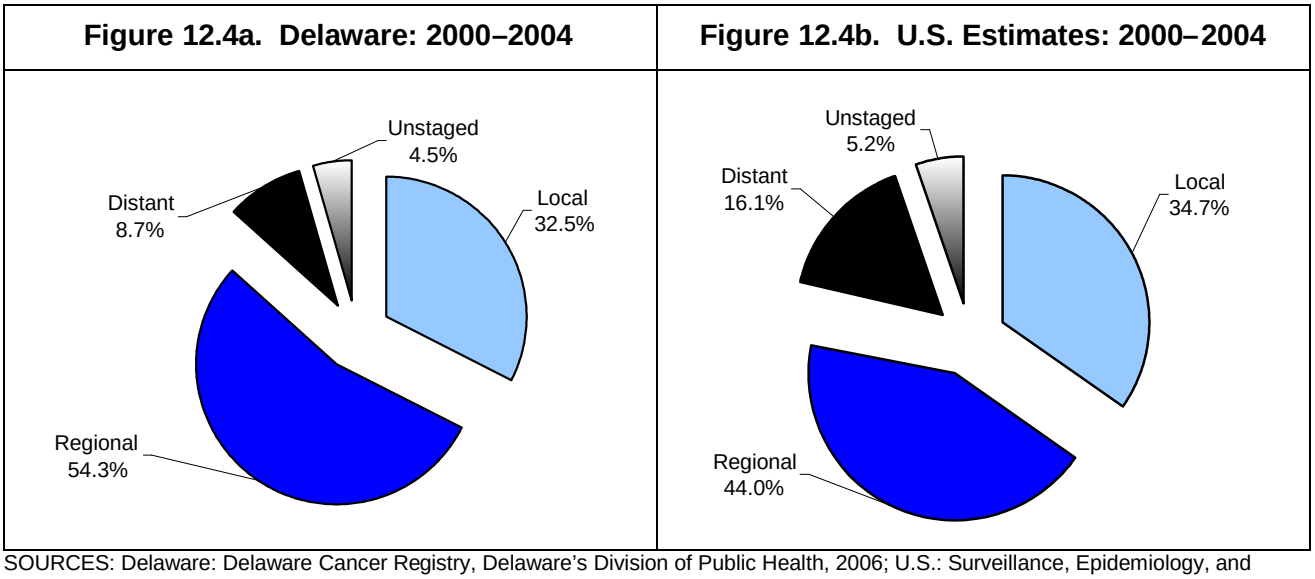
SOURCE: Delaware Cancer Registry, Delaware's Division of Public Health, 2006.

Table 12.5. Percentage of Oral Cavity and Pharynx Cancer Cases in Delaware, by Stage at Diagnosis, Race and Sex: 2000–2004

Stage at Diagnosis	All Races			Caucasian			African-American		
	All	Male	Female	All	Male	Female	All	Male	Female
Local	32.5	29.2	39.6	35.6	33.5	40.2	22.7	15.1	40.9
Regional	54.3	57.5	47.2	52.8	55.9	46.2	61.3	67.9	45.5
Distant	8.7	9.4	6.9	6.5	6.7	6.0	16.0	17.0	---
Unknown	4.5	3.8	6.3	5.1	3.9	7.7	0.0	0.0	0.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

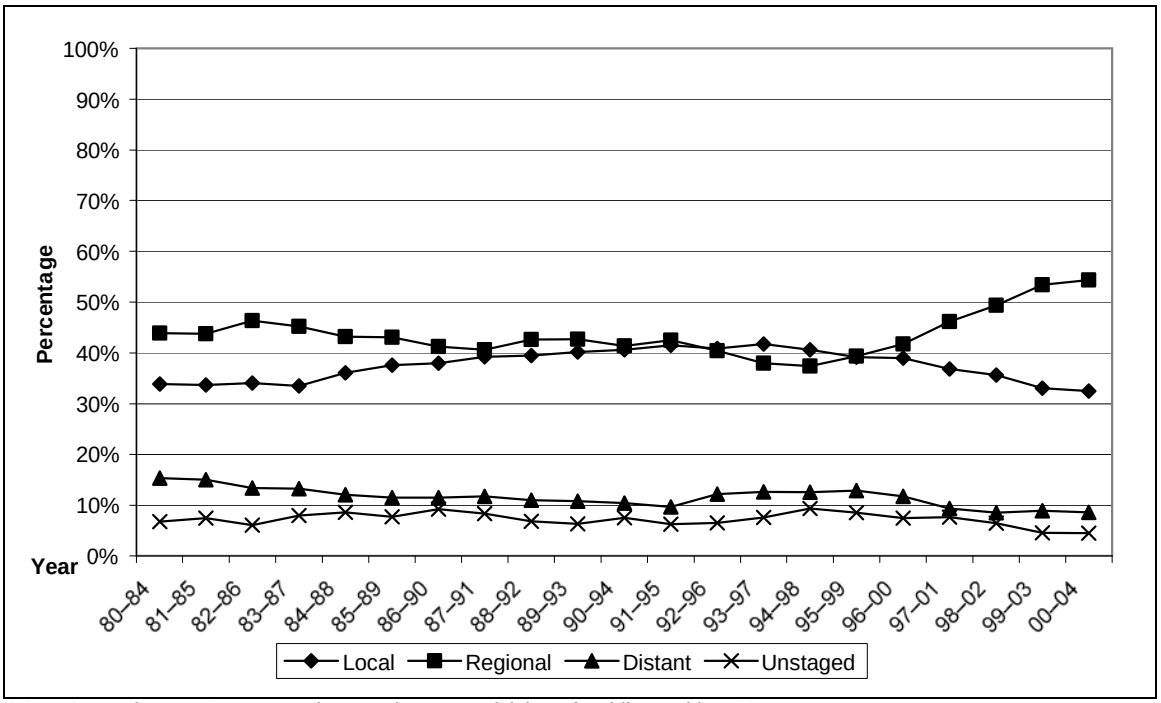
SOURCE: Delaware Cancer Registry, Delaware's Division of Public Health, 2006.

Figure 12.4. Percentage of Oral Cavity and Pharynx Cancer Cases in Delaware and the United States (Estimates), by Stage at Diagnosis: 2000–2004



SOURCES: Delaware: Delaware Cancer Registry, Delaware's Division of Public Health, 2006; U.S.: Surveillance, Epidemiology, and End Results Program, National Cancer Institute, 2007.

Figure 12.5. Percentage of Oral Cavity and Pharynx Cancer Cases in Delaware, by Stage at Diagnosis: 1980–2004



SOURCE: Delaware Cancer Registry, Delaware's Division of Public Health, 2006.

Table 12.6. Number of Oral Cavity and Pharynx Cancer Deaths in Delaware and Counties, by Race and Sex: 2000–2004

	All Races			Caucasian			African-American		
	All	Male	Female	All	Male	Female	All	Male	Female
Delaware	104	70	34	82	53	29	19	14	< 6
Kent	16	13	< 6	10	7	< 6	< 6	< 6	0
New Castle	61	37	24	49	29	20	11	7	< 6
Sussex	27	20	7	23	17	6	< 6	< 6	< 6

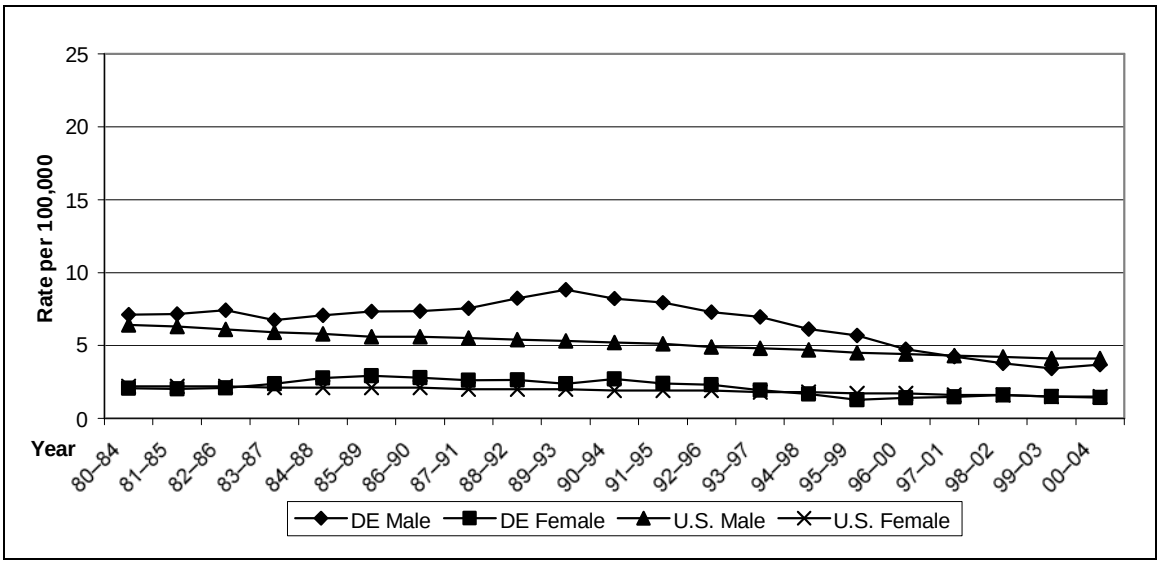
SOURCE: Delaware Health Statistics Center, 2006.

Table 12.7. Five-Year Average Age-Adjusted Oral Cavity and Pharynx Cancer Mortality Rates* in the United States, Delaware and Counties, by Race and Sex: 2000–2004

RACE AND REGION	SEX		
	All	Male	Female
ALL RACES			
United States	2.7 (2.6–2.7)	4.1 (4.0–4.1)	1.5 (1.5–1.5)
Delaware	2.4 (1.6–3.3)	3.7 (2.1–5.3)	1.4 (0.4–2.5)
Kent	---	---	---
New Castle	2.5 (-0.7–5.7)	3.5 (-3.6–10.7)	---
Sussex	2.5 (-2.2–7.1)	---	---
CAUCASIAN			
United States	2.5 (2.5–2.6)	3.8 (3.7–3.8)	1.5 (1.5–1.5)
Delaware	2.3 (1.3–3.2)	3.2 (1.6–4.9)	1.4 (0.3–2.6)
Kent	---	---	---
New Castle	2.4 (-1.2–5.9)	3.3 (-4.2–10.8)	---
Sussex	---	---	---
AFRICAN-AMERICAN			
United States	3.9 (3.8–4.0)	6.8 (6.6–7.0)	1.7 (1.6–1.8)
Delaware	---	---	---
Kent	---	---	---
New Castle	---	---	---
Sussex	---	---	---

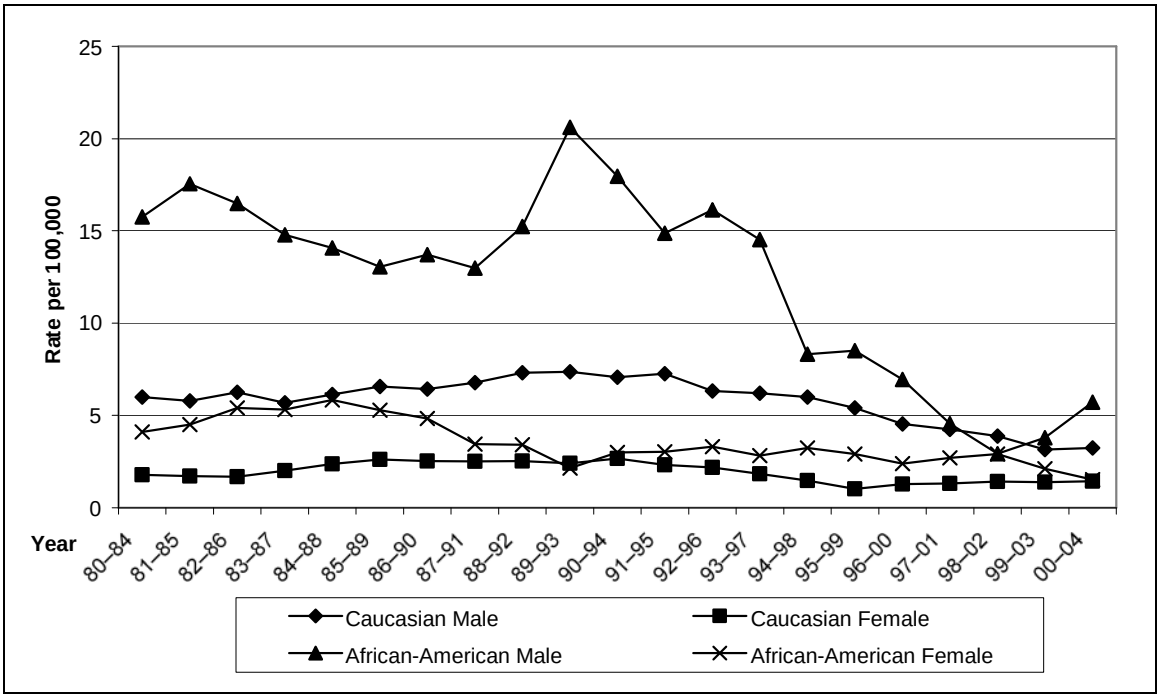
* = Rates are per 100,000 population and age-adjusted to the 2000 U.S. standard population.
--- = Rate based on fewer than 25 deaths.
SOURCES: Delaware: Delaware Health Statistics Center, 2006; U.S.: National Center for Health Statistics, 2007.

Figure 12.6. Five-Year Average Age-Adjusted Oral Cavity and Pharynx Cancer Mortality Rates* in the United States and Delaware, by Sex: 1980–2004



* = Rates are per 100,000 population and are age-adjusted to the 2000 U.S. standard population.
SOURCES: Delaware: Delaware Health Statistics Center, 2006; U.S.: National Center for Health Statistics, 2007.

Figure 12.7. Five-Year Average Age-Adjusted Oral Cavity and Pharynx Cancer Mortality Rates* in Delaware, by Race and Sex: 1980–2004



* = Rates are per 100,000 population and are age-adjusted to the 2000 U.S. standard population.
SOURCES: Delaware: Delaware Health Statistics Center, 2006; U.S.: National Center for Health Statistics, 2007.

Table 12.8. Age-Specific Oral Cavity and Pharynx Cancer Mortality Rates* in Delaware, by Race and Sex: 2000–2004

Age Group	All Races			Caucasian			African-American		
	All	Male	Female	All	Male	Female	All	Male	Female
0–39	---	0.0	---	---	0.0	---	0.0	0.0	0.0
40–64	3.9	6.0	---	3.8	5.6	---	---	---	---
65–74	9.6	---	---	---	---	---	---	---	---
75–84	---	---	---	---	---	---	0.0	0.0	0.0
85+	---	---	---	---	---	---	---	---	0.0

* = Rates are per 100,000 population.
--- = Rate based on fewer than 25 deaths.
SOURCE: Delaware Health Statistics Center, 2006.

Figure 12.8. Age-Specific Oral Cavity and Pharynx Cancer Mortality Rates in Delaware, by Race: 2000–2004

NOTE: Figure is not displayed because of patient confidentiality rules; the small number of cases precludes the display of data.

SOURCE: Delaware Cancer Registry, Delaware's Division of Public Health, 2006.

13. Prostate Cancer

Risk Factors and Early Detection

Risk Factors for Prostate Cancer

- Increasing age
- Family history of prostate cancer
- African-American race
- Nationality. It is most common in North America and northwestern Europe.

Possible Risk Factors for Prostate Cancer

- High-fat diet low in fruits and vegetables
- Physical inactivity

Under Investigation as Risk Factors for Prostate Cancer

- Vasectomies. Some earlier studies suggested that males who had a vasectomy may have a slightly increased risk for prostate cancer, but this link is not consistent.

Early Detection of Prostate Cancer

- Digital rectal exam
- Prostate-specific antigen (PSA) blood test
- Transrectal ultrasonography

The digital rectal exam and PSA blood test are two methods recommended for prostate cancer screening.

Results are shown below for the following questions in the BRFSS survey:

- A prostate-specific antigen test, also called a PSA test, is a blood test used to check males for prostate cancer. Have you ever had a PSA test?
- A digital rectal exam is an exam in which a doctor, nurse or other health professional places a gloved finger into the rectum to feel the size, shape and hardness of the prostate gland. Have you ever had a digital rectal exam?

Delaware Males Ages 40 and Older With PSA Within the Past Two Years

In 2006, 56.9 percent of males in Delaware ages 40 and older had had a PSA blood test within the past two years, compared with 53.8 percent of males in the United States.

The number of males in Delaware who had had a PSA blood test increased as age increased. Among those ages 40–49, 23.5 percent had had a PSA blood test within the past two years, compared with 64.8 percent of males ages 50–59 and 80.8 percent of males ages 65 and older.

College graduates (61.5 percent) were most likely to have had a PSA blood test within the past two years, compared with males with a high school education (49.0 percent) or with some post-high school education (57.8 percent).

Data Highlights

New Cancer Cases and Deaths (Tables 13.1 and 13.6)

- Prostate cancer was the most frequently diagnosed cancer among males, and during 2000–2004 it accounted for 3,328 (29.6 percent) of newly diagnosed cancer cases among males.
- Caucasian Delaware residents made up 76.6 percent (2,549) of prostate cancer cases in 2000–2004, and African-American residents made up 19.3 percent (642). Hispanic residents made up 1.2 percent (41), and those of other races made up less than 1 percent of prostate cancer cases.
- The majority of prostate cancer cases (2000–2004) were New Castle County residents (2,076 or 62.4 percent), followed by Sussex County residents (761 or 22.9 percent) and Kent County residents (491 or 14.8 percent).
- During 2000–2004, 442 Delaware residents died from prostate cancer; 344 (77.8 percent) decedents were Caucasian, and 88 (19.9 percent) were African-American.
- In contrast to newly diagnosed prostate cancer cases, deaths from prostate cancer accounted for 5.2 percent of all cancer deaths among males in Delaware during 2000–2004.
- A total of 259 (58.6 percent) decedents were from New Castle County, followed by 119 (26.9 percent) from Sussex County and 64 (14.4 percent) from Kent County.

Incidence and Mortality Rates (Tables 13.2 and 13.7)

Significant Findings *(The results reported in this section reflect rates in which the confidence intervals did not overlap. This means that differences in observed rates were unlikely to be due to chance variation.)*

- In Delaware, prostate cancer incidence was 70.4 percent higher among African-American males (261.7 per 100,000) than Caucasian males (153.6 per 100,000) during 2000–2004.
- Prostate cancer mortality was nearly twice as high among African-American males in Delaware (49.9 per 100,000) than among Caucasian males (25.1 per 100,000) during 2000–2004.
- Mortality rates from prostate cancer were 20 percent lower among African-American males in Delaware compared with the rates for the United States (49.9 and 62.3 per 100,000, respectively).

Suggestive Findings *(The results reported in this section reflect rates in which the confidence intervals overlap. This means that observed differences may be due simply to chance variation.)*

- Overall prostate cancer incidence was highest in New Castle County (194.1 per 100,000). African-American and Caucasian males in New Castle County also had higher incidence rates than their counterparts in Kent and Sussex Counties.

Trends in Cancer Incidence and Mortality (Figures 13.1–13.2 and 13.6–13.7)

- Delaware's overall prostate cancer incidence rate has been less than or the same as the U.S. estimate since 1996–2000.
- In Delaware, the incidence rate for Caucasian males was lower than the rate for African American males. Incidence rates for both African American and White males declined since 1991-1995.
- Mortality from prostate cancer declined among males in Delaware and the United States. The mortality rates for males in Delaware and United States were the same 2000–2004.
- The mortality rate declined among African American males in Delaware from 1996-2000. The rate among Caucasian males in Delaware declined from 1993-1997.

Age-Specific Incidence and Mortality Rates (Tables 13.3 and 13.8, Figures 13.3 and 13.8)

- The incidence of prostate cancer increased with age and peaked at ages 65–74.

Stage at Diagnosis of Prostate Cancer (Tables 13.4–13.5, Figures 13.4–13.5)

- A total of 298 cases (9.6 percent of all prostate cancers) were diagnosed in the late (i.e., regional or distant) stages.
- In Delaware during 2000–2004, a similar proportion of prostate cancers were diagnosed in the local and regional stages (92.9 percent), compared with the U.S. estimate (93.0 percent) for 2000–2004. Delaware had a lower proportion of cases diagnosed in the distant stage (3.2 percent) than the U.S. estimates (4.1 percent).
- The increase in the proportion of prostate cancers diagnosed in the local stage since 1986–90 (from 52.4 percent to 86.5 percent in 2000–2004) was mirrored by a decrease in the proportion of distant-stage (from 21.6 percent in 1986–90 to 3.2 percent in 2000–2004) and regional-stage cancers (from 16.6 percent in 1986–90 to 6.4 percent in 2000–2004).

Prostate Cancer Incidence

Table 13.1. Number of Prostate Cancer Cases in Delaware and Counties, by Race: 2000–2004

	All Male	Caucasian Male	African-American Male
Delaware	3,328	2,549	642
Kent	491	348	102
New Castle	2,076	1,555	453
Sussex	761	646	87

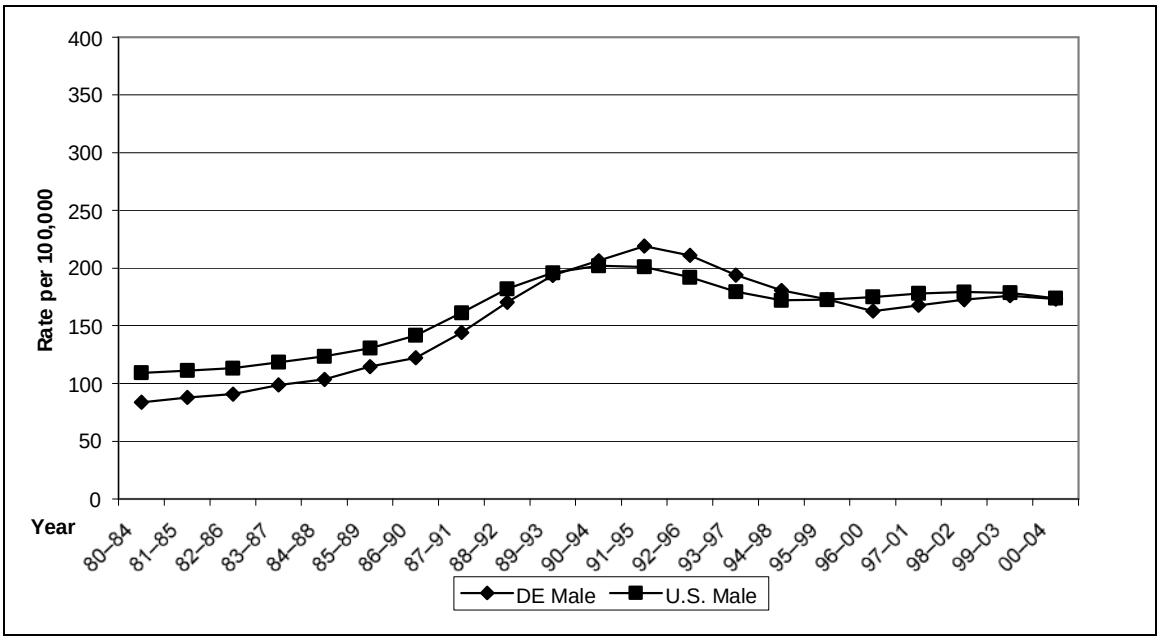
SOURCE: Delaware Cancer Registry, Delaware's Division of Public Health, 2006.

Table 13.2. Five-Year Average Age-Adjusted Prostate Cancer Incidence Rates* in the United States (Estimates), Delaware and Counties, by Race: 2000–2004

	All Male	Caucasian Male	African-American Male
United States	170.1 (169.4-170.8)	165.8 (165.0–166.5)	267.0 (263.9–270.0)
Delaware	173.0 (167.0–178.9)	153.6 (147.6–159.6)	261.7 (240.5–283.0)
Kent	168.2 (130.6–205.7)	143.1 (106.7–179.6)	212.3 (115.0–309.5)
New Castle	194.1 (171.8–216.5)	173.5 (150.7–196.3)	292.0 (208.4–375.7)
Sussex	135.3 (109.6–161.0)	123.6 (97.9–149.4)	213.4 (100.6–326.1)

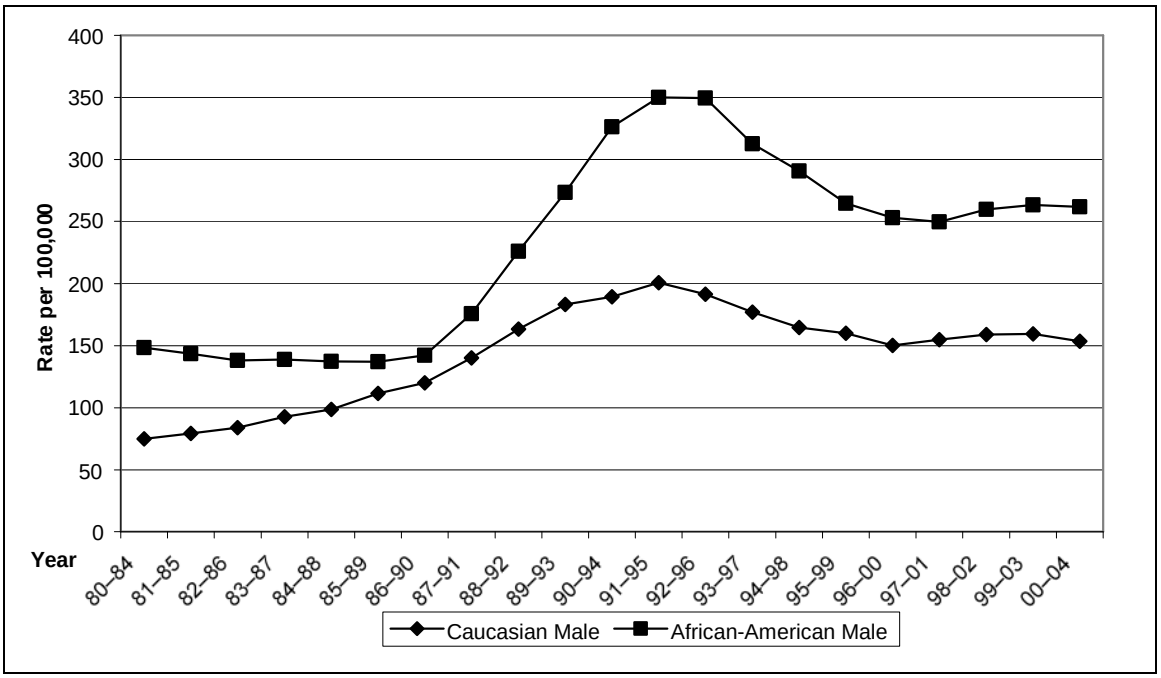
* = Rates are per 100,000 population and age-adjusted to the 2000 U.S. standard population.
SOURCES: Delaware: Delaware Cancer Registry, Delaware's Division of Public Health, 2006; U.S.: Surveillance, Epidemiology, and End Results Program, National Cancer Institute, 2007.

Figure 13.1. Five-Year Average Age-Adjusted Prostate Cancer Incidence Rates* in the United States (Estimates) and Delaware: 1980–2004



* = Rates are per 100,000 population and are age-adjusted to the 2000 U.S. standard population.
SOURCES: Delaware: Delaware Cancer Registry, Delaware's Division of Public Health, 2006; U.S.: Surveillance, Epidemiology, and End Results Program, National Cancer Institute, 2007.

Figure 13.2. Five-Year Average Age-Adjusted Prostate Cancer Incidence Rates* in Delaware, by Race: 1980–2004



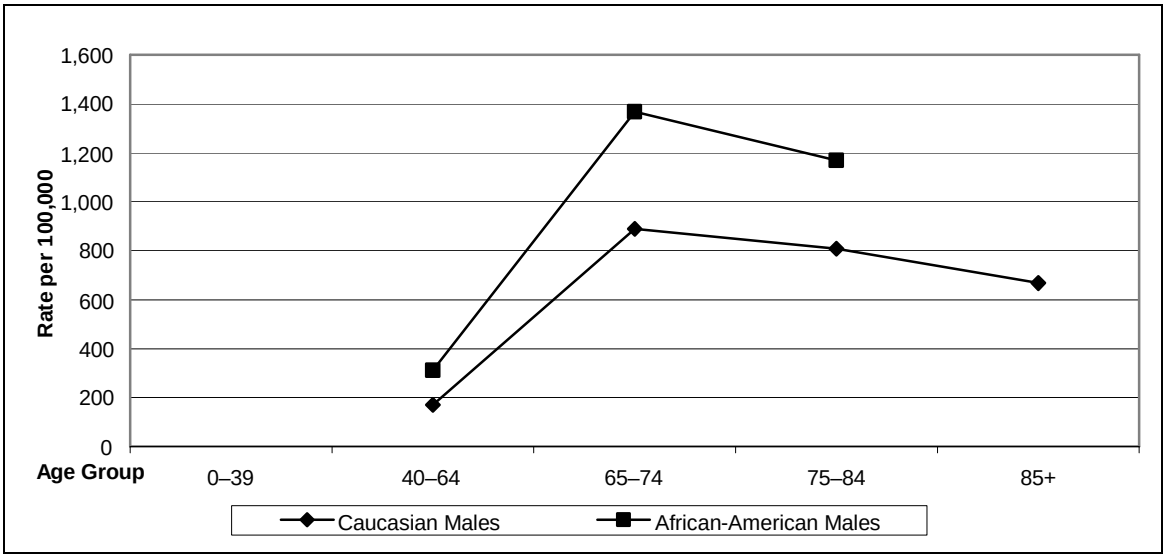
* = Rates are per 100,000 population and are age-adjusted to the 2000 U.S. standard population.
SOURCE: Delaware Cancer Registry, Delaware's Division of Public Health, 2006.

Table 13.3. Age-Specific Prostate Cancer Incidence Rates* in Delaware, by Race: 2000–2004

Age Group	All Male	Caucasian Male	African-American Male
0–39	---	---	---
40–64	198.3	170.1	311.1
65–74	965.1	889.7	1,368.0
75–84	881.1	808.1	1,168.9
85+	745.5	667.2	---

* = Rates are per 100,000 population.
--- = Rate based on fewer than 25 cases.
SOURCE: Delaware Cancer Registry, Delaware's Division of Public Health, 2006.

Figure 13.3. Age-Specific Prostate Cancer Incidence Rates in Delaware, by Race: 2000–2004



NOTE: Rates for Caucasians ages 0–39 and African-Americans ages 0–39 and 85+ years are not displayed due to patient confidentiality rules.
SOURCE: Delaware Cancer Registry, Delaware's Division of Public Health, 2006.

Prostate Cancer by Stage at Diagnosis

Table 13.4. Number of Prostate Cancer Cases in Delaware, by Stage at Diagnosis and Race: 2000–2004

Stage at Diagnosis	All Male	Caucasian Male	African-American Male
Local	2,679	2,055	532
Regional	198	161	32
Distant	100	70	24
Unknown	119	84	21
Total	3,096	2,370	609

SOURCE: Delaware Cancer Registry, Delaware's Division of Public Health, 2006.

Table 13.5. Percentage of Prostate Cancer Cases in Delaware, by Stage at Diagnosis and Race: 2000–2004

Stage at Diagnosis	All Male	Caucasian Male	African-American Male
Local	86.6	86.7	87.4
Regional	6.4	6.8	5.3
Distant	3.2	3.0	3.9
Unknown	3.8	3.5	3.5
Total	100.0	100.0	100.0

SOURCE: Delaware Cancer Registry, Delaware's Division of Public Health, 2006.

Figure 13.4. Percentage of Prostate Cancer Cases in Delaware and the United States (Estimates), by Stage at Diagnosis: 2000–2004

Figure 13.4a. Delaware: 2000–2004

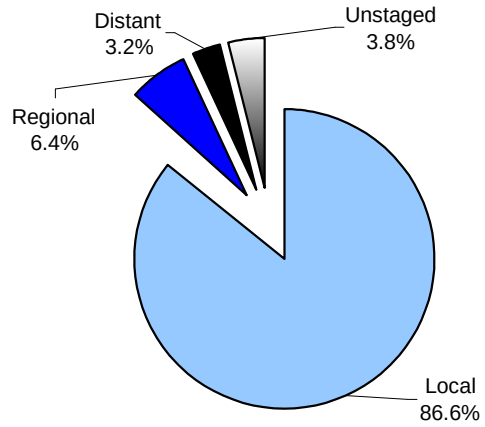
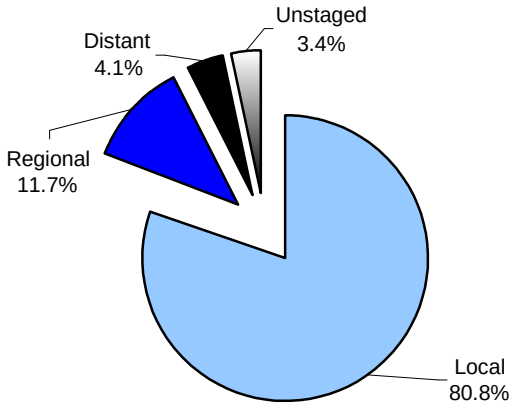
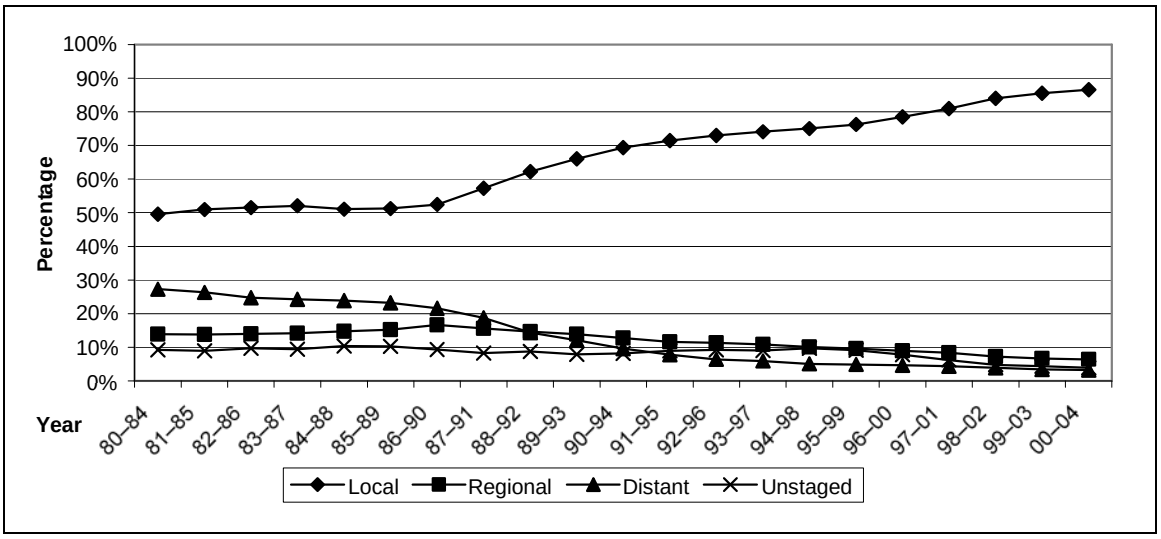


Figure 13.4b. U.S. Estimates: 2000–2004



SOURCES: Delaware: Delaware Cancer Registry, Delaware's Division of Public Health, 2006; U.S.: Surveillance, Epidemiology, and End Results Program, National Cancer Institute, 2007.

Figure 13.5. Percentage of Prostate Cancer Cases in Delaware, by Stage at Diagnosis: 1980–2004



SOURCE: Delaware Cancer Registry, Delaware's Division of Public Health, 2006.

Prostate Cancer Mortality

Table 13.6. Number of Prostate Cancer Deaths in Delaware and Counties, by Race: 2000–2004

	All Male	Caucasian Male	African-American Male
Delaware	442	344	88
Kent	64	39	24
New Castle	259	205	49
Sussex	119	100	15

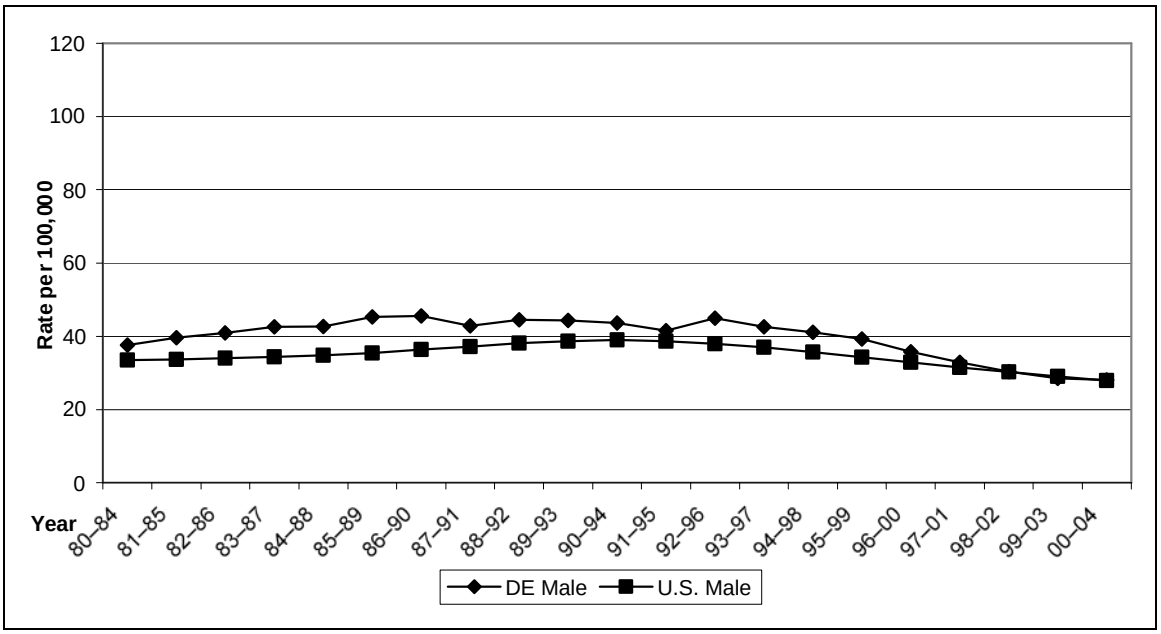
SOURCE: Delaware Health Statistics Center, 2006.

Table 13.7. Five-Year Average Age-Adjusted Prostate Cancer Mortality Rates* in the United States, Delaware and Counties, by Race: 2000–2004

	All Male	Caucasian Male	African-American Male
United States	27.9 (27.7–28.0)	25.6 (25.4–25.7)	62.3 (61.5–63.1)
Delaware	28.1 (25.4–30.8)	25.1 (22.4–27.9)	49.9 (39.0–60.8)
Kent	26.4 (3.3–49.4)	20.1 (-3.4–43.5)	---
New Castle	29.4 (15.9–42.8)	26.6 (12.9–40.3)	49.9 (-5.8–105.6)
Sussex	26.9 (7.2–46.7)	25.1 (4.7–45.4)	---

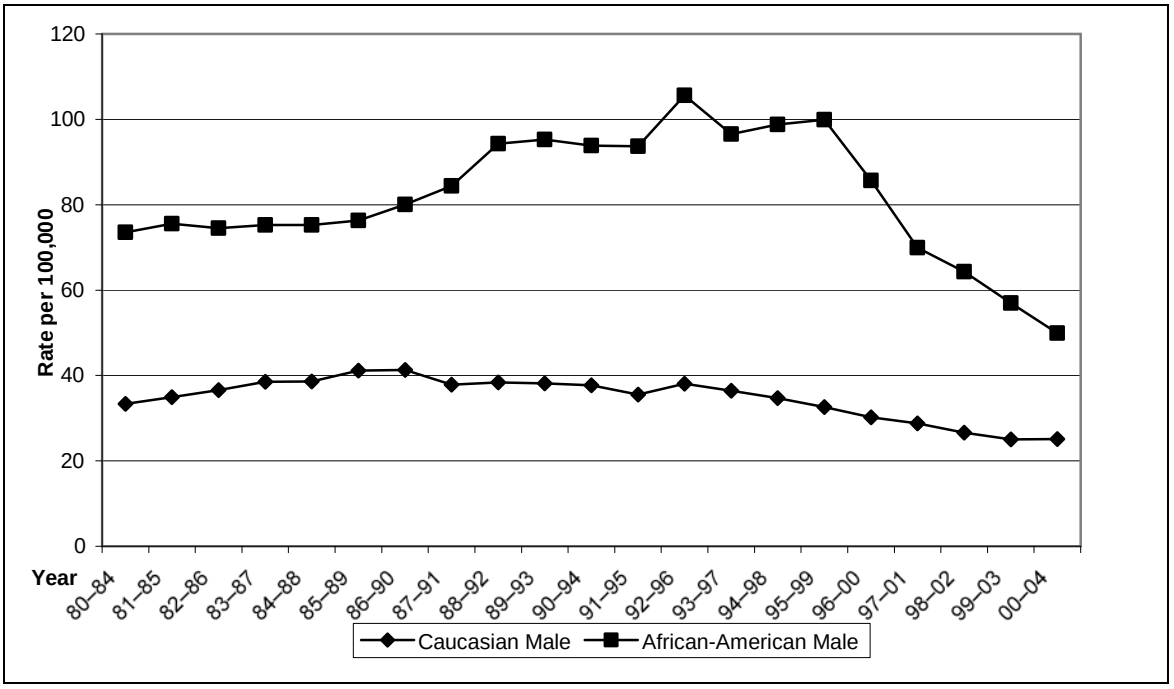
* = Rates are per 100,000 population and age-adjusted to the 2000 U.S. standard population.
--- = Rate based on fewer than 25 deaths.
SOURCES: Delaware: Delaware Health Statistics Center, 2006; U.S.: National Center for Health Statistics, 2007.

Figure 13.6. Five-Year Average Age-Adjusted Prostate Cancer Mortality Rates* in the United States and Delaware: 1980–2004



* = Rates are per 100,000 population and are age-adjusted to the 2000 U.S. standard population.
SOURCES: Delaware: Delaware Health Statistics Center, 2006; U.S.: National Center for Health Statistics, 2007.

Figure 13.7. Five-Year Average Age-Adjusted Prostate Cancer Mortality Rates* in Delaware, by Race: 1980–2004



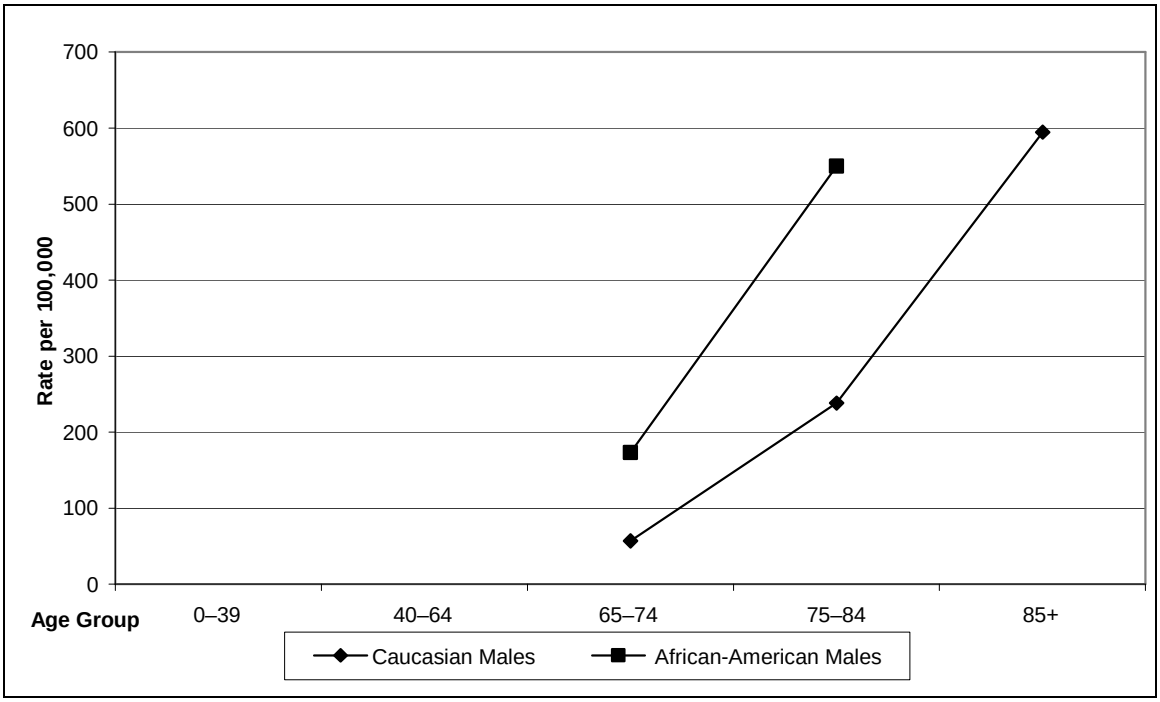
* = Rates are per 100,000 population and are age-adjusted to the 2000 U.S. standard population.
SOURCE: Delaware Health Statistics Center, 2006.

Table 13.8. Age-Specific Prostate Cancer Mortality Rates* in Delaware, by Race: 2000–2004

Age Group	All Male	Caucasian Male	African-American Male
0–39	---	---	0.0
40–64	5.7	---	---
65–74	71.4	57.2	173.4
75–84	272.7	238.2	550.1
85+	603.5	594.6	---

* = Rates are per 100,000 population.
SOURCE: Delaware Health Statistics Center, 2006.

Figure 13.8. Age-Specific Prostate Cancer Mortality Rates in Delaware, by Race: 2000–2004



NOTE: Rates for Caucasians ages 0–39 and Caucasians and African-Americans ages 40–64 are not displayed due to data suppression rules.
SOURCE: Delaware Health Statistics Center, 2006.

14. Testicular Cancer

Risk Factors and Early Detection

Risk Factors for Testicular Cancer

Testicular cancer occurs more often among males:

- Ages 20–39 with a family history of the disease among first-degree relatives
- With congenital abnormalities of the genital organs, particularly cryptorchidism (undescended testicle), low birth weight and intrauterine growth retardation
- With mothers with low parity and subfertility
- Caucasian males are more likely to be diagnosed with testicular cancer than any other race or ethnic group.

Possible Risk Factors for Testicular Cancer

- Maternal exposure to exogenous estrogens during the first trimester of pregnancy
- Inguinal hernia
- History of testicular trauma to the affected testicle
- Employment in occupations related to leather processing

Data Highlights

New Cancer Cases (Table 14.1)

NOTE: Mortality data for testicular cancer were not presented in this chapter due to data confidentiality issues.

- During 2000–2004, there were 95 newly diagnosed cases of testicular cancer, accounting for 0.8 percent of all newly diagnosed cancer cases in males in Delaware.
- There were 83 cases from testicular cancer among Caucasian residents (87.4 percent) of Delaware during 2000–2004. Data for African-American residents were not presented due to data suppression or confidentiality constraints.
- The majority of newly diagnosed testicular cancer cases during 2000–2004 were among New Castle County residents (66 or 69.5 percent); 16 (16.8 percent) were among Sussex County residents, and 13 (13.7 percent) were among Kent County residents.

Incidence Rates (Tables 14.2)

Significant Findings *(The results reported in this section reflect rates in which the confidence intervals did not overlap. This means that differences in observed rates were unlikely to be due to chance variation.)*

- There are no significant findings for testicular cancer incidence rates during 2000–2004 in Delaware.
- According to estimates for the United States during 2000–2004, the rate among Caucasian males was 5.6 per 100,000, and the rate among African-American males was 1.1 per 100,000.

Suggestive Findings *(The results reported in this section reflect rates in which the confidence intervals overlap. This means that observed differences may be due simply to chance variation.)*

- In 2000–2004, the incidence rate for testicular cancer was the same for Delaware and the United States (4.9 per 1000,000).

Trends in Cancer Incidence Rates (Figures 14.1–14.2)

- The testicular cancer incidence rate increased in Delaware from 1980–84 to 1998–2002. Since that time period the rate of testicular cancer has decreased.
- The incidence rate for testicular cancer in Delaware was lower than or the same as the U.S. rate from 1980-84 through 2000-04. Currently, the incidence rate in Delaware is below that of the United States.

Age-Specific Incidence Rates (Tables 14.3)

- Testicular cancer primarily affects Caucasian males in their 20s, 30s, and 40s. The highest age-specific incidence rate of testicular cancer in Delaware was among Caucasian males ages 0–39.

Stage at Diagnosis of Testicular Cancer (Tables 14.4–14.5, Figures 14.4–14.5)

- In Delaware, 25.3% of testicular cancer cases (23) were diagnosed in the late stages (i.e., regional or distant) during 2000–2004, compared with 29.0 percent in U.S. estimates for 2000–2004.
- In Delaware during 2000–2004, slightly fewer testicular cancer cases were diagnosed in the local stage (69.2 percent) compared with the U.S. estimate for 2000–2004 (70.5 percent).
- The proportion of testicular cancers diagnosed in the local stage increased from 51.9 percent in 1980–84 to 78.7 percent in 1994–98. The proportion of local-stage cancers decreased until 1998–2002.
- The increase in local-stage cancers until 1994–98 was mirrored by a decrease in the proportion of late-stage cancers (from 46.3 percent in 1980–84 to 19.1 percent in 1994–98). Since then, the percentage of regional- and distant-stage cancers increased and then remained steady.

Testicular Cancer Incidence

Table 14.1. Number of Testicular Cancer Cases in Delaware and Counties, by Race: 2000–2004

	All Male	Caucasian Male	African-American Male
Delaware	95	83	< 6
Kent	13	13	0
New Castle	66	56	< 6
Sussex	16	14	0

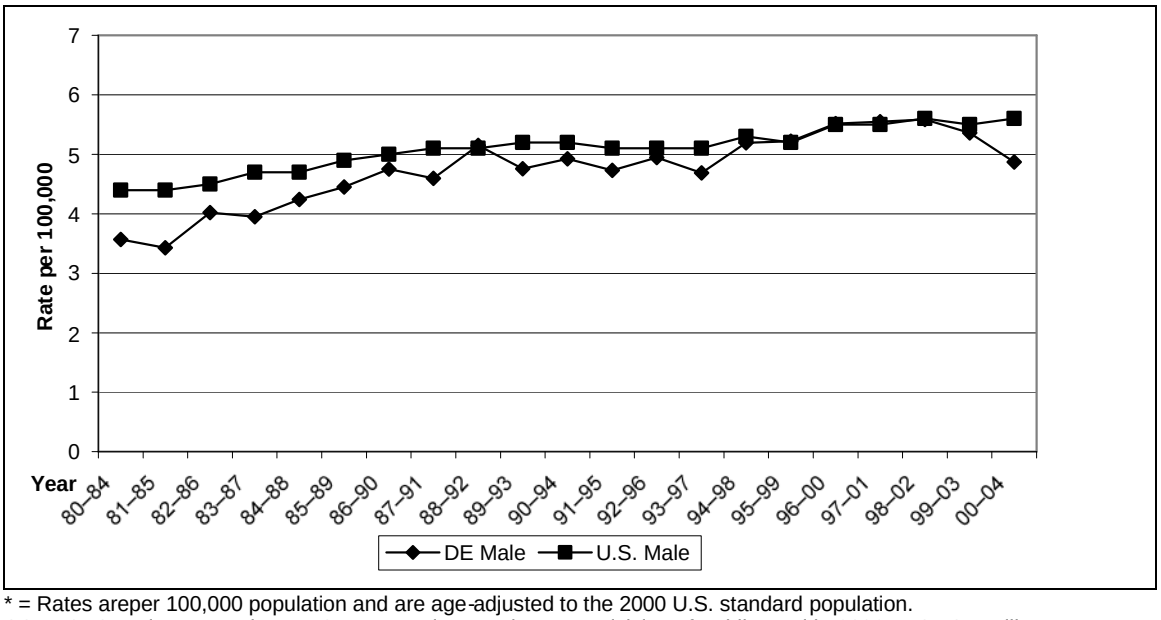
SOURCE: Delaware Cancer Registry, Delaware's Division of Public Health, 2006.

Table 14.2. Five-Year Average Age-Adjusted Testicular Cancer Incidence Rates* in the United States (Estimates), Delaware and Counties, by Race: 2000–2004

	All Male	Caucasian Male	African-American Male
United States	4.9 (4.8–5.0)	5.6 (5.5–5.7)	1.1 (1.0–1.2)
Delaware	4.9 (3.9–5.9)	5.6 (4.4–6.8)	---
Kent	---	---	---
New Castle	5.2 (3.7–6.7)	5.9 (4.1–7.7)	---
Sussex	---	---	---

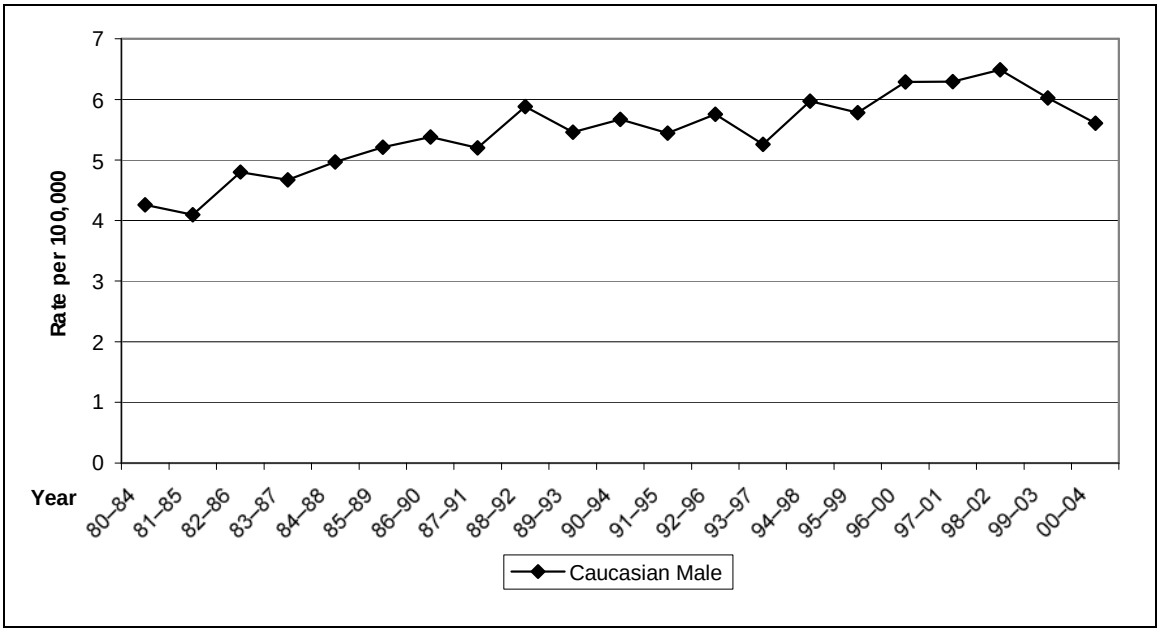
* = Rates are per 100,000 population and age-adjusted to the 2000 U.S. standard population.
SOURCES: Delaware: Delaware Cancer Registry, Delaware's Division of Public Health, 2006; U.S.: Surveillance, Epidemiology, and End Results Program, National Cancer Institute, 2007.

Figure 14.1. Five-Year Average Age-Adjusted Testicular Cancer Incidence Rates* in the United States (Estimates) and Delaware: 1980–2004



* = Rates areper 100,000 population and are age-adjusted to the 2000 U.S. standard population.
SOURCES: Delaware: Delaware Cancer Registry, Delaware's Division of Public Health, 2006; U.S.: Surveillance, Epidemiology, and End Results Program, National Cancer Institute, 2007.

Figure 14.2. Five-Year Average Age-Adjusted Testicular Cancer Incidence Rates* in Delaware, by Race: 1980–2004



* = Rates are per 100,000 population and are age-adjusted to the 2000 U.S. standard population.
NOTE: Rates for African-Americans have been suppressed due to patient confidentiality rules.
SOURCE: Delaware Cancer Registry, Delaware's Division of Public Health, 2006.

Table 14.3. Age-Specific Testicular Cancer Incidence Rates* in Delaware, by Race: 2000–2004

Age Group	All Male	Caucasian Male	African-American Male
0–39	5.2	7.1	---
40–64	5.3	6.4	---
65–74	0.0	0.0	0.0
75–84	---	---	0.0
85+	0.0	0.0	0.0

* = Rates are per 100,000 population.
--- = Rate based on fewer than 25 cases.
SOURCE: Delaware Cancer Registry, Delaware's Division of Public Health, 2006.

Figure 14.3. Age-Specific Testicular Cancer Incidence Rates in Delaware, by Race: 2000–2004

NOTE: Figure is not displayed because of patient confidentiality rules; the small number of cases precludes the display of data.

SOURCE: Delaware Cancer Registry, Delaware's Division of Public Health, 2006.

Testicular Cancer by Stage at Diagnosis

Table 14.4. Number of Testicular Cancer Cases in Delaware, by Stage at Diagnosis and Race: 2000–2004

Stage at Diagnosis	All Male	Caucasian Male	African-American Male
Local	63	56	< 6
Regional	14	11	0
Distant	9	7	< 6
Unknown	< 6	< 6	0
Total	91	79	< 6

SOURCE: Delaware Cancer Registry, Delaware's Division of Public Health, 2006.

Table 14.5. Percentage of Testicular Cancer Cases in Delaware, by Stage at Diagnosis and Race: 2000–2004

Stage at Diagnosis	All Male	Caucasian Male	African-American Male
Local	69.2	70.9	---
Regional	15.4	13.9	0.0
Distant	9.9	8.9	0.0
Unknown	---	---	---
Total	100.0	100.0	---

SOURCE: Delaware Cancer Registry, Delaware's Division of Public Health, 2006.

Figure 14.4. Percentage of Testicular Cancer Cases in Delaware and the United States (Estimates), by Stage at Diagnosis: 2000–2004

Figure 14.4a. Delaware: 2000–2004

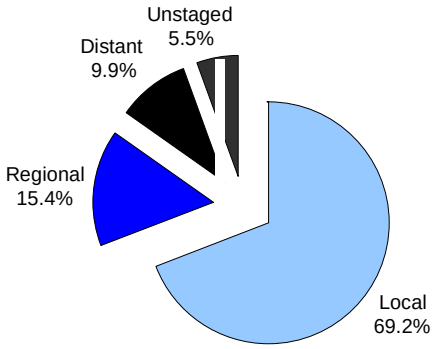
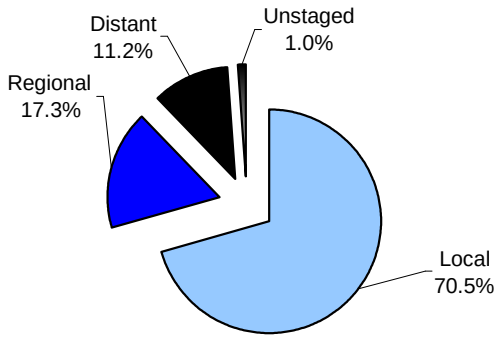
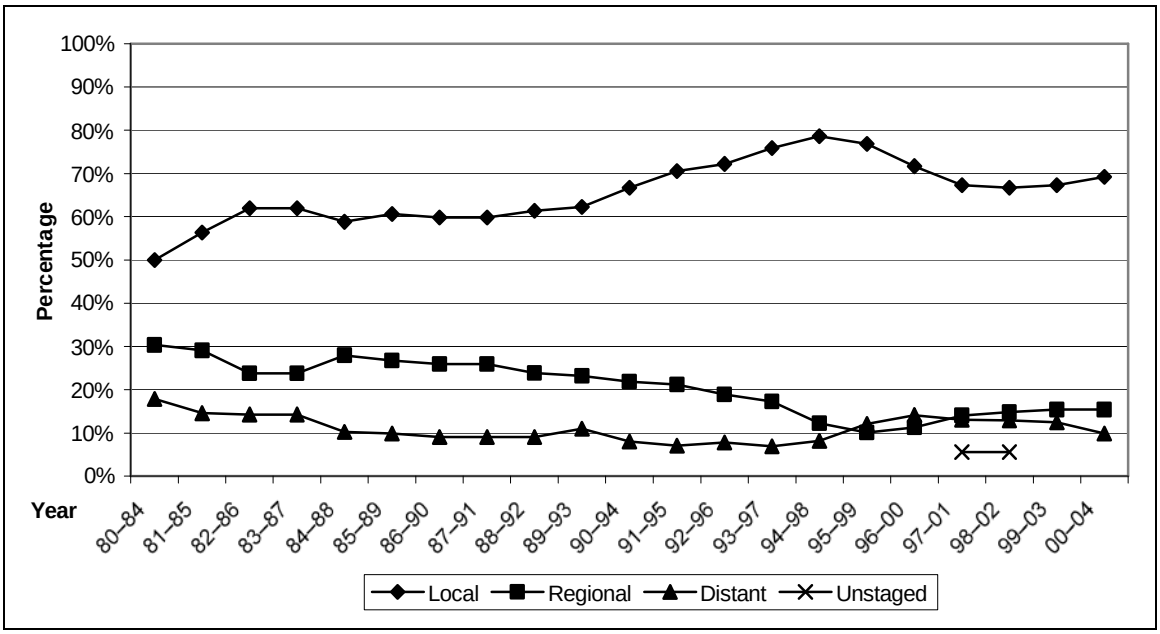


Figure 14.4b. U.S. Estimates: 2000–2004



SOURCES: Delaware: Delaware Cancer Registry, Delaware's Division of Public Health, 2006; U.S.: Surveillance, Epidemiology, and End Results Program, National Cancer Institute, 2007.

Figure 14.5. Percentage of Testicular Cancer Cases in Delaware, by Stage at Diagnosis: 1980–2004



SOURCE: Delaware Cancer Registry, Delaware's Division of Public Health, 2006.

NOTE: Tables 14.6–14.8 and figures 14.6–14.8 are not displayed because of patient confidentiality rules; the small number of cases precludes the display of data.

APPENDIX A

HISPANIC CANCER RATES

Delaware's Division of Public Health would like to present cancer rates for racial and ethnic groups in addition to Delaware's Caucasian and African-American populations. To explore this possibility, an attempt was made to calculate rates for Delaware residents with Hispanic ethnicity. However, this report includes only cancer cases and deaths for the Hispanic population in Delaware (see tables A1 and A2). Cancer rates were not calculated because of several methodological issues that would prevent the rates from being fairly compared with similar data for the Caucasian and African-American populations. Because cancer rates are calculated by dividing the number of cancer cases (numerator) by a population (denominator), the rates can be heavily influenced by changes or uncertainties in either. Specific issues that suggest that Hispanic cancer rates would be subject to misinterpretation are presented below:

- **Uncertain estimate of Delaware's Hispanic population—**Estimates of Delaware's population are derived from a census performed every 10 years by the U.S. Census Bureau. The Delaware Population Consortium (DPC) uses the census to estimate the Delaware population between census years. In 1997, the DPC began releasing studies on special topics of interest, including Hispanic population estimates. Because the estimates are calculated from mortality, fertility, labor force and migration statistics and because these statistics are based on a small population of Hispanics, the DPC urged that the Hispanic population estimates presented in its studies be used with caution (Delaware Population Consortium. *Delawareans of Hispanic Origin, 1991–1998*. Population Study Series. PS-00-01, April 2000). For these reasons, the estimates are not included in the DPC's annual Delaware population projection. In less-populated areas, such as small states, and especially in subsets of the population (for example, for one sex or one county), even a small inaccuracy can result in a substantial error in the cancer rate.

- **Inaccurate recording of Hispanic ethnicity on death certificates—**Race and Hispanic origin are treated as distinct concepts and reported separately on death certificates and to the Delaware Cancer Registry, in accordance with guidelines from the federal Office of Management and Budget. To assess the completeness of the reporting of Hispanic ethnicity, expected numbers of cancer cases and deaths in the Hispanic population were calculated and compared with the actual (observed) reports. Because the Hispanic population is younger than the Delaware population as a whole and because cancer rates increase with age, the expected values were age-adjusted to ensure comparability. There were 78 deaths from cancer reported on death certificates between 2000 and 2004, but 139 deaths were expected. Similarly, 245 cases were reported to the registry, but 434 cases were expected. Although this analysis is a cursory attempt to estimate the degree of underreporting of Hispanic ethnicity, it demonstrates the possibility of significantly inaccurate Hispanic cancer rates.[1]

[1] This analysis assumes that the risk of cancer in the Hispanic population, for any particular age, is the same as in the Delaware population as a whole. The indirect standardization of age adjustment was used to calculate the expected number of cases and deaths in the Hispanic population. The indirect method applies the age-specific rates of a standard population (Delaware's 2000–2004 rates) to the age distribution of the study (Hispanic) population in order to estimate the expected deaths or cases in the study population. Indirect adjustment is used when the number of deaths or cases in each age group in the study population is too small to calculate stable age-specific rates. The rest of this report uses the direct standardization of age adjustment, which is explained in appendix B.

- **Small number of cases or deaths and small population sizes—**An incidence or mortality rate is an estimate, and the reliability of the estimate can be measured by calculating a confidence interval. A small confidence interval suggests that the rate is a good estimate; a wide confidence interval suggests that the rate should be interpreted with caution. If the confidence intervals of two rates do not overlap, the rates are considered to be statistically different. Both the size of the numerator (the number of cases or deaths) and the denominator (the population) determine the width of the confidence interval.

  To illustrate the impact of these statistical concepts on the calculation of Hispanic cancer rates, five-year average annual age-adjusted cancer rates were compared for three racial/ethnic groups, along with their 95-percent confidence intervals. A 95-percent confidence interval suggests that there is a 95-percent probability that the actual rate is within that interval.

  As shown in the tables below, the small numerators and denominators for the Hispanic population produced large confidence intervals, compared with those of the Caucasian and African-American populations.

Table A1. Cancer Cases, Population and Age-Adjusted Cancer Incidence Rates in Delaware: 2000–2004

Race/Ethnicity	Average Annual Cases (2000–2004)	Average Annual Population (2000–2004)	Annual Average Incidence Rate per 100,000	95% Confidence Interval	
				Lower	Upper
Hispanic	49	42,898	285.4	243.7	327.2
Caucasian	3,498	617,888	484.7	477.5	491.9
African-American	635	165,570	533.7	514.8	552.7

Table A2. Cancer Deaths, Population and Age-Adjusted Cancer Mortality Rates in Delaware: 2000–2004

Race/Ethnicity	Average Annual Deaths (2000–2004)	Average Annual Population (2000–2004)	Annual Average Mortality Rate per 100,000	95% Confidence Interval	
				Lower	Upper
Hispanic	16	42,898	117.4	88.2	146.5
Caucasian	1,423	617,888	194.8	190.3	199.3
African-American	259	165,570	236.6	223.4	249.7

SOURCES: For Hispanics, the population was estimated by the U.S. Census Bureau. For Caucasians and African-Americans, the population was provided by the Delaware Population Consortium. Incidence data: Delaware Cancer Registry, Delaware's Division of Public Health, 2006. Mortality data: Delaware Health Statistics Center, 2006.

APPENDIX B

METHODOLOGY

The purpose of the methodology section is to document the materials, data sources and statistical methods that were used to generate the counts and age-adjusted and age-specific incidence and mortality rates discussed in this report. Coding and classification schemes used for both incidence and mortality cases included in the report are described, and a description of technical terms and variable definitions used in the report is provided.

SOURCES OF DATA

Incidence Data

Delaware Cancer Registry

Incident cancer cases that were diagnosed between January 1, 2000, and December 31, 2004, and reported to the Delaware Cancer Registry (DCR) by November 2006 were included in this report to compute the five-year average age-adjusted incidence rates. Trends in incidence were based on cancer diagnoses from January 1, 1980, to December 31, 2004, reported to DCR by November 2006. The total number of newly diagnosed reportable cancers between 2000 and 2004 that occurred among Delaware residents was 21,379. This number includes individuals with cancers diagnosed at more than one site, also known as multiple primaries.

DCR's reporting procedures are consistent with those adopted by the American Cancer Society (ACS) and the National Cancer Institute's (NCI) Surveillance, Epidemiology, and End Results (SEER) Program. Currently, the procedures exclude all cases of benign brain cancers and in situ cancer, except for in situ bladder cancer and borderline ovarian cancer. Invasive and in situ bladder cancer cases were combined in the analysis because of the difficulty in distinguishing between the two types of cancers based on the language used by pathologists.

The International Classification of Diseases for Oncology, Second Edition (ICD-O-2) was used to describe the topography (primary anatomic site) and morphology (histology) for cancers reported between 1988 and 2000. Cancers reported between 2001 and 2004 were coded using the International Classification of Diseases for Oncology, Third Edition (ICD-O-3). The topography code (ICD-O-2 or ICD-O-3) defines both the site of the tumor and the type of neoplasm. The codes range from C00.0 to C80.9. Five-digit morphology codes ranging from M8000/0 to M9989/3 were used to describe both the histology and the behavior of the tumor. The first four digits of the morphology codes define the histology of the cancer, and the fifth digit indicates whether the cancer was malignant, benign, in situ or uncertain (whether benign or malignant). ICD-O-2 codes were converted to ICD-O-3 codes for all cases diagnosed between 1988 and 2000 using conversion programs, primarily to account for the changes in the morphology codes. The topography codes for ICD-O-2 and ICD-O-3 were identical. Cancer primary site groupings used in this report were based on SEER conventions and are shown in appendix D. The histology codes for Kaposi's sarcoma and mesothelioma were retained within the site-specific groupings.

SEER Program

Data from SEER were used to compare Delaware's incidence and mortality rates with those for the United States. Established in 1971 after legislation was passed by Congress, SEER collects, analyzes and disseminates data for cancer control, diagnosis and treatment. Several population-based registries that are representative of the different regions in the United States routinely collect data to allow SEER to produce cancer incidence and mortality statistics.

Connecticut, Hawaii, Iowa, New Mexico, Utah and metropolitan areas of Detroit in Michigan and San Francisco and Oakland in California have provided data to SEER since January 1, 1973. Other states that participate include parts of Georgia and Washington, Kentucky, Louisiana, New Jersey and the remaining counties in California. Recently, SEER expanded data collection activities to 17 population-based registries. This report was based on the nine registries that have provided data to SEER since 1974–75. These registries include Atlanta, Connecticut, Detroit, Hawaii, Iowa, New Mexico, San Francisco-Oakland, Seattle-Puget Sound and Utah.

Mortality Data

Delaware Health Statistics Center

Cancer mortality data used in this report were provided by the Delaware Health Statistics Center. The data file was compiled from all death certificates filed in Delaware between 1980 and 2004. Five-year average age-adjusted mortality rates were based on deaths that occurred between 2000 and 2004. Trends in cancer mortality were presented for deaths that occurred between 1980 and 2004.

The underlying cause-of-death codes were based on the International Classification of Diseases, Ninth Edition (ICD-9) for deaths that occurred between 1980 and 1998. The International Classification of Diseases, Tenth Edition (ICD-10) was used to code deaths that occurred between 2000 and 2004. The underlying cause of death was the cause of death listed on the death certificate that started the sequence of events that eventually led to the death of the individual. It was usually selected from a list of causes of death that appears on the death certificate. Only cancer deaths that occurred among residents of Delaware were included in the analysis. The recodes used to define the overall primary site cancer groups were based on those adopted by SEER (see appendix D).

National Center for Health Statistics

U.S. mortality data were obtained from the National Center for Health Statistics to allow for comparisons between Delaware's mortality rates and national data. The data were compiled from all death certificates filed in the 50 states and the District of Columbia between 1980 and 2004. Cancer deaths were coded in accordance with World Health Organization regulations, which stipulate that cancer deaths should be coded using the most current revision of the International Classification of Diseases. Accordingly, deaths that occurred prior to 1999 were coded using ICD-9. Beginning with 1999, deaths were coded using ICD-10.

Population Data

Standard Population

The year 2000 standard U.S. population was used for age adjustment of incidence and mortality rates. The standard population was used for direct standardization of the incidence and mortality rates to enable comparisons among populations (United States and Delaware counties) that had different age structures.

Population Estimates for Delaware, 2004

The Delaware Population Consortium provided population estimates for Delaware by age, race, sex and county. The population data for the United States was provided by the National Center for Health Statistics. In this data set, between 1980 and 1989, race/ethnicity was defined as Caucasian, African-American and other. Beginning in 1990, detailed race/ethnicity categories were collected as follows: Asian/Pacific Islander, African-American, Caucasian, American Indian and Alaska Native and Hispanic. In 2000, the population estimates included a separate multiracial category, but these cases are not included in this report. The population data for Delaware are presented in appendix E.

RISK FACTORS AND EARLY DETECTION

Cancer risk factors and effective means of preventing cancer are described at the beginning of each chapter of this report. Three Web sites were used as primary sources to update risk factors for cancer: ACS (www.cancer.org), NCI (www.cancer.gov) and WebMD (www.webmd.com).

Behavioral Risk Factor Surveillance System

The Behavioral Risk Factor Surveillance System provided estimates on the prevalence of risk factors in Delaware and the United States. Cancer risk factor data for Delaware and the United States were obtained from the Centers for Disease Control and Prevention's interactive data system. The most recent updates were from 2005 or 2006, depending on the risk factor. The results are included in the appropriate chapters on the site-specific cancers. However, data on obesity, physical inactivity and diet are presented in appendix F, since the literature to support their role in the etiology of cancer is inconsistent.

STATISTICAL METHODOLOGY AND TECHNICAL TERMS

Age-adjusted and age-, race- and sex-specific incidence and mortality rates are presented in this report to describe the pattern of cancer incidence and mortality in Delaware. All rates and the 95-percent confidence intervals were computed using Microsoft Excel and expressed as a five-year average per 100,000 population.

Direct Standardization and Age-Adjusted Incidence and Mortality Rates

The age distribution of a population is an important determinant of the burden of cancer. Because cancer incidence and mortality increase with age, crude rates cannot be used for comparisons of cancer statistics between sexes, racial or ethnic groups or geographic entities or across different time spans. In order to enable comparisons that were independent of the age distribution of the population of Delaware, directly standardized age-adjusted rates were calculated (Anderson & Rosenberg, 1998; Klein & Schoenborn, 2001; Goodman & Wilkens, 1994). Age-adjusted incidence and mortality rates for Delaware were computed using an external reference population with a fixed standard age distribution. Age-standardized rates represent a theoretical rate of cancer incidence or mortality in a population with an age distribution identical to the reference or standard population.

Incidence and mortality rates were adjusted to the U.S. standard million population using direct standardization. This process involved calculating the age-specific incidence or mortality rates for the residents of Delaware and then applying or multiplying these rates to the proportion of individuals in the same age group in the reference population. The individual age-specific rates were then summed to obtain the overall age-adjusted rate.

The formula for an age-adjusted rate can be presented as follows:

$$\text{Age-Adjusted Rate} = \text{sum}\ (w_i \times ((c_i/n_i) \times 100{,}000))$$

Where c_i is the number of new cases or deaths in the *i* age group, n_i is the population estimate for the *i* age group and w_i is the proportion of the standard population in the *i* age group. All rates are expressed per 100,000 of the population.

Age-Specific Incidence and Mortality Rates

Age-related differences in the risk of cancer incidence and mortality and variations in the patterns of cancer were provided by calculating age-specific rates. The age-specific rates were calculated by dividing the number of cases or deaths using five age groups (0–39,40–64, 65–74, 75–84, and 85 and older) in a defined time period by the total population of Delaware in that age group and for the same time period. The rates were expressed per 100,000 of the population.

Race- and Sex-Specific Incidence and Mortality Rates

Subgroup differences in patterns of observed cancer incidence and mortality were demonstrated by calculating race- and sex-specific incidence and mortality rates. These rates were calculated by dividing the number of cases or deaths that occurred in each race and/or sex group by the total population in the corresponding race and/or sex group over the same time period. These rates were adjusted to the U.S. standard population and expressed per 100,000 of the population.

Confidence Intervals

Age-adjusted incidence and mortality rates are subject to chance variation, particularly when they are based on an unusually large or small number of new cancer cases or deaths occurring over a limited period of time or in a limited geographic area. Aggregating several years of data sometimes provides more reliable estimates of incidence and mortality in these situations. The level of uncertainty associated with incidence and mortality statistics can be estimated by the standard error used to calculate the 95-percent confidence interval.

Traditional confidence limits are based on the assumption that the study population is large and that the population under investigation has a normal distribution. A population is considered to be large when the number of deaths or new cancer cases exceeds 100. When cancers are rare, it is more appropriate to calculate the confidence limit based on the inverse gamma function. This method assumes that the direct standardized rate is a linear combination of random Poisson variables (Fay & Feuer, 1997). The advantage of the Poisson model is that it assigns more variability to incidence or mortality rates that are based on a small number of cases than is assigned to rates based on larger counts of deaths or new cases. The confidence limits for the age-adjusted rates for Delaware were calculated by assuming that the population has a normal distribution.

Stage at Diagnosis

The stage of diagnosis describes the extent to which newly diagnosed cancer cases had spread from the site of origin. SEER summary staging was used to define the stage at diagnosis for all incident cancer cases. Cancer cases diagnosed between 1980 and 2000 were coded according to the Summary Stage 1977; beginning with 2000, cases were coded using the codes for Summary Stage 2000. Four categories were used to code the metastases for any particular cancer site:

- "In situ" (Stage 0) was used to code in situ cancer cases that had not spread beyond the site of origin.
- "Local" describes tumors that were invasive but confined to the organ of origin.
- "Regional" tumors had extended beyond the limits of the organ of origin, but there was no evidence of distant metastasis.
- "Distant" stage described cancer cells that had detached from the primary site and begun to grow at a new site in the body.

OTHER TECHNICAL INFORMATION

Suppression of Data

Presentation of data was limited to those rates that were based on an adequate number of cancer cases or deaths. Rates that were based on a very small number of cases were unstable and therefore could not be reliably interpreted.

In addition, suppressing incidence and mortality statistics based on a small number of new cancer cases or deaths protected patient privacy and confidentiality (Coughlin, Clutter & Hutton, 1999; McLaughlin, 2002). Counts were suppressed using the recommendations of the National Center for Health Statistics. All incidence and mortality counts presented for subgroups that were fewer than six per cell were suppressed. Age-adjusted incidence and mortality rates based on fewer than 25 cases or deaths were also suppressed. The same criteria were applied to age-, race- and sex-specific incidence and mortality rates.

Interpretation

The cancer incidence rate was interpreted as the rate at which individuals developed cancer in the population of Delaware between 2000 and 2004. The mortality rate was the rate at which individuals in Delaware died from cancer between 2000 and 2004.

Definition of Race/Ethnicity

Race groupings in this report were defined using both race and Hispanic ethnicity. For incidence and mortality rates, the total population included people of Hispanic ethnicity and those of unknown race. Race-specific incidence and mortality rates excluded all Delaware cases of Hispanic ethnicity to maintain consistency with the race-specific SEER rates to which Delaware's were compared.

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APPENDIX C

FIVE-YEAR AVERAGE AGE-ADJUSTED INCIDENCE AND MORTALITY RATES FOR ALL CANCERS, EXCLUDING SPECIFIC SITES: 2000–2004

	All			Caucasian			African-American		
	Total	**Male**	**Female**	**Total**	**Male**	**Female**	**Total**	**Male**	**Female**
Incidence*									
Delaware									
Count	6,901	3,342	3,559	5,728	2,818	2,910	899	404	495
Rate	163.0 (159.1–166.8)	179.2 (173.1–185.4)	153.9 (148.8–158.9)	160.9 (156.7–165.1)	177.5 (170.8–184.1)	151.9 (146.3–157.5)	151.2 (141.0–161.4)	161.5 (144.5–178.5)	144.5 (131.5–157.4)
Kent County									
Count	929	456	473	754	378	376	129	64	65
Rate	145.7 (123.2–168.2)	163.3 (120.1–206.6)	135.4 (109.1–161.7)	145.9 (121.3–170.6)	168.1 (118.2–217.9)	134.2 (106.2–162.3)	117.9 (64.8–171.0)	120.0 (53.2–186.8)	112.4 (37.5–187.2)
New Castle County									
Count	4,185	1,958	2,227	3,394	1,610	1784	601	264	337
Rate	168.0 (155.9–180.2)	183.3 (160.4–206.2)	161.3 (146.9–175.6)	166.1 (153.2–179.1)	181.0 (156.7–205.3)	160.0 (144.6–175.4)	154.6 (119.3–190.0)	170.5 (98.2–242.8)	147.5 (106.7–188.4)
Sussex County									
Count	1,786	927	859	1,579	829	76	169	76	93
Rate	160.9 (143.1–178.7)	177.1 (146.6–207.6)	148.6 (126.9–170.3)	157.6 (139.2–176.0)	173.8 (142.0–205.5)	145.3 (122.8–167.9)	172.1 (105.7–238.6)	184.0 (75.7–292.3)	163.4 (80.9–245.8)
Mortality*									
Delaware									
Count	2,879	1,462	1,417	2,397	1,227	1,170	430	212	218
Rate	68.0 (65.5–70.5)	81.3 (77.0–85.5)	58.5 (55.5–61.6)	65.9 (63.2–68.5)	78.9 (74.4–83.4)	56.5 (53.2–59.7)	78.6 (70.9–86.2)	94.9 (81.1–108.7)	68.3 (59.1–77.4)
Kent County									
Count	426	216	210	338	178	160	75	34	41
Rate	67.9 (49.9–85.9)	80.9 (46.2–115.7)	59.0 (37.8–80.2)	65.1 (45.8–84.3)	80.7 (43.0–118.4)	54.0 (31.7–76.3)	75.8 (25.2–126.4)	74.5 (-9.9–158.8)	77.1 (10.8–143.5)
New Castle County									
Count	1,732	870	862	1,417	713	704	278	139	139
Rate	70.6 (61.3–79.9)	85.7 (67.8–103.6)	60.7 (49.9–71.4)	68.6 (58.7–78.4)	82.9 (64.1–101.7)	59.1 (47.6–70.5)	79.2 (50.7–107.7)	102.0 (39.0–165.0)	66.4 (34.9–97.9)
Sussex County									
Count	721	376	345	642	336	306	77	39	38
Rate	63.1 (50.0–76.3)	72.8 (50.6–95.1)	54.6 (38.6–70.6)	61.9 (48.2–75.6)	71.0 (48.0–94.5)	53.8 (37.1–70.4)	80.1 (32.0–128.2)	96.3 (14.8–177.7)	67.8 (9.5–126.2)

* = Rates are expressed per 100,000.

NOTE: Rates exclude the following sites: female breast, cervical, colorectal, kidney and renal pelvis, leukemia, liver and bile duct, lung and bronchial, non-Hodgkin's lymphoma, oral cavity and pharynx, prostate and testicular.

APPENDIX D

PRIMARY SITE DEFINITIONS FOR CANCER INCIDENCE AND MORTALITY

Primary Site	ICD-O-2	ICD-O-3	ICD-9	ICD-10
Oral cavity and pharynx	C00.0–C14.8	C00.0–C14.8	140.0–149.9	C00.0–C14.8
Esophagus	C15.0–C15.9	C15.0–C15.9	150.0–150.9	C15.0–C15.9
Stomach	C16.0–C16.9	C16.0–C16.9	151.0–151.9	C16.0–C16.9
Colon and rectum	C18.0–C20.9, C26.0	C18.0–C20.9, C26.0	153.0–154.1, 159.0	C18.0–C20.9, C26.0
Liver and bile duct	C22.0–C22.1	C22.0–C22.1	155.0–155.2	C22.0–C22.9
Pancreas	C25.0–C25.9	C25.0–C25.9	157.0–157.9	C25.0–C25.9
Larynx	C32.0–C32.9	C32.0–C32.9	161.0–161.9	C32.0–C32.9
Bronchus and lung	C34.0–C34.9	C34.0–C34.9	162.2–162.9	C34.0–C34.9
Melanoma of the skin	C44.0–C44.9, M8720–M8790	C44.0–C44.9, M8720–M8790	172.0–172.9	C43.0–C43.9
Female breast	C50.0–C50.9	C50.0–C50.9	174.0–174.9	C50.0–C50.9
Cervix uteri	C53.0–C53.9	C53.0–C53.9	180.0–180.9	C53.0–C53.9
Corpus/uterus, not otherwise specified	C54.0–C55.9	C54.0–C55.9	182.0–182.9, 179	C54.0–C55.9
Ovary	C56.9	C56.9	183.0	C56.9
Prostate	C61.9	C61.9	185	C61
Testis	C62.0–C62.9	C62.0–C62.9	186.0–186.9	C62.0–C62.9
Urinary bladder	C67.0–C67.9	C67.0–C67.9	188.0–188.9	C67.0–C67.9
Kidney and renal pelvis	C64.9, C65.9	C64.9, C65.9	189.0–189.1	C64, C65
Brain and other nervous system	C70.0–C72.9	C70.0–C72.9	191.0–192.9	C70.0–C72.9
Thyroid	C73.9	C73.9	193	C73
Non-Hodgkin's lymphomas	M9590–M9595, M9670–M9717	M9590–M9596, M9670–M9729	200.0–200.8, 202.0–202.2, 202.8–202.9	C82.0–C85.9
Hodgkin's lymphomas	M9650–M9667	M9650–M9667	201.0–201.9	C81.0–C81.9
Multiple myeloma	M9731–M9732	M9731–M9732, M9734	203.0, 203.2–203.8	C88.7–C88.9, C90.0–C90.2
Leukemias	M9800–M9941	M9733, M9742, M9800–M9948, M9963–M9964	202.4, 203.1, 204.0–208.9	C90.1, C91.0–C95.9

APPENDIX E

DELAWARE POPULATION ESTIMATES (FIVE-YEAR TOTALS), BY SEX, RACE, YEARS AND AGE GROUP: 1980–2004

TOTAL POPULATION

Years	0–4	5–9	10–14	15–19	20–24	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60–64	65–69	70–74	75–79	80–84	85+	Total
1980–84	214,207	215,224	238,510	284,928	287,504	257,448	240,373	198,978	169,336	160,852	159,719	157,164	137,314	112,545	82,140	56,216	35,859	27,646	3,035,963
1981–85	218,519	217,674	235,624	278,183	285,957	262,204	247,217	205,957	176,370	163,939	158,955	156,135	138,915	115,869	84,762	58,120	36,884	28,312	3,069,596
1982–86	222,918	220,151	232,773	271,597	284,419	267,048	254,255	213,182	183,696	167,085	158,194	155,112	140,534	119,290	87,468	60,088	37,938	28,995	3,104,743
1983–87	227,406	222,657	229,956	265,167	282,889	271,982	261,493	220,660	191,326	170,291	157,437	154,097	142,173	122,813	90,260	62,123	39,023	29,694	3,141,447
1984–88	231,983	225,191	227,174	258,889	281,367	277,007	268,938	228,400	199,273	173,559	156,684	153,088	143,831	126,440	93,141	64,227	40,139	30,410	3,179,741
1985–89	236,653	227,754	224,425	252,761	279,854	282,125	276,595	236,411	207,551	176,889	155,935	152,086	145,508	130,174	96,115	66,402	41,286	31,143	3,219,667
1986–90	241,417	230,346	221,710	246,778	278,349	287,338	284,469	244,704	216,172	180,283	155,189	151,090	147,204	134,018	99,184	68,651	42,467	31,894	3,261,263
1987–91	247,002	233,344	221,422	239,937	277,915	290,859	292,199	253,305	226,107	183,991	155,843	150,234	148,777	137,280	102,762	70,853	43,848	33,044	3,308,722
1988–92	252,939	237,039	222,907	234,247	276,897	292,805	298,751	262,638	234,402	190,346	158,034	149,705	149,883	139,752	106,802	73,121	45,335	34,445	3,360,048
1989–93	258,679	241,198	226,409	230,132	275,530	292,343	303,805	272,267	241,848	198,345	162,375	149,809	150,596	141,613	110,952	75,571	46,885	36,158	3,414,515
1990–94	263,575	245,976	231,812	228,278	273,079	289,734	307,523	281,967	248,810	207,578	168,638	150,931	150,828	142,664	115,253	78,238	48,501	38,109	3,471,495
1991–95	267,276	251,644	238,648	229,237	269,266	285,672	309,672	291,351	255,795	218,395	176,552	152,922	150,922	142,984	119,406	81,230	50,469	40,220	3,531,662
1992–96	268,230	257,884	244,332	234,502	262,602	282,623	309,916	300,043	261,684	230,929	184,172	156,088	150,842	143,580	122,749	84,821	52,337	42,224	3,589,559
1993–97	267,318	264,096	249,956	241,269	256,251	279,379	309,039	307,035	269,684	240,209	193,595	160,553	150,922	144,422	125,162	88,785	54,357	44,091	3,646,121
1994–98	265,318	270,063	255,087	249,306	251,098	276,614	306,836	312,437	278,979	247,970	203,452	166,464	151,575	145,375	127,290	92,731	56,609	45,874	3,703,078
1995–99	263,097	275,155	259,963	257,829	248,402	273,725	303,060	316,753	288,783	254,999	213,433	173,368	153,324	146,388	128,811	96,676	59,072	47,686	3,760,523
1996–2000	260,887	278,384	265,330	265,682	248,998	269,598	298,611	319,891	298,156	261,724	224,182	181,016	155,416	147,743	130,117	100,350	61,687	49,464	3,817,237
1997–2001	260,222	279,236	271,171	270,361	254,617	262,938	294,526	321,205	306,718	267,541	236,586	188,557	158,410	148,605	131,729	103,494	64,856	51,192	3,871,965
1998–2002	261,182	278,111	276,995	273,420	262,695	255,987	290,542	320,747	314,036	275,407	246,059	197,923	162,941	149,202	133,595	106,149	68,385	53,284	3,926,663
1999–2003	263,147	275,728	282,716	276,063	270,531	250,646	286,717	318,458	319,534	284,720	253,936	208,082	168,894	150,079	135,437	108,913	72,185	55,811	3,981,596
2000–2004	264,703	270,578	285,718	277,493	277,587	245,714	280,543	313,374	325,255	296,648	262,791	219,919	176,929	152,903	138,167	112,027	76,375	58,800	4,035,524

TOTAL MALE POPULATION

Years	0–4	5–9	10–14	15–19	20–24	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60–64	65–69	70–74	75–79	80–84	85+	Total
1980–84	109,306	109,805	121,585	141,190	140,621	126,224	117,528	96,927	82,646	78,388	77,061	74,473	65,132	50,443	33,955	21,202	11,611	7,269	1,465,366
1981–85	111,544	111,121	120,157	137,931	140,086	128,782	121,035	100,443	86,114	79,862	76,725	74,084	65,854	51,973	35,246	22,030	11,988	7,332	1,482,307
1982–86	113,828	112,453	118,745	134,748	139,553	131,392	124,646	104,086	89,727	81,364	76,391	73,698	66,584	53,549	36,586	22,890	12,378	7,395	1,500,013
1983–87	116,159	113,801	117,350	131,638	139,021	134,054	128,365	107,861	93,492	82,895	76,058	73,314	67,322	55,173	37,976	23,784	12,780	7,458	1,518,501
1984–88	118,537	115,165	115,971	128,600	138,491	136,771	132,195	111,773	97,415	84,454	75,727	72,931	68,068	56,846	39,420	24,712	13,196	7,522	1,537,794
1985–89	120,964	116,546	114,608	125,632	137,964	139,543	136,139	115,827	101,503	86,043	75,397	72,551	68,823	58,570	40,919	25,677	13,625	7,587	1,557,918
1986–90	123,441	117,943	113,261	122,733	137,438	142,371	140,201	120,028	105,762	87,662	75,069	72,173	69,585	60,346	42,474	26,679	14,068	7,652	1,578,887
1987–91	126,361	119,575	113,147	119,415	137,266	144,393	144,160	124,332	110,654	89,453	75,440	71,791	70,326	61,932	44,245	27,669	14,586	7,935	1,602,682
1988–92	129,420	121,562	113,881	116,683	136,734	145,559	147,517	129,015	114,657	92,613	76,507	71,522	70,884	63,213	46,211	28,723	15,182	8,316	1,628,201
1989–93	132,392	123,724	115,770	114,714	136,060	145,319	150,055	133,884	118,210	96,587	78,550	71,575	71,327	64,282	48,108	29,921	15,851	8,786	1,655,113
1990–94	134,893	126,195	118,659	113,863	134,793	143,882	151,941	138,762	121,554	101,108	81,480	72,141	71,505	65,105	49,980	31,199	16,567	9,376	1,683,004
1991–95	136,777	129,054	122,259	114,510	132,759	141,725	152,970	143,435	124,882	106,389	85,222	73,078	71,636	65,589	51,812	32,650	17,462	10,031	1,712,240
1992–96	137,127	132,227	125,389	117,153	129,509	139,932	153,216	147,705	127,627	112,514	88,790	74,649	71,602	66,183	53,329	34,376	18,327	10,620	1,740,276
1993–97	136,560	135,384	128,537	120,476	126,511	138,066	152,850	151,106	131,610	116,796	93,387	76,842	71,604	66,898	54,471	36,193	19,279	11,215	1,767,785
1994–98	135,513	138,493	131,217	124,569	124,021	136,681	151,765	153,614	136,352	120,327	98,249	79,630	71,829	67,657	55,678	37,857	20,366	11,836	1,795,655
1995–99	134,370	141,136	133,699	128,994	122,710	135,375	149,777	155,661	141,353	123,570	103,159	82,833	72,633	68,311	56,850	39,503	21,522	12,507	1,823,964
1996–2000	133,161	142,939	136,383	132,978	123,174	133,430	147,574	157,118	146,142	126,696	108,399	86,446	73,549	69,158	57,860	41,098	22,776	13,252	1,852,133
1997–2001	132,716	143,337	139,243	135,903	125,672	130,319	145,374	157,968	150,411	129,323	114,470	90,033	74,975	69,650	59,001	42,519	24,294	13,961	1,879,169
1998–2002	133,022	142,634	142,083	138,230	129,134	127,095	143,248	157,865	153,944	133,336	118,785	94,643	77,147	69,924	60,295	43,821	25,892	14,804	1,905,901
1999–2003	133,607	141,297	144,922	139,954	132,619	124,625	141,349	156,805	156,439	138,155	122,341	99,690	79,962	70,284	61,539	45,363	27,474	15,850	1,932,275
2000–2004	133,866	138,540	146,752	141,377	136,179	121,992	138,334	154,139	159,016	144,235	126,427	105,497	83,734	71,511	62,883	47,165	29,106	16,901	1,957,654

TOTAL FEMALE POPULATION

Years	0–4	5–9	10–14	15–19	20–24	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60–64	65–69	70–74	75–79	80–84	85+	Total
1980–84	104,902	105,418	116,924	143,736	146,881	131,220	122,842	102,049	86,690	82,462	82,657	82,688	72,182	62,100	48,170	35,008	24,246	20,361	1,570,536
1981–85	106,976	106,551	115,467	140,250	145,868	133,416	126,178	105,512	90,256	84,074	82,228	82,047	73,061	63,894	49,496	36,082	24,893	20,959	1,587,208
1982–86	109,091	107,697	114,028	136,848	144,862	135,649	129,604	109,093	93,968	85,718	81,802	81,411	73,950	65,739	50,858	37,188	25,557	21,574	1,604,637
1983–87	111,248	108,855	112,607	133,529	143,863	137,919	133,123	112,795	97,833	87,394	81,378	80,780	74,851	67,638	52,258	38,328	26,239	22,208	1,622,846
1984–88	113,447	110,025	111,203	130,290	142,871	140,227	136,738	116,623	101,857	89,102	80,956	80,154	75,763	69,592	53,696	39,503	26,940	22,861	1,641,848
1985–89	115,689	111,208	109,817	127,130	141,885	142,574	140,451	120,581	106,047	90,844	80,536	79,533	76,686	71,602	55,174	40,714	27,659	23,533	1,661,663
1986–90	117,976	112,404	108,448	124,046	140,906	144,961	144,264	124,673	110,409	92,620	80,119	78,917	77,620	73,670	56,692	41,962	28,398	24,224	1,682,310
1987–91	120,640	113,769	108,274	120,523	140,646	146,461	148,036	128,971	115,454	94,537	80,402	78,442	78,453	75,346	58,505	43,178	29,261	25,098	1,705,994
1988–92	123,518	115,476	109,025	117,564	140,161	147,244	151,232	133,623	119,745	97,732	81,525	78,181	79,000	76,537	60,585	44,395	30,153	26,123	1,731,819
1989–93	126,286	117,475	110,640	115,418	139,469	147,023	153,749	138,383	123,639	101,757	83,825	78,235	79,270	77,330	62,842	45,649	31,034	27,370	1,759,392
1990–94	128,683	119,782	113,153	114,415	138,286	145,852	155,582	143,205	127,256	106,470	87,157	78,790	79,324	77,559	65,273	47,039	31,934	28,733	1,788,491
1991–95	130,498	122,590	116,390	114,727	136,507	143,947	156,702	147,916	130,913	112,005	91,330	79,843	79,287	77,395	67,594	48,581	33,007	30,190	1,819,422
1992–96	131,103	125,658	118,943	117,349	133,093	142,691	156,700	152,338	134,056	118,415	95,382	81,439	79,241	77,397	69,420	50,445	34,010	31,604	1,849,283
1993–97	130,758	128,712	121,419	120,793	129,740	141,313	156,188	155,930	138,074	123,412	100,207	83,711	79,318	77,523	70,691	52,591	35,079	32,877	1,878,336
1994–98	129,805	131,570	123,871	124,736	127,077	139,933	155,071	158,823	142,627	127,643	105,203	86,834	79,746	77,718	71,612	54,874	36,243	34,037	1,907,423
1995–99	128,726	134,019	126,264	128,834	125,692	138,350	153,282	161,092	147,431	131,428	110,275	90,535	80,691	78,077	71,961	57,173	37,550	35,178	1,936,559
1996–2000	127,727	135,445	128,948	132,704	125,824	136,169	151,037	162,773	152,014	135,028	115,783	94,570	81,867	78,585	72,257	59,252	38,911	36,212	1,965,104
1997–2001	127,506	135,899	131,928	134,457	128,945	132,619	149,152	163,237	156,307	138,218	122,117	98,525	83,436	78,955	72,728	60,976	40,562	37,231	1,992,796
1998–2002	128,161	135,478	134,912	135,190	133,561	128,892	147,294	162,882	160,092	142,071	127,274	103,281	85,794	79,278	73,300	62,328	42,493	38,481	2,020,762
1999–2003	129,539	134,430	137,794	136,109	137,912	126,022	145,368	161,653	163,095	146,566	131,594	108,392	88,931	79,795	73,898	63,550	44,712	39,962	2,049,321
2000–2004	130,837	132,038	138,966	136,116	141,408	123,722	142,209	159,235	166,239	152,413	136,364	114,422	93,195	81,392	75,284	64,862	47,269	41,899	2,077,870

TOTAL CAUCASIAN POPULATION

Years	0–4	5–9	10–14	15–19	20–24	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60–64	65–69	70–74	75–79	80–84	85+	Total
1980–84	161,578	164,018	181,424	224,599	233,283	209,496	197,457	164,950	140,805	135,974	137,745	137,055	121,128	98,211	72,417	49,295	32,140	24,892	2,486,467
1981–85	165,108	165,832	179,045	218,700	231,353	213,038	202,745	170,315	146,500	138,347	136,602	135,821	122,426	101,259	74,803	51,006	33,035	25,460	2,511,395
1982–86	168,715	167,666	176,697	212,956	229,439	216,640	208,175	175,855	152,425	140,762	135,468	134,598	123,738	104,402	77,268	52,776	33,955	26,041	2,537,576
1983–87	172,401	169,520	174,380	207,363	227,541	220,304	213,750	181,575	158,590	143,218	134,344	133,386	125,064	107,642	79,814	54,607	34,901	26,635	2,565,035
1984–88	176,168	171,395	172,093	201,917	225,659	224,029	219,474	187,481	165,005	145,717	133,229	132,185	126,404	110,983	82,444	56,502	35,873	27,244	2,593,802
1985–89	180,017	173,291	169,836	196,614	223,792	227,817	225,351	193,578	171,679	148,260	132,123	130,995	127,758	114,428	85,161	58,463	36,872	27,866	2,623,901
1986–90	183,950	175,207	167,609	191,451	221,941	231,670	231,386	199,873	178,624	150,847	131,026	129,816	129,127	117,980	87,967	60,492	37,899	28,503	2,655,366
1987–91	187,894	177,153	166,863	185,435	220,429	233,668	236,950	206,300	186,376	153,654	131,079	128,661	130,340	120,965	91,201	62,536	39,077	29,527	2,688,106
1988–92	191,482	179,322	167,125	180,133	217,986	233,865	241,209	213,099	192,430	158,654	132,454	127,698	131,049	123,163	94,871	64,638	40,365	30,776	2,720,317
1989–93	194,527	181,518	168,606	175,680	215,064	231,556	243,878	219,891	197,450	164,885	135,647	127,228	131,291	124,781	98,560	66,965	41,688	32,322	2,751,535
1990–94	196,541	183,858	171,241	172,627	211,065	227,003	245,006	226,480	201,837	171,857	140,503	127,525	130,982	125,640	102,304	69,478	43,072	34,075	2,781,094
1991–95	197,412	186,426	174,732	171,429	205,735	220,756	244,418	232,502	205,982	179,838	146,738	128,525	130,397	125,760	105,836	72,293	44,756	35,969	2,809,504
1992–96	196,651	189,133	177,569	173,360	198,474	215,370	242,035	237,686	209,264	188,958	152,691	130,589	129,548	126,041	108,655	75,544	46,418	37,738	2,835,726
1993–97	194,914	191,522	180,524	176,197	191,712	209,970	238,546	241,328	214,237	194,942	160,089	133,824	128,769	126,460	110,586	79,153	48,220	39,380	2,860,373
1994–98	192,142	193,572	183,087	180,113	185,796	205,241	233,844	243,436	220,158	199,443	167,649	138,299	128,457	126,835	112,312	82,600	50,327	40,896	2,884,205
1995–99	188,932	194,765	185,366	184,555	181,700	200,659	227,822	244,375	226,303	203,325	174,928	143,676	129,091	127,140	113,534	85,979	52,617	42,427	2,907,193
1996–2000	184,527	194,549	187,688	188,692	180,124	195,312	221,186	244,155	231,860	206,909	182,487	149,683	130,063	127,584	114,588	89,037	55,043	43,903	2,927,389
1997–2001	181,606	192,937	190,124	190,745	182,626	188,335	215,368	242,431	236,668	209,906	191,266	155,510	131,973	127,505	115,785	91,683	57,891	45,339	2,947,698
1998–2002	180,206	190,281	192,184	191,812	187,218	181,454	210,062	239,373	240,546	214,723	197,260	162,833	135,299	127,174	117,089	93,824	61,061	47,125	2,969,523
1999–2003	180,280	186,740	193,974	192,646	191,680	176,071	205,224	235,036	242,929	220,703	201,862	170,609	139,929	127,053	118,258	96,126	64,358	49,368	2,992,844
2000–2004	186,835	187,987	200,127	198,216	200,774	177,758	205,887	234,912	250,735	233,093	210,952	182,185	148,499	130,262	121,191	99,448	68,324	52,255	3,089,440

CAUCASIAN MALE POPULATION

Years	0–4	5–9	10–14	15–19	20–24	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60–64	65–69	70–74	75–79	80–84	85+	Total
1980–84	82,959	83,837	93,237	111,461	115,453	104,632	98,145	81,339	69,237	66,809	66,667	65,197	57,578	44,196	29,758	18,440	10,352	6,397	1,205,694
1981–85	84,785	84,833	92,019	108,599	114,559	106,506	100,888	84,155	72,123	67,961	66,144	64,724	58,206	45,589	30,962	19,201	10,689	6,443	1,218,386
1982–86	86,651	85,841	90,817	105,811	113,673	108,413	103,707	87,068	75,129	69,132	65,625	642,55	58,841	47,026	32,215	19,993	11,037	6,490	1,23,1724
1983–87	88,558	86,861	89,631	103,095	112,793	110,354	106,606	90,082	78,261	70,324	65,110	63,789	59,484	48,508	33,519	20,818	11,396	6,537	1,245,726
1984–88	90,507	87,893	88,459	100,448	111,919	112,330	109,586	93,200	81,523	71,537	64,600	63,327	60,133	50,037	34,875	21,677	11,766	6,584	1,260,401
1985–89	92,499	88,937	87,303	97,869	111,053	114,341	112,649	96,427	84,921	72,771	64,094	62,868	60,789	51,615	36,286	22,572	12,149	6,632	1,275,775
1986–90	94,536	89,993	86,162	95,356	110,193	116,388	115,797	99,764	88,461	74,025	63,592	62,412	61,453	53,243	37,755	23,503	12,544	6,680	1,291,859
1987–91	96,603	91,084	85,801	92,401	109,365	117,553	118,677	103,103	92,377	75,404	63,670	61,899	62,058	54,702	39,395	24,463	12,993	6,954	1,308,504
1988–92	98,415	92,299	85,916	89,772	108,060	117,753	120,867	106,617	95,377	77,933	64,379	61,412	62,459	55,871	41,201	25,486	13,518	7,317	1,324,653
1989–93	99,976	93,496	86,759	87,553	106,568	116,515	122,185	110,104	97,882	81,089	65,921	61,169	62,693	56,848	42,907	26,655	14,105	7,762	1,340,188
1990–94	100,944	94,755	88,204	86,059	104,476	114,058	122,732	113,431	100,104	84,572	68,261	61,295	62,616	57,611	44,554	27,878	14,727	8,326	1,354,604
1991–95	101,316	96,062	90,063	85,584	101,649	110,756	122,359	116,385	102,202	88,543	71,293	61,697	62,429	58,057	46,110	29,235	15,517	8,943	1,368,200
1992–96	100,728	97,455	91,652	86,573	98,014	107,767	121,224	118,867	103,867	93,072	74,142	62,694	62,034	58,543	47,411	30,791	16,313	9,468	1,380,616
1993–97	99,722	98,630	93,312	87,994	94,667	104,786	119,500	120,558	106,495	95,906	77,803	64,290	61,582	59,097	48,364	32,446	17,187	10,003	1,392,341
1994–98	98,201	99,623	94,637	90,036	91,660	102,343	117,163	121,394	109,608	98,028	81,613	66,398	61,292	59,607	49,390	33,899	18,212	10,551	1,403,657
1995–99	96,518	100,126	95,789	92,340	89,600	100,026	114,113	121,704	112,789	99,912	85,260	68,933	61,495	59,930	50,431	35,331	19,290	11,134	1,414,720
1996–2000	94,269	99,975	96,920	94,357	88,932	97,325	110,832	121,464	115,584	101,719	88,998	71,844	61,777	60,338	51,357	36,685	20,435	11,787	1,424,600
1997–2001	92,809	98,925	98,067	95,791	89,892	93,851	107,793	120,723	117,874	103,230	93,364	74,654	62,618	60,355	52,324	37,907	21,789	12,415	1,434,381
1998–2002	92,038	97,369	99,020	96,917	91,678	90,456	104,973	119,239	119,639	105,824	96,193	78,306	64,200	60,112	53,379	38,978	23,227	13,155	1,444,703
1999–2003	91,842	95,475	99,777	97,689	93,503	87,784	102,418	117,163	120,526	109,002	98,354	82,255	66,392	59,923	54,320	40,294	24,611	14,094	1,455,422
2000–2004	94,820	96,174	102,959	101,051	98,245	88,770	102,796	117,238	124,250	115,365	102,790	88,032	70,507	61,313	55,810	42,205	26,227	15,137	1,503,689

CAUCASIAN FEMALE POPULATION

Years	0–4	5–9	10–14	15–19	20–24	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60–64	65–69	70–74	75–79	80–84	85+	Total
1980–84	78,619	80,179	88,187	113,136	117,829	104,864	99,309	83,606	71,566	69,165	71,077	71,854	63,550	54,015	42,639	30,847	21,787	18,481	1,280,710
1981–85	80,323	80,997	87,026	110,099	116,793	106,532	101,853	86,153	74,375	70,386	70,456	71,092	64,219	55,670	43,813	31,793	22,344	18,998	1,292,922
1982–86	82,064	81,824	85,880	107,144	115,766	108,227	104,463	88,778	77,294	71,629	69,840	70,338	64,895	57,376	45,020	32,769	22,915	19,529	1,305,751
1983–87	83,842	82,659	84,750	104,269	114,748	109,948	107,139	91,483	80,327	72,893	69,230	69,592	65,578	59,134	46,259	33,774	23,501	20,076	1,319,202
1984–88	85,660	83,502	83,634	101,470	113,739	111,697	109,883	94,271	83,479	74,180	68,626	68,854	66,269	60,945	47,533	34,810	24,102	20,637	1,3332,91
1985–89	87,517	84,354	82,533	98,746	112,739	113,474	112,698	97,143	86,755	75,490	68,027	68,124	66,967	62,812	48,842	35,878	24,719	21,214	1,348,032
1986–90	89,414	85,214	81,446	96,096	111,747	115,279	115,585	100,103	90,159	76,823	67,433	67,401	67,673	64,736	50,187	36,979	25,352	21,808	1,363,437
1987–91	91,290	86,069	81,061	93,036	111,064	116,114	118,271	103,194	93,997	78,251	67,409	66,761	68,282	66,261	51,788	38,067	26,082	22,563	1,379,558
1988–92	93,067	87,022	81,208	90,361	109,925	116,111	120,341	106,481	97,052	80,722	68,076	66,286	68,590	67,291	53,660	39,149	26,846	23,453	1,395,640
1989–93	94,551	88,022	81,847	88,126	108,496	115,042	121,693	109,787	99,568	83,796	69,726	66,059	68,598	67,933	55,649	40,309	27,583	24,557	1,411,340
1990–94	95,596	89,103	83,037	86,568	106,589	11,2945	122,275	113,048	101,733	87,285	72,242	66,230	68,366	68,029	57,749	41,600	28,345	25,750	1,426,490
1991–95	96,096	90,364	84,668	85,845	104,086	110,000	122,059	116,117	103,780	91,295	75,446	66,828	67,968	67,703	59,727	43,058	29,238	27,026	1,441,304
1992–96	95,923	91,678	85,917	86,788	100,461	107,603	120,811	118,818	105,397	95,886	78,549	67,895	67,515	67,498	61,244	44,753	30,105	28,269	1,455,110
1993–97	95,192	92,892	87,211	88,204	97,046	105,184	119,046	120,770	107,742	99,036	82,286	69,534	67187	67,363	62,222	46,707	31,033	29,377	1,468,032
1994–98	93,941	93,950	88,449	90,077	94,136	102,898	116,682	122,041	110,550	101,414	86,036	71,901	67,164	67,227	62,921	48,701	32,115	30,345	1,480,548
1995–99	92,414	94,638	89,577	92,216	92,100	100,633	113,708	122,671	113,514	103,413	89,668	74,743	67,596	67,210	63,103	50,648	33,328	31,293	1,492,473
1996–2000	90,257	94,574	90,768	94,336	91,192	97,987	110,354	122,691	116,276	105,190	93,489	77,839	68,286	67,246	63,230	52,351	34,608	32,116	1,502,789
1997–2001	88,797	94,011	92,057	94,954	92,734	94,483	107,575	121,708	118,795	106,677	97,902	80,856	69,354	67,150	63,461	53,776	36,102	32,924	1,513,316
1998–2002	88,168	92,912	93,163	94,895	95,540	90,998	105,089	120,134	120,907	108,899	101,067	84,527	71,099	67,061	63,710	54,846	37,834	33,970	1,524,819
1999–2003	88,438	91,266	94,197	94,957	98,177	88,286	102,806	117,873	122,403	111,701	103,508	88,353	73,537	67,130	63,938	55,832	39,748	35,274	1,537,423
2000–2004	92,015	91,813	97,168	97,165	102,529	88,988	103,091	117,674	126,485	117,728	108,162	94,153	77,992	68,949	65,381	57,243	42,097	37,118	1,585,751

TOTAL AFRICAN-AMERICAN POPULATION

Years	0–4	5–9	10–14	15–19	20–24	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60–64	65–69	70–74	75–79	80–84	85+	Total
1980–84	46,897	45,434	51,959	55,157	49,134	42,910	37,844	29,625	24,715	22,107	19,988	18,744	15,266	13,530	9,147	6,527	3,534	2,579	495,097
1981–85	47,798	46,196	51,582	54,338	49,512	44,071	39,300	31,127	25,939	22,701	20,217	18,846	15,518	13,785	9,379	6,711	3,653	2,675	503,348
1982–86	48,717	46,971	51,208	53,532	49,893	45,264	40,812	32,705	27,223	23,311	20,448	18,949	15,774	14,045	9,617	6,900	3,776	2,774	511,919
1983–87	49,653	47,759	50,837	52,737	50,277	46,489	42,383	34,362	28,572	23,938	20,682	19,052	16,035	14,310	9,861	7,095	3,903	2,878	520,823
1984–88	50,607	48,560	50,468	51,954	50,664	47,747	44,014	36,104	29,987	24,581	20,919	19,156	16,300	14,579	10,111	7,295	4,034	2,986	530,066
1985–89	51,579	49,374	50,102	51,183	51,054	49,040	45,708	37934	31,472	25,241	21,159	19,260	16,569	14,853	10,367	7,500	4,170	3,097	539,662
1986–90	52,570	50,202	49,738	50,423	51,446	50,367	47,468	39,856	33,031	25,919	21,402	19,366	16,843	15,132	10,630	7,711	4,310	3,212	549,627
1987–91	54,172	51,175	50,053	49,380	52,258	51,673	49,437	41,844	34,988	26,674	21,825	19,558	17,117	15,379	10,960	7,860	4,499	3,339	562,191
1988–92	56,275	52,448	50,874	48,472	53,098	53,002	51,406	44,030	36,959	27,792	22,436	19,828	17,401	15,598	11,303	8,018	4,680	3,490	577,111
1989–93	58,557	53,977	52,253	48,037	53,735	54,200	53,281	46,384	39,055	29,223	23,336	20,179	17,717	15,768	11,715	8,128	4,887	3,653	594,086
1990–94	60,844	55,778	54,147	48,271	54,031	55,213	55,154	48,880	41,207	31,038	24,457	20,707	18,070	15,855	12,203	8,261	5,096	3,840	613,053
1991–95	62,920	57,989	56,443	49,280	53,969	56,174	56,918	51,458	43,509	33,330	25,785	21,344	18,506	15,917	12,721	8,409	5,361	4,035	634,069
1992–96	63,895	60,622	58,351	51,544	53,045	57,127	58,446	54,115	45,547	36,102	27,134	22,050	19,002	16,076	13,133	8,703	5,540	4,245	654,678
1993–97	64,057	63,449	60,202	54,537	52,021	57,719	59,830	56,586	47,878	38,767	28,753	22,904	19,548	16,313	13,491	8,991	5,742	4,437	675,224
1994–98	64,021	66,258	62,036	57,806	51,513	57,973	61,017	58,851	50,440	41,418	30,550	23,991	20,152	16,671	13,774	9,404	5,871	4,663	696,409
1995–99	63,978	68,919	63,926	61,065	51,864	57,878	61,835	61,040	53,223	43,955	32,627	25,196	20,862	17,138	13,925	9,881	6,005	4,905	718,221
1996–2000	64,374	71,027	66,136	64,067	53,217	57,262	62,534	63,030	56,076	46,437	35,125	26,486	21,569	17,779	14,029	10,386	6,143	5,175	740,853
1997–2001	65,054	72,187	68,668	66,184	55,750	56,044	62,816	64,727	58,871	48,620	38,016	27,870	22,250	18,402	14,284	10,768	6,400	5,421	762,333
1998–2002	66,052	72,427	71,468	67,799	58,888	54,819	62,668	66,024	61,387	50,999	40,812	29,515	23,093	19,006	14,657	11,168	6,678	5,686	783,147
1999–2003	66,965	72,306	74,289	69,286	62,010	54,087	62,215	66,882	63,510	53,597	43,489	31,386	24,127	19,632	15,102	11,524	7,083	5,923	803,414
2000–2004	68,151	71,914	76,162	70,577	66,593	55,493	62,171	67,673	65,877	56,687	46,259	33,577	25,318	20,323	15,571	11,724	7,570	6,208	827,848

AFRICAN-AMERICAN MALE POPULATION

Years	0–4	5–9	10–14	15–19	20–24	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60–64	65–69	70–74	75–79	80–84	85+	Total
1980–84	23,413	22,932	25,771	27,047	22,479	19,198	17,162	13,572	11,436	10,281	9,361	8,588	7,120	5,899	3,946	2,611	1,200	808	232,824
1981–85	23,891	23,338	25,628	26,664	22,826	19,852	17,861	14,215	11,990	10,553	9,467	8,635	7,190	6,021	4,026	2,670	1,235	825	236,887
1982–86	24,379	23,752	25,485	26,286	23,179	20,528	18,588	14,888	12,570	10,832	9,574	8,683	7,261	6,146	4,108	2,731	1,271	842	241,103
1983–87	24,876	24,173	25,343	25,914	23,537	21,227	19,345	15,593	13,179	11,118	9,682	8,730	7,333	6,274	4,191	2,793	1,308	859	245,475
1984–88	25,384	24,602	25,202	25,547	23,901	21,949	20,133	16,332	13,817	11,412	9,792	8,778	7,405	6,404	4,276	2,856	1,346	877	250,013
1985–89	25,902	25,038	25,062	25,185	24,270	22,696	20,952	17,106	14,487	11,714	9,903	8,826	7,478	6,536	4,363	2,921	1,386	896	254,721
1986–90	26,431	25,482	24,922	24,828	24,646	23,468	21,805	17,916	15,189	12,024	10,016	8,874	7,552	6,671	4,451	2,988	1,427	914	259,606
1987–91	27,285	25,995	25,079	24,352	25,172	24,218	22,764	18,777	16,088	12,375	10,225	8,954	7,649	6,779	4,574	3,013	1,490	925	265,715
1988–92	28,423	26,651	25,469	23,967	25,637	24,958	23,744	19,765	16,981	12,890	10,507	9,083	7,758	6,867	4,719	3,041	1,549	946	272,956
1989–93	29,636	27,393	26,167	23,794	25,968	25,603	24,686	20,891	17,881	13,544	10,917	9,253	7,899	6,933	4,882	3,067	1,618	969	281,102
1990–94	30,855	28,277	27,146	23,910	26,118	26,116	25,636	22,121	18,792	14,367	11,411	9,519	8,077	6,950	5,074	3,113	1,699	992	290,173
1991–95	31,970	29,365	283,38	24,385	26,063	26,594	26,507	23,431	19,740	15,413	11,998	9,853	8,291	6,933	5,303	3,192	1,792	1,021	300,191
1992–96	32,488	30,680	29,423	25,424	25,618	27,040	27,287	24,768	20,517	16,699	12,595	10,229	8,522	6,981	5,470	3,339	1,848	1,074	310,000
1993–97	32,547	32,134	30,512	26,801	25,168	27,304	27,979	26,010	21,491	17,863	13,334	10,665	8,813	7,062	5,612	3,469	1,919	1,118	319,801
1994–98	32,560	33,663	31,509	28,385	24,975	27,411	28,532	2,7136	22,672	18,977	14,152	11,193	9,144	7,209	5,755	3,633	1,978	1,172	330,057
1995–99	32,552	35,111	32,505	30,077	25,127	27,411	28,852	28,229	24,010	20,038	15,112	11,746	9,515	7,440	5,829	3,802	2,041	1,242	340,637
1996–2000	32,685	36,310	33,646	31,728	25,735	27,143	29,164	29,185	25,459	21,032	16,268	12,317	9,918	7,763	5,853	3,995	2,125	1,313	351,639
1997–2001	32,932	37,013	34,893	33,052	26,898	26,607	29,251	30,042	269,02	21,814	17,623	12,941	10,315	8,083	5,963	4,143	2,259	1,370	362,099
1998–2002	33,346	37,160	36,259	34,125	28,367	26,072	29,153	30,712	28,173	22,838	18,820	13,682	10,760	8,434	6,114	4,330	2,382	1,451	372,179
1999–2003	33,649	37,065	37,728	34,977	29,887	25,801	28,952	31,108	29,249	24,061	19,928	14,541	11,254	8,799	6,307	4,524	2,530	1,535	381,895
2000–2004	34,094	36,791	38,896	35,893	32,393	26,525	29,075	31,372	30,367	25,505	21,024	15,503	11,760	9,106	6,464	4,604	2,668	1,620	393,660

AFRICAN-AMERICAN FEMALE POPULATION

Years	0–4	5–9	10–14	15–19	20–24	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60–64	65–69	70–74	75–79	80–84	85+	Total
1980–84	23,486	22,500	26,187	28,110	26,638	23,700	20,681	16,052	13,279	11,827	10,628	10,155	8,143	7,631	5,200	3,915	2,336	1,769	262,237
1981–85	23,909	22,856	25,953	27,674	26,662	24,203	21,438	16,910	13,949	12,149	10,751	10,210	8,323	7,764	5,352	4,039	2,419	1,847	266,408
1982–86	24,339	23,217	25,721	27,245	26,686	24,717	22,223	17,814	14,653	12,480	10,875	10,266	8,508	7,899	5,508	4,167	2,505	1,929	270,752
1983–87	24,777	23,584	25,491	26,822	26,709	25,242	23,036	18,766	15,393	12,819	11,001	10,322	8,696	8,036	5,669	4,300	2,594	2,015	275,272
1984–88	25,223	23,957	25,263	26,407	26,733	25,778	23,879	19,769	16,170	13,168	11,128	10,379	8,888	8,176	5,835	4,437	2,687	2,104	279,981
1985–89	25,677	24,336	25,037	25,997	26,757	26,326	24,753	20,826	16,985	13,526	11,256	10,436	9,084	8,318	6,005	4,578	2,783	2,197	284,877
1986–90	26,139	24,720	24,813	25,594	26,781	26,885	25,660	21,939	17,842	13,894	11,386	10,494	9,285	8,462	6,180	4,723	2,883	2,295	289,975
1987–91	26,887	25,179	24,972	25,028	27,073	27,446	26,670	23,068	18,900	14,298	11,601	10,605	9,463	8,600	6,388	4,848	3,009	2,411	296,445
1988–92	27,852	25,797	25,404	24,506	27,453	28040	27,660	24,264	19,978	14,902	11,929	10,746	9,640	8,732	6,585	4,978	3,131	2,544	304,139
1989–93	28,921	26,584	26,086	24,242	27,764	28,595	28,594	25,493	21,174	15,679	12,419	10,926	9,817	8,835	6,834	5,063	3,269	2,684	312,978
1990–94	29,989	27,501	27,002	24,361	27,913	29,097	29,518	26,760	22,415	16,671	13,045	11,188	9,992	8,905	7,129	5,148	3,397	2,848	322,880
1991–95	30,951	28,624	28,105	24,896	27,906	29,580	30,411	28,027	23,768	17,917	13,787	11,492	10,215	8,984	7,418	5,217	3,568	3,014	333,879
1992–96	31,407	29,943	28,928	26,120	27,427	30,087	31,159	29,347	25,031	19,403	14,540	11,821	10,480	9,095	7,663	5,364	3,692	3,171	344,678
1993–97	31,511	31,314	29,690	27,737	26,853	30,415	31,852	30,577	26,387	20,904	15,419	12,239	10,735	9,251	7,878	5,521	3,823	3,319	355,424
1994–98	31,461	32,595	30,528	29,420	26,538	30,562	32,485	31,715	27,768	22,441	16,398	12,798	11,008	9,462	8,019	5,771	3,893	3,490	366,352
1995–99	31,426	33,808	31,421	30,987	26,737	30,467	32,983	32,811	29,213	23,917	17,516	13,449	11,348	9,698	8,096	6,080	3,965	3,663	377,584
1996–2000	31,689	34,717	32,490	32,339	27,482	30,120	33,370	33,845	30,617	25,405	18,857	14,169	11,650	10,016	8,177	6,391	4,018	3,862	306,470
1997–2001	32,122	35,174	33,775	33,132	28,852	29,438	33,564	34,685	31,970	26,806	20,393	14,929	11,936	10,319	8,322	6,625	4,141	4,051	233,242
1998–2002	32,707	35,267	35,209	33,674	30,521	28,747	33,515	35,311	33,214	28,161	21,992	15,833	12,333	10,571	8,544	6,838	4,296	4,235	410,968
1999–2003	33,316	35,241	36,561	34,310	32,123	28,287	33,263	35,775	34,262	29,535	23,562	16,845	12,872	10,833	8,795	7,000	4,552	4,388	421,519
2000–2004	34,057	35,123	37,266	34,684	34,200	28,968	33,096	36,301	35,510	31,182	25,235	18,074	13,558	11,217	9,107	7,120	4,902	4,588	434,188

SOURCE: Delaware Health Statistics Center, Department of Health and Social Services.

APPENDIX F

BEHAVIORAL RISK FACTORS

Delaware's Behavioral Risk Factor Surveillance System (BRFSS) Survey, an annual survey of adults ages 18 and older, is a collaboration between Delaware's Division of Public Health and the Centers for Disease Control and Prevention (CDC). The BRFSS survey includes a core set of questions developed by CDC and administered annually as a random-digit-dial telephone survey in all 50 states. The BRFSS survey was developed to monitor the statewide prevalence of behavioral risk factors among adults that relate to premature morbidity and mortality. Questions in the survey include lifestyle behaviors (including tobacco use, fruit and vegetable consumption, exercise and weight control), cancer screening practices, health status and health care access and use. The data provided here for Delaware are a subset of the available information and relate specifically to prevalence estimates of risk factors for the development of cancer and of screening practices that affect cancer survival among Delaware residents.

More information about Delaware's BRFSS survey is available at http://www.state.de.us/dhss/dph/dpc/brfsurveys.html. General information on the BRFSS is available at http://www.cdc.gov/brfss/.

Overweight/Obesity

Being overweight or obese is a risk factor for several cancers, including female breast (in postmenopausal females), colorectal, kidney and uterus. In addition, being overweight or obese is a major risk factor for other chronic diseases, including coronary heart disease, type 2 diabetes and stroke.

The term "overweight" is defined by CDC as a body mass index (BMI) greater than or equal to 25 and less than 30; "obese" is defined as a BMI greater than or equal to 30. (BMI is calculated using a individual's height and weight.)

In Delaware in 2006

- Almost 64 percent (63.8 percent) of Delaware residents were overweight or obese: 37.8 percent were overweight; 26.0 percent were obese. The rate of overweight/obesity among U.S. adults was 61.6 percent.
- The prevalence of overweight/obese people in Delaware differed by sex: 73.1 percent of males and 54.9 percent of females were currently overweight/obese.
- Among African-Americans in Delaware, 73.3 percent were overweight/obese, compared with 62.2 percent of Caucasians.
- The prevalence of overweight/obese people in Delaware was highest in the 35–44, 45–54 and 55–64 age groups (68.5, 67.3 and 74.4 percent, respectively), followed by the 65+ age group (62.7 percent). It was lowest in the 18–24 age group (47.6 percent).
- The prevalence of overweight/obese people in Delaware was highest among those with a high school education (65.5 percent) and lowest among college graduates (62.0 percent).
- In Delaware, the prevalence of overweight/obese people was highest in the $35,000–$49,000 income group (68.8 percent) and lowest in the $15,000–$24,999 income group (61.5 percent).

Physical Activity

Lack of physical activity is a risk factor for colorectal cancer and a suspected risk factor in other cancers, including prostate cancer. The benefits of regular sustained physical activity, however, also include reduction in risk of other chronic diseases, including coronary heart disease, type 2 diabetes and stroke, as well as improved overall well-being.

BRFSS survey questions examine the intensity, duration and frequency of activity reported by respondents. “Physically active” is defined as 30 or more minutes of exercise of moderate activity at least five days per week or 20 or more minutes of vigorous activity at least three days per week.

In Delaware in 2006

- The prevalence of physically active people in Delaware was 45.1 percent, compared with 49.1 percent in the United States.
- Forty-six percent of females and 44.7 percent of males were physically active, compared with 47.9 percent and 50.7 percent, respectively, in the United States.
- The prevalence of physically active people in Delaware was 46.5 percent among Caucasians and 39.7 percent among African-Americans, compared with 51.1 percent of Caucasians and 41.8 percent of African-Americans in the United States.
- The prevalence of physical activity in Delaware was lowest among those ages 65+ (37.5 percent) and highest in the youngest age group (18–24; 60.5 percent). This same pattern occurred in the United States, where 39.0 percent of people ages 65+ and 59.6 percent of people ages 18–24 were physically active.
- The prevalence of physical activity was highest among college graduates (48.2 percent) and lowest among those with less than a high school education (35.8 percent). U.S. data showed the same trend of increased prevalence of physical activity with increasing levels of education.
- Delaware data showed a pattern of increased prevalence of physical activity with increasing income level for people who earned at least $15,000. Prevalence of physical activity was 31.7 percent in the $15,000–$24,999 income group and 50.4/50.8 percent in groups within income at/above $50,000.

Dietary Fruits and Vegetables

A diet high in fruit and vegetable intake is known or strongly suspected to be effective in the prevention of numerous cancers, including breast, cervical, colorectal, corpus uterus, esophagus, oral cavity and pharynx, ovarian, pancreatic, prostate and stomach cancers. In addition to cancer, dietary factors are associated with coronary heart disease, type 2 diabetes and stroke.

A diet “low in fruit and vegetables” was defined as an average daily frequency of fewer than five servings of fruits and vegetables and was summarized based on responses to the following BRFSS questions:

- How often do you drink fruit juices such as orange, grapefruit or tomato?
- Not counting juice, how often do you eat fruit?
- How often do you eat green salad?
- How often do you eat potatoes, not including French fries, fried potatoes or potato chips?
- How often do you eat carrots?
- Not counting carrots, potatoes or salad, how many servings of vegetables do you usually eat?

In Delaware in 2006

- A similar proportion of Delaware residents (21.3 percent) and U.S. residents (23.2 percent) consumed fruit and vegetables five or more times a day.
- Delaware males were less likely than females to consume five or more servings of fruits and vegetables daily (17.2 percent and 25.1 percent, respectively). Rates of adequate fruit and vegetable consumption were 18.6 percent among U.S. males and 28.1 percent among U.S. females.

- Fewer African-Americans (14.1 percent) than Caucasians (22.3 percent) in Delaware had a diet with five or more servings of fruits and vegetables a day, compared with 21.5 percent of African-Americans and 23.5 percent of Caucasians in the United States.
- The prevalence of adequate fruit and vegetable intake was highest in the 65+ age category (26.9 percent); prevalence for all other age groups was comparable—and low—ranging from 17.7 percent to 22.2 percent. This pattern was also exhibited in U.S. prevalence, though rates were slightly higher.
- Prevalence of a diet with five servings of fruits and vegetables a day was highest among college graduates (27.0 percent) and lowest among those with less than a high school education (14.3 percent). U.S. data also showed that the prevalence of a diet with adequate fruits and vegetables decreased as level of education decreased.