**CANCER INCIDENCE AND**

**MORTALITY**

**IN MASSACHUSETTS**

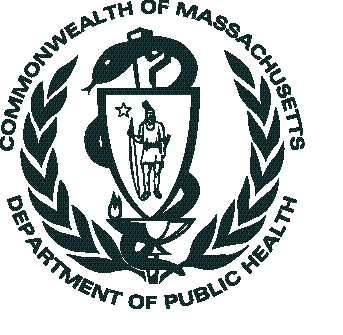
**2010 – 2014:**

STATEWIDE REPORT

The Office of Data Management and Outcomes Assessment

Massachusetts Department of Public Health

*August 2017*



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**CANCER INCIDENCE AND**

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**2010 – 2014:**

STATEWIDE REPORT

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Massachusetts Department of Public Health

*August 2017*

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**ACKNOWLEDGMENTS**

This report was prepared by Susan T. Gershman, Director, Massachusetts Cancer Registry, and Massachusetts Cancer Registry staff and consultants. Special thanks are given to Annie MacMillan and Richard Knowlton for their diligent work in preparing the data for this report. Thanks are also given to consultant Nancy Weiss for her editing efforts. Thanks are given to Malena Hood of the Division of Research and Epidemiology for providing the mortality and population data. Thanks are also given to Virginia Lijewski, MPH, Epidemiologist, formerly of the Bureau of Infectious Disease and Laboratory Sciences (BIDLS), Monina Klevens, DDS, MPH, also with BIDLS, and Richard Knowlton, MS, Epidemiologist, Massachusetts Cancer Registry, for their contribution to the special section “The Epidemiology of Cancer and Benign Brain Tumors among Massachusetts Residents with Hepatitis B or Hepatitis C from 2002-2012".

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We acknowledge the Centers for Disease Control and Prevention for its support of the staff and the printing and distribution of this report under cooperative agreement 5 NU58DP003920-05-00 awarded to the Massachusetts Cancer Registry at the Massachusetts Department of Public Health. Its contents are solely the responsibility of the authors and do not necessarily represent the official views of the Centers for Disease Control and Prevention.

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**EXECUTIVE SUMMARY**

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**EXECUTIVE SUMMARY**

*Cancer Incidence and Mortality in Massachusetts, 2010-2014: Statewide Report* presents cancer incidence and mortality data for the Commonwealth from 2010 through 2014. 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 hepatitis B/hepatitis C-related cancers 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.

**All counts and average annual age-adjusted rates presented in this Executive Summary are for the period 2010-2014 and are for Massachusetts residents, unless otherwise stated.**

OVERALL:

* Total number of new cases – 182,288, an average of 36,458 annually
* Total number of cancer deaths – 63,671, an average of 12,734 annually
* Incidence rate (age-adjusted) for all cancers combined for total population – 471.1 per 100,000 persons
* Mortality rate (age-adjusted) for all cancer deaths combined for total population – 157.8 per 100,000 persons.

MOST COMMONLY DIAGNOSED CANCERS & CANCER DEATH CAUSES BY SEX:

***Incidence (newly diagnosed cases)***

* Males – *prostate cancer* accounted for 24.2% of all newly diagnosed cancers among males
* Females – *invasive breast cancer* accounted for 29.8% of all newly diagnosed cancers among females.

***Mortality (cancer deaths)***

* Males – *cancer of the bronchus and lung* accounted for 26.5% of all cancer deaths among males
* Females – *cancer of the bronchus and lung* also accounted for 26.5% of all cancer deaths among females.

TRENDS 2010-2014:

***Statistically Significant Incidence Trends – Males***

* All cancers combined decreased 3.2% per year.
* Kidney and Renal Pelvis cancer increased 4.3% per year.
* Prostate cancer decreased by 11.1% per year.

***Statistically Significant Mortality Trends – Males***

* All cancers deaths combined decreased 2.0% per year.
* Bronchus and lung cancer decreased 1.4% per year.
* Breast cancer increased 23.1% per year. (Note: While this is a statistically significant increase, there were 64 deaths from 2010-2014 and the mortality rate increased from 0.2 to 0.4/100,000. With such small numbers even an increase of a few cases can result in a significant trend. The rates were comparable to national rates as well.)
* Kidney and renal pelvis cancer increased 10.4% per year.

***Statistically Significant Incidence Trends – Females***

* Bronchus and lung cancer decreased 1.4% per year.
* Colon and rectum cancer decreased 2.4% per year.
* Melanoma of skin cancer decreased 4.6% per year.
* Pancreatic cancer increased 3.0% per year.

***Statistically Significant Mortality Trends – Females***

* All cancers deaths combined decreased 1.5% per year.
* Bronchus and lung cancer decreased 1.0% per year.
* Hodgkin Lymphoma decreased 22.9% per year (Note: As with male breast cancer mortality, there were 44 deaths from 2010-2014 and the mortality rate decreased from 0.3 to 0.1/100,000. The rates were comparable to national rates as well.)

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 those of all other racial/ethnic groups.
* Cancers of prostate, bronchus and lung, and colon/rectum were the leading cancer types in each racial/ethnic group.
* White, non-Hispanic males had significantly higher rates of cancers of the brain and other nervous system, esophagus, leukemia, and urinary bladder when compared to all other race/ethnic groups.
* Black, non-Hispanic males had significantly higher rates of multiple myeloma and prostate cancer when compared to all other race/ethnic groups.
* Asian, non-Hispanic males had significantly higher rates of liver and intrahepatic bile duct cancer when compared to white, non-Hispanic and black, non-Hispanic males.

***Males Mortality***

* Black, non-Hispanic males had the highest total cancer mortality rate, significantly higher compared to all other racial/ethnic groups.
* Cancer of the bronchus and lung was the leading cause of cancer death for each racial/ethnic group. White and black, non-Hispanics had significantly elevated rates compared to the other two racial/ethnic groups.
* The mortality rate for prostate cancer and for multiple myeloma was significantly elevated among black, non-Hispanic males compared to the other racial/ethnic groups.
* The mortality rate for liver and intrahepatic cancer was significantly elevated among Asian, non-Hispanics compared to the other racial/ethnic groups.

***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.
* 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, uterus, ovary, and urinary bladder.
* 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.

***Females Mortality***

* Black and white, non-Hispanic females had the highest total cancer mortality rates, significantly higher than for Asian, 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 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 significantly lower than national rates for males, and 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, melanoma of skin, oral cavity and pharynx, thyroid, and urinary bladder. Among those cancers significantly elevated for males were esophagus, liver and intrahepatic bile ducts, testicular, thyroid and urinary bladder. Incidence rates that were significantly lower compared to the U.S. among females were cervix uteri, colon and rectum, and kidney and renal pelvis, while among males the cancer types included bronchus and lung, colon and rectum, larynx, 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, there were some individual cancers that had significantly elevated mortality rates compared to the U.S. These include male esophagus and female urinary bladder. Those cancers that were significantly lower compared to the U.S. included breast, cervix uteri, colon/rectum, and kidney and renal pelvis among females, and bronchus and lung, colon/rectum, kidney and renal pelvis, multiple myeloma, non-Hodgkin lymphoma, prostate, and testis among males.

**INTRODUCTION**

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**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, 2010-2014: 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 2010 through 2014;\*
* Provides detailed information on the most commonly occurring types of cancer for 2010 through 2014;
* Examines cancer incidence patterns by age, sex, and race/ethnicity;
* Reviews Massachusetts cancer incidence and mortality trends for 2010 through 2014;
* Compares Massachusetts incidence and mortality data with respective national data; and
* Features a special section on the epidemiology of hepatitis B/C-related cancers.

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 epidemiology of hepatitis B/C-related cancers.
* **FIGURES & TABLES** which present cancer incidence and mortality data for 24 types of cancer for 2010-2014. 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). For national trends, please refer to the Annual Report to the Nation on the Status of Cancer, 1975-2014, Featuring Survival (2).***

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**SPECIAL OVERVIEW:**

**The Epidemiology of Cancer and Benign Brain Tumors among Massachusetts Residents with Hepatitis B or Hepatitis C from 2002-2012**

**The Epidemiology of Cancer and Benign Brain Tumors among Massachusetts Residents with Hepatitis B or Hepatitis C from 2002-2012**

**INTRODUCTION**

Hepatitis B is an infection of the liver caused by the hepatitis B virus (HBV). Of those infected with HBV 10% may progress to a chronic infection and can pass the virus to others via sexual contact and contact with infected blood, including needle sharing to inject drugs. Through maternal transmission, pregnant women can pass the infection to their babies at birth.1 Hepatitis C is an infection of the liver caused by the hepatitis C virus (HCV). Unlike HBV infection, most people who get infected with HCV progress to a chronic infection. Risk factors for HCV transmission include receiving infected blood products before widespread screening in 1992, needle sharing to inject drugs, and maternal-fetal transmission. Sexual transmission of HCV is possible, but rare. Sexual transmission is increased by having a sexually transmitted disease or HIV infection, sex with multiple partners, or rough sex.2

Liver inflammation from chronic HBV or HCV infection can cause scarring of the liver or cirrhosis, which in turn can lead to liver cancer. The association of liver cancer and HBV was first proposed in 1972, shortly after the discovery of HBV.3 The association of liver cancer and HCV was established soon after the discovery of HCV in 1989.4 Recent studies have shown an increased risk of liver cancer among HCV infected people ranging from 23 to 35-fold.4 Other studies have shown associations between HBV or HCV infection and non-Hodgkin lymphoma (NHL) and lung cancer.4,5

Hepatitis B vaccination can prevent HBV infection. While there is currently no hepatitis C vaccine, effective anti-viral treatments exist to prevent progression to cirrhosis, the stage of liver disease where the majority of liver cancers develop.6

Our objective was to explore the association of HBV and HCV with liver cancer and examine trends in liver cancer from 2002 to 2012 as well as assess associations with other cancers.

**METHODS**

HBV and HCV surveillance data are collected using a web-based system, the MA Virtual Epidemiologic Network (MAVEN). MAVEN is maintained by the Bureau of Infectious Disease and Laboratory Sciences (BIDLS) within the Massachusetts Department of Public Health. Demographics, clinical characteristics, risk history, and viral hepatitis laboratory results are collected when available. The Massachusetts Cancer Registry (MCR) collects information on all newly diagnosed cases of *in situ* and invasive cancers and benign brain tumors among Massachusetts residents from hospitals, nursing homes, doctors’ offices, radiation centers and 43 state and territory central cancer registries. For the sake of brevity in this report, the term ‘cancer’ in reference to MCR cases will include invasive and *in situ* cancers and benign brain tumors.

HBV and HCV and MCR data were matched on name and date of birth using Link Plus TM software, a probabilistic record linkage program developed at CDC’s Division of Cancer Prevention and Control in support of CDC’s National Program of Cancer Registries (NPCR).7 Percentages of individual cancers among HBV- or HCV-infected MCR cases were compared with percentages among all MCR cases. The population proportions were compared using a T-test to determine statistical significance at the p<.05 level. Using cumulative age-adjusted incidence rates, relative risks were calculated for being diagnosed with all cancers, liver cancer, and a non-liver cancer among people in the MCR with and without HBV or HCV infections. The annual percent change (APC) was calculated for incidence trends in liver cancer using Joinpoint software from the National Cancer Institute.8

**RESULTS**

Between 2002 and 2012, there were 28,070 HBV and 94,701 HCV chronic and acute infections reported to the MDPH. During the same time period, there were 447,087 cancer cases reported to the MCR. Of the HBV cases, 5.2% (n=1,471) matched with an MCR case while 5.8% of HCV cases matched with an MCR case (n=5,499). Of the MCR cancer cases, 1.5% (n=6,970) had an HBV or HCV infection reported from 2002 to 2012.

Liver cancer was the most common cancer among males and third most common among females infected with HBV or HCV (Table 1).

|  |  |  |  |
| --- | --- | --- | --- |
| **Table 1. MCR Cases with Hepatitis B or C infection (2002-2012)\*** | | | |
| **Males:** | **HBV/HCV Cancers** | **All Cancers** | **% Infected with HBV/HCV** |
| 1. Liver | 1,349 (28.6%) | 4,285 (2.0%) | 31.5% |
| 1. Prostate | 576 (12.2%) | 55,105 (26.1%) | 1.0% |
| 1. Lung | 500 (10.6%) | 27,295 (12.9%) | 1.8% |
| 1. Others | 2,287 (48.5%) | 125,720 (59.2%) | 1.8% |
| TOTAL | 4,712 (100%) | 212,405 (100%) | 2.2% |
|  | | | |
| **Females:** | **HBV/HCV Cancers** | **All Cancers** | **% Infected with HBV/HCV** |
| 1. Breast | 433 (19.2%) | 57,762 (24.6%) | 0.7% |
| 1. Lung | 268 (11.9%) | 28,172 (12.0%) | 1.0% |
| 1. Liver | 238 (10.6%) | 1,484 (0.6%) | 16.1% |
| 1. Others | 1,315 (58.3%) | 147,239 (62.7%) | 0.9% |
| TOTAL | 2,254 (100%) | 234,657 (100%) | 1.0% |

\*-Note that there were 4 transgender HBV/HCV cases and 25 for all cancers.

Liver cancer was disproportionately represented among HBV/HCV cancers for both males and females; 28.6% and 10.6% of liver cancers among males and females, respectively, were infected with HBV or HCV. Additionally non-Hodgkin lymphoma (NHL) was also disproportionately represented among HBV/HCV cancers for both males (6.1% vs. 4.2%) and females (6.6% vs. 3.7%) (data not shown). These proportional differences were all statistically significant (p<.05). The other specific cancers in Table 1 (prostate, breast, and lung), while representing the top 3 percentages of HBV/HCV cancers, were not overrepresented among HBV and HCV cancer cases compared to their representation among all cancer cases.

Among males, a significantly higher percentage of HBV/HCV cancers among Asian, non-Hispanics (NHs) included liver (46.7%) compared to 27.1% of white, NHs, 24.7% of black, NHs, and 36.7% of Hispanics. Also seen among Asian, NHs females, was a significantly higher percentage of HBV/HCV-related liver cancer (23.4%) compared to 9.3% of white, NHs, 12.2% of black, NHs, and 14.8% of Hispanic females.

Between 2002 and 2012, people with HCV infection had 13 times the risk of liver cancer than did people without HCV infection and people with HBV infection had 15 times the risk of liver cancer than did people without HBV infection.

|  |  |  |
| --- | --- | --- |
| **Table 2. Hepatitis B and C Infection and Cancer Relative Risks, 2002-2012** | | |
| **Hepatitis C and Cancer (n=5,499)** | | |
|  | Relative Risk | 95% Confidence Interval |
| All Cancers | 0.6 | 0.6, 0.6 |
| Liver Cancer | 13.1 | 12.2, 13.9 |
| Non Liver Cancer | 0.5 | 0.5, 0.5 |
|  | | |
| **Hepatitis B and Cancer (n=1,471)** | | |
|  | Relative Risk | Confidence Interval |
| All Cancers | 0.7 | 0.6, 0.7 |
| Liver Cancer | 15.3 | 13.7, 17.1 |
| Non Liver Cancer | 0.5 | 0.5, 0.6 |

The incidence rates for liver cancer for both males and females in Massachusetts increased significantly from 2002-2012 (APC=3.9 and APC=3.6, respectively). In addition, there were significant increases in trends for white, NHs (APC=6.5) and black, NHs (APC=3.3). Among MCR cases, 31.5% of males with liver cancer and 16.1% of females with liver cancer were infected with HBV or HCV.

Two line graphs are presented showing trends in primary liver cancer age-adjusted incidence rates in Massachusetts for the period 2002-2012.  All rates are adjusted to the U.S. 2000 Standard Population 

The first graph shows rates by sex for 2002-2012
2002 9.4  male,  2.6 female
2003 8.8 male,  2.9 female
2004 10.1 male, 2.7 female 
2005 10.7 male, 2.8 female
2006 12.6 male, 3.2 female
2007 11.7 male, 3.6 female
2008 12.8 male, 3.8 female
2009 13.2 male, 3.8 female
2010 12.5 male, 3.4 female
2011 12.4 male, 3.3 female
2012 13.5 male, 3.8 female

The second graph shows rates by race ethnicity.  The abbreviation NH means non Hispanic.
2002 4.8  White NH, 7.8 Black NH, 17.3 Asian NH, 11.8 Hispanic
2003 4.7  White NH, 10.4 Black NH, 20 Asian NH, 11.7 Hispanic
2004 5.2  White NH, 9.5 Black NH, 16.4 Asian NH, 10.2 Hispanic
2005 5.5  White NH, 8.8 Black NH, 19.3 Asian NH, 9.8 Hispanic
2006 6.5  White NH, 9.2 Black NH, 20.7 Asian NH, 12.1 Hispanic
2007 6.1  White NH, 12.5 Black NH, 22 Asian NH, 13.7 Hispanic
2008 6.9  White NH, 11.5 Black NH, 20.9 Asian NH, 11.7 Hispanic
2009 6.9  White NH, 12.6 Black NH, 20.6 Asian NH, 10.4 Hispanic
2010 6.2  White NH, 10 Black NH, 21.8 Asian NH, 16.3 Hispanic
2011 6.3  White NH, 9.7 Black NH, 18.2 Asian NH, 13.9 Hispanic
2012 6.8  White NH, 13.7 Black NH, 20.9 Asian NH, 13.5 Hispanic





Two line graphs are presented showing trends in primary liver cancer age-adjusted incidence rates in Massachusetts for the period 2002-2012.  All rates are adjusted to the U.S. 2000 Standard Population 

The first graph shows rates by sex for 2002-2012
2002 9.4  male,  2.6 female
2003 8.8 male,  2.9 female
2004 10.1 male, 2.7 female 
2005 10.7 male, 2.8 female
2006 12.6 male, 3.2 female
2007 11.7 male, 3.6 female
2008 12.8 male, 3.8 female
2009 13.2 male, 3.8 female
2010 12.5 male, 3.4 female
2011 12.4 male, 3.3 female
2012 13.5 male, 3.8 female

The second graph shows rates by race ethnicity.  The abbreviation NH means non Hispanic.
2002 4.8  White NH, 7.8 Black NH, 17.3 Asian NH, 11.8 Hispanic
2003 4.7  White NH, 10.4 Black NH, 20 Asian NH, 11.7 Hispanic
2004 5.2  White NH, 9.5 Black NH, 16.4 Asian NH, 10.2 Hispanic
2005 5.5  White NH, 8.8 Black NH, 19.3 Asian NH, 9.8 Hispanic
2006 6.5  White NH, 9.2 Black NH, 20.7 Asian NH, 12.1 Hispanic
2007 6.1  White NH, 12.5 Black NH, 22 Asian NH, 13.7 Hispanic
2008 6.9  White NH, 11.5 Black NH, 20.9 Asian NH, 11.7 Hispanic
2009 6.9  White NH, 12.6 Black NH, 20.6 Asian NH, 10.4 Hispanic
2010 6.2  White NH, 10 Black NH, 21.8 Asian NH, 16.3 Hispanic
2011 6.3  White NH, 9.7 Black NH, 18.2 Asian NH, 13.9 Hispanic
2012 6.8  White NH, 13.7 Black NH, 20.9 Asian NH, 13.5 Hispanic





**LIMITATIONS**

Prior to the electronic reporting with MAVEN in 2006, manual laboratory reporting was used and thus earlier years may be incomplete, resulting in fewer records available for the match and the potential for an underestimation of the association with cancer. HBV and HCV diagnosis date reflects the date of symptom onset, specimen collection date for the first lab result or MDPH notification date, whichever is the earliest, resulting in a possible misclassification of year of hepatitis infection. Likewise, MCR diagnosis date reflects the date the tumor was first diagnosed and not when the tumor first became malignant.

**CONCLUSIONS**

Liver cancer was statistically associated with prior HBV or HCV infection among Massachusetts residents from 2002 to 2012. The trends in liver cancer from 2002 to 2012 revealed a significant increase among males and females and white and black, non-Hispanics. These trends are certainly driven in part by HBV and HCV infections. It is estimated that 50% of liver cancers in the U.S. are HCV related, 15% are HBV related, and 35% are related to something else.(ref) Eighty-one percent of Americans with chronic HCV infection were born between 1945 and 1965. Many of those people were infected before the discovery of HCV in 1989 and have been living with an infection for at least twenty years, resulting in more liver cancer occurring as this population ages and enters the final stages of HCV infection. 9 The strong association between HBC and HCV infection and liver cancer underscores the importance of prevention of liver cancer through hepatitis B vaccination and prompt antiviral treatment for HBV and HCV infected people.

Among MCR cases infected with HBV or HCV, non-Hodgkin lymphoma (NHL) was disproportionately represented among males and females. While this association was statistically significant, the disproportions were not as large as for liver cancer. HBV and HCV have strong lymphotropic properties (stimulating or acting on lymphatic system) and data have shown a causal association with NHL.4 This association with NHL, while not as strong as the association with liver cancer, has some biological foundation and further supports vaccination and early treatment for people with HBV and HCV infections.

**FIGURES & TABLES**

**Figure 1.**

**PERCENTAGE OF CANCER INCIDENT CASES BY CANCER TYPE AND SEX**

**Massachusetts, 2010-2014**

**MALES (N=87,975) FEMALES (N=94,299)**

Source: Massachusetts Cancer Registry

**Figure 2.**

**INCIDENCE RATES1 FOR TEN LEADING CANCER TYPES BY SEX**

**Massachusetts, 2010-2014**

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, 2010-2014**

**MALES (N=32,258) FEMALES (N=31,413)**

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

Source: Massachusetts Vital Statistics

**Figure 4.**

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

**Massachusetts, 2010-2014**

**Table 1**.

**AGE-SPECIFIC INCIDENCE RATES1 AND MEDIAN AGE AT DIAGNOSIS FOR SELECTED CANCER SITES**

**Massachusetts, 2010-2014**

**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** | 28.2 | 12.3 | 13.2 | 23.0 | 38.1 | 54.1 | 74.8 | 100.8 | 164.7 | 290.3 | 569.5 | 928.7 | 1375.6 | 1918.7 | 2478.4 | 2704.8 | 2838.6 | 2845.0 | 66 |
| **Brain & Other Nervous System** | 5.8 | 4.1 | 2.9 | 2.9 | 2.7 | 5.0 | 3.9 | 3.5 | 4.9 | 6.8 | 8.5 | 11.8 | 15.9 | 20.7 | 25.6 | 31.2 | 29.4 | 23.2 | 59 |
| **Breast** | -- | 0.1 | -- | -- | -- | -- | 0.3 | 0.2 | 0.6 | 0.7 | 1.7 | 2.1 | 3.1 | 5.7 | 7.4 | 8.0 | 10.2 | 7.9 | 68 |
| **Breast *in situ*2** |  |  |  | -- | -- | -- | 0.1 | -- | 0.1 | 0.2 | 0.1 | 0.5 | 0.3 | 0.1 | 0.8 | 0.9 | 0.4 | 0.4 | 62 |
| **Bronchus & Lung** | -- | -- | 0.1 | 0.2 | 0.6 | 0.3 | 1.5 | 3.0 | 8.4 | 20.1 | 52.0 | 104.5 | 163.0 | 269.6 | 417.9 | 524.2 | 554.2 | 451.9 | 71 |
| **Colon / Rectum** | -- | -- | 0.1 | 0.3 | 0.8 | 2.0 | 5.6 | 10.1 | 20.7 | 32.4 | 69.0 | 66.8 | 89.6 | 129.9 | 184.1 | 225.0 | 269.4 | 341.4 | 67 |
| **Esophagus** | -- | -- | -- | -- | 0.1 | 0.2 | 0.3 | 0.6 | 1.8 | 6.3 | 10.3 | 19.4 | 31.5 | 39.2 | 55.2 | 53.3 | 58.4 | 53.0 | 67 |
| **Hodgkin Lymphoma** | -- | 0.4 | 1.2 | 2.6 | 5.7 | 5.9 | 4.9 | 3.5 | 4.1 | 3.5 | 3.2 | 2.7 | 3.9 | 4.3 | 5.3 | 4.9 | 4.9 | 4.6 | 41 |
| **Kidney & Renal Pelvis** | 2.6 | 0.6 | -- | 0.2 | 0.6 | 1.7 | 3.6 | 8.3 | 14.2 | 22.2 | 32.8 | 43.5 | 63.3 | 79.8 | 93.9 | 95.2 | 88.2 | 68.7 | 63 |
| **Larynx** | -- | -- | 0.1 | -- | -- | 0.2 | 0.2 | 0.4 | 0.7 | 3.2 | 7.0 | 14.2 | 17.9 | 23.5 | 30.3 | 30.1 | 36.2 | 17.8 | 66 |
| **Leukemia** | 8.8 | 3 | 3.2 | 3.6 | 3.5 | 3.0 | 4.0 | 4.1 | 6.8 | 10.3 | 12.3 | 20.7 | 34.0 | 48.5 | 67.7 | 90.3 | 102.8 | 115.9 | 67 |
| **Liver & Intrahepatic Bile Ducts** | 1.4 | -- | 0.3 | 0.2 | 0.5 | 0.2 | 0.5 | 1.3 | 2.5 | 7.3 | 20.3 | 40.5 | 50.1 | 43.4 | 53.1 | 62.8 | 62.2 | 44.7 | 63 |
| **Melanoma of Skin** | -- | -- | 0.2 | 0.4 | 1.5 | 3.8 | 8.2 | 8.0 | 13.9 | 18.9 | 27.5 | 45.5 | 56.7 | 78.8 | 110.9 | 142.7 | 160.5 | 149.0 | 66 |
| **Multiple Myeloma** | -- | -- | -- | -- | -- | 0.3 | 0.1 | 1.6 | 2.4 | 6.5 | 8.6 | 13.5 | 20.4 | 27.3 | 43.8 | 40.7 | 61.0 | 46.3 | 67 |
| **Non-Hodgkin Lymphoma** | 1.1 | 1.1 | 0.4 | 2.2 | 3.2 | 3.0 | 5.8 | 8.3 | 12.6 | 17.7 | 25.4 | 35.3 | 47.9 | 75.9 | 98.0 | 115.2 | 146.9 | 144.8 | 66 |
| **Oral Cavity & Pharynx** | 0.1 | 0.1 | 0.1 | 0.5 | 0.6 | 1.7 | 2.3 | 4.1 | 9.1 | 20.6 | 33.0 | 47.5 | 62.5 | 64.5 | 67.1 | 73.7 | 53.9 | 52.6 | 62 |
| **Pancreas** | -- | -- | 0.1 |  | 0.1 | 0.3 | 0.7 | 1.7 | 3.2 | 7.3 | 13.2 | 25.3 | 33.4 | 54.1 | 65.8 | 86.0 | 98.7 | 107.2 | 69 |
| **Prostate** | 0.1 | -- | -- | -- | -- | -- | 0.1 | 0.4 | 9.7 | 40.4 | 151.8 | 292.5 | 477.3 | 646.5 | 670.3 | 515.3 | 329.6 | 331.9 | 65 |
| **Stomach** | -- | -- | 0.1 | -- | -- | 0.3 | 1.2 | 2.0 | 2.8 | 5.0 | 10.1 | 15.5 | 20.6 | 32.2 | 46.6 | 58.5 | 72.3 | 73.2 | 69 |
| **Testis** | 0.7 | 0.3 | 0.1 | 3.1 | 10.3 | 15.6 | 14.4 | 13.4 | 10.8 | 8.3 | 6.6 | 3.8 | 2.1 | 1.4 | 1.7 | 0.6 | 0.8 | 0.8 | 35 |
| **Thyroid** | 0.3 | -- | 0.6 | 1.0 | 2.7 | 5.2 | 8.2 | 11.7 | 13.9 | 17.1 | 17.3 | 22.2 | 22.2 | 23.8 | 26.7 | 22.4 | 18.1 | 8.3 | 54.5 |
| **Urinary Bladder** | -- | -- | -- | 0.2 | 0.7 | 0.8 | 1.4 | 2.2 | 6.6 | 11.2 | 26.1 | 45.0 | 80.3 | 137.5 | 226.4 | 280.0 | 344.7 | 403.5 | 72 |
| **Other Sites** | 7.4 | 2.6 | 3.7 | 5.6 | 4.5 | 4.7 | 7.6 | 12.0 | 15.0 | 24.6 | 32.6 | 56.3 | 79.8 | 112.0 | 180.7 | 244.8 | 336.4 | 398.5 | 70 |

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1 per 100,000 2 Breast *in situ* is excluded from ‘All Sites’. 3 Dashes 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, 2010-2014**

## 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** | 23.6 | 12.1 | 16.1 | 20.9 | 45.6 | 72.8 | 127.2 | 196.2 | 331.4 | 472.8 | 661.9 | 814.4 | 1098.0 | 1448.3 | 1810.7 | 2039.0 | 2085.6 | 1828.2 | 65 |
| **Brain & Other Nervous System** | 4.0 | 3.6 | 3.8 | 2.8 | 2.4 | 2.1 | 2.7 | 3.3 | 4.7 | 4.3 | 5.8 | 9.1 | 11.6 | 14.5 | 16.3 | 20.5 | 17.3 | 17.7 | 60 |
| **Breast** | -- | -- | 0.1 | -- | 1.9 | 10.1 | 29.0 | 67.3 | 141.2 | 213.2 | 251.2 | 271.9 | 366.1 | 452.9 | 502.7 | 493.3 | 451.9 | 327.8 | 62 |
| **Breast *in situ*2** | -- | -- | -- | 0.3 | 0.2 | 1.2 | 4.5 | 15.4 | 68.6 | 104.4 | 103.4 | 94.5 | 105.5 | 126.0 | 118.8 | 105.1 | 66.6 | 27.7 | 57 |
| **Bronchus & Lung** | 0.1 | -- | 0.1 | 0.4 | 0.5 | 0.2 | 0.8 | 3.2 | 11.2 | 26.3 | 60.6 | 93.8 | 147.6 | 247.1 | 375.6 | 438.0 | 399.6 | 262.2 | 71 |
| **Cervix Uteri** | -- | -- | -- | 0.1 | 0.5 | 3.1 | 6.9 | 9.3 | 10.5 | 8.7 | 8.2 | 7.9 | 9.1 | 9.8 | 6.8 | 8.4 | 7.8 | 6.2 | 51 |
| **Colon / Rectum** | -- | 0.1 | 0.3 | 0.3 | 1.2 | 2.1 | 4.4 | 11.1 | 20.1 | 27.8 | 52.7 | 47.4 | 61.9 | 91.5 | 130.4 | 186.3 | 235.0 | 265.1 | 72 |
| **Corpus Uteri & Uterus, NOS** | -- | -- | 0.1 | -- | 0.1 | 1.4 | 3.1 | 9.0 | 14.1 | 27.6 | 54.5 | 83.7 | 111.8 | 126.8 | 117.0 | 96.3 | 82.0 | 56.6 | 63 |
| **Esophagus** | -- | -- | -- | -- | -- | -- | 0.3 | 0.6 | 0.6 | 0.9 | 1.2 | 4.0 | 5.9 | 9.6 | 14.8 | 12.1 | 14.4 | 13.5 | 71 |
| **Hodgkin Lymphoma** | -- | 0.1 | 1.0 | 3.3 | 6.1 | 3.9 | 3.8 | 2.8 | 2.8 | 1.3 | 2.2 | 2.7 | 2.3 | 2.5 | 3.3 | 3.9 | 5.6 | 1.7 | 38 |
| **Kidney & Renal Pelvis** | 1.7 | 0.7 | 0.2 | 0.3 | 0.4 | 0.9 | 2.3 | 4.1 | 7.5 | 10.0 | 16.6 | 19.6 | 28.2 | 34.4 | 47.4 | 54.0 | 45.9 | 34.1 | 65 |
| **Larynx** | -- | -- | -- | -- | -- | -- | 0.1 | 0.1 | 0.3 | 0.9 | 2.8 | 4.0 | 2.8 | 7.1 | 8.3 | 5.6 | 6.3 | 5.2 | 67 |
| **Leukemia** | 7.9 | 4.2 | 2.1 | 1.6 | 3.0 | 3.1 | 3.0 | 3.2 | 5.8 | 5.8 | 8.9 | 13.7 | 19.5 | 23.9 | 35.4 | 50.4 | 52.9 | 60.0 | 68 |
| **Liver & Intrahepatic Bile Ducts** | 0.3 | -- | 0.2 | 0.2 | 0.3 | 0.5 | 0.5 | 0.9 | 1.7 | 3.9 | 9.0 | 12.4 | 12.7 | 15.8 | 22.0 | 23.2 | 18.5 | . | 68 |
| **Melanoma of Skin** | -- | -- | 0.3 | 1.1 | 4.9 | 10.5 | 13.4 | 11.1 | 16.9 | 21.1 | 27.4 | 32.2 | 38.9 | 42.8 | 51.2 | 55.1 | 61.7 | 61.0 | 61 |
| **Multiple Myeloma** | -- | -- | -- | -- | -- | 0.3 | 0.4 | 0.9 | 1.3 | 3.2 | 6.6 | 9.0 | 13.2 | 20.3 | 23.8 | 29.9 | 34.2 | 31.4 | 70 |
| **Non-Hodgkin Lymphoma** | 0.1 | 0.7 | 0.9 | 1.1 | 1.7 | 2.7 | 4.1 | 5.5 | 8.3 | 12.1 | 19.9 | 28.1 | 41.9 | 53.7 | 68.9 | 81.4 | 103.2 | 88.3 | 68 |
| **Oral Cavity & Pharynx** | 0.1 | 0.1 | 0.4 | 0.5 | 0.6 | 0.6 | 1.5 | 2.7 | 3.7 | 5.5 | 10.8 | 15.1 | 18.0 | 24.6 | 27.4 | 29.7 | 32.9 | 33.5 | 66 |
| **Ovary** | 0.2 | 0.1 | 0.4 | 0.9 | 1.6 | 2.3 | 3.5 | 4.2 | 7.0 | 13.6 | 21.1 | 25.7 | 30.3 | 37.7 | 43.8 | 43.5 | 43.7 | 38.5 | 63 |
| **Pancreas** | -- | -- | -- | -- | 0.1 | 0.1 | 0.4 | 1.3 | 2.6 | 4.3 | 8.8 | 15.2 | 25.7 | 42.6 | 60.1 | 71.1 | 84.2 | 100.6 | 74 |
| **Stomach** | -- | -- | -- | 0.3 | 0.3 | 0.3 | 0.5 | 1.1 | 3.6 | 4.0 | 4.7 | 7.3 | 8.2 | 11.8 | 18.8 | 23.5 | 34.9 | 37.7 | 72 |
| **Thyroid** | 0.2 | 0.1 | 1.8 | 4.3 | 17.1 | 24.6 | 39.1 | 44.2 | 49.1 | 53.2 | 52.6 | 46.8 | 44.9 | 47.6 | 39.9 | 34.9 | 24.4 | 13.5 | 49 |
| **Urinary Bladder** | -- | -- | 0.1 | 0.2 | 0.2 | 0.1 | 0.6 | 1.0 | 2.3 | 3.7 | 8.2 | 16.2 | 26.3 | 39.6 | 61.3 | 80.3 | 88.3 | 82.9 | 73 |
| **Other Sites** | 8.8 | 2.2 | 4.2 | 3.5 | 2.8 | 4.4 | 7.1 | 10.5 | 17.0 | 23.7 | 33.4 | 52.0 | 71.3 | 94.6 | 141.5 | 199.0 | 236.2 | 272.4 | 72 |

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1 per 100,000 2 Breast *in situ* is excluded from ‘All Sites’. 3 Dashes 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, 2010-2014**

#### **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** | 26.0 | 12.2 | 14.6 | 22.0 | 41.9 | 63.5 | 101.4 | 149.5 | 250.2 | 383.8 | 616.9 | 869.6 | 1230.3 | 1668.3 | 2111.7 | 2324.7 | 2381.7 | 2151.0 | 66 |
| **Brain & Other Nervous System** | 4.9 | 3.9 | 3.3 | 2.9 | 2.6 | 3.5 | 3.3 | 3.4 | 4.8 | 5.5 | 7.1 | 10.4 | 13.6 | 17.4 | 20.5 | 25.1 | 22.1 | 19.4 | 59 |
| **Breast** | -- | 0.1 | 0.0 | -- | 1.0 | 5.1 | 14.8 | 34.4 | 72.7 | 109.5 | 129.7 | 141.8 | 193.3 | 243.9 | 279.5 | 285.1 | 278.2 | 226.3 | 62 |
| **Breast *in situ2*** | -- | -- | -- | 0.1 | 0.1 | 0.6 | 2.3 | 7.9 | 35.2 | 53.5 | 53.1 | 49.2 | 55.4 | 67.2 | 65.6 | 60.4 | 40.6 | 19.0 | 57 |
| **Bronchus & Lung** | 0.1 | -- | 0.1 | 0.3 | 0.5 | 0.3 | 1.2 | 3.1 | 9.8 | 23.3 | 56.4 | 98.9 | 155.0 | 257.6 | 394.7 | 475.0 | 460.4 | 322.4 | 71 |
| **Cervix Uteri** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| **Colon / Rectum** | -- | 0.1 | 0.2 | 0.3 | 1.0 | 2.0 | 5.0 | 10.6 | 20.4 | 30.0 | 60.7 | 56.7 | 75.1 | 109.5 | 154.6 | 202.9 | 248.5 | 289.3 | 69 |
| **Corpus Uteri & Uterus, NOS** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| **Esophagus** | -- | -- | -- | -- | 0.0 | 0.1 | 0.3 | 0.3 | 1.2 | 3.5 | 5.6 | 11.4 | 18.0 | 23.4 | 33.0 | 29.8 | 31.7 | 26.0 | 68 |
| **Hodgkin Lymphoma** | -- | 0.3 | 1.1 | 3.0 | 5.9 | 4.9 | 4.4 | 3.2 | 3.4 | 2.4 | 2.6 | 2.7 | 3.1 | 3.4 | 4.2 | 4.3 | 5.3 | 2.6 | 40 |
| **Kidney & Renal Pelvis** | 2.1 | 0.7 | 0.1 | 0.2 | 0.5 | 1.3 | 3.0 | 6.1 | 10.8 | 16.0 | 24.5 | 31.1 | 44.9 | 55.6 | 68.4 | 71.7 | 62.5 | 45.0 | 64 |
| **Larynx** | -- | -- | 0.0 | -- | -- | 0.1 | 0.1 | 0.2 | 0.5 | 2.0 | 4.8 | 8.9 | 10.0 | 14.8 | 18.2 | 16.1 | 18.1 | 9.2 | 66 |
| **Leukemia** | 8.4 | 3.6 | 2.7 | 2.6 | 3.2 | 3.1 | 3.5 | 3.7 | 6.3 | 8.0 | 10.6 | 17.0 | 26.4 | 35.4 | 50.0 | 67.5 | 72.6 | 77.7 | 67 |
| **Liver & Intrahepatic Bile Ducts** | 0.9 | -- | 0.2 | 0.2 | 0.4 | 0.1 | 0.5 | 0.9 | 1.7 | 4.4 | 11.9 | 24.3 | 30.4 | 27.0 | 32.6 | 39.5 | 38.5 | 26.8 | 64 |
| **Melanoma of Skin** | -- | -- | 0.2 | 0.8 | 3.2 | 7.2 | 10.8 | 9.6 | 15.4 | 20.0 | 27.5 | 38.6 | 47.4 | 59.7 | 78.1 | 92.7 | 100.7 | 88.9 | 64 |
| **Multiple Myeloma** | -- | -- | -- | -- | -- | 0.3 | 0.2 | 1.2 | 1.8 | 4.8 | 7.6 | 11.2 | 16.6 | 23.6 | 32.8 | 34.6 | 44.7 | 36.1 | 69 |
| **Non-Hodgkin Lymphoma** | 0.6 | 0.9 | 0.6 | 1.7 | 2.5 | 2.8 | 4.9 | 6.9 | 10.4 | 14.9 | 22.6 | 31.6 | 44.8 | 64.1 | 82.0 | 95.9 | 120.4 | 106.2 | 67 |
| **Oral Cavity & Pharynx** | 0.1 | 0.1 | 0.2 | 0.5 | 0.6 | 1.2 | 1.9 | 3.4 | 6.3 | 12.9 | 21.6 | 30.7 | 39.2 | 43.2 | 45.3 | 48.6 | 41.2 | 39.5 | 63 |
| **Ovary** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| **Pancreas** | -- | -- | 0.0 | -- | 0.1 | 0.2 | 0.5 | 1.5 | 2.9 | 5.8 | 10.9 | 20.1 | 29.3 | 48.0 | 62.7 | 77.5 | 89.9 | 102.7 | 71 |
| **Prostate** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| **Stomach** | -- | -- | 0.0 | 0.1 | 0.2 | 0.3 | 0.8 | 1.5 | 3.2 | 4.5 | 7.3 | 11.2 | 14.1 | 21.3 | 31.3 | 38.5 | 49.6 | 49.0 | 70 |
| **Testis** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| **Thyroid** | 0.3 | 0.1 | 1.2 | 2.7 | 9.9 | 15.0 | 23.9 | 28.3 | 31.9 | 35.6 | 35.4 | 35.0 | 34.1 | 36.5 | 34.0 | 29.5 | 21.9 | 11.8 | 51 |
| **Urinary Bladder** | -- | -- | 0.0 | 0.2 | 0.4 | 0.4 | 1.0 | 1.6 | 4.4 | 7.4 | 16.9 | 30.1 | 52.1 | 85.4 | 135.7 | 166.0 | 189.1 | 184.6 | 72 |
| **Other Sites** | 8.1 | 2.4 | 3.9 | 4.6 | 3.7 | 4.5 | 7.4 | 11.2 | 16.1 | 24.1 | 33.0 | 54.1 | 75.4 | 102.7 | 159.2 | 218.6 | 275.6 | 312.6 | 71 |

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1 per 100,000 2 Breast *in situ* is excluded from ‘All Sites’. 3 Dashes 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, 2010-2014**

\*APCis statistically significant (p < 0.05). Values appearing directly on a bar have been bolded for ease of reading only. Source: Massachusetts Cancer Registry.

**Figure 6.**

**ANNUAL PERCENT CHANGE (APC) IN AGE-ADJUSTED CANCER RATES AMONG FEMALES**

**Massachusetts, 2010-2014**

\*APCis statistically significant (p < 0.05). Values appearing directly on a bar have been bolded for ease of reading only. Source: Massachusetts Cancer Registry.

**Table 4.**

**ANNUAL AGE-ADJUSTED1 INCIDENCE RATES2 FOR SELECTED CANCER SITES**

**Massachusetts, 2010-2014**

**MALES**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Cancer Site / Type** | **2010** | **2011** | **2012** | **2013** | **2014** |
| **All Sites** | 532.9 | 538.8 | 500.2 | 482.9 | 479.4 |
| **Brain & Other Nervous System** | 8.3 | 7.9 | 7.4 | 9.1 | 7.5 |
| **Breast** | 1.2 | 1.5 | 1.2 | 1.5 | 1.7 |
| **Breast *in situ*3** | 0.2 | 0.2 | 0.2 | 0.1 | 0.1 |
| **Bronchus & Lung** | 73.3 | 74.6 | 71.3 | 67.0 | 68.1 |
| **Colon / Rectum** | 44.7 | 43.5 | 42.2 | 40.7 | 44.0 |
| **Esophagus** | 9.9 | 11.0 | 9.8 | 9.8 | 9.1 |
| **Hodgkin Lymphoma** | 3.4 | 3.6 | 3.6 | 3.1 | 3.2 |
| **Kidney & Renal Pelvis** | 20.0 | 20.6 | 20.8 | 23.3 | 23.2 |
| **Larynx** | 6.0 | 5.3 | 5.2 | 6.3 | 5.7 |
| **Leukemia** | 15.8 | 17.4 | 17.6 | 16.1 | 16.3 |
| **Liver & Intrahepatic Bile Ducts** | 12.9 | 12.4 | 14.2 | 12.5 | 12.4 |
| **Melanoma of Skin** | 25.0 | 29.1 | 25.8 | 25.0 | 22.8 |
| **Multiple Myeloma** | 7.8 | 7.9 | 8.2 | 8.8 | 7.5 |
| **Non-Hodgkin Lymphoma** | 23.7 | 22.1 | 22.6 | 23.2 | 23.4 |
| **Oral Cavity & Pharynx** | 17.7 | 18.0 | 18.7 | 16.8 | 18.0 |
| **Pancreas** | 13.0 | 14.3 | 14.3 | 14.7 | 13.9 |
| **Prostate** | 140.5 | 138.2 | 106.9 | 97.6 | 92.9 |
| **Stomach** | 10.0 | 9.0 | 8.9 | 10.3 | 9.9 |
| **Testis** | 5.6 | 6.7 | 6.7 | 6.6 | 6.5 |
| **Thyroid** | 9.4 | 10.8 | 10.4 | 9.3 | 11.6 |
| **Urinary Bladder** | 40.3 | 41.6 | 42.3 | 39.6 | 39.0 |

Rates 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, 2010-2014**

**FEMALES**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Cancer Site / Type** | **2010** | **2011** | **2012** | **2013** | **2014** |
| **All Sites** | 444.4 | 457.4 | 457.0 | 447.0 | 446.5 |
| **Brain & Other Nervous System** | 5.8 | 6.3 | 5.6 | 6.1 | 5.6 |
| **Breast** | 130.7 | 137.3 | 137.1 | 137.4 | 138.6 |
| **Breast *in situ*3** | 44.9 | 41.6 | 42.6 | 42.6 | 40.9 |
| **Bronchus & Lung** | 62.7 | 60.7 | 61.2 | 60.7 | 58.5 |
| **Cervix Uteri** | 5.6 | 5.1 | 5.0 | 4.9 | 5.5 |
| **Colon / Rectum** | 35.9 | 34.3 | 33.2 | 33.1 | 32.3 |
| **Corpus Uteri & Uterus, NOS** | 28.1 | 31.2 | 28.3 | 29.8 | 27.6 |
| **Esophagus** | 2.4 | 2.0 | 1.7 | 2.4 | 2.6 |
| **Hodgkin Lymphoma** | 2.6 | 2.7 | 2.6 | 2.4 | 2.7 |
| **Kidney & Renal Pelvis** | 10.4 | 10.6 | 10.9 | 10.7 | 10.8 |
| **Larynx** | 1.5 | 1.4 | 1.8 | 1.2 | 1.2 |
| **Leukemia** | 10.7 | 10.3 | 10.0 | 10.2 | 9.1 |
| **Liver & Intrahepatic Bile Ducts** | 3.5 | 3.3 | 3.8 | 4.1 | 4.0 |
| **Melanoma of Skin** | 18.4 | 18.6 | 17.8 | 16.2 | 15.6 |
| **Multiple Myeloma** | 4.4 | 6.0 | 5.2 | 5.3 | 4.9 |
| **Non-Hodgkin Lymphoma** | 16.7 | 15.5 | 17.8 | 16.7 | 15.8 |
| **Oral Cavity & Pharynx** | 6.5 | 6.2 | 7.9 | 7.3 | 6.7 |
| **Ovary** | 10.6 | 12.2 | 12.9 | 10.5 | 11.3 |
| **Pancreas** | 10.7 | 11.0 | 11.0 | 11.6 | 12.1 |
| **Stomach** | 4.7 | 4.5 | 4.3 | 4.4 | 5.0 |
| **Thyroid** | 27.4 | 30.7 | 29.7 | 26.9 | 31.2 |
| **Urinary Bladder** | 10.9 | 12.1 | 11.7 | 10.8 | 10.9 |

Rates 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, 2010-2014**

**TOTAL**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Cancer Site / Type** | **2010** | **2011** | **2012** | **2013** | **2014** |
| **All Sites** | 479.5 | 489.8 | 472.4 | 459.3 | 456.9 |
| **Brain & Other Nervous System** | 7.0 | 7.0 | 6.4 | 7.5 | 6.4 |
| **Breast** | -- | -- | -- | -- | -- |
| **Breast *in situ*3** | -- | -- | -- | -- | -- |
| **Bronchus & Lung** | 66.7 | 66.4 | 65.1 | 63.1 | 62.3 |
| **Cervix Uteri** | -- | -- | -- | -- | -- |
| **Colon / Rectum** | 39.8 | 38.3 | 37.2 | 36.5 | 37.5 |
| **Corpus Uteri & Uterus, NOS** | -- | -- | -- | -- | -- |
| **Esophagus** | 5.7 | 5.9 | 5.3 | 5.7 | 5.5 |
| **Hodgkin Lymphoma** | 3.0 | 3.1 | 3.1 | 2.7 | 3.0 |
| **Kidney & Renal Pelvis** | 14.8 | 15.2 | 15.5 | 16.4 | 16.5 |
| **Larynx** | 3.5 | 3.2 | 3.3 | 3.5 | 3.2 |
| **Leukemia** | 12.8 | 13.4 | 13.4 | 12.8 | 12.2 |
| **Liver & Intrahepatic Bile Ducts** | 7.8 | 7.5 | 8.5 | 8.0 | 7.8 |
| **Melanoma of Skin** | 21.1 | 22.9 | 21.0 | 19.8 | 18.7 |
| **Multiple Myeloma** | 5.9 | 6.9 | 6.5 | 6.8 | 6.1 |
| **Non-Hodgkin Lymphoma** | 19.8 | 18.3 | 19.8 | 19.6 | 19.2 |
| **Oral Cavity & Pharynx** | 11.7 | 11.6 | 12.9 | 11.7 | 11.9 |
| **Ovary** | -- | -- | -- | -- | -- |
| **Pancreas** | 11.8 | 12.5 | 12.6 | 13.0 | 12.9 |
| **Prostate** | -- | -- | -- | -- | -- |
| **Stomach** | 6.9 | 6.5 | 6.4 | 7.0 | 7.2 |
| **Testis** | -- | -- | -- | -- | -- |
| **Thyroid** | 18.7 | 21.0 | 20.3 | 18.4 | 21.7 |
| **Urinary Bladder** | 23.2 | 24.6 | 24.8 | 23.1 | 22.8 |

Rates 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-ADJUSTED[[2]](#footnote-2) MORTALITY RATES[[3]](#footnote-3) FOR SELECTED CANCER SITES**

**Massachusetts, 2010-2014**

**MALES**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Cancer Site / Type** | **2010** | **2011** | **2012** | **2013** | **2014** |
| **All Sites** | 199.8 | 194.2 | 187.2 | 186.0 | 184.6 |
| **Brain & Other Nervous System** | 4.9 | 5.1 | 4.9 | 5.2 | 5.1 |
| **Breast** | 0.2 | 0.2 | 0.4 | 0.4 | 0.4 |
| **Bronchus & Lung** | 49.9 | 47.9 | 48.6 | 47.3 | 46.8 |
| **Colon / Rectum** | 15.4 | 14.8 | 14.6 | 14.1 | 15.0 |
| **Esophagus** | 7.5 | 8.3 | 8.5 | 7.6 | 8.2 |
| **Hodgkin Lymphoma** | 0.5 | 0.2 | 0.3 | 0.3 | 0.3 |
| **Kidney & Renal Pelvis** | 3.6 | 4.0 | 4.5 | 4.8 | 5.4 |
| **Larynx** | 1.7 | 1.6 | 1.2 | 1.4 | 1.5 |
| **Leukemia** | 8.2 | 8.4 | 8.1 | 9.1 | 8.2 |
| **Liver & Intrahepatic Bile Ducts** | 9.0 | 9.0 | 8.8 | 10.5 | 9.7 |
| **Melanoma of Skin** | 4.0 | 3.7 | 3.8 | 4.1 | 3.9 |
| **Multiple Myeloma** | 3.3 | 3.8 | 3.7 | 3.4 | 4.2 |
| **Non-Hodgkin Lymphoma** | 6.7 | 7.1 | 5.9 | 6.4 | 6.6 |
| **Oral Cavity & Pharynx** | 3.9 | 3.5 | 3.6 | 3.6 | 3.2 |
| **Pancreas** | 10.8 | 11.9 | 11.2 | 12.6 | 12.0 |
| **Prostate** | 18.4 | 17.3 | 17.5 | 17.8 | 18.2 |
| **Stomach** | 3.8 | 3.8 | 3.9 | 3.5 | 4.2 |
| **Testis** | 0.1 | 0.1 | 0.2 | 0.2 | 0.03 |
| **Thyroid** | 0.4 | 0.7 | 0.6 | 0.8 | 0.5 |
| **Urinary Bladder** | 8.4 | 7.5 | 7.2 | 7.9 | 7.7 |

**Table 8**

**ANNUAL AGE-ADJUSTED[[4]](#footnote-4) MORTALITY RATES[[5]](#footnote-5) FOR SELECTED CANCER SITES**

**Massachusetts, 2010-2014**

**FEMALES**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Cancer Site / Type** | **2010** | **2011** | **2012** | **2013** | **2014** |
| **All Sites** | 140.1 | 137.1 | 136.2 | 136.2 | 130.1 |
| **Brain & Other Nervous System** | 3.1 | 3.3 | 3.5 | 3.3 | 3.1 |
| **Breast** | 17.0 | 17.9 | 18.1 | 17.8 | 18.1 |
| **Bronchus & Lung** | 36.6 | 35.7 | 36.0 | 35.1 | 35.1 |
| **Cervix Uteri** | 1.2 | 1.4 | 1.1 | 0.9 | 1.3 |
| **Colon / Rectum** | 11.7 | 9.9 | 10.5 | 11.1 | 10.2 |
| **Corpus Uteri & Uterus, NOS** | 3.9 | 4.3 | 3.9 | 4.9 | 4.4 |
| **Esophagus** | 1.7 | 1.5 | 1.4 | 1.3 | 1.9 |
| **Hodgkin Lymphoma** | 0.3 | 0.3 | 0.2 | 0.2 | 0.1 |
| **Kidney & Renal Pelvis** | 1.7 | 2.2 | 1.9 | 2.1 | 1.8 |
| **Larynx** | 0.5 | 0.5 | 0.3 | 0.4 | 0.3 |
| **Leukemia** | 4.6 | 4.5 | 4.7 | 5.1 | 4.4 |
| **Liver & Intrahepatic Bile Ducts** | 3.4 | 2.9 | 3.2 | 3.7 | 3.7 |
| **Melanoma of Skin** | 1.6 | 1.8 | 1.8 | 2.1 | 1.8 |
| **Multiple Myeloma** | 2.3 | 2.5 | 2.7 | 2.6 | 2.6 |
| **Non-Hodgkin Lymphoma** | 4.2 | 4.0 | 4.1 | 4.3 | 4.1 |
| **Oral Cavity & Pharynx** | 1.7 | 1.1 | 1.1 | 1.2 | 1.3 |
| **Ovary** | 6.4 | 7.7 | 6.7 | 7.8 | 6.6 |
| **Pancreas** | 9.2 | 9.4 | 9.2 | 9.0 | 9.7 |
| **Stomach** | 2.3 | 2.1 | 2.2 | 2.5 | 2.2 |
| **Thyroid** | 0.6 | 0.5 | 0.2 | 0.5 | 0.4 |
| **Urinary Bladder** | 2.5 | 2.3 | 2.4 | 2.7 | 2.1 |

**Table 9.**

**ANNUAL AGE-ADJUSTED[[6]](#footnote-6) MORTALITY RATES[[7]](#footnote-7) FOR SELECTED CANCER SITES**

**Massachusetts, 2010-2014**

**TOTAL3**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Cancer Site / Type** | **2010** | **2011** | **2012** | **2013** | **2014** |
| **All Sites** | 163.8 | 160.0 | 157.0 | 156.3 | 152.4 |
| **Brain & Other Nervous System** | 3.7 | 4.2 | 4.1 | 4.1 | 4.2 |
| **Breast** | - | - | - | - | - |
| **Bronchus & Lung** | 42.1 | 40.8 | 41.3 | 40.1 | 39.9 |
| **Cervix Uteri** | - | - | - | - | - |
| **Colon / Rectum** | 13.3 | 12.0 | 12.2 | 12.4 | 12.3 |
| **Corpus Uteri & Uterus, NOS** | - | - | - | - | - |
| **Esophagus** | 4.3 | 4.4 | 4.5 | 4.0 | 4.7 |
| **Hodgkin Lymphoma** | 0.4 | 0.2 | 0.2 | 0.3 | 0.2 |
| **Kidney & Renal Pelvis** | 2.5 | 3.0 | 3.1 | 3.2 | 3.4 |
| **Larynx** | 1.0 | 1.0 | 0.7 | 0.8 | 0.8 |
| **Leukemia** | 6.1 | 6.2 | 6.2 | 6.8 | 5.9 |
| **Liver & Intrahepatic Bile Ducts** | 5.9 | 5.7 | 5.7 | 6.8 | 6.3 |
| **Melanoma of Skin** | 2.6 | 2.6 | 2.6 | 2.9 | 2.6 |
| **Multiple Myeloma** | 2.7 | 3.1 | 3.2 | 2.9 | 3.3 |
| **Non-Hodgkin Lymphoma** | 5.3 | 5.3 | 4.8 | 5.2 | 5.2 |
| **Oral Cavity & Pharynx** | 2.7 | 2.2 | 2.2 | 2.3 | 2.2 |
| **Ovary** | 3.6 | 4.3 | 3.8 | 4.4 | 3.7 |
| **Pancreas** | 9.9 | 10.5 | 10.2 | 10.6 | 10.7 |
| **Prostate** | - | - | - | - | - |
| **Stomach** | 2.9 | 2.8 | 3.0 | 2.9 | 3.1 |
| **Testis** | - | - | - | - | - |
| **Thyroid** | 0.5 | 0.6 | 0.4 | 0.6 | 0.4 |
| **Urinary Bladder** | 4.9 | 4.4 | 4.3 | 4.7 | 4.4 |

**Table 10.**

**FIVE LEADING CANCER INCIDENCE RATES BY RACE/ETHNICITY AND SEX**

**Massachusetts, 2010-2014**

**MALES**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **AGE-ADJUSTED[[8]](#footnote-8) INCIDENCE RATE[[9]](#footnote-9)** | | | | |
| **RANK** | **White, non-Hispanic** | **Black, non-Hispanic** | **Asian, non-Hispanic** | **Hispanic** |
| 1 | Prostate  106.3 | Prostate  198.5 | Bronchus & Lung  58.5 | Prostate  123.1 |
| 2 | Bronchus & Lung  72.5 | Bronchus & Lung  69.7 | Prostate  56.7 | Bronchus & Lung  39.7 |
| 3 | Colon / Rectum  43.0 | Colon / Rectum  46.8 | Colon / Rectum  34.5 | Colon / Rectum  36.2 |
| 4 | Urinary Bladder  42.9 | Kidney & Renal Pelvis  21.1 | Liver & Intrahepatic Bile Ducts  28.5 | Liver & Intrahepatic Bile Ducts  23.0 |
| 5 | Melanoma of Skin  27.8 | Liver & Intrahepatic Bile Ducts  20.0 | Urinary Bladder  14.4 | Non-Hodgkin Lymphoma  19.5 |

**FEMALES**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **AGE-ADJUSTED1 INCIDENCE RATE2** | | | | |
| **RANK** | **White, non-Hispanic** | **Black, non-Hispanic** | **Asian, non-Hispanic** | **Hispanic** |
| 1 | Breast3  142.3 | Breast  116.4 | Breast  90.2 | Breast  88.4 |
| 2 | Bronchus & Lung  64.1 | Bronchus & Lung  46.8 | Bronchus & Lung  33.7 | Bronchus & Lung  28.4 |
| 3 | Colon / Rectum  33.7 | Colon / Rectum  37.2 | Colon / Rectum  28.5 | Thyroid  27.5 |
| 4 | Corpus Uteri &  Uterus, NOS  30.2 | Corpus Uteri &  Uterus, NOS  24.8 | Thyroid  27.7 | Colon / Rectum  27.2 |
| 5 | Thyroid  29.5 | Thyroid  23.4 | Corpus Uteri &  Uterus, NOS  13.2 | Corpus Uteri &  Uterus, NOS  21.2 |

**Table 11.**

**NUMBER AND PERCENTAGE OF INCIDENT CASES FOR SELECTED CANCER SITES BY RACE/ETHNICITY[[10]](#footnote-10)**

**Massachusetts, 2010-2014**

**MALES**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **All Races[[11]](#footnote-11)** | | **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** | 87975 | 100.0 | 76150 | 100.0 | 4498 | 100.0 | 2109 | 100.0 | 3270 | 100.0 |
| **Brain & Other Nervous System** | 1351 | 1.5 | 1193 | 1.6 | 47 | 1.0 | 27 | 1.3 | 71 | 2.2 |
| **Breast3** | 244 | 0.3 | 216 | 0.3 | 9 | 0.2 | 12 | 0.6 | 6 | 0.2 |
| **Bronchus & Lung** | 11951 | 13.6 | 10783 | 14.2 | 512 | 11.4 | 341 | 16.2 | 267 | 8.2 |
| **Colon / Rectum** | 7338 | 8.3 | 6361 | 8.4 | 381 | 8.5 | 235 | 11.1 | 267 | 8.2 |
| **Esophagus** | 1745 | 2.0 | 1612 | 2.1 | 58 | 1.3 | 36 | 1.7 | 26 | 0.8 |
| **Hodgkin Lymphoma** | 558 | 0.6 | 447 | 0.6 | 38 | 0.8 | 16 | 0.8 | 50 | 1.5 |
| **Kidney & Renal Pelvis** | 3809 | 4.3 | 3340 | 4.4 | 182 | 4.0 | 72 | 3.4 | 167 | 5.1 |
| **Larynx** | 1017 | 1.2 | 894 | 1.2 | 47 | 1.0 | 11 | 0.5 | 50 | 1.5 |
| **Leukemia** | 2769 | 3.1 | 2418 | 3.2 | 107 | 2.4 | 59 | 2.8 | 110 | 3.4 |
| **Liver & Intrahepatic Bile Ducts** | 2368 | 2.7 | 1757 | 2.3 | 188 | 4.2 | 199 | 9.4 | 199 | 6.1 |
| **Melanoma of Skin** | 4342 | 4.9 | 4064 | 5.3 | 8 | 0.2 | 8 | 0.4 | 15 | 0.5 |
| **Multiple Myeloma** | 1384 | 1.6 | 1145 | 1.5 | 119 | 2.6 | 33 | 1.6 | 62 | 1.9 |
| **Non-Hodgkin Lymphoma** | 3902 | 4.4 | 3436 | 4.5 | 165 | 3.7 | 81 | 3.8 | 174 | 5.3 |
| **Oral Cavity & Pharynx** | 3256 | 3.7 | 2869 | 3.8 | 129 | 2.9 | 105 | 5.0 | 128 | 3.9 |
| **Pancreas** | 2413 | 2.7 | 2160 | 2.8 | 122 | 2.7 | 42 | 2.0 | 72 | 2.2 |
| **Prostate** | 21290 | 24.2 | 17259 | 22.7 | 1732 | 38.5 | 358 | 17.0 | 970 | 29.7 |
| **Stomach** | 1633 | 1.9 | 1294 | 1.7 | 127 | 2.8 | 75 | 3.6 | 121 | 3.7 |
| **Testis** | 1021 | 1.2 | 907 | 1.2 | 17 | 0.4 | 19 | 0.9 | 60 | 1.8 |
| **Thyroid** | 1780 | 2.0 | 1506 | 2.0 | 62 | 1.4 | 101 | 4.8 | 68 | 2.1 |
| **Urinary Bladder** | 6726 | 7.6 | 6306 | 8.3 | 122 | 2.7 | 82 | 3.9 | 118 | 3.6 |
| **Other Sites** | 7078 | 8.0 | 6183 | 8.1 | 326 | 7.2 | 197 | 9.3 | 269 | 8.2 |

**Table 12.**

**NUMBER AND PERCENTAGE OF INCIDENT CASES FOR SELECTED CANCER SITES BY RACE/ETHNICITY[[12]](#footnote-12)**

**Massachusetts, 2010-2014**

**FEMALES**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **All Races[[13]](#footnote-13)** | | **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** | 94299 | 100.0 | 82633 | 100.0 | 4310 | 100.0 | 2555 | 100.0 | 3648 | 100.0 |
| **Brain & Other Nervous System** | 1133 | 1.2 | 977 | 1.2 | 46 | 1.1 | 39 | 1.5 | 62 | 1.7 |
| **Breast3** | 28065 | 29.8 | 24764 | 30.0 | 1286 | 29.8 | 811 | 31.7 | 1030 | 28.2 |
| **Bronchus & Lung** | 13091 | 13.9 | 12056 | 14.6 | 484 | 11.2 | 244 | 9.5 | 260 | 7.1 |
| **Cervix Uteri** | 958 | 1.0 | 692 | 0.8 | 91 | 2.1 | 64 | 2.5 | 100 | 2.7 |
| **Colon / Rectum** | 7355 | 7.8 | 6385 | 7.7 | 405 | 9.4 | 220 | 8.6 | 271 | 7.4 |
| **Corpus Uteri & Uterus, NOS** | 6260 | 6.6 | 5552 | 6.7 | 276 | 6.4 | 117 | 4.6 | 243 | 6.7 |
| **Esophagus** | 489 | 0.5 | 441 | 0.5 | 20 | 0.5 | 11 | 0.4 | 14 | 0.4 |
| **Hodgkin Lymphoma** | 461 | 0.5 | 383 | 0.5 | 15 | 0.3 | 11 | 0.4 | 49 | 1.3 |
| **Kidney & Renal Pelvis** | 2221 | 2.4 | 1936 | 2.3 | 122 | 2.8 | 37 | 1.4 | 104 | 2.9 |
| **Larynx** | 311 | 0.3 | 280 | 0.3 | 15 | 0.3 | 5 | 0.2 | 8 | 0.2 |
| **Leukemia** | 2061 | 2.2 | 1750 | 2.1 | 86 | 2.0 | 65 | 2.5 | 105 | 2.9 |
| **Liver & Intrahepatic Bile Ducts** | 822 | 0.9 | 634 | 0.8 | 54 | 1.3 | 67 | 2.6 | 60 | 1.6 |
| **Melanoma of Skin** | 3520 | 3.7 | 3233 | 3.9 | 13 | 0.3 | 9 | 0.4 | 35 | 1.0 |
| **Multiple Myeloma** | 1139 | 1.2 | 874 | 1.1 | 148 | 3.4 | 21 | 0.8 | 77 | 2.1 |
| **Non-Hodgkin Lymphoma** | 3537 | 3.8 | 3069 | 3.7 | 141 | 3.3 | 78 | 3.1 | 176 | 4.8 |
| **Oral Cavity & Pharynx** | 1487 | 1.6 | 1293 | 1.6 | 54 | 1.3 | 56 | 2.2 | 64 | 1.8 |
| **Ovary** | 2420 | 2.6 | 2140 | 2.6 | 92 | 2.1 | 79 | 3.1 | 79 | 2.2 |
| **Pancreas** | 2543 | 2.7 | 2247 | 2.7 | 135 | 3.1 | 63 | 2.5 | 79 | 2.2 |
| **Stomach** | 1001 | 1.1 | 763 | 0.9 | 88 | 2.0 | 68 | 2.7 | 74 | 2.0 |
| **Thyroid** | 5323 | 5.6 | 4228 | 5.1 | 271 | 6.3 | 277 | 10.8 | 397 | 10.9 |
| **Urinary Bladder** | 2498 | 2.6 | 2314 | 2.8 | 71 | 1.6 | 18 | 0.7 | 50 | 1.4 |
| **Other Sites** | 7604 | 8.1 | 6622 | 8.0 | 397 | 9.2 | 195 | 7.6 | 311 | 8.5 |

**Table 13.**

**NUMBER AND PERCENTAGE OF INCIDENT CASES FOR SELECTED CANCER SITES BY RACE/ETHNICITY[[14]](#footnote-14)**

**Massachusetts, 2010-2014**

**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** | 182288 | 100.0 | 158794 | 100.0 | 8809 | 100.0 | 4665 | 100.0 | 6918 | 100.0 |
| **Brain & Other Nervous System** | 2485 | 1.4 | 2171 | 1.4 | 93 | 1.1 | 66 | 1.4 | 133 | 1.9 |
| **Breast4** | 28310 | 15.5 | 24981 | 15.7 | 1295 | 14.7 | 823 | 17.6 | 1036 | 15.0 |
| **Bronchus & Lung** | 25043 | 13.7 | 22840 | 14.4 | 996 | 11.3 | 585 | 12.5 | 527 | 7.6 |
| **Cervix Uteri** | 958 | 0.5 | 692 | 0.4 | 91 | 1.0 | 64 | 1.4 | 100 | 1.4 |
| **Colon / Rectum** | 14694 | 8.1 | 12747 | 8.0 | 786 | 8.9 | 455 | 9.8 | 538 | 7.8 |
| **Corpus Uteri & Uterus, NOS** | 6260 | 3.4 | 5552 | 3.5 | 276 | 3.1 | 117 | 2.5 | 243 | 3.5 |
| **Esophagus** | 2234 | 1.2 | 2053 | 1.3 | 78 | 0.9 | 47 | 1.0 | 40 | 0.6 |
| **Hodgkin Lymphoma** | 1020 | 0.6 | 831 | 0.5 | 53 | 0.6 | 27 | 0.6 | 99 | 1.4 |
| **Kidney & Renal Pelvis** | 6030 | 3.3 | 5276 | 3.3 | 304 | 3.5 | 109 | 2.3 | 271 | 3.9 |
| **Larynx** | 1328 | 0.7 | 1174 | 0.7 | 62 | 0.7 | 16 | 0.3 | 58 | 0.8 |
| **Leukemia** | 4830 | 2.6 | 4168 | 2.6 | 193 | 2.2 | 124 | 2.7 | 215 | 3.1 |
| **Liver & Intrahepatic Bile Ducts** | 3192 | 1.8 | 2391 | 1.5 | 242 | 2.7 | 267 | 5.7 | 259 | 3.7 |
| **Melanoma of Skin** | 7863 | 4.3 | 7298 | 4.6 | 21 | 0.2 | 17 | 0.4 | 50 | 0.7 |
| **Multiple Myeloma** | 2523 | 1.4 | 2019 | 1.3 | 267 | 3.0 | 54 | 1.2 | 139 | 2.0 |
| **Non-Hodgkin Lymphoma** | 7440 | 4.1 | 6506 | 4.1 | 306 | 3.5 | 159 | 3.4 | 350 | 5.1 |
| **Oral Cavity & Pharynx** | 4743 | 2.6 | 4162 | 2.6 | 183 | 2.1 | 161 | 3.5 | 192 | 2.8 |
| **Ovary** | 2421 | 1.3 | 2141 | 1.3 | 92 | 1.0 | 79 | 1.7 | 79 | 1.1 |
| **Pancreas** | 4956 | 2.7 | 4407 | 2.8 | 257 | 2.9 | 105 | 2.3 | 151 | 2.2 |
| **Prostate** | 21290 | 11.7 | 17259 | 10.9 | 1732 | 19.7 | 358 | 7.7 | 970 | 14.0 |
| **Stomach** | 2634 | 1.4 | 2057 | 1.3 | 215 | 2.4 | 143 | 3.1 | 195 | 2.8 |
| **Testis** | 1021 | 0.6 | 907 | 0.6 | 17 | 0.2 | 19 | 0.4 | 60 | 0.9 |
| **Thyroid** | 7104 | 3.9 | 5734 | 3.6 | 334 | 3.8 | 378 | 8.1 | 465 | 6.7 |
| **Urinary Bladder** | 9225 | 5.1 | 8621 | 5.4 | 193 | 2.2 | 100 | 2.1 | 168 | 2.4 |
| **Other Sites** | 14684 | 8.1 | 12807 | 8.1 | 723 | 8.2 | 392 | 8.4 | 580 | 8.4 |

**Table 14.**

**AGE-ADJUSTED[[15]](#footnote-15) INCIDENCE RATES[[16]](#footnote-16) AND 95% CONFIDENCE LIMITS (95% CL)**

**FOR SELECTED CANCER SITES BY RACE/ETHNICITY[[17]](#footnote-17)**

**Massachusetts, 2010-2014**

**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** | 505.7 | 502.3-509.2 | 506.7 | 503.0-510.3 | 537.9 | 521.0-554.9 | 317.2 | 302.8-331.7 | 398.8 | 383.1-414.5 |
| **Brain & Other Nervous System** | 8.0 | 7.6-8.5 | 8.6 | 8.1-9.1 | 4.8 | 3.4-6.3 | 3.2 | 1.9-4.6 | 6.1 | 4.3-7.9 |
| **Breast** | 1.4 | 1.2-1.6 | 1.5 | 1.3-1.7 | \* | \* | \* | \* | \* | \* |
| **Breast *in situ*4** | 0.1 | 0.1-0.2 | \* | \* | \* | \* | \* | \* | \* | \* |
| **Bronchus & Lung** | 70.8 | 69.5-72.1 | 72.5 | 71.1-73.9 | 69.7 | 63.2-76.2 | 58.5 | 51.9-65.1 | 39.7 | 34.4-45.0 |
| **Colon / Rectum** | 43.0 | 42.0-44.0 | 43.0 | 41.9-44.1 | 46.8 | 41.7-51.9 | 34.5 | 29.8-39.1 | 36.2 | 31.1-41.2 |
| **Esophagus** | 9.9 | 9.4-10.4 | 10.4 | 9.9-11.0 | 7.5 | 5.4-9.5 | 5.8 | 3.8-7.9 | 4.2 | 2.4-5.9 |
| **Hodgkin Lymphoma** | 3.4 | 3.1-3.7 | 3.5 | 3.2-3.8 | 3.4 | 2.3-4.5 | \* | \* | 3.7 | 2.4-5.0 |
| **Kidney & Renal Pelvis** | 21.6 | 20.9-22.3 | 22.2 | 21.4-23.0 | 21.1 | 17.8-24.4 | 10.1 | 7.6-12.5 | 17.7 | 14.6-20.8 |
| **Larynx** | 5.7 | 5.3-6.0 | 5.7 | 5.3-6.1 | 5.9 | 4.1-7.7 | \* | \* | 6.0 | 4.1-7.9 |
| **Leukemia** | 16.6 | 16.0-17.3 | 17.0 | 16.3-17.7 | 11.7 | 9.3-14.1 | 8.3 | 6.0-10.6 | 11.3 | 8.7-13.9 |
| **Liver & Intrahepatic Bile Ducts** | 12.9 | 12.4-13.4 | 11.0 | 10.5-11.6 | 20.0 | 17.0-23.1 | 28.5 | 24.3-32.7 | 23.0 | 19.4-26.6 |
| **Melanoma of Skin** | 25.5 | 24.7-26.3 | 27.8 | 26.9-28.7 | \* | \* | \* | \* | \* | \* |
| **Multiple Myeloma** | 8.0 | 7.6-8.5 | 7.6 | 7.2-8.1 | 15.6 | 12.6-18.6 | 5.0 | 3.2-6.8 | 7.4 | 5.3-9.4 |
| **Non-Hodgkin Lymphoma** | 23.0 | 22.3-23.7 | 23.5 | 22.7-24.3 | 18.1 | 15.1-21.1 | 11.0 | 8.5-13.6 | 19.5 | 16.1-22.9 |
| **Oral Cavity & Pharynx** | 17.8 | 17.2-18.5 | 18.3 | 17.6-18.9 | 14.6 | 11.9-17.3 | 14.0 | 11.2-16.8 | 15.7 | 12.6-18.8 |
| **Pancreas** | 14.0 | 13.5-14.6 | 14.3 | 13.7-14.9 | 16.6 | 13.4-19.8 | 6.7 | 4.5-8.9 | 9.8 | 7.2-12.4 |
| **Prostate** | 114.4 | 112.8-115.9 | 106.3 | 104.7-108.0 | 198.5 | 188.6-208.5 | 56.7 | 50.5-62.8 | 123.1 | 114.5-131.6 |
| **Stomach** | 9.6 | 9.2-10.1 | 8.8 | 8.3-9.3 | 16.9 | 13.7-20.1 | 11.9 | 9.0-14.8 | 16.2 | 12.9-19.5 |
| **Testis** | 6.4 | 6.0-6.8 | 7.7 | 7.2-8.2 | \* | \* | \* | \* | 3.3 | 2.4-4.2 |
| **Thyroid** | 10.3 | 9.8-10.8 | 10.7 | 10.1-11.3 | 6.6 | 4.9-8.4 | 11.3 | 9.0-13.6 | 5.5 | 4.1-6.9 |
| **Urinary Bladder** | 40.6 | 39.6-41.5 | 42.9 | 41.9-44.0 | 17.0 | 13.8-20.3 | 14.4 | 11.1-17.7 | 17.6 | 13.9-21.2 |

**Table 15.**

**AGE-ADJUSTED[[18]](#footnote-18) INCIDENCE RATES[[19]](#footnote-19) AND 95% CONFIDENCE LIMITS (95% CL)**

**FOR SELECTED CANCER SITES BY RACE/ETHNICITY[[20]](#footnote-20)**

**Massachusetts, 2010-2014**

**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** | 450.4 | 447.4-453.3 | 463.4 | 460.1-466.7 | 396.2 | 384.2-408.3 | 304.0 | 291.7-316.3 | 326.0 | 314.6-337.5 |
| **Brain & Other Nervous System** | 5.9 | 5.5-6.2 | 6.2 | 5.8-6.6 | 4.0 | 2.8-5.1 | 4.3 | 2.9-5.6 | 4.9 | 3.5-6.3 |
| **Breast** | 136.3 | 134.7-137.9 | 142.3 | 140.5-144.2 | 116.4 | 110.0-122.9 | 90.2 | 83.8-96.6 | 88.4 | 82.7-94.2 |
| **Breast *in situ*4** | 42.5 | 41.6-43.4 | 44.4 | 43.3-45.4 | 40.1 | 36.3-43.9 | 30.1 | 26.5-33.7 | 30.7 | 27.5-34.0 |
| **Bronchus & Lung** | 60.7 | 59.7-61.8 | 64.1 | 62.9-65.2 | 46.8 | 42.6-51.1 | 33.7 | 29.3-38.0 | 28.4 | 24.7-32.0 |
| **Cervix Uteri** | 5.2 | 4.9-5.6 | 4.8 | 4.4-5.2 | 8.2 | 6.5-9.9 | 6.9 | 5.1-8.6 | 8.4 | 6.6-10.2 |
| **Colon / Rectum** | 33.7 | 32.9-34.5 | 33.7 | 32.8-34.6 | 37.2 | 33.5-40.9 | 28.5 | 24.6-32.4 | 27.2 | 23.8-30.7 |
| **Corpus Uteri & Uterus, NOS** | 29.0 | 28.3-29.7 | 30.2 | 29.3-31.0 | 24.8 | 21.8-27.8 | 13.2 | 10.7-15.7 | 21.2 | 18.4-24.0 |
| **Esophagus** | 2.2 | 2.0-2.4 | 2.3 | 2.1-2.5 | 1.8 | 1.0-2.5 | \* | \* | \* | \* |
| **Hodgkin Lymphoma** | 2.6 | 2.3-2.8 | 2.8 | 2.5-3.1 | \* | \* | \* | \* | 3.3 | 2.3-4.4 |
| **Kidney & Renal Pelvis** | 10.7 | 10.2-11.1 | 10.9 | 10.4-11.4 | 11.1 | 9.1-13.1 | 4.8 | 3.2-6.4 | 8.9 | 7.1-10.8 |
| **Larynx** | 1.4 | 1.3-1.6 | 1.5 | 1.3-1.7 | 1.4 | 0.7-2.1 | \* | \* | \* | \* |
| **Leukemia** | 10.0 | 9.6-10.5 | 10.0 | 9.5-10.5 | 7.8 | 6.1-9.4 | 7.2 | 5.4-9.1 | 8.5 | 6.7-10.4 |
| **Liver & Intrahepatic Bile Ducts** | 3.7 | 3.5-4.0 | 3.3 | 3.0-3.6 | 4.7 | 3.4-6.0 | 9.2 | 6.9-11.5 | 6.7 | 4.9-8.5 |
| **Melanoma of Skin** | 17.3 | 16.7-17.9 | 19.3 | 18.6-20.0 | \* | \* | \* | \* | 3.0 | 1.9-4.1 |
| **Multiple Myeloma** | 5.2 | 4.9-5.5 | 4.5 | 4.2-4.8 | 14.2 | 11.9-16.5 | 2.8 | 1.6-4.1 | 7.5 | 5.7-9.2 |
| **Non-Hodgkin Lymphoma** | 16.5 | 15.9-17.0 | 16.6 | 16.0-17.2 | 12.8 | 10.6-14.9 | 9.5 | 7.3-11.7 | 16.8 | 14.1-19.5 |
| **Oral Cavity & Pharynx** | 6.9 | 6.6-7.3 | 6.9 | 6.6-7.3 | 4.6 | 3.4-5.9 | 7.3 | 5.3-9.3 | 6.4 | 4.7-8.1 |
| **Ovary** | 11.5 | 11.0-12.0 | 12.0 | 11.4-12.5 | 8.2 | 6.5-9.9 | 9.0 | 6.9-11.1 | 6.6 | 5.1-8.2 |
| **Pancreas** | 11.3 | 10.8-11.7 | 11.3 | 10.9-11.8 | 13.0 | 10.7-15.2 | 8.9 | 6.6-11.2 | 8.0 | 6.1-9.9 |
| **Stomach** | 4.6 | 4.3-4.9 | 3.9 | 3.6-4.2 | 8.6 | 6.7-10.4 | 8.8 | 6.6-11.0 | 7.2 | 5.4-8.9 |
| **Thyroid** | 29.2 | 28.4-30.0 | 29.5 | 28.5-30.4 | 23.4 | 20.6-26.2 | 27.7 | 24.3-31.0 | 27.5 | 24.6-30.3 |
| **Urinary Bladder** | 11.3 | 10.8-11.7 | 11.9 | 11.4-12.4 | 7.2 | 5.5-8.9 | 2.5 | 1.3-3.7 | 5.5 | 3.9-7.2 |

**Table 16.**

**AGE-ADJUSTED[[21]](#footnote-21) INCIDENCE RATES[[22]](#footnote-22) AND 95% CONFIDENCE LIMITS (95% CL)**

**FOR SELECTED CANCER SITES BY RACE/ETHNICITY[[23]](#footnote-23)**

**Massachusetts, 2010-2014**

**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** | 471.1 | 468.9-473.3 | 478.5 | 476.0-480.9 | 453.4 | 443.6-463.2 | 308.5 | 299.2-317.9 | 354.3 | 345.0-363.6 |
| **Brain & Other Nervous System** | 6.9 | 6.6-7.1 | 7.3 | 7.0-7.6 | 4.3 | 3.4-5.2 | 3.8 | 2.8-4.7 | 5.5 | 4.4-6.6 |
| **Breast** | --5 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| **Breast *in situ*4** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| **Bronchus & Lung** | 64.7 | 63.8-65.5 | 67.3 | 66.4-68.2 | 55.7 | 52.1-59.3 | 44.7 | 40.9-48.5 | 33.0 | 29.9-36.0 |
| **Cervix Uteri** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| **Colon / Rectum** | 37.8 | 37.2-38.4 | 37.8 | 37.2-38.5 | 41.0 | 38.0-44.0 | 31.3 | 28.3-34.4 | 30.8 | 27.9-33.7 |
| **Corpus Uteri & Uterus, NOS** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| **Esophagus** | 5.6 | 5.4-5.9 | 5.9 | 5.7-6.2 | 4.0 | 3.1-5.0 | 3.4 | 2.4-4.5 | 2.6 | 1.7-3.5 |
| **Hodgkin Lymphoma** | 3.0 | 2.8-3.1 | 3.1 | 2.9-3.4 | 2.3 | 1.6-2.9 | 1.1 | 0.7-1.6 | 3.5 | 2.7-4.3 |
| **Kidney & Renal Pelvis** | 15.7 | 15.3-16.1 | 16.1 | 15.6-16.5 | 15.4 | 13.6-17.1 | 7.2 | 5.8-8.7 | 12.7 | 11.1-14.4 |
| **Larynx** | 3.3 | 3.1-3.5 | 3.4 | 3.2-3.6 | 3.3 | 2.5-4.2 | \* | \* | 3.0 | 2.2-3.9 |
| **Leukemia** | 12.9 | 12.5-13.3 | 13.1 | 12.7-13.5 | 9.4 | 8.1-10.8 | 7.6 | 6.2-9.0 | 9.7 | 8.2-11.2 |
| **Liver & Intrahepatic Bile Ducts** | 7.9 | 7.6-8.2 | 6.8 | 6.5-7.1 | 11.4 | 9.9-12.9 | 18.2 | 15.9-20.5 | 13.9 | 12.1-15.8 |
| **Melanoma of Skin** | 20.6 | 20.2-21.1 | 22.8 | 22.2-23.3 | 1.1 | 0.6-1.6 | \* | \* | 2.4 | 1.6-3.2 |
| **Multiple Myeloma** | 6.4 | 6.2-6.7 | 5.9 | 5.6-6.1 | 14.7 | 12.9-16.6 | 3.8 | 2.8-4.9 | 7.4 | 6.1-8.8 |
| **Non-Hodgkin Lymphoma** | 19.3 | 18.9-19.8 | 19.7 | 19.2-20.1 | 15.1 | 13.4-16.9 | 10.3 | 8.6-11.9 | 18.0 | 15.9-20.1 |
| **Oral Cavity & Pharynx** | 12.0 | 11.6-12.3 | 12.2 | 11.9-12.6 | 8.9 | 7.6-10.3 | 10.5 | 8.8-12.2 | 10.4 | 8.8-12.1 |
| **Ovary** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| **Pancreas** | 12.5 | 12.2-12.9 | 12.7 | 12.3-13.1 | 14.6 | 12.8-16.5 | 7.9 | 6.3-9.5 | 8.7 | 7.2-10.2 |
| **Prostate** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| **Stomach** | 6.8 | 6.5-7.0 | 6.0 | 5.8-6.3 | 11.9 | 10.3-13.6 | 10.2 | 8.4-11.9 | 10.9 | 9.2-12.6 |
| **Testis** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| **Thyroid** | 20.0 | 19.6-20.5 | 20.3 | 19.8-20.9 | 15.6 | 13.9-17.4 | 20.0 | 17.9-22.1 | 17.2 | 15.5-18.9 |
| **Urinary Bladder** | 23.7 | 23.2-24.2 | 25.1 | 24.6-25.7 | 11.2 | 9.5-12.8 | 7.8 | 6.2-9.4 | 10.4 | 8.7-12.2 |

**Table 17.**

**FIVE LEADING CANCER MORTALITY RATES BY RACE/ETHNICITY AND SEX**

**Massachusetts, 2010-2014**

**MALES**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **AGE-ADJUSTED[[24]](#footnote-24) MORTALITY RATE[[25]](#footnote-25)** | | | | |
| **RANK** | **White, non-Hispanic** | **Black, non-Hispanic** | **Asian, non-Hispanic** | **Hispanic** |
| 1 | Bronchus & Lung 51.7 | Bronchus & Lung 50.2 | Bronchus & Lung 37.7 | Bronchus & Lung 24.2 |
| 2 | Prostate 18.1 | Prostate 39.8 | Liver & Intrahepatic Bile Duct 21.4 | Prostate 15.8 |
| 3 | Colon/Rectum 15.7 | Colon/Rectum 17.2 | Colon/Rectum 8.7 | Liver & Intrahepatic Bile Duct 12.5 |
| 4 | Pancreas 12.5 | Liver & Intrahepatic Bile Duct 13.6 | Prostate 7.2 | Colon/Rectum 10.4 |
| 5 | Leukemia 9.1 | Pancreas 13.6 | Pancreas 5.8 | Pancreas 8.1 |

**FEMALES**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **AGE-ADJUSTED1 MORTALITY RATE2** | | | | |
| **RANK** | **White, non-Hispanic** | **Black, non-Hispanic** | **Asian, non-Hispanic** | **Hispanic** |
| 1 | Bronchus & Lung 39.2 | Bronchus & Lung 27.9 | Bronchus & Lung 17.5 | Bronchus & Lung 12.0 |
| 2 | Breast 18.8 | Breast 19.7 | Colon/Rectum 8.9 | Breast 10.5 |
| 3 | Colon/Rectum 10.8 | Colon/Rectum 13.9 | Breast 7.9 | Colon/Rectum 9.2 |
| 4 | Pancreas 9.8 | Pancreas 10.1 | Pancreas 7.1 | Pancreas 6.3 |
| 5 | Ovary 7.7 | Corpus Uteri & Uterus, NOS 7.7 | Liver & Intrahepatic Bile Duct 6.6 | Liver & Intrahepatic Bile Duct 4.6 |

**Table 18.**

**NUMBER AND PERCENTAGE OF DEATHS FOR SELECTED CANCER SITES BY RACE/ETHNICITY[[26]](#footnote-26)**

**Massachusetts, 2010-2014**

**MALES**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **All Races[[27]](#footnote-27)** | | **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** | 32258 | 100.0 | 29057 | 100.0 | 1487 | 100.0 | 715 | 100.0 | 865 | 100.0 |
| **Brain & Other Nervous System** | 894 | 2.8 | 827 | 2.8 | 27 | 1.8 | 11 | 1.5 | 23 | 2.7 |
| **Breast** | 64 | 0.2 | 62 | 0.2 | 2 | 0.1 | 0 | 0.0 | 0 | 0.0 |
| **Bronchus & Lung** | 8555 | 26.5 | 7789 | 26.8 | 359 | 24.1 | 211 | 29.5 | 164 | 19.0 |
| **Colon / Rectum** | 2590 | 8.0 | 2332 | 8.0 | 132 | 8.9 | 54 | 7.5 | 61 | 7.1 |
| **Esophagus** | 1485 | 4.6 | 1388 | 4.8 | 49 | 3.3 | 21 | 2.9 | 21 | 2.4 |
| **Hodgkin Lymphoma** | 57 | 0.2 | 47 | 0.2 | 2 | 0.1 | 2 | 0.3 | 6 | 0.7 |
| **Kidney & Renal Pelvis** | 818 | 2.5 | 754 | 2.6 | 32 | 2.1 | 8 | 1.1 | 22 | 2.5 |
| **Larynx** | 272 | 0.8 | 239 | 0.8 | 13 | 0.9 | 5 | 0.7 | 13 | 1.5 |
| **Leukemia** | 1430 | 4.4 | 1313 | 4.5 | 42 | 2.8 | 25 | 3.5 | 45 | 5.2 |
| **Liver & Intrahepatic Bile Ducts** | 1775 | 5.5 | 1398 | 4.8 | 120 | 8.1 | 140 | 19.6 | 107 | 12.4 |
| **Melanoma of Skin** | 687 | 2.1 | 672 | 2.3 | 5 | 0.3 | 1 | 0.1 | 5 | 0.6 |
| **Multiple Myeloma** | 640 | 2.0 | 551 | 1.9 | 52 | 3.5 | 12 | 1.7 | 22 | 2.5 |
| **Non-Hodgkin Lymphoma** | 1116 | 3.5 | 1021 | 3.5 | 40 | 2.7 | 15 | 2.1 | 34 | 3.9 |
| **Oral Cavity & Pharynx** | 668 | 2.1 | 576 | 2.0 | 40 | 2.7 | 22 | 3.1 | 26 | 3.0 |
| **Pancreas** | 2113 | 6.6 | 1915 | 6.6 | 95 | 6.4 | 34 | 4.8 | 59 | 6.8 |
| **Prostate** | 3001 | 9.3 | 2647 | 9.1 | 223 | 15.0 | 32 | 4.5 | 86 | 9.9 |
| **Stomach** | 670 | 2.1 | 535 | 1.8 | 46 | 3.1 | 33 | 4.6 | 53 | 6.1 |
| **Testis** | 22 | 0.1 | 21 | 0.1 | 0 | 0.0 | 0 | 0.0 | 1 | 0.1 |
| **Thyroid** | 103 | 0.3 | 96 | 0.3 | 3 | 0.2 | 2 | 0.3 | 2 | 0.2 |
| **Urinary Bladder** | 1318 | 4.1 | 1258 | 4.3 | 28 | 1.9 | 13 | 1.8 | 4 | 3.0 |
| **Other Sites** | 3980 | 12.3 | 3616 | 12.4 | 177 | 11.9 | 74 | 10.3 | 100 | 11.6 |

**Table 19.**

**NUMBER AND PERCENTAGE OF DEATHS FOR SELECTED CANCER SITES BY RACE/ETHNICITY[[28]](#footnote-28)**

**Massachusetts, 2010-2014**

**FEMALES**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **All Races[[29]](#footnote-29)** | | **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** | 31413 | 100.0 | 28497 | 100.0 | 1423 | 100.0 | 585 | 100.0 | 798 | 100.0 |
| **Brain & Other Nervous System** | 699 | 2.2 | 643 | 2.3 | 18 | 1.3 | 18 | 3.1 | 19 | 2.4 |
| **Breast** | 4142 | 13.2 | 3733 | 13.1 | 213 | 15.0 | 64 | 10.9 | 117 | 14.7 |
| **Bronchus & Lung** | 8337 | 26.5 | 7801 | 27.4 | 290 | 20.4 | 119 | 20.3 | 104 | 13.0 |
| **Cervix Uteri** | 251 | 0.8 | 199 | 0.7 | 23 | 1.6 | 6 | 1.0 | 19 | 2.4 |
| **Colon / Rectum** | 2640 | 8.4 | 2336 | 8.2 | 147 | 10.3 | 63 | 10.8 | 83 | 10.4 |
| **Corpus Uteri & Uterus, NOS** | 1029 | 3.3 | 885 | 3.1 | 82 | 5.8 | 20 | 4.5 | 36 | 4.5 |
| **Esophagus** | 372 | 1.2 | 338 | 1.2 | 13 | 0.9 | 8 | 1.4 | 11 | 1.4 |
| **Hodgkin Lymphoma** | 48 | 0.1 | 44 | 0.1 | 0 | 0.0 | 1 | 0.2 | 3 | 0.4 |
| **Kidney & Renal Pelvis** | 480 | 1.5 | 453 | 1.6 | 12 | 0.8 | 2 | 0.3 | 9 | 1.1 |
| **Larynx** | 93 | 0.3 | 88 | 0.3 | 2 | 0.1 | 1 | 0.2 | 2 | 0.3 |
| **Leukemia** | 1100 | 3.5 | 987 | 3.5 | 52 | 3.7 | 17 | 2.9 | 40 | 5.0 |
| **Liver & Intrahepatic Bile Ducts** | 799 | 2.5 | 668 | 2.3 | 40 | 2.8 | 50 | 8.6 | 40 | 5.0 |
| **Melanoma of Skin** | 420 | 1.3 | 409 | 1.4 | 4 | 0.3 | 2 | 0.3 | 4 | 0.5 |
| **Multiple Myeloma** | 635 | 2.0 | 536 | 1.9 | 67 | 4.7 | 5 | 0.9 | 24 | 3.0 |
| **Non-Hodgkin Lymphoma** | 1019 | 3.2 | 931 | 3.3 | 33 | 2.3 | 19 | 3.3 | 34 | 4.3 |
| **Oral Cavity & Pharynx** | 311 | 1.0 | 281 | 1.0 | 8 | 0.6 | 9 | 1.5 | 11 | 1.4 |
| **Ovary** | 1656 | 5.3 | 1528 | 5.4 | 69 | 4.8 | 28 | 4.8 | 26 | 3.3 |
| **Pancreas** | 2274 | 7.2 | 2057 | 7.2 | 105 | 7.4 | 46 | 7.9 | 58 | 7.3 |
| **Stomach** | 541 | 1.7 | 438 | 1.5 | 40 | 2.8 | 26 | 4.4 | 32 | 4.0 |
| **Thyroid** | 109 | 0.4 | 90 | 0.3 | 7 | 0.5 | 4 | 0.7 | 8 | 1.0 |
| **Urinary Bladder** | 614 | 2.0 | 588 | 2.1 | 18 | 1.3 | 3 | 0.5 | 5 | 0.6 |
| **Other Sites** | 3844 | 12.2 | 3464 | 12.2 | 180 | 12.7 | 74 | 12.7 | 113 | 14.2 |

**Table 20.**

**NUMBER AND PERCENTAGE OF DEATHS FOR SELECTED CANCER SITES BY RACE/ETHNICITY[[30]](#footnote-30)**

**Massachusetts, 2010-2014**

**TOTAL**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **All Races[[31]](#footnote-31)** | | **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** | 63671 | 100.0 | 57554 | 100.0 | 2910 | 100.0 | 1300 | 100.0 | 1663 | 100.0 |
| **Brain & Other Nervous System** | 1593 | 2.5 | 1470 | 2.6 | 45 | 1.6 | 29 | 2.2 | 42 | 2.5 |
| **Breast** | 4206 | 6.6 | 3795 | 6.6 | 215 | 7.4 | 64 | 4.9 | 117 | 7.0 |
| **Bronchus & Lung** | 16892 | 26.5 | 15590 | 27.1 | 649 | 22.3 | 330 | 25.4 | 268 | 16.1 |
| **Cervix Uteri** | 251 | 0.4 | 23 | 0.8 | 23 | 0.8 | 6 | 0.5 | 19 | 1.1 |
| **Colon / Rectum** | 5230 | 8.2 | 4668 | 8.1 | 279 | 9.6 | 117 | 9.0 | 144 | 8.7 |
| **Corpus Uteri & Uterus, NOS** | 1029 | 1.6 | 82 | 2.8 | 82 | 2.8 | 20 | 1.5 | 36 | 2.2 |
| **Esophagus** | 1857 | 2.9 | 1726 | 3.0 | 62 | 2.1 | 29 | 2.2 | 32 | 1.9 |
| **Hodgkin Lymphoma** | 105 | 0.2 | 91 | 0.2 | 2 | 0.1 | 3 | 0.2 | 9 | 0.5 |
| **Kidney & Renal Pelvis** | 1298 | 2.0 | 1207 | 2.1 | 44 | 1.5 | 10 | 0.8 | 31 | 1.9 |
| **Larynx** | 365 | 0.6 | 327 | 0.6 | 15 | 0.5 | 6 | 0.5 | 15 | 0.9 |
| **Leukemia** | 2530 | 4.0 | 2300 | 4.0 | 94 | 3.2 | 42 | 3.2 | 85 | 5.1 |
| **Liver & Intrahepatic Bile Ducts** | 2574 | 4.0 | 2066 | 3.6 | 160 | 5.5 | 190 | 14.6 | 147 | 8.8 |
| **Melanoma of Skin** | 1107 | 1.7 | 1081 | 1.9 | 9 | 0.3 | 3 | 0.2 | 9 | 0.5 |
| **Multiple Myeloma** | 1275 | 2.0 | 1087 | 1.9 | 119 | 4.1 | 17 | 1.3 | 46 | 2.8 |
| **Non-Hodgkin Lymphoma** | 2135 | 3.4 | 1952 | 3.4 | 73 | 2.5 | 34 | 2.6 | 68 | 4.1 |
| **Oral Cavity & Pharynx** | 979 | 1.5 | 857 | 1.5 | 48 | 1.7 | 31 | 2.4 | 37 | 2.2 |
| **Ovary** | 1656 | 2.6 | 1528 | 2.7- | 69 | 2.4 | 28 | 2.2 | 26 | 1.6 |
| **Pancreas** | 4387 | 6.9 | 3972 | 6.9 | 200 | 6.9 | 80 | 6.2 | 117 | 7.0 |
| **Prostate** | 3001 | 4.7 | 2647 | 4.6 | 223 | 7.7 | 32 | 2.5 | 86 | 5.2 |
| **Stomach** | 1211 | 1.9 | 973 | 1.7 | 86 | 3.0 | 59 | 4.5 | 85 | 5.1 |
| **Testis** | 22 | 0.03 | 21 | 0.5 | 0 | 0.0 | 0 | 0.0 | 1 | 0.0 |
| **Thyroid** | 212 | 0.3 | 186 | 3.2 | 10 | 0.3 | 6 | 0.5 | 10 | 0.6 |
| **Urinary Bladder** | 1932 | 3.0 | 1846 | 3.2 | 46 | 1.6 | 16 | 1.2 | 20 | 1.2 |
| **Other Sites** | 7824 | 12.3 | 7080 | 12.3 | 357 | 12.3 | 148 | 11.4 | 213 | 12.8 |

**Table 21.**

**AGE-ADJUSTED[[32]](#footnote-32) MORTALITY RATES[[33]](#footnote-33) AND 95% CONFIDENCE LIMITS (95% CL)**

**FOR SELECTED CANCER SITES BY RACE/ETHNICITY[[34]](#footnote-34)**

**Massachusetts, 2010-2014**

**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** | 190.2 | 188.1-192.2 | 193.6 | 191.4-195.8 | 210.1 | 199.4-220.8 | 121.5 | 112.6-130.4 | 125.5 | 117.2-133.9 |
| **Brain & Other Nervous System** | 5.1 | 4.7-5.4 | 5.5 | 5.1-5.8 | 2.7 | 1.7-3.8 | \* | \* | 2.4 | 1.4-3.4 |
| **Breast** | 0.4 | 0.3-0.5 | 0.4 | 0.3-0.5 | \* | \* | \* | \* | \* | \* |
| **Bronchus & Lung** | 50.3 | 49.3-51.4 | 51.7 | 50.6-52.9 | 50.2 | 45.0-55.4 | 37.7 | 32.6-42.8 | 24.2 | 20.5-27.9 |
| **Colon / Rectum** | 15.3 | 14.8-15.9 | 15.6 | 15.0-16.3 | 17.2 | 14.3-20.2 | 8.7 | 6.4-11.0 | 10.4 | 7.8-13.0 |
| **Esophagus** | 8.4 | 8.0-8.8 | 8.9 | 8.4-9.4 | 6.5 | 4.7-8.3 | 4.4 | 2.5-6.2 | 3.1 | 1.8-4.5 |
| **Hodgkin Lymphoma** | 0.3 | 0.3-0.4 | 0.3 | 0.2-0.5 | \* | \* | \* | \* | \* | \* |
| **Kidney & Renal Pelvis** | 4.7 | 4.4-5.0 | 4.9 | 4.5-5.2 | 5.0 | 3.3-6.8 | \* | \* | 2.5 | 1.5-3.6 |
| **Larynx** | 1.6 | 1.4-1.8 | 1.6 | 1.4-1.8 | \* | \* | \* | \* | \* | \* |
| **Leukemia** | 8.7 | 8.3-9.2 | 9.1 | 8.6-9.5 | 6.0 | 4.2-7.8 | 4.3 | 2.6-6.0 | 6.2 | 4.4-8.0 |
| **Liver & Intrahepatic Bile Ducts** | 9.8 | 9.3-10.3 | 8.8 | 8.3-9.3 | 13.6 | 11.2-16.1 | 21.4 | 17.9-25.0 | 12.5 | 10.1-14.8 |
| **Melanoma of Skin** | 4.1 | 3.7-4.4 | 4.5 | 4.2-4.9 | \* | \* | \* | \* | \* | \* |
| **Multiple Myeloma** | 3.8 | 3.5-4.1 | 3.7 | 3.4-4.0 | 7.3 | 5.3-9.3 | \* | \* | 4.2 | 2.4-6.0 |
| **Non-Hodgkin Lymphoma** | 6.8 | 6.4-7.2 | 7.0 | 6.5-7.4 | 5.2 | 3.6-6.9 | \* | \* | 4.2 | 2.8-5.6 |
| **Oral Cavity & Pharynx** | 3.7 | 3.5-4.0 | 3.7 | 3.4-4.0 | 4.9 | 3.4-6.4 | 3.1 | 1.8-4.4 | 3.7 | 2.3-5.1 |
| **Pancreas** | 12.2 | 11.7-12.7 | 12.5 | 12.0-13.1 | 13.6 | 10.9-16.3 | 5.8 | 3.8-7.7 | 8.1 | 6.0-10.1 |
| **Prostate** | 18.6 | 17.9-19.3 | 18.1 | 17.5-18.8 | 39.8 | 34.6-45.0 | 7.2 | 4.7-9.8 | 15.8 | 12.5-19.2 |
| **Stomach** | 4.0 | 3.7-4.3 | 3.6 | 3.3-3.9 | 6.6 | 4.7-8.6 | 5.1 | 3.4-6.9 | 7.6 | 5.6-9.7 |
| **Testis** | 0.1 | 0.1-0.2 | 0.1 | 0.1-0.2 | \* | \* | \* | \* | \* | \* |
| **Thyroid** | 0.6 | 0.5-0.7 | 0.6 | 0.5-0.8 | \* | \* | \* | \* | \* | \* |
| **Urinary Bladder** | 8.1 | 7.6-8.5 | 8.5 | 8.1-9.0 | 4.8 | 3.0-6.6 | \* | \* | \* | \* |

**Table 22.**

**AGE-ADJUSTED[[35]](#footnote-35) MORTALITY RATES[[36]](#footnote-36) AND 95% CONFIDENCE LIMITS (95% CL)**

**FOR SELECTED CANCER SITES BY RACE/ETHNICITY[[37]](#footnote-37)**

**Massachusetts, 2010-2014**

**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** | 135.9 | 134.4-137.4 | 140.0 | 138.3-141.6 | 135.4 | 128.3-142.4 | 80.7 | 74.2-87.2 | 86.5 | 90.5-92.5 |
| **Brain & Other Nervous System** | 3.2 | 3.0-3.5 | 3.5 | 3.2-3.8 | \* | \* | \* | \* | \* | \* |
| **Breast** | 18.2 | 17.7-18.8 | 18.8 | 18.2-19.4 | 19.7 | 17.1-22.4 | 7.9 | 5.9-9.8 | 10.5 | 8.6-12.4 |
| **Bronchus & Lung** | 36.9 | 36.1-37.6 | 39.2 | 38.4-40.1 | 27.9 | 24.7-31.2 | 17.5 | 14.4-20.7 | 12.0 | 9.7-14.3 |
| **Cervix Uteri** | 1.2 | 1.0-1.3 | 1.1 | 1.0-1.3 | 2.0 | 1.2-2.8 | \* | \* | \* | \* |
| **Colon / Rectum** | 10.9 | 10.5-11.3 | 10.8 | 10.4-11.3 | 13.9 | 11.6-16.1 | 8.9 | 6.7-11.1 | 9.2 | 7.2-11.2 |
| **Corpus Uteri & Uterus, NOS** | 4.4 | 4.2-4.7 | 4.3 | 4.0-4.6 | 7.7 | 6.0-9.4 | 2.6 | 1.4-3.7 | 4.1 | 2.7-5.4 |
| **Esophagus** | 1.6 | 1.4-1.7 | 1.6 | 1.5-1.8 | \* | \* | \* | \* | \* | \* |
| **Hodgkin Lymphoma** | 0.2 | 0.2-0.3 | 0.2 | 0.2-0.3 | \* | \* | \* | \* | \* | \* |
| **Kidney & Renal Pelvis** | 2.0 | 1.8-2.2 | 2.1 | 2.0-2.3 | \* | \* | \* | \* | \* | \* |
| **Larynx** | 0.4 | 0.3-0.5 | 0.4 | 0.3-0.5 | \* | \* | \* | \* | \* | \* |
| **Leukemia** | 4.8 | 4.5-5.1 | 4.8 | 4.5-5.1 | 5.2 | 3.8-6.6 | \* | \* | 4.3 | 3.0-5.7 |
| **Liver & Intrahepatic Bile Ducts** | 3.5 | 3.2-3.7 | 3.3 | 3.0-3.5 | 3.7 | 2.6-4.9 | 6.6 | 4.8-8.5 | 4.6 | 3.2-6.1 |
| **Melanoma of Skin** | 1.9 | 1.7-2.0 | 2.1 | 1.9-2.3 | \* | \* | \* | \* | \* | \* |
| **Multiple Myeloma** | 2.6 | 2.4-2.8 | 2.5 | 2.3-2.7 | 6.5 | 5.0-8.1 | \* | \* | 2.7 | 1.6-3.8 |
| **Non-Hodgkin Lymphoma** | 4.2 | 4.0-4.5 | 4.3 | 4.0-4.6 | 3.1 | 2.0-4.2 | \* | \* | 4.3 | 2.9-5.8 |
| **Oral Cavity & Pharynx** | 1.3 | 1.2-1.5 | 1.3 | 1.2-1.5 | \* | \* | \* | \* | \* | \* |
| **Ovary** | 7.3 | 6.9-7.6 | 7.7 | 7.3-8.1 | 6.3 | 4.8-7.8 | 3.5 | 2.2-4.8 | 2.7 | 1.7-3.7 |
| **Pancreas** | 9.6 | 9.2-10.0 | 9.8 | 9.4-10.3 | 10.1 | 8.1-12.0 | 7.1 | 5.0-9.1 | 6.3 | 4.7-7.9 |
| **Stomach** | 2.3 | 2.1-2.5 | 2.0 | 1.8-2.2 | 3.9 | 2.7-5.1 | 3.5 | 2.1-4.8 | 3.1 | 2.0-4.2 |
| **Thyroid** | 0.5 | 0.4-0.5 | 0.4 | 0.3-0.5 | \* | \* | \* | \* | \* | \* |
| **Urinary Bladder** | 2.5 | 2.3-2.7 | 2.6 | 2.4-2.8 | \* | \* | \* | \* | \* | \* |

**Table 23.**

**AGE-ADJUSTED[[38]](#footnote-38) MORTALITY RATES[[39]](#footnote-39) AND 95% CONFIDENCE LIMITS (95% CL)**

**FOR SELECTED CANCER SITES BY RACE/ETHNICITY[[40]](#footnote-40)**

**Massachusetts, 2010-2014**

**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** | 157.8 | 156.6-159.0 | 161.6 | 160.3-162.9 | 163.3 | 157.4-169.2 | 98.9 | 93.5-104.3 | 102.6 | 97.7-107.6 |
| **Brain & Other Nervous System** | 4.1 | 3.9-4.3 | 4.4 | 4.2-4.6 | 2.2 | 1.5-2.8 | 1.8 | 1.2-2.5 | 2.1 | 1.5-2.7 |
| **Breast** | - | - | - | - | - | - | - | - | - | - |
| **Bronchus & Lung** | 42.4 | 41.7-43.0 | 44.3 | 43.6-45.0 | 36.7 | 33.9-39.5 | 26.4 | 23.6-29.3 | 17.2 | 15.1-19.2 |
| **Cervix Uteri** | - | - | - | - | - | - | - | - | - | -- |
| **Colon / Rectum** | 12.8 | 12.5-13.1 | 12.9 | 12.5-13.3 | 15.4 | 13.6-17.2 | 8.8 | 7.2-10.5 | 9.6 | 8.1-11.2 |
| **Corpus Uteri & Uterus, NOS** | - | - | - | - | - | - | - | - | - | - |
| **Esophagus** | 4.6 | 4.4-4.8 | 4.8 | 4.6-5.1 | 3.3 | 2.5-4.1 | 2.5 | 1.6-3.4 | 2.1 | 1.3-2.8 |
| **Hodgkin Lymphoma** | 0.3 | 0.2-0.3 | 0.3 | 0.2-0.4 | \* | \* | \* | \* | \* | \* |
| **Kidney & Renal Pelvis** | 3.2 | 3.0-3.3 | 3.3 | 3.1-3.5 | 2.5 | 1.8-3.3 | \* | \* | 1.7 | 1.1-2.2 |
| **Larynx** | 0.9 | 0.8-1.0 | 0.9 | 0.8-1.0 | \* | \* | \* | \* | \* | \* |
| **Leukemia** | 6.4 | 6.1-6.6 | 6.6 | 6.3-6.8 | 5.3 | 4.3-6.4 | 3.1 | 2.1-4.0 | 5.1 | 4.0-6.2 |
| **Liver & Intrahepatic Bile Ducts** | 6.3 | 6.1-6.6 | 5.7 | 5.5-6.0 | 8.1 | 6.8-9.3 | 13.4 | 11.5-15.3 | 8.1 | 6.8-9.5 |
| **Melanoma of Skin** | 2.8 | 2.6-2.9 | 3.1 | 2.9-3.3 | \* | \* | \* | \* | \* | \* |
| **Multiple Myeloma** | 3.1 | 3.0-3.3 | 3.0 | 2.8-3.2 | 6.8 | 5.6-8.0 | \* | \* | 3.3 | 2.3-4.2 |
| **Non-Hodgkin Lymphoma** | 5.3 | 5.1-5.5 | 5.4 | 5.2-5.7 | 4.0 | 3.1-4.9 | 2.6 | 1.7-3.5 | 4.4 | 3.3-5.4 |
| **Oral Cavity & Pharynx** | 2.4 | 2.3-2.6 | 2.4 | 2.2-2.6 | 2.5 | 1.8-3.2 | 2.1 | 1.4-2.8 | 2.3 | 1.5-3.0 |
| **Ovary** | - | - | - | - | - | - | - | - | - | - |
| **Pancreas** | 10.8 | 10.5-11.1 | 11.0 | 10.7-11.4 | 11.5 | 10.0-13.2 | 6.5 | 5.1-8.0 | 7.1 | 5.8-8.3 |
| **Prostate** | - | - | - | - | - | - | - | - | - | - |
| **Stomach** | 3.0 | 2.8-3.2 | 2.7 | 2.5-2.9 | 5.0 | 3.9-6.1 | 3.1 | 2.0-4.2 | 4.9 | 3.9-6.0 |
| **Testis** | - | - | - | - | - | - | - | - | - | - |
| **Thyroid** | 0.5 | 0.5-0.6 | 0.5 | 0.4-0.6 | \* | \* | \* | \* | \* | \* |
| **Urinary Bladder** | 4.7 | 4.5-4.9 | 5.0 | 4.8-5.2 | 2.9 | 2.0-3.7 | \* | \* | 1.5 | 0.9-2.2 |

**Table 24.**

**INCIDENCE RATES1 FOR SELECTED CANCER SITES BY SEX**

**Massachusetts (2010-2014 and U.S. (2009-2013)**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **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** | 505.7\* | 502.3-509.2 | 512.1 | 511.6-512.6 | 450.4\* | 447.4-453.3 | 418.46 | 418.0-418.9 |
| **Brain & Other Nervous System** | 8.0 | 7.6-8.5 | 7.8 | 7.7-7.8 | 5.9 | 5.5-6.2 | 5.6 | 5.6-5.7 |
| **Breast** | 1.4 | 1.2-1.6 | 1.3 | 1.3-1.4 | 136.3\* | 134.7-137.9 | 123.3 | 123.1-123.6 |
| **Breast *in situ2*** | 0.1 | 0.1-0.2 | N/A | N/A | 42.5\* | 41.6-43.4 | 31.0 | 30.9-31.1 |
| **Bronchus & Lung** | 70.8\* | 69.5-72.1 | 75.0 | 74.8-75.2 | 60.7\* | 59.7-61.8 | 53.5 | 53.4-53.7 |
| **Cervix Uteri** | -- | -- | -- | -- | 5.2\* | 4.9-5.6 | 7.6 | 7.6-7.7 |
| **Colon / Rectum** | 43.0\* | 42.0-44.0 | 46.9 | 46.7-47.0 | 33.7\* | 32.9-34.5 | 35.6 | 35.5-35.7 |
| **Corpus Uteri & Uterus, NOS** | -- | -- | -- | -- | 29.0\* | 28.3-29.7 | 25.6 | 25.5-25.7 |
| **Esophagus** | 9.9\* | 9.4-10.4 | 8.1 | 8.1-8.2 | 2.2\* | 2.0-2.4 | 1.8 | 1.8-1.8 |
| **Hodgkin Lymphoma** | 3.4 | 3.1-3.7 | 3.1 | 3.0-3.1 | 2.6 | 2.3-2.8 | 2.4 | 2.3-2.4 |
| **Kidney & Renal Pelvis** | 21.6 | 20.9-22.3 | 21.7 | 21.6-21.8 | 10.7\* | 10.2-11.1 | 11.3 | 11.2-11.4 |
| **Larynx** | 5.7\* | 5.3-6.0 | 6.2 | 6.1-6.2 | 1.4 | 1.3-1.6 | 1.4 | 1.4-1.4 |
| **Leukemia** | 16.6 | 16.0-17.3 | 17.2 | 17.2-17.4 | 10.0 | 9.6-10.5 | 10.6 | 10.5-10.6 |
| **Liver & Intrahepatic Bile Ducts** | 12.9\* | 12.4-13.4 | 11.8 | 11.7-11.9 | 3.7 | 3.5-4.0 | 4.0 | 4.0-4.1 |
| **Melanoma of Skin** | 25.5 | 24.7-26.3 | 25.9 | 25.8-26.0 | 17.3\* | 16.7-17.9 | 16.1 | 16.0-16.2 |
| **Multiple Myeloma** | 8.0 | 7.6-8.5 | 8.0 | 7.9-8.0 | 5.2 | 4.9-5.5 | 5.2 | 5.2-5.3 |
| **Non-Hodgkin Lymphoma** | 23.0 | 22.3-23.7 | 23.0 | 22.9-23.1 | 16.5 | 15.9-17.0 | 15.9 | 15.8-16.0 |
| **Oral Cavity & Pharynx** | 17.8 | 17.2-18.5 | 17.2 | 17.1-17.2 | 6.9\* | 6.6-7.3 | 6.3 | 6.3-6.4 |
| **Ovary** | -- | -- | -- | -- | 11.5 | 11.0-12.0 | 11.6 | 11.6-11.7 |
| **Pancreas** | 14.0 | 13.5-14.6 | 14.1 | 14.0-14.2 | 11.3 | 10.8-11.7 | 10.9 | 10.9-11.0 |
| **Prostate** | 114.4\* | 112.8-115.9 | 123.2 | 123.0-123.5 | -- | -- | -- | -- |
| **Stomach** | 9.6 | 9.2-10.1 | 9.2 | 9.2-9.3 | 4.6 | 4.3-4.9 | 4.6 | 4.6-4.7 |
| **Testis** | 6.4\* | 6.0-6.8 | 5.5 | 5.4-5.5 | -- | -- | -- | -- |
| **Thyroid** | 10.3\* | 9.8-10.8 | 7.0 | 7.0-7.1 | 29.2\* | 28.4-30.0 | 20.8 | 20.7-20.9 |
| **Urinary Bladder** | 40.6\* | 39.6-41.5 | 36.2 | 36.0-36.3 | 11.3\* | 10.8-11.7 | 8.9 | 8.9-9.0 |

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

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

N/A – not available

\* 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 3-8-2017)

**Table 25.**

**MORTALITY RATES1 FOR SELECTED CANCER SITES BY SEX**

**Massachusetts and U.S. (2010-2014)**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **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** | 190.2\* | 188.1-192.2 | 200.3 | 200.0-200.7 | 135.9\* | 134.4-137.4 | 142.0 | 141.7-142.2 |
| **Brain & Other Nervous System** | 5.1 | 4.7-5.4 | 5.3 | 5.3-5.4 | 3.2 | 3.0-3.5 | 3.5 | 3.5-3.6 |
| **Breast** | 0.4 | 0.3-0.5 | 0.3 | 0.3-0.3 | 18.2\* | 17.7-18.8 | 21.3 | 21.2-21.4 |
| **Bronchus & Lung** | 50.3\* | 49.3-51.4 | 55.8 | 55.6-56.0 | 36.9 | 36.1-37.6 | 36.3 | 36.2-36.4 |
| **Cervix Uteri** | - | - | - | - | 1.2\* | 1.0-1.3 | 2.3 | 2.3-2.3 |
| **Colon / Rectum** | 15.3\* | 14.8-15.9 | 17.8 | 17.7-17.9 | 10.9\* | 10.5-11.3 | 12.7 | 12.6-12.7 |
| **Corpus Uteri & Uterus, NOS** | - | - | - | - | 4.4 | 4.2-4.7 | 4.6 | 4.5-4.6 |
| **Esophagus** | 8.4\* | 8.0-8.8 | 7.3 | 7.2-7.4 | 1.6 | 1.4-1.7 | 1.5 | 1.5-1.5 |
| **Hodgkin Lymphoma** | 0.3 | 0.3-0.4 | 0.4 | 0.4-0.5 | 0.2 | 0.2-0.3 | 0.3 | 0.3-0.3 |
| **Kidney & Renal Pelvis** | 4.7\* | 4.4-5.0 | 5.7 | 5.6-5.7 | 2.0\* | 1.8-2.2 | 2.5 | 2.4-2.5 |
| **Larynx** | 1.6 | 1.4-1.8 | 1.9 | 1.8-1.9 | 0.4 | 0.3-0.5 | 0.4 | 0.4-0.4 |
| **Leukemia** | 8.7 | 8.3-9.2 | 9.1 | 9.0-9.1 | 4.8 | 4.5-5.1 | 5.1 | 5.0-5.1 |
| **Liver & Intrahepatic Bile Ducts** | 9.8 | 9.3-10.3 | 9.9 | 9.2-9.4 | 3.5 | 3.2-3.7 | 3.8 | 3.7-3.8 |
| **Melanoma of Skin** | 4.1 | 3.7-4.4 | 4.0 | 4.0-4.0 | 1.9 | 1.7-2.0 | 1.7 | 1.6-1.7 |
| **Multiple Myeloma** | 3.8\* | 3.5-4.1 | 4.4 | 4.3-4.4 | 2.6 | 2.4-2.8 | 2.8 | 2.8-2.8 |
| **Non-Hodgkin Lymphoma** | 6.8\* | 6.4-7.2 | 7.6 | 7.5-7.6 | 4.2 | 4.0-4.5 | 4.6 | 4.5-4.6 |
| **Oral Cavity & Pharynx** | 3.7 | 3.5-4.0 | 3.9 | 3.8-3.9 | 1.3 | 1.2-1.5 | 1.3 | 1.3-1.4 |
| **Ovary** | - | - | - | - | 7.3 | 6.9-7.6 | 7.4 | 7.4-7.5 |
| **Pancreas** | 12.2 | 11.7-12.7 | 12.6 | 12.5-12.7 | 9.6 | 9.2-10.0 | 9.6 | 9.5-9.6 |
| **Prostate** | 18.6\* | 17.9-19.3 | 20.0 | 19.9-20.1 | - | - | - | - |
| **Stomach** | 4.0 | 3.7-4.3 | 4.4 | 4.3-4.4 | 2.3 | 2.1-2.5 | 2.3 | 2.3-2.4 |
| **Testis** | 0.1\* | 0.1-0.2 | 0.3 | 0.3-0.3 | - | - | - | - |
| **Thyroid** | 0.6 | 0.5-0.7 | 0.5 | 0.5-0.5 | 0.5 | 0.4-0.5 | 0.5 | 0.5-0.5 |
| **Urinary Bladder** | 8.1 | 7.6-8.5 | 7.6 | 7.5-7.7 | 2.5\* | 2.3-2.7 | 2.2 | 2.1-2.2 |

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

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

N/A – not applicable

\* 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\*** | **ICD-10\*\*** |
| **Brain & Other**  **Nervous System** | C70.0-C72.9  except 9590-9989 | C70-C72 |
| **Breast**  **(includes *in situ*)** | C50.0 – C50.9  except 9590 -9989 | C50 |
| **Bronchus & Lung** | C34.0 – C34.9  except 9590-9989 | C34 |
| **Cervix Uteri** | C53.0 – C53.9  except 9590-9989 | C53 |
| **Colon/ Rectum** | C18.0-C18.9,  C19.9, C20.9,  C26.0  except 9590-9989 | C18 – C20, C26.0 |
| **Corpus Uteri**  **& Uterus, NOS** | C54.0 – C54.9,  C55.9  except 9590 – 9989 | C54 – C55 |
| **Esophagus** | C15.0-C15.9  except 9590 – 9989 | C15 |
| **Hodgkin Lymphoma** | C00.00 – C80.9  (includes 9650-9667) | C81 |
| **Kidney &**  **Renal Pelvis** | C64.9, C65.9  except 9590-9989 | C64- C65 |
| **Larynx** | C32.0 – C32.9  except 9590- 9989 | C32 |
| **Leukemia** | C00.0 – C80.9  (includes 9733, 9742,  9800 – 9820, 9826,  9831 – 9948, 9963 – 9964)  C42.0, C42.1, C42.4  (includes 9823, 9827) | C90.1, C91 – C95 |
| **Liver and Intrahepatic**  **Bile Ducts** | C22.0, C22.1  except 9590 – 9989 | C22 |

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

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

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

**APPENDIX II:**

**Population and Rate Changes**

The population estimates for 2010-2014 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 [www.mass.gov/dph/mcr](http://www.mass.gov/dph/mcr).

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**Appendix III**

**POPULATION ESTIMATES BY AGE, RACE/ETHNICTIY, AND SEX**

**Massachusetts, 2010-2014**

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **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** | 607101 | 579335 | 1186436 | 88339 | 83562 | 171901 | 68569 | 66722 | 135291 | 169590 | 162054 | 331644 |
| **05-09** | 661478 | 632397 | 1293875 | 87447 | 83076 | 170523 | 66506 | 66618 | 133124 | 155244 | 149359 | 304603 |
| **10-14** | 725431 | 690543 | 1415974 | 87321 | 83892 | 171213 | 59628 | 60969 | 120597 | 148002 | 142798 | 290800 |
| **15-19** | 826988 | 806078 | 1633066 | 101485 | 98853 | 200338 | 67925 | 74244 | 142169 | 162782 | 155403 | 318185 |
| **20-24** | 834770 | 837685 | 1672455 | 106468 | 104712 | 211180 | 87302 | 94991 | 182293 | 168747 | 161051 | 329798 |
| **25-29** | 811146 | 817602 | 1628748 | 88736 | 91360 | 180096 | 95342 | 107630 | 202972 | 152550 | 147251 | 299801 |
| **30-34** | 734828 | 746257 | 1481085 | 79931 | 86075 | 166006 | 90090 | 101846 | 191936 | 143809 | 143430 | 287239 |
| **35-39** | 705001 | 726954 | 1431955 | 74887 | 81772 | 156659 | 85455 | 92370 | 177825 | 122039 | 128392 | 250431 |
| **40-44** | 840321 | 875397 | 1715718 | 76031 | 83378 | 159409 | 76761 | 82904 | 159665 | 108745 | 117729 | 226474 |
| **45-49** | 968624 | 1006505 | 1975129 | 78763 | 83135 | 161898 | 64351 | 69346 | 133697 | 96706 | 107037 | 203743 |
| **50-54** | 1023251 | 1068831 | 2092082 | 73632 | 79294 | 152926 | 53855 | 58443 | 112298 | 77774 | 87933 | 165707 |
| **55-59** | 939972 | 998576 | 1938548 | 58986 | 65853 | 124839 | 43936 | 49846 | 93782 | 57458 | 67615 | 125073 |
| **60-64** | 809221 | 880725 | 1689946 | 44215 | 52283 | 96498 | 34745 | 39701 | 74446 | 40965 | 50404 | 91369 |
| **65-69** | 615458 | 691628 | 1307086 | 29425 | 38486 | 67911 | 23307 | 26809 | 50116 | 27091 | 35238 | 62329 |
| **70-74** | 417310 | 502632 | 919942 | 19346 | 27740 | 47086 | 17887 | 20448 | 38335 | 17149 | 24108 | 41257 |
| **75-79** | 311707 | 411392 | 723099 | 13185 | 21294 | 34479 | 12666 | 14505 | 27171 | 10667 | 16501 | 27168 |
| **80-84** | 243164 | 373559 | 616723 | 8190 | 15443 | 23633 | 7394 | 9712 | 17106 | 6296 | 10649 | 16945 |
| **85+** | 224282 | 485670 | 709952 | 6669 | 15659 | 22328 | 5268 | 8367 | 13635 | 5105 | 9562 | 14667 |

Population Data Source: United States Census Data (2010-2014)

**Appendix IV**

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

**Massachusetts (2010-2014)**

**United States (2010-2014)**

Data Source: United States Census Data, 2010-2014

\*Other includes people reporting 2 or more races.

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3. National Center for Health Statistics, U.S. Department of Health and Human Services. Centers for Disease Control and Prevention (CDC), National Center for Health Statistics (NCHS), Vintage 2009 Bridged Race postcensal population estimates for July 1, 2000 to July 1, 2009 by year, county, single year of age (0-85+ years), bridged race, Hispanic origin, and sex and Vintage 2013 Bridged Race postcensal population estimates for July 1, 2010 to July 1, 2013 by year, county, single year of age (0-85+ years), bridged race, Hispanic origin, and sex Available at: <http://www.cdc.gov/nchs/nvss/bridged_race.htm>

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7 Joinpoint Regression Program [computer program]. Version 4.2. Bethesda, MD: National Cancer Institute; June 2015. Available at: http://srab.cancer.gov/joinpoint/.

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

   Source: Massachusetts Vital Statistics [↑](#footnote-ref-1)
2. Rates are age-adjusted to the 2000 U.S. Standard Population. [↑](#footnote-ref-2)
3. per 100,000 males

   Source: Massachusetts Vital Statistics [↑](#footnote-ref-3)
4. Rates are age-adjusted to the 2000 U.S. Standard Population. [↑](#footnote-ref-4)
5. per 100,000 females

   Source: Massachusetts Vital Statistics [↑](#footnote-ref-5)
6. Rates are age-adjusted to the 2000 U.S. Standard Population. [↑](#footnote-ref-6)
7. per 100,000 total population

   3Dashes indicate cancers found in only one sex or predominantly in one sex (breast cancer). [↑](#footnote-ref-7)
8. Rates are age-adjusted to the 2000 U.S. Standard Population. [↑](#footnote-ref-8)
9. per 100,000

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

   Source: Massachusetts Cancer Registry [↑](#footnote-ref-9)
10. Race/ethnicity categories are mutually exclusive. Cases are only included in one race/ethnicity category. [↑](#footnote-ref-10)
11. The 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 [↑](#footnote-ref-11)
12. Race/ethnicity categories are mutually exclusive. Cases are only included in one race/ethnicity category. [↑](#footnote-ref-12)
13. The 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 [↑](#footnote-ref-13)
14. 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. 4 Breast in situ cases are excluded from ‘All Sites’ and from breast cancer counts. Source: Massachusetts Cancer Registry [↑](#footnote-ref-14)
15. Rates are age-adjusted to the 2000 U.S. Standard Population. [↑](#footnote-ref-15)
16. per 100,000 [↑](#footnote-ref-16)
17. Race/ethnicity categories are mutually exclusive. Cases are only included in one race/ethnicity category. 4 Breast *in situ* is excluded from ‘All Sites’.

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

    Source: Massachusetts Cancer Registry [↑](#footnote-ref-17)
18. Rates are age-adjusted to the 2000 U.S. Standard Population. [↑](#footnote-ref-18)
19. per 100,000 [↑](#footnote-ref-19)
20. Race/ethnicity categories are mutually exclusive. Cases are only included in one race/ethnicity category. 4 Breast *in situ* cases are excluded from ‘All Sites’.

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

    Source: Massachusetts Cancer Registry [↑](#footnote-ref-20)
21. Rates are age-adjusted to the 2000 U.S. Standard Population. [↑](#footnote-ref-21)
22. per 100,000 [↑](#footnote-ref-22)
23. Race/ethnicity categories are mutually exclusive. Cases are only included in one race/ethnicity category. 4 Breast *in situ* cases are excluded from ‘All Sites’. 5 Dashes 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 [↑](#footnote-ref-23)
24. Rates are age-adjusted to the 2000 U.S. Standard Population. [↑](#footnote-ref-24)
25. per 100,000

    Source: Massachusetts Vital Statistics [↑](#footnote-ref-25)
26. Race/ethnicity categories are mutually exclusive. Deaths are only included in one race/ethnicity category. [↑](#footnote-ref-26)
27. The number of deaths for all races is not the sum of deaths by race/ethnicity.

    Source: Massachusetts Vital Statistics [↑](#footnote-ref-27)
28. Race/ethnicity categories are mutually exclusive. Deaths are only included in one race/ethnicity category. [↑](#footnote-ref-28)
29. The number of deaths for all races is not the sum of deaths by race/ethnicity.

    Source: Massachusetts Vital Statistics [↑](#footnote-ref-29)
30. Race/ethnicity categories are mutually exclusive. Deaths are only included in one race/ethnicity category. [↑](#footnote-ref-30)
31. The number of deaths for all races is not the sum of deaths by race/ethnicity.

    Source: Massachusetts Vital Statistics [↑](#footnote-ref-31)
32. Rates are age-adjusted to the 2000 U.S. Standard Population. [↑](#footnote-ref-32)
33. per 100,000 [↑](#footnote-ref-33)
34. Race/ethnicity categories are mutually exclusive. Deaths are only included in one race/ethnicity category.

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

    Source: Massachusetts Vital Statistics [↑](#footnote-ref-34)
35. Rates are age-adjusted to the 2000 U.S. Standard Population. [↑](#footnote-ref-35)
36. per 100,000 [↑](#footnote-ref-36)
37. Race/ethnicity categories are mutually exclusive. Deaths are only included in one race/ethnicity category.

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

    Source: Massachusetts Vital Statistics [↑](#footnote-ref-37)
38. Rates are age-adjusted to the 2000 U.S. Standard Population. [↑](#footnote-ref-38)
39. per 100,000 [↑](#footnote-ref-39)
40. Race/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). [↑](#footnote-ref-40)