Cancer in North America: 1999-2003
Volume Two: Mortality

North American Association of Central Cancer Registries, Inc., 2006

NAACCR
North American Association of Central Cancer Registries

CANCER IN NORTH AMERICA, 1999 - 2003

EXECUTIVE SUMMARY

The North American Association of Central Cancer Registries, Inc. (NAACCR) is pleased to present this monograph, *Cancer in North America, 1999-2003*. This year marks the 16th release of the annual publication of Cancer in North America (CINA) series, the 10th monograph to include cancer mortality data, and the second to include cancer incidence data for Latino populations. NAACCR is a professional organization that develops and promotes uniform data standards for cancer registration; provides education and training; certifies population-based registries; aggregates and publishes data from central cancer registries; and promotes the use of cancer surveillance data and systems for cancer control and epidemiologic research, public health programs, and patient care to reduce the burden of cancer in North America. The NAACCR Data Use and Research Committee (DURC) is tasked with the annual aggregation and publication of incidence data from central cancer registries for the purpose of producing the Cancer in North America (CINA) monograph.

NAACCR is pleased to announce that 65 registries responded to the 2006 Call for Data with incidence data received from member registries. All NAACCR member registries receive state, provincial or territorial support. In the U.S., they also participate in the National Cancer Institute's Surveillance, Epidemiology, and End Results (SEER) Program or the Centers for Disease Control and Prevention's National Program of Cancer Registries (NPCR) or both. In Canada, all registries submit data to the Canadian Cancer Registry maintained by Statistics Canada. We greatly appreciate the efforts of registry staff to ensure submission of quality data files. We are proud to highlight the following features of this monograph:

- Cancer incidence data files were collected from all Canadian cancer registries, excluding Quebec, (representing 76% of the Canadian population) and all but three registries in the United States (97% of the U.S. population).
- Forty-three registries from the United States and five Canadian registries met the NAACCR high quality data criteria at the gold or silver level for 1999-2003. Data for the high quality registries in the United States are included in the NAACCR Combined Rates to show representative national statistics (representing 82% of the U.S. population). See Volume Three (NAACCR Combined Incidence).
- Fourty-two registries from the United States applied the NAACCR Hispanic Algorithm, version 2 (NHIA v2) to their file submission and were included in Volume Four (Cancer Incidence in U.S. Hispanic/Latino Populations). These registries represent about 82% of the U.S. Hispanic/Latino population.
- For the first time this year, the SEER Program's Site/Histology recodes for cancers among 0-19 year olds, included in Volumes Three and Four, were based on The International Childhood Cancer Classification, third edition, based on ICD-O-3[1], obtained from the SEER website, http://seer.cancer.gov/iccc/iccc3.html.

It is the collective goal of NAACCR and its members to provide cancer statistics that are inclusive of all racial/ethnic groups in the United States and of all geographic areas in the United States and Canada. The information within the CINA volumes allows the comparison and assessment of cancer incidence and death rates by race and ethnicity, gender, and geographic area. These data may be used by national, state, provincial, and local health professionals for the purposes of policy development, hypothesis generation, and as a resource for the cancer registry or general public. For ease of reference, the Highlights section of each volume contains a summary of the major findings for the volume.

The NAACCR DURC looks forward to continuing this annual aggregation of cancer data and production of cancer statistics for North America. NAACCR appreciates the continued participation of cancer registries, the implementation of high quality data standards, and the commitment of cancer registry personnel, through which this monograph would not be possible. It is the desire of NAACCR that this monograph will be a valuable tool for cancer surveillance research, and that it will help to reduce the burden of cancer in North America.

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1) Stellarova-Foucher E, Stiller C, Lacour B, Kaatsch P. International Classification of Childhood Cancer, Third Edition. Cancer 2005 (April 1); 130:1457-67.

CANCER IN NORTH AMERICA, 1999-2003

VOLUME TWO: MORTALITY

A Publication of the North American Association of Central Cancer Registries, Inc. (NAACCR)

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HIGHLIGHTS OF NAACCR COMBINED INCIDENCE, 1999-2003

CANADA:

Data from 5 Canadian central cancer registries met the NAACCR criteria for inclusion the NAACCR U.S. combined cancer statistics, representing about 20% of the Canadian population. To meet the inclusion criteria, each registry was required to submit five years (1999-2003) of data. Data from each year of the five year period had to pass rigorous criteria for completeness of reporting, non duplication of records, internal consistency among data items, and low percentage of death certificate only cases and cases with missing/unknown race, age, or county (See Introduction and Technical Notes). A combined Canadian rate is not presented due to the large proportion of Canadians residing in provinces and territories that did not meet all of the inclusion criteria. The NAACCR Data Evaluation and Certification Committee (DECC) continues to review and discuss its application in Canada.

UNITED STATES:

Data from 43 central cancer registries (37 states, 5 metropolitan areas, and the District Columbia) met the NAACCR criteria for inclusion the NAACCR U.S. combined cancer statistics. To meet the inclusion criteria, each registry was required to submit five years (1999-2003) of data. Data from each year of the five year period had to pass rigorous criteria for completeness of reporting, non duplication of records, internal consistency among data items, and low percentage of death certificate only cases and cases with missing/unknown race, age, or county (See Introduction and Technical Notes). If data from a metropolitan area and its state both met the criteria, only state data were used. Data for the NAACCR U.S. combined cancer incidence statistics cover approximately 82% of the total U.S. population, 82% of the white population, 80% of the black population, 72% of the American Indians/Alaska Native population (AI/AN), 92% of the Asian/Pacific Islander (API) population, and 82% of the Hispanic/Latino population.

A total 5,525,424 cancers (all invasive including bladder in situ) were diagnosed in 5-year period (1999-2003) in the NAACCR U.S. combined areas, averaging 1,105,085 cancers per year or approximately 3,028 cancers per day. A little over half of these cancers occurred in males (52%); slightly less than half (48%) occurred in females.

VOLUME THREE: COMBINED CANCER INCIDENCE

Common Cancers

- **The 5 most commonly diagnosed cancers.** For all races and both sexes combined, the five most commonly diagnosed cancers in the NAACCR U.S. combined areas were cancers of the prostate (167,673 cancers per year), female breast (162,228), lung (161,007), colon and rectum (126,190), and bladder (50,289).

- **Female breast cancer.** Breast cancer was the most commonly diagnosed cancer among women in all race populations. It accounted for 30% of female cancers among white women and black women, 28% among Chinese women, 36% among Filipino women, and 33% among Japanese women. The percentages of breast cancer were lower among Vietnamese women (23%), Korean women (25%), and AI/AN women (27%) than among other race populations.

- **Prostate cancer.** Prostate cancer was the most commonly diagnosed cancer among white men (28% of all cancers among white men), black men (37%), Filipino men (30%), Japanese men (28%), Chinese men (22%), and AI/AN men (22%). It was the third most commonly diagnosed cancer among Vietnamese men (15%), and Korean men (14%).

- **Lung cancer.** Lung cancer was the most commonly diagnosed cancer among Vietnamese men (18%). Among men in other race populations, lung cancer ranked from the second to the fourth and percentages varied from 12% to 18% by race. Among women, percentages of lung cancer were lower than men for all race populations, varying from 8% among Filipino women to 15% among white women. Lung cancer ranked the lowest (fourth) among Korean women (9%).

- **Colorectal cancer.** Colorectal cancer was either the second or third most commonly diagnosed cancer among men in most race populations, with the percentages varying from 10% among black men to 17% among Japanese men except Korean and Vietnamese men for whom, the colorectal cancer was the first and the fourth most commonly diagnosed cancer, accounting for 14% and 12% of all cancer cases respectively. As their male counterparts, colorectal cancer was either the second or the third most commonly diagnosed cancer among women in all race populations, with the percentages varying from 9% for Filipino to 16% for Japanese women.

- **Bladder cancer.** Bladder cancer was one of the five most commonly diagnosed cancers among white men (7% of all cancers among white males) and Japanese men (6%). Bladder cancer was not one of the five most commonly diagnosed cancers among men of other race populations and among women in all race populations.

- **Liver cancer.** Liver cancer was one of the five most commonly diagnosed cancers among the following race groups: Vietnamese men (15% of all cancers among Vietnamese men), Korean men (10%), Chinese men (8%), and Filipino men (4%). It was not one of the five most commonly diagnosed cancers among men in other race populations and among women in all race populations.

- **Stomach cancer.** Stomach cancer was the second most commonly diagnosed cancer among Korean men (14% of all cancers among Korean men). Although it was also one of the five most commonly diagnosed cancers among Japanese men (7%), Chinese men (5%), and Vietnamese men (6%), the percentages were smaller for these race populations than for Korean men. Stomach cancer was not one of the five most commonly diagnosed cancers among women in all race populations except Korean women (9% of all cancers among Korean women) and Japanese women (5%). It was the third most commonly diagnosed cancer among Korean women and the fourth among Japanese women.

- **Uterine corpus cancer.** Uterine corpus cancer was either the fourth or fifth most commonly diagnosed cancer among the majority of race populations, except Vietnamese and Korean women. It accounted for approximately 6% of all cancers among women.

- **Cervical cancer.** Cervical cancer was one of the five most commonly diagnosed cancers only among women in the following three race populations: Vietnamese (6% of all cancers among Vietnamese women), blacks (4%), and AI/AN (4%)women.

- **Non-Hodgkin lymphoma.** Non-Hodgkin lymphoma was one of the five most commonly diagnosed cancers among white men (4%), black men (3%), and AI/AN men (4%). It was not one of the five most commonly diagnosed cancers among Asian American men except Filipino (5%). Among women, Non-Hodgkin lymphoma was not one of the five most commonly diagnosed cancers in any race populations except white women (4%).

Average Annual Age adjusted (2000 U.S. Population Standard) Cancer Incidence Rates

Rates based on fewer than 16 cases were not used for the following comparisons.

Comparisons of incidence rates by race/sex group

- **Higher incidence rate for all cancers combined among men than among women.** Overall, incidence rate for all cancers combined was 35% higher among men (562.1 per 100,000) than women (415.3 per 100,000). However, the differences in the percentage between men and women varied greatly by race group: 32% higher among white men than among white women (555.0 per 100,000 versus 421.1 per 100,000) and 67% higher among black men than black women (639.8 per 100,000 versus 383.8 per 100,000).

- **Higher incidence rate for all cancers combined among black than among white for men but not for women.** Incidence rates for all cancers combined were 15% higher among black men (639.8 per 100,000) than among white men (555.0 per 100,000). In contrast, the rate among black women (383.8 per 100,000) was 9% lower than the rate among white women (421.1 per 100,000).

- **Higher incidence rates for specific cancer types among black than white for men and women.** Incidence rates were higher among black men than among white men for the following cancers: colon and rectum (10% higher), esophagus (44%), larynx (63%), liver (63%), lung (25%), multiple myeloma (100%), oral cavity and pharynx (13%), prostate (56%), pancreas (25%), and stomach (79%). Incidence rates were higher among black women than white women for the following cancers: cervix uteri (51%), colon and rectum (17%), esophagus (80%), larynx (38%), liver (45%), multiple myeloma (1.3 times), pancreas (38%), and stomach (104%).

- **Higher incidence rates for specific cancer types among white than black for men and women.** Although the overall incidence rates were higher among black men than white men, the rates were higher among white men than black men for the following cancers: bladder (1.2 times higher), brain and other nervous system (79%), leukemias (37%), Kaposi sarcoma (1.8 times), melanoma of the skin (19.5 times), mesothelioma (120%), non Hodgkin lymphoma (39%), testis (4 times), and thyroid (87%). For women, besides cancers of the bladder (51% higher), brain and other nervous system (74%), and thyroid (67%), leukemias (27%), melanoma of the skin (15.4 times), and non Hodgkin lymphoma (49%), incidence rates were also higher among white women than black women for cancers of the breast (17% higher), corpus and uterus, NOS (24%), and ovary (43%).

Geographic variations in cancer incidence rates among the NAACCR U.S. combined areas

Age-adjusted (2000 U.S. population standard) incidence rates varied widely by geographic area. These variations could relate to cancer risks, the prevalence of cancer screening, and other factors. **[Rates based on fewer than 16 cases were not used for the following comparisons.]**

- **Geographic variations in incidence rates for all cancers combined by race/sex group.** Incidence rates for all cancers combined varied by geographic areas. District Columbia had the lowest rate for white men (489.3 per 100,000) and Detroit, Michigan (641.4 per 100,000) had the highest rate. For white women, Seattle/Puget Sound in Washington had the highest rate (468.1 per 100,000) and Utah had the lowest rates (350.6 per 100,000). The highest rate was 31% higher than the lowest rate for men and 34% higher than the lowest rate for women. The geographic variations in rates were much larger among black than white for men and women. Among black men, incidence rates ranged from a low of 390.1 per 100,000 in Idaho to a high of 774.1 per 100,000 in Detroit, Michigan. Among black women, the rates varied from a low of 254.6 per 100,000 in Hawaii to a high of 457.2 per 100,000 in Kentucky. The highest was 2 times the lowest for black men and almost 80% greater than the lowest rate for black women.

- **Geographic variations in incidence rates for female breast cancer by race.** For white women, the District Columbia had the highest rate (160.3 per 100,000). This rate was 37% higher than the lowest rate (117.0 per 100,000), in Alabama. For black women, Kentucky had the highest rate (132.0 per 100,000), which was 52% higher than the lowest rate (86.9 per 100,000) in Utah.

- **Geographic variations in incidence rates for prostate cancer by race.** Detroit, Michigan had the highest incidence rates for both white men (202.3 per 100,000) and black men (315.9 per 100,000). For white men, the rate was 70% higher than the lowest rate (119.3 per 100,000), in Alabama. For black men, the rate was 79% higher than the lowest rate (176.9 per 100,000), in Nevada.

- **Geographic variations in incidence rates for lung cancer by race/sex group.** Kentucky had the highest rates for white men (138.1 per 100,000) and Nevada had the highest rate for white women (74.1 per 100,000) while Utah had the lowest rates for both white men (42.0 per 100,000) and white women (21.5 per 100,000). The highest rate was 3.3 times the lowest for white men and 3.4 times the lowest for white women. Incidence rates of lung cancer varied from a low of 73.4 per 100,000 in Massachusetts to a high of 149.0 per 100,000 in Wisconsin for black men and from a low of 36.3 per 100,000 in Alabama to a high of 80.5 per 100,000 in Kentucky for black women. The highest was 2.0 times the lowest for black men and 2.2 times the lowest for women.

- **Geographic variations in incidence rates for colorectal cancer by race/sex group.** Rhode Island had the highest rate for white men (74.2 per 100,000) and West Virginia had the highest rate for white women (53.2 per 100,000) while the District of Columbia had the lowest rates for both white men (46.4 per 100,000) and white women (36.7 per 100,000). The highest rate was 60% higher than the lowest rate for white men and 45% higher for white women. Iowa had the highest rate for black men (84.0 per 100,000) and West Virginia had the highest rate for black women (70.7 per 100,000). Rhode Island had the lowest rate for both black men (43.8 per 100,000) and black women (31.6 per 100,000). The highest rate was 1.9 times the lowest rate for black men and 2.2 times the lowest rate for black women.

- **Geographic variations in incidence rates for cervical cancer by race.** For white women, Los Angeles in California had the highest incidence rate (12.8 per 100,000) for white women. This rate was 2.1 times the lowest rate (6.1 per 100,000), in Massachusetts. In contrast, Illinois had the highest rate (16.2 per 100,000) for black women. The rate was 2.9 times the lowest rate (5.5 per 100,000) for black women, in Colorado.

- **Geographic variations in incidence rates for ovarian cancer by race.** Both New Jersey and Seattle/Puget Sound in Washington had the highest rate for white women (16.5 per 100,000) and West Virginia had the highest rates for black women (13.7 per 100,000). For white women, the highest rate was 38% higher than the lowest rate (12.0 per 100,000), in Hawaii. For black women, the highest rate was 1.5 times higher than the lowest rate (5.5 per 100,000), in Massachusetts.

Cancers among Children (ages 0-14) and Adolescents (ages 15-19)

For the first time this year, the SEER Program's Site/Histology Recode based on the International Classification of Childhood Cancer, third edition (ICCC-03)[1] based on ICD-O-3, was used to group cancers among 0-19 year olds. Differences in incidence rates in this monograph compared with rates published in previous monographs may be due, in part, to the different classification systems used to group these cancer sites.

[1] Stellarova-Foucher E, Stiller C, Lacour B, Kaatsch P. International Classification of Childhood Cancer, Third Edition. Cancer 2005 (April 1); 130: 1457-67.

Common cancers among children and adolescents

- All races and both sexes combined. An average 7,381 cancers were diagnosed among children and 3,433 cancers among adolescents in each of the five years (1999-2003) in the NAACCR U.S. combined areas.
  The five most commonly diagnosed cancers among children were
  - leukemias (31% of all cancers among children)
  - cancer of the central nervous system & intracranial & intraspinal neoplasms (CNS) (21%)
  - lymphomas and reticuloendothelial neoplasms (lymphomas) (11%)
  - neuroblastoma and other peripheral nervous cell tumors (neuroblastoma) (7%)
  - soft tissue and other extraosseous sarcomas (STS) (7%)

  The five most commonly diagnosed cancers among adolescents were
  - lymphomas (24%)
  - other malignant epithelial neoplasms and melanomas (23%)
  - leukemias (14%)
  - germ cell & trophoblastic tumors & neoplasms of gonads (germ cell tumors) (13%)
  - CNS (10%)

- White Children and Adolescents. An average 6,034 cancers were diagnosed among white children and 2,875 cancers among white adolescents in each of the five years (1999-2003) in the NAACCR U.S. combined areas.
  The five most commonly diagnosed cancers among white children were
  - leukemias (32% of all cancers among white children)
  - Cancer of the CNS (22%)
  - lymphomas (11%)
  - neuroblastoma (7%)
  - STS (7%)

  The five most commonly diagnosed cancers among white adolescents were
  - lymphomas (24% of all cancers in this age group)
  - other malignant epithelial neoplasms and melanomas (23%)
  - leukemias (13%)
  - germ cell tumors (13%)
  - Cancer of the CNS (10%).

- Black Children and Adolescents. An average of 848 cancers were diagnosed among black children and 349 cancers among black adolescents in each of the five years (1999-2003) in the NAACCR U.S. combined areas.
  The five most commonly diagnosed cancers among black children were
  - leukemia (24% of all cancers among black children)
  - CNS (21%)
  - lymphomas (11%)
  - renal tumor (9%)
  - STS (9%)

  The five most commonly diagnosed cancers among black adolescents were
  - lymphomas (26%)
  - other malignant epithelial neoplasms and melanoma (15%)
  - leukemias (15%)
  - STS (12%)
  - Cancer of the CNS (10%)

Comparisons of cancer incidence rates among boys and girls (ages 0 14) and adolescents (15 19) by race/sex group . **Rates are age-adjusted to the 2000 U.S. standard population and rates based on fewer than 16 cases were not used for the following comparisons.**

- **Higher incidence rates for all cancers combined among boys than girls.** Overall, incidence rates for all cancers combined were 12% higher among boys (156.4 per million) than girls (139.5 per million). The boy/girl rate ratios for all cancers combined were 1.3 for white children and 1.0 for black children. For most specific cancer types the incidence rates were higher for boys than girls.

- **Cancers with higher incidence rates among girls than boys.** Incidence rates were higher among girls than boys for renal tumors (9.3 per million vs. 7.9), germ cell tumors (5.7 per million vs. 4.5), and other malignant epithelial neoplasms and melanomas (7.6 per million vs. 5.1).

- **Higher incidence rates for all cancers combined among white children than black children**. Unlike cancer incidence rates for all ages combined, Incidence rates for all cancers combined among children were 51% higher for white boys (164.1 per million) than for black boys (109.0 per million) and 39% higher for white girls (145.6 per million) than for black girls (104.6 per million).

- **Higher incidence rates for all cancers combined among white adolescents than black adolescents.** Among males, incidence rates were 58% higher for white adolescents (229.8 per million) than for black adolescents (145.7 per million). Among females incidence rates were 55% higher for white adolescents (206.3 per million) than for black adolescents (133.0 per million).

- **Higher incidence rates among black children than white children.** Although incidence rates for all cancers combined and most specific cancer types were higher for white children than for black children, incidence rates were higher among black children than white children for retinoblastoma (22% higher), renal tumors (13%) in boys and renal tumor (26% higher) and STS (6%) in girls.

- **Higher incidence rates for all cancers combined among children (ages 0-4) and adolescents (ages 15-19) than among those in the other two age groups.** Overall, age specific incidence rates for all cancers combined were higher among children aged 0-4 and adolescents than children aged 5-9 and aged 10-14. The same pattern was also seen for both white and black boys and girls.

VOLUME TWO: MORTALITY, 1999 - 2003

Mortality data for the ten Canadian[2] provinces and three Canadian[2] territories were provided by Statistics Canada. Mortality data for the fifty U.S. states, the District of Columbia, and five SEER metropolitan areas were obtained from the National Center for Health Statistics, the Centers for Disease Control and Prevention, via the National Cancer Institute.

Age adjusted (2000 U.S.) cancer death rates for all races combined were slightly higher in Canada[2] (249.7 per 100,000 for men and 167.7 per 100,000 for women) than in the United States (243.7 per 100,000 for men and 164.3 per 100,000 for women).

CANADA:

A total of 233,840 persons in Canada[2] died of cancer during the five year period (1999 - 2003), averaging 46,768 deaths per year, or approximately 128 per day. More than half of the Canadian[2] cancer deaths occurred among men (53%); slightly less than half (47%) occurred among women.

[2] 1999-2003 mortality data for Canada were included, data for Quebec were excluded.

Common Cancers

- **All races and both sexes combined.** For all races and both sexes combined, the most common cancer deaths in Canada[2] were cancers of the lung (11,712 deaths per year), colon and rectum (5,796), female breast (3,641), prostate (2,907), and pancreas (2,349).

- **Sex difference.** An average of 24,727 Canadian men and 22,041 Canadian women died of cancer in each of the five years (1999-2003).
  The five leading causes of deaths from cancer among men were cancer of the
  - lung (28% of the total cancer deaths among men)
  - colon and rectum (12%)
  - prostate (12%)
  - pancreas (5%)
  - non Hodgkin lymphoma (4%)

  The five leading causes of deaths from cancer among women were cancers of the
  - lung (22%)
  - breast (17%)
  - colon and rectum (12%)
  - pancreas (5%)
  - ovary (5%)

- **Cervical cancer.** A total of 1,675 women in Canada[2] died of cervical cancer during the five year period (1999 - 2003). Because of the widespread availability and proven efficacy of the Pap smear test and effective treatments for cancer of the cervix, deaths from cervical cancer are largely preventable.

Average Annual Age adjusted Cancer Death Rates

Rates are age-adjusted to 1996 Canadian population and rates based on fewer than 16 cases were not used for the following comparisons.

- **Higher death rates among males than among females.** Overall, death rate for all cancers combined was 47% higher among men (229.7 per 100,000) than women (156.4 per 100,000).
- **Geographic variations in death rates.** In general, rates for all cancers combined were higher for eastern provinces (Quebec, Nova Scotia and Prince Edward Island) than for western provinces (British Columbia and Alberta).

UNITED STATES:

A total 2,770,823 persons in the U.S. died of cancer in the five year period (1999-2003), averaging more than half million (554,165) cancer deaths per year, or approximately, 1,517 per day. A little over half of the cancer deaths occurred among males (52%); slightly less than half (48%) occurred among females.

Common Cancers

- **All races and both sexes combined.** For all races and both sexes combined, the five leading causes of deaths from cancer in the United States were cancers of the
  - lung (155,815 deaths per year)
  - colon and rectum (56,770)
  - female breast (41,509)
  - prostate (30,705)
  - pancreas (29,851)

[2] 1999-2003 mortality data for Canada were included, data for Quebec were excluded.

- **Lung cancer.** For men, lung cancer was the leading cause of deaths from cancer for all races combined. It accounted for 32% of all cancer deaths among white men. The percentages of lung cancer death were about the same (31%) among black men and AI/AN (28%) men. The lowest percentage was among API men (26%). The percentages of lung cancer death among women were lower than men for all race populations. It ranges from 18% among API women to 25% among white women.

- **Prostate cancer.** Prostate cancer was the second leading cause of deaths from cancer among white men (10% of all cancer deaths among white men) and black men (16%), third among AI/AN men (8%), and fifth among API men (6%). The percentage of prostate cancer deaths was lower for API men than that for any other race population.

- **Female breast cancer.** Breast cancer was the second leading cause of deaths from cancer among white women (15% of all cancer deaths among white women), black women (19%), AI/AN women (14%), and API women (14%). The percentage of deaths from breast cancer was higher among black women than other race populations.

- **Colorectal cancer.** Colorectal cancer was the second leading cause of deaths from cancer and accounted for approximately 9% 12% of total cancer deaths among all race/sex populations.

- **Pancreatic cancer.** Pancreatic cancer was the fourth leading cause of cancer deaths among white men and women, and black men and women and AI/AN women. It was the sixth among API men and fourth among API women. Percentages of pancreatic cancer varied from 4% 7% of the total cancer deaths among these race/sex populations.

- **Ovarian cancer.** Ovarian cancer was the fifth leading cause of deaths from cancer among white women (6% of cancer deaths among white women), black women (4%), and AI/AN women (5%). It was not one of the five leading causes of cancer deaths among API women (5%).

- **Stomach cancer.** Stomach cancer was the fourth leading cause of deaths from cancer among API men and fifth among API women, accounting for 6-7% of all cancer deaths. Among black men, stomach cancer was the fifth leading cause of deaths from cancer, accounting for 4% of all cancer deaths. It was not one of the five leading causes of cancer deaths among other race/sex populations.

- **Cervical cancer.** A total of 20,365 women in the U.S. died of cervical cancer during the five year period (1999 - 2003). With early detection and prompt treatment, nearly all of these deaths could have been prevented.

Average Annual Age adjusted Cancer Death Rates

Rates are age-adjusted to the 2000 U.S. standard population and rates based on fewer than 16 cases were not used for the following comparisons.

- **Higher death rates among males than among females.** Overall, death rate for all cancers combined was approximately 48% higher among men (243.7 per 100,000) than women (164.3 per 100,000). However, the sex differences in the death rates varied by race group. The largest sex difference was seen among the black race group; about 72% (The rate for black men was 72% higher than the rate for black women). The smallest sex differences were seen among the AI/AN race group; the rates for men were approximately 37% higher than the rates for women in the AI/AN race group.

- **Higher death rates for all cancers combined among men than women in black than other race populations.** For all cancers combined, death rate among black men (331.0 per 100,000) was 38% higher than the rate among white men (239.2 per 100,000), 2.2 times the rate among AI/AN men (153.4 per 100,000) and 2.3 times the rate among API men (144.9 per 100,000). Death rate for all cancers combined was 18% higher among black women (192.4 per 100,000) than white women (163.4 per 100,000), 72% higher than the rate among AI/AN women (111.6 per 100,000), and 95% higher than the rate among API women (98.8 per 100,000).

- **Higher death rates for specific cancer types among black men than men in other race populations.** Death from cancers of the prostate, lung, colon and rectum, and pancreas accounted for much of the elevation in the death rate for all cancers combined among black men compared with other race populations. The death rate for prostate cancer among black males (65.1 per 100,000) was more than twice the rate among white males (26.7 per 100,000), more than three fold the rate among AI/AN men (18.0 per 100,000) and more than five fold the rate among API men (11.8 per 100,000). In addition, death rates were also higher among black men than among men in any other race populations for cancers of the esophagus, larynx, stomach, oral cavity and pharynx, and myeloma. The death rate for liver cancer among black men was higher than white and AI/AN men but lower than API men.

- **Higher death rates for specific cancer types among black women than women in other race populations.** Cancers of the colon and rectum, breast, pancreas, and cervix accounted for much of the elevation in the death rate for all cancers combined among black women compared with other race populations. The death rate for cancer of the cervix among black women (5.1 per 100,000) was more than twice the rate among white women (2.4 per 100,000), AI/AN women (2.6 per 100,000), and API women (2.5 per 100,000). In addition, death rates were also higher among women in black than any other race populations for cancers of the bladder, corpus and uterus, NOS, esophagus, larynx, and myeloma. The death rate for stomach cancer among black women was higher than AI/AN women but lower than API women.

- **Higher death rates for specific cancer types among white men and women than other race populations**. Death rates for cancer of the brain and melanoma of the skin, Hodgkin lymphoma, non Hodgkin lymphoma, leukemia were higher among white men and women than other race populations. The death rate for cancer of the bladder, testis, and thyroid was higher among white men than other race populations. The death rates for cancer of the lung and ovary were higher among white women than among women in other race populations.

- **Lower death rates for all cancers combined among API men and women than other race populations.** For all cancers combined, the death rate was 6% lower among API men (144.9 per 100,000) than AI/AN men (153.4 per 100,000), 39% lower than among white men (239.2 per 100,000), and 56% lower than among black men (331.0 per 100,000). The rate among API women (98.8 per 100,000) was 11% lower than the rate among AI/AN women (111.6 per 100,000), 40% lower than the rate among white women (163.4 per 100,000) and 49% lower than the rate among black women (192.4 per 100,000).

- **Higher death rates for cancers of the liver and stomach among API men and women than other race populations.** The death rate for liver cancer among API men (13.6 per 100,000) was more than two times the rates among white men (5.2 per 100,000) and AI/AN men (6.4 per 100,000) and 1.6 times the rate among black males (8.5 per 100,000). The death rate for liver cancer among API women (5.4 per 100,000) was 2.8 times the rate among white women (1.9 per 100,000), 1.9 times the rate among AI/AN women (2.8 per 100,000) and 1.8 times the rate among black women (3.0 per 100,000). The death rate for stomach cancer among API men (11.0 per 100,000) was more than twice the rate among white men (5.4 per 100,000) and 1.5 times the rate among AI/AN men (7.1 per 100,000). The death rate for stomach cancer among API women (6.7 per 100,000) was 2.5 times the rate for white women (2.7 per 100,000), 1.1 times the rate for black women (6.0 per 100,000), and 1.8 times the rate for AI/AN women (3.7 per 100,000).

- **Geographic variations in death rates.** Cancer death rates by census division region and state showed geographic variations. In general, death rates for all cancers combined were highest in the East South Central Division and lowest in the Mountain Division.

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