
CANCER INCIDENCE AND MORTALITY IN MASSACHUSETTS 2012 – 2016:

STATEWIDE REPORT

With a Special Overview:
Mass in Motion

Office of Data Management and Outcomes Assessment

Office of Population Health

Massachusetts Department of Public Health

September 2020



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With a Special Overview:
Mass in Motion

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Massachusetts Department of Public Health

September 2020

ACKNOWLEDGMENTS

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EXECUTIVE SUMMARY

DATA HIGHLIGHTS

Cancer Incidence and Mortality in Massachusetts, 2012-2016: Statewide Report presents cancer incidence and mortality data for the Commonwealth from 2012 through 2016. The report includes numbers and rates for 24 types of cancer, information on age-specific patterns, an examination of patterns by race/ethnicity, and a comparison of Massachusetts and national cancer rates. A special section on the Mass in Motion program is also included. Data are provided on invasive cancers only with the exceptions of urinary bladder (which includes *in situ* and invasive cancers combined) and *in situ* breast cancer. *In situ* means the cancer cells are still in the place that they started and have not spread at all.

All counts and average annual age-adjusted rates presented in this Executive Summary are for the period 2012-2016 and are for Massachusetts residents, unless otherwise stated.

OVERALL:

- Total number of new cases –185,831, an average of 37,166 annually (males=88,753; females =97,056)
- Total number of cancer deaths – 63,930, an average of 12,786 annually (males=32,384; females=31,546)
- Incidence rate (age-adjusted) for all cancers combined for total population – 463.4 per 100,000 persons
- Mortality rate (age-adjusted) for all cancer deaths combined for total population – 152.9 per 100,000 persons

MOST COMMONLY DIAGNOSED CANCERS & CANCER DEATH CAUSES BY SEX:

Incidence (newly diagnosed cases)

- Males – *prostate cancer* accounted for 22.6 % of all newly diagnosed cancers among males
- Females – *invasive breast cancer* accounted for 30.2 % of all newly diagnosed cancers among females

Mortality (cancer deaths)

- Males – *cancer of the bronchus and lung* accounted for 25.6% of all cancer deaths among males
- Females – *cancer of the bronchus and lung* also accounted for 26.1% of all cancer deaths among females

TRENDS 2012-2016:

Trend Calculation Update: The annual percent change (APC) is a summary measure of the trend over a specific time period (See Figures 5 and 6). Beginning with the report *Cancer Incidence and Mortality in Massachusetts 2011-2015: Statewide Report*, the coefficient of variation (CV) is being used to determine which APC rates to suppress and which to flag as being unreliable. The CV is calculated by dividing the mean incidence or mortality age-adjusted rate for each of the five years by the standard error and multiplying that by 100. According to the US Census, a CV less than 15% indicates a high reliability and can be presented without caution, a CV between 15-30% indicates a medium reliability and can be presented with care, and a CV over 30% indicates a low reliability and can only be presented with extreme caution (footnote). This report presents all trends with a high reliability and all trends with a medium reliability with a footnote. Any trends with a low reliability are not presented and are indicated with 'NA'. (2)

Statistically Significant Incidence Trends – Males

- Bronchus & lung cancer decreased 2.2% per year.
- Leukemia decreased 3.8% per year.
- Testicular cancer decreased by 4.6% per year

Statistically Significant Mortality Trends – Males

- All cancers deaths combined decreased 1.8% per year.
- Bronchus and lung cancer deaths decreased 2.4% per year.
- Urinary bladder cancer deaths increased 5.3% per year.
- Brain & other nervous system cancer deaths increased 3.8% per year.
- Non-Hodgkin's lymphoma deaths increased 2.5% per year.

Statistically Significant Incidence Trends – Females

- *In situ* breast cancer decreased 2.6% per year.
- Non-Hodgkin's lymphoma decreased 3.8% per year.

Statistically Significant Mortality Trends – Females

- All cancers deaths combined decreased 2.1% per year.
- Stomach cancer deaths decreased 4.5% per year.
- Multiple myeloma deaths decreased by 4.7% per year.
- Oral cavity and pharynx cancer deaths increased by 6.8% per year.

RATES BY RACE/ETHNICITY: *(Unless otherwise noted, the term 'racial/ethnic groups' in this report refers to white non-Hispanic, black non-Hispanic, Asian non-Hispanic and Hispanic).*

Males Incidence

- Black, non-Hispanic males had the highest total age-adjusted incidence rates, significantly higher than Asian, non-Hispanic and Hispanic males.
- Cancers of prostate, bronchus and lung, and colon/rectum were the top 3 leading cancer types in each racial/ethnic group except white, non-Hispanics. For white, non-Hispanic males, urinary bladder cancer was among the top 3, (after prostate and bronchus and lung).
- White, non-Hispanic males had significantly higher rates of cancers of the brain and other nervous system, bronchus and lung, esophagus, leukemia, oral cavity and pharynx, testis and urinary bladder when compared to all other race/ethnic groups. Melanoma of skin was significantly higher for white, non-Hispanic males when compared to all race/ethnic groups combined (there were too few cases to calculate rates for black, non-Hispanics, Asian, non-Hispanics and Hispanics).
- Black, non-Hispanic males had significantly higher rates of multiple myeloma and prostate cancer when compared to all other race/ethnic groups.
- Black, non-Hispanic, Asian, non-Hispanic, and Hispanic males had significantly higher rates of liver and intrahepatic bile duct cancer when compared to white, non-Hispanic males.

Males Mortality

- Black, non-Hispanic males had the highest total cancer mortality rate, significantly higher compared to Asian, non-Hispanics and Hispanics but not significantly higher than white, non-Hispanic males. Cancer of the bronchus and lung was the leading cause of cancer death for each racial/ethnic group. White, non-Hispanic males had the highest total mortality rate, significantly higher compared to Asian, non-Hispanics and Hispanics but not significantly higher than black, non-Hispanic males.
- The mortality rate for prostate cancer was significantly elevated among black, non-Hispanic males compared to the other racial/ethnic groups.
- The mortality rate for liver and intrahepatic cancer was highest among Asian, non-Hispanics, significantly elevated compared to white, non-Hispanics, but not compared to black, non-Hispanics and Hispanics.

Females Incidence

- White, non-Hispanic females had the highest total age-adjusted incidence rates, significantly higher than those of all other racial/ethnic groups.
- Breast cancer was the most commonly diagnosed cancer for each racial/ethnic group.
- The second most common cancer diagnosed was bronchus and lung for each racial/ethnic group except Hispanics. Thyroid was the second most common cancer for Hispanics, followed by bronchus and lung.
- Compared to all other racial/ethnic groups, white, non-Hispanic females had significantly higher rates of the following cancer types: invasive breast, bronchus and lung, ovary and urinary bladder. Melanoma of skin was significantly higher when compared to all race/ethnic groups combined (there were too few cases to calculate rates for Black, non-Hispanics, Asian, non-Hispanics and Hispanics). Black, non-Hispanic females had significantly higher rates of multiple myeloma compared to all other racial/ethnic groups.
- Black, non-Hispanic and Hispanic females had significantly higher rates of cervical cancer compared to white, non-Hispanic females, but not compared to Asian, non-Hispanic females.
- Asian, non-Hispanic females had significantly higher liver and intrahepatic bile duct cancer rates compared to white non-Hispanics and black non-Hispanics, but not compared to Hispanics.
- Hispanic females had significantly higher rates of multiple myeloma compared to white, non-Hispanic and Asian, non-Hispanic females, but not compared to black, non-Hispanic females.

Females Mortality

- White, non-Hispanic females had the highest total cancer mortality rates, significantly higher than for Asian, non-Hispanic, black, non-Hispanic and Hispanic females.
- Cancer of the bronchus and lung was the leading cause of cancer death among all racial/ethnic groups. White, non-Hispanic females had significantly elevated rates compared to the other racial/ethnic groups.
- Black, non-Hispanic females had significantly elevated uterine cancer and multiple myeloma mortality rates when compared to the other racial/ethnic groups. Their breast cancer mortality rate was significantly elevated compared to that of Asian, non-Hispanic and Hispanic females, but was not significantly elevated compared to white, non-Hispanic females.

MASSACHUSETTS VS. NATIONAL RATES

Males and Females Incidence

Overall age-adjusted cancer incidence rates in Massachusetts were not significantly different than national rates for males, but were significantly higher than national rates for females. Among the cancers significantly elevated for females were invasive and *in situ* breast, bronchus and lung, uterine, esophageal, oral cavity and pharynx, thyroid, and urinary bladder. Among those cancers significantly elevated for males were esophageal, testicular, thyroid and urinary bladder. Incidence rates among females that were significantly lower compared to the U.S. were cervix uteri, colon and rectum, kidney and renal pelvis, leukemia, and liver and intrahepatic bile ducts, while among males the cancer types included colon and rectum, leukemia, melanoma of skin, and prostate.

Males and Females Mortality

Overall age-adjusted cancer mortality rates in Massachusetts were significantly lower from national rates for both males and females. However, male esophageal cancer mortality rates were significantly elevated compared

to the U.S. Several cancers had significantly lower mortality rates compared to the U.S. For males, these were bronchus and lung, colon/rectum, kidney and renal pelvis, larynx, leukemia, multiple myeloma, non-Hodgkin lymphoma, oral cavity and pharynx, and prostate cancer. For females, these were breast, cervix uteri, colon/rectum, kidney and renal pelvis, and liver and intrahepatic bile duct cancer.

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, 2012-2016: Statewide Report* is produced annually with the most recently available 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 www.mass.gov/dph/mcr.

Overall 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 2012 through 2016;*
- Provides detailed information on the most commonly occurring types of cancer for 2012 through 2016;
- Examines cancer incidence patterns by age, sex, and race/ethnicity;
- Reviews Massachusetts cancer incidence and mortality trends for 2012 through 2016;
- Compares Massachusetts incidence and mortality data with respective national data; and
- Features a special section on the “Mass In Motion” program

The report is organized into the following sections:

- **SPECIAL OVERVIEW** which provides more detailed information on a specific topic of interest in Massachusetts. This report has a special overview of the “Mass in Motion” program which focuses on health behaviors for cancer prevention.
- **FIGURES & TABLES** which present cancer incidence and mortality data for 24 types of cancer for 2012-2016. There are 6 figures and 24 tables in this section with breakdowns by sex, race/ethnicity, year, age group, state and national comparisons, and cancer type.
- **APPENDICES** which 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.
- **REFERENCES**

**The Massachusetts incidence data in this report include only invasive cancers for 22 of the 24 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.*

Note: For more detailed information on the methods of the Massachusetts Cancer Registry, please refer to *Cancer Incidence and Mortality in Massachusetts 2006-2010: Statewide Report (1)*.

SPECIAL OVERVIEW

MASS IN MOTION



MASS IN MOTION



Each year in its annual report, the Massachusetts Cancer Registry spotlights a Massachusetts Department of Public Health program or policy that aims to reduce cancer incidence and death, and improve health and wellbeing for all residents of the Commonwealth. This year's focus is the Mass in Motion program.

Mass in Motion is a statewide movement to prevent obesity in Massachusetts by increasing opportunities for healthy eating and active living in the places we live, learn, work and play. The Mass in Motion's Municipal Wellness and Leadership Program is made up of 27 programs representing 60 cities and towns from around the Commonwealth that are working to make the healthy choice the easy choice.

Previous studies have shown that physical activity and nutrition are key risk factors that directly impact overweight/obesity and are associated with cancer risk. Maintaining a healthy weight, staying physically active, and eating a healthy diet can substantially reduce one's chances of developing or dying from cancer.¹ Although these leading risk factors are modifiable, the conditions in which people live, learn, work, and play do not offer equal access or opportunity to make this possible. Inequities exist in access to healthy foods and safe spaces or opportunities for physical activity and active living (such as walking and biking).

The health implications of these inequities are evident in the fact that residents of Massachusetts who are Black, Hispanic, or of low socioeconomic status, are consistently and disproportionately impacted by chronic diseases related to unhealthy environments. Simply put, it is very difficult to lead healthy lives in unhealthy environments. Because of this, the Massachusetts Department of Public Health (MDPH) frames its chronic disease prevention and wellness efforts around addressing the social determinants of health and focusing on policies that ensure that all individuals have the ability to make healthy choices².



Mass in Motion communities work locally to make healthier choices easier for everyone by:

- Increasing access to local fresh foods through farmers markets and community gardens, and working with food retailers to offer healthy, affordable food and drink options
- Building and expanding open spaces, safer parks, playgrounds and other places to be active
- Creating safe neighborhoods with new sidewalks, bike lanes, walkable paths that make roads safe for all users

For individuals looking for information on what they can do to reduce cancer risk some options include:

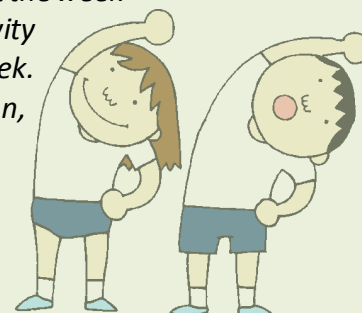
Nutrition

- *Choose foods and drinks in amounts that help you get to and maintain a healthy weight, without being underweight*
- *Limit consumption of high-calorie foods and beverages*
- *Limit how much processed meat and red meat you eat*
- *Eat at least 2 ½ cups of vegetables and fruits each day*
- *Choose whole grains instead of refined grain products*
- *If you drink alcohol, limit how much (no more than 2 drinks a day for men and 1 drink per day for women)¹*



Exercise

- **Adults:** *At least 150 minutes of moderate intensity or 75 minutes of vigorous intensity activity each week, or an equivalent combination preferably spread throughout the week*
- **Children and adolescents:** *At least 1 hour of moderate or vigorous activity each day, with vigorous intensity activity occurring at least 3 days a week.*
- **Limit sedentary behavior** such as sitting, lying down, watching television, or other forms of screen-based entertainment.
- **Doing some physical activity above usual activities,** no matter what one's level of activity, can have many health benefits.¹



Examples of Mass in Motion community activities

- The City of Salem engaged residents, municipal staff and community-based partners to complete a City-wide Community Food Assessment identifying policies and practices to change that will increase access to healthy foods.
- The City of Northampton's Open Space, Recreation and Multi-Use Trail Plan, an ambitious roadmap for increasing access to outdoor exercise for all residents and visitors – with particular attention to people with mobility disabilities and people of color.
- The City of Worcester used the Community Health Inclusion Index to assess parks throughout the city for people with mobility constraints. The results enabled the city to make data-informed decisions about investments now and into the future.

For more information on Mass in Motion see: <https://www.mass.gov/orgs/mass-in-motion>

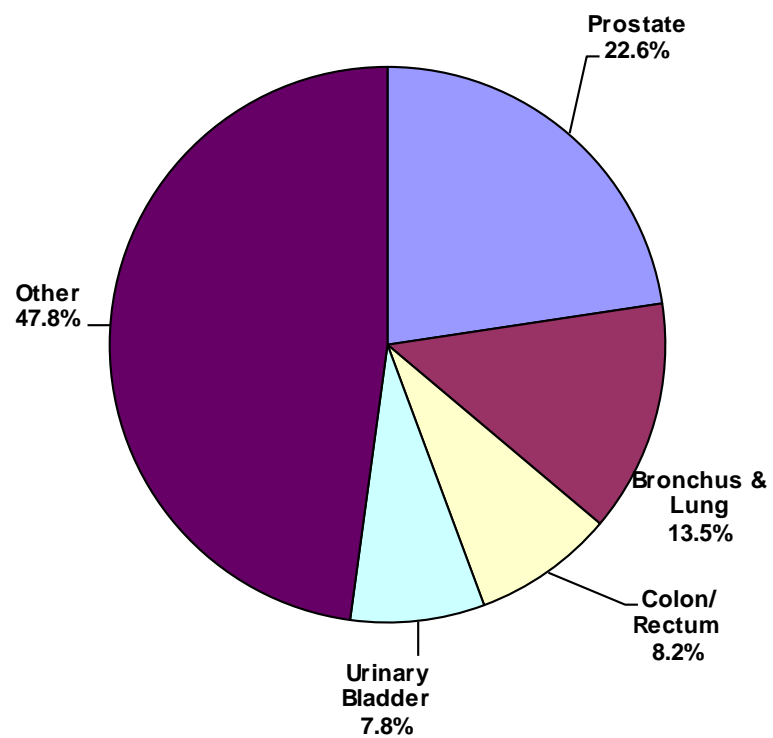
For More Detailed Information:

- American Cancer Society Guidelines on Nutrition and Physical Activity for Cancer Prevention
<https://www.cancer.org/healthy/eat-healthy-get-active/acs-guidelines-nutrition-physical-activity-cancer-prevention.html>
- American Cancer Society Nutrition and Physical Activity Cancer Fact Sheet
<https://www.cancer.org/content/dam/cancer-org/cancer-control/en/booklets-flyers/nutrition-and-cancer-fact-sheet.pdf>
- Proportion and Number of Cancer Cases and Deaths Attributable to Potentially Modifiable Risk Factors in the United States
<https://onlinelibrary.wiley.com/doi/full/10.3322/caac.21440>

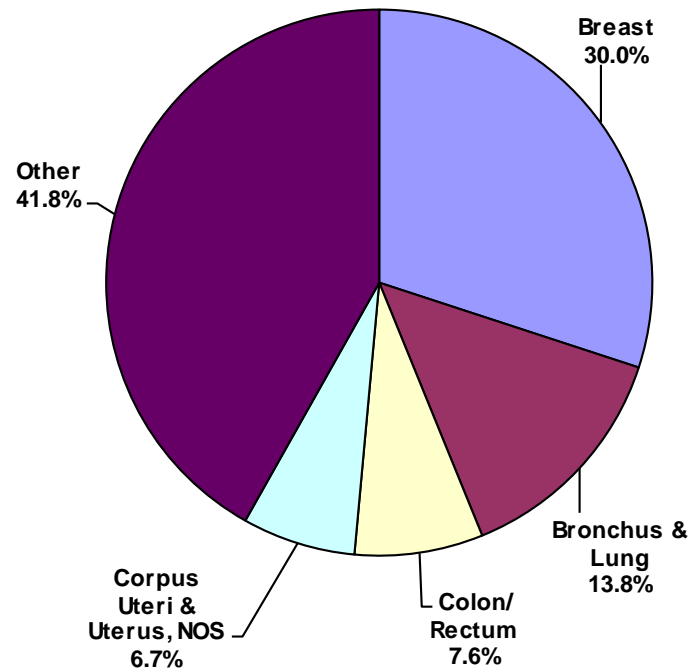
FIGURES & TABLES

Figure 1.
PERCENTAGE OF CANCER INCIDENT CASES BY CANCER TYPE AND SEX
Massachusetts, 2012-2016

MALES (N=88,753)

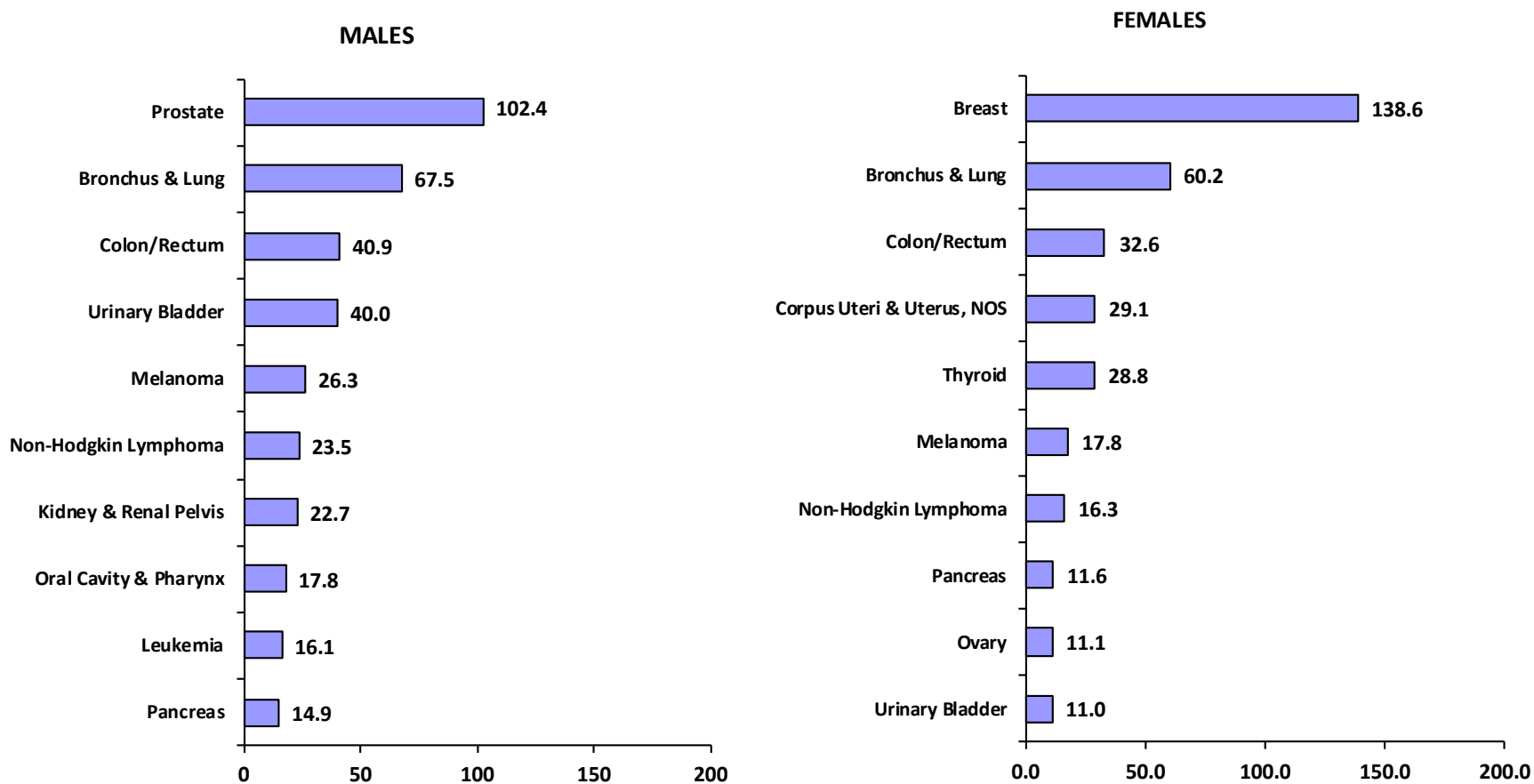


FEMALES (N=97,056)



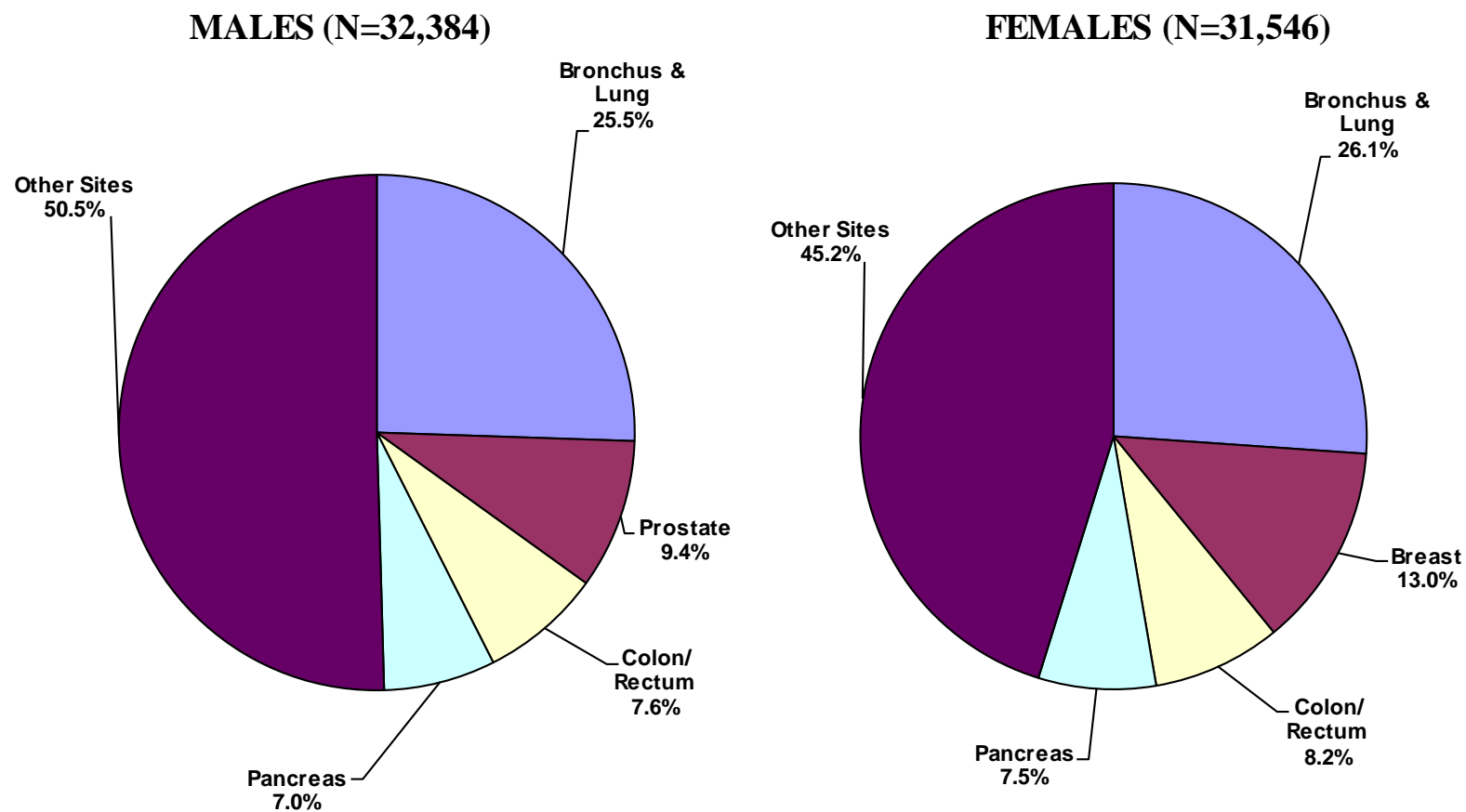
Source: Massachusetts Cancer Registry

Figure 2.
INCIDENCE RATES¹ FOR TEN LEADING CANCER TYPES BY SEX
Massachusetts, 2012-2016



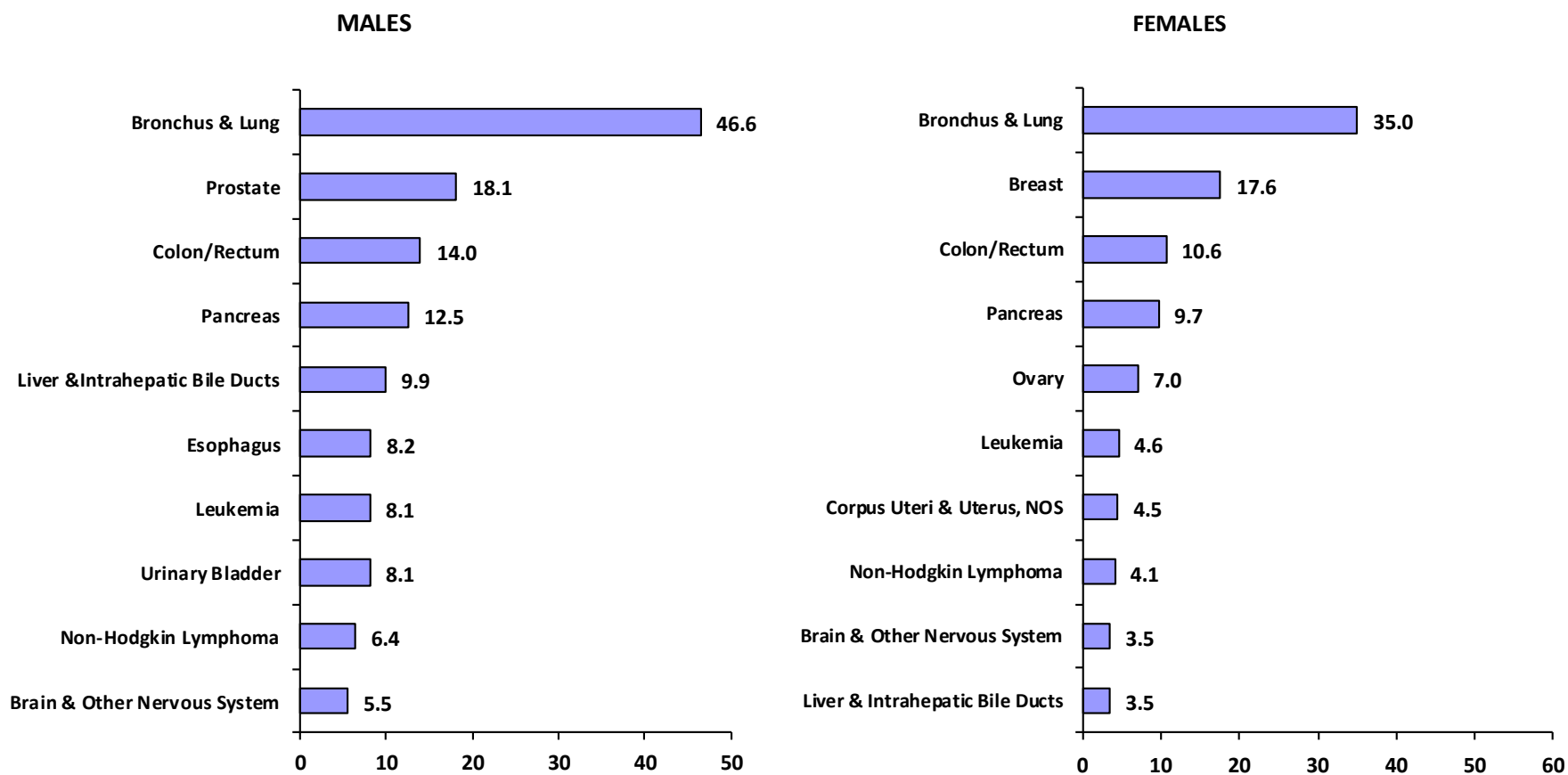
¹Rates are age-adjusted to the 2000 U.S. Standard Population. NOS – Not Otherwise Specified.
 Source: Massachusetts Cancer Registry

Figure 3.
PERCENTAGE OF CANCER DEATHS BY CANCER TYPE AND SEX
Massachusetts, 2012-2016



Source: Massachusetts Vital Statistics

Figure 4
MORTALITY RATES¹ FOR TEN LEADING CANCER TYPES BY SEX
Massachusetts, 2012-2016



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

Table 1
AGE-SPECIFIC INCIDENCE RATES¹ AND MEDIAN AGE AT DIAGNOSIS FOR SELECTED CANCER SITES
Massachusetts, 2012-2016
MALES

Cancer Site / Type	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+	Median Age
All Sites	28.7	14.1	12.6	24.1	36.4	53.3	72.6	97.9	159.2	271.1	540.7	884.4	1320.6	1798.6	2372.4	2665.8	2864.3	2799.7	67
Brain & Other Nervous System	4.9	3.5	2.4	2.5	2.3	4.7	4.3	4.0	4.4	5.1	8.1	12.1	16.6	21.1	30.2	33.4	32.7	21.3	61
Breast	-- ³	0.1	--	--	--	--	0.3	0.2	0.7	0.6	1.5	2.3	3.2	4.8	7.5	5.8	9.5	7.5	67
Breast <i>in situ</i> ²	--	--	--	0.1	--	--	--	0.1	0.2	0.1	0.2	0.3	0.3	0.4	0.8	1.7	0.4	0.4	68
Bronchus & Lung	0.2	--	--	0.1	0.3	0.3	1.3	2.7	6.1	17.9	47.7	98.6	157.8	252.2	409.3	490.8	545.0	441.9	71
Colon / Rectum	--	--	0.2	0.7	0.7	2.6	5.6	9.8	21.7	35.1	67.0	65.9	84.1	114.6	165.4	217.7	254.7	316.0	67
Esophagus	--	--	--	--	0.1	0.3	0.3	0.8	1.7	6.0	9.3	19.6	28.6	34.1	52.3	53.2	55.1	50.9	67
Hodgkin Lymphoma	--	0.4	1.2	3.6	5.0	5.1	4.8	2.6	2.9	2.7	2.6	3.2	4.1	4.0	6.1	6.4	4.6	3.2	41
Kidney & Renal Pelvis	2.6	0.5	0.3	0.4	0.3	1.5	3.1	7.9	15.2	22.2	35.5	47.9	63.2	82.8	99.5	108.3	88.9	69.5	64
Larynx	--	--	0.1	--	--	0.1	0.2	0.4	0.9	2.7	7.0	13.6	18.3	22.0	28.5	27.0	35.7	20.9	66
Leukemia	8.5	3.5	2.6	3.6	2.8	2.5	3.8	3.6	7.0	9.5	13.1	20.6	32.8	46.4	63.4	88.8	101.9	108.6	67
Liver & Intrahepatic Bile Ducts	1.5	--	0.4	0.3	0.3	0.2	0.5	1.4	2.1	5.5	17.1	38.3	53.9	53.8	54.6	67.9	66.1	53.7	64
Melanoma of Skin	--	0.1	--	0.4	1.3	4.2	6.9	8.3	12.5	18.9	29.2	43.0	58.4	79.1	108.9	159.0	172.6	173.0	67
Multiple Myeloma	--	--	--	--	--	0.3	0.2	1.2	2.9	6.3	8.4	13.8	21.5	29.2	43.3	47.0	61.6	47.0	68
Non-Hodgkin Lymphoma	1.3	1.8	2.0	2.6	3.8	2.5	5.2	8.2	12.8	16.0	26.1	36.2	50.9	74.0	98.6	118.3	158.9	144.5	66
Oral Cavity & Pharynx	--	0.2	0.1	0.4	0.5	1.4	1.7	4.1	9.7	19.0	34.4	48.6	61.7	66.4	67.4	68.2	58.9	54.1	62
Pancreas	--	--	0.1	--	--	0.2	0.5	1.1	4.0	8.2	13.9	24.8	37.8	55.1	75.0	87.7	110.6	107.8	69
Prostate	0.1	--	--	--	--	0.1	0.1	0.5	6.4	31.9	129.2	261.9	424.7	563.9	602.4	479.1	334.5	312.8	65
Stomach	--	--	0.1	--	--	0.5	1.4	2.0	3.0	6.0	9.6	14.4	21.8	31.5	46.3	56.2	70.7	66.0	69
Testis	0.4	0.1	0.2	2.5	10.6	15.0	14.9	13.0	10.5	7.5	6.8	3.5	2.3	1.5	1.5	0.6	1.9	0.4	34
Thyroid	0.2	0.1	0.3	1.0	3.8	6.4	9.3	13.1	15.2	16.7	17.4	21.0	20.6	23.2	24.3	23.1	19.8	8.7	54
Urinary Bladder	0.1	--	--	0.3	0.7	0.6	1.4	2.0	5.8	12.3	23.9	43.9	79.6	128.9	217.1	286.2	352.7	404.0	72
Other Sites	8.9	3.7	2.8	5.6	3.9	5.0	7.0	10.8	13.9	21.4	32.8	51.1	78.9	110.0	170.8	241.1	328.0	387.8	70

¹per 100,000

²Breast *in situ* is excluded from 'All Sites'.

³Dashes indicate age groups with no incident cases.

Source: Massachusetts Cancer Registry

Table 2
AGE-SPECIFIC INCIDENCE RATES¹ AND MEDIAN AGE AT DIAGNOSIS FOR SELECTED CANCER SITES
Massachusetts, 2012-2016
FEMALES

Cancer Site/ Type	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+	Median Age
All Sites	21.1	13.0	14.8	21.3	43.7	76.5	130.7	204.1	332.0	473.6	657.3	818.1	1093.3	1448.3	1827.8	2035.0	2072.6	1783.0	66
Brain & Other Nervous System	2.9	3.4	2.7	3.0	2.2	3.2	3.8	3.9	4.6	4.2	6.6	9.5	11.6	14.1	17.0	19.9	20.7	16.6	60
Breast	-- ³	--	0.1	0.1	1.7	11.8	31.5	73.0	143.8	214.4	258.3	270.0	367.3	466.7	516.5	500.1	447.1	318.5	63
Breast <i>in situ</i> ²	--	--	--	0.1	0.2	1.4	4.5	13.0	66.0	98.9	99.5	92.4	98.7	120.8	119.5	104.0	63.4	24.7	58
Bronchus & Lung	--	--	0.2	0.4	0.3	0.4	0.9	3.3	9.4	24.4	52.6	100.7	148.7	232.1	384.3	437.8	395.6	275.9	71
Cervix Uteri	--	--	--	--	0.5	2.2	7.2	10.4	10.1	8.9	8.6	7.0	9.6	9.2	7.6	7.8	9.1	6.8	52
Colon / Rectum	--	0.2	0.3	1.0	1.9	2.2	4.9	12.1	21.3	30.8	52.7	46.6	60.1	83.1	122.2	172.9	213.3	248.9	70
Corpus Uteri & Uterus, NOS	--	--	0.1	--	0.2	1.9	2.6	8.7	13.6	26.7	52.9	81.4	108.1	133.8	125.7	98.5	85.4	52.8	64
Esophagus	--	--	--	--	--	--	0.2	0.1	0.8	1.3	1.1	4.0	6.8	8.6	12.7	11.7	13.4	15.5	70
Hodgkin Lymphoma	--	--	1.2	3.3	5.2	4.3	3.9	2.8	3.4	1.6	2.5	2.9	2.8	2.2	2.7	3.6	3.8	1.7	38
Kidney & Renal Pelvis	2.0	1.0	0.3	0.4	0.3	1.2	2.8	4.1	7.7	10.3	16.1	21.3	28.4	35.3	43.3	49.6	46.0	33.2	65
Larynx	--	--	--	--	--	--	--	0.1	0.2	0.9	2.9	4.6	3.0	5.9	7.2	5.1	4.3	4.7	66
Leukemia	6.6	4.7	2.2	1.0	2.9	2.5	2.0	3.3	5.0	6.3	8.9	13.3	18.6	23.6	34.7	51.9	53.8	58.1	68
Liver & Intrahepatic Bile Ducts	0.3	--	0.2	0.4	0.2	0.1	0.4	0.7	1.4	1.6	4.3	9.1	14.0	13.4	17.0	22.5	24.5	20.4	68
Melanoma of Skin	0.2	0.3	0.5	0.8	4.3	9.7	12.8	11.8	17.6	20.1	26.3	33.1	38.6	46.7	52.0	62.9	72.3	64.3	62
Multiple Myeloma	--	--	--	--	--	0.3	0.3	1.2	1.5	2.8	6.2	10.0	13.4	19.7	23.4	27.5	36.6	30.7	69
Non-Hodgkin Lymphoma	0.3	0.4	0.6	1.0	2.4	2.5	3.9	5.3	9.4	12.8	18.4	25.3	41.1	53.2	69.7	84.5	104.1	79.4	68
Oral Cavity & Pharynx	--	--	0.5	0.5	0.6	1.2	1.5	1.8	4.4	6.3	10.5	16.0	19.4	25.3	31.2	31.4	33.6	33.8	66
Ovary	0.2	0.2	0.4	1.1	1.6	2.1	4.1	4.5	5.7	13.9	20.7	23.7	29.3	34.1	40.3	44.7	43.0	39.6	64
Pancreas	--	--	--	0.1	0.1	--	0.4	1.4	2.3	4.5	9.8	17.5	24.4	42.6	61.1	74.8	91.7	96.0	73
Stomach	--	--	--	0.2	0.3	0.4	0.5	1.7	3.3	4.5	4.5	7.0	8.2	12.9	19.4	22.5	33.4	34.1	71
Thyroid	0.1	--	1.9	4.5	15.5	25.4	39.5	43.0	48.3	51.7	50.3	47.8	45.1	46.5	41.1	34.7	24.5	13.2	50
Urinary Bladder	--	--	0.3	0.2	0.1	0.1	0.6	1.2	2.2	3.3	9.4	15.1	24.2	38.9	58.6	78.8	88.5	77.1	73
Other Sites	8.3	2.8	3.3	3.5	3.4	4.8	6.9	9.8	16.0	22.4	33.7	52.3	70.8	100.7	140.2	191.8	227.7	261.9	71

¹per 100,000

²Breast *in situ* is excluded from 'All Sites'.

³Dashes indicate age groups with no incident cases.

Source: Massachusetts Cancer Registry

Table 3
AGE-SPECIFIC INCIDENCE RATES¹ AND MEDIAN AGE AT DIAGNOSIS FOR SELECTED CANCER SITES
Massachusetts, 2012-2016
TOTAL

Cancer Site/ Type	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+	Median Age
All Sites	25.0	13.6	13.7	22.7	40.1	65.0	102.0	152.0	247.9	375.0	600.6	850.2	1201.7	1612.4	2075.2	2307.6	2388.9	2111.5	66
Brain & Other Nervous System	3.9	3.4	2.5	2.8	2.3	4.0	4.1	3.9	4.5	4.6	7.3	10.8	14.0	17.4	23.0	25.7	25.5	18.1	61
Breast	-- ³	0.1	0.1	0.0	0.9	5.9	16.0	37.3	74.0	110.2	133.2	140.7	193.9	250.4	285.4	286.5	272.3	218.0	63
Breast <i>in situ</i> ²	--	--	--	0.1	0.1	0.7	2.3	6.7	33.9	50.8	51.1	47.9	51.9	64.4	65.6	59.8	38.3	16.8	58
Bronchus & Lung	0.1	--	0.1	0.3	0.3	0.4	1.1	3.0	7.8	21.2	50.2	99.7	153.1	241.5	395.7	460.7	455.3	329.5	71
Cervix Uteri	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Colon / Rectum	--	0.1	0.3	0.8	1.3	2.4	5.2	11.0	21.5	32.9	59.7	55.9	71.5	97.8	141.8	192.3	229.8	270.6	68
Corpus Uteri & Uterus, NOS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Esophagus	--	--	--	--	--	0.1	0.2	0.4	1.3	3.6	5.1	11.5	17.1	20.6	30.7	29.6	30.1	26.9	68
Hodgkin Lymphoma	--	0.2	1.2	3.4	5.1	4.7	4.3	2.7	3.1	2.1	2.5	3.1	3.4	3.1	4.3	4.8	4.1	2.2	40
Kidney & Renal Pelvis	2.3	0.7	0.3	0.4	0.3	1.4	3.0	6.0	11.3	16.1	25.5	34.2	45.0	57.5	68.8	75.0	63.2	44.9	64
Larynx	--	--	0.1	--	--	--	0.1	0.2	0.5	1.8	4.9	9.0	10.3	13.4	16.9	14.6	16.9	10.0	66
Leukemia	7.6	4.1	2.4	2.3	2.8	2.5	2.9	3.4	6.0	7.9	11.0	16.8	25.3	34.2	47.7	67.9	73.0	74.4	67
Liver & Intrahepatic Bile Ducts	0.9	--	0.3	0.3	0.3	0.1	0.4	1.0	1.7	3.5	10.5	23.2	33.1	32.4	34.1	42.1	41.1	31.1	65
Melanoma of Skin	0.1	0.2	0.3	0.6	2.8	7.0	9.8	10.1	15.1	19.5	27.7	37.9	48.0	61.8	77.9	104.4	112.5	99.4	65
Multiple Myeloma	--	--	--	--	--	0.3	0.2	1.2	2.2	4.5	7.3	11.8	17.2	24.2	32.4	36.0	46.6	36.0	69
Non-Hodgkin Lymphoma	0.8	1.1	1.3	1.8	3.1	2.5	4.6	6.8	11.1	14.4	22.2	30.6	45.7	62.9	82.9	99.1	126.0	100.4	67
Oral Cavity & Pharynx	--	0.1	0.3	0.5	0.5	1.3	1.6	2.9	7.0	12.5	22.2	31.7	39.5	44.5	47.6	47.3	43.7	40.3	63
Ovary	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Pancreas	--	--	0.1	0.0	0.0	0.1	0.5	1.2	3.1	6.3	11.8	21.0	30.7	48.5	67.4	80.4	99.3	99.8	71
Prostate	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Stomach	--	--	0.1	0.1	0.2	0.5	0.9	1.9	3.1	5.2	7.0	10.6	14.6	21.6	31.6	37.1	48.3	44.4	69
Testis	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Thyroid	0.2	0.1	1.1	2.8	9.6	15.9	24.6	28.4	32.2	34.6	34.3	34.8	33.4	35.6	33.5	29.7	22.6	11.7	51
Urinary Bladder	0.1	--	0.2	0.2	0.4	0.3	1.0	1.6	3.9	7.7	16.5	29.0	50.6	81.0	130.5	168.4	194.0	182.8	72
Other Sites	8.6	3.3	3.0	4.6	3.6	4.9	6.9	10.3	15.0	21.9	33.3	51.8	74.7	105.0	154.1	213.1	267.8	302.6	70

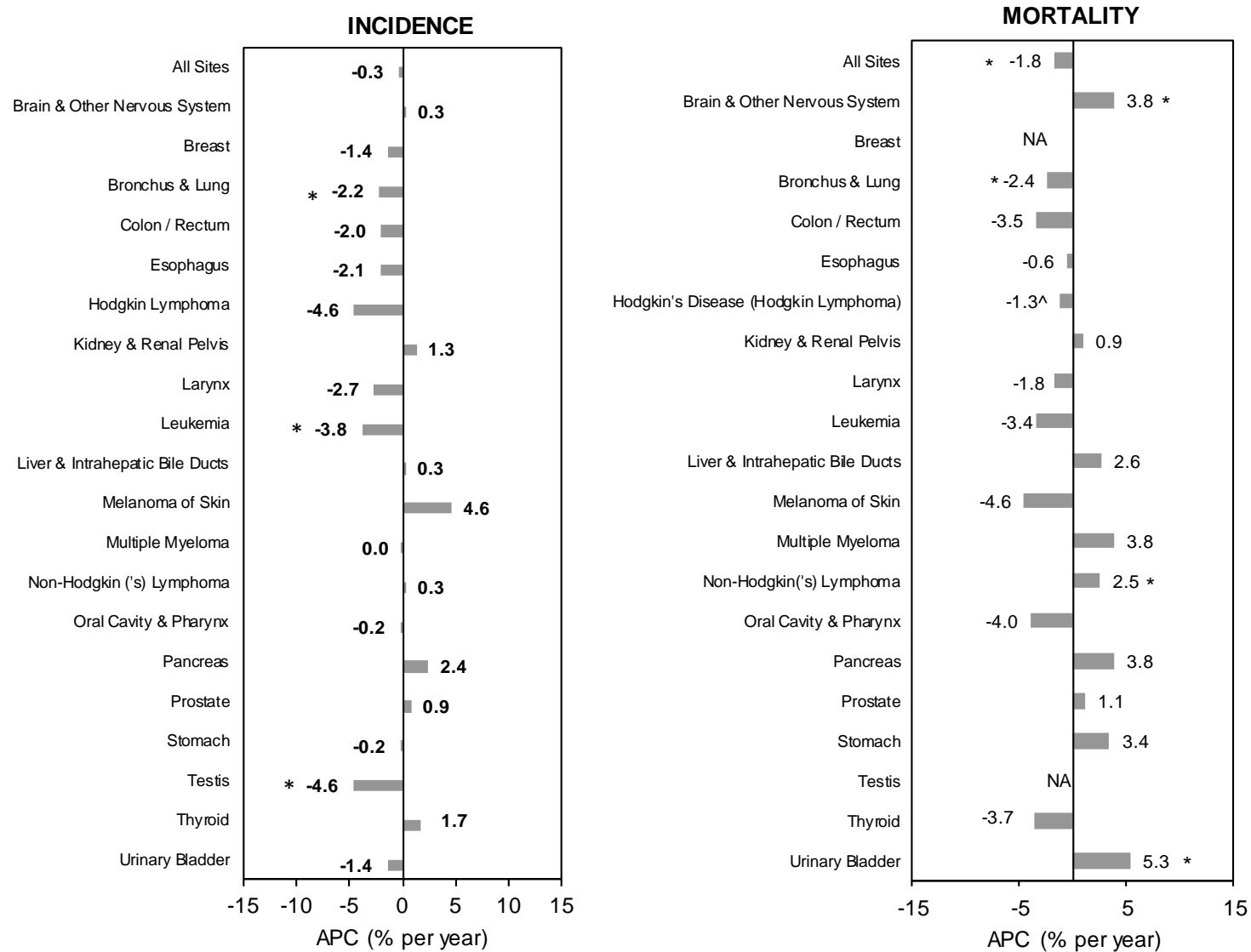
¹per 100,000

²Breast *in situ* is excluded from 'All Sites'.

³Dashes indicate age groups with no incident cases or cancers found in only one sex.

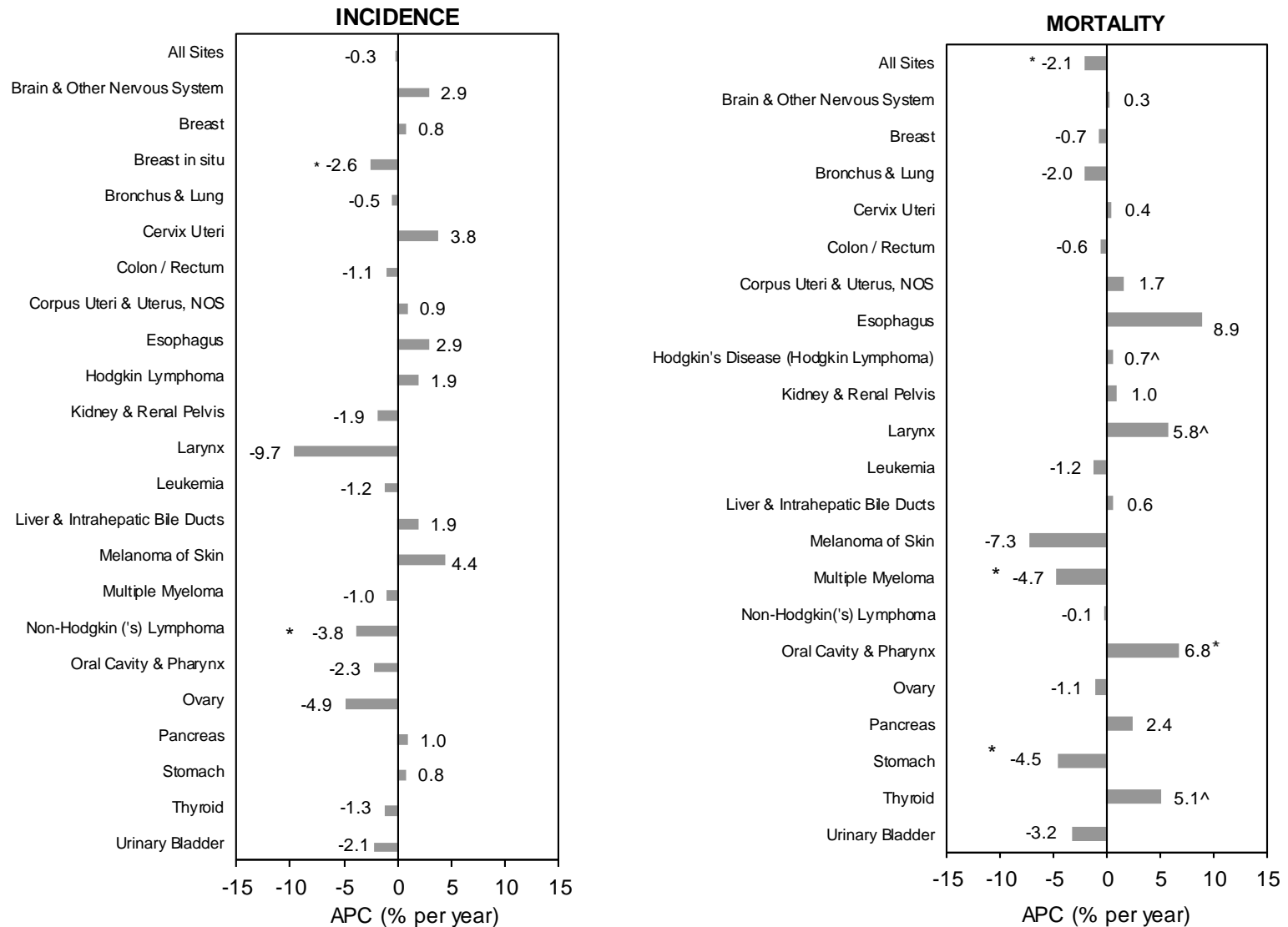
Source: Massachusetts Cancer Registry

Figure 5.
ANNUAL PERCENT CHANGE (APC) IN AGE ADJUSTED CANCER RATES AMONG MALES
Massachusetts, 2012-2016



APC is statistically significant ($p \leq 0.05$). Values appearing directly on a bar have been bolded for ease of reading only. ^ indicates a medium reliability trend (CV between 15 and 30). NA indicates an unreliable trend (CV greater than 30) therefore the APC is not presented. Source: Massachusetts Cancer Registry

Figure 6
ANNUAL PERCENT CHANGE (APC) IN AGE-ADJUSTED CANCER RATES AMONG FEMALES
Massachusetts, 2012-2016



APC is statistically significant ($p \leq 0.05$). Values appearing directly on a bar have been bolded for ease of reading only. ^ indicates a medium reliability trend (CV between 1 and 30). NA indicates an unreliable trend (CV greater than 30) therefore the APC is not presented Source: Massachusetts Cancer Registry

Table 4
ANNUAL AGE-ADJUSTED¹ INCIDENCE RATES² FOR SELECTED CANCER SITES
Massachusetts, 2012-2016
MALES

Cancer Site / Type	2012	2013	2014	2015	2016
All Sites	501.5	483.8	482.0	483.5	493.0
Brain & Other Nervous System	7.4	9.2	7.6	7.2	8.5
Breast	1.2	1.5	1.4	1.3	1.2
Breast <i>in situ</i>³	0.2	0.1	0.1	0.3	0.2
Bronchus & Lung	71.4	67.2	68.8	66.2	64.3
Colon / Rectum	42.2	40.7	44.1	39.1	38.9
Esophagus	9.8	9.8	9.2	8.8	9.3
Hodgkin Lymphoma	3.6	3.1	3.1	2.8	3.0
Kidney & Renal Pelvis	20.9	23.2	23.3	23.8	22.0
Larynx	5.2	6.3	5.7	5.2	5.0
Leukemia	17.7	16.1	16.5	15.4	14.9
Liver & Intrahepatic Bile Ducts	14.3	12.5	12.6	13.0	14.2
Melanoma of Skin	25.8	25.1	22.8	26.2	31.6
Multiple Myeloma	8.3	8.9	7.5	8.1	8.7
Non-Hodgkin Lymphoma	22.9	23.6	24.1	23.9	23.1
Oral Cavity & Pharynx	18.7	16.7	18.0	17.8	17.9
Pancreas	14.3	14.8	14.0	15.4	15.8
Prostate	107.2	97.9	93.7	104.4	108.3
Stomach	8.9	10.3	10.0	8.5	9.7
Testis	6.7	6.6	6.5	6.1	5.5
Thyroid	10.4	9.3	11.4	11.4	10.2
Urinary Bladder	42.4	39.7	39.2	39.8	39.4

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

²per 100,000 males

³Breast *in situ* is excluded from “All Sites”

Source: Massachusetts Cancer Registry

Table 5
ANNUAL AGE-ADJUSTED¹ INCIDENCE RATES² FOR SELECTED CANCER SITES
Massachusetts, 2012-2016
FEMALES

Cancer Site / Type	2012	2013	2014	2015	2016
All Sites	457.3	447.6	447.5	450.5	449.9
Brain & Other Nervous System	5.6	6.1	5.5	6.4	6.3
Breast	137.0	137.4	138.8	137.6	142.3
Breast <i>in situ</i>³	42.6	42.6	40.9	38.9	39.1
Bronchus & Lung	61.2	60.9	58.7	59.9	60.3
Cervix Uteri	5.0	4.9	5.5	5.1	5.9
Colon / Rectum	33.2	33.2	32.3	32.9	31.6
Corpus Uteri & Uterus, NOS	28.3	29.8	27.6	30.0	29.5
Esophagus	1.7	2.4	2.6	2.3	2.0
Hodgkin Lymphoma	2.6	2.4	2.8	2.7	2.7
Kidney & Renal Pelvis	11.0	10.7	10.8	10.9	9.9
Larynx	1.8	1.2	1.2	1.4	1.0
Leukemia	9.9	10.3	9.0	10.1	9.4
Liver & Intrahepatic Bile Ducts	3.8	4.1	4.1	3.7	4.4
Melanoma of Skin	17.7	16.2	15.7	19.1	20.2
Multiple Myeloma	5.3	5.3	5.0	4.8	5.3
Non-Hodgkin Lymphoma	18.0	16.8	15.9	15.3	15.5
Oral Cavity & Pharynx	7.9	7.3	6.8	7.6	6.9
Ovary	12.9	10.5	11.4	11.2	9.7
Pancreas	11.0	11.6	12.2	12.1	11.3
Stomach	4.3	4.3	5.0	5.1	4.1
Thyroid	29.7	27.0	31.4	29.0	26.9
Urinary Bladder	11.7	10.8	10.9	10.8	10.5

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

²per 100,000 males

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

Source: Massachusetts Cancer Registry

Table 6
ANNUAL AGE-ADJUSTED¹ INCIDENCE RATES² FOR SELECTED CANCER SITES
Massachusetts, 2012-2016
TOTAL

Cancer Site / Type	2012	2013	2014	2015	2016
All Sites	473.1	460.1	458.5	460.8	465.0
Brain & Other Nervous System	6.4	7.5	6.5	6.8	7.3
Breast	-- ⁴	--	--	--	--
Breast <i>in situ</i> ³	--	--	--	--	--
Bronchus & Lung	65.1	63.3	62.7	62.3	61.7
Cervix Uteri	--	--	--	--	--
Colon / Rectum	37.2	36.5	37.6	35.6	34.8
Corpus Uteri & Uterus, NOS	--	--	--	--	--
Esophagus	5.3	5.7	5.5	5.2	5.3
Hodgkin Lymphoma	3.1	2.7	3.0	2.8	2.8
Kidney & Renal Pelvis	15.5	16.4	16.5	16.9	15.5
Larynx	3.3	3.5	3.2	3.1	2.8
Leukemia	13.4	12.8	12.2	12.4	11.8
Liver & Intrahepatic Bile Ducts	8.6	8.0	8.0	7.9	8.8
Melanoma of Skin	20.9	19.8	18.7	21.9	24.9
Multiple Myeloma	6.6	6.9	6.1	6.3	6.8
Non-Hodgkin Lymphoma	20.1	19.9	19.5	19.0	18.8
Oral Cavity & Pharynx	13.0	11.7	12.0	12.3	12.0
Ovary	--	--	--	--	--
Pancreas	12.6	13.0	13.0	13.6	13.3
Prostate	--	--	--	--	--
Stomach	6.3	6.9	7.2	6.5	6.6
Testis	--	--	--	--	--
Thyroid	20.3	18.5	21.7	20.4	18.8
Urinary Bladder	24.8	23.1	22.9	23.1	22.9

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

²per 100,000 total population

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

⁴Dashes indicate cancers found in only one sex or predominantly in one sex (breast cancer).

Source: Massachusetts Cancer Registry

Table 7
ANNUAL AGE-ADJUSTED¹ MORTALITY RATES² FOR SELECTED CANCER SITES
Massachusetts, 2012-2016
MALES

Cancer Site / Type	2012	2013	2014	2015	2016
All Sites	190.1	185.9	184.6	177.1	177.4
Brain & Other Nervous System	5.0	5.3	5.3	5.9	5.8
Breast	0.4	0.4	0.4	0.1	0.2
Bronchus & Lung	47.4	45.4	44.9	42.8	43.1
Colon / Rectum	14.4	13.7	14.5	12.9	12.4
Esophagus	8.3	7.3	7.9	8.5	7.4
Hodgkin Lymphoma	0.3	0.3	0.3	0.3	0.3
Kidney & Renal Pelvis	4.4	4.6	5.2	5.0	4.5
Larynx	1.2	1.4	1.5	1.2	1.2
Leukemia	7.9	8.8	7.7	7.3	7.3
Liver & Intrahepatic Bile Ducts	8.6	10.1	9.3	8.9	10.5
Melanoma of Skin	3.7	4.0	3.8	3.2	3.2
Multiple Myeloma	3.6	3.3	4.0	3.8	4.1
Non-Hodgkin Lymphoma	5.8	6.2	6.3	6.4	6.4
Oral Cavity & Pharynx	3.6	3.5	3.1	3.5	2.9
Pancreas	11.0	12.2	11.5	11.9	13.4
Prostate	17.2	17.2	17.6	17.3	18.1
Stomach	3.9	3.3	4.1	4.4	4.0
Testis	0.2	0.2	0.03	0.1	0.2
Thyroid	0.5	0.7	0.4	0.7	0.5
Urinary Bladder	7.0	7.6	7.5	7.8	9.0

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

²per 100,000 males

Source: Massachusetts Vital Statistics

Table 8
ANNUAL AGE-ADJUSTED¹ MORTALITY RATES² FOR SELECTED CANCER SITES
Massachusetts, 2012-2016
FEMALES

Cancer Site / Type	2012	2013	2014	2015	2016
All Sites	138.6	136.2	130.1	131.8	126.6
Brain & Other Nervous System	3.6	3.3	3.6	3.6	3.6
Breast	17.8	17.0	17.1	17.5	16.9
Bronchus & Lung	35.4	34.0	34.0	34.0	32.0
Cervix Uteri	1.2	0.9	1.2	1.0	1.2
Colon / Rectum	10.5	10.9	10.0	10.4	10.4
Corpus Uteri & Uterus, NOS	3.9	4.7	4.2	4.6	4.2
Esophagus	1.4	1.2	1.9	1.8	1.7
Hodgkin Lymphoma	0.2	0.2	0.1	0.2	0.2
Kidney & Renal Pelvis	1.9	2.0	1.8	2.2	1.9
Larynx	0.3	0.4	0.3	0.4	0.4
Leukemia	4.6	4.9	4.1	4.4	4.6
Liver & Intrahepatic Bile Ducts	3.2	3.7	3.6	3.2	3.5
Melanoma of Skin	1.8	2.1	1.7	1.5	1.4
Multiple Myeloma	2.7	2.5	2.6	2.2	2.3
Non-Hodgkin Lymphoma	4.0	4.2	4.1	4.0	4.1
Oral Cavity & Pharynx	1.0	1.2	1.3	1.3	1.4
Ovary	6.6	7.5	6.4	6.7	6.6
Pancreas	9.2	8.8	9.4	10.0	9.7
Stomach	2.3	2.4	2.1	2.1	1.9
Thyroid	0.3	0.5	0.4	0.4	0.4
Urinary Bladder	2.4	2.6	2.1	2.3	2.2

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

²per 100,000 females

Source: Massachusetts Vital Statistics

Table 9
ANNUAL AGE-ADJUSTED¹ MORTALITY RATES² FOR SELECTED CANCER SITES
Massachusetts, 2012-2016
TOTAL³

Cancer Site / Type	2012	2013	2014	2015	2016
All Sites	159.6	156.4	152.4	150.0	147.0
Brain & Other Nervous System	4.2	4.2	4.2	4.7	4.7
Breast	-	-	-	-	-
Bronchus & Lung	40.4	38.7	38.5	37.7	36.7
Cervix Uteri	-	-	-	-	-
Colon / Rectum	12.2	12.1	11.9	11.4	11.2
Corpus Uteri & Uterus, NOS	-	-	-	-	-
Esophagus	4.4	3.9	4.5	4.7	4.3
Hodgkin Lymphoma	0.2	0.2	0.2	0.2	0.2
Kidney & Renal Pelvis	3.0	3.1	3.3	3.4	3.0
Larynx	0.7	0.8	0.8	0.8	0.7
Leukemia	6.1	6.6	5.6	5.6	5.6
Liver & Intrahepatic Bile Ducts	5.6	6.6	6.1	5.8	6.6
Melanoma of Skin	2.6	2.9	2.6	2.2	2.2
Multiple Myeloma	3.1	2.8	3.2	2.8	3.0
Non-Hodgkin Lymphoma	4.7	5.1	5.0	5.0	5.1
Oral Cavity & Pharynx	2.2	2.2	2.1	2.3	2.0
Ovary	-	-	-	-	-
Pancreas	10.1	10.3	10.4	10.9	11.4
Prostate	-	-	-	-	-
Stomach	3.0	2.8	3.0	3.1	2.8
Testis	-	-	-	-	-
Thyroid	0.4	0.6	0.4	0.5	0.4
Urinary Bladder	4.2	4.6	4.3	4.5	4.9

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

²per 100,000 total population

³Dashes indicate cancers found in only one sex or predominantly in one sex (breast cancer).

Table 10
FIVE LEADING CANCER INCIDENCE RATES BY RACE/ETHNICITY AND SEX
Massachusetts, 2012-2016

MALES

AGE-ADJUSTED¹ INCIDENCE RATE²				
RANK	White, non-Hispanic	Black, non-Hispanic	Asian, non-Hispanic	Hispanic
1	Prostate 96.2	Prostate 177.2	Bronchus & Lung 53.9	Prostate 102.1
2	Bronchus & Lung 69.6	Bronchus & Lung 59.9	Prostate 53.0	Bronchus & Lung 38.1
3	Urinary Bladder 42.5	Colon / Rectum 46.9	Colon / Rectum 33.4	Colon / Rectum 34.7
4	Colon / Rectum 41.1	Kidney and Renal Pelvis 21.0	Liver and Intrahepatic Bile Ducts 26.7	Liver and Intrahepatic Bile Ducts 20.9
5	Melanoma of Skin 28.6	Liver and Intrahepatic Bile Ducts 19.6	Urinary Bladder 14.1	Non-Hodgkin Lymphoma 20.1

FEMALES

AGE-ADJUSTED¹ INCIDENCE RATE²				
RANK	White, non-Hispanic	Black, non-Hispanic	Asian, non-Hispanic	Hispanic
1	Breast ³ 144.7	Breast 123.2	Breast 95.7	Breast 90.6
2	Bronchus & Lung 64.0	Bronchus & Lung 44.4	Bronchus & Lung 34.0	Thyroid 28.6
3	Colon / Rectum 32.9	Colon / Rectum 35.2	Thyroid 29.0	Bronchus & Lung 25.9
4	Corpus Uteri & Uterus, NOS 30.0	Corpus Uteri & Uterus, NOS 27.1	Colon / Rectum 27.1	Colon / Rectum 24.2
5	Thyroid 29.1	Thyroid 20.8	Corpus Uteri & Uterus, NOS 16.0	Corpus Uteri & Uterus, NOS 21.8

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

²per 100,000

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

Source: Massachusetts Cancer Registry

Table 11
NUMBER AND PERCENTAGE OF INCIDENT CASES FOR SELECTED CANCER SITES BY RACE/ETHNICITY¹
Massachusetts, 2012-2016
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	88753	100.0	76539	100.0	4620	100.0	2313	100.0	3497	100.0
Brain & Other Nervous System	1393	1.6	1230	1.6	44	1.0	30	1.3	75	2.1
Breast³	236	0.3	205	0.3	13	0.3	9	0.4	9	0.3
Bronchus & Lung	11993	13.5	10784	14.1	493	10.7	362	15.7	297	8.5
Colon / Rectum	7256	8.2	6206	8.1	426	9.2	249	10.8	314	9.0
Esophagus	1724	1.9	1598	2.1	46	1.0	39	1.7	33	0.9
Hodgkin Lymphoma	534	0.6	430	0.6	38	0.8	16	0.7	45	1.3
Kidney & Renal Pelvis	4157	4.7	3620	4.7	201	4.4	84	3.6	197	5.6
Larynx	1033	1.2	901	1.2	45	1.0	9	0.4	63	1.8
Leukemia	2779	3.1	2433	3.2	111	2.4	75	3.2	109	3.1
Liver & Intrahepatic Bile Ducts	2565	2.9	1929	2.5	204	4.4	201	8.7	204	5.8
Melanoma of Skin	4652	5.2	4285	5.6	6	0.1	10	0.4	16	0.5
Multiple Myeloma	1494	1.7	1250	1.6	129	2.8	34	1.5	67	1.9
Non-Hodgkin Lymphoma	4149	4.7	3630	4.7	168	3.6	105	4.5	206	5.9
Oral Cavity & Pharynx	3403	3.8	2997	3.9	136	2.9	120	5.2	126	3.6
Pancreas	2680	3.0	2370	3.1	146	3.2	63	2.7	80	2.3
Prostate	20100	22.6	16288	21.3	1712	37.1	389	16.8	936	26.8
Stomach	1682	1.9	1287	1.7	150	3.2	91	3.9	128	3.7
Testis	1013	1.1	905	1.2	13	0.3	18	0.8	57	1.6
Thyroid	1849	2.1	1563	2.0	57	1.2	104	4.5	83	2.4
Urinary Bladder	6945	7.8	6469	8.5	135	2.9	92	4.0	154	4.4
Other Sites	7116	8.0	6159	8.0	347	7.5	213	9.2	298	8.5

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

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

Source: Massachusetts Cancer Registry

Table 12
NUMBER AND PERCENTAGE OF INCIDENT CASES FOR SELECTED CANCER SITES BY RACE/ETHNICITY¹
Massachusetts, 2012-2016
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	97056	100.0	84153	100.0	4690	100.0	2939	100.0	4100	100.0
Brain & Other Nervous System	1191	1.2	1018	1.2	47	1.0	47	1.6	70	1.7
Breast ³	29288	30.2	25500	30.3	1461	31.2	958	32.6	1193	29.1
Bronchus & Lung	13534	13.9	12414	14.8	506	10.8	282	9.6	271	6.6
Cervix Uteri	982	1.0	683	0.8	96	2.0	74	2.5	120	2.9
Colon / Rectum	7243	7.5	6240	7.4	411	8.8	243	8.3	284	6.9
Corpus Uteri & Uterus, NOS	6523	6.7	5685	6.8	323	6.9	158	5.4	281	6.9
Esophagus	509	0.5	466	0.6	23	0.5	7	0.2	10	0.2
Hodgkin Lymphoma	472	0.5	379	0.5	22	0.5	14	0.5	56	1.4
Kidney & Renal Pelvis	2289	2.4	1963	2.3	145	3.1	37	1.3	116	2.8
Larynx	304	0.3	276	0.3	17	0.4	1	0.0	8	0.2
Leukemia	2058	2.1	1759	2.1	93	2.0	65	2.2	104	2.5
Liver & Intrahepatic Bile Ducts	912	0.9	696	0.8	66	1.4	75	2.6	68	1.7
Melanoma of Skin	3721	3.8	3373	4.0	8	0.2	7	0.2	42	1.0
Multiple Myeloma	1176	1.2	909	1.1	151	3.2	24	0.8	84	2.0
Non-Hodgkin Lymphoma	3572	3.7	3060	3.6	168	3.6	100	3.4	192	4.7
Oral Cavity & Pharynx	1614	1.7	1398	1.7	61	1.3	67	2.3	69	1.7
Ovary	2410	2.5	2097	2.5	109	2.3	85	2.9	87	2.1
Pancreas	2690	2.8	2366	2.8	142	3.0	56	1.9	97	2.4
Stomach	1013	1.0	754	0.9	99	2.1	70	2.4	82	2.0
Thyroid	5349	5.5	4173	5.0	257	5.5	328	11.2	450	11.0
Urinary Bladder	2499	2.6	2302	2.7	75	1.6	20	0.7	63	1.5
Other Sites	7707	7.9	6642	7.9	410	8.7	221	7.5	353	8.6

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

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

Source: Massachusetts Cancer Registry

Table 13
NUMBER AND PERCENTAGE OF INCIDENT CASES FOR SELECTED CANCER SITES BY RACE/ETHNICITY¹
Massachusetts, 2012-2016
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	185831	100.0	160708	100.0	9313	100.0	5253	100.0	7597	100.0
Brain & Other Nervous System	2584	1.4	2248	1.4	91	1.0	77	1.5	145	1.9
Breast⁴	29525	15.9	25706	16.0	1474	15.8	967	18.4	1202	15.8
Bronchus & Lung	25530	13.7	23200	14.4	999	10.7	644	12.3	568	7.5
Cervix Uteri	982	0.5	683	0.4	96	1.0	74	1.4	120	1.6
Colon / Rectum	14500	7.8	12447	7.7	837	9.0	492	9.4	598	7.9
Corpus Uteri & Uterus, NOS	6524	3.5	5686	3.5	323	3.5	158	3.0	281	3.7
Esophagus	2233	1.2	2064	1.3	69	0.7	46	0.9	43	0.6
Hodgkin Lymphoma	1007	0.5	810	0.5	60	0.6	30	0.6	101	1.3
Kidney & Renal Pelvis	6448	3.5	5585	3.5	346	3.7	121	2.3	313	4.1
Larynx	1337	0.7	1177	0.7	62	0.7	10	0.2	71	0.9
Leukemia	4838	2.6	4192	2.6	205	2.2	140	2.7	213	2.8
Liver & Intrahepatic Bile Ducts	3479	1.9	2626	1.6	270	2.9	277	5.3	272	3.6
Melanoma of Skin	8374	4.5	7659	4.8	14	0.2	17	0.3	58	0.8
Multiple Myeloma	2670	1.4	2159	1.3	280	3.0	58	1.1	151	2.0
Non-Hodgkin Lymphoma	7723	4.2	6691	4.2	337	3.6	205	3.9	398	5.2
Oral Cavity & Pharynx	5017	2.7	4395	2.7	197	2.1	187	3.6	195	2.6
Ovary	2411	1.3	2098	1.3	109	1.2	85	1.6	87	1.1
Pancreas	5370	2.9	4736	2.9	288	3.1	119	2.3	177	2.3
Prostate	20100	10.8	16288	10.1	1712	18.4	389	7.4	936	12.3
Stomach	2695	1.5	2041	1.3	249	2.7	161	3.1	210	2.8
Testis	1013	0.5	905	0.6	13	0.1	18	0.3	57	0.8
Thyroid	7199	3.9	5736	3.6	315	3.4	432	8.2	533	7.0
Urinary Bladder	9446	5.1	8773	5.5	210	2.3	112	2.1	217	2.9
Other Sites	14826	8.0	12803	8.0	757	8.1	434	8.3	651	8.6

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

²Total includes persons classified as a transsexual and persons of unknown sex.

³The number of cases for all races is not the sum of cases by race/ethnicity.

⁴Breast 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, 2012-2016
MALES

Cancer Site / Type	All Races		White, non-Hispanics		Black, non-Hispanics		Asian, non-Hispanics		Hispanics	
	Rates	95% CL	Rates	95% CL	Rates	95% CL	Rates	95% CL	Rates	95% CL
All Sites	488.7	485.4-492.0	493.4	489.8-497.0	502.5	486.9-518.1	308.1	294.8-321.3	369.3	355.5-383.2
Brain & Other Nervous System	8.0	7.6-8.4	8.6	8.1-9.1	4.1	2.8-5.4	3.2	2.0-4.4	5.2	3.8-6.6
Breast	1.3	1.1-1.5	1.3	1.1-1.5	*	*	*	*	*	*
Breast <i>in situ</i>⁴	0.2	0.1-0.2	0.2	0.1-0.2	*	*	*	*	*	*
Bronchus & Lung	67.5	66.3-68.8	69.6	68.3-70.9	59.9	54.2-65.6	53.9	48.1-59.7	38.1	33.3-42.9
Colon / Rectum	40.9	40.0-41.9	41.1	40.0-42.1	46.9	42.1-51.7	33.4	29.0-37.7	34.7	30.3-39.1
Esophagus	9.4	8.9-9.8	10.0	9.5-10.5	5.6	3.9-7.4	5.3	3.5-7.0	3.7	2.3-5.1
Hodgkin Lymphoma	3.1	2.9-3.4	3.3	3.0-3.6	3.4	2.3-4.5	*	*	3.2	2.0-4.5
Kidney & Renal Pelvis	22.7	22.0-23.4	23.4	22.6-24.2	21.0	17.9-24.1	10.2	7.9-12.5	18.0	15.2-20.7
Larynx	5.5	5.1-5.8	5.5	5.2-5.9	4.9	3.4-6.4	*	*	6.8	5.0-8.7
Leukemia	16.1	15.4-16.7	16.7	16.0-17.3	12.0	9.6-14.4	9.3	7.1-11.6	9.7	7.5-11.9
Liver & Intrahepatic Bile Ducts	13.3	12.8-13.9	11.7	11.2-12.2	19.6	16.8-22.5	26.7	22.8-30.5	20.9	17.7-24.0
Melanoma of Skin	26.3	25.6-27.1	28.6	27.7-29.5	*	*	*	*	*	*
Multiple Myeloma	8.3	7.9-8.7	8.0	7.6-8.5	15.1	12.3-17.9	4.6	3.0-6.2	7.0	5.1-8.9
Non-Hodgkin Lymphoma	23.5	22.8-24.2	24.2	23.3-25.0	17.5	14.6-20.3	13.3	10.6-16.1	20.1	16.9-23.2
Oral Cavity & Pharynx	17.8	17.2-18.5	18.4	17.8-19.1	14.8	12.1-17.4	13.9	11.3-16.5	13.4	10.7-16.0
Pancreas	14.9	14.3-15.5	15.2	14.5-15.8	17.0	14.0-20.0	8.5	6.2-10.7	9.2	6.9-11.5
Prostate	102.4	100.9-103.8	96.2	94.7-97.7	177.2	168.2-186.2	53.0	47.5-58.4	102.1	94.9-109.2
Stomach	9.5	9.0-9.9	8.4	7.9-8.9	18.5	15.3-21.7	12.2	9.6-14.8	14.7	11.8-17.6
Testis	6.3	5.9-6.7	7.8	7.2-8.3	*	*	*	*	2.8	2.0-3.6
Thyroid	10.5	10.0-11.0	11.2	10.6-11.7	5.6	4.0-7.1	10.4	8.3-12.4	6.3	4.8-7.8
Urinary Bladder	40.0	39.1-41.0	42.5	41.5-43.6	17.5	14.3-20.6	14.1	11.1-17.2	19.7	16.2-23.2

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

²per 100,000

³Race/ethnicity categories are mutually exclusive. Cases are only included in one race/ethnicity category. ⁴Breast *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, 2012-2016
FEMALES

Cancer Site / Type	All Races		White, non-Hispanics		Black, non-Hispanics		Asian, non-Hispanics		Hispanics	
	Rates	95% CL	Rates	95% CL	Rates	95% CL	Rates	95% CL	Rates	95% CL
All Sites	450.5	447.6-453.4	464.6	461.3-467.9	399.7	388.1-411.4	307.7	296.1-319.2	323.1	312.5-333.6
Brain & Other Nervous System	6.0	5.6-6.3	6.3	5.9-6.7	3.9	2.7-5.0	4.7	3.3-6.0	4.7	3.5-6.0
Breast	138.6	137.0-140.2	144.7	142.9-146.6	123.2	116.8-129.7	95.7	89.4-101.9	90.6	85.2-96.1
Breast <i>in situ</i>⁴	40.8	39.9-41.7	42.7	41.7-43.7	40.0	36.4-43.6	33.3	29.7-36.9	27.1	24.2-30.0
Bronchus & Lung	60.2	59.2-61.3	64.0	62.8-65.1	44.4	40.5-48.4	34.0	29.9-38.1	25.9	22.7-29.2
Cervix Uteri	5.3	4.9-5.6	4.8	4.4-5.1	8.2	6.6-9.9	6.7	5.1-8.2	9.1	7.4-10.9
Colon / Rectum	32.6	31.8-33.4	32.9	32.0-33.7	35.2	31.7-38.7	27.1	23.6-30.6	24.2	21.2-27.2
Corpus Uteri & Uterus, NOS	29.1	28.4-29.8	30.0	29.2-30.8	27.1	24.1-30.1	16.0	13.4-18.6	21.8	19.1-24.5
Esophagus	2.2	2.0-2.4	2.3	2.1-2.5	2.0	1.2-2.8	*	*	*	*
Hodgkin Lymphoma	2.6	2.4-2.9	2.8	2.5-3.1	1.7	1.0-2.4	*	*	3.5	2.5-4.5
Kidney & Renal Pelvis	10.7	10.2-11.1	10.9	10.4-11.4	12.1	10.1-14.1	4.2	2.8-5.6	8.7	7.0-10.5
Larynx	1.3	1.2-1.5	1.4	1.2-1.6	*	*	*	*	*	*
Leukemia	9.7	9.3-10.2	9.9	9.4-10.4	7.8	6.1-9.4	6.5	4.9-8.1	7.6	6.0-9.2
Liver & Intrahepatic Bile Ducts	4.0	3.7-4.3	3.6	3.3-3.8	5.5	4.1-6.8	9.1	6.9-11.2	6.4	4.8-8.1
Melanoma of Skin	17.8	17.2-18.4	19.9	19.2-20.6	*	*	*	*	3.1	2.1-4.1
Multiple Myeloma	5.1	4.8-5.4	4.6	4.3-4.9	13.4	11.2-15.6	2.9	1.7-4.0	7.4	5.7-9.1
Non-Hodgkin Lymphoma	16.3	15.7-16.8	16.4	15.8-17.0	14.2	12.0-16.4	10.7	8.5-12.8	16.5	14.0-19.0
Oral Cavity & Pharynx	7.3	6.9-7.6	7.4	7.0-7.8	4.9	3.6-6.1	7.4	5.6-9.3	6.0	4.5-7.5
Ovary	11.1	10.7-11.6	11.6	11.0-12.1	8.9	7.2-10.6	8.8	6.9-10.8	6.2	4.8-7.5
Pancreas	11.6	11.2-12.1	11.7	11.3-12.2	12.7	10.6-14.8	7.0	5.1-8.9	9.0	7.1-10.9
Stomach	4.6	4.3-4.8	3.9	3.6-4.2	9.0	7.2-10.8	7.9	6.0-9.9	7.0	5.4-8.7
Thyroid	28.8	28.0-29.6	29.1	28.1-30.0	20.8	18.2-23.4	29.0	25.8-32.2	28.6	25.9-31.4
Urinary Bladder	11.0	10.5-11.4	11.7	11.2-12.2	6.9	5.3-8.5	2.4	1.3-3.4	6.0	4.4-7.6

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

²per 100,000

³Race/ethnicity categories are mutually exclusive. Cases are only included in one race/ethnicity category. ⁴Breast *in situ* cases are 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, 2012-2016
TOTAL

Cancer Site / Type	All Races		White, non-Hispanics		Black, non-Hispanics		Asian, non-Hispanics		Hispanics	
	Rates	95% CL	Rates	95% CL	Rates	95% CL	Rates	95% CL	Rates	95% CL
All Sites	463.4	461.3-465.6	473.0	470.6-475.4	440.5	431.2-449.7	306.0	297.4-314.7	339.9	331.6-348.3
Brain & Other Nervous System	6.9	6.6-7.2	7.4	7.1-7.7	4.0	3.1-4.8	4.0	3.0-4.9	5.0	4.1-5.9
Breast	-- ⁵	--	--	--	--	--	--	--	--	--
Breast <i>in situ</i>⁴	--	--	--	--	--	--	--	--	--	--
Bronchus & Lung	63.0	62.2-63.8	66.0	65.1-66.8	50.5	47.2-53.7	42.8	39.4-46.2	31.0	28.2-33.7
Cervix Uteri	--	--	--	--	--	--	--	--	--	--
Colon / Rectum	36.3	35.7-36.9	36.5	35.9-37.2	40.0	37.2-42.8	29.8	27.1-32.6	28.5	26.0-31.0
Corpus Uteri & Uterus, NOS	--	--	--	--	--	--	--	--	--	--
Esophagus	5.4	5.2-5.6	5.8	5.5-6.1	3.4	2.6-4.3	2.8	2.0-3.7	2.1	1.4-2.7
Hodgkin Lymphoma	2.9	2.7-3.0	3.1	2.8-3.3	2.5	1.8-3.1	*	*	3.3	2.6-4.1
Kidney & Renal Pelvis	16.2	15.8-16.6	16.7	16.2-17.1	15.9	14.2-17.7	7.0	5.7-8.3	12.9	11.3-14.4
Larynx	3.2	3.0-3.4	3.3	3.1-3.5	2.9	2.1-3.6	*	*	3.3	2.5-4.1
Leukemia	12.5	12.2-12.9	12.9	12.5-13.3	9.4	8.1-10.8	7.8	6.5-9.2	8.5	7.2-9.8
Liver & Intrahepatic Bile Ducts	8.3	8.0-8.5	7.2	7.0-7.5	11.8	10.4-13.3	17.2	15.1-19.3	12.8	11.2-14.5
Melanoma of Skin	21.3	20.8-21.7	23.4	22.9-24.0	*	*	*	*	*	*
Multiple Myeloma	6.5	6.3-6.8	6.1	5.8-6.4	14.2	12.4-15.9	3.7	2.7-4.7	7.3	6.0-8.5
Non-Hodgkin Lymphoma	19.5	19.0-19.9	19.8	19.3-20.3	15.7	14.0-17.5	11.9	10.2-13.6	18.1	16.2-20.1
Oral Cavity & Pharynx	12.2	11.8-12.5	12.6	12.2-13.0	9.1	7.8-10.4	10.5	8.9-12.1	9.2	7.8-10.6
Ovary	--	--	--	--	--	--	--	--	--	--
Pancreas	13.1	12.7-13.5	13.3	12.9-13.7	14.7	13.0-16.5	7.7	6.2-9.1	9.1	7.7-10.6
Prostate	--	--	--	--	--	--	--	--	--	--
Stomach	6.7	6.5-7.0	5.9	5.6-6.1	12.8	11.2-14.5	9.9	8.3-11.5	10.2	8.7-11.7
Testis	--	--	--	--	--	--	--	--	--	--
Thyroid	19.9	19.5-20.4	20.3	19.8-20.9	13.7	12.2-15.3	20.2	18.2-22.1	18.1	16.5-19.7
Urinary Bladder	23.3	22.8-23.8	24.9	24.3-25.4	11.1	9.6-12.7	7.6	6.1-9.1	11.7	10.1-13.4

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

²per 100,000

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

⁴Breast *in situ* cases are excluded from 'All Sites'.

⁵Dashes indicate cancers found in only one sex or predominantly in one sex (breast cancer).

*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, 2012-2016

MALES

AGE-ADJUSTED¹ MORTALITY RATE²				
RANK	White, non-Hispanic	Black, non-Hispanic	Asian, non-Hispanic	Hispanic
1	Bronchus & Lung 48.2	Bronchus & Lung 42.7	Bronchus & Lung 36.8	Bronchus & Lung 21.3
2	Prostate 17.7	Prostate 36.2	Liver & Intrahepatic Bile Duct 18.2	Prostate 15.7
3	Colon/Rectum 14.3	Colon/Rectum 14.8	Colon/Rectum 8.5	Liver & Intrahepatic Bile Duct 12.9
4	Pancreas 12.9	Liver & Intrahepatic Bile Duct 14.3	Prostate 7.1	Colon/Rectum 9.8
5	Liver & Intrahepatic Bile Duct 8.9	Pancreas 13.1	Stomach 6.6	Stomach 7.4

FEMALES

AGE-ADJUSTED¹ MORTALITY RATE²				
RANK	White, non-Hispanic	Black, non-Hispanic	Asian, non-Hispanic	Hispanic
1	Bronchus & Lung 37.3	Bronchus & Lung 25.3	Bronchus & Lung 18.8	Bronchus & Lung 11.4
2	Breast 18.1	Breast 18.7	Breast 7.7	Breast 11.1
3	Colon/Rectum 10.7	Colon/Rectum 11.5	Colon/Rectum 7.7	Colon/Rectum 8.0
4	Pancreas 10.0	Pancreas 9.2	Pancreas 6.0	Pancreas 6.2
5	Ovary 7.5	Corpus Uteri & Uterus, NOS 8.0	Liver & Intrahepatic Bile Duct 5.5	Liver & Intrahepatic Bile Duct 5.5

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

²per 100,000

Source: Massachusetts Vital Statistics

Table 18
NUMBER AND PERCENTAGE OF DEATHS FOR SELECTED CANCER SITES BY RACE/ETHNICITY¹
Massachusetts, 2012-2016
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	32384	100.0	28928	100.0	1491	4.6	798	100.0	946	100.0
Brain & Other Nervous System	990	3.1	907	3.1	31	2.1	14	1.8	31	3.3
Breast	58	0.2	55	0.2	1	0.1	2	0.2	0	0.0
Bronchus & Lung	8274	25.5	7500	25.9	343	23.0	231	29.0	163	17.2
Colon / Rectum	2471	7.6	2199	7.6	125	8.4	61	7.6	69	7.3
Esophagus	1513	4.7	1416	4.9	43	2.9	23	2.9	23	2.4
Hodgkin Lymphoma	50	0.2	38	0.1	2	0.1	2	0.3	8	0.9
Kidney & Renal Pelvis	899	2.8	820	2.8	35	2.3	13	1.6	26	2.8
Larynx	245	0.8	219	0.8	12	0.8	2	0.3	11	1.2
Leukemia	1377	4.3	1256	4.3	37	2.5	24	3.0	48	5.1
Liver & Intrahepatic Bile Ducts	1882	5.8	1464	5.1	146	9.8	130	16.3	124	13.1
Melanoma of Skin	653	2.0	635	2.2	6	0.4	1	0.1	5	0.5
Multiple Myeloma	675	2.1	577	2.0	52	3.5	17	2.1	25	2.6
Non-Hodgkin Lymphoma	1109	3.4	999	3.4	35	2.4	26	3.3	37	3.9
Oral Cavity & Pharynx	652	2.0	556	1.9	40	2.7	23	2.9	27	2.9
Pancreas	2260	7.0	2034	7.0	108	7.2	41	5.1	59	6.2
Prostate	3046	9.4	2665	9.2	227	15.2	37	4.6	93	9.8
Stomach	724	2.2	552	1.9	56	3.8	48	6.0	60	6.3
Testis	27	0.1	26	0.1	0	0.0	0	0.0	1	0.1
Thyroid	106	0.3	94	0.3	5	0.3	2	0.3	4	0.4
Urinary Bladder	1372	4.2	1308	4.5	28	1.9	7	0.9	18	1.9
Other Sites	4001	12.4	3608	12.5	159	10.7	94	11.8	114	12.1

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

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

Source: Massachusetts Vital Statistics

Table 19
NUMBER AND PERCENTAGE OF DEATHS FOR SELECTED CANCER SITES BY RACE/ETHNICITY¹
Massachusetts, 2012-2016
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	31546	100.0	28354	100.0	1434	100.0	638	100.0	912	100.0
Brain & Other Nervous System	781	2.5	711	2.5	18	1.3	24	3.8	26	2.9
Breast	4100	13.0	3633	12.8	219	15.3	76	11.9	136	14.9
Bronchus & Lung	8223	26.1	7633	26.9	285	19.9	151	23.7	116	12.7
Cervix Uteri	237	0.8	175	0.6	23	1.6	8	1.3	25	2.7
Colon / Rectum	2597	8.2	2300	8.1	132	9.2	62	9.7	84	9.2
Corpus Uteri & Uterus, NOS	1073	3.4	910	3.2	92	6.4	19	3.0	44	4.8
Esophagus	398	1.3	365	1.3	15	1.1	5	0.8	10	1.1
Hodgkin Lymphoma	43	0.1	36	0.1	0	0.0	1	0.2	5	0.6
Kidney & Renal Pelvis	502	1.6	466	1.6	15	1.1	2	0.3	14	1.5
Larynx	86	0.3	80	0.3	3	0.2	1	0.2	1	0.1
Leukemia	1105	3.5	990	3.5	51	3.6	19	3.0	40	4.4
Liver & Intrahepatic Bile Ducts	837	2.7	692	2.4	46	3.2	46	7.2	47	5.2
Melanoma of Skin	410	1.3	401	1.4	2	0.1	2	0.3	4	0.4
Multiple Myeloma	631	2.0	528	1.9	66	4.6	5	0.8	27	3.0
Non-Hodgkin Lymphoma	1017	3.2	918	3.2	35	2.4	19	3.0	41	4.5
Oral Cavity & Pharynx	314	1.0	285	1.0	8	0.6	9	1.4	10	1.1
Ovary	1635	5.2	1505	5.3	59	4.1	29	4.6	31	3.4
Pancreas	2357	7.5	2130	7.5	104	7.3	47	7.4	64	7.0
Stomach	532	1.7	401	1.4	46	3.2	36	5.6	42	4.6
Thyroid	99	0.3	83	0.3	8	0.6	1	0.2	7	0.8
Urinary Bladder	606	1.9	569	2.0	24	1.7	4	0.6	8	0.9
Other Sites	3963	12.6	3543	12.5	183	12.8	72	11.3	130	14.3

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

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

Source: Massachusetts Vital Statistics

Table 20
NUMBER AND PERCENTAGE OF DEATHS FOR SELECTED CANCER SITES BY RACE/ETHNICITY¹
Massachusetts, 2012-2016
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	63930	100.0	57284	100.0	2925	4.6	1436	100.0		
Brain & Other Nervous System	1771	2.8	1618	2.8	49	1.7	38	2.7	57	3.1
Breast	4158	6.5	3688	6.4	220	7.5	78	5.4	136	7.3
Bronchus & Lung	16498	25.8	15134	26.4	628	21.5	382	26.6	279	15.0
Cervix Uteri	237	0.4	175	0.3	23	0.8	8	0.6	25	1.4
Colon / Rectum	5068	7.9	4499	7.9	257	8.8	123	8.6	153	8.2
Corpus Uteri & Uterus, NOS	1073	1.7	910	1.6	92	3.2	19	1.3	44	2.4
Esophagus	1911	3.0	1781	3.1	58	2.0	28	2.0	33	1.8
Hodgkin Lymphoma	93	0.2	74	0.1	2	0.1	3	0.2	13	0.7
Kidney & Renal Pelvis	1400	2.2	1286	2.2	50	1.7	15	1.0	40	2.1
Larynx	331	0.5	299	0.5	15	0.5	3	0.2	12	0.7
Leukemia	2481	3.9	2246	3.9	88	3.0	43	3.0	88	4.7
Liver & Intrahepatic Bile Ducts	2719	4.3	2156	3.8	192	6.6	176	12.3	171	9.2
Melanoma of Skin	1063	1.7	1036	1.8	8	0.3	3	0.2	9	0.5
Multiple Myeloma	1306	2.0	1105	1.9	118	4.0	22	1.5	52	2.8
Non-Hodgkin Lymphoma	2126	3.3	1917	3.4	70	2.4	45	3.1	78	4.2
Oral Cavity & Pharynx	966	1.5	841	1.5	48	1.6	32	2.2	37	2.0
Ovary	1635	2.6	1505	2.6	59	2.0	29	2.0	31	1.7
Pancreas	4617	7.2	4164	7.3	212	7.3	88	6.1	123	6.6
Prostate	3047	4.8	2666	4.7	227	7.8	37	2.6	93	5.0
Stomach	1256	2.0	953	1.7	102	3.5	84	5.9	102	5.5
Testis	27	0.04	26	0.05	0	0.0	0	0.0	1	0.05
Thyroid	205	0.3	177	0.3	13	0.4	3	0.2	11	0.6
Urinary Bladder	1978	3.1	1877	3.3	52	1.8	11	0.8	26	1.4
Other Sites	7964	12.5	7151	12.5	342	11.7	166	11.6	244	13.1

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

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

Source: Massachusetts Vital Statistics

Table 21
AGE-ADJUSTED¹ MORTALITY RATES² AND 95% CONFIDENCE LIMITS (95% CL)
FOR SELECTED CANCER SITES BY RACE/ETHNICITY³
Massachusetts, 2012-2016
MALES

Cancer Site / Type	All Races		White, non-Hispanics		Black, non-Hispanics		Asian, non-Hispanics		Hispanics	
	Rates	95% CL	Rates	95% CL	Rates	95% CL	Rates	95% CL	Rates	95% CL
All Sites	182.9	180.9-184.4	186.7	184.5-188.8	188.8	179.2-198.3	119.6	111.3-127.9	119.2	111.6-126.8
Brain & Other Nervous System	5.5	5.1-5.8	5.9	5.5-6.3	3.0	1.9-4.0	*	*	2.7	1.8-3.7
Breast	0.3	0.2-0.4	0.4	0.3-0.4	*	*	*	*	*	*
Bronchus & Lung	46.6	45.6-47.6	48.2	47.1-49.2	42.7	38.1-47.2	36.8	32.0-41.5	21.3	18.0-24.6
Colon / Rectum	14.0	13.5-14.6	14.3	13.7-14.9	14.8	12.2-17.4	8.5	6.4-10.7	9.8	7.5-12.1
Esophagus	8.2	7.8-8.6	8.8	8.4-9.3	5.3	3.7-6.8	3.5	2.1-4.9	2.6	1.6-3.7
Hodgkin Lymphoma	0.3	0.2-0.4	0.3	0.2-0.4	*	*	*	*	*	*
Kidney & Renal Pelvis	4.9	4.6-5.3	5.2	4.8-5.5	4.4	3.0-5.9	*	*	2.8	1.7-3.8
Larynx	1.3	1.2-1.5	1.4	1.2-1.5	*	*	*	*	*	*
Leukemia	8.1	7.7-8.5	8.4	8.0-8.9	4.9	3.3-6.5	3.6	2.2-5.1	5.5	4.0-7.1
Liver & Intrahepatic Bile Ducts	9.9	9.4-10.3	8.9	8.4-9.3	14.3	12.0-16.6	18.2	15.1-21.3	12.9	10.6-15.2
Melanoma of Skin	3.7	3.4-4.0	4.1	3.8-4.5	*	*	*	*	*	*
Multiple Myeloma	3.9	3.6-4.2	3.8	3.5-4.1	7.0	5.1-8.9	*	*	3.8	2.3-5.2
Non-Hodgkin Lymphoma	6.4	6.1-6.8	6.6	6.2-7.0	4.3	2.9-5.8	4.0	2.4-5.5	4.4	3.0-5.8
Oral Cavity & Pharynx	3.4	3.2-3.7	3.4	3.1-3.6	4.8	3.3-6.3	3.2	1.9-4.5	3.4	2.1-4.6
Pancreas	12.5	12.0-13.0	12.9	12.3-13.4	13.1	10.7-15.6	5.8	4.1-7.7	6.5	4.9-8.2
Prostate	18.1	17.4-18.7	17.7	17.0-18.4	36.2	31.5-41.0	7.1	4.8-9.4	15.7	12.5-18.9
Stomach	4.1	3.8-4.4	3.6	3.3-3.9	7.4	5.5-9.3	6.6	4.7-8.4	7.4	5.5-9.3
Testis	0.2	0.1-0.2	0.2	0.1-0.3	*	*	*	*	*	*
Thyroid	0.6	0.5-0.7	0.6	0.5-0.7	*	*	*	*	*	*
Urinary Bladder	8.1	7.6-8.5	8.6	8.2-9.1	4.2	2.6-5.7	*	*	*	*

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

²per 100,000

³Race/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 Vital Statistics

Table 22
AGE-ADJUSTED¹ MORTALITY RATES² AND 95% CONFIDENCE LIMITS (95% CL)
FOR SELECTED CANCER SITES BY RACE/ETHNICITY³
Massachusetts, 2012-2016
FEMALES

Cancer Site / Type	All Races		White, non-Hispanics		Black, non-Hispanics		Asian, non-Hispanics		Hispanics	
	Rates	95% CL	Rates	95% CL	Rates	95% CL	Rates	95% CL	Rates	95% CL
All Sites	132.6	131.1-134.0	136.8	135.2-138.4	125.6	119.1-132.1	75.5	69.6-81.4	85.1	79.5-90.6
Brain & Other Nervous System	3.5	3.3-3.8	3.8	3.5-4.1	*	*	2.5	1.5-3.4	2.2	1.4-3.1
Breast	17.6	17.1-18.2	18.1	17.5-18.7	18.7	16.2-21.1	7.7	6.0-9.5	11.1	9.2-12.9
Bronchus & Lung	35.0	34.2-35.7	37.3	36.5-38.1	25.3	22.3-28.2	18.8	15.8-21.8	11.4	9.3-13.4
Cervix Uteri	1.1	1.0-1.3	1.0	0.9-1.2	1.9	1.1-2.6	*	*	2.2	1.3-3.1
Colon / Rectum	10.6	10.2-11.0	10.7	10.3-11.2	11.5	9.6-13.5	7.7	5.8-9.7	8.0	6.3-9.8
Corpus Uteri & Uterus, NOS	4.5	4.2-4.8	4.4	4.1-4.7	8.0	6.3-9.6	*	*	4.2	3.0-5.4
Esophagus	1.6	1.5-1.8	1.7	1.5-1.9	*	*	*	*	*	*
Hodgkin Lymphoma	0.2	0.1-0.2	0.2	0.1-0.2	*	*	*	*	*	*
Kidney & Renal Pelvis	2.0	1.8-2.2	2.1	1.9-2.3	*	*	*	*	*	*
Larynx	0.4	0.3-0.4	0.4	0.3-0.5	*	*	*	*	*	*
Leukemia	4.6	4.4-4.9	4.7	4.4-5.0	4.6	3.3-5.9	*	*	3.6	2.5-4.8
Liver & Intrahepatic Bile Ducts	3.5	3.3-3.8	3.3	3.1-3.6	4.0	2.8-5.2	5.5	3.9-7.1	4.5	3.2-5.8
Melanoma of Skin	1.7	1.6-1.9	2.0	1.8-2.2	*	*	*	*	*	*
Multiple Myeloma	2.5	2.3-2.7	2.4	2.2-2.6	5.9	4.5-7.3	*	*	2.6	1.6-3.6
Non-Hodgkin Lymphoma	4.1	3.9-4.4	4.2	3.9-4.5	3.0	2.0-4.0	*	*	4.4	3.1-5.8
Oral Cavity & Pharynx	1.3	1.1-1.4	1.3	1.2-1.5	*	*	*	*	*	*
Ovary	7.0	6.6-7.3	7.5	7.1-7.9	4.9	3.6-6.1	3.2	2.0-4.3	2.8	1.8-3.8
Pancreas	9.7	9.3-10.1	10.0	9.6-10.4	9.2	7.5-11.0	6.0	4.3-7.7	6.2	4.7-7.7
Stomach	2.2	2.0-2.4	1.9	1.7-2.1	4.1	2.9-5.3	4.0	2.7-5.3	3.7	2.6-4.9
Thyroid	0.4	0.3-0.5	0.4	0.3-0.5	*	*	*	*	*	*
Urinary Bladder	2.4	2.2-2.6	2.5	2.3-2.7	2.2	1.3-3.1	*	*	*	*

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

²per 100,000

³Race/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 Vital Statistics

Table 23
AGE-ADJUSTED¹ MORTALITY RATES² AND 95% CONFIDENCE LIMITS (95% CL)
FOR SELECTED CANCER SITES BY RACE/ETHNICITY³
Massachusetts, 2012-2016
TOTAL

Cancer Site / Type	All Races		White, non-Hispanics		Black, non-Hispanics		Asian, non-Hispanics		Hispanics	
	Rates	95% CL	Rates	95% CL	Rates	95% CL	Rates	95% CL	Rates	95% CL
All Sites	152.9	151.8-154.1	157.0	155.7-158.3	149.5	144.0-154.9	95.0	90.1-99.9	99.1	94.6-103.6
Brain & Other Nervous System	4.4	4.2-4.6	4.7	4.5-5.0	2.2	1.6-2.8	2.0	1.4-2.7	2.5	1.9-3.2
Breast	- ⁴	-	-	-	-	-	-	-	-	-
Bronchus & Lung	39.8	39.2-40.4	41.8	41.1-42.5	32.3	29.8-34.8	26.7	24.1-29.4	15.6	13.7-17.4
Cervix Uteri	-	-	-	-	-	-	-	-	-	-
Colon / Rectum	12.0	11.7-12.4	12.2	11.9-12.6	12.9	11.3-14.5	8.2	6.7-9.6	8.6	7.3-10.0
Corpus Uteri & Uterus, NOS	-	-	-	-	-	-	-	-	-	-
Esophagus	4.5	4.3-4.7	4.9	4.7-5.1	2.8	2.1-3.6	1.9	1.2-2.6	1.7	1.1-2.3
Hodgkin Lymphoma	0.2	0.2-0.3	0.2	0.2-0.3	*	*	*	*	*	*
Kidney & Renal Pelvis	3.3	3.1-3.5	3.5	3.3-3.6	2.4	1.7-3.0	*	*	1.9	1.3-2.5
Larynx	0.8	0.7-0.9	0.8	0.7-0.9	*	*	*	*	*	*
Leukemia	6.0	5.8-6.3	6.3	6.0-6.5	4.6	3.6-5.6	2.9	2.0-3.7	4.4	3.5-5.4
Liver & Intrahepatic Bile Ducts	6.4	6.1-6.6	5.8	5.5-6.0	8.6	7.4-9.8	11.2	9.6-12.9	8.2	7.0-9.5
Melanoma of Skin	2.6	2.4-2.7	2.9	2.7-3.1	*	*	*	*	*	*
Multiple Myeloma	3.1	2.9-3.3	3.0	2.8-3.1	6.4	5.2-7.5	1.5	0.9-2.2	3.1	2.2-3.9
Non-Hodgkin Lymphoma	5.1	4.9-5.3	5.2	5.0-5.4	3.6	2.7-4.4	3.2	2.2-4.1	4.5	3.5-5.5
Oral Cavity & Pharynx	2.3	2.1-2.4	2.2	2.1-2.4	2.4	1.7-3.1	2.0	1.3-2.7	2.0	1.3-2.6
Ovary	-	-	-	-	-	-	-	-	-	-
Pancreas	11.0	10.6-11.3	11.3	11.0-11.6	11.1	9.6-12.5	5.9	4.7-7.2	6.4	5.3-7.6
Prostate	-	-	-	-	-	-	-	-	-	-
Stomach	3.0	2.8-3.2	2.6	2.5-2.8	5.4	4.4-6.5	5.2	4.1-6.3	5.3	4.2-6.3
Testis	-	-	-	-	-	-	-	-	-	-
Thyroid	0.5	0.4-0.5	0.5	0.4-0.5	*	*	*	*	*	*
Urinary Bladder	4.6	4.4-4.8	5.0	4.7-5.2	2.9	2.1-3.7	*	*	1.5	0.9-2.1

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

²per 100,000

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

⁴Dashes indicate cancers found in only one sex or predominantly in one sex (breast cancer).

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

Source: Massachusetts Vital Statistics

Table 24
INCIDENCE RATES¹ FOR SELECTED CANCER SITES BY SEX
Massachusetts (2012-2016) and U.S. (2012-2016)

Cancer Site / Type	MALES				FEMALES			
	Massachusetts		United States		Massachusetts		United States	
	Rate	95% CL	Rate	95% CL	Rate	95% CL	Rate	95% CL
All Sites	488.7	485.4-492.0	488.5	488.0-489.0	450.5*	447.6-453.4	420.0	419.6-420.4
Brain & Other Nervous System	8.0	7.6-8.4	7.6	7.5-7.7	6.0	5.6-6.3	5.5	5.5-5.6
Breast	1.3	1.1-1.5	1.3	1.3-1.3	138.6*	137.0-140.2	124.9	124.6-125.1
Breast <i>in situ</i> ²	0.2	0.1-0.2	N/A	N/A	40.8*	39.9-41.7	30.0	29.9-30.1
Bronchus & Lung	67.5	66.3-68.8	68.7	68.5-68.9	60.2*	59.2-61.3	51.2	51.0-51.3
Cervix Uteri	-	-	-	-	5.3*	4.9-5.6	7.6	7.6-7.7
Colon / Rectum	40.9*	40.0-41.9	44.5	44.4-44.7	32.6*	31.8-33.4	34.0	33.9-34.1
Corpus Uteri & Uterus, NOS	-	-	-	-	29.1*	28.4-29.8	26.7	26.6-26.8
Esophagus	9.4*	8.9-9.8	7.8	7.8-7.9	2.2*	2.0-2.4	1.8	1.7-1.8
Hodgkin Lymphoma	3.1	2.9-3.4	3.0	3.0-3.0	2.6	2.4-2.9	2.3	2.3-2.4
Kidney & Renal Pelvis	22.7	22.0-23.4	22.4	22.3-22.5	10.7*	10.2-11.1	11.5	11.4-11.5
Larynx	5.5	5.1-5.8	5.7	5.6-5.7	1.3	1.2-1.5	1.3	1.3-1.3
Leukemia	16.1*	15.4-16.7	18.1	18.0-18.2	9.7*	9.3-10.2	11.0	10.9-11.0
Liver & Intrahepatic Bile Ducts	13.3	12.8-13.9	12.7	12.6-12.8	4.0*	3.7-4.3	4.4	4.4-4.5
Melanoma of Skin	26.3*	25.6-27.1	27.7	27.6-27.9	17.8	17.2-18.4	17.1	17.1-17.2
Multiple Myeloma	8.3	7.9-8.7	8.4	8.4-8.5	5.1	4.8-5.4	5.5	5.4-5.5
Non-Hodgkin Lymphoma	23.5	22.8-24.2	23.1	23.0-23.2	16.3	15.7-16.8	16.0	15.9-16.0
Oral Cavity & Pharynx	17.8	17.2-18.5	17.8	17.7-17.8	7.3*	6.9-7.6	6.4	6.4-6.5
Ovary	-	-	-	-	11.1	10.7-11.6	11.1	11.0-11.2
Pancreas	14.9	14.3-15.5	14.5	14.4-14.6	11.6	11.2-12.1	11.2	11.1-11.2
Prostate	102.4*	100.9-103.8	104.7	104.5-104.9	-	-	-	-
Stomach	9.5	9.0-9.9	9.0	8.9-9.0	4.6	4.3-4.8	4.7	4.6-4.7
Testis	6.3*	5.9-6.7	5.6	5.6-5.7	-	-	-	-
Thyroid	10.5*	10.0-11.0	7.4	7.4-7.5	28.8*	28.0-29.6	21.7	21.6-21.8
Urinary Bladder	40.0*	39.1-41.0	34.8	34.7-35.0	11.0*	10.5-11.4	8.6	8.5-8.7

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

²Breast *in situ* cases are excluded from “All Sites” and from breast cancer counts.

*indicates that the Massachusetts incidence rate differed significantly from the national rate ($p < 0.05$).

Data Sources: Massachusetts: Massachusetts Cancer Registry and United States: NAACCR Fast Stats: An interactive tool for quick access to key NAACCR cancer statistics. North American Association of Central Cancer Registries.

<http://www.naaccr.org/>. (Accessed on 1-12-2018)

Table 25
MORTALITY RATES¹ FOR SELECTED CANCER SITES BY SEX
Massachusetts and U.S. (2012-2016)

Cancer Site / Type	MALES				FEMALES			
	Massachusetts		United States		Massachusetts		United States	
	Rate	95% CL	Rate	95% CL	Rate	95% CL	Rate	95% CL
All Sites	182.9*	180.9-184.4	192.6	192.3-192.9	132.6*	131.1-134.0	137.8	137.6-138.1
Brain & Other Nervous System	5.5	5.1-5.8	5.4	5.3-5.4	3.5	3.3-3.8	3.6	3.5-3.6
Breast	0.3	0.2-0.4	0.3	0.3-0.3	17.6*	17.1-18.2	20.6	20.5-20.7
Bronchus & Lung	46.6*	45.6-47.6	51.4	51.3-51.6	35.0	34.2-35.7	34.3	34.2-34.5
Cervix Uteri	-	-	-	-	1.1*	1.0-1.3	2.3	2.2-2.3
Colon / Rectum	14.0*	13.5-14.6	17.0	16.9-17.1	10.6*	10.2-11.0	12.2	12.1-12.3
Corpus Uteri & Uterus, NOS	-	-	-	-	4.5	4.2-4.8	4.8	4.7-4.8
Esophagus	8.2*	7.8-8.6	7.1	7.0-7.1	1.6	1.5-1.8	1.5	1.4-1.5
Hodgkin Lymphoma	0.3	0.2-0.4	0.4	0.4-0.4	0.2	0.1-0.2	0.2	0.2-0.2
Kidney & Renal Pelvis	4.9*	4.6-5.3	5.5	5.5-5.6	2.0*	1.8-2.2	2.3	2.3-2.4
Larynx	1.3*	1.2-1.5	1.8	1.7-1.8	0.4	0.3-0.4	0.4	0.3-0.4
Leukemia	8.1*	7.7-8.5	8.7	8.6-8.7	4.6	4.4-4.9	4.9	4.8-4.9
Liver & Intrahepatic Bile Ducts	9.9	9.4-10.3	9.6	9.5-9.7	3.5*	3.3-3.8	3.9	3.9-4.0
Melanoma of Skin	3.7	3.4-4.0	3.7	3.7-3.8	1.7	1.6-1.9	1.5	1.5-1.6
Multiple Myeloma	3.9*	3.6-4.2	4.3	4.3-4.3	2.5	2.3-2.7	2.8	2.7-2.8
Non-Hodgkin Lymphoma	6.4*	6.1-6.8	7.2	7.2-7.3	4.1	3.9-4.4	4.4	4.3-4.4
Oral Cavity & Pharynx	3.4*	3.2-3.7	3.9	3.9-4.0	1.3	1.1-1.4	1.3	1.3-1.4
Ovary	-	-	-	-	7.0	6.6-7.3	7.0	7.0-7.1
Pancreas	12.5	12.0-13.0	12.6	12.5-12.7	9.7	9.3-10.1	9.6	9.5-9.6
Prostate	18.1*	17.4-18.7	19.2	19.1-19.3	-	-	-	-
Stomach	4.1	3.8-4.4	4.2	4.1-4.2	2.2	2.0-2.4	2.3	2.2-2.3
Testis	0.2	0.1-0.2	0.3	0.2-0.3	-	-	-	-
Thyroid	0.6	0.5-0.7	0.5	0.5-0.5	0.4	0.3-0.5	0.5	0.5-0.5
Urinary Bladder	8.1	7.6-8.5	7.5	7.5-7.6	2.4	2.2-2.6	2.2	2.1-2.2

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

*indicates that the Massachusetts mortality rate differed significantly from the national rate (p < 0.05).

Data Sources: Massachusetts - Massachusetts Vital Statistics and United States - National Center for Health Statistics.

APPENDICES

APPENDIX I
ICD CODES USED FOR THIS REPORT

Cancer Site/Type	ICD-O-3 SEER Site Recode*	ICD-10**
Brain & Other Nervous System	31010, 31040	C70-C72
Breast (includes <i>in situ</i>)	26000	C50
Bronchus & Lung	22030	C34
Cervix Uteri	27010	C53
Colon/ Rectum	21041-21052	C18 – C20, C26.0
Corpus Uteri & Uterus, NOS	27020, 27030	C54 – C55
Esophagus	21010	C15
Hodgkin Lymphoma	33011, 33012	C81
Kidney & Renal Pelvis	29020	C64- C65
Larynx	22020	C32
Leukemia	35011-35013, 35021, 35031, 35022, 35023, 35041,35043	C90.1, C91 – C95
Liver and Intrahepatic Bile Ducts	21071	C22
Melanoma of Skin	25010	C43
Multiple Myeloma	34000	C90.0, C90.2
Non – Hodgkin Lymphoma	33041,33042	C82 – C85, C96.3
Oral Cavity & Pharynx	21010-20100	C00 – C14
Ovary	27040	C56
Pancreas	21100	
Prostate	28010	C61

Stomach	21020	C16
Testis	28020	C62
Thyroid	32010	C73
Urinary Bladder (includes <i>in situ</i>)	29010	C67

* *International Classification of Diseases for Oncology, 3d Ed. Surveillance, Epidemiology, and End Results Program (SEER) Site Recode ICD-O-3/WHO 2008 Definition*
https://seer.cancer.gov/siterecode/icdo3_dwho/home/index.html

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

APPENDIX II:

Population and Rate Changes

The population estimates for 2012-2016 used in this report were produced by the National Center for Health Statistics (NCHS) in collaboration with the U.S. Census Bureau's Population Estimation Program. 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) specifications back into the four race categories specified in the 1977 OMB specifications so that the estimates will be compatible with previous years' populations. (3) 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 <http://www.mass.gov/eohhs/docs/dph/cancer/state/registry-statewide-00-04-report.pdf>

Appendix III

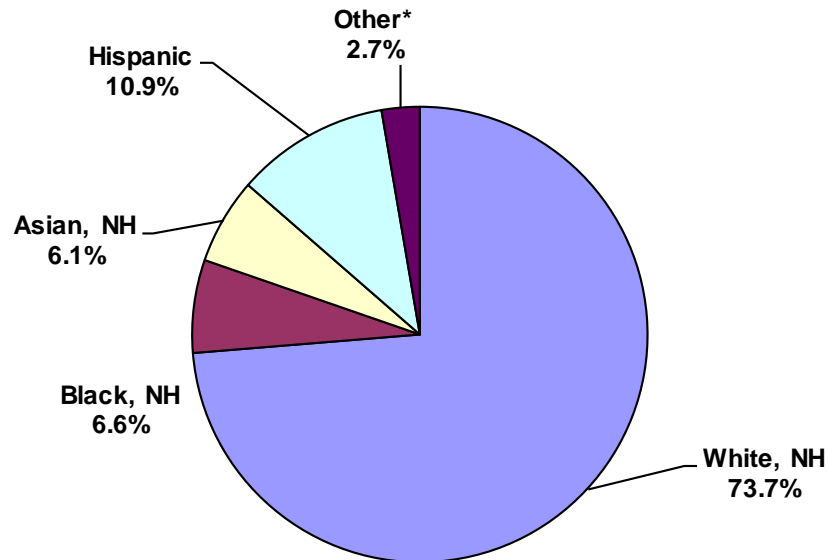
POPULATION ESTIMATES BY AGE, RACE/ETHNICITY, AND SEX Massachusetts, 2012-2016

Age Group	White, non-Hispanic			Black, non-Hispanic			Asian, non-Hispanic			Hispanic		
	Males	Females	Total	Males	Females	Total	Males	Females	Total	Males	Females	Total
00-04	590213	563707	1153920	91132	85644	176776	70323	68441	138764	179218	171909	351127
05-09	635134	606690	1241824	91613	86046	177659	69550	68561	138111	165024	159213	324237
10-14	699390	667634	1367024	89487	85548	175035	65227	66083	131310	156005	150640	306645
15-19	808543	795295	1603838	100426	98944	199370	72941	80105	153046	168249	160197	328446
20-24	834208	834867	1669075	111705	109535	221240	93956	101718	195674	181151	170734	351885
25-29	824262	826748	1651010	98397	97902	196299	103427	115847	219274	167343	157424	324767
30-34	762710	771666	1534376	86122	90977	177099	99378	111345	210723	155628	151021	306649
35-39	693399	711424	1404823	79196	85226	164422	87977	98534	186511	135791	138875	274666
40-44	772725	804681	1577406	76869	83462	160331	84861	91398	176259	115766	124921	240687
45-49	908920	947319	1856239	78609	85256	163865	70678	76170	146848	103663	113874	217537
50-54	1007941	1052523	2060464	77590	83039	160629	59596	65154	124750	86991	97856	184847
55-59	970354	1026679	1997033	65649	73264	138913	48828	55532	104360	65935	76477	142412
60-64	832202	905545	1737747	49173	57387	106560	39024	45032	84056	46965	56320	103285
65-69	681132	763251	1444383	34288	43454	77742	27576	32279	59855	32185	41712	73897
70-74	459547	546126	1005673	21432	30820	52252	19805	22746	42551	20567	27777	48344
75-79	316905	412575	729480	14428	23075	37503	14463	16682	31145	12712	18868	31580
80-84	237535	355405	592940	8916	16328	25244	8777	11029	19806	7388	12331	19719
85+	232434	490478	722912	7415	17325	24740	6610	10191	16801	6330	11753	18083

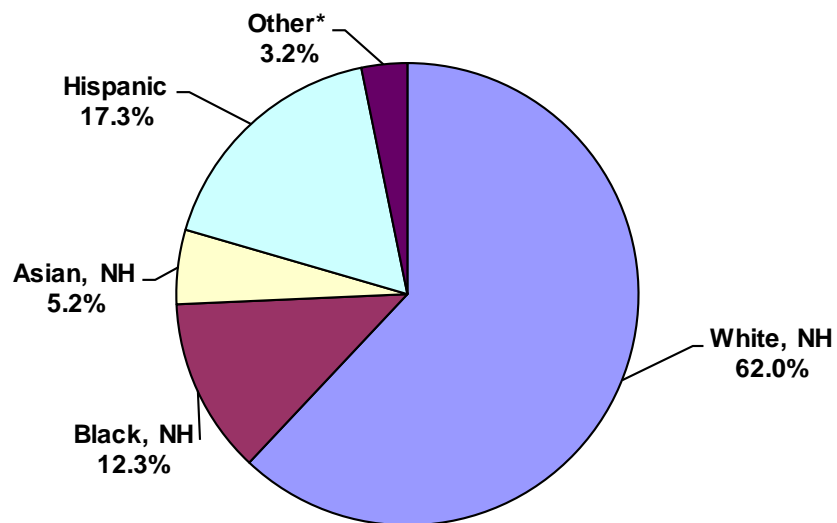
Population Data Source: United States Census Data (2012-2016)

Appendix IV
Racial/Ethnic Breakdown of the Massachusetts and United States Populations*

Massachusetts (2012-2016)



United States (2012-2016)



Data Source: United States Census Data, American Community Survey, 2012-2016

*Other includes people reporting 2 or more races

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