
**CANCER INCIDENCE AND
MORTALITY
IN MASSACHUSETTS
2001-2005:
STATEWIDE REPORT**

Bureau of Health Information, Statistics,
Research, and Evaluation

Massachusetts Department of Public Health

April 2008

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2001-2005:
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Massachusetts Department of Public Health

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EXECUTIVE SUMMARY

EXECUTIVE SUMMARY

Cancer Incidence and Mortality in Massachusetts, 2001-2005: Statewide Report presents cancer incidence and mortality data for the Commonwealth from 2001 through 2005. The data include numbers and rates for 24 types of cancer, detailed information about the most commonly occurring types of cancer, information about age-specific patterns, a discussion of cancer trends, an examination of patterns by race/ethnicity, and a comparison of Massachusetts and national cancer rates. The report provides data only on invasive cancer, except for urinary bladder (which includes *in situ* and invasive cancers combined) and *in situ* breast cancer.

Highlights from the report

- From 2001 to 2005 there were 176,399 newly diagnosed cases of cancer and 67,638 deaths from cancer among Massachusetts residents. The average annual age-adjusted incidence rate was 515.8 per 100,000 persons, and the average annual age-adjusted mortality rate was 192.7 per 100,000 persons. Overall, cancer incidence rates for males in Massachusetts over the years 2001-2005 decreased an average of 1.6% per year, a statistically significant decrease. Among Massachusetts females, overall incidence rates remained stable over this time period. Mortality from all types of cancer combined decreased by 2.7% annually for males, and by 2.0% for females from 2001-2005, both statistically significant decreases.
- Prostate cancer was the most common type of newly diagnosed cancer among Massachusetts males. Prostate cancer accounted for approximately 28% of new cancers among males in the state from 2001 to 2005. The average annual age-adjusted incidence rate of prostate cancer was 170.6 per 100,000 males. The annual incidence rate of prostate cancer decreased an average of 4.6% per year, a statistically significant trend, from 2001 to 2005. The mortality rate of prostate cancer decreased significantly by 7.3% per year from 2001 to 2005.
- From 2001 to 2005, invasive breast cancer was the most common type of newly diagnosed cancer among Massachusetts females, accounting for approximately 29% of new cancers among females in the state. The average annual age-adjusted incidence rate of breast cancer was 134.2 per 100,000 females. The incidence rate of female invasive breast cancer decreased over the years 2001-2005 by 1.2% annually, but this decrease was not statistically significant. The mortality rate from invasive breast cancer also decreased during this period by 3.7% annually, which was statistically significant. The age-adjusted incidence rate of *in situ* breast cancer for Massachusetts females was 46.6 per 100,000.
- Cancer of the bronchus and lung was the most common cause of cancer deaths among both Massachusetts males and females between 2001 and 2005, accounting for 29% of all cancer deaths among males and 26% of all cancer deaths among females. During this time period, the mortality rate of cancer of the bronchus and lung in Massachusetts decreased by 2.0% annually for males and decreased by 0.8% annually for females. These changes were statistically significant for males, but were not significant for females.
- The incidence rate of cancer of the bronchus and lung increased by 1.2% per year for Massachusetts females during 2001-2005 and decreased by 1.0% for males. The increase among females was statistically significant, but the decrease among males was not.
- For all types of cancer combined for 2001-2005, black, non-Hispanics had the highest age-adjusted incidence and mortality rates among Massachusetts males. Their incidence rates were significantly higher than those for Asian,

non-Hispanics and Hispanics, but not for white, non-Hispanics. Their mortality rates were significantly higher than those for all other racial/ethnic groups.

- For all Massachusetts male race/ethnicity groups diagnosed between 2001 and 2005, cancers of the prostate, bronchus and lung, and colon/rectum were the top three most commonly diagnosed cancers, and cancer of the bronchus and lung was the most common cause of cancer death.
- For all types of cancer combined for 2001-2005, white, non-Hispanics had the highest age-adjusted incidence rate among Massachusetts females and black, non-Hispanic females had the highest age-adjusted mortality rate. The incidence rates were statistically significantly higher for white, non-Hispanic females compared with all other groups. While the mortality rates for black, non-Hispanic females were significantly higher than those of Asian, non-Hispanic females and Hispanic females, they were not statistically significantly different from those of white, non-Hispanic females.
- Breast cancer was the most commonly diagnosed cancer for all Massachusetts female race/ethnicity groups from 2001 to 2005. Cancers of the bronchus and lung and colon/rectum were also leading cancers among females. Bronchus and lung was second and colon/rectum was third for white, non-Hispanic and black, non-Hispanic females. For Asian, non-Hispanic females, colon/rectum was second and bronchus and lung was third. For Hispanics, colon/rectum was second and uterine was third.
- Between 2001 and 2005, cancer of the bronchus and lung was the most common cause of cancer death among all female race/ethnicities in Massachusetts except Hispanic females. Breast cancer was the most common cause of death among Hispanic females.
- Age-adjusted cancer incidence rates in Massachusetts were generally higher than their national counterparts. The Massachusetts male and female incidence rates for all sites combined for the period 2001 through 2005 were 602.5 per 100,000 and 457.2 per 100,000, respectively, while the 2000-2004 rates for the North American Association of Central Cancer Registries (NAACCR) were 557.8 per 100,000 and 413.1 per 100,000, respectively.
- Similarly, age-adjusted cancer mortality rates in Massachusetts females for 2001-2005 were slightly higher than age-adjusted mortality rates in the United States, and male mortality rates were slightly lower. For all cancer sites combined, mortality rates were 238.7 per 100,000 nationally versus 234.7 per 100,000 in Massachusetts for males and 162.2 per 100,000 nationally versus 166.1 per 100,000 in Massachusetts for females.

INTRODUCTION

INTRODUCTION

The Massachusetts Cancer Registry (MCR) collects reports of newly diagnosed cases of cancer and routinely compiles summaries of cancer incidence and mortality data. This report, *Cancer Incidence and Mortality in Massachusetts, 2001-2005: Statewide Report*, is produced annually with statewide data. Another report, *Cancer Incidence in Massachusetts: City and Town Supplement*, is also produced annually and contains information for the 351 cities and towns in Massachusetts. Electronic versions of these reports may be found on the Internet at <http://www.mass.gov/dph/mcr>.

Content

This report:

- provides statewide information on cancer incidence and mortality in Massachusetts for twenty-four types of cancer and for all cancers combined for 2001 through 2005;*
- provides detailed information about the most commonly occurring types of cancer for 2001 through 2005;
- examines cancer incidence patterns by age, sex, and race/ethnicity;
- reviews Massachusetts cancer incidence and mortality trends for 2001 through 2005; and
- compares Massachusetts incidence and mortality data with national incidence and mortality data.

The rest of the report is organized into the following sections:

- **METHODS** provides a detailed explanation of the data collection, data processing, and statistical techniques

employed in this report and the limitations to consider when reviewing the data.

- **OVERVIEW** provides an overview of cancer incidence and mortality data in Massachusetts from 2001 through 2005, including leading types of cancer, cancer incidence by age and sex, cancer trends, cancer patterns by race/ethnicity, and a comparison of rates in Massachusetts as compared with the U.S.
- **FIGURES & TABLES** present cancer incidence and mortality data for twenty-four types of cancer for 2001-2005. There are six figures and twenty-four tables in this section with breakdowns such as sex, race/ethnicity, year, age group, state data versus national data, and cancer type.
- **APPENDICES** provide information supplemental to this report, including a listing of codes used to prepare the report, information on population and rate changes, and population estimates.

** The Massachusetts incidence data in this report include only invasive cancers for twenty-two of the twenty-four types of cancer. Cancer of the urinary bladder includes both in situ and invasive cases. Cancer of the breast in situ is presented as a separate category, but is not included in the "all sites combined" data.*

METHODS

METHODS

Data Sources

Cancer Incidence

The MCR collects reports of newly diagnosed cancer cases. Facilities reporting to the MCR in 2005 included 74 Massachusetts acute care hospitals, one medical practice association, pathology laboratories, one radiation/oncology facility, endoscopy centers, dermatologists, and urologists. Reports from dermatologists' offices and dermatopathology laboratories, particularly on cases of melanoma, have only been collected by the MCR since 2001. Reports from urologists' offices have only been collected by the MCR since 2002. Currently, the MCR collects information on *in situ* and invasive cancers and benign tumors of the brain and associated tissues. The MCR does not collect information on basal and squamous cell carcinomas of the skin.

The MCR also collects information from reporting hospitals on cases diagnosed and treated in staff physician offices when this information is available. Not all hospitals report this type of case, however, and some hospitals report such cases as if the patients had been diagnosed and treated by the hospital directly. Collecting these types of data makes the MCR's overall case ascertainment more complete. Some cancer types that may be reported to the MCR in this manner are melanoma, prostate, colon, and oral cancers.

In addition, the MCR identifies previously unreported cancer cases through review of death certificate data to further improve case completeness. This process is referred to as death clearance and identifies cancers mentioned on death certificates that were not previously reported to the MCR. In some instances, the MCR obtains additional information on these cases through follow-up activities with hospitals, nursing homes, hospice residences, and physicians' offices. In other instances, a cancer-related cause of death recorded on a Massachusetts death certificate is the only source of information for a cancer case. These "death certificate only" cancer diagnoses are, therefore, poorly documented, and have not been confirmed

by review of complete clinical and pathological information. Such cases are included in this report, but they comprise less than 3% of all cancer cases.

Case reports from 2001 were coded following the International Classification of Diseases for Oncology, Third Edition (ICD-O-3), which was implemented in North America with cases diagnosed as of January 1, 2001 (1).

Each year, the North American Association of Central Cancer Registries (NAACCR) reviews cancer registry data for quality, completeness, and timeliness. The NAACCR certification results for the MCR for diagnosis years 2001-2004 are presented in Table A. For 2001-2004, the MCR's annual case count was estimated by NAACCR to be more than 95% complete each year. The MCR achieved the gold standard for this certification element as well as for six other certification elements for each case year from 1997 through 2004. (See Table A.)

The Massachusetts cancer cases presented in this report are primary cases of cancer diagnosed among Massachusetts residents during 2001-2005 and reported to the MCR as of November 26, 2007. These data include some additional cases diagnosed in 2001-2004 that were not counted in the previous report, *Cancer Incidence and Mortality in Massachusetts 2000-2004: Statewide Report*, because they were reported to the MCR too late to be incorporated in that report.

Cancer site/types were grouped according to coding definitions adapted from the National Cancer Institute (NCI)'s Surveillance, Epidemiology, and End Results (SEER) Program (Appendix I). The Massachusetts data presented are invasive cancers, with the exception of urinary bladder and breast cancer. Both *in situ* and invasive cancers are presented for these sites. (See section 'Definition of Cancer Sites' on page 14 for additional information about the urinary bladder category). *In situ* cancers are neoplasms diagnosed at the earliest stage, before they have spread, when they are limited to a small number of cells and have not invaded the organ itself. Invasive cancers have spread beyond the layer of cells where they started and have the potential to

spread to other parts of the body. Typically, published incidence rates do not combine invasive and *in situ* cancers due to differences in the biologic significance, survival prognosis, and types of treatment of the tumors. Because a substantial number of breast cancers are diagnosed at a pre-invasive (*in situ*) stage, we present an additional category for these data that is separate from the invasive breast cancer data. The *in situ* breast cancer cases are not added into the totals for all cancer sites combined. Due to the specific nature of the diagnostic techniques and treatment patterns, *in situ* and invasive cancers of the urinary bladder are combined and *in situ* urinary bladder cases are added into the totals for all cancer sites combined.

The national incidence data are from NAACCR. The NAACCR incidence rates include data from 36 states, 5 metropolitan areas, and the District of Columbia and cover about 77% of the United States population, including Massachusetts (2).

Cancer Mortality

The Massachusetts death data were obtained from the Massachusetts Registry of Vital Records and Statistics, which has legal responsibility for collecting reports of deaths in this state. Death reports from 2001 to 2005 were coded using the International Classification of Diseases, Tenth Revision (ICD-10) (3). The cancer site/type groups for deaths in this report were based on cancer site/type categories from the National Cancer Institute's Surveillance, Epidemiology, and End Results Program (SEER) Program (Appendix I). These SEER cancer site/type definitions are the standard categories commonly used by cancer registries. The cancer mortality data published in this report may differ slightly from the cancer mortality data published in *Massachusetts Deaths*, the annual Massachusetts Department of Public Health mortality surveillance publication, because *Massachusetts Deaths* uses cancer site/type groupings from the National Center for Health Statistics.

The U.S. mortality data presented here are from NAACCR, which uses data from the National Center for Health Statistics (4). The NAACCR

mortality rates cover the entire U.S. population from 2000-2004.

Definitions

Population Estimates

All of the population estimates used in this report were produced by the National Center for Health Statistics (NCHS) in collaboration with the Census Bureau's Population Estimation Program. The NCHS reallocates the multiple race categories from the Census Bureau population estimates file to create four mutually exclusive race categories that are consistent with the race categories used to collect cancer incidence and cancer mortality data. The population data used in this report are presented in Appendix III.

Race/Ethnicity

The MCR uses an algorithm developed by NAACCR called the NAACCR Hispanic Identification Algorithm (NHIA) to help classify Hispanic ethnicity. The algorithm is only applied to cases with an unknown Spanish/Hispanic origin or cases that have been classified as Hispanic based on a Spanish surname only. The algorithm uses last name, maiden name, birthplace, race, and sex to determine the ethnicity of these cases.

The race/ethnicity categories presented in this report are mutually exclusive. Cases and deaths are only included in one race/ethnicity category. The race/ethnicity tables include the categories white, non-Hispanic; black, non-Hispanic; Asian, non-Hispanic; and Hispanic. The total population in Massachusetts also includes unknown races/ethnicities and American Indians. As a result, the number of cases for the total population is not the sum of cases by race/ethnicity.

Statistical Terms

- *Age-Specific Rates* – Age-specific rates were calculated by dividing the number of people in an age group who were diagnosed with cancer or died of cancer in a given time frame by the number of people in that same age group overall in that time frame. They are

presented as rates per 100,000 residents and are site- and sex-specific.

- *Age-Adjusted Rates* – An age-adjusted incidence or mortality rate is a weighted average of the age-specific rates, where the weights are the proportions of persons in the corresponding age groups of a standard 100,000 population. The potential confounding effect of age is reduced when comparing age-adjusted rates for different age-structured populations. The 2000 U.S. Bureau of the Census population distribution was used as a standard. Rates were age-adjusted using 18 five-year age groups. Age-adjusted rates can only be compared if they are adjusted to the same standard population. It is also important to note that differences in methodologies used in calculating rates, such as number of age groups used, may cause slight variations in results.
- *Confidence Intervals (CI) or Confidence Limits (CL)* - The confidence interval (CI)—also called a confidence limit (CL)—is a range of values determined by the degree of variability of the data within which the true value should lie. The 95% confidence intervals presented in this report mean that 95 times out of 100 this range of values will contain the true one. The confidence interval indicates the precision of the rate calculation; the wider the interval, the less certain the rate. Statistically, the width of the interval reflects the size of the population and the number of events; smaller populations and smaller number of cases yield less precise estimates that have wider confidence intervals. Confidence intervals were used in the report as a conservative statistical test to estimate the difference between the age-adjusted incidence or mortality rates with the probability of error of 5% or less ($p \leq 0.05$). Rates and confidence intervals were not calculated when there were fewer than twenty cases.
- *Estimated Annual Percent Change (EAPC)* – The EAPC is a statistical method for trend analysis. It shows how much a cancer rate has increased or decreased over the observed

period of time. This estimation assumes that the change in incidence or mortality rates is constant during the observed time period. The EAPC for a short time period (2001-2005 for this report) was calculated using the SEER methods. The $EAPC = 100 * (e^m - 1)$, where m is a slope of the linear regression line, which is an approximation of the function of the natural logarithm of the rates by the year of diagnosis (5). A positive EAPC corresponds to an increasing trend, while a negative EAPC corresponds to a decreasing trend. All of the EAPC values calculated in this report were statistically tested ($p \leq 0.05$) against the hypothesis that they are equal to zero (the rate is neither increasing nor decreasing).

- *Median Age at Diagnosis* – The median age at diagnosis is the point (in age) where half of cancer cases occurred below this age and half of cases occurred above this age.

Interpreting the Data

When interpreting cancer incidence and mortality data in this report, it is important to consider the following:

Border Areas and Neighboring States

Some areas of Massachusetts appear to have low cancer incidence, but this may be due to loss of cases in Massachusetts residents who were diagnosed in neighboring states and not reported to the MCR. Presently the MCR has reciprocal reporting agreements with the following fifteen states: Alaska, Arkansas, Connecticut, Florida, Maine, Mississippi, New Hampshire, New York, North Carolina, Rhode Island, South Carolina, Texas, Vermont, Wisconsin, and Wyoming.

Cases Diagnosed in Non-Hospital Settings

During the time period covered by this report, the MCR's information sources for most newly diagnosed cases of cancer were hospitals. In addition, the MCR collected information from reporting hospitals on cases diagnosed and treated in staff physician offices, when this information was available. In 2001, dermatologists and

dermatopathology laboratories were added as reporting sources. The addition of these new reporting sources may elevate the incidence of melanoma diagnosed in the years 2001 and later. In 2002, urologists' offices and a general laboratory were added as reporting sources. Some types of cancer in this report, such as prostate cancer, may be under-reported because they are diagnosed primarily by private physicians, private laboratories, health maintenance organizations, or radiotherapy centers that escape the case identification systems used by hospitals. The extent of this under-reporting has not been determined exactly, but cases included in this report represent the great majority of cases statewide and provide an essential basis for evaluating statewide cancer incidence patterns.

Definition of Cancer Sites

Reports published by the MCR since 2004 use a definition for urinary bladder that includes both *in situ* and invasive cancers. Prior reports included only invasive cases in the urinary bladder category. This change was made to conform to the definitions of the National Cancer Institute's Surveillance, Epidemiology and End Results Program. The addition of *in situ* cases in this category has elevated both the number of cases and rates for this site and for all sites combined compared with reports published prior to 2004. The first statewide report to use this expanded definition was Cancer Incidence and Mortality in Massachusetts 1997-2001: Statewide Report.

The implementation of ICD-O-3 coding in 2001, and corresponding cancer site recodes, has changed the incidence of some types of tumors, especially ovarian cancer, leukemias, and lymphomas. These changes may affect annual site-specific incidence, causing a drop or spike in 2001-2005 rates, as well as the incidence of all sites combined and average annual incidence rates. Therefore, caution should be exercised when comparing rates in 2001-2005 with those for previous years.

Trends

Trend data should be interpreted with caution. Apparent increases or decreases in cancer incidence over time may reflect changes in diagnostic methods or case reporting rather than true changes in cancer occurrence. Also, cancer incidence trends may appear more favorable than they actually are because they have not been adjusted for reporting error or delay (6). Typically, statewide Massachusetts cancer incidence data are released about two years after a diagnosis year; for example, data for 2005 diagnoses are being released for the first time in early 2008. The MCR continues to receive case reports on an ongoing basis even after the data are released. These delayed case reports, as well as corrections to cases based on subsequent details from the reporting facilities, result in reporting delay and error; the more recent diagnosis years may be less complete than the earlier diagnosis years. Finally, the following should be considered when interpreting trend data:

- The EAPC assumes that the change in rate is the same over the entire time period examined, which may or may not be true for the trends examined in this report.
- If the percent difference in rates between year 2001 and year 2005 is small, the statistical significance of the EAPC may have no practical importance.

Race/Ethnicity

Race/ethnicity data for cancer cases are based on information in the medical record. Race/ethnicity data for cancer deaths are based on information from death certificates as reported by next-of-kin and funeral directors. Errors in these source documents may lead to incorrect classification of race/ethnicity. Also, completeness of the race/ethnicity data may be different for cancer cases and cancer deaths. Some race/ethnicity categories may be under-reported if race/ethnicity is not available for all cases. Counts and rates may under-represent the true incidence of cancer in some racial/ethnic populations. The NAACCR Hispanic Identification Algorithm (NHIA) has been implemented in this report to help classify Hispanic ethnicity.

Table A.
North American Association of Central Cancer Registries (NAACCR) Certification Results
for the Massachusetts Cancer Registry (MCR), 2001-2004*

Registry Element	Gold Standard	Silver Standard	MCR Results By Year				Standard Achieved
			2001	2002	2003	2004	
Completeness of case ascertainment*	95%	90%	>95%	>95%	>95%	>95%	Gold
Unknown "age at diagnosis"	≤2%	≤3%	0.0%	0.0%	0.0%	0.0%	Gold
Unknown "sex"	≤2%	≤3%	0.0%	0.0%	0.0%	0.0%	Gold
Unknown "race"	≤3%	≤5%	1.9%	1.3%	1.4%	1.4%	Gold
Death certificate only cases†	≤3%	≤5%	1.7%	1.5%	1.6%	1.8%	Gold
Duplicate primary cases	≤0.1%	≤0.2%	0.04%	0.04%	0.02%	0.05%	Gold
Timeliness	Data submitted within 24 months of close of calendar year.						Gold

* Completeness of case ascertainment was estimated by methods from the NAACCR. 2005 completeness figures were not available at the time of publication of this report.

† Death certificate only cases are cases that are identified through the death certificate clearance process and only have information from a death certificate.

OVERVIEW

OVERVIEW

In Massachusetts, from 2001 through 2005, there were 176,399¹ newly diagnosed cases of cancer – 88,969 in males and 87,419 in females. For all types of cancer combined for 2001-2005, the average annual age-adjusted incidence rate among males was 602.5 cases per 100,000 and the average annual age-adjusted incidence rate among females was 457.2 cases per 100,000.

During the same time period, there were 67,638 deaths due to cancer – 33,526 males and 34,112 females. For all types of cancer combined for 2001-2005, the age-adjusted mortality rate was 234.7 deaths per 100,000 for males and 166.1 deaths per 100,000 for females.

Leading Types of Cancer

Incidence

Males

The most commonly diagnosed type of cancer in Massachusetts males from 2001-2005 was prostate cancer, followed by cancers of the bronchus and lung, colon/rectum, and urinary bladder. These four cancer types comprised 61% of newly diagnosed cases. Prostate cancer comprised approximately 28% of all male incident cases (Figure 1).

From 2001-2005, the age-adjusted incidence rates for these four leading types of cancer were 170.6 cases per 100,000 for prostate cancer, 85.9 cases per 100,000 for cancer of the bronchus and lung, 67.2 cases per 100,000 for colon/rectum cancer, and 46.2 cases per 100,000 for urinary bladder cancer. Other leading cancer types for males included melanoma, non-Hodgkin lymphoma, cancer of the kidney and renal pelvis, cancer of the oral cavity and pharynx, leukemia, and pancreatic cancer (Figure 2).

¹ The male and female case counts will not add up to the total case count because the MCR collects two additional gender classifications (transsexuals and persons with sex chromosome abnormalities/hermaphrodites).

Females

Among Massachusetts females, the most commonly diagnosed cancer types were cancers of the breast, bronchus and lung, colon/rectum, and corpus uteri (uterus), representing 60% of new cancer cases during 2001-2005. Breast cancer comprised 29% of all female incident cases (Figure 1).

From 2001-2005, the age-adjusted incidence rates for these four leading types of cancer were 134.2 cases per 100,000 for breast cancer, 63.3 cases per 100,000 for cancer of the bronchus and lung, 48.4 cases per 100,000 for colon/rectum cancer, and 28.6 cases per 100,000 for cancer of the uterus. Other leading cancer types for females included melanoma, thyroid cancer, non-Hodgkin lymphoma, ovarian cancer, urinary bladder cancer, and pancreatic cancer (Figure 2).

Mortality

Males

Cancer of the bronchus and lung was the leading cause of cancer death for Massachusetts males between 2001 and 2005. During this time period, cancer of the bronchus and lung accounted for 29% of all cancer deaths in males. Prostate cancer ranked second in mortality for males. The third and fourth most common causes of cancer death were cancers of the colon/rectum and pancreas, respectively. These four types of cancer comprised 54% of all cancer deaths for this time period (Figure 3).

From 2001 to 2005, the age-adjusted mortality rates for the four leading causes of cancer death were 66.8 deaths per 100,000 for cancer of the bronchus and lung, 25.5 deaths per 100,000 for prostate cancer, 22.9 deaths per 100,000 for colon/rectum cancer, and 13.2 deaths per 100,000 for pancreatic cancer. Other leading causes of cancer death for males during this time period included cancer of the esophagus, non-Hodgkin lymphoma, leukemia, and cancers of the urinary bladder, liver and intrahepatic bile ducts, and stomach (Figure 4).

Females

Cancer of the bronchus and lung was also the leading cause of cancer death for Massachusetts females between 2001 and 2005. During this time period, this cancer accounted for 26% of all cancer deaths in females. Breast cancer ranked second in mortality for females. The third and fourth most common causes of cancer death were cancers of the colon/rectum and pancreas, respectively. These four types of cancer comprised approximately 57% of all cancer deaths for this time period (Figure 3).

From 2001 to 2005, the age-adjusted mortality rates for these four leading causes of cancer death were 44.6 deaths per 100,000 for cancer of the bronchus and lung, 24.8 deaths per 100,000 for breast cancer, 16.5 deaths per 100,000 for colon/rectum cancer, and 10.0 deaths per 100,000 for pancreatic cancer. Other leading causes of cancer death for females during this time period included cancer of the ovary, non-Hodgkin lymphoma, leukemia, and cancers of the uterus, brain and other nervous system, and stomach (Figure 4).

Cancer Incidence Patterns by Age

The likelihood of being diagnosed with cancer increased steadily with age for many cancers. The age-specific incidence rate for all sites combined for males rose from 21.3 per 100,000 in the age group 0-4 to 3,344.3 per 100,000 in the age group 80-84 (Table 1). For females, the age-specific rate for all sites combined increased from 23.1 per 100,000 for ages 0-4 to 2,140.4 for ages 80-84 (Table 2). The cancer incidence rate for people aged 85 and above declined for both males and females (Tables 1 and 2).

The median age of diagnosis with any type of cancer in the period 2001-2005 was 68 years for males and 67 years for females (Tables 1 and 2). For many of the cancer types presented in this report, the median age at diagnosis was age 60 or older. The following cancers were diagnosed at a younger median age (males and females are combined for cancers occurring in both sexes): brain and other nervous system (median age – 57), breast *in situ* (median age – 56), cervix (median

age – 49), Hodgkin lymphoma (median age – 38), testis (median age – 35), and thyroid (median age – 47) (Tables 1-3).

Cancer Trends

Incidence

All of the data describing percent increases and decreases per year are based upon the estimated annual percent change (EAPC). From 2001 to 2005, overall cancer incidence in Massachusetts remained unchanged for females and decreased slightly for males. Though cancer rates fluctuated by year, the average annual percentage change in incidence rates was unchanged for females and decreased an average of 1.6% per year for males. Nationally, cancer incidence rates for all cancer sites combined decreased by 0.5% per year for males from 1995 to 2004, and by 1.7% per year for females from 2001 to 2004, with both decreases being statistically significant (7). Incidence trends in the leading cancers affecting Massachusetts males and females are discussed below. See Figures 5 and 6 for incidence trends and Tables 4, 5, and 6 for annual age-adjusted incidence rates over the years 2001 to 2005.

Males

Among Massachusetts males between 2001 and 2005, the incidence rate of prostate cancer decreased by 4.6% per year, a statistically significant decrease (Figure 5). The 2001 incidence rate of prostate cancer was 190.4 cases per 100,000 males, and decreased to 161.6 cases per 100,000 males in 2005 (Table 4). In addition, there was an overall decrease in prostate cancer from its peak incidence of 217.4 per 100,000 in 1992. Nationally, incidence rates for prostate cancer decreased non-significantly by 0.6% per year between 1995 and 2004. The national incidence rates for prostate cancer stabilized from 1995-2004 after a steep increase from 1988-1992 and a subsequent decline from 1992-1995. (7). The increase in prostate cancer incidence during the late 1980s and early 1990s is attributed to changes in diagnostic methodology and increased prostate-specific antigen (PSA) screening (8).

In Massachusetts, the age-adjusted incidence rate of cancer of the bronchus and lung declined by 1.0% per year between 2001 and 2005 (Figure 5), though the decrease was not statistically significant. The incidence rate for cancer of the bronchus and lung fell from 87.7 cases per 100,000 males in 2001 to 85.8 cases per 100,000 in 2005 (Table 4). Nationally the incidence rates for cancer of the lung and bronchus declined significantly by 1.9% per year from 1995 to 2004 (7).

The incidence rate of colorectal cancer in Massachusetts males decreased from 73.1 cases per 100,000 males in 2001 to 58.9 cases per 100,000 in 2005. The estimated annual percent decrease was 5.1% and was statistically significant (Figure 5). The national data show that colorectal incidence rates decreased significantly by 1.6% per year from 1995 to 2004 for males (7).

Incidence rates of thyroid cancer and cancers of the kidney and renal pelvis increased significantly from 2001 to 2005 among males in Massachusetts (16.5% and 4.4%, respectively) (Figure 5). Nationally, thyroid cancer increased significantly by 5.4% per year and kidney cancer by 2.5% per year from 1995-2004 (7).

Females

Invasive breast cancer incidence in Massachusetts females decreased by 1.2% per year during the period 2001-2005, but this decrease was not statistically significant (Figure 6). The incidence rate decreased from 139.1 cases per 100,000 females in 2001 to 131.0 cases per 100,000 in 2005 (Table 5). Nationally, breast cancer incidence rates decreased non-significantly by 0.9% from 1995-2004 (7). The national incidence rates for female breast cancer decreased significantly between 2001 and 2004, reversing a long-term trend that began in the early 1980s (7). Rising breast cancer incidence during the 1990s has been attributed to increased mammography screening (9).

The incidence of cancer of the bronchus and lung among Massachusetts females increased significantly by 1.2% per year between 2001 and 2005. The rate changed from 62.2 cases per

100,000 females in 2001 to 65.3 cases per 100,000 in 2005 (Table 5). The national rate of cancer of the bronchus and lung among females increased non-significantly by 0.2% per year from 1995 to 2004 (7).

The incidence rate of colorectal cancer, which is the third most common cancer among Massachusetts females, decreased significantly by 4.6% per year from 2001 through 2005. The Massachusetts incidence rate was 53.4 per 100,000 in 2001 and 43.8 per 100,000 in 2005. Nationally, the rates for colorectal cancer decreased significantly by 1.3% per year from 1995-2004 (7).

The annual incidence rate for uterine cancer, the fourth most common cancer among Massachusetts females, increased over the years 2001 to 2005, with a non-statistically significant increase of 0.4% per year (Figure 6). Among Hispanics, it replaced lung cancer as the third most commonly diagnosed cancer for 2001-2005. Nationally, the rates for uterine cancer decreased non-significantly by 0.4% per year from 1995-2004 (7).

Among Massachusetts females, thyroid cancer incidence rates increased significantly by 13.4% per year between 2001 and 2005. Nationally, the rates for thyroid cancer in females increased significantly by 7.0% per year from 1995-2004 (7). These increases have been observed in the U.S. as well as globally. Although changes in diagnostic procedures, including the introduction and greater use of ultrasound and fine-needle biopsy, have likely contributed to the incidence increase, more research on the relationship between temporal trends, diagnostic procedures, and exposure to radiation and other potential risk factors is needed (7). For more detailed information on thyroid cancer in Massachusetts, please refer to the MCR publication *Data Report: Thyroid Cancer in Massachusetts* (10). This report can be accessed at www.mass.gov/dph/mcr.

In addition to the changes mentioned above, ovarian cancer decreased significantly by 3.1% per year for 2001-2005 in Massachusetts and 1.6% per year nationally for 1995-2004 (7).

Mortality

Cancer mortality for all sites combined from 2001 to 2005 decreased annually by 2.7% per year for Massachusetts males and 2.0% per year for Massachusetts females, both statistically significant decreases (Figures 5 and 6). Recent national data for all cancer sites combined show statistically significant declines in mortality rates by 1.7% per year for men and 1.0% per year for women from 1995-2004 (7).

Males

Among Massachusetts males, mortality from bronchus and lung, prostate, and colon/rectum cancers all decreased at statistically significant levels from 2001 to 2005, with a 7.3% per year decrease for prostate cancer, a 2.0% per year decrease for cancer of the bronchus and lung, and a 6.7% per year decrease for colon/rectum cancer. Deaths from cancer of the stomach also decreased significantly among males, averaging a 9.7% decrease per year. (Figure 5). Nationally, from 1995-2004, prostate cancer mortality decreased by 4.1%, colon cancer by 2.4%, lung cancer by 2.0%, and stomach cancer by 3.7% (7); all of these decreases were significant.

Females

For Massachusetts females, the bronchus and lung cancer mortality rate decreased non-significantly by 0.8% per year, while breast cancer mortality decreased significantly by 3.7% per year. The colon/rectum cancer mortality rate declined for females by 4.5% per year, which was not significant. Nationally, from 1995-2004, breast cancer and colon cancer mortality decreased significantly by 2.3% per year and 2.2% per year, respectively, while lung cancer mortality increased by 0.2% per year (7); again, all changes were significant.

It is important to note that the mortality rates for most cancers with significant increases or decreases are low (Tables 7 and 8). A trend based on a small number of deaths may not be stable over a longer period. As a result, the statistical significance of EAPC for these sites may have no practical importance.

Cancer Patterns by Race/Ethnicity

Incidence

Table 10 presents the five leading cancers (based on age-adjusted rates) by race/ethnicity and sex. Tables 11, 12, and 13 present the distribution of cases by cancer type for all races combined and by race/ethnicity groups for males, females, and all sexes for the period 2001-2005. Age-adjusted rates for all races combined and by race/ethnicity, cancer type, and sex are presented in Tables 14, 15, and 16. The tables include age-adjusted rates and their surrounding 95% confidence intervals or limits (95% CL). See the Methods section of this report for more information about confidence intervals.

Overall, of the total 176,399 newly diagnosed cancer cases during 2001-2005, 160,480 occurred in white, non-Hispanics, 6,330 in black, non-Hispanics, 2,615 in Asian, non-Hispanics, and 4,372 in Hispanics (Table 13). The remaining 2,602 cases occurred in American Indians or those whose race/ethnicity was unknown.

Males

Among males, the top three most commonly diagnosed cancers were the same for each male race/ethnicity category. These top three cancers were prostate cancer, cancer of the bronchus and lung, and cancer of the colon/rectum. Cancer of the urinary bladder ranked fourth for all Massachusetts male race/ethnicity categories except Asian, non-Hispanics. The fourth most commonly diagnosed cancer for Asian, non-Hispanic males was cancer of the liver and intrahepatic bile ducts. The fifth most common cancer for Hispanic males was stomach cancer, for black, non-Hispanic males kidney cancer, for white, non-Hispanic males melanoma, and for Asian, non-Hispanic males non-Hodgkin lymphoma (Table 10).

From 2001 to 2005, black, non-Hispanic males had the highest incidence rate of all cancer types combined (628.0 per 100,000). This rate was significantly higher than the rates for other race/ethnicity groups except white, non-Hispanics ($p \leq 0.05$). Asian, non-Hispanic males had the

lowest incidence rate of all sites combined (320.9 per 100,000) ($p \leq 0.05$). Black, non-Hispanic males had the highest rate of prostate cancer (259.8 per 100,000), which was significantly higher than the prostate cancer rates for other race/ethnicity groups. Nationally for the years 2000-2004, prostate cancer incidence rates were nearly doubled in black, non-Hispanic males compared with white, non-Hispanic males (293.3 vs. 151.1) (7). Asian, non-Hispanic men in Massachusetts had a significantly higher rate of liver cancer compared with the other groups. Nationally, the rate for liver cancer among Asians from 2000-2004 was nearly triple that of white, non-Hispanics (21.1 vs. 7.5) (7).

Females

Based on age-adjusted rates, breast cancer was the most commonly diagnosed cancer for each female race/ethnicity category. Cancer of the bronchus and lung was the second leading cancer for white, non-Hispanic and black, non-Hispanic females, but the third leading cancer for Asian, non-Hispanic and Hispanic females. Cancer of the colon/rectum was the third leading cancer for white, non-Hispanic and black, non-Hispanic females, but the second leading cancer for Asian, non-Hispanic and Hispanic females. Cancer of the corpus uteri (uterus) was the fourth leading cancer site for white, non-Hispanics and black, non-Hispanics, the third for Hispanics, and the fifth for Asian, non-Hispanics. Thyroid cancer was the fourth most common cancer for Asian, non-Hispanic females and the fifth for black, non-Hispanics. Non-Hodgkin lymphoma was the fifth most frequent cancer in Hispanic females. Melanoma was the fifth most commonly diagnosed cancer in white, non-Hispanic females (Table 10).

During 2001-2005, white, non-Hispanic females had the highest incidence rate of all cancer types combined (465.5 per 100,000) among all race/ethnicity groups. This rate was significantly higher than the rates for the other race/ethnicity groups ($p \leq 0.05$). Asian, non-Hispanic females had the lowest incidence rate of all sites combined (273.1 per 100,000) ($p \leq 0.05$). The invasive breast and lung cancer incidence rates were statistically significantly higher for white, non-

Hispanic females, 137.7 and 65.9 cases per 100,000, respectively, than the other race/ethnicity groups. The breast cancer *in situ* incidence rate was also statistically significantly higher among white, non-Hispanic females (48.1 cases per 100,000) than the other race/ethnicity groups (Table 15).

Mortality

Table 17 presents the five leading causes of cancer mortality by race/ethnicity and sex. The number of cancer-related deaths, age-adjusted mortality rates, and 95% confidence intervals by cancer type, race/ethnicity, and sex are presented in Tables 18 through 23.

Of the 67,638 deaths from cancer between 2001 and 2005, 63,095 occurred among white, non-Hispanics, 2,645 among black, non-Hispanics, 807 among Asian, non-Hispanics, and 1,021 among Hispanics (Table 20). Overall death rates were significantly higher in the black, non-Hispanic population as compared with all other race/ethnicity groups, which is consistent with national data (7).

Males

For Massachusetts males, cancer of the bronchus and lung was the most common cause of cancer death among all male race/ethnicities based on age-adjusted rates. Cancer of the prostate was the second leading cause of cancer death among white, non-Hispanic, black, non-Hispanic, and Hispanic males. Cancer of the liver and intrahepatic bile ducts was the second leading cause of cancer death for Asian, non-Hispanic males. Cancer of the colon/rectum was the third most common cause of cancer death in all male race/ethnicity groups (Table 17).

For all types of cancer combined for 2001-2005, black, non-Hispanics had the highest age-adjusted mortality rate among males, with 285.0 deaths per 100,000 males. This was significantly higher than the rates for the three other racial/ethnic groups. Black, non-Hispanics had significantly higher mortality rates of the following cancers as compared with white, non-Hispanics: liver cancer

(12.8 per 100,000 vs. 7.1 per 100,000), multiple myeloma (7.4 per 100,000 vs. 4.4 per 100,000), prostate cancer (51.8 per 100,000 vs. 25.3 per 100,000), and stomach cancer (13.9 per 100,000 vs. 5.8 per 100,000). Mortality data were limited for both Asian, non-Hispanics and Hispanics due to small numbers, but Asian, non-Hispanic males had the highest mortality rate of cancer of the liver and intrahepatic bile ducts, 18.1 per 100,000 (Table 21). This rate was significantly higher than that of white, non-Hispanics, but not those of the other two racial/ethnic groups.

Females

Cancers of the bronchus and lung, breast, and colon/rectum were the three most common causes of cancer death for all Massachusetts female race/ethnicities, except Asian, non-Hispanics, although the ranking of those cancers differed among the race/ethnicity categories. Pancreatic cancer was the third most common cause of cancer death among Asian, non-Hispanics. Cancer of the bronchus and lung was the most common cause of cancer death for all female race/ethnicities in Massachusetts, except Hispanics. Breast cancer was the most common cause of death for Hispanic females. (Table 17).

For all types of cancer combined for 2001-2005, black, non-Hispanic females had the highest age-adjusted mortality rate among females with 176.3 deaths per 100,000 females, though this rate was not statistically significantly different than the rate for white, non-Hispanic females. White, non-Hispanic females had significantly elevated mortality rates of lung cancer (46.5 per 100,000) compared with the other racial/ethnic groups. Breast cancer mortality rates were comparable between black, non-Hispanic and white, non-Hispanic females, but these groups had significantly elevated rates when compared with Asian, non-Hispanics and Hispanics. The mortality rate from colon/rectum cancer was statistically significantly higher in white, non-Hispanic and black, non-Hispanic females compared with the other two racial/ethnic groups (Table 22).

Massachusetts Compared with the U.S.

Age-adjusted incidence and mortality rates in Massachusetts are compared with national rates in Table 24. The national incidence and mortality data are from the North American Association of Central Cancer Registries (NAACCR). It is important to interpret these data cautiously. Cancer rates may be affected by differences in the racial/ethnic composition of the population, differences in population estimates, the prevalence of cancer risk factors, and cancer screening rates. Cancer rates in Massachusetts and NAACCR areas or the United States may differ because of these variations. Massachusetts incidence and mortality data cover the period 2001-2005, while national incidence and mortality data cover the period 2000-2004 (the most recent data available at the time this report was produced).

Incidence

The NAACCR incidence data represent about 77% of the U.S. population, including 78% of whites, 69% of blacks, 87% of Asian/Pacific Islanders, and 76% of Hispanics/Latinos (2). For all cancer sites combined and for both sexes, the age-adjusted incidence rates were higher in Massachusetts than in the NAACCR areas. The incidence rates in Massachusetts were slightly higher than the incidence rates in the NAACCR areas for leading cancers: female bronchus and lung, male and female colon/rectum, female breast, prostate, and uterine cancer. Lung cancer incidence among males was lower in Massachusetts than in the NAACCR areas (85.9 versus 89.0 per 100,000 males). Female breast *in situ* cancer incidence was higher in Massachusetts than in NAACCR registries (46.6 versus 29.1 per 100,000 females). The incidence rate of cervical cancer in Massachusetts was lower than the incidence rate in the NAACCR registries (6.3 per 100,000 versus 8.8 per 100,000) (Table 24).

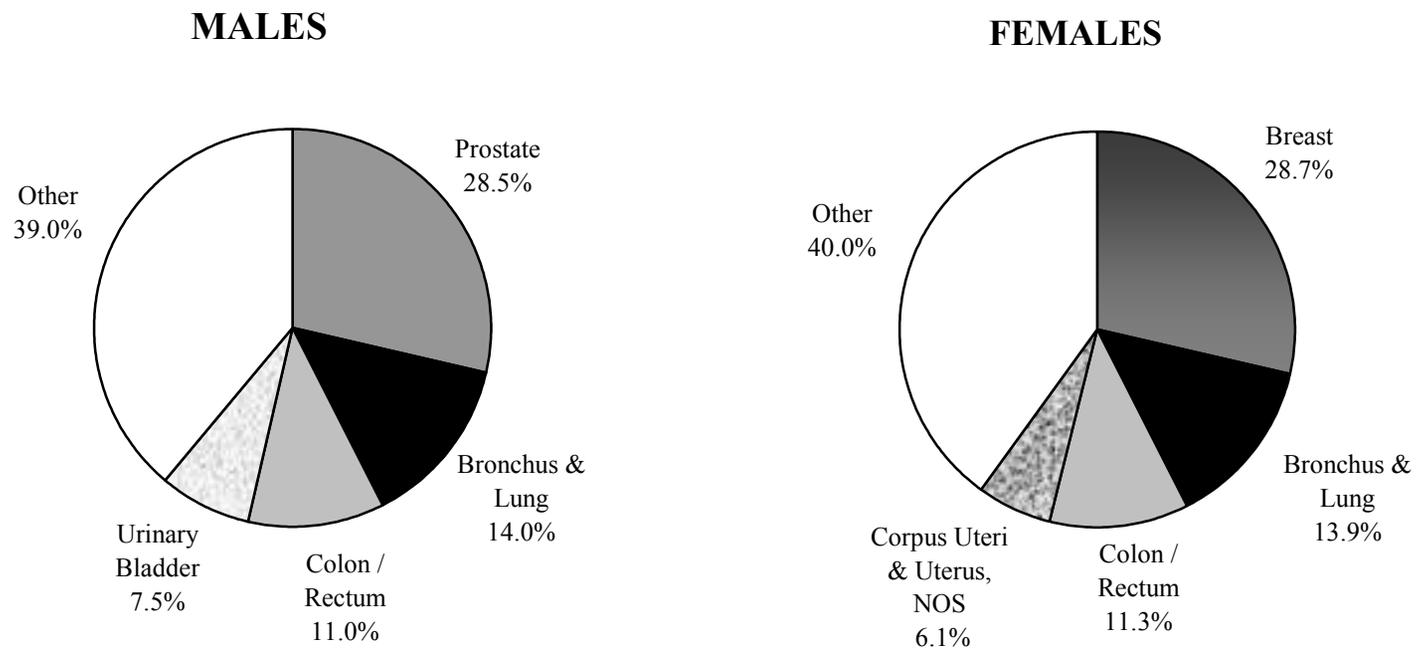
Mortality

The national mortality data cover the entire United States population. For males, the age-adjusted mortality rate in Massachusetts was slightly lower than the age-adjusted mortality rate

in the United States for all cancer sites combined, 234.7 per 100,000 versus 238.7. Lung cancer and prostate cancer rates were lower for Massachusetts compared with the U.S. and bladder cancer rates were higher. For females, the age-adjusted mortality rate for all cancer sites combined in Massachusetts was slightly higher than the national rate (166.1 per 100,000 versus 162.2, respectively) (Table 24). Breast cancer rates were lower in Massachusetts compared with the U.S. and uterine and bladder cancer rates were higher.

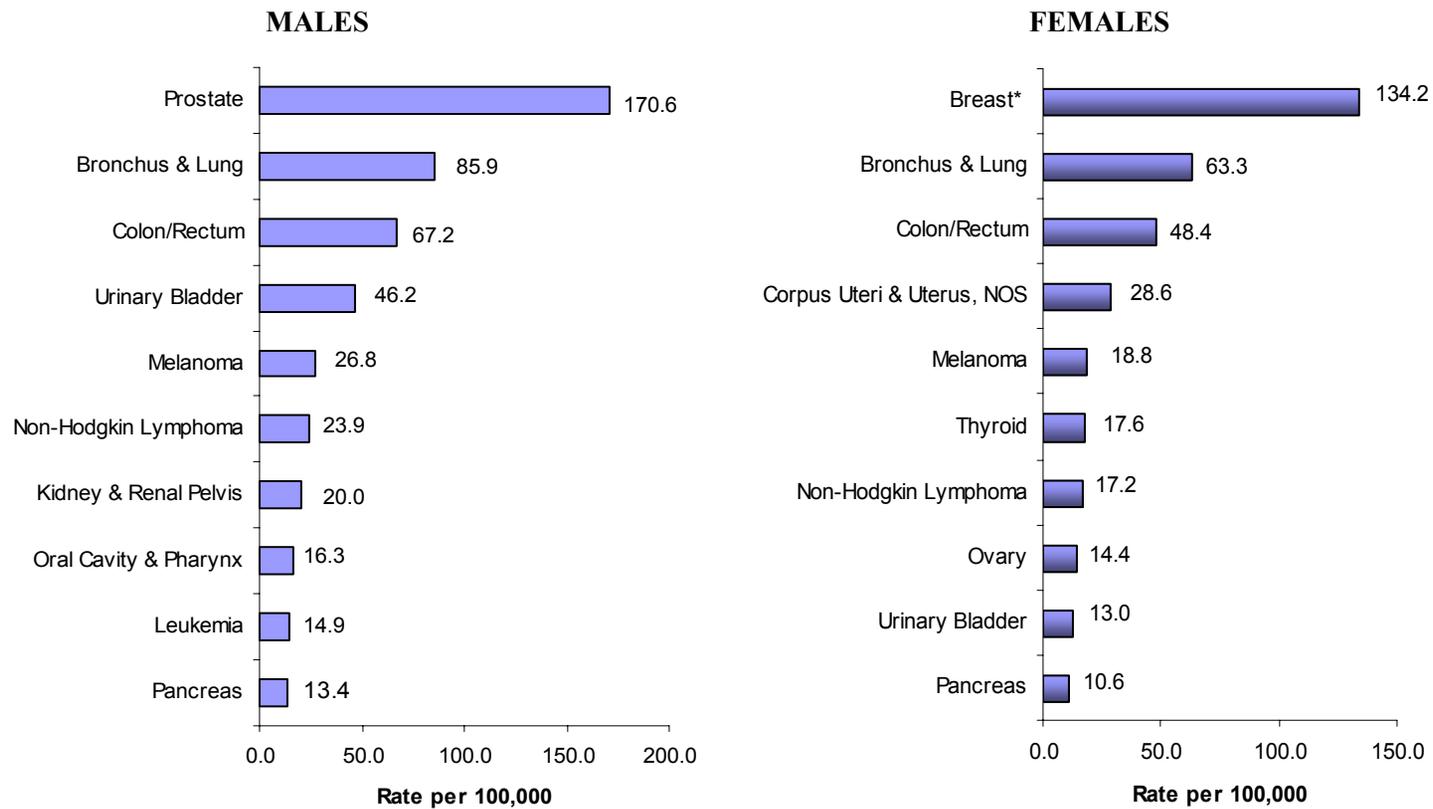
FIGURES & TABLES

Figure 1.
CANCER INCIDENCE CASES BY CANCER TYPE AND SEX
Massachusetts, 2001-2005



Source: Massachusetts Cancer Registry

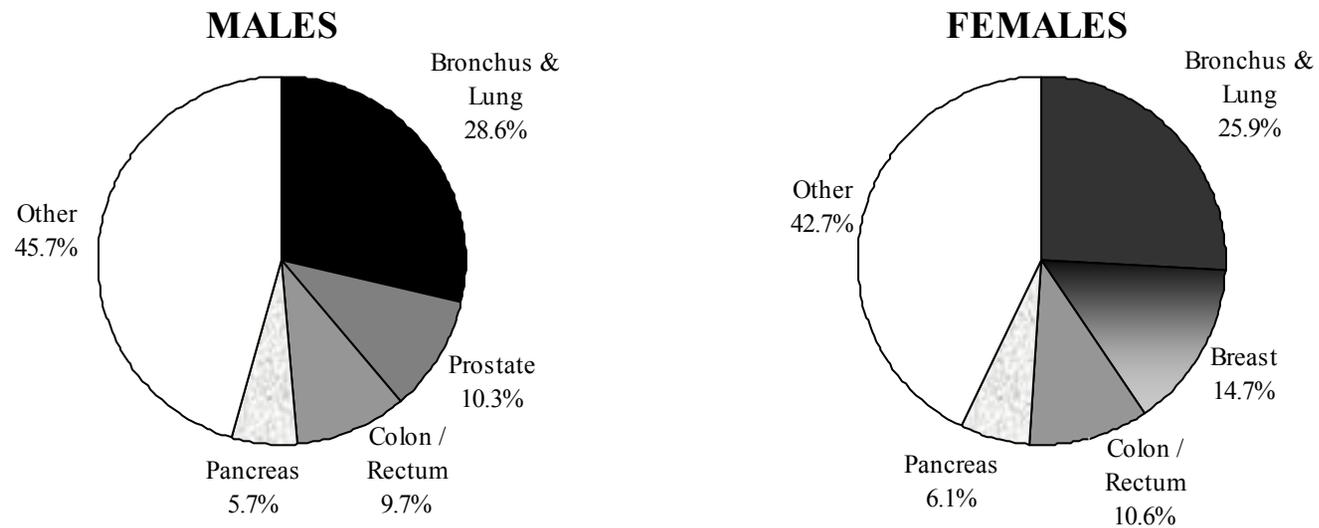
Figure 2.
INCIDENCE RATES¹ FOR TEN LEADING CANCER TYPES BY SEX
Massachusetts, 2001-2005



¹ Rates are age-adjusted to the 2000 U.S. Standard Population. * Breast cancer rates do not include *in situ* cases.

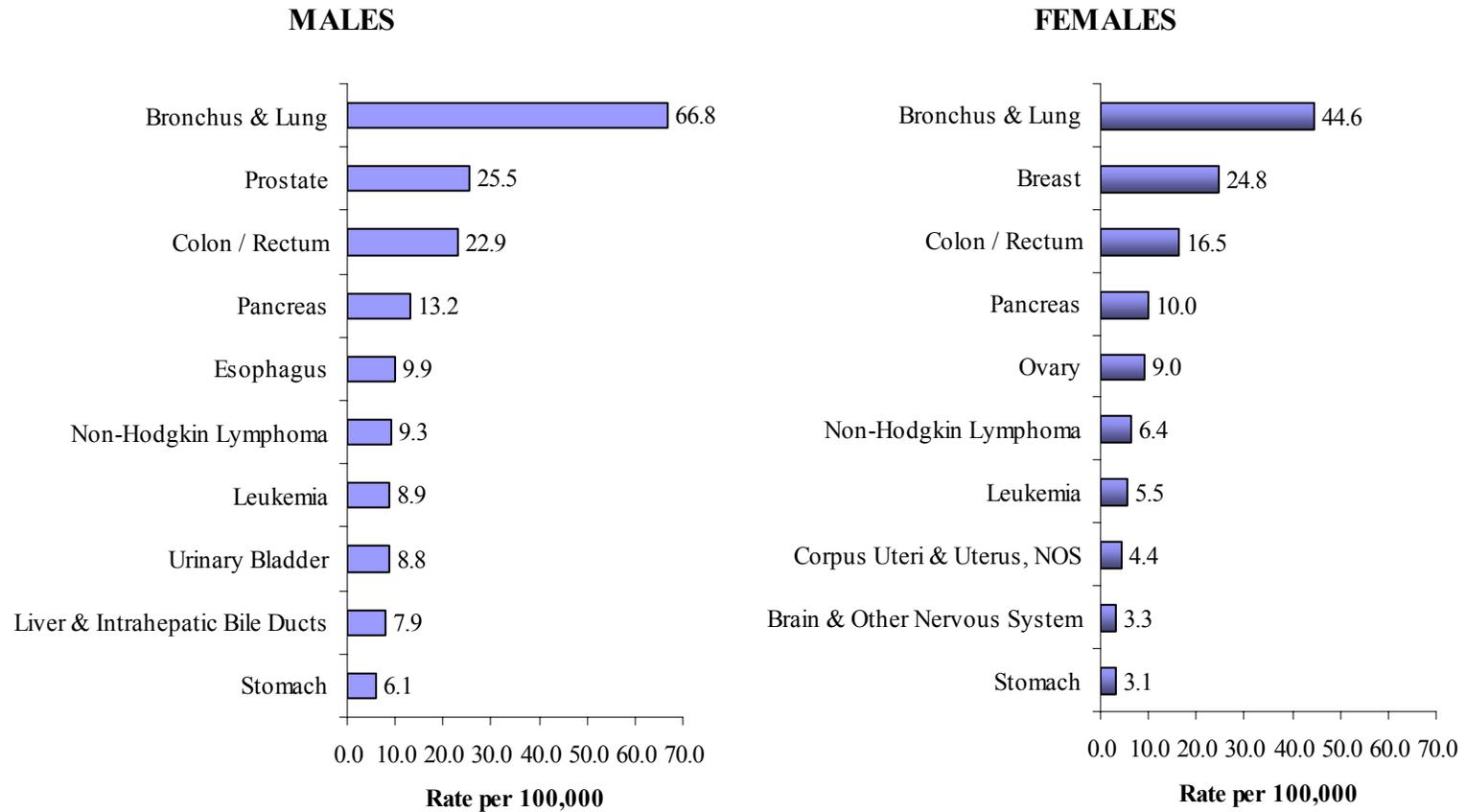
Source: Massachusetts Cancer Registry

Figure 3.
CANCER DEATHS BY CANCER TYPE AND SEX
Massachusetts, 2001-2005



Source: Massachusetts Cancer Registry

Figure 4.
MORTALITY RATES¹ FOR TEN LEADING CANCER TYPES BY SEX
Massachusetts, 2001-2005



¹ Rates are age-adjusted to the 2000 U.S. Standard Population. * NOS – Not Otherwise Specified.

Source: Massachusetts Cancer Registry

Table 1.
AGE-SPECIFIC INCIDENCE RATES¹ AND MEDIAN AGES FOR SELECTED CANCER SITES
Massachusetts, 2001-2005
MALES

Cancer Site / Type	Age Groups																		Median
	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+	Age
All Sites	21.3	12.3	14.5	23.9	34.0	54.4	70.0	100.8	164.8	308.6	630.0	1104.3	1747.0	2526.1	3133.5	3337.0	3344.3	2966.6	68
Brain & Other Nervous System	4.6	4.3	2.9	3.0	1.6	3.1	3.1	5.0	6.2	9.0	9.8	16.1	16.1	19.8	30.2	31.6	31.4	20.3	56
Breast	-- ³	--	--	--	--	--	--	0.1	0.3	0.3	1.5	2.1	4.0	7.1	5.1	8.0	6.3	9.9	69
Breast <i>in situ</i>²	--	--	--	0.2	--	--	--	0.1	0.1	0.2	0.2	0.3	0.3	0.8	1.9	0.3	1.2	--	67
Bronchus & Lung	--	--	--	0.2	0.1	1.1	1.7	4.4	14.6	29.3	64.7	131.7	233.6	387.7	534.3	582.6	572.3	407.0	71
Colon / Rectum	--	--	0.1	0.4	0.7	2.0	4.6	8.6	17.0	32.7	72.6	106.0	163.2	255.8	341.2	410.8	483.9	442.4	70
Esophagus	--	--	--	--	--	0.2	0.4	0.7	2.8	6.6	13.7	25.1	35.5	44.7	61.1	61.7	69.6	53.0	68
Hodgkin Lymphoma	0.1	0.8	1.8	3.8	5.1	6.3	3.7	5.0	4.1	3.9	2.7	3.6	4.1	4.8	7.3	5.6	7.9	5.2	39
Kidney & Renal Pelvis	1.5	0.7	--	0.1	0.2	0.7	2.9	5.2	10.6	16.1	30.7	38.7	64.8	82.9	84.7	95.2	95.9	62.9	64
Larynx	--	--	--	--	--	--	0.3	0.7	1.7	3.7	8.1	18.6	24.4	33.8	34.6	34.3	33.4	29.6	66
Leukemia	7.7	3.1	3.7	3.3	2.8	3.5	3.5	3.3	5.4	8.5	12.0	21.5	32.2	41.6	63.4	78.3	93.2	90.4	66
Liver & Intrahepatic Bile Ducts	1.1	--	--	--	0.3	0.2	0.6	1.3	2.7	10.2	20.0	20.8	26.4	35.7	43.8	45.0	38.9	33.3	64
Melanoma of Skin	--	0.1	0.4	1.6	2.9	5.2	10.1	13.8	17.6	26.1	34.4	46.2	63.8	87.7	109.3	115.6	132.9	139.3	63
Multiple Myeloma	--	--	--	--	--	0.4	0.4	1.0	2.1	3.7	7.4	11.8	18.0	29.0	35.3	41.3	46.0	49.4	69
Non-Hodgkin Lymphoma	0.3	1.3	2.1	3.0	2.3	4.8	7.0	9.6	13.5	18.9	26.2	40.5	53.5	72.5	102.0	123.1	134.0	137.8	66
Oral Cavity & Pharynx	0.1	0.1	0.3	0.3	0.7	1.2	1.2	2.3	8.6	19.7	30.7	51.7	55.3	56.4	55.7	59.8	59.7	48.3	60
Pancreas	--	--	--	--	0.1	--	0.3	1.3	2.7	5.7	12.4	22.3	38.2	49.7	71.9	78.0	103.4	88.9	70
Prostate	--	--	--	--	--	0.1	--	0.7	11.0	52.0	191.4	402.6	665.2	957.6	1017.4	889.6	616.7	543.2	67
Stomach	--	--	--	--	0.3	0.6	1.2	1.2	3.0	5.9	9.2	13.2	26.6	38.8	55.0	74.0	94.7	88.4	72
Testis	0.4	--	0.2	3.3	9.9	14.2	15.2	15.0	11.0	8.5	4.5	2.7	1.8	1.9	1.6	1.9	--	1.0	35
Thyroid	0.1	--	0.4	1.0	2.1	3.2	5.9	7.0	7.6	9.1	10.5	11.8	14.8	15.0	14.3	13.7	8.3	3.6	52
Urinary Bladder	--	--	--	0.1	0.2	0.7	1.6	3.2	6.2	16.1	29.9	59.0	107.5	171.6	271.7	310.5	381.3	353.0	72
Other Sites	5.5	1.9	2.6	3.9	4.8	7.2	6.1	11.5	16.1	22.4	37.6	58.4	98.1	132.0	193.3	276.4	334.5	359.7	70

¹ per 100,000 ² Breast *in situ* is excluded from "All Sites." ³ Dashed-out age groups had no incident cases.

Source: Massachusetts Cancer Registry

Table 2.
AGE-SPECIFIC INCIDENCE RATES¹ AND MEDIAN AGES FOR SELECTED CANCER SITES
Massachusetts, 2001-2005
FEMALES

Cancer Site / Type	Age Groups																		Median
	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+	Age
All Sites	23.1	11.1	11.8	21.8	37.3	64.8	115.2	185.4	296.6	476.1	641.8	900.5	1195.5	1574.7	1818.3	2041.0	2140.4	1846.2	67
Brain & Other Nervous System	5.3	3.2	2.5	2.0	1.7	2.9	3.3	2.9	4.5	6.5	6.6	10.7	12.4	16.5	14.6	18.2	19.7	15.5	58
Breast	-- ³	--	0.1	0.1	1.4	5.7	27.4	68.6	126.2	213.5	248.2	319.7	384.8	428.8	436.3	471.5	439.7	346.9	61
Breast <i>in situ</i>²	--	--	--	0.1	1.1	4.7	17.9	64.2	104.8	115.4	125.8	136.9	130.2	118.3	109.4	83.6	37.9	--	56
Bronchus & Lung	0.1	0.1	--	0.3	0.4	0.8	1.8	5.4	15.3	33.4	59.2	116.4	194.2	302.0	374.2	382.0	349.5	212.3	71
Cervix Uteri	--	--	--	0.2	1.3	4.5	8.0	9.8	11.9	8.8	11.3	10.5	9.2	12.2	11.2	10.2	10.2	7.3	49
Colon / Rectum	--	--	0.1	0.1	0.4	1.8	3.9	8.6	13.5	28.6	49.0	70.6	104.9	168.0	225.0	298.3	367.0	390.2	75
Corpus Uteri & Uterus, NOS	--	--	--	0.2	0.3	1.2	3.5	7.4	14.4	30.8	59.7	90.9	112.9	110.8	98.2	86.1	88.3	56.2	62
Esophagus	--	--	--	--	--	--	0.1	0.3	0.4	0.9	2.0	4.0	5.4	12.6	13.7	16.6	17.2	15.7	74
Hodgkin Lymphoma	--	0.1	1.4	4.1	5.9	4.4	5.2	3.2	3.0	1.3	1.5	2.3	2.1	1.8	3.3	4.1	4.5	2.2	35
Kidney & Renal Pelvis	1.7	0.6	0.3	0.2	0.5	0.7	1.2	2.5	5.1	8.8	14.3	21.4	26.5	40.6	46.2	50.2	51.2	33.2	68
Larynx	--	--	0.1	--	--	0.1	0.1	0.2	0.6	1.7	2.5	3.4	5.9	7.2	9.8	5.4	5.2	3.9	66
Leukemia	8.3	3.1	2.2	2.3	1.2	2.4	2.6	4.2	4.5	6.7	8.0	9.7	18.9	23.7	35.6	46.5	51.0	55.8	71
Liver & Intrahepatic Bile Ducts	0.4	0.1	--	--	--	0.6	0.3	0.1	0.6	1.7	3.1	5.1	5.7	10.8	11.7	12.5	18.6	17.9	73
Melanoma of Skin	0.1	0.2	0.3	2.1	5.8	12.4	16.4	18.5	20.5	27.2	29.4	31.7	38.6	45.5	49.8	55.6	49.4	48.2	56
Multiple Myeloma	--	--	--	--	--	--	0.1	0.1	0.9	1.8	4.4	7.8	9.4	13.3	22.0	26.8	28.1	20.7	74
Non-Hodgkin Lymphoma	0.4	0.5	0.9	0.9	2.3	3.3	4.8	5.4	8.2	13.3	16.8	29.4	43.4	59.8	69.2	93.8	111.2	81.6	71
Oral Cavity & Pharynx	--	0.2	0.2	0.7	0.7	1.6	1.2	2.0	3.5	6.6	11.0	11.9	19.0	21.4	28.9	27.5	23.3	26.9	66
Ovary	0.2	0.3	0.6	1.2	1.9	1.4	2.9	5.3	9.7	19.1	25.6	33.7	40.8	44.6	50.4	55.1	58.0	44.1	63
Pancreas	--	--	0.1	0.1	--	0.3	--	1.2	2.6	4.5	9.3	15.1	24.2	41.7	55.1	72.9	73.4	80.1	75
Stomach	--	0.1	--	--	0.1	0.4	0.9	1.2	1.8	2.8	3.4	6.2	8.4	14.9	22.9	29.8	43.5	51.7	77
Thyroid	0.1	0.1	0.7	4.1	10.0	15.6	24.5	28.2	30.0	30.0	30.9	27.1	26.8	29.5	22.2	17.7	15.2	8.2	46
Urinary Bladder	--	--	--	0.1	0.2	0.3	0.5	2.1	3.6	4.8	10.2	20.9	31.9	56.4	74.8	78.9	82.2	81.8	73
Other Sites	6.5	2.5	2.4	3.2	3.2	4.4	6.5	8.3	15.6	23.2	35.3	52.2	70.1	112.6	143.2	181.2	234.0	245.7	73

¹per 100,000 ² Breast *in situ* is excluded from "All Sites." ³ Dashed-out age groups had no incident cases.

Source: Massachusetts Cancer Registry

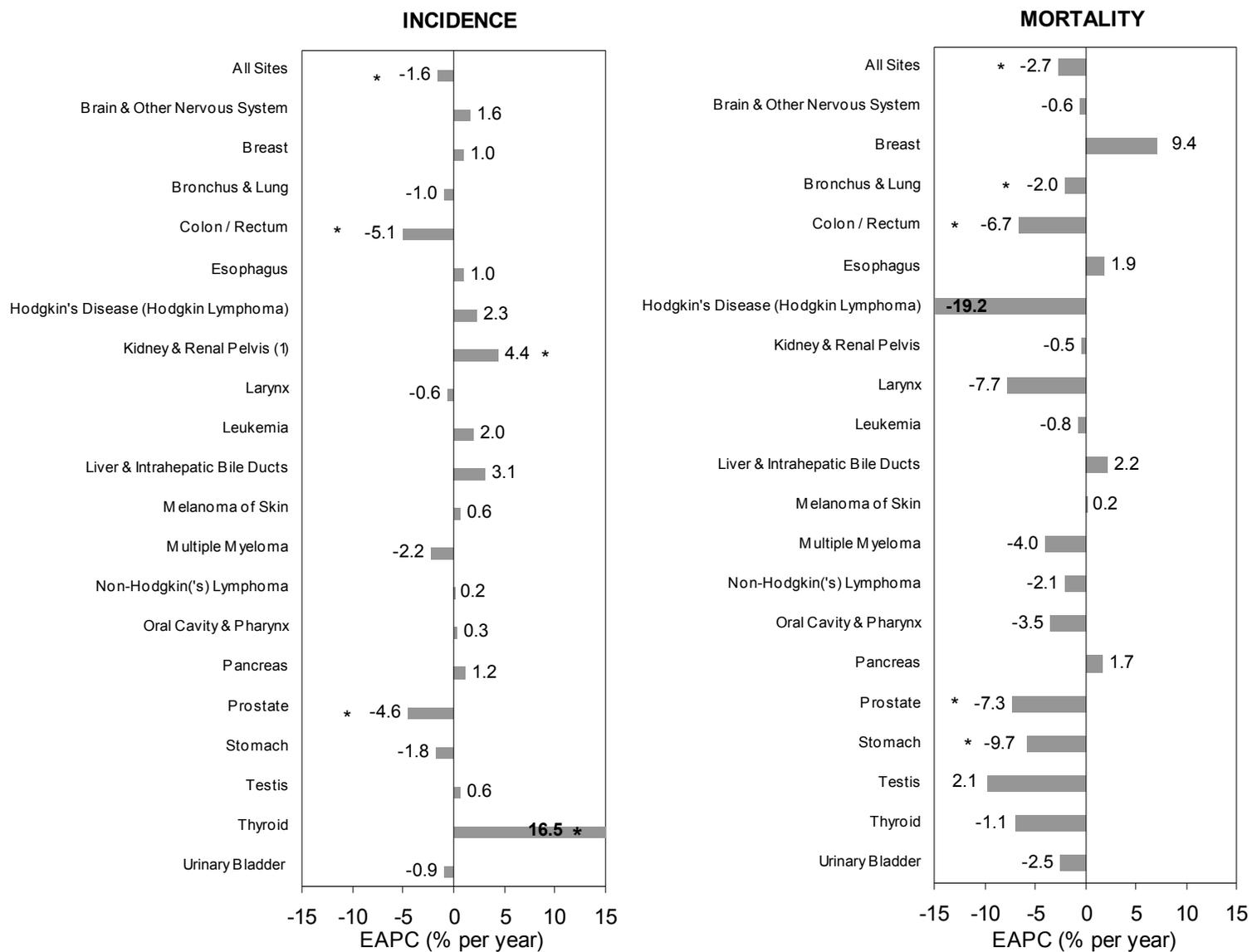
Table 3.
AGE-SPECIFIC INCIDENCE RATES¹ AND MEDIAN AGES FOR SELECTED CANCER SITES
Massachusetts, 2001-2005
TOTAL

Cancer Site / Type	Age Groups																		Median
	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+	Age
All Sites	22.2	11.7	13.2	22.9	35.7	59.8	92.9	143.7	231.7	394.4	636.2	998.4	1456.8	2014.7	2391.1	2571.9	2580.8	2174.5	67
Brain & Other Nervous System	4.9	3.8	2.7	2.5	1.6	3.0	3.2	3.9	5.3	7.7	8.1	13.3	14.2	18.1	21.4	23.7	24.0	16.9	57
Breast	-- ³	--	0.0	0.0	0.7	2.9	13.9	34.8	64.3	109.5	128.7	167.2	204.5	233.8	248.5	281.6	281.2	248.3	61
Breast <i>in situ</i> ²	--	--	--	0.1	0.0	0.6	2.4	9.1	32.6	53.8	59.6	65.6	72.3	70.4	67.7	64.7	53.5	26.8	56
Bronchus & Lung	0.1	0.1	--	0.2	0.2	0.9	1.8	4.9	15.0	31.4	61.9	123.8	212.8	341.7	443.9	464.2	431.1	269.4	71
Cervix Uteri	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	49
Colon / Rectum	--	--	0.1	0.2	0.6	1.9	4.3	8.6	15.2	30.6	60.5	87.6	132.5	208.6	275.6	344.3	409.7	405.5	72
Corpus Uteri & Uterus, NOS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	62
Esophagus	--	--	--	--	--	0.1	0.3	0.5	1.6	3.6	7.8	14.1	19.7	27.4	34.4	35.0	36.4	26.6	69
Hodgkin Lymphoma	0.1	0.5	1.6	3.9	5.5	5.3	4.5	4.1	3.6	2.6	2.1	2.9	3.1	3.2	5.0	4.7	5.7	3.0	38
Kidney & Renal Pelvis	1.6	0.7	0.1	0.1	0.3	0.7	2.0	3.8	7.8	12.3	22.3	29.7	44.6	60.2	63.0	68.7	67.5	41.9	66
Larynx	--	--	0.0	--	--	0.0	0.2	0.5	1.1	2.7	5.2	10.7	14.6	19.5	20.6	17.2	15.5	11.4	66
Leukemia	8.0	3.1	3.0	2.8	2.0	2.9	3.0	3.7	4.9	7.6	10.0	15.4	25.2	32.0	47.7	59.5	66.4	65.9	68
Liver & Intrahepatic Bile Ducts	0.8	0.1	--	--	0.1	0.4	0.5	0.7	1.6	5.9	11.3	12.7	15.5	22.3	25.7	25.8	26.0	22.4	66
Melanoma of Skin	0.1	0.2	0.3	1.8	4.4	8.9	13.3	16.2	19.1	26.7	31.8	38.7	50.6	65.0	75.7	80.2	79.9	74.9	60
Multiple Myeloma	--	--	--	--	--	0.2	0.3	0.5	1.5	2.7	5.8	9.7	13.5	20.6	27.8	32.7	34.6	29.1	71
Non-Hodgkin Lymphoma	0.4	0.9	1.5	2.0	2.3	4.1	5.9	7.5	10.8	16.0	21.3	34.7	48.2	65.7	83.5	105.8	119.7	98.1	68
Oral Cavity & Pharynx	0.1	0.2	0.2	0.5	0.7	1.4	1.2	2.1	6.0	13.0	20.6	31.0	36.2	37.6	40.6	40.8	36.6	33.2	62
Ovary	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	63
Pancreas	--	--	0.0	0.0	0.0	0.1	0.2	1.2	2.6	5.1	10.8	18.5	30.8	45.4	62.4	75.0	84.4	82.7	72
Prostate	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	67
Stomach	--	0.1	--	--	0.2	0.5	1.1	1.2	2.4	4.3	6.2	9.5	17.0	26.0	36.9	47.9	62.2	62.4	74
Testis	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	35
Thyroid	0.1	0.1	0.5	2.5	6.0	9.5	15.3	17.7	19.0	19.8	21.0	19.8	21.1	22.8	18.8	16.0	12.6	6.9	47
Urinary Bladder	--	--	--	0.1	0.2	0.5	1.0	2.6	4.9	10.3	19.8	39.2	67.8	109.7	160.5	173.8	191.6	161.3	73
Other Sites	6.0	2.2	2.5	3.6	4.0	5.8	6.3	9.9	15.8	22.8	36.4	55.2	83.4	121.6	165.0	220.2	270.7	279.1	72

¹per 100,000 ² Breast *in situ* is excluded from "All Sites." ³ Dashed-out age groups had no incident cases or are found only in one sex.

Source: Massachusetts Cancer Registry

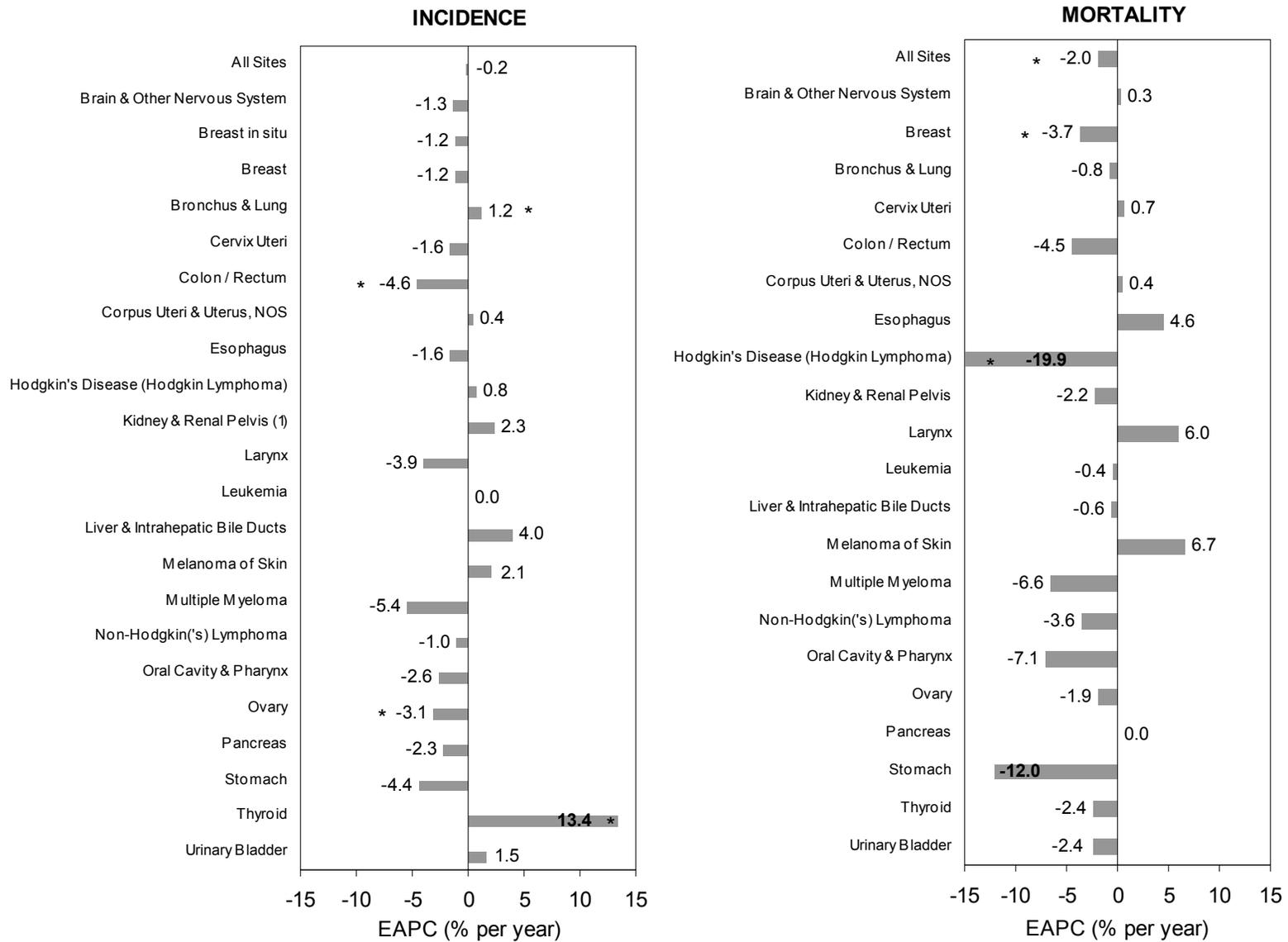
Figure 5.
ESTIMATED ANNUAL PERCENT CHANGE (EAPC) IN AGE-ADJUSTED CANCER RATES AMONG MALES
Massachusetts, 2001-2005



* EAPC is statistically significant (p<0.05). Values appearing directly on a bar have been bolded for ease of reading only.

Source: Massachusetts Cancer Registry

Figure 6.
ESTIMATED ANNUAL PERCENT CHANGE (EAPC) IN AGE-ADJUSTED CANCER RATES AMONG FEMALES
Massachusetts, 2001-2005



* EAPC is statistically significant (p<0.05). Values appearing directly on a bar have been bolded for ease of reading only.

Source: Massachusetts Cancer Registry

Table 4.
ANNUAL AGE-ADJUSTED¹ INCIDENCE RATES² FOR SELECTED CANCER SITES
Massachusetts, 2001-2005
MALES

Cancer Site / Type	2001	2002	2003	2004	2005
All Sites (Excluding Breast <i>in situ</i>)	620.7	622.8	594.1	586.2	589.8
Brain & Other Nervous System	8.5	8.1	8.3	9.1	8.7
Breast	0.8	1.7	1.7	1.2	1.0
Breast <i>in situ</i>³	0.2	0.1	0.2	0.2	0.2
Bronchus & Lung	87.7	88.6	83.9	83.6	85.8
Colon / Rectum	73.1	71.0	68.5	65.0	58.9
Esophagus	10.4	12.2	11.4	12.5	10.8
Hodgkin Lymphoma	3.7	3.7	3.6	3.8	4.1
Kidney & Renal Pelvis	18.6	19.0	19.6	20.0	22.5
Larynx	6.8	7.3	7.4	7.1	6.7
Leukemia	14.4	14.2	15.0	15.9	15.0
Liver & Intrahepatic Bile Ducts	9.2	9.4	8.8	9.8	10.5
Melanoma of Skin	26.9	27.0	25.4	27.0	27.7
Multiple Myeloma	7.5	7.4	6.8	7.2	6.8
Non-Hodgkin Lymphoma	24.1	23.8	23.7	23.4	24.6
Oral Cavity & Pharynx	15.4	17.0	17.0	15.8	16.2
Pancreas	12.8	13.7	13.7	12.9	14.0
Prostate	190.4	181.2	164.0	156.6	161.6
Stomach	12.3	10.7	10.9	12.0	10.6
Testis	6.0	6.9	6.2	5.7	6.8
Thyroid	4.1	5.5	6.1	6.2	8.3
Urinary Bladder	45.5	48.1	47.6	45.1	44.8

¹ Rates are age-adjusted to the 2000 U.S. Standard Population

² per 100,000 males

³ Breast *in situ* is excluded from "All Sites."

Source: Massachusetts Cancer Registry

Table 5.
ANNUAL AGE-ADJUSTED¹ INCIDENCE RATES² FOR SELECTED CANCER SITES
Massachusetts, 2001-2005
FEMALES

Cancer Site / Type	2001	2002	2003	2004	2005
All Sites (Excluding Breast <i>in situ</i>)	456.7	463.1	454.5	458.6	454.0
Brain & Other Nervous System	6.1	6.1	6.7	5.4	6.1
Breast	139.1	136.0	131.0	134.1	131.0
Breast <i>in situ</i>³	46.8	47.9	47.9	44.7	45.6
Bronchus & Lung	62.2	62.4	62.7	64.0	65.3
Cervix Uteri	6.5	6.8	5.3	7.0	5.9
Colon / Rectum	53.4	50.2	48.2	46.6	43.8
Corpus Uteri & Uterus, NOS	26.6	30.8	28.5	29.3	27.8
Esophagus	2.6	2.7	2.5	2.3	2.6
Hodgkin Lymphoma	2.7	2.4	3.1	2.8	2.6
Kidney & Renal Pelvis	9.6	10.4	10.1	9.8	11.1
Larynx	1.7	1.4	2.0	1.6	1.3
Leukemia	9.0	9.5	10.1	9.5	9.0
Liver & Intrahepatic Bile Ducts	2.3	2.6	2.9	2.6	2.8
Melanoma of Skin	17.5	19.9	17.5	19.7	19.5
Multiple Myeloma	4.1	4.3	4.2	3.6	3.4
Non-Hodgkin Lymphoma	17.0	18.0	17.0	17.2	16.5
Oral Cavity & Pharynx	6.8	6.5	6.7	6.4	6.0
Ovary	15.4	14.6	14.6	13.9	13.5
Pancreas	10.8	11.0	11.0	10.2	10.0
Stomach	5.3	5.2	5.4	4.8	4.4
Thyroid	13.1	15.2	18.5	18.5	22.3
Urinary Bladder	12.6	12.8	12.7	13.6	13.2

¹ Rates are age-adjusted to the 2000 U.S. Standard Population.

² per 100,000 females

³ Breast *in situ* is excluded from 'All Sites.'

Source: Massachusetts Cancer Registry

Table 6.
ANNUAL AGE-ADJUSTED¹ INCIDENCE RATES² FOR SELECTED CANCER SITES
Massachusetts, 2001-2005
TOTAL

Cancer Site / Type	2001	2002	2003	2004	2005
All Sites (Excluding Breast <i>in situ</i>)	522.7	527.1	510.4	510.1	509.7
Brain & Other Nervous System	7.1	7.0	7.4	7.1	7.2
Breast	76.4	75.2	72.0	73.3	71.7
Breast <i>in situ</i>³	25.1	25.6	25.5	23.8	24.4
Bronchus & Lung	72.6	72.9	71.3	71.9	73.7
Cervix Uteri	— ⁴	—	—	—	—
Colon / Rectum	61.7	59.3	56.9	54.9	50.5
Corpus Uteri & Uterus, NOS	—	—	—	—	—
Esophagus	6.0	6.8	6.4	6.8	6.3
Hodgkin Lymphoma	3.2	3.0	3.3	3.2	3.3
Kidney & Renal Pelvis	13.7	14.2	14.3	14.3	16.2
Larynx	3.9	4.0	4.4	4.0	3.7
Leukemia	11.3	11.6	12.1	12.3	11.6
Liver & Intrahepatic Bile Ducts	5.4	5.6	5.6	5.9	6.3
Melanoma of Skin	21.3	22.5	20.7	22.7	22.6
Multiple Myeloma	5.5	5.6	5.3	5.2	4.9
Non-Hodgkin Lymphoma	20.1	20.5	19.9	20.0	20.1
Oral Cavity & Pharynx	10.6	11.3	11.4	10.7	10.7
Ovary	—	—	—	—	—
Pancreas	11.7	12.2	12.1	11.4	11.8
Prostate	—	—	—	—	—
Stomach	8.3	7.6	7.7	7.9	7.0
Testis	—	—	—	—	—
Thyroid	8.8	10.5	12.5	12.6	15.5
Urinary Bladder	26.1	27.2	27.1	26.8	26.5

¹ Rates are age-adjusted to the 2000 U.S. Standard Population.

² per 100,000 total population

³ Breast *in situ* is excluded from "All Sites."

⁴ Dashed-out cancers are those found in only one sex,

Source: Massachusetts Cancer Registry

Table 7.
ANNUAL AGE-ADJUSTED¹ MORTALITY RATES² FOR SELECTED CANCER SITES
Massachusetts, 2001-2005
MALES

Cancer Site / Type	2001	2002	2003	2004	2005
All Sites	245.4	244.7	235.0	227.0	222.7
Brain & Other Nervous System	5.2	5.5	4.9	4.7	5.4
Breast	0.3	0.3	0.2	0.6	0.3
Bronchus & Lung	68.5	69.6	66.8	64.9	64.2
Colon / Rectum	25.9	25.1	22.9	20.9	20.1
Esophagus	9.0	9.9	11.0	9.1	10.3
Hodgkin Lymphoma	0.7	0.9	0.6	0.4	0.3
Kidney & Renal Pelvis	5.8	5.3	5.9	6.2	5.3
Larynx	2.9	2.8	2.3	2.6	2.0
Leukemia	9.6	8.1	9.5	8.9	8.8
Liver & Intrahepatic Bile Ducts	8.1	7.5	7.2	7.2	9.3
Melanoma of Skin	4.3	4.0	4.6	4.2	4.3
Multiple Myeloma	4.5	4.9	4.3	4.2	4.0
Non-Hodgkin Lymphoma	9.4	10.0	9.4	8.8	9.1
Oral Cavity & Pharynx	4.0	4.6	3.7	4.3	3.4
Pancreas	12.1	13.5	14.0	12.6	13.6
Prostate	29.4	27.5	26.1	23.4	21.8
Stomach	7.0	6.5	5.8	5.8	5.5
Testis	0.1	0.4	0.2	0.3	0.1
Thyroid	0.7	0.3	0.3	0.7	0.3
Urinary Bladder	9.9	7.9	8.7	9.3	8.0

¹ Rates are age-adjusted to the 2000 U.S. Standard Population.

² per 100,000 males

Source: Massachusetts Cancer Registry

Table 8.
ANNUAL AGE-ADJUSTED¹ MORTALITY RATES² FOR SELECTED CANCER SITES
Massachusetts, 2001-2005
FEMALES

Cancer Site / Type	2001	2002	2003	2004	2005
All Sites	171.4	171.9	165.8	163.2	158.9
Brain & Other Nervous System	3.0	3.3	3.8	3.3	3.0
Breast	26.5	26.3	24.3	24.0	23.0
Bronchus & Lung	45.1	45.1	45.7	43.4	44.2
Cervix Uteri	1.6	1.5	1.3	1.7	1.6
Colon / Rectum	17.4	18.7	15.9	15.3	15.2
Corpus Uteri & Uterus, NOS	4.2	4.6	4.4	4.2	4.4
Esophagus	1.8	1.8	2.1	2.1	2.0
Hodgkin Lymphoma	0.6	0.3	0.3	0.3	0.2
Kidney & Renal Pelvis	2.7	2.3	2.2	2.4	2.4
Larynx	0.5	0.7	0.5	0.5	0.7
Leukemia	5.5	5.3	5.7	5.8	5.1
Liver & Intrahepatic Bile Ducts	2.8	2.4	2.6	3.0	2.5
Melanoma of Skin	1.9	1.7	2.1	1.7	2.7
Multiple Myeloma	3.1	3.5	3.2	2.5	2.6
Non-Hodgkin Lymphoma	7.0	6.8	6.0	6.0	6.2
Oral Cavity & Pharynx	1.7	1.4	1.6	1.6	1.1
Ovary	9.0	9.7	8.8	9.2	8.4
Pancreas	10.0	10.1	9.7	10.1	10.0
Stomach	3.5	3.8	3.0	3.0	2.1
Thyroid	0.4	0.4	0.7	0.4	0.4
Urinary Bladder	2.7	3.3	2.6	2.4	2.8

¹ Rates are age-adjusted to the 2000 U.S. Standard Population.

² per 100,000 females

Source: Massachusetts Cancer Registry

Table 9.
ANNUAL AGE-ADJUSTED¹ MORTALITY RATES² FOR SELECTED CANCER SITES
Massachusetts, 2001-2005
TOTAL

Cancer Site / Type	2001	2002	2003	2004	2005
All Sites	199.5	199.8	192.6	187.9	184.2
Brain & Other Nervous System	4.0	4.3	4.3	4.0	4.1
Breast	15.3	15.2	14.0	13.9	13.1
Bronchus & Lung	54.3	55.0	54.4	52.0	52.3
Cervix Uteri	—	—	—	—	—
Colon / Rectum	20.9	21.4	18.7	17.7	17.3
Corpus Uteri & Uterus, NOS	—	—	—	—	—
Esophagus	4.8	5.3	5.9	5.1	5.7
Hodgkin Lymphoma	0.6	0.6	0.5	0.4	0.3
Kidney & Renal Pelvis	4.0	3.6	3.7	4.0	3.6
Larynx	1.5	1.5	1.3	1.4	1.3
Leukemia	7.1	6.4	7.2	7.1	6.6
Liver & Intrahepatic Bile Ducts	5.1	4.6	4.6	4.9	5.5
Melanoma of Skin	2.9	2.7	3.1	2.7	3.3
Multiple Myeloma	3.6	4.0	3.7	3.2	3.2
Non-Hodgkin Lymphoma	8.1	8.0	7.3	7.2	7.4
Oral Cavity & Pharynx	2.6	2.8	2.5	2.8	2.1
Ovary	—	—	—	—	—
Pancreas	11.0	11.5	11.5	11.2	11.6
Prostate	—	—	—	—	—
Stomach	4.9	5.0	4.2	4.1	3.5
Testis	—	—	—	—	—
Thyroid	0.5	0.4	0.5	0.5	0.3
Urinary Bladder	5.5	5.1	4.9	5.1	4.8

¹ Rates are age-adjusted to the 2000 U.S. Standard Population.

² per 100,000 total population

³ Dashed-out cancers are those found in only one sex.

Source: Massachusetts Cancer Registry

Table 10.
FIVE LEADING CANCER INCIDENCE RATES BY RACE/ETHNICITY AND SEX
Massachusetts, 2001-2005

MALES

AGE-ADJUSTED¹ INCIDENCE RATE²				
RANK	White, non-Hispanic	Black, non-Hispanic	Asian, non-Hispanic	Hispanic
1	Prostate 165.3	Prostate 259.8	Prostate 76.0	Prostate 174.1
2	Bronchus & Lung 87.6	Bronchus & Lung 87.6	Bronchus & Lung 49.0	Colon / Rectum 46.1
3	Colon / Rectum 67.9	Colon / Rectum 55.6	Colon / Rectum 44.0	Bronchus & Lung 44.5
4	Urinary Bladder 48.1	Urinary Bladder 21.7	Liver & Intrahepatic Bile Ducts 30.1	Urinary Bladder 25.4
5	Melanoma of Skin 27.8	Kidney & Renal Pelvis 21.5	Non-Hodgkin Lymphoma 16.2	Stomach 20.0

FEMALES

AGE-ADJUSTED¹ INCIDENCE RATE²				
RANK	White, non-Hispanic	Black, non-Hispanic	Asian, non-Hispanic	Hispanic
1	Breast ³ 137.7	Breast 110.0	Breast 71.0	Breast 92.5
2	Bronchus & Lung 65.9	Bronchus & Lung 49.1	Colon / Rectum 35.1	Colon / Rectum 35.7
3	Colon / Rectum 48.7	Colon / Rectum 43.4	Bronchus & Lung 30.1	Corpus Uteri & Uterus, NOS 24.5
4	Corpus Uteri & Uterus, NOS 29.1	Corpus Uteri & Uterus, NOS 21.1	Thyroid 21.9	Bronchus & Lung 22.3
5	Melanoma of Skin 19.9	Thyroid 12.5	Corpus Uteri & Uterus, NOS 15.6	Non-Hodgkin Lymphoma 17.1

¹ Rates are age-adjusted to the 2000 U.S. Standard Population

² per 100,000

³ Breast cancer rates do not include breast *in situ* cases.

Source: Massachusetts Cancer Registry

Table 11.
INCIDENCE CASES AND PERCENTAGE OF CASES FOR SELECTED CANCER SITES BY RACE/ETHNICITY¹
Massachusetts, 2001-2005
MALES

Cancer Site / Type	All Races ²		White, non-Hispanic		Black, non-Hispanic		Asian, non-Hispanic		Hispanic	
	Cases	% of Cases	Cases	% of Cases	Cases	% of Cases	Cases	% of Cases	Cases	% of Cases
All Sites	88,969	100.0	80,623	100.0	3,431	100.0	1,247	100.0	2,182	100.0
Brain & Other Nervous System	1,296	1.5	1,204	1.5	24	0.7	24	1.9	38	1.7
Breast ³	189	0.2	170	0.2	10	0.3	3	0.2	3	0.1
Bronchus & Lung	12,476	14.0	11,645	14.4	450	13.1	170	13.6	177	8.1
Colon / Rectum	9,818	11.0	9,040	11.2	301	8.8	169	13.6	208	9.5
Esophagus	1,701	1.9	1,569	1.9	66	1.9	19	1.5	37	1.7
Hodgkin Lymphoma	587	0.7	533	0.7	16	0.5	6	0.5	27	1.2
Kidney & Renal Pelvis	3,010	3.4	2,740	3.4	130	3.8	28	2.2	80	3.7
Larynx	1,058	1.2	968	1.2	38	1.1	7	0.6	29	1.3
Leukemia	2,196	2.5	1,992	2.5	57	1.7	30	2.4	69	3.2
Liver & Intrahepatic Bile Ducts	1,444	1.6	1,119	1.4	88	2.6	139	11.1	90	4.1
Melanoma of Skin	4,032	4.5	3,729	4.6	7	0.2	3	0.2	21	1.0
Multiple Myeloma	1,042	1.2	923	1.1	68	2.0	7	0.6	30	1.4
Non-Hodgkin Lymphoma	3,564	4.0	3,174	3.9	140	4.1	67	5.4	123	5.6
Oral Cavity & Pharynx	2,515	2.8	2,247	2.8	94	2.7	61	4.9	84	3.8
Pancreas	1,959	2.2	1,813	2.2	78	2.3	23	1.8	41	1.9
Prostate	25,327	28.5	22,328	27.7	1,395	40.7	264	21.2	695	31.9
Stomach	1,634	1.8	1,388	1.7	93	2.7	49	3.9	86	3.9
Testis	1,013	1.1	939	1.2	12	0.3	13	1.0	33	1.5
Thyroid	955	1.1	853	1.1	19	0.6	36	2.9	31	1.4
Urinary Bladder	6,635	7.5	6,343	7.9	104	3.0	38	3.0	93	4.3
Other Sites	6,518	7.3	5,906	7.3	241	7.0	91	7.3	187	8.6

¹ Race/ethnicity categories are mutually exclusive. Cases are only included in one race/ethnicity category.

² The number of cases for all races is not the sum of cases by race/ethnicity. ³ Breast *in situ* cases are excluded from "All Sites" and breast cancer counts.

Source: Massachusetts Cancer Registry

Table 12.
INCIDENCE CASES AND PERCENTAGE OF CASES FOR SELECTED CANCER SITES BY RACE/ETHNICITY¹
Massachusetts, 2001-2005
FEMALES

Cancer Site / Type	All Races ²		White, non-Hispanic		Black, non-Hispanic		Asian, non-Hispanic		Hispanic	
	Cases	% of Cases	Cases	% of Cases	Cases	% of Cases	Cases	% of Cases	Cases	% of Cases
All Sites	87419	100.0	79848	100.0	2899	100.0	1367	100.0	2190	100.0
Brain & Other Nervous System	1088	1.2	1004	1.3	21	0.7	12	0.9	44	2.0
Breast ³	25068	28.7	22911	28.7	886	30.6	386	28.2	633	28.9
Bronchus & Lung	12188	13.9	11539	14.5	360	12.4	123	9.0	118	5.4
Cervix Uteri	1112	1.3	869	1.1	79	2.7	33	2.4	102	4.7
Colon / Rectum	9889	11.3	9126	11.4	318	11.0	153	11.2	199	9.1
Corpus Uteri & Uterus, NOS	5326	6.1	4854	6.1	160	5.5	79	5.8	162	7.4
Esophagus	504	0.6	450	0.6	31	1.1	4	0.3	14	0.6
Hodgkin Lymphoma	464	0.5	409	0.5	18	0.6	9	0.7	24	1.1
Kidney & Renal Pelvis	1944	2.2	1787	2.2	71	2.4	19	1.4	51	2.3
Larynx	300	0.3	271	0.3	14	0.5	8	0.6	0	0.0
Leukemia	1802	2.1	1637	2.1	59	2.0	23	1.7	59	2.7
Liver & Intrahepatic Bile Ducts	526	0.6	431	0.5	31	1.1	28	2.0	32	1.5
Melanoma of Skin	3449	3.9	3153	3.9	8	0.3	10	0.7	26	1.2
Multiple Myeloma	785	0.9	690	0.9	60	2.1	5	0.4	26	1.2
Non-Hodgkin Lymphoma	3350	3.8	3044	3.8	95	3.3	56	4.1	104	4.7
Oral Cavity & Pharynx	1231	1.4	1082	1.4	47	1.6	43	3.1	33	1.5
Ovary	2709	3.1	2519	3.2	57	2.0	46	3.4	61	2.8
Pancreas	2151	2.5	1986	2.5	79	2.7	32	2.3	42	1.9
Stomach	1050	1.2	878	1.1	60	2.1	47	3.4	53	2.4
Thyroid	3046	3.5	2563	3.2	113	3.9	146	10.7	152	6.9
Urinary Bladder	2578	2.9	2459	3.1	49	1.7	12	0.9	39	1.8
Other Sites	6859	7.8	6186	7.7	283	9.8	101	7.4	208	9.5

¹ Race/ethnicity categories are mutually exclusive. Cases are only included in one race/ethnicity category.

² The number of cases for all races is not the sum of cases by race/ethnicity. ³ Breast *in situ* cases are excluded from "All Sites" and from breast cancer counts.

Source: Massachusetts Cancer Registry

Table 13.
INCIDENCE CASES AND PERCENTAGE OF CASES FOR SELECTED CANCER SITES BY RACE/ETHNICITY¹
Massachusetts, 2001-2005
TOTAL²

Cancer Site / Type	All Races ³		White, non-Hispanic		Black, non-Hispanic		Asian, non-Hispanic		Hispanic	
	Cases	% of Cases	Cases	% of Cases	Cases	% of Cases	Cases	% of Cases	Cases	% of Cases
All Sites	176399	100.0	160480	100.0	6330	100.0	2615	100.0	4372	100.0
Brain & Other Nervous System	2384	1.4	2208	1.4	45	0.7	36	1.4	82	1.9
Breast ⁴	25258	14.3	23082	14.4	896	14.2	389	14.9	636	14.5
Bronchus & Lung	24666	14.0	23186	14.4	810	12.8	293	11.2	295	6.7
Cervix Uteri	1112	0.6	869	0.5	79	1.2	33	1.3	102	2.3
Colon / Rectum	19708	11.2	18167	11.3	619	9.8	322	12.3	407	9.3
Corpus Uteri & Uterus, NOS	5326	3.0	4854	3.0	160	2.5	79	3.0	162	3.7
Esophagus	2206	1.3	2020	1.3	97	1.5	23	0.9	51	1.2
Hodgkin Lymphoma	1051	0.6	942	0.6	34	0.5	15	0.6	51	1.2
Kidney & Renal Pelvis	4954	2.8	4527	2.8	201	3.2	47	1.8	131	3.0
Larynx	1358	0.8	1239	0.8	52	0.8	7	0.3	37	0.8
Leukemia	3998	2.3	3629	2.3	116	1.8	53	2.0	128	2.9
Liver & Intrahepatic Bile Ducts	1970	1.1	1550	1.0	119	1.9	167	6.4	122	2.8
Melanoma of Skin	7481	4.2	6882	4.3	15	0.2	13	0.5	47	1.1
Multiple Myeloma	1827	1.0	1613	1.0	128	2.0	12	0.5	56	1.3
Non-Hodgkin Lymphoma	6916	3.9	6219	3.9	235	3.7	124	4.7	227	5.2
Oral Cavity & Pharynx	3746	2.1	3329	2.1	141	2.2	104	4.0	117	2.7
Ovary	2709	1.5	2519	1.6	57	0.9	46	1.8	61	1.4
Pancreas	4110	2.3	3799	2.4	157	2.5	55	2.1	83	1.9
Prostate	25328	14.4	22329	13.9	1395	22.0	264	10.1	695	15.9
Stomach	2684	1.5	2266	1.4	153	2.4	96	3.7	139	3.2
Testis	1013	0.6	939	0.6	12	0.2	13	0.5	33	0.8
Thyroid	4002	2.3	3416	2.1	132	2.1	182	7.0	183	4.2
Urinary Bladder	9214	5.2	8803	5.5	153	2.4	50	1.9	132	3.0
Other Sites	13378	7.6	12093	7.5	524	8.3	192	7.3	395	9.0

¹ Cases are only included in one race/ethnicity category. ² Total includes persons classified as transsexual and persons of unknown sex.

³ The number of cases for all races is not the sum of cases by race/ethnicity. ⁴ Breast *in situ* cases are excluded from "All Sites" and from breast cancer counts.

Source: Massachusetts Cancer Registry

Table 14.
AGE-ADJUSTED¹ INCIDENCE RATES² AND 95% CONFIDENCE LIMITS (95% CL)
FOR SELECTED CANCER SITES BY RACE/ETHNICITY³
Massachusetts, 2001-2005
MALES

Cancer Site / Type	All Races		White, non-Hispanic		Black, non-Hispanic		Asian, non-Hispanic		Hispanic	
	Rate	95% CL	Rate	95% CL	Rate	95% CL	Rate	95% CL	Rate	95% CL
All Sites (Excluding Breast <i>in situ</i>)	602.5	598.5-606.4	603.3	599.1-607.5	628.0	605.7-650.3	320.9	301.6-340.3	472.1	449.4-494.8
Brain & Other Nervous System	8.5	8.1-9.0	9.1	8.6-9.7	2.8	1.6-4.1	5.2	3.0-7.5	5.2	3.2-7.2
Breast	1.3	1.1-1.5	1.3	1.1-1.5	*	*	*	*	*	*
Breast <i>in situ</i>⁴	0.2	0.1-0.3	0.2	0.1-0.3	*	*	*	*	*	*
Bronchus & Lung	85.9	84.4-87.4	87.6	86.0-89.2	87.6	79.0-96.1	49.0	41.1-56.9	44.5	37.2-51.7
Colon / Rectum	67.2	65.9-68.5	67.9	66.5-69.3	55.6	48.9-62.2	44.0	36.8-51.2	46.1	39.0-53.2
Esophagus	11.5	10.9-12.0	11.6	11.0-12.2	12.2	9.1-15.3	*	*	8.4	5.3-11.5
Hodgkin Lymphoma	3.8	3.5-4.1	4.2	3.8-4.5	*	*	*	*	2.3	1.3-3.3
Kidney & Renal Pelvis	20.0	19.3-20.7	20.2	19.5-21.0	21.5	17.6-25.4	6.4	3.8-8.9	16.3	12.2-20.4
Larynx	7.1	6.6-7.5	7.1	6.7-7.6	7.5	4.9-10.0	*	*	7.0	4.1-9.8
Leukemia	14.9	14.3-15.5	15.2	14.6-15.9	10.2	7.3-13.1	6.7	4.0-9.5	10.4	7.2-13.6
Liver & Intrahepatic Bile Ducts	9.5	9.0-10.0	8.2	7.8-8.7	14.6	11.4-17.9	30.1	24.8-35.3	15.7	12.0-19.4
Melanoma of Skin	26.8	26.0-27.7	27.8	26.9-28.7	*	*	*	*	3.5	1.7-5.3
Multiple Myeloma	7.1	6.7-7.6	6.9	6.5-7.4	12.0	9.0-15.0	*	*	6.8	4.0-9.5
Non-Hodgkin Lymphoma	23.9	23.2-24.7	23.8	23.0-24.7	20.6	16.9-24.3	16.2	11.9-20.5	19.1	15.1-23.1
Oral Cavity & Pharynx	16.3	15.6-16.9	16.2	15.5-16.9	15.3	12.0-18.6	12.8	9.2-16.3	16.1	12.1-20.1
Pancreas	13.4	12.8-14.0	13.6	13.0-14.2	14.9	11.4-18.5	6.4	3.6-9.3	7.8	5.1-10.6
Prostate	170.6	168.5-172.7	165.3	163.1-167.4	259.8	245.5-274.1	76.0	66.4-85.6	174.1	160.1-188.2
Stomach	11.3	10.7-11.8	10.5	10.0-11.1	19.7	15.5-23.9	14.4	10.1-18.7	20.0	15.1-24.8
Testis	6.3	5.9-6.7	7.3	6.9-7.8	*	*	*	*	2.3	1.5-3.1
Thyroid	6.1	5.7-6.4	6.3	5.9-6.7	*	*	6.6	4.2-8.9	4.3	2.5-6.2
Urinary Bladder	46.2	45.1-47.3	48.1	46.9-49.3	21.7	17.3-26.1	10.0	6.6-13.4	25.4	19.6-31.2

¹ Rates are age-adjusted to the 2000 U.S. Standard Population. ² per 100,000

³ Race/ethnicity categories are mutually exclusive. Cases are only included in one race/ethnicity category.

⁴ Breast *in situ* is excluded from "All Sites."

* An age-adjusted incidence rate was not calculated when there were fewer than 20 cases.

Source: Massachusetts Cancer Registry

Table 15.
AGE-ADJUSTED¹ INCIDENCE RATES² AND 95% CONFIDENCE LIMITS (95% CL)
FOR SELECTED CANCER SITES BY RACE/ETHNICITY³
Massachusetts, 2001-2005
FEMALES

Cancer Site / Type	All Races		White, non-Hispanic		Black, non-Hispanic		Asian, non-Hispanic		Hispanic	
	Rate	95% CL	Rate	95% CL	Rate	95% CL	Rate	95% CL	Rate	95% CL
All Sites (Excluding Breast <i>in situ</i>)	457.2	454.1-460.3	465.5	462.2-468.8	374.4	360.5-388.2	273.1	257.7-288.4	336.7	321.0-352.4
Brain & Other Nervous System	6.1	5.7-6.4	6.5	6.0-6.9	2.2	1.3-3.2	*	*	4.2	2.8-5.7
Breast	134.2	132.5-135.9	137.7	135.9-139.5	110.0	102.7-117.4	71.0	63.6-78.5	92.5	84.6-100.4
Breast <i>in situ</i>⁴	46.6	45.6-47.6	48.1	47.0-49.1	30.9	27.0-34.8	30.9	26.1-35.7	28.5	24.5-32.5
Bronchus & Lung	63.3	62.2-64.4	65.9	64.7-67.1	49.1	44.0-54.2	30.1	24.6-35.6	22.3	18.0-26.6
Cervix Uteri	6.3	5.9-6.6	5.8	5.4-6.1	9.2	7.1-11.2	5.8	3.7-7.9	13.1	10.2-16.0
Colon / Rectum	48.4	47.4-49.4	48.7	47.6-49.7	43.4	38.6-48.3	35.1	29.3-41.0	35.7	30.3-41.0
Corpus Uteri & Uterus, NOS	28.6	27.8-29.3	29.1	28.3-30.0	21.1	17.8-24.4	15.6	12.0-19.1	24.5	20.4-28.6
Esophagus	2.5	2.3-2.7	2.4	2.2-2.7	4.2	2.7-5.7	*	*	*	*
Hodgkin Lymphoma	2.7	2.5-3.0	3.0	2.7-3.3	*	*	*	*	2.3	1.2-3.4
Kidney & Renal Pelvis	10.2	9.8-10.7	10.4	9.9-10.9	8.8	6.8-10.9	*	*	8.1	5.7-10.4
Larynx	1.6	1.4-1.8	1.6	1.4-1.8	*	*	*	*	*	*
Leukemia	9.4	9.0-9.9	9.6	9.1-10.1	7.4	5.5-9.4	3.5	2.0-4.9	7.1	5.0-9.2
Liver & Intrahepatic Bile Ducts	2.6	2.4-2.9	2.4	2.1-2.6	4.3	2.8-5.8	7.0	4.3-9.7	6.6	4.2-9.1
Melanoma of Skin	18.8	18.2-19.5	19.9	19.2-20.6	*	*	*	*	3.0	1.7-4.2
Multiple Myeloma	3.9	3.7-4.2	3.8	3.5-4.0	8.4	6.3-10.6	*	*	5.2	3.1-7.3
Non-Hodgkin Lymphoma	17.2	16.6-17.7	17.2	16.6-17.9	11.8	9.4-14.2	11.6	8.4-14.9	17.1	13.4-20.7
Oral Cavity & Pharynx	6.5	6.1-6.8	6.3	5.9-6.7	5.9	4.2-7.6	7.8	5.4-10.3	5.3	3.4-7.3
Ovary	14.4	13.8-14.9	15.0	14.4-15.6	7.5	5.5-9.5	8.0	5.5-10.4	9.9	7.1-12.7
Pancreas	10.6	10.2-11.1	10.7	10.2-11.2	11.4	8.9-14.0	8.1	5.2-10.9	8.2	5.5-10.9
Stomach	5.0	4.7-5.3	4.5	4.2-4.8	8.2	6.1-10.3	10.6	7.4-13.8	9.9	7.1-12.8
Thyroid	17.6	16.9-18.2	17.6	16.9-18.3	12.5	10.2-14.9	21.9	18.1-25.6	15.8	13.0-18.5
Urinary Bladder	13.0	12.4-13.5	13.5	13.0-14.1	7.0	5.1-9.0	*	*	7.4	4.9-9.9

¹ Rates are age-adjusted to the 2000 U.S. Standard Population. ² per 100,000

³ Race/ethnicity categories are mutually exclusive. Cases are only included in one race/ethnicity category.

⁴ Breast *in situ* is excluded from "All Sites."

* An age-adjusted incidence rate was not calculated when there were fewer than 20 cases.

Source: Massachusetts Cancer Registry

Table 16.
AGE-ADJUSTED¹ INCIDENCE RATES² AND 95% CONFIDENCE LIMITS (95% CL)
FOR SELECTED CANCER SITES BY RACE/ETHNICITY³
Massachusetts, 2001-2005
TOTAL

Cancer Site / Type	All Races		White, non-Hispanic		Black, non-Hispanic		Asian, non-Hispanic		Hispanic	
	Rate	95% CL	Rate	95% CL	Rate	95% CL	Rate	95% CL	Rate	95% CL
All Sites (Excluding Breast <i>in situ</i>)	515.8	513.4-518.3	520.8	518.2-523.3	476.1	464.0-488.2	293.1	281.0-305.1	392.5	379.4-405.6
Brain & Other Nervous System	7.2	6.9-7.5	7.7	7.3-8.0	2.5	1.7-3.3	3.6	2.3-4.8	4.6	3.4-5.8
Breast	73.7	72.8-74.6	75.4	74.4-76.4	62.8	58.5-67.0	37.5	33.5-41.4	51.9	47.4-56.5
Breast <i>in situ</i>⁴	24.9	24.4-25.4	25.6	25.0-26.2	17.5	15.2-19.7	16.1	13.6-18.6	15.6	13.4-17.8
Bronchus & Lung	72.5	71.6-73.4	74.6	73.7-75.6	64.4	59.9-69.0	38.6	34.0-43.3	31.6	27.7-35.5
Cervix Uteri	— ⁵	—	—	—	—	—	—	—	—	—
Colon / Rectum	56.6	55.8-57.4	57.1	56.2-57.9	48.6	44.7-52.6	39.3	34.7-43.9	40.4	36.0-44.7
Corpus Uteri & Uterus, NOS	—	—	—	—	—	—	—	—	—	—
Esophagus	6.4	6.2-6.7	6.5	6.2-6.8	7.5	6.0-9.0	3.1	1.8-4.5	5.1	3.6-6.7
Hodgkin Lymphoma	3.2	3.0-3.4	3.5	3.3-3.8	1.9	1.2-2.5	*	*	2.3	1.6-3.1
Kidney & Renal Pelvis	14.6	14.2-15.0	14.8	14.4-15.2	14.2	12.2-16.2	5.4	3.8-7.1	11.6	9.4-13.8
Larynx	4.0	3.8-4.2	4.0	3.8-4.3	4.1	3.0-5.3	*	*	3.4	2.2-4.7
Leukemia	11.8	11.4-12.1	12.0	11.6-12.4	8.5	6.9-10.1	4.9	3.4-6.3	8.5	6.7-10.3
Liver & Intrahepatic Bile Ducts	5.7	5.5-6.0	5.0	4.7-5.2	8.8	7.2-10.4	18.2	15.3-21.0	10.8	8.6-12.9
Melanoma of Skin	22.0	21.5-22.5	23.0	22.5-23.6	*	*	*	*	3.2	2.1-4.2
Multiple Myeloma	5.3	5.0-5.5	5.1	4.9-5.4	10.1	8.3-11.8	*	*	5.9	4.2-7.6
Non-Hodgkin Lymphoma	20.1	19.6-20.6	20.1	19.6-20.6	15.7	13.7-17.8	13.7	11.1-16.4	18.3	15.5-21.0
Oral Cavity & Pharynx	10.9	10.6-11.3	10.8	10.5-11.2	9.9	8.2-11.6	10.1	8.0-12.1	10.1	8.0-12.1
Ovary	—	—	—	—	—	—	—	—	—	—
Pancreas	11.8	11.5-12.2	11.9	11.6-12.3	13.0	10.9-15.1	7.3	5.3-9.4	8.3	6.3-10.3
Prostate	—	—	—	—	—	—	—	—	—	—
Stomach	7.7	7.4-8.0	7.0	6.7-7.3	12.6	10.6-14.7	12.2	9.6-14.8	14.3	11.7-16.9
Testis	—	—	—	—	—	—	—	—	—	—
Thyroid	12.0	11.6-12.4	12.1	11.7-12.5	8.0	6.6-9.4	14.4	12.1-16.6	10.4	8.6-12.1
Urinary Bladder	26.7	26.2-27.3	27.9	27.3-28.5	12.9	10.8-15.0	6.3	4.5-8.1	14.7	12.0-17.5

¹ Rates are age-adjusted to the 2000 U.S. Standard Population. ² per 100,000

³ Race/ethnicity categories are mutually exclusive. Cases are only included in one race/ethnicity category. ⁴ Breast *in situ* cases are excluded from “All Sites.”

⁵ Dashed-out cancers are found in only one sex. * An age-adjusted incidence rate was not calculated when there were fewer than 20 cases.

Source: Massachusetts Cancer Registry

**Table 17.
FIVE LEADING CANCER MORTALITY RATES BY RACE/ETHNICITY AND SEX
Massachusetts, 2001-2005**

MALES

AGE-ADJUSTED¹ MORTALITY RATE²				
RANK	White, non-Hispanic	Black, non-Hispanic	Asian, non-Hispanic	Hispanic
1	Bronchus & Lung 67.9	Bronchus & Lung 76.9	Bronchus & Lung 42.9	Bronchus & Lung 31.5
2	Prostate 25.3	Prostate 51.8	Liver & Intrahepatic Bile Ducts 18.1	Prostate 15.6
3	Colon / Rectum 23.4	Colon / Rectum 25.2	Colon / Rectum 9.3	Colon / Rectum 10.2
4	Pancreas 13.2	Pancreas 16.4	Pancreas 6.4	Liver & Intrahepatic Bile Ducts 9.6
5	Esophagus 10.1	Stomach 13.9	Oral Cavity & Pharynx 5.7	Pancreas 9.1

FEMALES

AGE-ADJUSTED¹ MORTALITY RATE²				
RANK	White, non-Hispanic	Black, non-Hispanic	Asian, non-Hispanic	Hispanic
1	Bronchus & Lung 46.5	Bronchus & Lung 38.3	Bronchus & Lung 17.8	Breast 13.2
2	Breast 25.5	Breast 28.6	Colon / Rectum 10.1	Bronchus & Lung 11.7
3	Colon / Rectum 16.6	Colon / Rectum 20.0	Pancreas 8.4	Colon / Rectum 9.2
4	Pancreas 10.0	Pancreas 11.3	Breast 7.3	Pancreas 7.8
5	Ovary 9.5	Corpus Uteri & Uterus, NOS 6.9	Stomach 6.2	Liver & Intrahepatic Bile Ducts 5.0

¹ Rates are age-adjusted to the 2000 U.S. Standard Population.

² per 100,000

Source: Massachusetts Cancer Registry

Table 18.
NUMBER AND PERCENTAGE OF DEATHS FOR SELECTED CANCER SITES BY RACE/ETHNICITY¹
Massachusetts, 2001-2005
MALES

Cancer Site / Type	All Races ²		White, non-Hispanic		Black, non-Hispanic		Asian, non-Hispanic		Hispanic	
	Deaths	% of Deaths	Deaths	% of Deaths	Deaths	% of Deaths	Deaths	% of Deaths	Deaths	% of Deaths
All Sites	33526	100.0	31157	100.0	1364	100.0	444	100.0	527	100.0
Brain & Other Nervous System	779	2.3	733	2.4	17	1.2	14	3.2	14	2.7
Breast	48	0.1	43	0.1	3	0.2	1	0.2	1	0.2
Bronchus & Lung	9588	28.6	8953	28.7	373	27.3	134	30.2	123	23.3
Colon / Rectum	3265	9.7	3062	9.8	121	8.9	33	7.4	44	8.3
Esophagus	1442	4.3	1347	4.3	54	4.0	12	2.7	25	4.7
Hodgkin Lymphoma	87	0.3	75	0.2	7	0.5	0	0.0	5	0.9
Kidney & Renal Pelvis	823	2.5	790	2.5	21	1.5	6	1.4	6	1.1
Larynx	362	1.1	337	1.1	16	1.2	2	0.5	6	1.1
Leukemia	1272	3.8	1186	3.8	41	3.0	18	4.1	25	4.7
Liver & Intrahepatic Bile Ducts	1165	3.5	956	3.1	73	5.4	80	18.0	53	10.1
Melanoma of Skin	622	1.9	611	2.0	3	0.2	2	0.5	6	1.1
Multiple Myeloma	623	1.9	574	1.8	37	2.7	1	0.2	10	1.9
Non-Hodgkin Lymphoma	1325	4.0	1252	4.0	47	3.4	13	2.9	13	2.5
Oral Cavity & Pharynx	590	1.8	528	1.7	23	1.7	21	4.7	18	3.4
Pancreas	1903	5.7	1756	5.6	85	6.2	21	4.7	37	7.0
Prostate	3452	10.3	3195	10.3	193	14.1	17	3.8	43	8.2
Stomach	873	2.6	758	2.4	66	4.8	19	4.3	30	5.7
Testis	36	0.1	35	0.1	1	0.1	0	0.0	0	0.0
Thyroid	61	0.2	56	0.2	5	0.4	0	0.0	0	0.0
Urinary Bladder	1218	3.6	1172	3.8	32	2.3	8	1.8	5	0.9
Other Sites	3992	11.9	3738	12.0	146	10.7	42	9.5	63	12.0

¹ Race/ethnicity categories are mutually exclusive. Deaths are only included in one race/ethnicity category.

² The number of deaths for all races is not the sum of deaths by race/ethnicity.

Source: Massachusetts Cancer Registry

Table 19.
NUMBER AND PERCENTAGE OF DEATHS FOR SELECTED CANCER SITES BY RACE/ETHNICITY¹
Massachusetts, 2001-2005
FEMALES

Cancer Site / Type	All Races ²		White, non-Hispanic		Black, non-Hispanic		Asian, non-Hispanic		Hispanic	
	Deaths	% of Deaths	Deaths	% of Deaths	Deaths	% of Deaths	Deaths	% of Deaths	Deaths	% of Deaths
All Sites	34112	100.0	31938	100.0	1281	100.0	363	100.0	494	100.0
Brain & Other Nervous System	626	1.8	594	1.9	14	1.1	6	1.7	12	2.4
Breast	5005	14.7	4666	14.6	224	17.5	32	8.8	79	16.0
Bronchus & Lung	8844	25.9	8434	26.4	272	21.2	70	19.3	59	11.9
Cervix Uteri	289	0.8	245	0.8	19	1.5	8	2.2	17	3.4
Colon / Rectum	3616	10.6	3387	10.6	142	11.1	39	10.7	46	9.3
Corpus Uteri & Uterus, NOS	885	2.6	810	2.5	50	3.9	7	1.9	17	3.4
Esophagus	407	1.2	373	1.2	26	2.0	3	0.8	5	1.0
Hodgkin Lymphoma	68	0.2	67	0.2	1	0.1	0	0.0	0	0.0
Kidney & Renal Pelvis	499	1.5	475	1.5	13	1.0	7	1.9	2	0.4
Larynx	117	0.3	107	0.3	9	0.7	0	0.0	1	0.2
Leukemia	1141	3.3	1062	3.3	37	2.9	12	3.3	29	5.9
Liver & Intrahepatic Bile Ducts	558	1.6	487	1.5	24	1.9	23	6.3	23	4.7
Melanoma of Skin	393	1.2	388	1.2	3	0.2	0	0.0	0	0.0
Multiple Myeloma	623	1.8	565	1.8	42	3.3	0	0.0	15	3.0
Non-Hodgkin Lymphoma	1378	4.0	1291	4.0	44	3.4	21	5.8	20	4.0
Oral Cavity & Pharynx	302	0.9	281	0.9	8	0.6	8	2.2	3	0.6
Ovary	1789	5.2	1709	5.4	39	3.0	16	4.4	24	4.9
Pancreas	2080	6.1	1928	6.0	77	6.0	33	9.1	38	7.7
Stomach	670	2.0	585	1.8	40	3.1	27	7.4	18	3.6
Thyroid	94	0.3	82	0.3	5	0.4	4	1.1	3	0.6
Urinary Bladder	611	1.8	580	1.8	18	1.4	2	0.6	10	2.0
Other Sites	4117	12.1	3822	12.0	174	13.6	45	12.4	73	14.8

¹ Race/ethnicity categories are mutually exclusive. Deaths are only included in one race/ethnicity category.

² The number of deaths for all races is not the sum of deaths by race/ethnicity.

Source: Massachusetts Cancer Registry

Table 20.
NUMBER AND PERCENTAGE OF DEATHS FOR SELECTED CANCER SITES BY RACE/ETHNICITY¹
Massachusetts, 2001-2005
TOTAL

Cancer Site / Type	All Races ²		White, non-Hispanic		Black, non-Hispanic		Asian, non-Hispanic		Hispanic	
	Deaths	% of Deaths	Deaths	% of Deaths	Deaths	% of Deaths	Deaths	% of Deaths	Deaths	% of Deaths
All Sites	67638	100.0	63095	100.0	2645	100.0	807	100.0	1021	100.0
Brain & Other Nervous System	1405	2.1	1327	2.1	31	1.2	20	2.5	26	2.5
Breast	5053	7.5	4709	7.5	227	8.6	33	4.1	80	7.8
Bronchus & Lung	18432	27.3	17387	27.6	645	24.4	204	25.3	182	17.8
Cervix Uteri	289	0.4	245	0.4	19	0.7	8	1.0	17	1.7
Colon / Rectum	6881	10.2	6449	10.2	263	9.9	72	8.9	90	8.8
Corpus Uteri & Uterus, NOS	885	1.3	810	1.3	50	1.9	7	0.9	17	1.7
Esophagus	1849	2.7	1720	2.7	80	3.0	15	1.9	30	2.9
Hodgkin Lymphoma	155	0.2	142	0.2	8	0.3	0	0.0	5	0.5
Kidney & Renal Pelvis	1322	2.0	1265	2.0	34	1.3	13	1.6	8	0.8
Larynx	479	0.7	444	0.7	25	0.9	2	0.2	7	0.7
Leukemia	2413	3.6	2248	3.6	78	2.9	30	3.7	54	5.3
Liver & Intrahepatic Bile Ducts	1723	2.5	1443	2.3	97	3.7	103	12.8	76	7.4
Melanoma of Skin	1015	1.5	999	1.6	6	0.2	2	0.2	6	0.6
Multiple Myeloma	1246	1.8	1139	1.8	79	3.0	1	0.1	25	2.4
Non-Hodgkin Lymphoma	2703	4.0	2543	4.0	91	3.4	34	4.2	33	3.2
Oral Cavity & Pharynx	892	1.3	809	1.3	31	1.2	29	3.6	21	2.1
Ovary	1789	2.6	1709	2.7	39	1.5	16	2.0	24	2.4
Pancreas	3983	5.9	3684	5.8	162	6.1	54	6.7	75	7.3
Prostate	3452	5.1	3195	5.1	193	7.3	17	2.1	43	4.2
Stomach	1543	2.3	1343	2.1	106	4.0	46	5.7	48	4.7
Testis	36	0.1	35	0.1	1	0.0	0	0.0	0	0.0
Thyroid	155	0.2	138	0.2	10	0.4	4	0.5	3	0.3
Urinary Bladder	1829	2.7	1752	2.8	50	1.9	10	1.2	15	1.5
Other Sites	8109	12.0	7560	12.0	320	12.1	87	10.8	136	13.3

¹ Race/ethnicity categories are mutually exclusive. Deaths are only included in one race/ethnicity category.

² The number of deaths for all races is not the sum of deaths by race/ethnicity.

Source: Massachusetts Cancer Registry

Table 21.
AGE-ADJUSTED¹ MORTALITY RATES² AND 95% CONFIDENCE LIMITS (95% CL)
FOR SELECTED CANCER SITES BY RACE/ETHNICITY³
Massachusetts, 2001-2005
MALES

Cancer Site / Type	All Races		White, non-Hispanic		Black, non-Hispanic		Asian, non-Hispanic		Hispanic	
	Rate	95% CL	Rate	95% CL	Rate	95% CL	Rate	95% CL	Rate	95% CL
All Sites	234.7	232.1-237.2	237.6	235.0-240.3	285.0	268.9-301.1	127.9	114.9-140.8	128.0	115.4-140.6
Brain & Other Nervous System	5.1	4.8-5.5	5.4	5.0-5.8	*	*	*	*	*	*
Breast	0.3	0.2-0.4	0.3	0.2-0.4	*	*	*	*	*	*
Bronchus & Lung	66.8	65.4-68.1	67.9	66.5-69.3	76.9	68.7-85.1	42.9	35.2-50.7	31.5	25.3-37.8
Colon / Rectum	22.9	22.1-23.7	23.4	22.6-24.2	25.2	20.5-30.0	9.3	5.8-12.9	10.2	6.8-13.7
Esophagus	9.9	9.4-10.4	10.1	9.6-10.6	10.2	7.4-13.1	*	*	5.4	3.0-7.9
Hodgkin Lymphoma	0.6	0.5-0.7	0.6	0.4-0.7	*	*	*	*	*	*
Kidney & Renal Pelvis	5.7	5.3-6.1	6.0	5.5-6.4	4.3	2.4-6.3	*	*	*	*
Larynx	2.5	2.2-2.8	2.5	2.3-2.8	*	*	*	*	*	*
Leukemia	8.9	8.4-9.4	9.1	8.6-9.7	8.8	6.0-11.7	*	*	4.2	2.0-6.4
Liver & Intrahepatic Bile Ducts	7.9	7.4-8.3	7.1	6.7-7.6	12.8	9.7-16.0	18.1	13.9-22.3	9.6	6.7-12.4
Melanoma of Skin	4.3	3.9-4.6	4.6	4.2-5.0	*	*	*	*	*	*
Multiple Myeloma	4.4	4.0-4.7	4.4	4.0-4.7	7.4	4.9-9.9	*	*	*	*
Non-Hodgkin Lymphoma	9.3	8.8-9.8	9.6	9.1-10.2	8.3	5.7-10.8	*	*	*	*
Oral Cavity & Pharynx	4.0	3.6-4.3	3.9	3.6-4.2	4.0	2.2-5.7	5.7	3.0-8.4	*	*
Pancreas	13.2	12.6-13.8	13.2	12.6-13.9	16.4	12.7-20.2	6.4	3.4-9.4	9.1	5.7-12.4
Prostate	25.5	24.7-26.4	25.3	24.4-26.2	51.8	44.3-59.4	*	*	15.6	10.7-20.6
Stomach	6.1	5.7-6.5	5.8	5.4-6.2	13.9	10.3-17.5	*	*	8.2	4.8-11.6
Testis	0.2	0.1-0.3	0.3	0.2-0.3	*	*	*	*	*	*
Thyroid	0.4	0.3-0.5	0.4	0.3-0.5	*	*	*	*	*	*
Urinary Bladder	8.8	8.3-9.2	9.1	8.6-9.6	7.9	5.0-10.8	*	*	*	*

¹ Rates are age-adjusted to the 2000 U.S. Standard Population. ² per 100,000

³ Race/ethnicity categories are mutually exclusive. Deaths are only included in one race/ethnicity category.

* An age-adjusted mortality rate was not calculated when there were fewer than 20 deaths.

Source: Massachusetts Cancer Registry

Table 22.
AGE-ADJUSTED¹ MORTALITY RATES² AND 95% CONFIDENCE LIMITS (95% CL)
FOR SELECTED CANCER SITES BY RACE/ETHNICITY³
Massachusetts, 2001-2005
FEMALES

Cancer Site / Type	All Races		White, non-Hispanic		Black, non-Hispanic		Asian, non-Hispanic		Hispanic	
	Rate	95% CL	Rate	95% CL	Rate	95% CL	Rate	95% CL	Rate	95% CL
All Sites	166.1	164.3-167.9	169.5	167.6-171.4	176.3	166.5-186.1	87.7	78.3-97.1	90.9	82.1-99.6
Brain & Other Nervous System	3.3	3.0-3.5	3.5	3.2-3.8	*	*	*	*	*	*
Breast	24.8	24.1-25.5	25.5	24.7-26.2	28.6	24.8-32.4	7.3	4.7-9.9	13.2	10.0-16.4
Bronchus & Lung	44.6	43.7-45.6	46.5	45.5-47.6	38.3	33.7-42.9	17.8	13.5-22.1	11.7	8.5-14.8
Cervix Uteri	1.5	1.4-1.7	1.5	1.3-1.7	*	*	*	*	*	*
Colon / Rectum	16.5	15.9-17.0	16.6	16.0-17.2	20.0	16.7-23.3	10.1	6.8-13.4	9.2	6.4-12.1
Corpus Uteri & Uterus, NOS	4.4	4.1-4.6	4.3	4.0-4.6	6.9	5.0-8.9	*	*	*	*
Esophagus	2.0	1.8-2.1	1.9	1.7-2.1	3.6	2.2-5.0	*	*	*	*
Hodgkin Lymphoma	0.4	0.3-0.4	0.4	0.3-0.5	*	*	*	*	*	*
Kidney & Renal Pelvis	2.4	2.2-2.6	2.5	2.3-2.7	*	*	*	*	*	*
Larynx	0.6	0.5-0.7	0.6	0.5-0.7	*	*	*	*	*	*
Leukemia	5.5	5.2-5.8	5.5	5.2-5.9	4.8	3.2-6.4	*	*	4.6	2.7-6.4
Liver & Intrahepatic Bile Ducts	2.7	2.4-2.9	2.5	2.3-2.7	3.5	2.1-4.9	6.1	3.5-8.6	5.0	2.8-7.1
Melanoma of Skin	2.0	1.8-2.2	2.2	2.0-2.4	*	*	*	*	*	*
Multiple Myeloma	3.0	2.7-3.2	2.9	2.7-3.1	6.2	4.3-8.1	*	*	*	*
Non-Hodgkin Lymphoma	6.4	6.1-6.7	6.5	6.1-6.8	6.1	4.2-7.9	5.3	2.9-7.7	3.5	1.8-5.2
Oral Cavity & Pharynx	1.5	1.3-1.6	1.5	1.3-1.7	*	*	*	*	*	*
Ovary	9.0	8.6-9.4	9.5	9.0-9.9	5.5	3.8-7.3	*	*	4.3	2.4-6.1
Pancreas	10.0	9.5-10.4	10.0	9.5-10.4	11.3	8.8-13.9	8.4	5.5-11.3	7.8	5.1-10.5
Stomach	3.1	2.8-3.3	2.9	2.6-3.1	5.6	3.8-7.3	6.2	3.7-8.6	*	*
Thyroid	0.4	0.3-0.5	0.4	0.3-0.5	*	*	*	*	*	*
Urinary Bladder	2.8	2.5-3.0	2.8	2.6-3.1	*	*	*	*	*	*

¹ Rates are age-adjusted to the 2000 U.S. Standard Population. ² per 100,000

³ Race/ethnicity categories are mutually exclusive. Deaths are only included in one race/ethnicity category.

* An age-adjusted mortality rate was not calculated when there were fewer than 20 deaths.

Source: Massachusetts Cancer Registry

Table 23.
AGE-ADJUSTED¹ MORTALITY RATES² AND 95% CONFIDENCE LIMITS (95% CL)
FOR SELECTED CANCER SITES BY RACE/ETHNICITY³
Massachusetts, 2001-2005
TOTAL

Cancer Site / Type	All Races		White, non-Hispanic		Black, non-Hispanic		Asian, non-Hispanic		Hispanic	
	Rate	95% CL	Rate	95% CL	Rate	95% CL	Rate	95% CL	Rate	95% CL
All Sites	192.7	191.2-194.1	195.8	194.2-197.3	217.3	208.8-225.8	105.6	97.9-113.4	106.3	99.0-113.6
Brain & Other Nervous System	4.1	3.9-4.3	4.4	4.1-4.6	1.9	1.2-2.6	2.3	1.2-3.3	1.9	1.0-2.7
Breast	14.3	13.9-14.7	14.6	14.2-15.0	16.7	14.5-19.0	4.2	2.7-5.7	7.6	5.8-9.5
Bronchus & Lung	53.6	52.8-54.4	55.1	54.3-55.9	53.6	49.4-57.8	28.9	24.7-33.0	20.0	16.8-23.1
Cervix Uteri	— ⁴	—	—	—	—	—	—	—	—	—
Colon / Rectum	19.2	18.7-19.6	19.4	19.0-19.9	22.1	19.3-24.8	9.9	7.4-12.3	9.7	7.5-12.0
Corpus Uteri & Uterus, NOS	—	—	—	—	—	—	—	—	—	—
Esophagus	5.3	5.1-5.6	5.4	5.2-5.7	6.4	5.0-7.8	*	*	2.9	1.8-4.1
Hodgkin Lymphoma	0.5	0.4-0.5	0.5	0.4-0.6	*	*	*	*	*	*
Kidney & Renal Pelvis	3.8	3.6-4.0	4.0	3.7-4.2	2.9	1.9-3.9	*	*	*	*
Larynx	1.4	1.3-1.5	1.4	1.3-1.5	2.1	1.3-3.0	*	*	*	*
Leukemia	6.9	6.6-7.1	7.0	6.7-7.3	6.3	4.8-7.7	3.2	1.9-4.4	4.4	3.0-5.8
Liver & Intrahepatic Bile Ducts	4.9	4.7-5.2	4.5	4.3-4.8	7.5	6.0-9.0	12.0	9.5-14.4	7.2	5.4-8.9
Melanoma of Skin	2.9	2.8-3.1	3.2	3.0-3.4	*	*	*	*	*	*
Multiple Myeloma	3.5	3.3-3.7	3.5	3.3-3.7	6.8	5.3-8.4	*	*	2.6	1.5-3.7
Non-Hodgkin Lymphoma	7.6	7.3-7.9	7.7	7.4-8.0	7.1	5.6-8.6	4.8	3.1-6.5	3.1	1.9-4.3
Oral Cavity & Pharynx	2.6	2.4-2.7	2.5	2.4-2.7	2.3	1.5-3.1	3.4	2.1-4.7	2.1	1.1-3.1
Ovary	—	—	—	—	—	—	—	—	—	—
Pancreas	11.4	11.0-11.7	11.4	11.0-11.8	13.5	11.4-15.7	7.5	5.4-9.5	8.4	6.3-10.5
Prostate	—	—	—	—	—	—	—	—	—	—
Stomach	4.3	4.1-4.6	4.1	3.9-4.3	8.8	7.1-10.5	5.8	4.0-7.6	5.3	3.6-6.9
Testis	—	—	—	—	—	—	—	—	—	—
Thyroid	0.4	0.4-0.5	0.4	0.4-0.5	*	*	*	*	*	*
Urinary Bladder	5.1	4.8-5.3	5.3	5.0-5.5	4.6	3.3-5.8	*	*	*	*

¹ Rates are age-adjusted to the 2000 U.S. Standard Population. ² per 100,000

³ Race/ethnicity categories are mutually exclusive. Deaths are only included in one race/ethnicity category.

⁴ Dashed-out cancers are found in only one sex.

* An age-adjusted mortality rate was not calculated when there were fewer than 20 deaths.

Source: Massachusetts Cancer Registry

Table 24.
INCIDENCE AND MORTALITY RATES¹ FOR SELECTED CANCER SITES BY SEX
Massachusetts, 2001-2005, and U.S., 2000-2004*

Cancer Site / Type	MALES				FEMALES			
	Incidence		Mortality		Incidence		Mortality	
	MA	NAACCR	MA	U.S.	MA	NAACCR	MA	U.S.
All Sites	602.5	557.8	234.7	238.7	457.2	413.1	166.1	162.2
Brain & Other Nervous System	8.5	7.9	5.1	5.4	6.1	5.7	3.3	3.6
Breast	1.3	1.4	0.3	0.3	134.2	125.3	24.8	25.5
Breast <i>in situ</i>²	0.2	0.2	n/a ⁴	n/a	46.6	29.1	n/a ⁴	n/a
Bronchus & Lung	85.9	89.0	66.8	73.4	63.3	55.2	44.6	41.1
Cervix Uteri	— ³	—	—	—	6.3	8.8	1.5	2.6
Colon / Rectum	67.2	62.9	22.9	23.5	48.4	45.8	16.5	16.4
Corpus Uteri & Uterus, NOS	—	—	—	—	28.6	23.0	4.4	4.1
Esophagus	11.5	8.6	9.9	7.8	2.5	2.1	2.0	1.8
Hodgkin Lymphoma	3.8	3.2	0.6	0.6	2.7	2.5	0.4	0.4
Kidney & Renal Pelvis	20.0	18.4	5.7	6.1	10.2	9.5	2.4	2.8
Larynx	2.1	7.5	2.5	2.4	1.6	1.6	0.6	0.5
Leukemia	14.9	16.0	8.9	10.0	9.4	9.6	5.5	5.7
Liver & Intrahepatic Bile Ducts	9.5	7.8	7.9	5.9	2.6	2.5	2.7	2.1
Melanoma of Skin	26.8	21.1	4.3	3.9	18.8	13.6	2.0	1.7
Multiple Myeloma	7.1	6.9	4.4	4.6	3.9	4.6	3.0	3.1
Non-Hodgkin Lymphoma	23.9	22.8	9.3	9.6	17.2	16.2	6.4	6.2
Oral Cavity & Pharynx	16.3	16.0	4.0	4.1	6.5	6.1	1.5	1.5
Ovary	—	—	—	—	14.4	13.5	9.0	8.9
Pancreas	13.4	12.9	13.2	12.2	10.6	10.0	10.0	9.2
Prostate	170.6	160.8	25.5	27.9	—	—	—	—
Stomach	11.3	10.5	6.1	5.9	5.0	5.0	3.1	3.0
Testis	6.3	5.3	0.2	0.3	—	—	—	—
Thyroid	6.1	4.3	0.4	0.5	17.6	12.4	0.4	0.5
Urinary Bladder	46.2	38.4	8.8	7.5	13.0	9.8	2.8	2.3

¹ Rates are age-adjusted to the 2000 U.S. Standard Population.

² Breast *in situ* cases are excluded from “All Sites” and from breast cancer counts, and are not presented for males.

³ Dashed-out cancers are found in only one sex.

⁴ Rates are not available for that cancer subtype.

Sources: Massachusetts Cancer Registry and North American Association of Central Cancer Registries (NAACCR). [Note: NAACCR data for 2001-2005 were not available at the time this report was prepared.]

APPENDICES

APPENDIX I

ICD CODES USED FOR THIS REPORT

Cancer Site/Type C o d e s	
	ICD-O-3*	ICD-10**
Brain & Other Nervous System	C70.0 - C72.9 except 9590 - 9989	C70 - C72
Breast (includes <i>in situ</i>)	C50.0 - C50.9 except 9590 - 9989	C50
Bronchus & Lung	C34.0 - C34.9 except 9590 - 9989	C34
Cervix Uteri	C53.0 - C53.9 except 9590 - 9989	C53
Colon / Rectum	C18.0 - C18.9, C19.9, C20.9, C26.0 except 9590 - 9989	C18 - C20, C26.0
Corpus Uteri & Uterus, NOS	C54.0 - C54.9, C55.9 except 9590 - 9989	C54 - C55
Esophagus	C15.0 - C15.9 except 9590 - 9989	C15
Hodgkin Lymphoma	C00.0 - C80.9 (includes 9650 - 9667)	C81
Kidney & Renal Pelvis	C64.9, C65.9 except 9590 - 9989	C64 - C65
Larynx	C32.0 - C32.9 except 9590 - 9989	C32
Leukemia	C00.0 - C80.9 (includes 9733, 9742, 9800 - 9820, 9826, 9831 - 9948, 9963-9964) C42.0, C42.1, C42.4 (includes 9823, 9827)	C90.1, C91 - C95
Liver and Intrahepatic Bile Ducts	C22.0, C22.1 except 9590 - 9989	C22

..... *C o d e s*

Cancer Site / Type	ICD-O-3*	ICD-10**
Melanoma of Skin	C44.0 - C44.9 (includes 8720 - 8790)	C43
Multiple Myeloma	C00.0 - C80.9 (includes 9731, 9732, 9734)	C90.0, C90.2
Non-Hodgkin Lymphoma	C00.0 - C80.9 (includes 9590 - 9596, 9670 - 9729) All sites except C42.0, C42.1, C42.4 (includes 9823, 9827)	C82 - C85, C96.3
Oral Cavity & Pharynx	C00.0 - C14.8 except 9590 - 9989	C00 - C14
Ovary	C56.9 except 9590 - 9989	C56
Pancreas	C25.0 - C25.9 except 9590 - 9989	C25
Prostate	C61.9 except 9590 - 9989	C61
Stomach	C16.0 - C16.9 except 9590 - 9989	C16
Testis	C62.0 - C62.9 except 9590 - 9989	C62
Thyroid	C73.9 except 9590 - 9989	C73
Urinary Bladder (includes <i>in situ</i>)	C67.0 - C67.9 except 9590 - 9989	C67

* *International Classification of Diseases for Oncology, 3d Ed. (2)* (includes codes added since publication) for incidence data

** *International Classification of Diseases, Tenth Revision (3)* (includes codes added since publication) for mortality data

APPENDIX II:

Population and Rate Changes

Population estimates used in this report were produced by the National Center for Health Statistics (NCHS) in collaboration with the Census Bureau's Population Estimation Program. For this report, new estimates for 2005 were added to the previous estimates for 2001-2004. The NCHS takes the Census Bureau population estimates file and reallocates the multiple race categories required by the 1997 Office of Management and Budget (OMB) back into the four race categories specified in the 1977 OMB specifications so that the estimates will be compatible with previous years' populations. The estimates are divided into mutually exclusive racial/ethnic categories similar to those of the MCR.

Please note that the statewide age-adjusted rates published in this report cannot be compared with those published in reports prior to July 2007, because the overall population count and the age distribution of the population, which were based on the Census 2000 count, differ.

The difference in the new population estimates is pronounced for Hispanics and black, non-Hispanics. The Hispanic and black, non-Hispanic populations have increased 15% since 2000, while the overall state population has increased by 1%. It is important to remember that both age-adjusted cancer incidence and cancer death rates are not a measure of the actual risk of cancer or of death from it. Rather, age-adjusted rates are summary measures used to compare cancer incidence and mortality trends over time or among different populations whose age distributions differ. For specific examples of the effect of new population estimates on age-adjusted rates see Appendix II in the report *Cancer Incidence and Mortality in Massachusetts 2000-2004: Statewide Report*, available at www.mass.gov/dph/mcr.

Appendix III

**POPULATION ESTIMATES BY AGE, RACE/ETHNICITY, AND SEX
Massachusetts, 2001-2005**

Age Group	White, non-Hispanic			Black, non-Hispanic			Asian, non-Hispanic			Hispanic		
	Males	Females	Total	Males	Females	Total	Males	Females	Total	Males	Females	Total
0-4	741,330	706,410	1,447,740	82,514	78,750	161,264	54,915	53,604	108,519	128,392	122,914	251,306
5-9	775,690	735,585	1,511,275	78,534	74,681	153,215	47,972	49,804	97,776	115,374	110,417	225,791
10-14	842,932	798,744	1,641,676	87,686	84,632	172,318	47,409	44,797	92,206	118,571	112,811	231,382
15-19	827,259	785,275	1,612,534	80,201	76,351	156,552	49,640	51,761	101,401	105,159	97,349	202,508
20-24	795,405	803,981	1,599,386	78,871	80,921	159,792	67,981	74,102	142,083	125,078	117,117	242,195
25-29	761,380	787,705	1,549,085	70,913	75,389	146,302	82,806	86,645	169,451	121,912	116,045	237,957
30-34	885,429	913,873	1,799,302	70,986	78,365	149,351	86,525	86,118	172,643	109,566	110,526	220,092
35-39	1,016,275	1,044,319	2,060,594	74,188	80,547	154,735	69,462	68,337	137,799	98,975	103,281	202,256
40-44	1,101,715	1,133,296	2,235,011	72,946	78,302	151,248	56,006	55,004	111,010	80,637	86,233	166,870
45-49	1,038,052	1,084,836	2,122,888	61,459	65,526	126,985	43,542	46,270	89,812	59,387	65,501	124,888
50-54	927,160	979,474	1,906,634	48,136	53,984	102,120	34,640	37,106	71,746	42,929	49,688	92,617
55-59	773,575	830,269	1,603,844	34,929	42,057	76,986	24,305	25,526	49,831	30,304	36,868	67,172
60-64	563,804	622,064	1,185,868	24,669	31,775	56,444	17,859	19,046	36,905	20,344	24,692	45,036
65-69	433,483	499,379	932,862	17,913	24,120	42,033	13,699	14,662	28,361	12,899	17,662	30,561
70-74	394,291	508,079	902,370	13,320	19,868	33,188	10,109	12,014	22,123	8,851	13,007	21,858
75-79	349,309	502,734	852,043	9,772	16,240	26,012	6,928	8,773	15,701	6,322	9,087	15,409
80-84	241,063	418,257	659,320	5,754	11,379	17,133	3,782	5,446	9,228	3,506	5,803	9,309
85+	181,675	443,263	624,938	4,597	10,151	14,748	2,746	4,526	7,272	3,094	5,790	8,884

Source: National Center for Health Statistics

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