Chapter II:
Overview

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This chapter provides an overview of the status of cancer in Minnesota, using cases reported to the Minnesota Cancer Surveillance System (MCSS) and deaths reported to the Minnesota Center for Health Statistics (MCHS). The first section highlights the relative importance of various cancers by gender and age. Following this is a section that provides an assessment of the cancer burden in Minnesota by race and ethnicity. Changes in cancer incidence and mortality rates over the 19-year period 1988-2006 are summarized in the third section, and geographical variation in cancer occurrence is discussed in the next section. The final section presents estimates of Minnesota cancer prevalence.

Cancer surveillance plays a crucial role in the protection and improvement of public health. The data presented in this report enable the Minnesota Department of Health to identify health concerns, to target and evaluate goals for cancer control, and to inform the public and medical professionals about cancer risks.

The total number of new cases and deaths due to cancer in Minnesota over the five-year period 2002-2006 and the corresponding age-adjusted average annual incidence and mortality rates per 100,000 persons are presented in Table II-1. To calculate the average number of cases or deaths per year, divide the total number of cases or deaths over the five-year period by five. Annual counts and rates by year for the most common cancers may be found in Chapter III.

On average, 23,941 potentially serious cancers (12,646 in males and 11,295 in females) were diagnosed among Minnesotans each year over the five-year period 2002-2006 (Table II-1). These figures do not include common skin cancers or *in situ* cancers for sites other than the urinary bladder. The actual number of persons diagnosed with cancer was about 5.0 percent lower than the number of cancers diagnosed because some individuals were diagnosed with more than one cancer. The overall average annual age-adjusted incidence rate over the same five-year period was 470.4 new cases per 100,000 persons (556.4 and 408.9 for males and females, respectively).

Over the five-year period 2002-2006, an average of 9,072 Minnesotans died each year with cancer listed as the underlying cause of death on the death certificate (4,643 males and 4,429 females) (Table II-1). The age-adjusted mortality rate over the same five-year period was 176.6 deaths per 100,000 persons (215.3 for males and 151.6 for females). For the first time in 2000, cancer became the leading cause of death in Minnesota, surpassing heart disease. Cancer is responsible for about one in every four deaths.

Cancer is not a single disease, and does not have a single cause or a single cure. The more than 65 types of cancer listed in Table II-1 vary considerably in their risk factors, in frequency and prognosis, and in the age group and gender most likely to be affected.

Cancer Incidence and Mortality in Minnesota by Gender and Age

The risk of being diagnosed with and dying from cancer varies by both gender and age. In general, males are at greater risk of both developing and dying from cancer than females. The overall cancer incidence rate is 36 percent higher among males then females, and the overall cancer mortality rate is 42 percent higher. Men are at two to four times greater risk than women for a number of cancers, including cancers of the urinary bladder, esophagus, larynx, oral cavity, kidney, liver, and stomach, as well as mesothelioma and Kaposi sarcoma. The higher risk among men may be directly attributable to historically higher smoking rates among men and to occupational exposures. For many cancers, the reason for the higher rates among men is not known. Excluding the sex-specific cancers, women are at greater risk than men for only three common cancers: breast, gall bladder and thyroid.

Despite these differences in risk, the most common cancers diagnosed among men and women in Minnesota are similar (Figures II-1 and II-2). Prostate cancer is the most commonly diagnosed cancer among men, and breast cancer is the most commonly diagnosed among women. Each of these cancers accounts for approximately

one third of cancers diagnosed among men and women. Lung and bronchus cancer and cancers of the colon and rectum are the second and third most commonly diagnosed cancers among men and among women in Minnesota, accounting for roughly 12 percent and 10 percent, respectively, of diagnoses for each gender.

Although prostate cancer and breast cancer are more common, lung and bronchus cancer is the leading cause of cancer mortality for both males and females, accounting for 25 percent of cancer deaths in the state. In 2006, lung cancer killed almost as many Minnesotans (2,353 deaths) as the next four leading causes of cancer mortality combined: colorectal (822), breast (614), pancreas (564), and prostate (484).

The fourth most commonly diagnosed cancer in Minnesota is urinary bladder cancer for men and uterine cancer in women. Urinary bladder cancer accounts for about 7 percent of cancers among males and uterine cancer accounts for about 7 percent of the cancers among females. Non-Hodgkin lymphoma is the fifth most common cancer among both men and women, accounting for nearly five percent of diagnosed cancers in Minnesota. Melanoma of the skin is the sixth most commonly diagnosed cancer for each gender, accounting for four percent of cancers.

In general, cancer is a disease of the elderly. Tables II-2 through II-5 show the age-specific incidence and mortality rates for the five-year period 2002-2006 for males and females in Minnesota. The overall cancer rate increases by 80 to 150 fold with age, from approximately 20 new cases per year for each 100,000 children less than five years of age, to more than 3,000 and 1,600 per 100,000 men and women 70 years of age and older, respectively. Similarly, the overall cancer mortality rate increases by more than 675 to 1,350 fold from two deaths per year for each 100,000 children less than five years of age to more than 2,600 and 1,350 deaths per 100,000 men and women 85 years of age and older, respectively.

The relationship between cancer risk and age varies with the type of cancer (Figure II-3). While only a small percentage of prostate, lung, and colorectal cancers are diagnosed among persons under the age of 50 years, more than 20 percent of breast cancers, 30 percent of melanomas, 40 percent of brain cancers, 50 percent of cervical cancers, 60 percent of Hodgkin lymphomas, and 80 percent of acute lymphocytic leukemias are diagnosed among persons less than 50 years of age.

Race and Ethnic Disparities in Cancer in Minnesota

It is clear from national data that race and ethnic differences exist in the risk of developing and dying from cancer, and data from Minnesota are consistent with that picture. However, assessing race and ethnic disparities in the burden of cancer in Minnesota is limited by the relatively small size of populations of color in our state, incomplete or inaccurate reporting of race and ethnicity on the medical record and death certificate, and differences in the way race and ethnicity are defined and collected for cases and deaths (the numerator for rates) and population estimates (the denominator for rates). These difficulties are not unique to Minnesota and are well recognized in cancer registration.

As discussed in Chapter I, several steps to improve the classification of race and ethnicity in the MCSS have been undertaken, and cancer incidence and mortality are reported for five major race and ethnic groups in Minnesota: American Indian/Alaska Native, Asian/Pacific Islander, black/African American including African-born, non-Hispanic white, and Hispanic (all races). In addition, cancer rates for American Indians are presented for two geographic areas: statewide, and for residents of the Contract Health Service Delivery Area (CHSDA). The IHS has designated 29 Minnesota counties as part of CHSDA. Over the five-year period 2002-2006, these counties are estimated to have included 51 percent of the American Indian population in the state.

Despite improvements, it is likely that an unknown degree of misclassification and inconsistency between numerators and denominators still exists. For small populations, this may result in substantial error; therefore race

and ethnic differences in cancer rates should be interpreted cautiously.

Persons of unknown or "other" race who were not Hispanic were not assigned to a race group, but were included in data for all races combined. The category "Hispanic" used in this report combined data for the entire Hispanic population in Minnesota, regardless of race. This was done because a substantial proportion of Hispanics were not identified by race on the medical record and frequently reported themselves as "other" race on the census. Although the category "non-Hispanic white" excludes Hispanics reported as white race, Hispanics were not excluded from the other race groups. Therefore, Hispanics are not mutually exclusive from race and ethnic categories other than "non-Hispanic white". In some instances, the sum of counts by race and ethnicity could therefore exceed the total number of cases or deaths.

It should also be noted that cancer mortality data presented here differs somewhat from cancer mortality data reported by the MCHS. For data presented here, race and ethnicity reported on death certificates was supplemented with information from the Indian Health Service to better identify cancer deaths among American Indians. This process increased the overall cancer mortality rate among American Indians by approximately 14 percent, and decreased rates among other race and ethnic groups (primarily non-Hispanic whites) by a small percent. To our knowledge, MCHS has not similarly updated race classification on electronic death certificate files.

Tables in Chapter III show the total number of cases and deaths over the five-year period 2002-2006 by race and ethnicity and gender. This section provides an overview of race and ethnic disparities in the occurrence of cancer in Minnesota. To simplify the presentation, the rates referred to are for both sexes combined except for breast, cervix, uterus, and prostate cancer.

American Indian/Alaska Native

As discussed earlier, tables and figures in this report present cancer data for American Indians in two geographic regions of Minnesota: statewide, and for those living in the 29 IHS CHSDA counties. The rates for American Indians living in the CHSDA counties may better reflect the cancer experience of American Indians in Minnesota, but they are based on fewer cases, and therefore can be more affected by random variation. The overall cancer incidence and mortality rates calculated for American Indians living in the CHSDA counties are 20 percent higher than comparable rates for American Indians statewide, and the differences are statistically significant. However, rates for some sites are lower for American Indians in CHSDA counties, and when examining site-specific rates for both sexes combined, only the elevated risk of lung cancer among American Indians living in the CHSDA counties is statistically significant. In the text below, data are presented for American Indians statewide. Comparable data for American Indians living in the CHSDA counties can be found in the referenced tables and figures.

During the five-year period 2002-2006, an average of 189 American Indians in Minnesota were diagnosed with cancer each year and 76 died of the disease annually (Tables II-6 and III-1.3). After adjusting for population size and age distribution, American Indians had the highest overall cancer incidence and mortality rates compared to other race/ethnic groups in the state (Table II-7 and Figure II-4). American Indians were 13 percent more likely to be diagnosed with cancer than non-Hispanic whites and 40 percent more likely to die of the disease. The overall cancer incidence and mortality rates were seven and eight percent higher, respectively, among American Indians than blacks, but neither difference was statistically significant.

The overall cancer incidence rate among American Indians was significantly higher in Minnesota than in the geographic areas reporting to the SEER Program, where the majority of American Indian cancer cases are from cancer registries in New Mexico and Alaska. The overall cancer mortality rate among American Indians was also significantly higher in Minnesota than in the U.S. as a whole. During 2002-2006 in the SEER Program, American Indian/Alaska Native populations had the lowest overall cancer incidence rate compared to other race and ethnic

groups (Figure II-5). The overall cancer incidence rate among American Indians was more than two times higher in Minnesota than among American Indians in the SEER Program, and the overall cancer mortality rate was nearly two times higher in Minnesota than in the U.S. as a whole. In contrast, overall cancer rates among other race and ethnic groups in Minnesota were similar to or lower than comparable rates reported by the SEER Program (Figures II-4 and II-5).

The majority of the excess in cancer incidence among American Indians in Minnesota compared to non-Hispanic whites was due to lung cancer. The lung cancer incidence rate was twice as high among American Indians as among non-Hispanic whites, and the lung cancer mortality rate was similarly elevated (Table II-7). Colorectal and kidney/renal pelvis cancers also contributed significantly to the excess burden of cancer in the American Indian population in Minnesota. American Indians had the highest incidence and mortality rates for these two cancers in Minnesota (Table II-7).

Asian/Pacific Islander

During the five-year period 2002-2006, an average of 233 Asian/Pacific Islanders in Minnesota were diagnosed with cancer each year and 86 died of the disease annually (Tables II-6 and III-1.3). After adjusting for population size and age distribution, Asian/Pacific Islanders had the lowest overall cancer incidence rate and the lowest overall cancer mortality rate compared to other race and ethnic groups in the state (Table II-7 and Figure II-4). Asian/Pacific Islanders were 44 percent less likely to be diagnosed with cancer than non-Hispanic whites and 28 percent less likely to die of the disease.

The overall cancer incidence rate among Asian/Pacific Islanders over this period was 16 percent lower in Minnesota than in the SEER Program, while mortality was 13 percent higher than in the U.S. as a whole (Figures II-4 and II-5). Both comparisons were statistically significant.

Asian/Pacific Islanders in Minnesota and nationally have a significantly lower risk than non-Hispanic whites of being diagnosed with many common cancers such as prostate, female breast, lung, and colorectal cancer. However, they have among the highest rates of liver and stomach cancers, for which survival tends to be poor. Asian/Pacific Islanders in Minnesota were more than four times more likely than non-Hispanic whites to be diagnosed with liver cancer and two times more likely to be diagnosed with stomach cancer (Table II-7). Mortality rates for these sites were similarly elevated. Asian/Pacific Islander women in Minnesota had one of the highest incidence rates of cervical cancer, more than twice as high as the rate among non-Hispanic white women. Cervical cancer rates were also elevated among black, American Indian, and Hispanic women, and the rates among these women were not statistically different from those among Asian/Pacific Islander women.

Black/African American

During the five-year period 2002-2006, an average of 480 blacks in Minnesota were diagnosed with cancer each year and 170 died of the disease annually (Tables II-6 and III-1.3). After adjusting for population size and age distribution, blacks had the second highest overall cancer incidence and mortality rates compared to other race and ethnic groups in the state (Table II-7 and Figure II-4), second only to American Indians. Blacks were six percent more likely to be diagnosed with cancer than non-Hispanic whites but 30 percent more likely to die of the disease. Overall cancer incidence and mortality rates were somewhat higher for American Indians than blacks, but the differences were not statistically significant.

Cancer incidence and mortality rates among blacks in Minnesota over this period were nearly identical to those in the SEER Program (Figures II-4 and II-5).

Unlike nationally, where blacks had the highest incidence rate of many specific types of cancer compared to other race and ethnic groups, in Minnesota blacks only had the highest rate for prostate and liver cancers, primarily because of higher rates among American Indians in many other sites (Table II-7). The prostate cancer incidence rate among blacks in Minnesota was 23

percent higher than among non-Hispanic whites; their prostate cancer mortality rate was 90 percent higher than among non-Hispanic whites. The cancer incidence rate among blacks compared to non-Hispanic whites was significantly higher for three other common sites: six times higher for liver cancer, two times higher for cervix cancer, and 28 percent higher for lung cancer.

Non-Hispanic White

During the five-year period 2002-2006, an average of 22,490 non-Hispanic white Minnesotans were diagnosed with cancer each year and 8,688 died of the disease annually (Tables II-6 and III-1.3). After adjusting for population size and age distribution, cancer rates among non-Hispanic whites were intermediate between American Indians and blacks, who had significantly higher overall cancer incidence and mortality rates, and Asian/Pacific Islanders and Hispanics, who had significantly lower overall cancer incidence and mortality rates (Table II-7 and Figure II-4).

Over the five-year period 2002-2006, the overall cancer incidence and mortality rates among non-Hispanic whites were four and seven percent lower, respectively, in Minnesota than nationally (Figures II-4 and II-5). Although these differences are modest, both are statistically significant.

Compared to other race and ethnic groups in Minnesota, non-Hispanic whites had the highest incidence of female breast, uterus, and bladder cancers. However, blacks had the highest mortality rates for female breast and uterine cancer. Non-Hispanic whites had the lowest incidence and mortality rates for cervix, liver, and stomach cancer.

Hispanic (all races)

During the five-year period 2002-2006, an average of 219 Hispanics in Minnesota were diagnosed with cancer each year and 54 died of the disease annually (Tables II-6 and III-1.3). After adjusting for population size and age distribution, Hispanics had the second lowest overall cancer incidence rate compared to other race and ethnic groups in the state, and the lowest overall cancer mortality rate (Table II-7 and Figure II-4). Hispanics were 28 percent less likely to be diagnosed with cancer and 39 percent less likely to die of the disease than non-Hispanic whites.

The overall cancer incidence rate among Hispanics was about three percent lower in Minnesota than in the SEER Program, while the overall cancer mortality rate was 13 percent lower than in the US as a whole (Figures II-4 and II-5). However, neither difference was statistically significant.

Hispanics in Minnesota and nationally have a significantly lower risk than non-Hispanic whites of being diagnosed with prostate and female breast cancer, which are among the most common cancers diagnosed, as well as leukemia, lung, and bladder cancers. In Minnesota, cancer rates were somewhat lower among Hispanics compared to non-Hispanic whites for other cancers as well, although the differences were not statistically significant (Table II-7). However, similar to Asian/Pacific Islanders, Hispanic Minnesotans had significantly elevated rates for liver and stomach cancers, for which survival tends to be poor. Hispanics in Minnesota were three times more likely than non-Hispanic whites to be diagnosed with liver cancer, and mortality was similarly elevated. Hispanic women in Minnesota had a significantly elevated incidence of cervical cancer; the rate was nearly three times higher than among non-Hispanic white women.

Conclusions

Many of the same race and ethnic disparities in cancer that occur nationally exist in Minnesota. The most notable exception is that American Indians have the lowest cancer rates nationally, but the highest cancer rates in Minnesota. Much remains to be learned about what causes these differences in cancer incidence and mortality. It is likely that a combination of behavioral, cultural, socioeconomic, and genetic differences are involved, but the relative importance of each factor is controversial and is likely to vary by cancer site. For some cancers, research has shown that disparities are eliminated when access to quality care is equal.

Despite the marked disparities in the occurrence of cancer discussed above, many similarities exist. Cancer is the leading cause of death for each major race and ethnic group in Minnesota except American Indians, for whom heart disease is still the leading cause. Breast cancer is the most commonly diagnosed cancer among women, regardless of race and ethnicity; prostate cancer is the most commonly diagnosed cancer among men, regardless of race and ethnicity (Table II-6). Lung and colorectal cancers are among the top four cancers, regardless of race and ethnicity or gender.

Eliminating disparities in health is a priority for MDH, and a number of interventions funded by the MDH Office of Minority and Multicultural Health (OMMH) are directed toward reducing disparities in the burden of cancer described above. More information on these projects can be found on the OMMH web site http://www.health.state.mn.us/ommh/. In addition, the statewide comprehensive cancer control plan, *Cancer Plan Minnesota*, has identified reducing disparities in cancer screening and treatment as one of four top priorities for the next one to two years. More information on *Cancer Plan Minnesota*, activities related to priorities, and the Minnesota Cancer Alliance can be found at http://www.mncanceralliance.org.

Cancer Trends in Minnesota

Long-term trends in cancer incidence and mortality over the 19-year period 1988-2006 were assessed by using Joinpoint regression analysis, as discussed in Appendix E. This methodology identifies changes in trends as well as the linear trend during the interval between changes in trend. Discussions of specific cancers in Chapter III include a brief summary of trends for each site. This section provides an overview of changes in cancer rates in Minnesota.

The overall age-adjusted cancer incidence rate in Minnesota increased by six percent over the 19-year period, from 445.4 new cases per 100,000 persons in 1988 to 474.1 in 2006 (Figure II-6). However, due to growth and aging of the Minnesota population, the number of persons diagnosed with cancer increased by nearly 38 percent over the same period, from 18,010 new cases in 1988 to 24,916 in 2004.

In contrast, the overall age-adjusted cancer mortality rate in Minnesota decreased by 16 percent over the 19-year period, from 199.5 cancer deaths per 100,000 persons in 1988 to 171.4 in 2006 (Figure II-7). Despite this significant progress, the number of persons dying of cancer in the state actually increased by twelve percent over the same period, from 8,100 cancer deaths in 1988 to 9,065 in 2006. In other words, the decrease in the risk of dying of cancer was not sufficiently rapid to balance increases in the number of deaths due to Minnesota population growth and aging.

The increase in the risk of being diagnosed with cancer in Minnesota described above has not been constant over time and has not been the same for men and women. Among males, the overall cancer incidence rate increased by 3.8 percent per year from 1988 to 1992, largely driven by increases in prostate cancer detection with the prostate specific antigen test (Figure II-8). After declining modestly from 1992 to 1995, the overall cancer incidence rate among males in Minnesota increased significantly by 0.5 percent per year from 1995 to 2006. This overall increase reflects significant increases in risk for a number of less common cancers (such as thyroid, liver, kidney, melanoma, esophagus, kidney, pancreas, non-Hodgkin lymphoma, and bladder), partially balanced by substantial and long-standing decreases in the incidence of two of the most commonly diagnosed cancers (lung and colorectal cancers) (Figure II-10).

Among females, the pattern was considerably different; their overall cancer incidence rate was relatively stable from 1988 to 1995, increased by 1.4 percent per year from 1995 to 2000, and was stable again from 2000 to 2006 (Figure II-8). The recent stabilization largely reflects continued significant increases in risk for lung cancer and increases in many of the same cancers that are increasing among males, balanced by decreases in colorectal cancer and a stabilization in female breast cancer incidence after sharp decreases from 2000 to 2004 (Figure II-12).

The overall risk of dying of cancer in Minnesota has been decreasing since cancer registration was implement in 1988. Cancer mortality rates are significantly increasing for only two sites among males (liver and esophagus) and for only three sites among females (liver, lung, and mesothelioma) (Figures II-11 and II-13). Mortality data for 2007 not included in this report shows that mesothelioma mortality among both males and females is lower in 2007 than in 1999, when mesothelioma began being reported as a unique cause of death.

Nonetheless, the decrease in cancer mortality is more rapid among men than women (Figure II-9). The overall cancer mortality rate among males decreased by 0.8 percent per year from 1988 to 2002, and then started decreasing by 2.9 percent per year. The overall cancer mortality rate among females has been decreasing by 0.6 percent per year over the entire 19-year period. The primary reason that cancer mortality is not declining as rapidly for women as for men is that lung cancer, the leading cause of cancer deaths for both men and women, is increasing by 0.9 percent per year among women, while it has been decreasing by 1.1 percent per year among men since 1988.

The overall cancer incidence trends in Minnesota are somewhat different than seen among the white population in the SEER 9 area (Figure II-8). The overall incidence rate among males decreased by 1.3 percent per year from 2000 to 2006 in SEER, while it is still increasing in Minnesota. The overall incidence rate among females decreased by 0.5 percent per year from 1998 to 2006 in SEER, while it is stable in Minnesota. In general, cancer mortality trends in Minnesota are very similar to what is seen nationally (Figure II-9).

Geographic Variation in the Occurrence of Cancer in Minnesota

To evaluate geographic variation in the occurrence of cancer in Minnesota, the state is divided into eight regions. The counties included in each region are shown in Appendix C. Regions of the state are used rather than individual counties because most counties have populations which are too small to produce rates stable enough to make meaningful comparisons. In addition, regions better reflect economic, topographical and occasionally cultural differences in the state than do individual counties.

The regional names given in Appendix C are abbreviated in the text and graphs as follows:

Metro	Metropolitan Minnesota
SE	Southeastern Minnesota
SC	South Central Minnesota
SW	Southwestern Minnesota
Central	Central Minnesota
WC	West Central Minnesota
NW	Northwestern Minnesota
NE	Northeastern Minnesota

Geographic variation was assessed for the five most common cancer sites and mesotheliomas, aggregating data over the 5-year period 2002-2006. Comparisons were made using rates for non-Hispanic whites, who constitute about 87 percent of the Minnesota population and about 94 percent of the cancer cases reported to the MCSS. As discussed in a previous section, cancer rates for specific sites vary considerably by race and ethnicity. Comparing regional variation in cancer incidence and mortality among non-Hispanic whites minimizes race as a factor in observed differences.

In describing regional differences, it is important to recognize that the variation of cancer rates within Minnesota is much less than variations observed nationally and certainly internationally. Over the five-year period 2002-2006, the overall cancer incidence rate among states varied by as much as 27 percent (both sexes combined, non-hispanic whites); internationally, rates differ by as much as a factor of eight (all races, both sexes, varying years). In contrast, the Minnesota region with the highest overall cancer incidence rate is only 8 percent higher than the region with the lowest (Figure II-18). This is noteworthy, as there appears to be a common misperception that cancer rates are much higher in one part of the state than another.

It should also be noted that the MCSS only records microscopically confirmed cancers. Therefore, regional variations in medical practices pertaining to the likelihood of obtaining tissue

from suspected cancer cases will produce differences in cancer rates from region to region. With very few exceptions, this does not appear to be a significant factor in most cancer rates.

In Minnesota, there is a consistent difference in regional cancer rates of lung and bronchus cancer. Lung cancer incidence rates vary by 35 percent when comparing the highest to the lowest regional rate (Figure II-19). For both sexes combined, lung cancer rates in SW, SC and WC Minnesota are 11 to 17 percent below the statewide rate. This is primarily due to lower female lung cancer rates in these regions (10 to 27 percent lower), although male rates (8 to 11 percent lower) also contribute to the reduction (Figure II-20). In contrast, higher female and male lung cancer rates in NE Minnesota (over 10 percent higher than the statewide rate for each) give that region the highest lung cancer rate of the eight regions. Although there is a higher lung cancer rate among females in the Metro region compared to the state as a whole (10 percent higher), the Metro region male lung cancer rate differs very little from the state average. The regional differences in lung cancer incidence are very likely to be real (not an artifact of reporting or biopsy rates), since Minnesota lung cancer mortality rates closely parallel those of the incidence rates. These differences are consistent with differences in the measured smoking behaviors among the regions' populations as noted in previous reports.

Colon and rectum cancer incidence rates vary by 28 percent among Minnesota regions, and show a statistically significant difference between the Metro and non-Metro areas of Minnesota (Figure II-21). The Metro rate is seven percent lower than the state average. Incidence in the SW region (19 percent), the SC region (13 percent) and the WC region (11 percent) are all statistically significantly higher than the state average. Colorectal cancer mortality and incidence have been declining since the 1980s both in Minnesota and nationally. Some of the decline may be due to screening, which can identify and remove polyps before they become cancerous. If colorectal cancer screening is more common in residents of the Metro region than in the rest of the state, this would help to explain the observed differences between the Metro and non-Metro regions.

Female breast cancer incidence rates show only small geographic differences, varying by up to 17 percent comparing the highest to the lowest regional rate (Figure II-22). Incidence rates range from three percent above the state average in the Metro and Southeastern Regions to eight to twelve percent below the state average in Central and NW Minnesota. Breast cancer mortality rates are less than one fifth incidence rates. Here too there is little variation in the state although mortality rates in WC Minnesota were significantly lower (17 percent) than the state average. Breast cancer mortality in the Metro and SE regions are only slightly above the state average. Because survival for breast cancer on average is quite long, there may not be a strong correlation between incidence and mortality among the regions. Mammography screening rates can affect incidence rates in those areas with higher rates of screening which will identify some additional cases that would not have been identified had the cancer been allowed to take its natural course. It is not known whether this has played any role in the differences of breast cancer rates among the regions of Minnesota. Socioeconomic status is also correlated with breast cancer risk and may explain some portion of the slightly higher rates in the Metro area.

Incidence rates for prostate cancer have varied considerably over time, and have been strongly influenced by the PSA screening test that was widely implemented starting in the late 1980s (Figure II-23). Prostate cancer incidence rates vary by 22 percent among Minnesota regions which is considerably less than in previous five year periods. The incidence rate in the Metro area was significantly lower than the state average (5 percent lower). This contrasts with data from 1988-1994, when prostate cancer incidence rates were five percent higher than the state average in the Metro area and lower in Central Minnesota. Again, this may be due to varying medical practices among the regions, specifically in the use of the PSA as a screening method for prostate cancer. It has been well documented that use (or lack of use) of the PSA test as a screening device is a significant factor in determining prostate cancer rates. It is not known how this might be playing a role in Minnesota.

Another notable and consistent regional pattern in cancer occurrence has been an increased incidence of mesothelioma, or cancer of the pleura, pericardium, and peritoneum, especially in the NE region (Figure II-24). The only known cause of mesothelioma is exposure to asbestos. Latency periods for mesothelioma are typically 30 to 50 years. Between 2002 and 2006, 45 men and 3 women in the NE region were diagnosed with mesothelioma, giving this region a significantly higher rate than the Minnesota rate. Incidence rates for mesothelioma among men in NE Minnesota is twice that of the state incidence rate. No excess among females has been noticed. A higher mesothelioma rate had also been noted from 1988-1994 for males (75 percent higher than the statewide rate, based on 39 cases) but not for females (75 percent lower than the statewide rate, based on two cases), suggesting an exposure unique to males, most likely occupational exposures. This has been and continues to be part of an ongoing study examining risk factors that may be causing this excess.

While differences of the various types of cancer noted in this report may or may not reflect real differences in etiologic factors by region, they certainly demonstrate a number of cautions that should be taken when examining regional variation.

1) Comparison of numerous types of cancers by region and by sex will, by chance alone, find a number of rates that are significantly different from the state average. In general, differences are more likely to be real when they are consistent over time, are evident for both sexes (when appropriate) and across similar regions, and when the increase is found for mortality (when appropriate) as well as incidence.
2) Differences may result from regional coding practices. Although MCSS, local cancer registrars and national organizations work hard to standardize coding practices, this is an ongoing and challenging effort given the many changes in coding practices over the years.
3) Small numbers produce greater variability and less reliability. However, even with small numbers regional differences can be informative for certain cancers with clearly delineated causes, for example, mesotheliomas and Kaposi sarcomas.
4) Some differences may be the result of variations in regional medical practices and screening rates (for example, prostate cancer).
5) Differences may occur if a group of counties within a region has been growing rapidly and projected population counts are inaccurate (usually too low). This may be occurring in the counties north of the Twin Cities metro and in the rapidly growing cooridor between the Twin Cities and the St. Cloud area. These counties are part of the Central Region which has higher rates of all cancers for this report.

In summary, the overall risk of developing cancer does not vary to a large degree among Minnesota regions. The two cancers that show the most striking geographic variation in Minnesota, lung cancer and mesothelioma, have well-known causes (smoking and asbestos exposure, respectively). It is likely that the observed geographic variation in these cancers can be explained by past geographic differences in smoking rates and work-related exposure to asbestos. Cancers of the colon and rectum, prostate, and breast also vary significantly across regions of the state. Because the diagnosis of these cancers is affected by the extent to which the population is screened, it is likely that at least some of the variation is due to geographic variation in screening.

These findings indicate that the risk of developing cancer is not dictated by where one chooses to live. The MCSS will continue to monitor regional variation in cancer rates as part of ongoing surveillance of cancer in Minnesota.

Minnesota Cancer Prevalence

Cancer prevalence is the number of persons alive in a population on a specified date who were previously diagnosed with cancer. Because individuals continue to require services, support, and care beyond the year in which they were diagnosed, it is an important measure of the burden of cancer in society. The SEER Program estimates that 11.4 million Americans, or 3.8% of the U.S. population, were living with a history of

cancer on January 1, 2006. This is eight times larger than the 1.4 million Americans estimated by the American Cancer Society to have been newly diagnosed with cancer during 2006.

Cancer prevalence estimates typically exclude people diagnosed with common skin cancers or *in situ* disease. Prevalent cancers include both newly diagnosed cases and individuals who have survived their disease, whether they are considered cancer-free or are still undergoing treatment. It is affected by present and past cancer incidence, cancer survival rates, and death from other causes. Because these factors vary by age, race/ethnicity, and gender, prevalence is also affected by the demographic characteristics of the population.

Prevalence can count persons ever diagnosed with cancer and still alive (complete prevalence), or those who were diagnosed during a specified time period such as the previous five, ten, or twenty-five years (limited duration prevalence). Prevalence percents are calculated by dividing the number of prevalent cases by the total number of people in the population at the given point in time. People can be diagnosed with and survive more than one cancer. The prevalence counts presented here count a person only once, for the first cancer he or she was diagnosed with, ignoring any cancer(s) that might have developed after the first diagnosis.

Because people with a history of cancer can live a normal lifespan, few cancer registries have registered cancer patients for a sufficient length of time to directly measure complete prevalence. In the U.S., the Connecticut cancer registry has registered cancer patients since 1940, and is the source used to approximate complete prevalence. The SEER Program has registered cancer patients in nine geographic regions covering about ten percent of the U.S. population since 1975, and has nearly complete (95%) follow-up on the vital status of patients. Prevalence percents from the SEER regions can be used to estimate limited duration cancer prevalence in geographic areas such as Minnesota where cancer registries have operated for a shorter period of time or where follow-up is incomplete.

Methods

MCSS cannot directly calculate prevalence for Minnesota because MCSS has only registered cancers in Minnesota since 1988 and does not have complete follow-up information on the vital status of the individual. However, prevalence percents based on cancer registration in the SEER Program are available from SEER as part of the SEER*Stat limited duration prevalence module, and are the basis for estimating complete and five-year prevalence for Minnesota.

The age-, sex- and site-specific cancer prevalence percents (5-year and 31-year) for the white population in the nine regions participating in the SEER Program since 1975 were calculated in SEER*Stat for all sites combined and the most common cancers. Using the program ProjPrev v. 1.0.1 available from SEER, 31-year prevalence counts for Minnesota were calculated by multiplying SEER prevalence percents by the corresponding age- and sex-specific population estimates for Minnesota on January 1, 2006, obtained by averaging estimates for the mid-year of 2005 and 2006 obtained from SEER.

To adjust for generally lower cancer rates in Minnesota, the resulting numbers were multiplied by age-, sex- and site-specific rate ratios for cancer incidence in Minnesota and in the SEER 9 Region white population during 2002-2006. Age-specific estimates were summed for site and sex totals and rounded to the nearest ten persons. The prevalence estimates for males and females were summed to estimate prevalence for both sexes combined. To calculate complete prevalence, 31-year prevalence estimates were adjusted by completeness indexes generated in the program ComPrev version 1.1.0 developed by the National Cancer Institute.

Limitations

The prevalence data presented here are estimates, not actual counts of Minnesotans living with cancer. Adjusting the prevalence percents for the white population in the nine SEER regions by known differences in cancer incidence between Minnesota and SEER decreased cancer prevalence estimates for Minnesota. This is appropriate given

that overall cancer incidence has historically been lower in Minnesota than in the geographic areas participating in the SEER program.

However, other factors affecting cancer prevalence could not be adjusted for. If Minnesotans have higher cancer survival rates than the SEER 9 Region white population, our prevalence estimates will be too low. MCSS is not yet able to calculate cancer survival rates for Minnesotans because of incomplete follow-up information. However, given the recognized high quality of health care in Minnesota, higher survival rates in Minnesota may occur. Similarly, Minnesotans have a higher life expectancy than many other states, due in part to having one of the lowest heart disease mortality rates in the nation. Since Minnesotans live longer and therefore have more "opportunity" to develop cancer, these prevalence estimates may be too low. It is therefore likely that the prevalence estimates presented here represent the lower limits of actual prevalence.

Results

As of January 1, 2006, an estimated 195,250 Minnesotans were living with a history of cancer (Table II-8), or 3.8% of the Minnesota population. An estimated 69,530 of these survivors had been diagnosed in the previous five years (Table II-9), or 1.3% of Minnesotans. By comparison, a total of 24,911 Minnesotans were diagnosed with cancer in 2006.

The number of persons living with a history of cancer for up to five years is very similar for men and women (36,260 and 33,260, respectively). However, the number of women ever diagnosed with cancer and alive on January 1, 2006 (104,090) is 14 percent larger than the number of men (91,160). This reflects the fact that women live on average more than five years longer than men, and that breast cancer tends to be diagnosed at a younger age.

Among Minnesota female cancer survivors, two out of five (42% or 43,330 women) have a history of breast cancer; among male cancer survivors, two out of five (45% or 41,420 men) have a history of prostate cancer. These large numbers reflect the facts that breast and prostate cancer account for about a third of all cancers diagnosed among men and women, and that survival is very high. Lung cancer, on the other hand, accounts for 12% of cancers diagnosed but only 3% of cancer survivors because survival is poor.

Conclusions

The number of Minnesotans diagnosed with cancer in a given year is only a fraction of those who are living with a history of cancer. It is hoped that these estimates will be useful for those involved in planning and policy related to cancer control.

Table II-1: Number of new cases and deaths and average annual incidence and mortality rates§ by anatomic site and gender, all races combined, Minnesota, 2002-2006

Cancer Site	Incidence						Mortality					
	New Cases 2002-2006			Average Annual Rate			Deaths 2002-2006			Average Annual Rate		
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
All Cancer Sites Combined	63,232	56,473	119,705	556.4	408.9	470.4	23,214	22,145	45,359	215.3	151.6	176.5
Oral Cavity & Pharynx	1,794	1,005	2,799	15.1	7.1	10.8	385	208	593	3.4	1.4	2.3
Lip	244	90	334	2.2	0.6	1.3	6	2	8	0.1	0.0	0.0
Tongue	430	245	675	3.5	1.8	2.6	86	58	144	0.7	0.4	0.5
Salivary Gland	167	148	315	1.5	1.1	1.2	56	26	82	0.5	0.2	0.3
Floor of Mouth	132	78	210	1.1	0.5	0.8	7	1	8	0.1	0.0	0.0
Gum & Other Mouth	232	244	476	2.0	1.7	1.8	53	54	107	0.5	0.3	0.4
Nasopharynx	77	39	116	0.6	0.3	0.5	36	14	50	0.3	0.1	0.2
Tonsil	314	97	411	2.5	0.7	1.6	39	15	54	0.3	0.1	0.2
Oropharynx	49	21	70	0.4	0.1	0.3	24	9	33	0.2	0.1	0.1
Hypopharynx	126	31	157	1.1	0.2	0.6	20	5	25	0.2	0.0	0.1
Other Oral Cavity & Pharynx	23	12	35	0.2	0.1	0.1	58	24	82	0.5	0.2	0.3
Digestive System	11,000	9,517	20,517	97.3	66.5	80.3	5,723	5,038	10,761	52.1	33.3	41.6
Esophagus	1,054	265	1,319	9.1	1.9	5.2	906	237	1,143	8.0	1.6	4.5
Stomach	876	508	1,384	7.9	3.5	5.4	472	330	802	4.4	2.2	3.1
Small Intestine	287	261	548	2.5	1.9	2.1	72	50	122	0.6	0.3	0.5
Colon & Rectum	6,335	6,107	12,442	56.4	42.4	48.6	2,071	2,230	4,301	19.3	14.4	16.5
Colon excl. Rectum	4,442	4,784	9,226	40.2	32.9	36.1	1,710	1,945	3,655	16.0	12.5	14.0
Rectum & Rectosigmoid Junction	1,893	1,323	3,216	16.3	9.5	12.5	361	285	646	3.3	1.9	2.5
Anus, Anal Canal & Anorectum	102	167	269	0.8	1.2	1.0	14	28	42	0.1	0.2	0.2
Liver & Intrahepatic Bile Duct	718	272	990	6.1	2.0	3.9	716	388	1,104	6.3	2.7	4.3
Liver	640	213	853	5.4	1.5	3.3	535	195	730	4.7	1.3	2.8
Intrahepatic Bile Duct	78	59	137	0.7	0.4	0.5	181	193	374	1.6	1.3	1.5
Gallbladder	92	215	307	0.9	1.5	1.2	66	154	220	0.6	1.0	0.9
Other Biliary	194	182	376	1.8	1.3	1.5	61	83	144	0.6	0.5	0.5
Pancreas	1,244	1,198	2,442	11.0	8.5	9.6	1,289	1,383	2,672	11.7	9.2	10.4
Retroperitoneum	39	35	74	0.3	0.3	0.3	10	10	20	0.1	0.1	0.1
Peritoneum, Omentum, Mesentery	6	255	261	0.0	1.9	1.0	6	94	100	0.1	0.7	0.4
Other Digestive Organs	53	52	105	0.5	0.3	0.4	40	51	91	0.4	0.3	0.3

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Source: MCSS (September 2009). All cases were either microscopically confirmed or Death Certificate Only. *In situ* cancers except those of the bladder were excluded. Deaths were from the Minnesota Center for Health Statistics, and include all deaths with the specified cancer as the underlying cause of death during the time period, regardless of year of diagnosis. All analyses were conducted by MCSS.

§ Rates are per 100,000 persons and are age-adjusted to the 2000 U.S. population.
- Not applicable; site is sex-specific or not available.

Table II-1: Number of new cases and deaths and average annual incidence and mortality rates§ by anatomic site and gender, all races combined, Minnesota, 2002-2006 (continued)

Cancer Site	Incidence						Mortality					
	New Cases 2002-2006			Average Annual Rate			Deaths 2002-2006			Average Annual Rate		
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
Respiratory System	8,559	6,969	15,528	76.8	51.3	62.2	6,583	5,293	11,876	60.5	37.8	47.2
Nose, Nasal Cavity & Middle Ear	89	64	153	0.8	0.5	0.6	23	15	38	0.2	0.1	0.1
Larynx	680	176	856	5.9	1.3	3.4	172	44	216	1.5	0.3	0.9
Lung & Bronchus	7,744	6,719	14,463	69.8	49.5	58	6,373	5,228	11,601	58.7	37.4	46.2
Pleura†	5	0	5	0.0	0.0	0.0	4	0	4	0.0	0.0	0.0
Trachea, Mediastinum & Other	41	10	51	0.3	0.1	0.2	11	6	17	0.1	0.0	0.1
Mesothelioma (all sites)	243	88	331	2.3	0.6	1.3	34	12	289	1.6	1.1	0.9
Bones & Joints	156	95	251	1.3	0.7	1.0	76	55	131	0.6	0.4	0.5
Soft Tissue incl. Heart	426	395	821	3.6	2.9	3.2	170	149	319	1.5	1.0	1.2
Skin	2,896	2,549	5,445	24.8	19.0	21.2	492	295	787	4.4	2.1	3.0
Melanoma of the Skin	2,600	2,272	4,872	22.1	17.1	19.0	358	227	585	3.2	1.6	2.3
Other Non-Epithelial Skin	296	277	573	2.7	1.9	2.2	134	68	202	1.2	0.4	0.8
Kaposi Sarcoma (all sites)	49	9	58	0.4	0.1	0.2	0	0	0	0.0	0.0	0.0
Breast	140	17,390	17,530	1.3	126.3	67.6	22	3,199	3,221	0.2	22.1	12.3
Female Genital System	-	6,911	-	-	50.5	-	-	2,286	-	-	15.9	-
Cervix Uteri	-	833	-	-	6.4	-	-	227	-	-	1.6	-
Corpus & Uterus, NOS	-	3,744	-	-	27.2	-	-	647	-	-	4.5	-
Ovary	-	1,773	-	-	12.9	-	-	1,250	-	-	8.7	-
Vagina	-	83	-	-	0.6	-	-	20	-	-	0.1	-
Vulva	-	380	-	-	2.7	-	-	97	-	-	0.6	-
Other Female Genital Organs	-	98	-	-	0.7	-	-	45	-	-	0.3	-
Male Genital System	21,961	-	-	192.8	-	-	2,730	-	-	27.3	-	-
Prostate	20,928	-	-	184.5	-	-	2,679	-	-	26.8	-	-
Testis	867	-	-	6.8	-	-	27	-	-	0.2	-	-
Penis	118	-	-	1.1	-	-	22	-	-	0.2	-	-
Other Male Genital Organs	48	-	-	0.4	-	-	2	-	-	-	-	-

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Source: MCSS (September 2009). All cases were either microscopically confirmed or Death Certificate Only. *In situ* cancers except those of the bladder were excluded. Deaths were from the Minnesota Center for Health Statistics, and include all deaths with the specified cancer as the underlying cause of death during the time period, regardless of year of diagnosis. All analyses were conducted by MCSS.

§ Rates are per 100,000 persons and are age-adjusted to the 2000 U.S. population.
† Mesotheliomas of the pleura are included in the separate group Mesothelioma.
- Not applicable; site is sex-specific or not available.

Table II-1: Number of new cases and deaths and average annual incidence and mortality rates[§] by anatomic site and gender, all races combined, Minnesota, 2002-2006 (continued)

Cancer Site	Incidence						Mortality					
	New Cases 2002-2006			Average Annual Rate			Deaths 2002-2006			Average Annual Rate		
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
Urinary System	6,857	2,972	9,829	61.4	21.2	38.8	1,507	795	2,302	14.1	8.9	8.9
Urinary Bladder	4,367	1,477	5,844	40.2	10.3	23.1	753	338	1,091	7.3	4.2	4.2
Kidney & Renal Pelvis	2,374	1,397	3,771	20.1	10.2	14.8	713	411	1,124	6.4	4.4	4.4
Ureter	77	73	150	0.7	0.5	0.6	15	23	38	0.1	0.1	0.1
Other Urinary Organs	39	25	64	0.4	0.2	0.2	26	23	49	0.2	0.2	0.2
Eye & Orbit	93	56	149	0.8	0.4	0.6	11	6	17	0.1	0.1	0.1
Brain & Other Nervous System	949	705	1,654	7.8	5.4	6.5	629	485	1,114	5.3	4.4	4.4
Brain	890	656	1,546	7.3	5.0	6.1	-	-	-	-	-	-
Other Nervous System	59	49	108	0.5	0.4	0.4	-	-	-	-	-	-
Endocrine System	692	1,763	2,455	5.6	13.6	9.6	72	114	186	0.6	0.8	0.7
Thyroid	590	1,690	2,280	4.7	13.0	8.9	35	81	116	0.3	0.5	0.5
Other Endocrine incl. Thymus	102	73	175	0.8	0.6	0.7	37	33	70	0.3	0.2	0.3
Lymphoma	3,416	2,803	6,219	29.6	20.3	24.4	1,122	952	2,074	10.4	6.3	8.0
Hodgkin Lymphoma	405	330	735	3.3	2.6	2.9	56	60	116	0.5	0.4	0.5
Non-Hodgkin Lymphoma	3,011	2,473	5,484	26.4	17.7	21.5	1,066	892	1,958	9.9	5.8	7.6
Multiple Myeloma	803	591	1,394	7.1	4.2	5.5	536	447	983	5.0	3.0	3.8
Leukemia	2,225	1,549	3,774	19.7	11.0	14.8	1,134	884	2,018	10.7	5.9	7.8
Lymphocytic Leukemia	1,283	817	2,100	11.3	5.9	8.3	391	272	663	3.7	1.8	2.5
Acute Lymphocytic Leukemia	193	146	339	1.5	1.2	1.4	62	42	104	0.5	0.3	0.4
Chronic Lymphocytic Leukemia	1,010	634	1,644	9.1	4.4	6.5	308	215	523	3.0	1.4	2.0
Other Lymphocytic Leukemia	80	37	117	0.7	0.3	0.4	21	15	36	0.2	0.1	0.1
Myeloid & Monocytic Leukemia	866	667	1,533	7.7	4.7	6.0	564	451	1,015	5.2	3.1	4.0
Acute Myeloid Leukemia	511	413	924	4.5	3.0	3.6	446	354	800	4.1	2.5	3.2
Acute Monocytic Leukemia	30	40	70	0.3	0.3	0.3	6	8	14	0.1	0.0	0.1
Chronic Myeloid Leukemia	308	203	511	2.7	1.4	2.0	58	51	109	0.5	0.3	0.4
Other Myeloid/Monocytic Leukemia	17	11	28	0.2	0.1	0.1	54	38	92	0.5	0.2	0.3
Other Leukemia	76	65	141	0.7	0.5	0.5	179	161	340	1.7	1.1	1.3
Miscellaneous	973	1,106	2,079	8.7	7.6	8.1	1,798	1,871	3,669	16.9	12.3	14.2

Source: MCSS (September 2009). All cases were either microscopically confirmed or Death Certificate Only. *In situ* cancers except those of the bladder were excluded. Deaths were from the Minnesota Center for Health Statistics, and include all deaths with the specified cancer as the underlying cause of death during the time period, regardless of year of diagnosis. All analyses were conducted by MCSS.

§ Rates are per 100,000 persons and are age-adjusted to the 2000 U.S. population.
- Not applicable; site is sex-specific or not available.

Table II-2: Age-specific rates§ of newly diagnosed cancers by anatomic site, males, all races combined, Minnesota, 2002-2006

Cancer Site	Age at Diagnosis (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+
All Cancer Sites Combined^	25	13	13	24	35	51	66	90	148	256	532	969	1552	2294	2929	3278	3307	2786
Oral Cavity & Pharynx	0.0	0.0	0.1	0.3	1.3	1.2	2.6	3.2	8.9	14.7	28.2	37.2	38.6	45.4	62.5	68.8	67.4	61.5
Lip	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.5	1.1	0.9	1.6	1.9	3.3	8.0	10.4	16.8	16.4	22.8
Tongue	0.0	0.0	0.0	0.0	0.1	0.4	0.3	1.0	2.8	4.0	7.6	10.2	11.2	10.3	14.1	12.6	10.4	7.6
Salivary Gland	0.0	0.0	0.0	0.2	0.9	0.2	0.5	0.4	0.7	0.9	2.0	1.4	3.5	3.1	4.7	6.5	14.2	10.4
Floor of Mouth	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.6	1.3	2.8	3.4	2.7	3.9	5.0	3.1	3.3	2.8
Gum & Other Mouth	0.0	0.0	0.0	0.1	0.0	0.1	0.5	0.6	0.4	1.2	2.7	4.9	6.1	5.2	7.9	10.3	12.0	14.5
Nasopharynx	0.0	0.0	0.1	0.0	0.3	0.1	0.6	0.3	1.0	0.2	1.1	1.7	1.0	1.8	2.2	2.7	1.6	0.0
Tonsil	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.3	2.2	4.7	7.5	9.5	5.3	7.2	7.9	6.5	3.8	0.7
Oropharynx	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.7	1.7	1.4	1.5	2.2	2.3	1.1	0.0
Hypopharynx	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1	1.2	1.7	2.1	3.3	4.1	6.6	6.9	3.8	2.1
Other Oral Cavity & Pharynx	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.3	0.4	0.8	0.3	1.6	1.1	0.5	0.7
Digestive System	1.5	0.2	0.4	0.5	2.0	3.4	5.8	14.3	26.7	53.5	106	167.3	244.9	357.3	472.1	570.3	677	655
Esophagus	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.4	2.4	6.6	10.7	19.8	28.8	37.6	43.4	48.2	57.5	42.2
Stomach	0.0	0.0	0.0	0.0	0.2	0.0	0.8	1.4	2.2	4.6	5.2	12.0	19.6	26.3	33.6	49.7	59.7	73.3
Small Intestine	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.3	0.9	2.2	3.2	5.2	5.9	9.0	11.3	14.2	18.1	9.7
Colon & Rectum	0.0	0.0	0.2	0.2	1.1	2.1	2.9	8.9	15.9	28.1	61.1	87.9	134.0	205.2	276.9	333.9	411	417
Colon excl. Rectum	0.0	0.0	0.2	0.2	0.9	1.4	2.3	6.0	9.5	17.1	36.5	54.3	86.2	143.1	202.7	248.2	322	338
Rectum & Rectosigmoid Junction	0.0	0.0	0.0	0.0	0.2	0.7	0.6	2.9	6.4	11.1	24.7	33.7	47.8	62.1	74.2	85.7	88.7	78.8
Anus, Anal Canal & Anorectum	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.6	0.5	0.7	1.6	2.6	2.0	4.1	1.3	4.2	1.6	3.5
Liver & Intrahepatic Bile Duct	1.4	0.1	0.2	0.2	0.1	0.5	0.7	0.9	1.5	4.3	11.2	14.6	18.4	21.7	25.1	29.5	31.2	20.0
Liver	1.4	0.1	0.2	0.2	0.1	0.2	0.7	0.6	1.1	4.1	9.7	13.3	17.2	19.6	21.4	27.2	26.8	16.6
Intrahepatic Bile Duct	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.2	0.4	0.2	1.6	1.3	1.2	2.1	3.8	2.3	4.4	3.5
Gallbladder	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.5	0.3	1.1	1.2	1.8	4.4	6.9	9.3	8.3
Other Biliary	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.3	0.6	0.8	1.1	2.4	2.7	6.2	8.8	11.5	12.0	20.7
Pancreas	0.0	0.0	0.0	0.0	0.3	0.1	0.6	1.3	2.3	5.3	11.4	20.8	31.2	42.0	61.6	67.3	68.4	56.0
Retroperitoneum	0.1	0.1	0.0	0.1	0.1	0.1	0.0	0.1	0.3	0.3	0.2	0.4	0.4	1.5	1.3	1.1	3.3	0.7
Peritoneum, Omentum, & Mesentery	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.2	0.0	0.2	0.0	0.3	0.4	0.0	0.0
Other Digestive Organs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.1	0.4	0.6	1.8	4.1	3.4	4.9	3.5

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Source: MCSS (September 2009). All cases were either microscopically confirmed or Death Certificate Only. *In situ* cancers except those of the bladder were excluded. All analyses were conducted by MCSS.

§ Rates are per 100,000 persons.

^ All Cancer Sites Combined rounded to nearest whole number.

- Not applicable; site is sex-specific or not available.

Table II-2: Age-specific rates§ of newly diagnosed cancers by anatomic site, males, all races combined, Minnesota, 2002-2006 (continued)

Cancer Site	Age at Diagnosis (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+
Respiratory System	0.2	0.2	0.4	0.4	0.9	1.4	1.6	4.2	11.6	27.8	59.5	112.4	219.1	331.0	466.7	565.7	503.2	327.6
Nose, Nasal Cavity & Middle Ear	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.5	0.1	0.9	1.2	1.4	1.8	2.3	2.8	5.7	3.3	2.1
Larynx	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.2	2.0	3.3	7.5	12.3	20.0	28.1	33.6	30.6	25.2	17.3
Lung & Bronchus	0.0	0.1	0.2	0.2	0.4	0.7	0.7	3.0	9.2	23.5	50.8	98.4	197.3	299.8	428.7	528.2	473.7	306.9
Pleura†	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.4	0.5	0.7
Trachea, Mediastinum & Other	0.2	0.1	0.1	0.2	0.3	0.7	0.6	0.4	0.3	0.0	0.0	0.3	0.0	0.8	1.6	0.8	0.5	0.7
Mesothelioma (all sites)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.5	0.5	0.4	6.7	8.2	8.5	21.4	25.2	23.5
Bones & Joints	0.1	0.9	0.9	2.4	1.1	0.9	1.0	0.6	0.7	0.6	0.8	1.6	2.0	3.9	3.1	2.3	3.8	2.8
Soft Tissue incl. Heart	2.2	1.4	0.4	2.0	1.6	2.0	1.4	1.1	2.8	3.0	4.3	5.0	3.3	6.7	14.1	14.9	15.3	20.0
Skin	0.3	0.0	0.2	0.8	2.9	4.8	8.3	14.4	15.9	22.0	34.1	44.7	57.6	71.4	84.2	124.3	129.2	143.1
Melanoma of the Skin	0.2	0.0	0.2	0.8	2.8	3.7	6.5	13.5	14.4	20.3	32.4	41.5	53.7	66.3	75.7	110.2	106.8	111.3
Other Non-Epithelial Skin	0.1	0.0	0.0	0.0	0.1	1.2	1.7	1.0	1.4	1.7	1.7	3.2	3.9	5.2	8.5	14.2	22.5	31.8
Kaposi Sarcoma (all sites)	0.0	0.0	0.0	0.0	0.1	0.5	0.7	0.8	0.9	0.9	0.5	0.3	0.2	0.5	0.0	0.0	1.6	0.7
Breast	0.0	0.0	0.0	0.0	0.1	0.0	0.2	0.1	0.7	0.5	1.7	1.3	2.7	2.8	6.0	12.2	4.4	11.1
Female Genital System	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cervix Uteri	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Corpus & Uterus, NOS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ovary	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vagina	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vulva	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Female Genital Organs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Male Genital System	0.8	0.0	0.2	5.2	11.3	15.6	18.4	14.2	22.4	49.1	165.9	379.1	655.6	1000	1184.3	1092.4	935.3	673.9
Prostate	0.1	0.0	0.0	0.2	0.1	0.0	0.2	1.1	9.1	39.8	160.3	374.7	649.5	993.1	1175.5	1084.3	922.7	660.8
Testis	0.7	0.0	0.2	5.0	11.1	15.5	18.1	13.0	13.1	7.9	4.7	2.4	2.0	1.3	1.3	0.4	2.2	0.0
Penis	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.2	1.1	0.6	1.6	2.2	4.1	5.7	6.5	7.1	8.3
Other Male Genital Organs	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.3	0.3	0.4	2.0	1.5	1.9	1.1	3.3	4.8

(Continues on next page)

Source: MCSS (September 2009). All cases were either microscopically confirmed or Death Certificate Only. *In situ* cancers except those of the bladder were excluded. All analyses were conducted by MCSS.

§ Rates are per 100,000 persons.

† Mesotheliomas of the pleura are included in the group Mesothelioma.

- Not applicable; site is sex-specific or not available.

Table II-2: Age-specific rates§ of newly diagnosed cancers by anatomic site, males, all races combined, Minnesota, 2002-2006 (continued)

Cancer Site	Age at Diagnosis (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+
Urinary System	3.2	0.9	0.3	0.0	0.1	2.0	3.6	6.6	16.5	27.7	49.5	97.7	150.9	232.0	321.8	400.5	441.3	405.0
Urinary Bladder	0.1	0.1	0.1	0.0	0.0	0.6	1.4	1.5	5.6	10.6	22.8	51.6	86.0	148.0	231.0	288.0	335.7	339.4
Kidney & Renal Pelvis	3.1	0.8	0.2	0.0	0.1	1.4	2.2	5.1	10.8	16.9	26.0	45.5	61.5	79.7	85.8	105.9	94.2	56.0
Ureter	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.6	0.3	1.8	3.6	3.5	5.0	8.2	3.5
Other Urinary Organs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.3	1.6	0.8	1.6	1.5	3.3	6.2
Eye & Orbit	0.6	0.2	0.0	0.0	0.0	0.2	0.0	0.4	0.7	0.4	0.7	1.9	1.8	2.3	2.8	3.4	5.5	2.8
Brain & Other Nervous System	4.1	2.2	2.8	1.9	2.4	3.7	5.6	6.5	5.9	8.8	8.9	13.3	17.2	19.6	25.1	23.3	20.3	16.6
Brain	3.9	2.2	2.5	1.8	2.1	3.4	5.4	5.8	5.5	7.7	8.2	12.7	16.1	19.1	24.2	22.2	20.3	15.9
Other Nervous System	0.2	0.0	0.3	0.1	0.3	0.2	0.2	0.6	0.4	1.1	0.7	0.6	1.2	0.5	0.9	1.1	0.0	0.7
Endocrine System	1.7	0.7	0.7	1.2	1.9	3.7	3.8	5.8	7.5	7.5	8.3	9.5	12.3	12.6	11.0	14.9	14.8	6.9
Thyroid	0.2	0.1	0.4	0.7	1.7	3.4	3.5	5.5	6.4	6.6	7.7	8.3	11.0	10.8	9.4	13.0	10.4	6.2
Other Endocrine incl. Thymus	1.5	0.6	0.3	0.4	0.1	0.2	0.3	0.3	1.1	1.0	0.6	1.1	1.4	1.8	1.6	1.9	4.4	0.7
Lymphoma	1.0	2.0	2.6	6.3	6.1	7.8	8.3	12.2	17.1	20.8	32.4	43.1	62.1	86.4	115.0	152.2	193.3	174.9
Hodgkin Lymphoma	0.2	0.5	1.8	3.8	4.1	4.5	3.8	3.4	4.7	3.0	2.0	2.7	2.9	4.6	4.7	7.6	6.6	4.8
Non-Hodgkin Lymphoma	0.8	1.5	0.7	2.5	2.0	3.3	4.4	8.7	12.3	17.7	30.3	40.4	59.2	81.7	110.3	144.6	186.7	170.0
Multiple Myeloma	0.0	0.0	0.0	0.0	0.0	0.4	0.5	0.9	1.7	4.1	6.5	11.7	18.2	28.9	36.5	46.7	51.5	35.9
Leukemia	8.9	4.0	3.8	3.3	2.6	3.7	3.5	3.6	6.1	9.1	15.7	27.8	41.0	56.7	78.9	109.8	140.2	149.3
Lymphocytic Leukemia	6.4	2.8	2.5	1.9	0.8	1.5	0.9	1.2	2.7	5.2	9.4	17.0	25.9	36.4	50.3	60.4	75.6	76.7
Acute Lymphocytic Leukemia	6.4	2.8	2.5	1.9	0.8	1.2	0.8	0.2	0.6	0.5	1.1	0.6	1.4	1.3	0.9	1.1	1.6	0.0
Chronic Lymphocytic Leukemia	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.4	1.5	4.0	7.6	15.0	22.9	34.3	45.9	56.2	70.1	71.2
Other Lymphocytic Leukemia	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.5	0.6	0.7	0.7	1.4	1.6	0.8	3.5	3.1	3.8	5.5
Myeloid & Monocytic Leukemia	1.8	0.8	1.1	1.2	1.6	1.8	2.6	2.3	2.8	3.7	5.6	10.2	14.7	19.9	28.3	45.9	58.0	64.3
Acute Myeloid Leukemia	1.5	0.5	1.0	1.0	0.9	0.9	0.8	1.1	1.7	2.4	3.3	5.9	8.0	13.4	17.6	27.9	30.7	35.9
Acute Monocytic Leukemia	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.3	0.5	0.5	0.3	0.2	0.0	0.6	1.9	1.6	2.1
Chronic Myeloid Leukemia	0.3	0.2	0.1	0.0	0.8	0.8	1.6	1.1	0.8	0.9	1.8	3.9	6.5	6.4	9.4	14.5	24.1	23.5
Other Myeloid/Monocytic Leukemia	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.6	1.5	1.6	2.8
Other Leukemia	0.6	0.5	0.3	0.2	0.2	0.4	0.0	0.1	0.6	0.2	0.7	0.6	0.4	0.5	0.3	3.4	6.6	8.3
Miscellaneous	0.3	0.3	0.1	0.0	0.2	0.1	0.0	0.7	1.2	2.1	4.6	8.0	14.3	17.8	28.6	36.1	54.7	77.2

Source: MCSS (September 2009). All cases were either microscopically confirmed or Death Certificate Only. *In situ* cancers except those of the bladder were excluded. All analyses were conducted by MCSS.

§ Rates are per 100,000 persons.
- Not applicable; site is sex-specific or not available.

Table II-3: Age-specific rates§ of newly diagnosed cancers by anatomic site, females, all races combined, Minnesota, 2002-2006

Cancer Site	Age at Diagnosis (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+
All Cancer Sites Combined^	19	9	13	22	41	72	108	166	266	420	587	781	1064	1393	1622	1875	1904	1557
Oral Cavity & Pharynx	0.0	0.1	0.6	0.4	0.9	1.3	1.8	2.0	5.2	7.4	9.9	13.2	20.2	24.2	26.4	26.6	36.3	38.1
Lip	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.7	0.7	0.5	0.6	1.5	1.4	2.4	2.6	5.1	5.0
Tongue	0.0	0.0	0.0	0.0	0.1	0.3	0.2	0.6	1.8	1.4	2.2	4.3	5.8	5.6	7.2	5.8	7.9	8.3
Salivary Gland	0.0	0.1	0.2	0.2	0.3	0.4	0.8	0.3	1.0	1.9	0.9	1.4	2.2	3.3	3.5	3.2	5.8	3.8
Floor of Mouth	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.7	0.8	1.1	2.1	2.6	1.9	1.7	2.7	3.2
Gum & Other Mouth	0.0	0.0	0.2	0.1	0.0	0.3	0.2	0.3	0.7	1.5	1.6	2.6	2.8	5.6	6.7	9.5	11.0	15.1
Nasopharynx	0.0	0.0	0.1	0.1	0.5	0.3	0.1	0.4	0.2	0.2	0.7	0.1	0.7	1.2	0.8	0.3	0.7	0.0
Tonsil	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.5	0.7	2.4	2.3	3.6	2.1	1.9	1.2	1.4	1.2
Oropharynx	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.3	0.3	0.4	0.5	0.8	0.6	1.0	0.6
Hypopharynx	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.3	0.6	0.9	1.4	0.8	0.9	0.3	0.6
Other Oral Cavity & Pharynx	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.2	0.5	0.5	0.9	0.3	0.3
Digestive System	0.4	0.0	0.3	0.7	1.4	3.0	8.7	10.7	21.6	41.1	64.6	96.2	149.8	235.7	329.8	408.4	492.7	451.7
Esophagus	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.3	0.5	1.2	4.3	6.0	8.2	9.9	13.0	8.6	12.4
Stomach	0.0	0.0	0.1	0.0	0.2	0.4	1.2	1.1	1.4	2.1	2.9	4.1	7.3	8.0	16.0	23.1	26.7	29.8
Small Intestine	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.4	0.5	2.1	2.2	5.5	4.3	7.3	8.5	7.2	12.7	5.6
Colon & Rectum	0.0	0.0	0.0	0.2	0.7	1.9	5.4	6.5	14.8	27.1	42.1	54.7	85.5	142.6	207.4	265.2	337.1	312.8
Colon excl. Rectum	0.0	0.0	0.0	0.1	0.7	1.6	3.0	3.7	8.6	17.1	25.5	38.3	64.3	109.5	167.7	221.4	286.4	268.8
Rectum & Rectosigmoid Junction	0.0	0.0	0.0	0.1	0.0	0.3	2.4	2.8	6.2	10.0	16.6	16.3	21.1	33.1	39.7	43.9	50.7	44.0
Anus, Anal Canal & Anorectum	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.3	1.2	1.8	2.5	3.5	3.4	2.8	3.7	3.5	4.1	5.0
Liver & Intrahepatic Bile Duct	0.2	0.0	0.1	0.2	0.3	0.1	0.2	0.6	0.8	1.6	2.2	2.7	6.2	7.0	9.9	9.5	10.6	8.9
Liver	0.2	0.0	0.1	0.2	0.3	0.0	0.2	0.4	0.7	1.3	1.7	2.4	4.5	5.4	7.7	7.5	7.9	6.5
Intrahepatic Bile Duct	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.1	0.3	0.5	0.3	1.7	1.6	2.1	2.0	2.7	2.4
Gallbladder	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.4	0.6	2.6	3.0	6.6	8.0	9.5	13.4	11.5
Other Biliary	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.4	0.8	0.9	1.3	2.4	4.7	7.2	7.8	13.0	7.4
Pancreas	0.0	0.0	0.0	0.1	0.1	0.1	0.4	1.2	1.4	3.3	6.4	12.9	24.1	35.7	48.0	55.7	56.5	49.3
Retroperitoneum	0.1	0.0	0.1	0.1	0.0	0.1	0.1	0.0	0.2	0.2	1.0	0.1	0.6	0.5	0.5	1.4	0.7	0.6
Peritoneum, Omentum, & Mesentery	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.3	0.4	1.0	2.1	4.3	6.4	10.8	9.9	9.8	7.5	4.1
Other Digestive Organs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.6	0.3	0.7	1.6	0.8	2.6	1.7	4.1

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Source: MCSS (September 2009). All cases were either microscopically confirmed or Death Certificate Only. *In situ* cancers except those of the bladder were excluded. All analyses were conducted by MCSS.
§ Rates are per 100,000 persons.
^ All Cancer Sites Combined rounded to nearest whole number.
-Not applicable; site is sex-specific or not available.

Table II-3: Age-specific rates§ of newly diagnosed cancers by anatomic site, females, all races combined, Minnesota, 2002-2006 (continued)

Cancer Site	Age at Diagnosis (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+
Respiratory System	0.4	0.1	0.0	0.1	0.7	0.9	1.3	4.2	12.5	28.9	49.3	91.3	166.6	241.6	315.4	323.8	261.1	125.2
Nose, Nasal Cavity & Middle Ear	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.2	0.6	0.6	1.1	1.1	1.2	2.7	2.9	2.4	1.2
Larynx	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.3	0.3	1.8	1.7	3.1	6.7	5.6	4.3	5.5	4.5	1.8
Lung & Bronchus	0.0	0.1	0.0	0.1	0.5	0.8	1.2	3.9	11.9	26.4	46.9	86.9	158.8	234.8	308.5	315.1	254.2	122.3
Pleura†	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Trachea, Mediastinum & Other	0.4	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.3	0.0	0.0
Mesothelioma (all sites)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.4	0.2	0.8	0.4	1.1	2.3	2.7	3.5	4.8	5.3
Bones & Joints	0.1	0.5	0.9	1.3	0.9	0.5	0.7	0.7	0.7	0.2	0.8	0.9	0.2	1.2	1.6	1.2	1.7	0.9
Soft Tissue incl. Heart	3.1	0.8	1.2	0.4	1.1	1.6	1.4	2.3	1.4	3.5	3.0	3.1	6.5	5.9	10.1	7.2	14.0	8.6
Skin	0.0	0.2	0.5	3.2	10.4	14.9	15.6	23.1	24.1	28.9	28.2	32.8	27.5	38.2	39.2	53.1	50.7	47.9
Melanoma of the Skin	0.0	0.2	0.1	2.8	9.9	14.4	14.4	22.1	22.9	26.8	26.8	29.8	25.2	32.8	33.9	43.3	38.4	32.2
Other Non-Epithelial Skin	0.0	0.0	0.3	0.3	0.5	0.5	1.2	1.0	1.2	2.1	1.4	3.0	2.2	5.4	5.3	9.8	12.3	15.7
Kaposi Sarcoma (all sites)	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4	0.9
Breast	0.0	0.0	0.0	0.2	0.9	7.9	25.8	57.5	112.9	183.5	238.3	291.9	359.0	414.7	409.5	472.1	436.1	388.2
Female Genital System	0.2	0.1	0.8	2.3	3.0	11.0	18.2	22.1	34.8	57.1	98.0	129.5	149.8	172.4	166.6	180.9	163.4	133.8
Cervix Uteri	0.0	0.0	0.0	0.4	1.4	6.8	9.6	9.7	11.3	11.1	10.8	10.5	11.0	8.7	10.4	6.1	6.9	6.8
Corpus & Uterus, NOS	0.0	0.0	0.0	0.1	0.1	1.4	3.7	6.8	12.3	27.3	56.3	82.3	94.2	109.3	95.2	100.7	95.2	63.5
Ovary	0.0	0.1	0.8	1.6	1.3	2.3	3.7	4.3	8.3	15.5	25.3	29.7	35.9	40.8	43.5	53.7	45.6	39.3
Vagina	0.2	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.8	1.7	1.5	1.6	3.5	5.2	1.4	2.1
Vulva	0.0	0.0	0.0	0.0	0.0	0.3	0.8	1.0	2.5	2.5	4.0	3.7	4.5	9.6	9.9	11.8	13.4	20.1
Other Female Genital Organs	0.0	0.0	0.0	0.1	0.2	0.4	0.1	0.2	0.2	0.7	0.8	1.6	2.6	2.3	4.3	3.5	1.0	2.1
Male Genital System	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Prostate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Testis	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Penis	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Male Genital Organs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

(Continues on next page)

Source: MCSS (September 2009). All cases were either microscopically confirmed or Death Certificate Only. *In situ* cancers except those of the bladder were excluded. All analyses were conducted by MCSS.

§ Rates are per 100,000 persons.
† Mesotheliomas of the pleura are included in the group Mesothelioma.
- Not applicable; site is sex-specific or not available.

Table II-3: Age-specific rates§ of newly diagnosed cancers by anatomic site, females, all races combined, Minnesota, 2002-2006 (continued)

Cancer Site	Age at Diagnosis (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+
Urinary System	1.9	0.6	0.1	0.3	1.0	1.4	2.7	3.5	6.6	14.4	23.4	38.0	54.0	79.5	99.7	128.1	132.9	105.2
Urinary Bladder	0.0	0.0	0.0	0.2	0.2	0.4	0.2	1.4	1.7	4.6	8.2	15.6	25.2	38.2	53.1	71.3	75.4	72.7
Kidney & Renal Pelvis	1.9	0.6	0.1	0.1	0.8	1.0	2.4	2.1	4.7	9.6	14.7	21.9	27.3	38.7	44.0	51.1	50.7	27.2
Ureter	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.4	1.5	2.3	2.7	4.9	5.1	2.7
Other Urinary Organs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.3	0.1	0.0	0.2	0.0	0.9	1.7	2.7
Eye & Orbit	1.0	0.1	0.0	0.0	0.1	0.0	0.1	0.1	0.1	0.6	0.6	0.6	0.0	1.4	1.6	1.4	1.0	2.4
Brain & Other Nervous System	3.1	2.1	2.8	2.2	2.3	3.6	2.9	3.7	4.5	5.4	6.6	7.9	10.3	15.0	17.1	16.4	14.4	4.1
Brain	2.9	1.9	2.4	2.1	2.1	3.5	2.3	3.2	4.1	5.2	6.1	7.8	10.3	13.6	15.7	15.3	14.0	4.1
Other Nervous System	0.2	0.1	0.5	0.1	0.2	0.1	0.6	0.6	0.5	0.2	0.5	0.1	0.0	1.4	1.3	1.2	0.3	0.0
Endocrine System	0.6	0.4	0.9	3.3	10.3	16.2	18.7	22.4	22.7	20.9	22.3	18.5	20.4	17.8	15.2	15.6	14.7	9.5
Thyroid	0.0	0.2	0.7	3.2	9.9	15.6	18.5	21.9	22.2	20.4	21.3	17.6	19.8	16.2	14.1	14.4	12.7	9.5
Other Endocrine incl. Thymus	0.6	0.1	0.2	0.1	0.3	0.6	0.2	0.6	0.5	0.5	1.0	0.9	0.6	1.6	1.1	1.2	2.1	0.0
Lymphoma	0.5	0.8	1.6	4.7	5.8	7.8	7.4	8.8	10.7	15.5	20.8	28.8	43.9	72.7	77.1	103.3	120.6	84.8
Hodgkin Lymphoma	0.0	0.4	1.1	3.4	4.1	5.3	3.4	3.5	1.9	1.7	1.7	1.4	3.6	3.8	3.5	5.2	4.8	1.8
Non-Hodgkin Lymphoma	0.5	0.5	0.5	1.3	1.7	2.5	4.0	5.3	8.8	13.8	19.1	27.4	40.4	69.0	73.6	98.1	115.8	83.0
Multiple Myeloma	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.4	0.9	2.5	4.0	8.4	11.8	15.9	24.8	26.6	26.0	19.2
Leukemia	7.8	3.3	2.8	2.7	1.7	1.8	1.8	3.0	4.5	5.9	10.1	11.9	23.2	29.8	47.5	57.7	68.2	67.9
Lymphocytic Leukemia	6.0	2.3	1.7	1.3	0.6	0.5	0.7	0.8	1.0	2.8	4.9	6.4	12.9	18.8	29.1	29.1	33.9	34.0
Acute Lymphocytic Leukemia	6.0	2.3	1.7	1.3	0.6	0.5	0.7	0.3	0.4	0.5	0.2	0.3	0.6	0.7	1.3	0.9	1.0	0.6
Chronic Lymphocytic Leukemia	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.5	1.8	4.4	5.4	11.8	17.6	26.9	27.7	30.8	31.6
Other Lymphocytic Leukemia	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.5	0.3	0.7	0.6	0.5	0.8	0.6	2.1	1.8
Myeloid & Monocytic Leukemia	1.6	0.7	0.8	1.3	0.9	1.0	1.0	2.1	3.5	2.9	4.7	5.4	9.7	10.1	16.0	27.4	31.9	29.2
Acute Myeloid Leukemia	1.1	0.4	0.6	1.0	0.7	1.0	0.6	1.5	2.2	1.6	2.9	2.7	7.5	6.1	10.7	16.4	18.2	16.2
Acute Monocytic Leukemia	0.1	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.3	0.2	0.3	0.4	0.4	0.7	0.3	1.7	2.1	2.1
Chronic Myeloid Leukemia	0.4	0.2	0.0	0.3	0.2	0.0	0.4	0.6	1.0	1.1	1.5	2.3	1.7	3.0	5.1	8.4	10.3	10.3
Other Myeloid/Monocytic Leukemia	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.0	0.9	1.4	0.6
Other Leukemia	0.2	0.2	0.3	0.1	0.2	0.3	0.1	0.1	0.1	0.2	0.5	0.1	0.6	0.9	2.4	1.2	2.4	4.7
Miscellaneous	0.2	0.0	0.0	0.1	0.2	0.4	0.5	1.0	2.4	3.6	5.8	7.5	19.1	24.9	37.3	49.3	64.1	63.5

Source: MCSS (September 2009). All cases were either microscopically confirmed or Death Certificate Only. *In situ* cancers except those of the bladder were excluded. All analyses were conducted by MCSS.

§ Rates are per 100,000 persons.
- Not applicable; site is sex-specific or not available.

Table II-4: Age-specific rates§ of cancer deaths by anatomic site, males, all races combined, Minnesota, 2002-2006

Cancer Site	Age at Death (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+
All Cancer Sites Combined^	3	3	2	4	5	6	8	18	31	68	127	237	419	651	1028	1459	1909	2589
Oral Cavity & Pharynx	0.0	0.0	0.1	0.0	0.2	0.2	0.0	0.2	0.4	2.8	4.2	7.3	8.2	11.3	14.8	18.4	17.0	31.1
Lip	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.4	0.5	2.1
Tongue	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.3	0.8	1.2	1.9	2.0	2.6	2.8	3.1	2.2	5.5
Salivary Gland	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.3	0.6	0.4	1.4	0.8	2.2	1.9	4.4	9.0
Floor of Mouth	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.6	0.0	0.0	0.0	0.0	0.5	0.7
Gum & Other Mouth	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.2	1.0	1.2	1.3	2.5	2.7	1.1	7.6
Nasopharynx	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.4	0.7	0.7	0.4	2.1	0.9	1.9	0.5	0.0
Tonsil	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.8	0.9	1.2	0.5	0.9	2.7	1.1	0.0
Oropharynx	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.1	0.8	1.3	0.9	1.1	1.6	2.1
Hypopharynx	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.4	0.8	0.3	0.9	1.1	1.1	0.7
Other Oral Cavity & Pharynx	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.3	1.3	0.6	2.6	3.1	3.4	3.8	3.5
Digestive System	0.5	0.1	0.3	0.2	0.4	1.5	1.7	4.8	9.5	20.2	41.4	73.5	116.8	162.2	250.8	328.9	420.0	555.0
Esophagus	0.1	0.0	0.0	0.0	0.0	0.1	0.2	0.9	1.3	4.0	6.8	13.3	26.5	29.9	41.8	47.8	55.3	52.5
Stomach	0.0	0.0	0.0	0.0	0.1	0.0	0.3	0.4	0.8	2.1	2.0	6.2	8.8	11.9	18.9	29.5	35.0	56.7
Small Intestine	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.4	0.7	1.1	0.8	3.1	2.2	4.2	5.5	5.5
Colon & Rectum	0.0	0.0	0.1	0.0	0.2	1.1	0.6	1.7	3.7	5.9	11.7	21.5	35.3	56.2	86.1	124.3	167.6	264.7
Colon excl. Rectum	0.0	0.0	0.1	0.0	0.1	0.7	0.6	1.5	2.8	4.4	9.4	16.9	28.4	45.6	72.0	99.8	140.7	233.6
Rectum & Rectosigmoid Junction	0.0	0.0	0.0	0.0	0.1	0.4	0.0	0.2	0.9	1.5	2.3	4.6	6.9	10.6	14.1	24.5	26.8	31.1
Anus, Anal Canal & Anorectum	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.2	0.0	0.6	0.5	0.0	0.4	0.0	2.1
Liver & Intrahepatic Bile Duct	0.3	0.1	0.2	0.2	0.1	0.2	0.2	0.8	1.4	3.9	8.6	12.5	13.5	19.6	28.9	38.6	41.1	44.9
Liver	0.3	0.1	0.2	0.2	0.1	0.1	0.1	0.5	0.9	2.8	7.5	9.6	10.8	15.0	18.5	29.1	30.1	30.4
Intrahepatic Bile Duct	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.5	1.1	1.1	2.9	2.7	4.6	10.4	9.6	11.0	14.5
Gallbladder	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.7	1.6	1.5	3.1	5.0	6.0	6.2
Other Biliary	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	1.0	0.0	1.5	2.8	3.8	4.9	11.1
Pancreas	0.0	0.0	0.0	0.0	0.0	0.1	0.3	1.0	1.8	3.6	10.7	16.5	28.4	35.1	65.4	72.7	99.1	104.4
Retroperitoneum	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	1.0	0.0	0.4	1.6	0.0
Peritoneum, Omentum, & Mesentery	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.2	0.3	0.0	0.4	0.0	0.7
Other Digestive Organs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.3	1.0	1.5	1.6	1.9	3.8	6.2

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Source: Deaths were from the Minnesota Center for Health Statistics, and include all deaths with the specified cancer as the underlying cause of death during the time period, regardless of year of diagnosis. All analyses were conducted by MCSS.

§ Rates are per 100,000 persons.

^ All Cancer Sites Combined rounded to nearest whole number.

- Not applicable; site is sex-specific or not available.

Table II-4: Age-specific rates§ of cancer deaths by anatomic site, males, all races combined, Minnesota, 2002-2006 (continued)

Cancer Site	Age at Death (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+
Respiratory System	0.0	0.0	0.0	0.1	0.0	0.4	0.1	2.3	5.5	16.9	33.3	73.5	150.5	216.6	354.2	458.6	514.7	447.2
Nose, Nasal Cavity & Middle Ear	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.0	0.6	0.3	0.9	0.8	3.3	3.5
Larynx	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.8	1.5	3.4	4.7	4.9	6.0	11.5	11.5	9.0
Lung & Bronchus	0.0	0.0	0.0	0.1	0.0	0.2	0.1	2.3	5.4	16.0	31.6	70.0	145.0	211.1	347.0	445.6	498.8	429.9
Pleura	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.0	1.4
Trachea, Mediastinum & Other	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.3	0.3	0.0	1.1	3.5
Mesothelioma (all sites)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.3	0.5	0.6	4.3	7.7	9.7	19.1	23.0	24.9
Bones & Joints	0.1	0.1	0.2	0.7	0.8	0.6	0.2	0.8	0.5	0.2	0.3	0.9	1.2	1.3	0.9	1.5	3.8	2.1
Soft Tissue incl. Heart	0.1	0.3	0.0	0.4	0.3	0.5	0.6	0.4	0.5	1.3	1.4	1.9	1.8	2.6	6.3	9.6	11.5	12.4
Skin	0.1	0.0	0.0	0.2	0.0	0.5	0.7	0.8	1.6	2.8	5.2	5.4	8.6	11.6	18.2	19.9	32.3	58.1
Melanoma of the Skin	0.1	0.0	0.0	0.2	0.0	0.5	0.7	0.6	1.1	2.3	4.2	4.3	6.9	8.2	14.8	14.5	20.8	32.5
Other Non-Epithelial Skin	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.5	0.6	1.0	1.1	1.8	3.4	3.5	5.4	11.5	25.6
Kaposi Sarcoma (all sites)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Breast	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.5	1.3	1.1	1.6	4.1
Female Genital System	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cervix Uteri	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Corpus & Uterus, NOS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Ovary	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vagina	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vulva	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Female Genital Organs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Male Genital System	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.1	0.8	0.8	2.8	7.0	22.3	51.6	90.5	193.2	299.0	678.1
Prostate	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.4	2.6	6.3	21.7	50.5	88.3	190.9	297.3	673.9
Testis	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.1	0.5	0.4	0.2	0.4	0.2	0.3	0.9	0.4	0.0	0.7
Penis	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.4	0.8	1.3	1.9	1.1	2.8
Other Male Genital Organs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.7

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Source: Deaths were from the Minnesota Center for Health Statistics, and include all deaths with the specified cancer as the underlying cause of death during the time period, regardless of year of diagnosis. All analyses were conducted by MCSS.

§ Rates are per 100,000 persons.
- Not applicable; site is sex-specific or not available.

Table II-4: Age-specific rates§ of cancer deaths by anatomic site, males, all races combined, Minnesota, 2002-2006 (continued)

Cancer Site	Age at Death (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+
Urinary System	0.2	0.5	0.0	0.0	0.1	0.0	0.2	0.5	1.9	4.2	6.0	15.6	25.1	43.1	64.7	94.5	125.4	201.1
Urinary Bladder	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	1.0	1.1	5.2	8.6	18.8	31.7	54.3	69.5	142.4
Kidney & Renal Pelvis	0.2	0.5	0.0	0.0	0.1	0.0	0.2	0.3	1.6	3.1	4.8	10.3	15.3	23.5	30.8	38.6	52.6	51.1
Ureter	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.3	0.9	0.8	2.2	2.1
Other Urinary Organs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	1.2	0.5	1.3	0.8	1.1	5.5
Eye & Orbit	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.3	0.0	0.3	0.9	0.8	0.0	1.4
Brain & Other Nervous System	0.6	0.2	0.3	0.5	0.7	0.4	1.2	2.8	4.4	4.6	7.4	10.9	13.5	18.0	22.9	19.5	27.4	15.2
Endocrine System	0.2	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.4	0.8	0.3	0.7	1.8	2.3	4.1	2.7	4.9	0.7
Thyroid	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.6	0.0	0.3	1.2	1.5	2.2	1.1	1.6	0.0
Other Endocrine incl. Thymus	0.2	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.2	0.2	0.3	0.4	0.6	0.8	1.9	1.5	3.3	0.7
Lymphoma	0.1	0.0	0.2	0.2	1.0	0.5	1.5	2.2	1.7	3.2	5.8	11.3	17.2	28.1	41.8	69.6	107.9	125.1
Hodgkin Lymphoma	0.0	0.0	0.0	0.1	0.5	0.2	0.3	0.5	0.0	0.4	0.2	0.3	0.6	0.8	1.6	3.4	3.3	4.1
Non-Hodgkin Lymphoma	0.1	0.0	0.2	0.1	0.4	0.2	1.2	1.6	1.7	2.8	5.6	11.0	16.7	27.3	40.2	66.2	104.6	121.0
Multiple Myeloma	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.3	1.2	3.7	5.7	8.6	15.5	22.6	38.2	52.0	52.5
Leukemia	1.0	1.6	0.4	0.8	1.3	1.3	0.6	1.9	1.9	2.8	5.1	7.6	12.0	27.8	48.7	66.9	103.5	150.7
Lymphocytic Leukemia	0.3	1.0	0.2	0.5	1.1	0.6	0.1	0.6	0.3	0.2	1.4	2.6	3.9	9.3	14.5	19.1	31.8	72.6
Acute Lymphocytic Leukemia	0.3	1.0	0.2	0.5	1.1	0.6	0.1	0.5	0.2	0.0	0.6	0.6	0.4	0.5	0.6	0.4	1.6	0.7
Chronic Lymphocytic Leukemia	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.6	1.9	3.5	8.2	13.2	16.8	27.9	69.1
Other Lymphocytic Leukemia	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.2	0.1	0.0	0.5	0.6	1.9	2.2	2.8
Myeloid & Monocytic Leukemia	0.7	0.5	0.2	0.2	0.2	0.7	0.5	1.0	1.4	2.2	3.2	4.0	6.9	15.5	26.1	35.2	50.9	50.5
Acute Myeloid Leukemia	0.6	0.3	0.2	0.2	0.2	0.7	0.5	0.6	0.9	2.1	2.7	3.3	6.1	11.9	21.7	28.7	38.9	31.8
Acute Monocytic Leukemia	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.8	0.5	1.4
Chronic Myeloid Leukemia	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.3	0.5	0.1	0.2	0.3	0.6	1.0	2.5	3.8	4.4	7.6
Other Myeloid/ Monocytic Leukemia	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.4	0.2	2.6	1.6	1.9	7.1	9.7
Other Leukemia	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.3	0.2	0.5	0.6	1.0	1.2	3.1	8.2	12.6	20.8	27.6
Miscellaneous	0.1	0.1	0.2	0.1	0.2	0.2	0.9	1.4	1.5	5.6	9.7	14.3	26.8	50.5	75.4	116.3	164.8	229.5

Source: Deaths were from the Minnesota Center for Health Statistics, and include all deaths with the specified cancer as the underlying cause of death during the time period, regardless of year of diagnosis. All analyses were conducted by MCSS.

§ Rates are per 100,000 persons.
- Not applicable; site is sex-specific or not available.

Table II-5: Age-specific rates§ of cancer deaths by anatomic site, females, all races combined, Minnesota, 2002-2006

Cancer Site	Age at Death (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+
All Cancer Sites Combined^	2	2	2	2	3	7	12	20	40	71	129	217	348	509	743	921	1148	1351
Oral Cavity & Pharynx	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.2	0.6	0.6	2.4	3.6	7.3	6.9	4.0	10.6	16.0
Lip	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.3
Tongue	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.4	0.1	0.6	1.1	2.1	1.3	0.9	4.1	3.8
Salivary Gland	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.2	0.1	0.0	0.2	0.5	1.3	1.2	1.4	1.5
Floor of Mouth	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3
Gum & Other Mouth	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.3	0.6	1.9	2.1	0.3	2.7	6.8
Nasopharynx	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.2	1.2	0.8	0.3	0.3	0.3
Tonsil	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.6	0.4	0.2	0.3	0.3	0.7	0.6
Oropharynx	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.3	0.6	0.0	0.0	0.3	0.0	0.6
Hypopharynx	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.5	0.3	0.0	0.0	0.3
Other Oral Cavity & Pharynx	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.4	0.7	0.8	0.9	1.4	1.5
Digestive System	0.1	0.1	0.0	0.2	0.3	1.1	2.3	2.3	7.5	12.5	21.9	39.3	65.1	97.8	154.1	216.7	278.2	415.3
Esophagus	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.4	0.3	1.3	2.8	5.0	5.4	6.9	13.3	7.9	15.7
Stomach	0.0	0.0	0.0	0.1	0.0	0.1	0.7	0.4	0.9	1.4	1.7	1.7	3.9	5.9	8.0	14.4	17.1	27.2
Small Intestine	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.4	0.6	0.4	0.2	0.5	1.3	2.0	2.4	4.1
Colon & Rectum	0.0	0.0	0.0	0.1	0.2	0.8	1.1	1.2	3.7	6.0	10.2	14.3	25.6	38.7	60.5	86.0	123.7	214.2
Colon excl. Rectum	0.0	0.0	0.0	0.1	0.2	0.5	1.0	0.9	3.3	4.5	8.9	11.4	20.6	33.8	52.5	75.9	110.3	192.0
Rectum & Rectosigmoid Junction	0.0	0.0	0.0	0.0	0.0	0.3	0.1	0.3	0.4	1.5	1.4	3.0	5.0	4.9	8.0	10.1	13.4	22.2
Anus, Anal Canal & Anorectum	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.3	0.6	0.6	0.7	0.8	0.9	0.3	1.5
Liver & Intrahepatic Bile Duct	0.0	0.1	0.0	0.0	0.1	0.1	0.1	0.1	0.9	1.0	2.2	3.3	4.5	8.0	16.5	17.9	21.2	23.0
Liver	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.1	0.4	0.4	1.5	1.8	2.1	4.2	8.0	8.7	8.2	13.3
Intrahepatic Bile Duct	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.5	0.6	0.7	1.4	2.4	3.8	8.5	9.2	13.0	9.7
Gallbladder	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.6	1.3	1.9	3.8	5.1	8.4	10.6	9.2
Other Biliary	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.1	0.6	0.7	1.6	2.4	2.6	6.2	8.6
Pancreas	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	1.4	3.0	4.1	12.6	20.2	30.0	45.9	63.5	81.2	102.5
Retroperitoneum	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.2	0.3	0.3	0.7	0.6
Peritoneum, Omentum, & Mesentery	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.5	1.0	1.7	2.8	4.5	5.8	4.8	2.7
Other Digestive Organs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.2	0.6	0.6	0.2	1.9	1.7	2.1	6.2

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Source: Deaths were from the Minnesota Center for Health Statistics, and include all deaths with the specified cancer as the underlying cause of death during the time period, regardless of year of diagnosis. All analyses were conducted by MCSS.

§ Rates are per 100,000 persons.

^ All Cancer Sites Combined rounded to nearest whole number.

- Not applicable; site is sex-specific or not available.

Table II-5: Age-specific rates§ of cancer deaths by anatomic site, females, all races combined, Minnesota, 2002-2006 (continued)

Cancer Site	Age at Death (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+
Respiratory System	0.0	0.0	0.0	0.0	0.2	0.1	0.7	2.0	6.8	14.3	29.1	55.9	108.1	154.6	233.6	259.2	261.1	187.0
Nose, Nasal Cavity & Middle Ear	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.3	0.2	0.5	0.3	0.6	1.0	0.6
Larynx	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.2	0.4	0.6	2.1	2.7	2.0	0.7	1.5
Lung & Bronchus	0.0	0.0	0.0	0.0	0.2	0.1	0.7	2.0	6.7	14.1	28.5	55.2	107.3	152.0	230.6	256.0	258.7	184.6
Pleura	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Trachea, Mediastinum & Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.6	0.7	0.3
Mesothelioma (all sites)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.6	0.7	1.9	2.1	2.3	3.4	5.9
Bones & Joints	0.0	0.1	0.2	0.4	0.6	0.3	0.2	0.0	0.0	0.0	0.5	0.7	0.7	0.7	1.1	2.6	1.7	1.5
Soft Tissue incl. Heart	0.0	0.1	0.0	0.1	0.2	0.5	0.5	0.0	0.5	0.4	1.3	2.3	2.8	4.5	3.2	3.8	5.5	7.7
Skin	0.0	0.0	0.0	0.0	0.1	0.5	1.1	1.4	0.6	1.3	2.1	4.1	5.2	5.2	8.3	8.7	12.7	16.0
Melanoma of the Skin	0.0	0.0	0.0	0.0	0.1	0.5	1.1	1.4	0.6	1.3	1.8	3.7	3.6	4.5	6.1	7.2	7.5	9.2
Other Non-Epithelial Skin	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.4	1.7	0.7	2.1	1.4	5.1	6.8
Kaposi Sarcoma (all sites)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6
Breast	0.0	0.0	0.0	0.0	0.1	0.6	2.4	6.1	12.3	17.7	32.1	45.4	51.4	69.7	86.9	103.0	131.9	169.9
Female Genital System	0.0	0.0	0.0	0.0	0.2	1.6	1.6	2.6	4.6	9.1	18.6	29.8	44.1	52.5	78.9	82.2	103.1	112.5
Cervix Uteri	0.0	0.0	0.0	0.0	0.1	0.6	0.6	1.0	1.8	1.7	3.3	3.8	4.1	3.8	6.7	4.6	4.8	6.5
Corpus & Uterus, NOS	0.0	0.0	0.0	0.0	0.0	0.6	0.4	0.9	0.7	1.5	4.8	8.1	14.4	11.3	21.9	24.5	35.3	34.0
Ovary	0.0	0.0	0.0	0.0	0.1	0.4	0.5	0.7	1.8	5.6	9.4	16.6	23.6	34.9	44.3	45.9	57.2	57.6
Vagina	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.1	0.1	0.1	0.6	0.0	0.3	1.2	1.0	1.2
Vulva	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.7	0.6	0.6	0.9	3.5	4.9	2.7	11.5
Other Female Genital Organs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.2	0.6	0.9	1.6	2.4	1.2	2.1	1.8
Male Genital System	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Prostate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Testis	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Penis	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Male Genital Organs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Source: Deaths were from the Minnesota Center for Health Statistics, and include all deaths with the specified cancer as the underlying cause of death during the time period, regardless of year of diagnosis. All analyses were conducted by MCSS.

§ Rates are per 100,000 persons.
- Not applicable; site is sex-specific or not available.

Table II-5: Age-specific rates§ of cancer deaths by anatomic site, females, all races combined, Minnesota, 2002-2006 (continued)

Cancer Site	Age at Death (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+
Urinary System	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.3	0.9	1.1	3.1	4.8	6.5	16.4	26.4	35.8	49.7	69.7
Urinary Bladder	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.1	0.6	1.3	1.6	2.6	4.7	12.5	13.3	20.6	35.4
Kidney & Renal Pelvis	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.2	0.8	0.5	1.8	2.7	3.9	10.6	13.1	19.6	25.0	30.7
Ureter	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.5	0.5	1.4	2.4	1.8
Other Urinary Organs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.7	0.3	1.4	1.7	1.8
Eye & Orbit	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.2	0.0	0.0	0.0	0.0	0.9
Brain & Other Nervous System	0.1	1.0	0.8	0.8	0.0	0.5	0.5	1.5	1.4	3.8	5.1	5.8	9.9	12.7	13.3	17.6	17.5	9.7
Endocrine System	0.5	0.0	0.2	0.0	0.0	0.1	0.1	0.1	0.3	0.3	1.3	1.0	0.9	3.5	2.9	3.5	4.8	7.1
Thyroid	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.3	0.0	0.6	0.7	0.6	2.8	2.1	2.9	4.8	5.9
Other Endocrine incl. Thymus	0.5	0.0	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.3	0.7	0.3	0.4	0.7	0.8	0.6	0.0	1.2
Lymphoma	0.1	0.0	0.0	0.1	0.2	1.0	0.7	0.8	1.0	2.8	2.4	5.0	9.9	17.1	27.2	42.1	68.5	76.5
Hodgkin Lymphoma	0.0	0.0	0.0	0.1	0.2	0.6	0.1	0.2	0.1	0.5	0.3	0.4	1.3	0.9	2.1	2.0	2.1	1.5
Non-Hodgkin Lymphoma	0.1	0.0	0.0	0.0	0.0	0.4	0.6	0.6	0.9	2.3	2.1	4.5	8.6	16.2	25.1	40.1	66.5	75.0
Multiple Myeloma	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.7	1.8	3.1	6.4	9.9	16.5	22.2	30.8	28.1
Leukemia	0.8	0.5	1.0	0.7	0.7	0.4	0.6	1.1	1.8	1.6	2.9	4.5	9.2	15.0	28.0	38.4	54.5	68.5
Lymphocytic Leukemia	0.2	0.1	0.5	0.3	0.3	0.1	0.0	0.0	0.5	0.2	0.5	0.6	2.1	3.8	9.3	11.3	17.8	26.6
Acute Lymphocytic Leukemia	0.2	0.1	0.5	0.3	0.3	0.1	0.0	0.0	0.5	0.1	0.2	0.3	0.4	0.5	1.1	1.4	1.0	0.6
Chronic Lymphocytic Leukemia	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.1	1.5	3.3	7.7	9.2	16.1	23.9
Other Lymphocytic Leukemia	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.0	0.5	0.6	0.7	2.1
Myeloid & Monocytic Leukemia	0.2	0.2	0.5	0.3	0.2	0.1	0.5	1.0	1.3	1.2	2.0	2.8	5.4	8.9	13.3	19.9	26.7	28.9
Acute Myeloid Leukemia	0.2	0.2	0.5	0.2	0.2	0.1	0.4	0.7	1.1	1.0	1.6	2.3	5.0	8.0	10.9	17.0	20.6	17.7
Acute Monocytic Leukemia	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.3	1.0	0.9
Chronic Myeloid Leukemia	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.2	0.1	0.2	0.2	0.3	0.2	0.5	1.6	1.2	3.1	5.3
Other Myeloid/Monocytic Leukemia	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.3	0.2	0.5	0.8	1.4	2.1	5.0
Other Leukemia	0.4	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.5	1.1	1.7	2.3	5.3	7.2	9.9	13.0
Miscellaneous	0.2	0.1	0.1	0.1	0.3	0.4	0.8	1.1	2.1	4.9	6.0	11.6	23.0	40.8	53.1	79.1	114.1	158.0

Source: Deaths were from the Minnesota Center for Health Statistics, and include all deaths with the specified cancer as the underlying cause of death during the time period, regardless of year of diagnosis. All analyses were conducted by MCSS.

§ Rates are per 100,000 persons.
- Not applicable; site is sex-specific or not available.

Table II-6: The five most commonly diagnosed cancers by race and ethnicity and gender, Minnesota, 2002-2006

Race/Ethnicity	Males				Females			
	Cancer Site	Cases	Percent	Rate§	Cancer Site	Cases	Percent	Rate§
American Indian Statewide	Prostate	125	26.0	171.7	Breast	105	22.6	92.5
	Lung and Bronchus	91	19.0	135.1	Lung and Bronchus	93	20.0	98.3
	Colon and Rectum	53	11.0	69.9	Colon and Rectum	50	10.8	59.6
	Kidney and Renal Pelvis	41	8.5	44.5	Kidney and Renal Pelvis	27	5.8	23.0
	Leukemia	22	4.6	26.4	Corpus and Uterus, NOS	25	5.4	23.2
	All Cancer Sites Combined	480	100.0	627.0	All Cancer Sites Combined	465	100.0	457.8
American Indian CHSDA‡	Prostate	80	25.5	194.3	Lung and Bronchus	72	24.3	139.7
	Lung and Bronchus	66	21.0	169.3	Breast	57	19.3	95.5
	Colon and Rectum	41	13.1	99.6	Colon and Rectum	35	11.8	71.8
	Kidney and Renal Pelvis	27	8.6	52.4	Kidney and Renal Pelvis	19	6.4	30.9
	Leukemia	14	4.5	29.7	Corpus and Uterus, NOS	16	5.4	28.0
	All Cancer Sites Combined	314	100.0	746.9	All Cancer Sites Combined	296	100.0	540.8
Asian/Pacific Islander	Prostate	86	16.0	57.0	Breast	150	23.8	50.8
	Colon and Rectum	65	12.1	36.5	Colon and Rectum	62	9.9	29.7
	Lung and Bronchus	54	10.1	33.2	Thyroid	54	8.6	15.0
	Liver and Bile Duct	47	8.8	22.3	Lung and Bronchus	49	7.8	24.0
	Oral Cavity and Pharynx	37	6.9	13.2	Corpus and Uterus, NOS	40	6.4	16.2
	All Cancer Sites Combined	536	100.0	284.5	All Cancer Sites Combined	629	100.0	245.4
Black	Prostate	440	31.8	223.5	Breast	290	28.6	98.6
	Lung and Bronchus	178	12.9	96.1	Lung and Bronchus	127	12.5	56.6
	Colon and Rectum	118	8.5	56.3	Colon and Rectum	91	9.0	38.9
	Liver and Bile Duct	69	5.0	32.4	Corpus and Uterus, NOS	46	4.5	20.3
	Kidney and Renal Pelvis	66	4.8	25.4	Cervix Uteri	45	4.4	13.4
	All Cancer Sites Combined	1,385	100.0	644.8	All Cancer Sites Combined	1,014	100.0	378.5
Non-Hispanic White	Prostate	19,642	33.1	181.4	Breast	16,479	31.0	127.1
	Lung and Bronchus	7,350	12.4	69.4	Lung and Bronchus	6,374	12.0	49.2
	Colon and Rectum	5,980	10.1	56.1	Colon and Rectum	5,777	10.9	41.8
	Urinary Bladder	4,215	7.1	40.5	Corpus and Uterus, NOS	3,545	6.7	27.3
	Non-Hodgkin Lymphoma	2,853	4.8	26.5	Non-Hodgkin Lymphoma	2,306	4.3	17.4
	All Cancer Sites Combined	59,345	100.0	551.5	All Cancer Sites Combined	53,103	100.0	407.5

(Continues on next page)

Source: MCSS (September 2009). All cases were either microscopically confirmed or Death Certificate Only. *In situ* cancers except those of the bladder were excluded. All analyses were conducted by MCSS. See text for comments on the accuracy of race- and ethnic-specific cancer rates.

§ Rates are per 100,000 persons and are age-adjusted to the 2000 U.S. population.

‡ CHSDA = resident of IHS Contract Health Service Delivery Area county.

Table II-6: The five most commonly diagnosed cancers by race and ethnicity and gender, Minnesota, 2002-2006 (continued)

Race/Ethnicity	Males				Females			
	Cancer Site	Cases	Percent	Rate§	Cancer Site	Cases	Percent	Rate§
Hispanic (all races)	Prostate	117	22.5	103.5	Breast	154	26.7	88.7
	Colon and Rectum	49	9.4	43.7	Colon and Rectum	49	8.5	35.8
	Lung and Bronchus	36	6.9	30.9	Lung and Bronchus	44	7.6	35.4
	Liver and Bile Duct	34	6.6	18.0	Corpus and Uterus, NOS	41	7.1	24.2
	Kidney and Renal Pelvis	29	5.6	15.3	Cervix Uteri	39	6.8	16.9
	All Cancer Sites Combined	519	100.0	340.5	All Cancer Sites Combined	577	100.0	344.2

Source: MCSS (September 2009). All cases were either microscopically confirmed or Death Certificate Only. *In situ* cancers except those of the bladder were excluded. All analyses were conducted by MCSS. See text for comments on the accuracy of race- and ethnic-specific cancer rates.

§ Rates are per 100,000 persons and are age-adjusted to the 2000 U.S. population.
‡ CHSDA = resident of IHS Contract Health Service Delivery Area county.

Table II-7: Cancer incidence and mortality rates by race and ethnicity‡ for selected cancers, Minnesota, 2002-2006

	Average Annual Incidence Rate§						Average Annual Mortality Rate§					
	NH-White	AI/AN Statewide	AI/AN CHSDA	A/PI	Black	Hispanic	NH-White	AI/AN Statewide	AI/AN CHSDA	A/PI	Black	Hispanic
All Sites Combined	467.6	527.7*	628.1*	259.9*	494.5*	338.2*	176.0	246.9*	296.3*	126.1*	228.0*	108.0*
Female Breast	127.1	92.5*	95.5*	50.8*	98.6*	88.7*	22.2	13.3	~	7.9*	27.5	22.4
Cervix	5.8	12.4*	14.3*	12.9*	13.4*	16.9*	1.5	~	~	6.0	~	~
Colon and Rectum	48.2	65.1*	84.3*	32.9*	46.5	39.2	16.4	27.5*	35.6*	13.3*	21.4*	7.5*
Corpus Uteri†	27.3	23.2	28.0	16.2*	20.3	24.2	4.4	~	~	~	5.5	~
Kidney†	14.6	32.1*	40.4*	4.9*	16.5	12.9	4.4	8.3	13.2*	~	3.9	3.7
Leukemia	14.7	16.6	20.4	7.4*	11.5	9.3*	7.9	6.4	~	6.1	4.4*	4.9
Liver†	3.2	9.3*	~	14.3*	19.0*	10.0	3.7	13.7*	~	18.8*	19.1*	8.0*
Lung and Bronchus	57.6	112.7*	151.0*	28.0*	74.0*	33.0*	46.2	89.4*	112.9*	20.9*	57.2*	18.8*
NHL†	21.4	16.8	10.6*	12.0*	15.5*	21.8	7.6	6.0	~	4.6	6.2	4.6
Oral Cavity†	10.6	14.0	14.7	11.7	13.4	6.2	2.2	~	~	3.1	~	~
Prostate	181.4	171.7	194.3	57.0*	223.5*	103.5*	26.8	~	~	11.9*	50.8*	18.2
Thyroid	8.9	6.0	~	10.5	4.6*	6.4	0.4	~	~	~	~	~
Urinary Bladder	23.3	12.2*	17.7	9.7*	22.1	11.0*	4.2	~	~	~	3.9	~

Source: MCSS (September 2009). All cases were either microscopically confirmed or Death Certificate Only. *In situ* cancers except those of the bladder were excluded. Deaths were from the Minnesota Center for Health Statistics. Cancer sites selected were in the top five sites for any race/sex group listed in Table II-6. All analyses were conducted by MCSS. See text for comments on the accuracy of race- and ethnic-specific cancer rates.

‡ AI/AN=American Indian/Alaska Native, CHSDA=resident in Contract Health Services Delivery Area, A/PI=Asian/Pacific Islander, NH=Non-Hispanic, Hispanic=Hispanic (all races).
† Corpus Uteri includes Uterus, NOS; Kidney include renal pelvis; Liver includes intrahepatic bile duct; NHL=Non-Hodgkin lymphoma; Oral cavity includes pharynx.
§ Rates are per 100,000 persons and are age-adjusted to the 2000 U.S. population.
* Rate is significantly different from rate among non-Hispanic whites ($p < 0.05$).
~ Rate is based on fewer than ten cases or deaths.

Table II-8: Estimated complete cancer prevalence† by anatomic site and gender, Minnesota, January 1, 2006

Cancer Site	Males		Females		Total	
	Count	Percent	Count	Percent	Count	Percent
All Cancer Sites Combined	91,160	100.0%	104,090	100.0%	195,250	100.0%
Brain and Other Nervous System	1,260	1.4%	1,020	1.0%	2,280	1.2%
Breast	220	0.2%	43,330	41.6%	43,550	22.3%
Cervix Uteri	0	0.0%	3,860	3.7%	3,860	2.0%
Colon and Rectum	9,410	10.3%	9,530	9.2%	18,940	9.7%
Corpus and Uterus, NOS	0	0.0%	10,900	10.5%	10,900	5.6%
Esophagus	420	0.5%	110	0.1%	530	0.3%
Hodgkin Lymphoma	1,490	1.6%	1,360	1.3%	2,850	1.5%
Kidney and Renal Pelvis	3,010	3.3%	2,020	1.9%	5,030	2.6%
Larynx	1,210	1.3%	290	0.3%	1,500	0.8%
Leukemia	2,720	3.0%	1,900	1.8%	4,620	2.4%
Liver and Intrahepatic Bile Duct	200	0.2%	100	0.1%	300	0.2%
Lung and Bronchus	2,670	2.9%	2,940	2.8%	5,610	2.9%
Melanoma of the Skin	5,320	5.8%	6,060	5.8%	11,380	5.8%
Myeloma	560	0.6%	400	0.4%	960	0.5%
Non-Hodgkin Lymphoma	4,060	4.5%	3,530	3.4%	7,590	3.9%
Oral Cavity and Pharynx	2,700	3.0%	1,670	1.6%	4,370	2.2%
Ovary	0	0.0%	2,920	2.8%	2,920	1.5%
Pancreas	230	0.3%	220	0.2%	450	0.2%
Prostate	41,420	45.4%	0	0.0%	41,420	21.2%
Stomach	470	0.5%	330	0.3%	800	0.4%
Testis	4,000	4.4%	0	0.0%	4,000	2.0%
Thyroid	1,410	1.5%	4,620	4.4%	6,030	3.1%
Urinary Bladder	7,100	7.8%	2,500	2.4%	9,600	4.9%

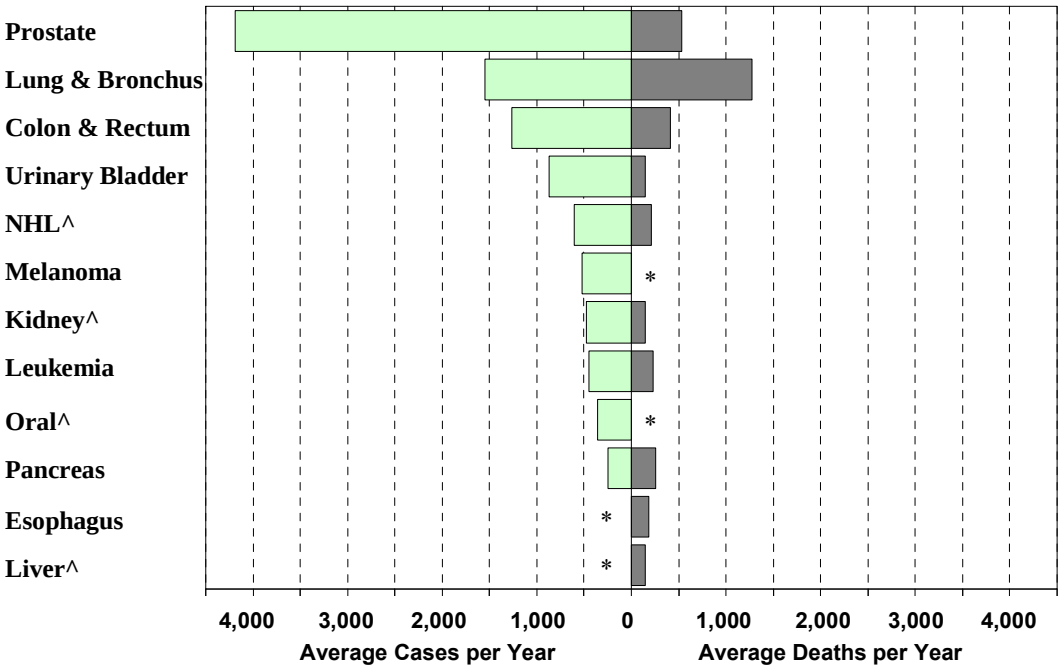
† Estimated number of Minnesotans ever diagnosed with an invasive cancer and alive on January 1, 2006, rounded to the nearest ten persons, using the first malignant primary for a person. Estimates are based on 31-year prevalence percentages and completeness indexes on January 1, 2006 for the white population in the nine geographic areas participating in the SEER program since 1975, adjusted for differences in cancer incidence between Minnesota and SEER.

Table II-9: Estimated five-year cancer prevalence† by anatomic site and gender, Minnesota, January 1, 2006

	Males		Females		Total	
	Count	Percent	Count	Percent	Count	Percent
All Cancer Sites Combined	36,260	100.0%	33,270	100.0%	69,530	100.0%
Brain and Other Nervous System	390	1.1%	310	0.9%	700	1.0%
Breast	90	0.2%	13,480	40.5%	13,570	19.5%
Cervix Uteri	0	0.0%	620	1.9%	620	0.9%
Colon and Rectum	3,630	10.0%	3,360	10.1%	6,990	10.1%
Corpus and Uterus, NOS	0	0.0%	2,750	8.3%	2,750	4.0%
Esophagus	290	0.8%	70	0.2%	360	0.5%
Hodgkin Lymphoma	320	0.9%	270	0.8%	590	0.8%
Kidney and Renal Pelvis	1,300	3.6%	790	2.4%	2,090	3.0%
Larynx	400	1.1%	100	0.3%	500	0.7%
Leukemia	1,150	3.2%	750	2.3%	1,900	2.7%
Liver and Intrahepatic Bile Duct	160	0.4%	60	0.2%	220	0.3%
Lung and Bronchus	1,580	4.4%	1,700	5.1%	3,280	4.7%
Melanoma of the Skin	1,790	4.9%	1,780	5.4%	3,570	5.1%
Myeloma	370	1.0%	270	0.8%	640	0.9%
Non-Hodgkin Lymphoma	1,710	4.7%	1,470	4.4%	3,180	4.6%
Oral Cavity and Pharynx	1,000	2.8%	540	1.6%	1,540	2.2%
Ovary	0	0.0%	930	2.8%	930	1.3%
Pancreas	170	0.5%	160	0.5%	330	0.5%
Prostate	17,410	48.0%	0	0.0%	17,410	25.0%
Stomach	250	0.7%	150	0.5%	400	0.6%
Testis	810	2.2%	0	0.0%	810	1.2%
Thyroid	420	1.2%	1,390	4.2%	1,810	2.6%
Urinary Bladder	2,570	7.1%	860	2.6%	3,430	4.9%

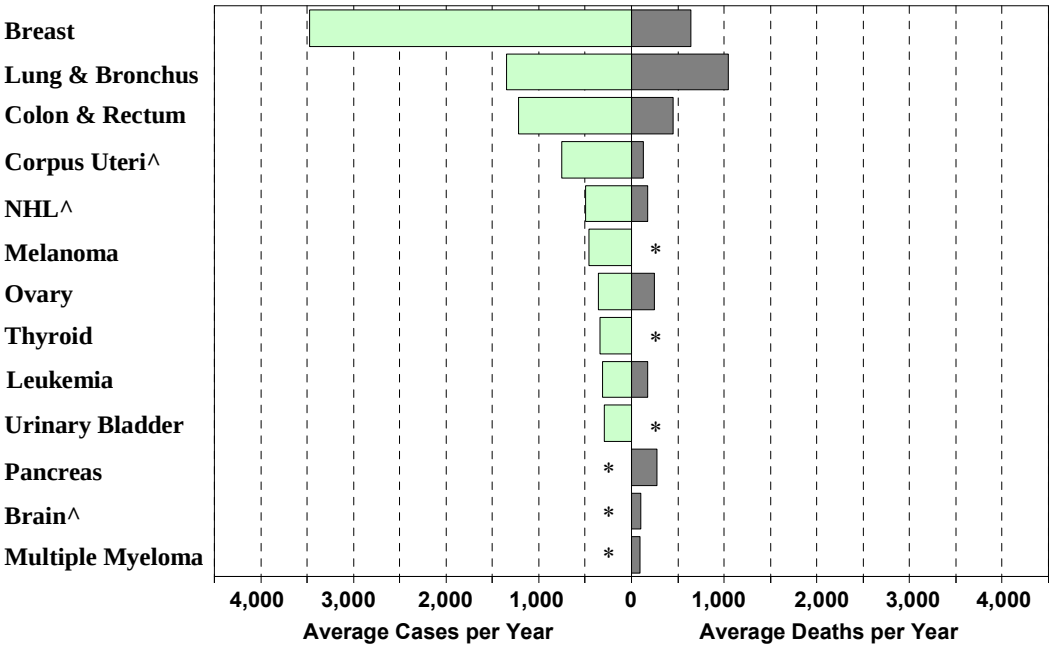
† Estimated number of Minnesotans diagnosed with an invasive cancer during 2001-20065and alive on January 1, 2006, rounded to the nearest ten persons, using the first malignant primary for a person. Estimates are based on prevalence percentages on January 1, 2006, for the white population in the nine geographic areas participating in the SEER program since 1975, adjusted for differences in cancer incidence between Minnesota and SEER.

Figure II-1: Ten Most Common Cancer Diagnoses and Deaths among Males, Minnesota, 2002-2006



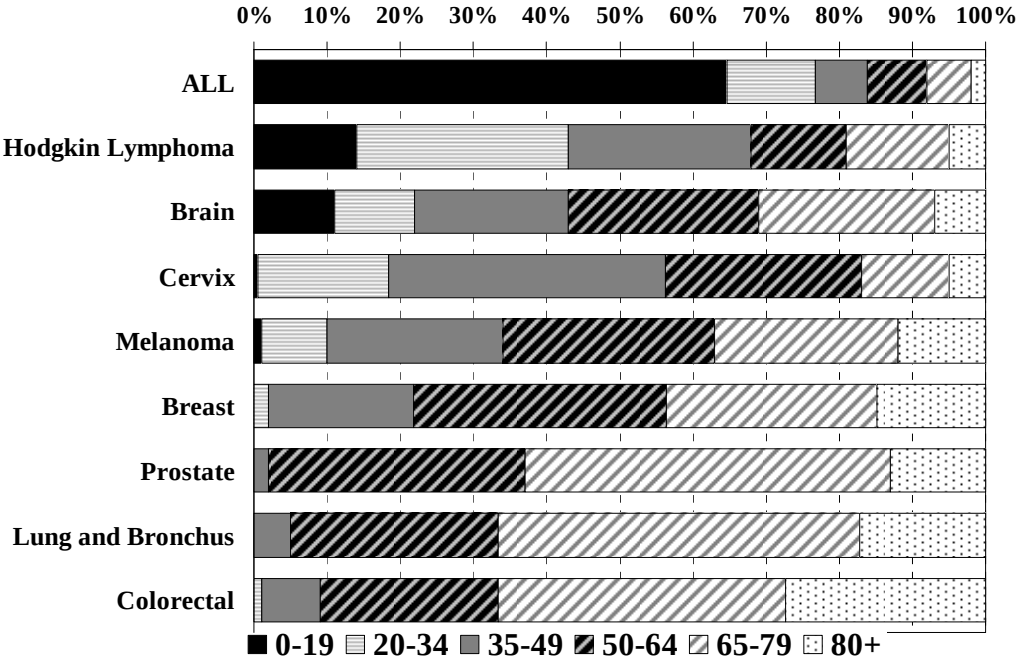
Source: MCSS (September 2009) and the Minnesota Center for Health Statistics. Cases were either microscopically confirmed or Death Certificate Only. *In situ* cancers except those of the bladder were excluded. All analyses were conducted by MCSS.
^ NHL=Non-Hodgkin Lymphoma, Kidney includes Renal Pelvis, Oral includes Oral Cavity & Pharynx, Liver includes Intrahepatic Bile Duct.
* Not among the ten leading causes.

Figure II-2: Ten Most Common Cancer Diagnoses and Deaths among Females, Minnesota, 2002-2006



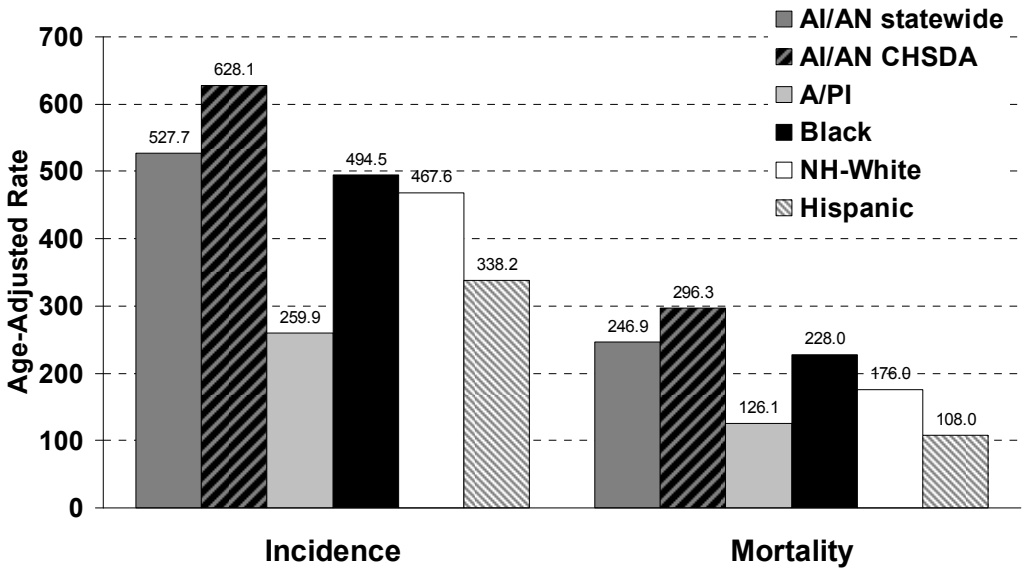
Source: MCSS (September 2009) and the Minnesota Center for Health Statistics. Cases were either microscopically confirmed or Death Certificate Only. *In situ* cancers except those of the bladder were excluded. All analyses were conducted by MCSS.
^ Corpus Uteri includes Uterus NOS, NHL=Non-Hodgkin Lymphoma, Brain includes Other Nervous System.
* Not among the ten leading causes.

Figure II-3: Percent of Cancers Diagnosed by Age Category among Selected Common Cancers, Minnesota, 2002-2006



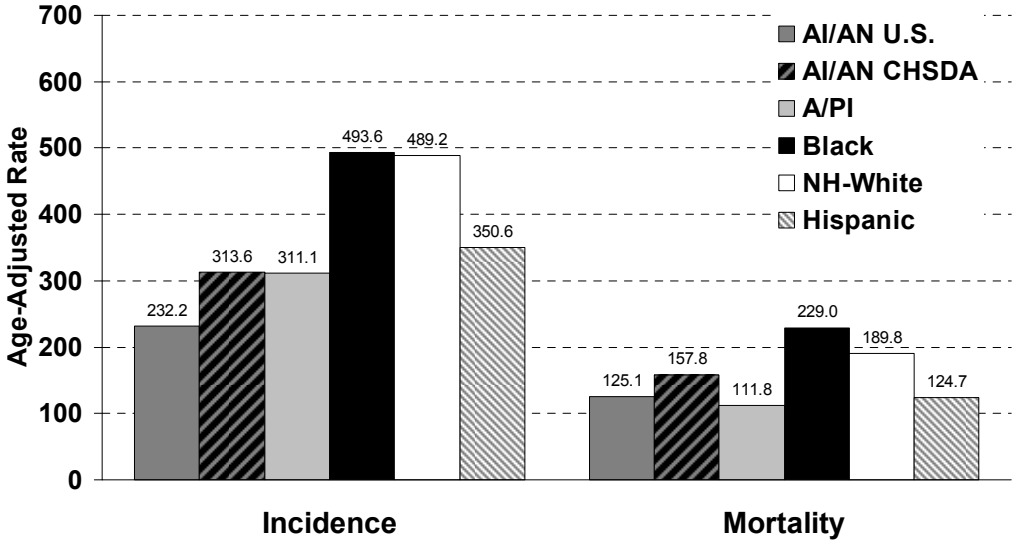
Source: MCSS (September 2009). Cases were either microscopically confirmed or Death Certificate Only. *In situ* cancers except those of the bladder were excluded. All analyses were conducted by MCSS.
^Brain includes Other Nervous System, ALL=Acute Lymphocytic Leukemia

Figure II-4: Cancer Incidence and Mortality Rates by Race and Ethnicity,‡ Minnesota, 2002-2006, All Cancer Sites Combined



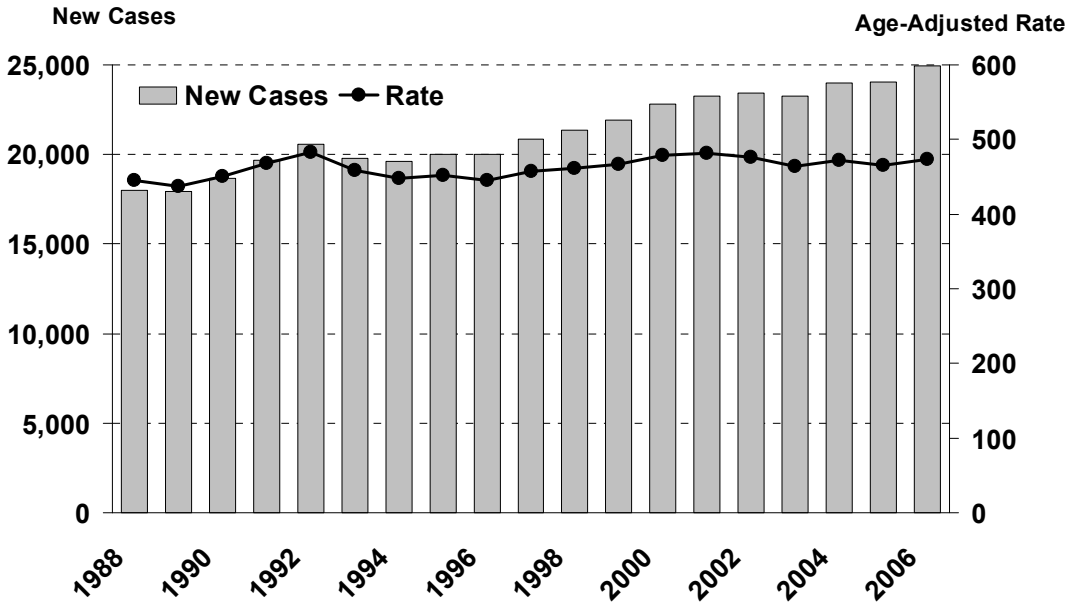
Source: MCSS (September 2009) and the Minnesota Center for Health Statistics. Cases were either microscopically confirmed or Death Certificate Only. *In situ* cancers except those of the bladder were excluded. All analyses were conducted by MCSS. See text for comments on the accuracy of race- and ethnic-specific cancer rates. Rates are per 100,000 persons and are age-adjusted to the 2000 U.S. population.
‡AI/AN=American Indian/Alaska Native, CHSDA=resident in Contract Health Services Delivery Area, A/PI=Asian/Pacific Islander, NH=Non-Hispanic, Hispanic=Hispanic (all races).

Figure II-5: Cancer Incidence and Mortality Rates by Race and Ethnicity,‡ SEER Program, 2002-2006, All Cancer Sites Combined



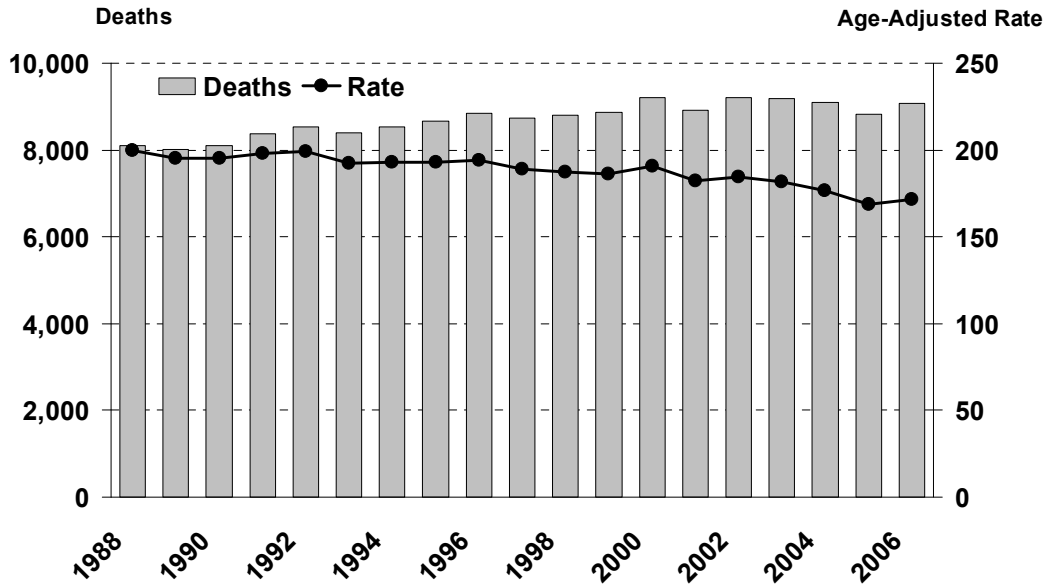
Source: *SEER Cancer Statistics Review 1975-2006*, Table 2.12. Available online at http://seer.cancer.gov/csr/1975_2006. Incidence data are from the 17 SEER areas. Mortality data are for the entire U.S. Rates are per 100,000 persons and are age-adjusted to the 2000 U.S. population.
‡AI/AN=American Indian/Alaska Native, CHSDA=resident in Contract Health Services Delivery Area, A/PI=Asian/Pacific Islander, NH=Non-Hispanic, Hispanic=Hispanic (all races).

Figure II-6: Cancer Incidence in Minnesota by Year, 1988-2006



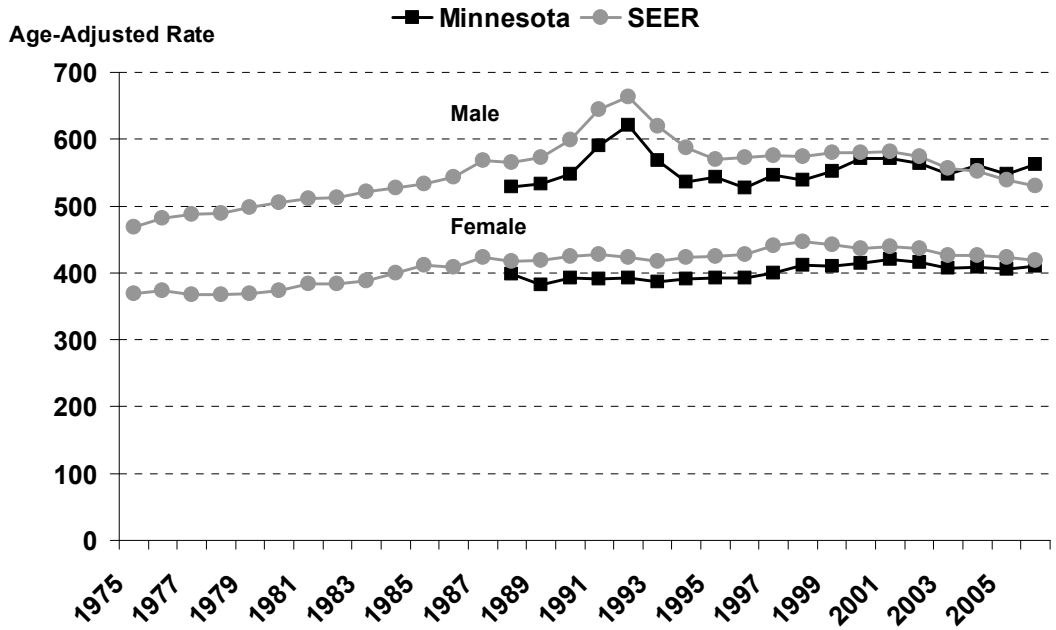
Source: MCSS (September 2009), all races combined. Cases were either microscopically confirmed or Death Certificate Only. *In situ* cancers except those of the bladder were excluded. All analyses were conducted by MCSS. Rates are per 100,000 persons and are age-adjusted to the 2000 U.S. population.

Figure II-7: Cancer Mortality in Minnesota by Year, 1988-2006



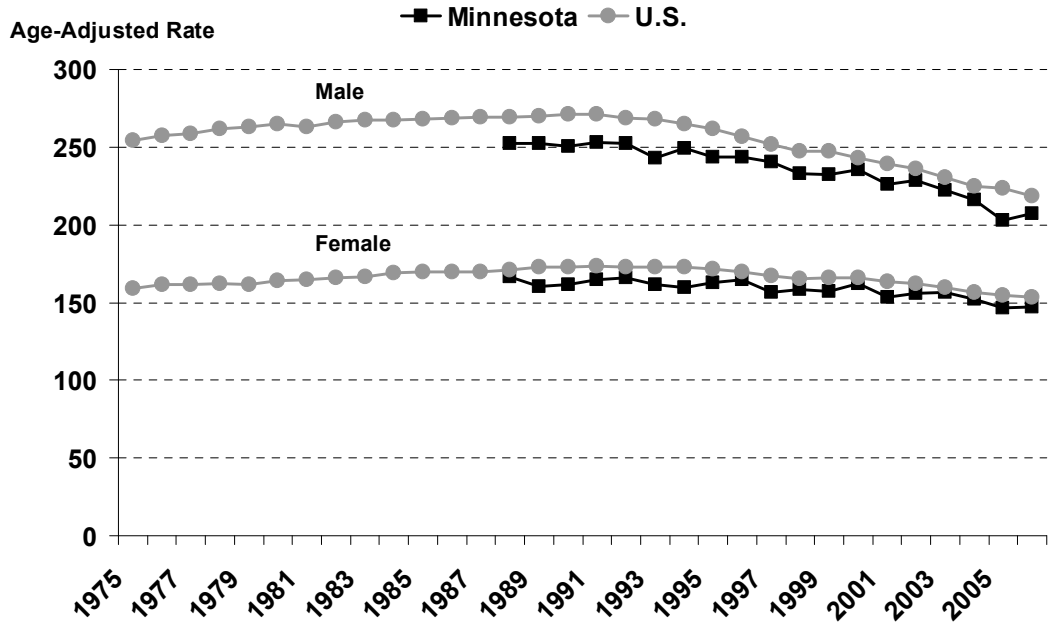
Source: Minnesota Center for Health Statistics. Deaths include all deaths with cancer specified as the underlying cause of death during the time period, regardless of year of diagnosis. All analyses were conducted by MCSS. Rates are per 100,000 persons and are age-adjusted to the 2000 U.S. population.

Figure II-8: Trends in Cancer Incidence by Gender, Minnesota and SEER, 1975-2006



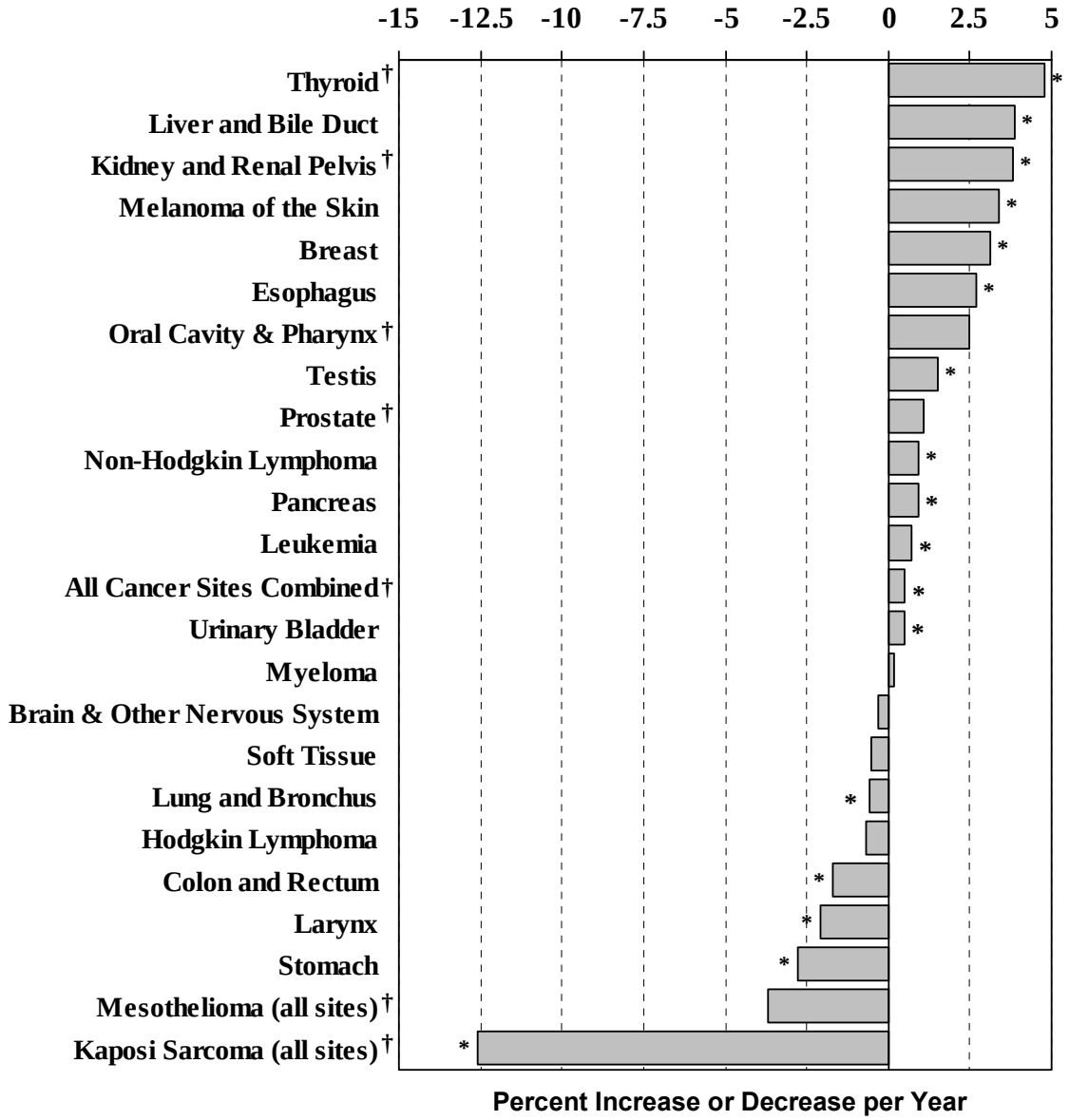
Source: MCSS (September 2009). *SEER Cancer Statistics Review 1975-2006,* available online at http://seer.cancer.gov/csr/1975_2006. For MCSS, cases were either microscopically confirmed or Death Certificate Only. *In situ* cancers except those of the bladder were excluded. Rates for MCSS are for all races combined. SEER is the Surveillance, Epidemiology and End Results Program. Rates for SEER are for white persons, including Hispanics. Rates are per 100,000 persons and are age-adjusted to the 2000 U.S. population.

Figure II-9: Trends in Cancer Mortality by Gender, Minnesota and the U.S., 1975-2006



Source: Minnesota Center for Health Statistics and *SEER Cancer Statistics Review 1975-2006,* available online at http://seer.cancer.gov/csr/1975_2006. Deaths include all deaths with cancer specified as the underlying cause of death during the time period. Rates for MCSS are for all races combined. Rates for U.S. are for white persons, including Hispanics. Rates are per 100,000 persons and are age-adjusted to the 2000 U.S. population.

Figure II-10: Average Annual Percent Change in Cancer Incidence among Males, Minnesota, 1988-2006

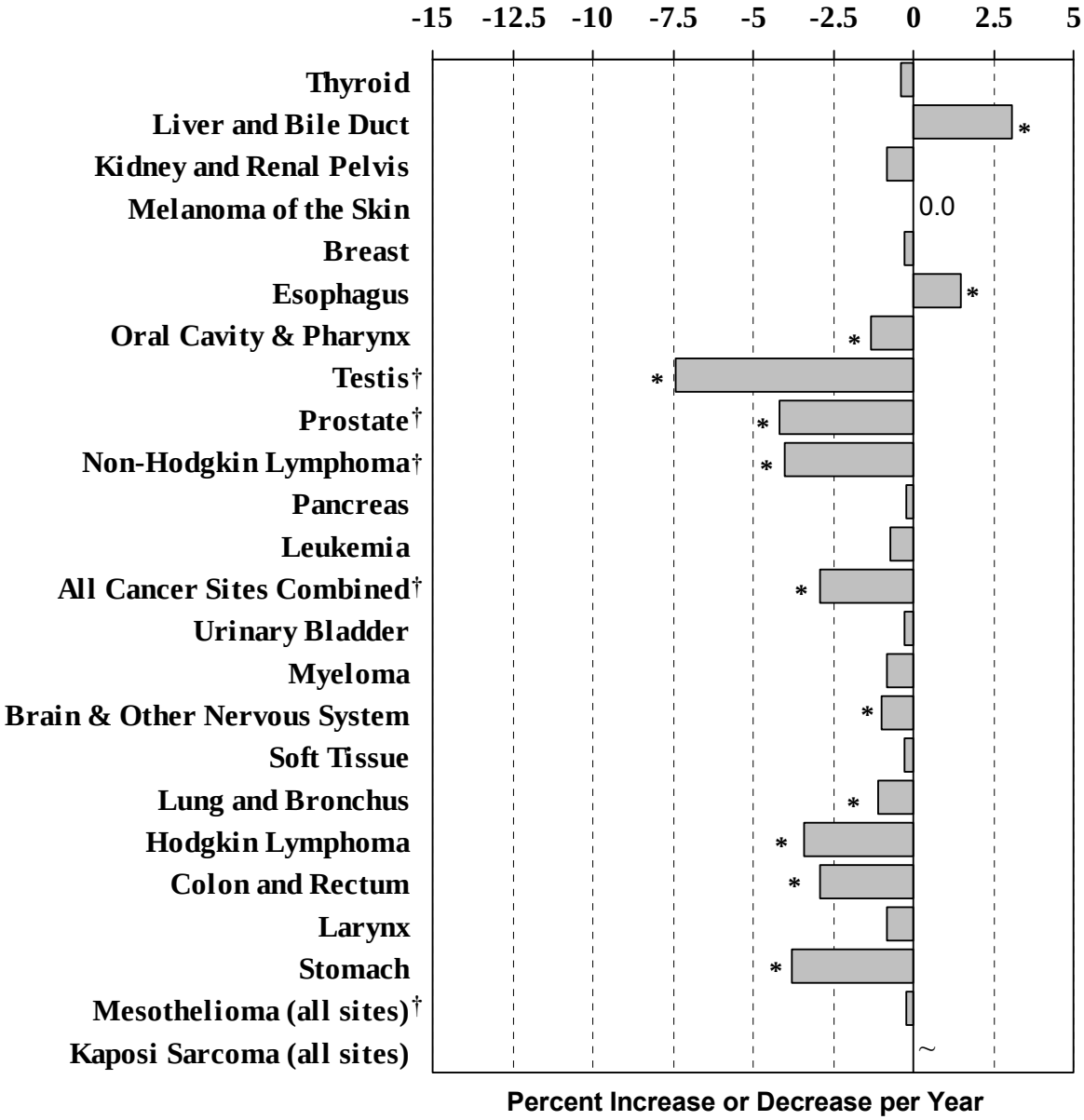


Source: MCSS (September 2009), all races combined. Cases were either microscopically confirmed or Death Certificate Only. *In situ* cancers except those of the bladder were excluded. All analyses were conducted by MCSS. Trends are based on annual rates per 100,000 persons age-adjusted to the 2000 U.S. population.

† Due to a change in trend during the period 1988-2006, the average annual percent change is for the interval (year) to 2006 for the following sites: Kaposi sarcoma (1991); all sites combined, prostate, thyroid (1995); kidney (1998); mesothelioma (1999); oral cavity (2003).

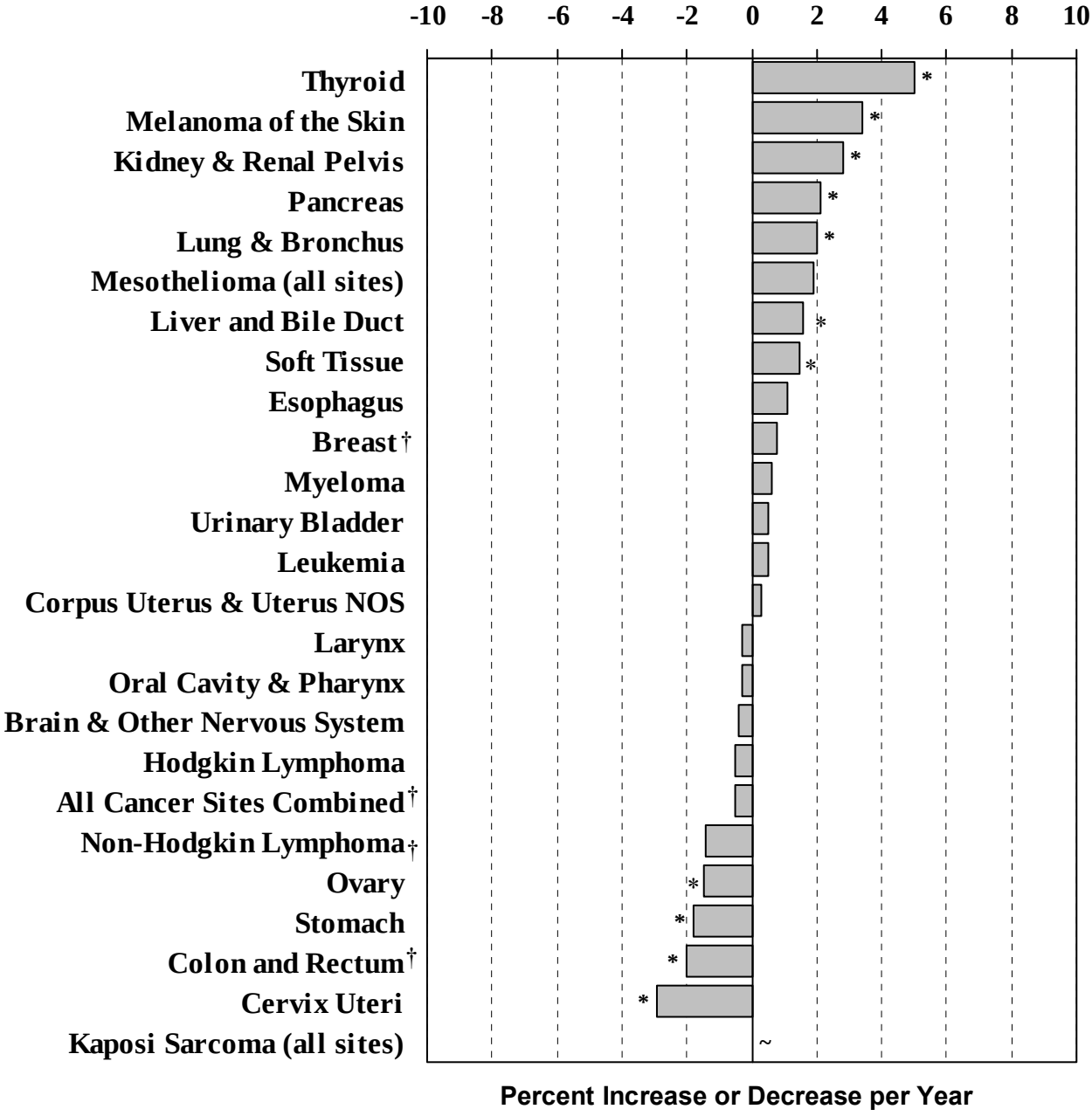
* Trend is statistically significant ($p < 0.05$).

Figure II-11: Average Annual Percent Change in Cancer Mortality among Males, Minnesota, 1988-2006



Source: Minnesota Center for Health Statistics, all races combined. All analyses were conducted by MCSS. Trends are based on annual rates per 100,000 persons age-adjusted to the 2000 U.S. population.
† Due to a change in trend during the period 1988-2006, the average annual percent change is for the interval (year) to 2006 for the following sites: prostate (1995); testis (1997); non-Hodgkin lymphoma (1998); all sites combined (2002). Because mesothelioma was first assigned a unique cause of death code in 1999, the trend interval begins in that year.
* Trend is statistically significant ($p < 0.05$).
~ Average annual percent change could not be calculated because deaths did not occur in every year.

Figure II-12: Average Annual Percent Change in Cancer Incidence among Females, Minnesota, 1988-2006



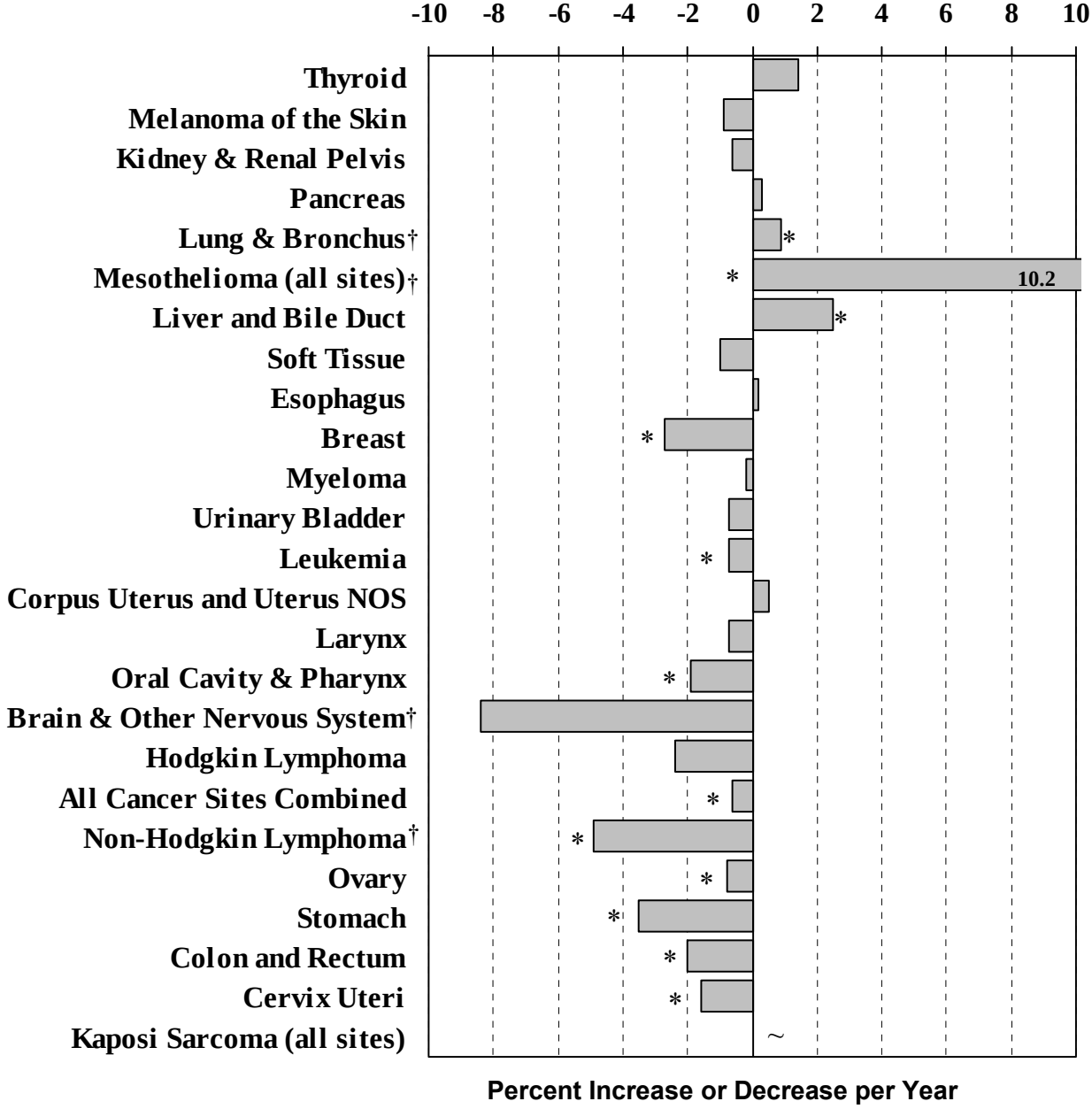
Source: MCSS (September 2009), all races combined. Cases were either microscopically confirmed or Death Certificate Only. *In situ* cancers except those of the bladder were excluded. All analyses were conducted by MCSS. Trends are based on annual rates per 100,000 persons age-adjusted to the 2000 U.S. population.

† Due to a change in trend during the period 1988-2006, the average annual percent change is for the interval (year) to 2006 for the following sites: colon and rectum (1998); all sites combined (2000); non-Hodgkin lymphoma (2001); breast (2004).

* Trend is statistically significant ($p < 0.05$).

~ Average annual percent change could not be calculated because cases were not diagnosed every year.

Figure II-13: Average Annual Percent Change in Cancer Mortality among Females, Minnesota, 1988-2006



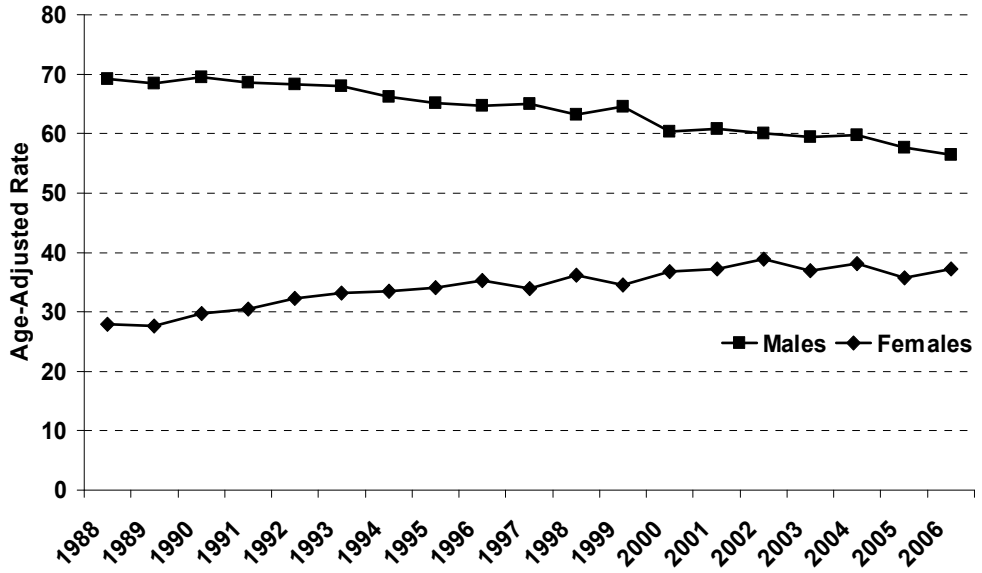
Source: Minnesota Center for Health Statistics, all races combined. All analyses were conducted by MCSS. Trends are based on annual rates per 100,000 persons age-adjusted to the 2000 U.S. population.

† Due to a change in trend during the period 1988-2006, the average annual percent change is for the interval (year) to 2006 for the following sites: lung and bronchus (1994); non-Hodgkin lymphoma (1996); brain (2003). Because mesothelioma was first assigned a unique cause of death code in 1999, the trend interval begins in that year.

* Trend is statistically significant ($p < 0.05$).

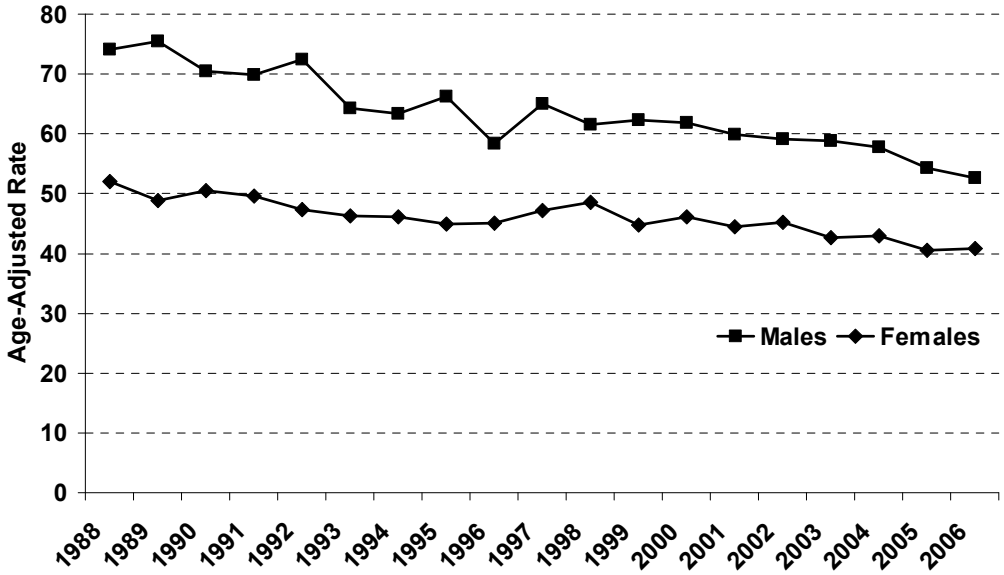
~ Average annual percent change could not be calculated because deaths did not occur in every year.

Figure II-14: Trends in Lung and Bronchus Cancer Mortality by Gender, Minnesota, 1988-2006



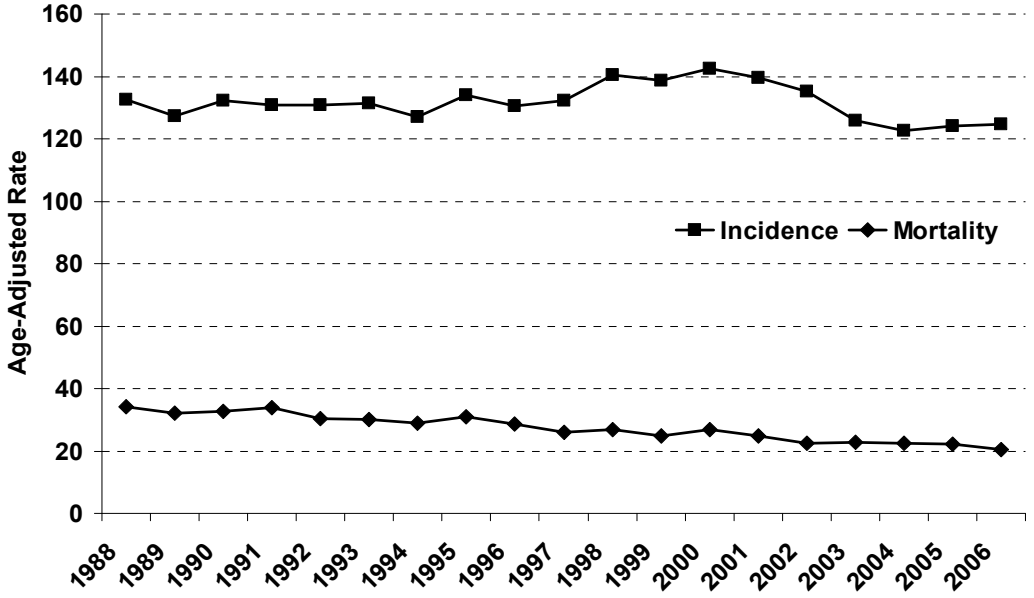
Source: Minnesota Center for Health Statistics, all races combined. All analyses were conducted by MCSS. Rates are per 100,000 persons and are age-adjusted to the 2000 U.S. population.

Figure II-15: Trends in Colon and Rectum Cancer Incidence by Gender, Minnesota, 1988-2006



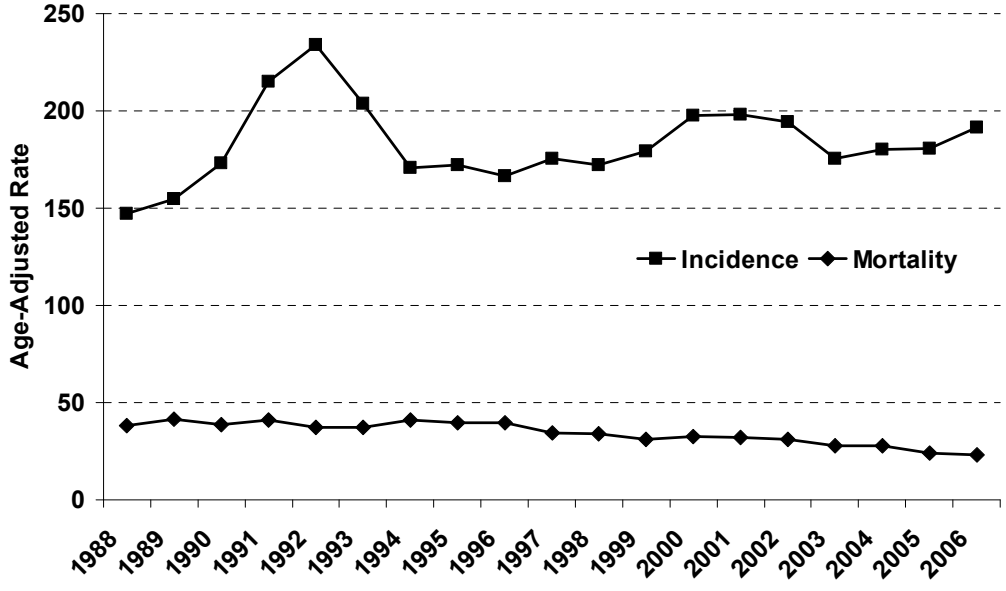
Source: MCSS (September 2009), all races combined. Cases were either microscopically confirmed or Death Certificate Only. *In situ* cancers were excluded. All analyses were conducted by MCSS. Rates are per 100,000 persons and are age-adjusted to the 2000 U.S. population.

Figure II-16: Trends in Female Breast Cancer Incidence and Mortality, Minnesota, 1988-2006



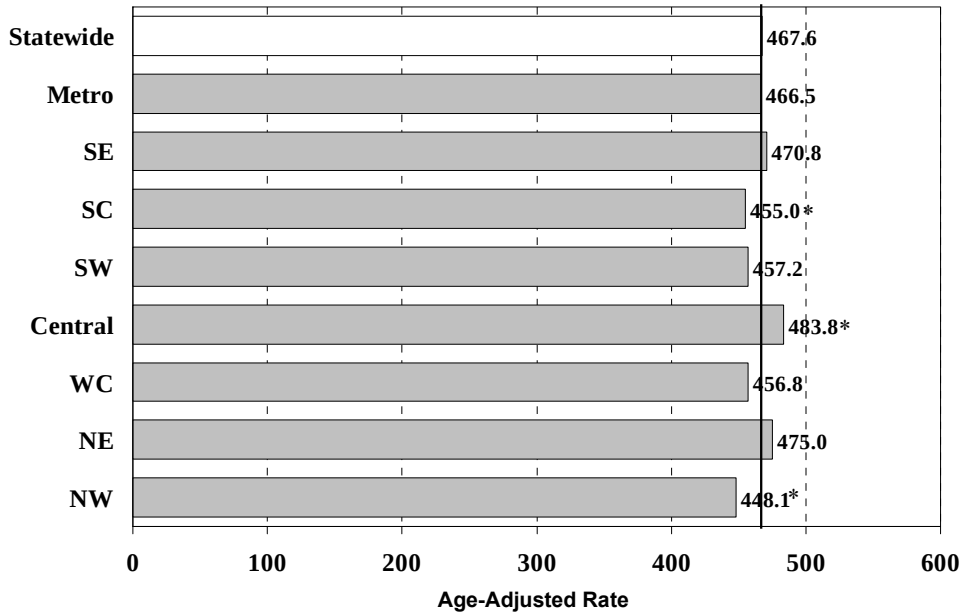
Source: MCSS (September 2009) and the Minnesota Center for Health Statistics, all races combined. Cases were either microscopically confirmed or Death Certificate Only. *In situ* cancers were excluded. All analyses were conducted by MCSS. Rates are per 100,000 persons and are age-adjusted to the 2000 U.S. population.

Figure II-17: Trends in Prostate Cancer Incidence and Mortality, Minnesota, 1988-2006



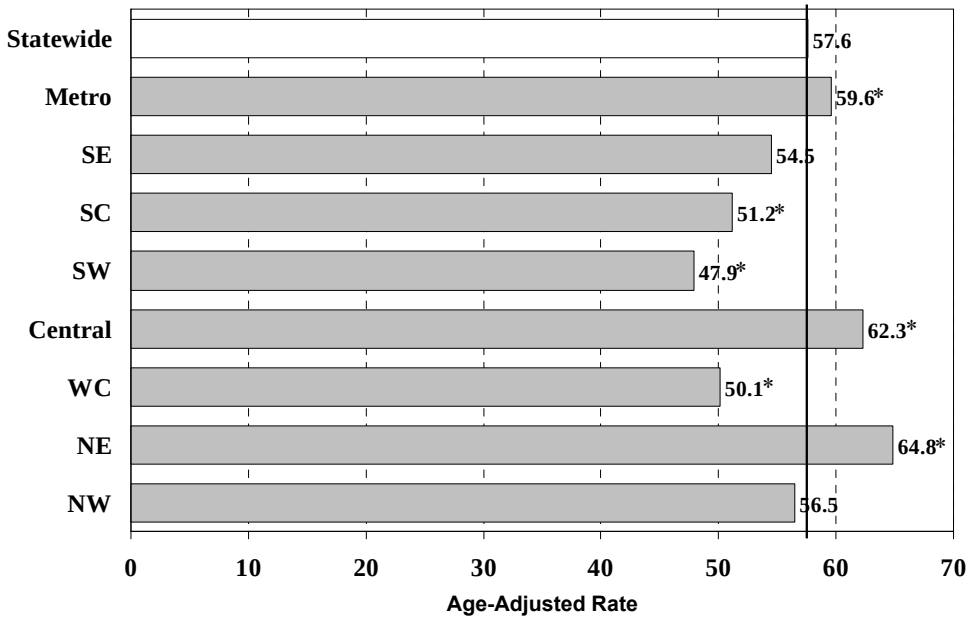
Source: MCSS (September 2009) and the Minnesota Center for Health Statistics, all races combined. Cases were either microscopically confirmed or Death Certificate Only. *In situ* cancers were excluded. All analyses were conducted by MCSS. Rates are per 100,000 persons and are age-adjusted to the 2000 U.S. population.

Figure II-18: Cancer Incidence among Non-Hispanic Whites by Region, Minnesota, 2002-2006, All Cancer Sites Combined



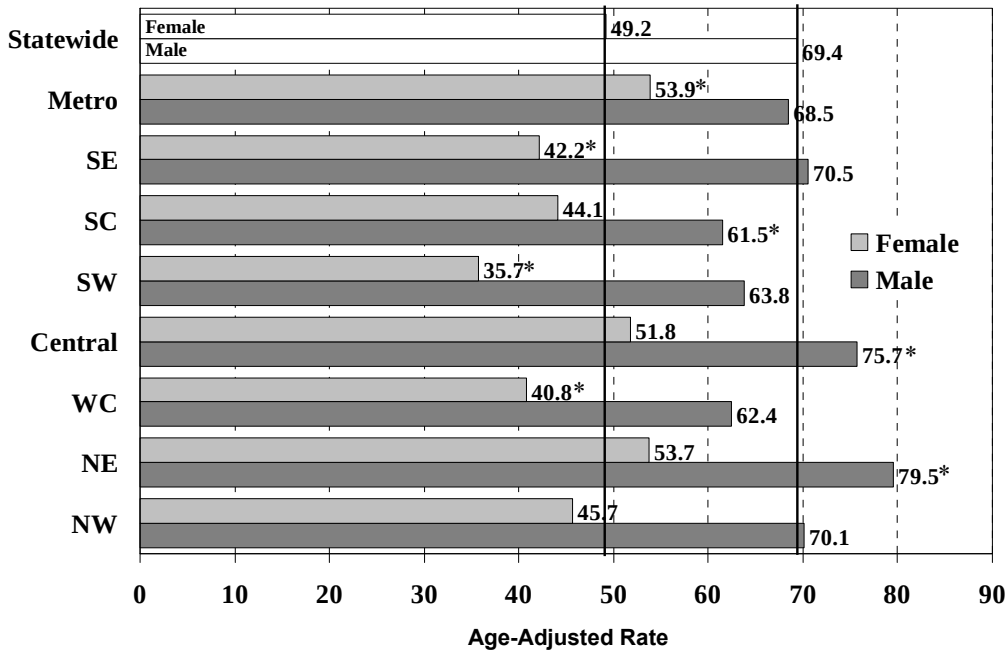
Source: MCSS (September 2009). All cases were either microscopically confirmed or Death Certificate Only. *In situ* cancers except those of the bladder were excluded. All analyses were conducted by MCSS. Rates are per 100,000 persons and are age-adjusted to the 2000 U.S. population.
*Regional rate is significantly ($p < 0.05$) different from the statewide rate.

Figure II-19: Lung and Bronchus Cancer Incidence among Non-Hispanic Whites by Region, Minnesota, 2002-2006



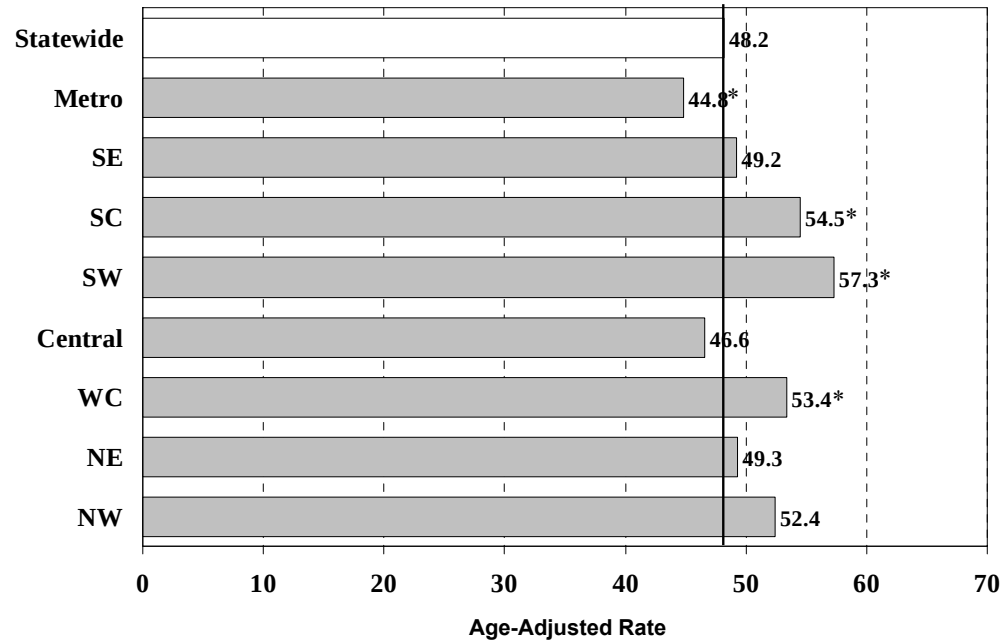
Source: MCSS (September 2009). All cases were either microscopically confirmed or Death Certificate Only. *In situ* cancers were excluded. All analyses were conducted by MCSS. Rates are per 100,000 persons and are age-adjusted to the 2000 U.S. population.
*Regional rate is significantly ($p < 0.05$) different from statewide rates.

Figure II-20: Lung and Bronchus Cancer Incidence among Non-Hispanic Whites by Gender and Region, Minnesota, 2002-2006



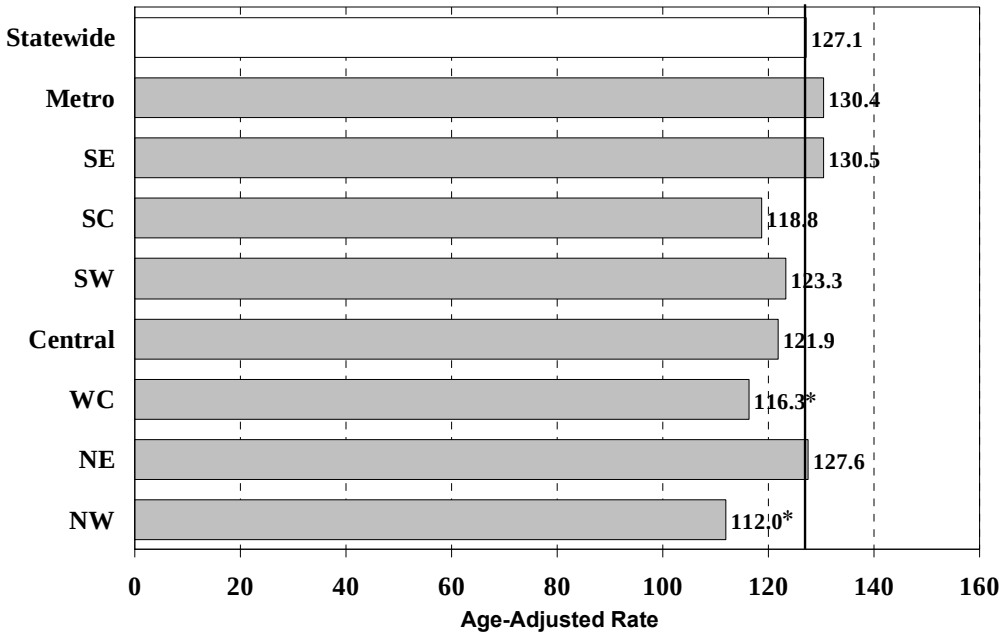
Source: MCSS (September 2009). All cases were either microscopically confirmed or Death Certificate Only. *In situ* cancers were excluded. All analyses were conducted by MCSS. Rates are per 100,000 persons and are age-adjusted to the 2000 U.S. population.
*Sex-specific regional rate is significantly ($p < 0.05$) different from statewide rate.

Figure II-21: Colon and Rectum Cancer Incidence among Non-Hispanic Whites by Region, Minnesota, 2002-2006



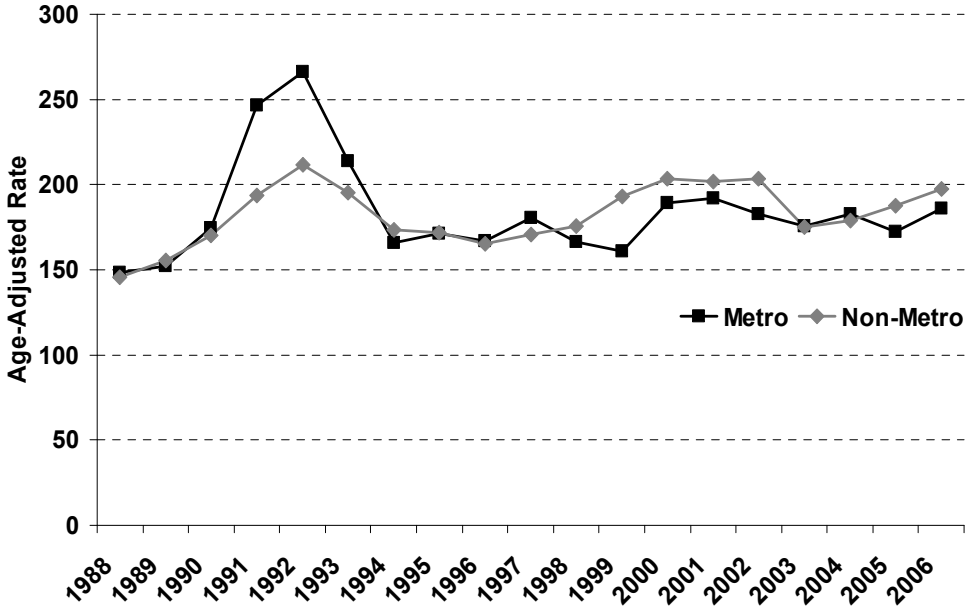
Source: MCSS (September 2009). All cases were either microscopically confirmed or Death Certificate Only. *In situ* cancers were excluded. All analyses were conducted by MCSS. Rates are per 100,000 persons and are age-adjusted to the 2000 U.S. population.
*Regional rate is significantly ($p < 0.05$) different from statewide rate.

Figure II-22: Female Breast Cancer Incidence among Non-Hispanic Whites by Region, Minnesota, 2002-2006



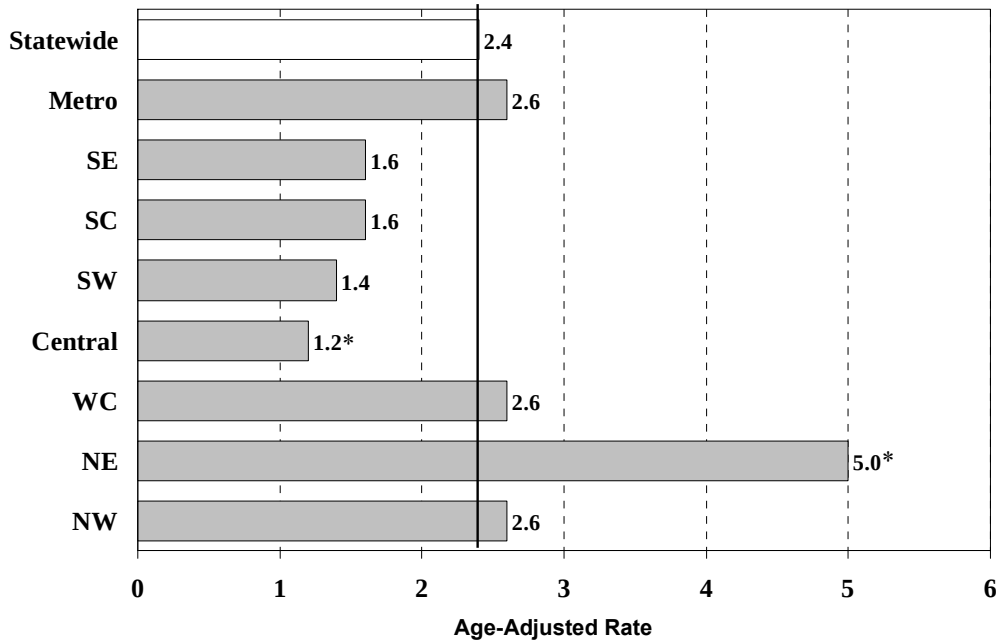
Source: MCSS (September 2009). All cases were either microscopically confirmed or Death Certificate Only. *In situ* cancers were excluded. All analyses were conducted by MCSS. Rates are per 100,000 persons and are age-adjusted to the 2000 U.S. population. *Regional rate is significantly ($p < 0.05$) different from statewide rate.

Figure II-23: Prostate Cancer Incidence Trends by Region, All Races Combined, Minnesota, 1988-2006



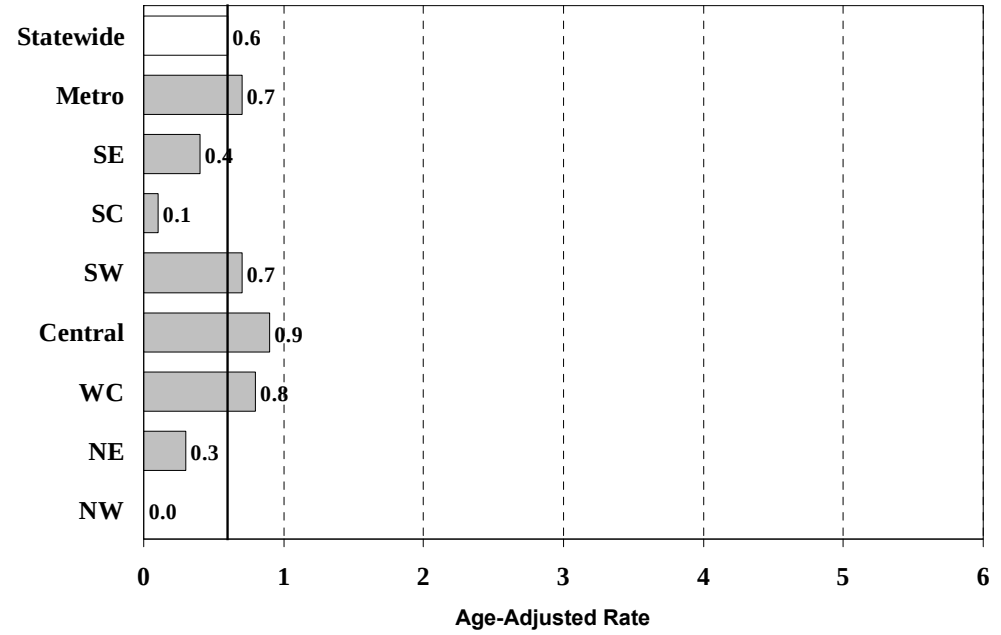
Source: MCSS (September 2009). All cases were either microscopically confirmed or Death Certificate Only. *In situ* cancers were excluded. All analyses were conducted by MCSS. Rates are per 100,000 persons and are age-adjusted to the 2000 U.S. population. The Metro region is composed of Anoka, Carver, Dakota, Hennepin, Ramsey, Scott and Washington counties.

Figure II-24: Mesothelioma Incidence among Non-Hispanic Whites by Region, Minnesota, 2002-2006, Males



Source: MCSS (September 2009). All cases were either microscopically confirmed or Death Certificate Only. *In situ* cancers were excluded. All analyses were conducted by MCSS. Rates are per 100,000 persons and are age-adjusted to the 2000 U.S. population.
*Regional rate is significantly ($p < 0.05$) different from statewide rate for males.

Figure II-25: Mesothelioma Incidence among Non-Hispanic Whites by Region, Minnesota, 2002-2006, Females



Source: MCSS (September 2009). All cases were either microscopically confirmed or Death Certificate Only. *In situ* cancers were excluded. All analyses were conducted by MCSS. Rates are per 100,000 persons and are age-adjusted to the 2000 U.S. population.
*Regional rate is significantly ($p < 0.05$) different from statewide rate for females.