**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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 ***Mass in Motion***

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Massachusetts Department of Public Health

*September 2020*

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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](http://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

![stretching[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*](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**

 **MALES (N=32,384) FEMALES (N=31,546)**

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Source: Massachusetts Vital Statistics

**Figure 4**

**MORTALITY RATES[[1]](#footnote-1) FOR TEN LEADING CANCER TYPES BY SEX**

**Massachusetts, 2012-2016**

**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 *in situ*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 *in situ*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 *in situ2*** | -- | -- | -- | 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 < 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 (CVgreater 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**

 APCis statistically significant (p < 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 (CVgreater 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 *in situ*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 *in situ*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 *in situ*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 |

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

 2per 100,000 females

 Source: Massachusetts Vital Statistics

**Table 9**

**ANNUAL AGE-ADJUSTED**1 **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-ADJUSTED**1 **INCIDENCE RATE**2 |
| **RANK** | **White, non-Hispanic** | **Black, non-Hispanic** | **Asian, non-Hispanic** | **Hispanic** |
| 1 | Prostate96.2 | Prostate177.2 | Bronchus & Lung53.9 | Prostate102.1 |
| 2 | Bronchus & Lung69.6 | Bronchus & Lung59.9 | Prostate53.0 | Bronchus & Lung38.1 |
| 3 | Urinary Bladder42.5 | Colon / Rectum46.9 | Colon / Rectum33.4 | Colon / Rectum34.7 |
| 4 | Colon / Rectum41.1 | Kidney and Renal Pelvis21.0 | Liver and Intrahepatic Bile Ducts26.7 | Liver and Intrahepatic Bile Ducts20.9 |
| 5 | Melanoma of Skin28.6 | Liver and IntrahepaticBile Ducts19.6 | Urinary Bladder14.1 | Non-Hodgkin Lymphoma20.1 |

**FEMALES**

|  |
| --- |
| **AGE-ADJUSTED1 INCIDENCE RATE2** |
| **RANK** | **White, non-Hispanic** | **Black, non-Hispanic** | **Asian, non-Hispanic** | **Hispanic** |
| 1 | Breast3144.7 | Breast123.2 | Breast95.7 | Breast 90.6  |
| 2 | Bronchus & Lung64.0 | Bronchus & Lung44.4 | Bronchus & Lung34.0 | Thyroid28.6 |
| 3 | Colon / Rectum32.9 | Colon / Rectum35.2 | Thyroid29.0 | Bronchus & Lung25.9 |
| 4 | Corpus Uteri &Uterus, NOS30.0 | Corpus Uteri &Uterus, NOS27.1 | Colon / Rectum27.1 | Colon / Rectum24.2 |
| 5 | Thyroid29.1 | Thyroid20.8 | Corpus Uteri &Uterus, NOS16.0 | Corpus Uteri &Uterus, NOS21.8 |

 Rates 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/ETHNICITY**1

**Massachusetts, 2012-2016**

**MALES**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|   | **All Races**2 | **White, non-Hispanic** | **Black, non-Hispanic** | **Asian, non-Hispanic** | **Hispanic** |
| **Cancer Site / Type** | **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 |

Race/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**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|   | **All Races2** | **White, non-Hispanic** | **Black, non-Hispanic** | **Asian, non-Hispanic** | **Hispanic** |
| **Cancer Site / Type** | **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 |
| **Breast3** | 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 |

Race/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**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|   | **All Races3** | **White, non-Hispanic** | **Black, non-Hispanic** | **Asian, non-Hispanic** | **Hispanic** |
| **Cancer Site / Type** | **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 |

Race/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**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|   | **All Races** | **White, non-Hispanics** | **Black, non-Hispanics** | **Asian, non-Hispanics** | **Hispanics** |
| **Cancer Site / Type** | **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 *in situ*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 |

Rates 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**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **All Races** | **White, non-Hispanics** | **Black, non-Hispanics** | **Asian, non-Hispanics** | **Hispanics** |
| **Cancer Site / Type** | **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 *in situ*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 |

Rates 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**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|   | **All Races** | **White, non-Hispanics** | **Black, non-Hispanics** | **Asian, non-Hispanics** | **Hispanics** |
| **Cancer Site / Type** | **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 *in situ*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 |

Rates 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**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|   | **All Races2** | **White, non-Hispanic** | **Black, non-Hispanic** | **Asian, non-Hispanic** | **Hispanic** |
| **Cancer Site / Type** | **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 |

Race/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**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|   | **All Races2** | **White, non-Hispanic** | **Black, non-Hispanic** | **Asian, non-Hispanic** | **Hispanic** |
| **Cancer Site / Type** | **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 |

Race/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**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|   | **All Races2** | **White, non-Hispanic** | **Black, non-Hispanic** | **Asian, non-Hispanic** | **Hispanic** |
| **Cancer Site / Type** | **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 |

Race/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**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|   | **All Races** | **White, non-Hispanics** | **Black, non-Hispanics** | **Asian, non-Hispanics** | **Hispanics** |
| **Cancer Site / Type** | **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 | \* | \* | \* | \* |

Rates 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**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **All Races** | **White, non-Hispanics** | **Black, non-Hispanics** | **Asian, non-Hispanics** | **Hispanics** |
| **Cancer Site / Type** | **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 | \* | \* | \* | \* |

Rates 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**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|   | **All Races** | **White, non-Hispanics** | **Black, non-Hispanics** | **Asian, non-Hispanics** | **Hispanics** |
| **Cancer Site / Type** | **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 |

Rates 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)**

|  |  |  |
| --- | --- | --- |
|  | **MALES** | **FEMALES** |
| **Cancer Site / Type** | **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 *in situ2*** | 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)**

|  |  |  |
| --- | --- | --- |
|  | **MALES** | **FEMALES** |
| **Cancer Site / Type** | **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** | ***.……….C o d e s………..*** |
|  | **ICD-O-3 SEER Site Recode\*** | **ICD-10\*\*** |
| **Brain & Other** **Nervous System** | 31010, 31040 | C70-C72 |
| **Breast** **(includes *in situ*)** | 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 *in situ*)** | 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_dwhoheme/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/ETHNICTIY, AND SEX**

**Massachusetts, 2012-2016**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **White, non-Hispanic** | **Black, non-Hispanic** | **Asian, non-Hispanic** | **Hispanic** |
| **Age Group** | **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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2. Massachusetts Department of Public Health. Massachusetts State Health Assessment. Boston, MA; October 2017.
1. 1Rates are age-adjusted to the 2000 U.S. Standard Population. \*NOS – Not Otherwise Specified.

 Source: Massachusetts Vital Statistics [↑](#footnote-ref-1)