

# A Profile of Health Among Massachusetts Adults, 2009

Results from the Behavioral Risk Factor Surveillance  
System

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HEALTH SURVEY PROGRAM  
DIVISION OF RESEARCH AND EPIDEMIOLOGY  
BUREAU FOR HEALTH INFORMATION,  
STATISTICS, RESEARCH, AND EVALUATION  
MASSACHUSETTS DEPARTMENT OF PUBLIC HEALTH



June 2010

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# Massachusetts Department of Public Health

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## Health Survey Program

Division of Research and Epidemiology  
Bureau of Health Information, Statistics, Research, and Evaluation

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Results from the Behavioral Risk Factor Surveillance System

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*Timothy P. Murray, Lieutenant Governor*

*JudyAnn Bigby, MD, Secretary of Health and Human Services*

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*June 2010*

# ACKNOWLEDGEMENTS

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# TABLE OF CONTENTS

	<u>Page</u>
<b>NEW IN THIS REPORT</b>	<b>4</b>
<b>INTRODUCTION</b>	<b>5</b>
About This Report	5
Terms, Definitions, and Statistical Methodology Used in This Report	6
Demographic Profile of BRFSS Respondents	9
Map of Massachusetts EOHHHS Regions	10
<b>SUMMARY OF RESULTS</b>	<b>11</b>
<b>RESULTS- DETAILED TABLES</b>	
<b>1. Overall Health Measures</b>	<b>22</b>
Section 1.1: Overall Health Status	23
Section 1.2: Quality of Life	25
Section 1.3: Disability	28
<b>2. Health Care Access and Utilization</b>	<b>31</b>
Section 2.1: Health Insurance Status	32
Section 2.2: Health Care Access	34
<b>3. Risk Factors and Preventive Behaviors</b>	<b>38</b>
Section 3.1: Tobacco Use	39
Section 3.2: Smoking Cessation	42
Section 3.3: Environmental Tobacco Smoke	45
Section 3.4: Alcohol Use	48
Section 3.5: Overweight and Obesity Status	51
Section 3.6: Physical Activity	54
Section 3.7: Fruit and Vegetable Consumption	56
Section 3.8: Cholesterol Awareness	58
Section 3.9: Hypertension Awareness	60
Section 3.10: Flu Vaccine and Pneumonia Vaccine	62
<b>4. Chronic Health Conditions</b>	<b>67</b>
Section 4.1: Diabetes	68
Section 4.2: Asthma	70
Section 4.3: Arthritis	73
Section 4.4: Heart Disease and Stroke	75
Section 4.5: Prescription Drug Use and Health	78
<b>5. Other Topics</b>	<b>80</b>
Section 5.1: Sexual Orientation	81
Section 5.2: HIV Testing	83
Section 5.3: Sexual Violence	86
<b>Appendix</b>	<b>88</b>
H1N1 Vaccination Coverage	89
Age Adjusted Percentages for Selected Topics	91
Massachusetts Estimates, National Estimates, and Healthy People 2010	99
Item-Specific Non-Response	100
Limitations	101
References	102

# NEW IN THIS REPORT

The overall presentation style and content of the report has not changed since 2008.

Many of the differences in health indicators between population subgroups remain the same as in the previous year's report; therefore we include only selected results in the summary section of this report. Detailed information on all indicators may be obtained from the tables and charts in the body of the report.

Statewide and national (where available) time trends for the time period 2000-2009 are included in the report this year. Trend analysis was conducted for state indicators (see p.7 for more details). National data are presented for comparison purposes. The significant changes in MA residents' health over time are discussed in the summary and in the body of the report.

Two new topics have been added to this year's report:

- Data on prescription drug use for selected medical conditions such as insomnia, depression and chronic pain has been added (SECTION 4.5);
- Data on sexual orientation has been added (SECTION 5.1).

In response to the H1N1 pandemic, starting in September 2009, all U.S. states and territories implemented an emergency core survey supplement to the BRFSS. From September 2009 through March 2010, data were collected at the state level on symptoms of influenza-like-illness; from October 2009 and continuing through June 2010, data have been collected on novel H1N1 immunization. Data collected from October-December 2009 on the topic of novel H1N1 immunization in Massachusetts are presented in the Appendix for all adults by age group as well as high risk groups (adults with asthma, other lung problems, diabetes, heart disease, kidney problems, anemia and/or weakened immune system).

Since 2008, the Massachusetts BRFSS has conducted a multimode survey in order to improve the coverage of the state's population including wireless-only users. In the same year, the Centers for Disease Control began applying a new weighting methodology to the BRFSS in order to account for socio-demographic differences in the population. The data presented in this report are based on data collected from the landline survey only as well as the traditional weighting methodology used in previous annual reports. CDC anticipates the release of the 2009 combined cell and landline sample, including the new weighting methodology, later this year. At that time, a supplement to this annual report will be released to include the new estimates of main health indicators based on the addition of the wireless-only sample as well as the new weighting methodology.

# INTRODUCTION

The Behavioral Risk Factor Surveillance System (BRFSS) is a continuous, random-digit-dial, landline-only telephone survey of adults ages 18 and older and is conducted in all states as a collaboration between the federal Centers for Disease Control and Prevention (CDC) and state departments of health. The survey has been conducted in Massachusetts since 1986. The BRFSS collects data on a variety of health risk factors, preventive behaviors, chronic conditions, and emerging public health issues. The information obtained in this survey assists in identifying the need for health interventions, monitoring the effectiveness of existing interventions and prevention programs, developing health policy and legislation, and measuring progress toward attaining state and national health objectives.

Each year, the BRFSS includes a core set of questions developed by the CDC. In 2009, these questions addressed health status, health care access and utilization, overweight and obesity status, asthma, diabetes, immunizations, tobacco use, alcohol consumption, HIV/AIDS testing and other selected public health topics.

In addition to the core CDC questions, the Massachusetts Health Survey Program, in collaboration with Massachusetts Department of Public Health programs, added a number of topics to the surveillance instrument including environmental tobacco exposure, disability and quality of life, cancer survivorship, sexual violence, chronic pain and prescription drug use and other selected topics.

Interviews were administered in the respondents' preferred language, with a choice of English, Spanish, or Portuguese. In 2009, 16,731 interviews were conducted among Massachusetts adults. To increase the number of respondents who belong to racial and/or ethnic minority groups, the cities of Boston, Worcester, Springfield, Lawrence, Lowell, Fall River, and New Bedford were oversampled, as in previous years.

## ABOUT THIS REPORT

This report summarizes selected results from the 2009 Massachusetts BRFSS. Some of the key findings are discussed in the Summary of Results. In each section of the report, a description of survey questions used to obtain estimates for key variables is provided along with an explanation of the importance of each indicator for public health. Tables detailing the overall estimates and estimates by demographic and socioeconomic characteristics (gender, age, race-ethnicity, disability status, education, annual household income, and Massachusetts health service regions) are provided in the main body of the report in the form of crude percentages. Where possible, figures comparing 2009 results to previous years' results, back to the year 2000, are provided for variables that have been measured for five or more years. The national trend data for the same time period are also presented if available to enable comparison between Massachusetts and national data.

United States (US) median data for all participating states and territories for the same variables are presented for 2009 in a separate table together with the Healthy People 2010 Objectives and state data.

In the appendix of the report, tables detailing age-adjusted percentages for 2009 indicators and their 95% confidence intervals are presented.

Data on novel H1N1 immunization for September through December 2009 is provided in the Appendix. Data are presented for adults by age group and for population subgroups under a higher risk such as respondents with chronic conditions. These data were collected through an emergency core survey supplement which was implemented beginning in September 2009.

All percentages in this report are weighted (see definition in next section) to the total Massachusetts population in 2009.

## TERMS, DEFINITIONS, AND STATISTICAL METHODOLOGY USED IN THIS REPORT

The BRFSS data are **weighted** to take into account differences in probabilities of selection due to the telephone number, the number of telephones in a household, and the number of adults in a household. Adjustments are also made to account for non-response, non-coverage of households without landline telephones and differential participation by sex, age and race/ethnicity. All the weighting factors are multiplied together to get the final weight for each respondent so that the weighted BRFSS data represents the adult population of Massachusetts. This final overall weight is appropriate to use for analysis of the questions asked on all three versions of the questionnaire. Massachusetts sample design includes three questionnaires (versions or “splits”), to allow for an increase in the number of questions asked without an increase in the length of the survey. Beginning in 2008, additional weights have been calculated for use with questions that are asked on only one version (“split”) of the questionnaire. The intent of these “split weights” is to obtain a more accurate estimate of prevalence for health indicators that are asked of only a portion of the survey respondents.

The data presented here are univariate, descriptive percentages that are either crude or age-adjusted. No multivariate analysis was performed on this data, and thus this report contains no inferences about causality.

The **crude percentage** is the weighted proportion of respondents in a particular category. When percentages are reported in the text of this report, they are referring to crude percentages. The crude percentage of respondents used in this report reflects the burden of a certain health status indicator in a specific group of the population e.g. age group, gender etc.

Although the overall sample size for 2009 was 16,731, the underlying size of the sample used to produce particular estimates varies depending on whether the data come from the core of the BRFSS or one of the sample splits through which optional modules and Massachusetts-added questions are administered. The 2009 BRFSS contained three splits: split 1 contained 5,496 respondents, split 2 contained 5,693 respondents, and split 3 contained 5,542 respondents.

The underlying **sample size (N)** in each cell of the presented tables is the number of people who answered “yes” or “no” to the corresponding question. The crude proportion is a weighted ratio of those who answered “yes” to the corresponding question versus all who responded to the question. Those who responded “don’t know” or refused to respond to a question were excluded from the analysis of that question.

The **age-adjusted percentage** is a weighted average of the age-specific proportions. The projected 2000 US population was used as a standard for the calculation. These estimates are presented in tables in the Appendix of this report. The age-adjusted percentage is a single, calculated number. Age-adjustment is done in order to be able to compare population subgroups with potentially different age structures (e.g., Hispanic vs. White non-Hispanic). The reader should exercise caution when using age-adjusted percentages for the comparison of survey data subgroups. While the estimates have been adjusted by age, other factors like gender, income, or education and their possible correlation may also have an impact on the results of subgroup comparisons (see Appendix).

The **US median** is calculated for the estimates from all participating states, the District of Columbia, and territories for each respective indicator when available. The values are ordered from lowest to

highest and the middle value is then chosen (if the number of values is odd) or calculated as the average of the two middle values (if the number of values is even). The median then represents a value for which half of the states have higher estimates and half of the states have lower estimates.

**The 95% confidence interval (95% CI)** is a range of values determined by the degree of variability of the data within which the true value is likely to lie. The confidence interval indicates the precision of a calculation; the wider the interval the less precision in the estimate. The 95% confidence intervals used in this report for crude and age-adjusted percentages are the indicators of reliability (or stability) of the estimate. Smaller population subgroups or smaller numbers of respondents yield less precise estimates.

**Suppression of the presented estimates:**

- a) Estimates and their 95% confidence intervals are not presented in the tables if the underlying sample size is less than 50 respondents.
- b) Following recommendations of the National Center for Health Statistics, data are not presented in the tables if a ratio of standard error to the estimate itself exceeds 30% (relative standard error of greater than 30%). Standard error of the estimate is a measure of its variability. Bigger standard errors yield wider confidence intervals and less reliable estimates [1].

An exception to these suppression rules can be found in the presentation of novel H1N1 immunization data in the Appendix, which was collected for 3 months in 2009 and therefore has a small underlying sample size and larger relative standard error by design. In order to present these data by month, age group, and for high risk adults, standard suppression rules were not applied; as a result, these data should be interpreted with caution.

**Statistical significance** (at the 95% probability level) was considered as a basis when we used the terms “more likely”, “less likely”, “about the same”, “increase” or “decrease.” Differences between percentages for respective subgroups are presented when a difference is statistically significant.

We considered the difference between two percentages to be statistically significant (with 95% probability) if the 95% confidence intervals surrounding the two percentages do not overlap, which is a conservative estimation for determining statistical significance [2]. We use the terms “**more likely**” or “**less likely**” when comparing percentages that met the criteria for statistical significance.

**Annual Percent Change (APC)** shows how fast or slow a percentage has increased or decreased over the observed period of time. Only statistically significant **APCs** are referred to in the text of this report. The **APC** is a measure used for the analysis of trends over time. This estimation assumes a linear change in the proportion of values over a certain time period. A positive **APC** corresponds to an increasing trend, while a negative **APC** corresponds to a decreasing trend. All **APCs** calculated in this report were statistically tested (95% probability level) against the “null hypothesis”- the proportion value is neither increasing nor decreasing over time. The linear approximation for the overall trend may not be accurate for longer periods of time (over 5 years) because the trend may change direction over time. In these cases more detailed trend analysis was conducted and change in trend direction was indicated.

**Join point regression** was used to calculate the number and location (in time) of points where trends change direction (join points) [3]. The join point regression model describes the trend as a sequence of linear segments between corresponding join points, so that each segment has an associated **APC**, which is tested for its statistical significance [4, 5].

**Disability** was defined as having one or more of the following conditions for at least one year: (1) impairment or health problem that limited activities or caused cognitive difficulties; (2) used special equipment or required help from others to get around; or (3) reported a disability of any kind.



**Race-ethnicity categories** in this report include White, Black, Hispanic, and Asian. When referring to White, Black, or Asian, these categories include only non-Hispanic respondents. All respondents reporting Hispanic ethnicity are included in the Hispanic category regardless of race.

**Healthy People 2010 Objectives:** *Healthy People 2010: National Health Promotion and Disease Prevention Objectives* is a national agenda that aims to significantly improve the health of Americans in the decade proceeding the year 2010. Developed through an extensive governmental, professional, and public national process, Healthy People 2010 defined two broad national goals: to increase quality and years of healthy life and to eliminate health disparities. These goals were supported by 476 specific objectives that set priorities for public health during the first decade of the 2000's. The objectives were organized into 28 priority areas and for each objective, a numeric national target for the year 2010 was set [6]. For each health status indicator in this report that has a corresponding Healthy People 2010 Objective, the year 2010 target is shown in the summary table at the end of the document.

# DEMOGRAPHIC CHARACTERISTICS OF RESPONDENTS

## MASSACHUSETTS BEHAVIORAL RISK FACTOR SURVEILLANCE SYSTEM, 2009

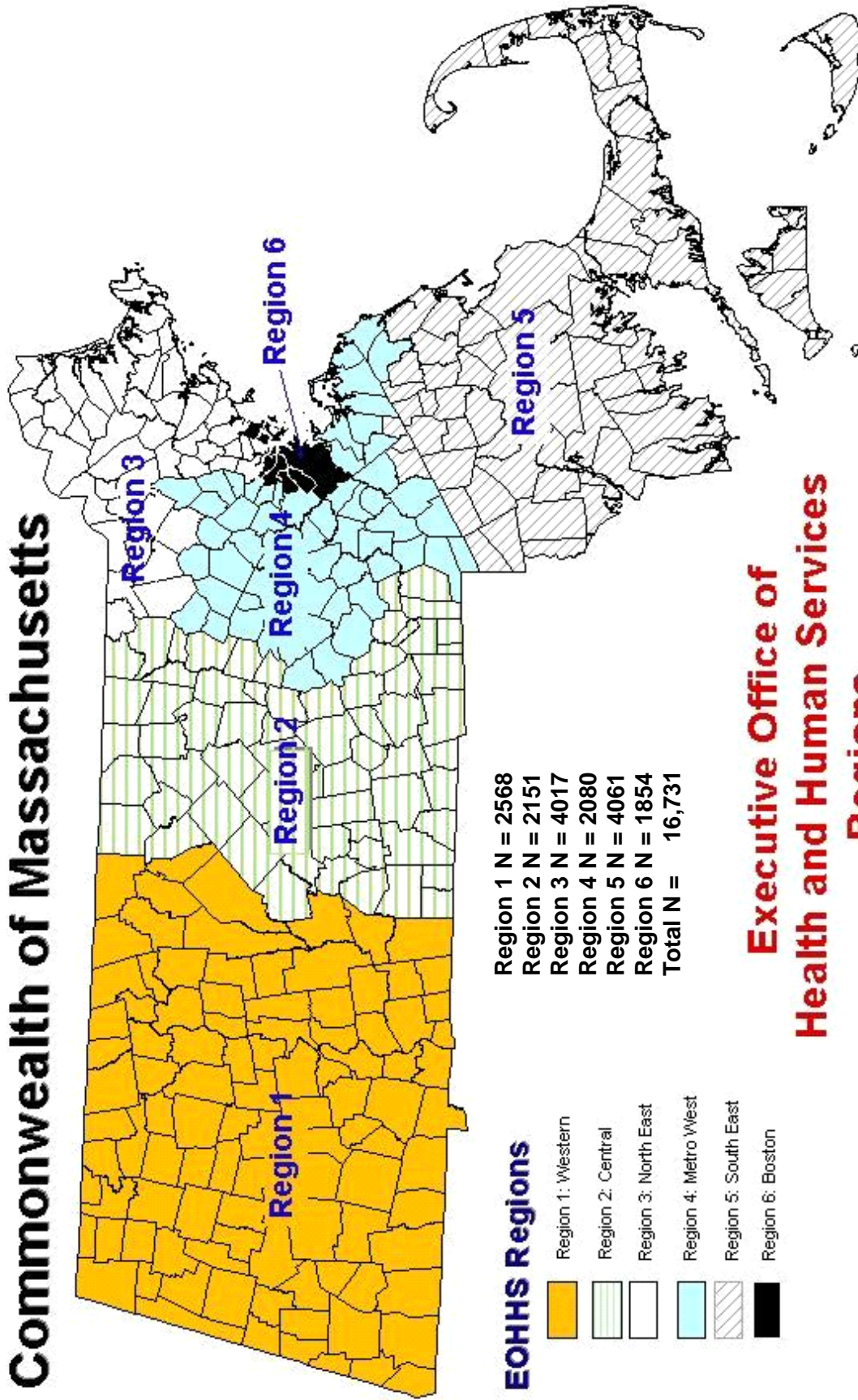
	UNWEIGHTED SAMPLE SIZE	WEIGHTED PERCENT
	N	% †
OVERALL	16,731	100
GENDER		
MALE	6216	47.8
FEMALE	10515	52.2
AGE GROUP		
18–24	475	12.7
25–34	1529	16.5
35–44	2584	18.8
45–54	3605	19.8
55–64	3509	14.5
65–74	2459	8.9
75 AND OLDER	2301	8.9
RACE-ETHNICITY*		
WHITE	13569	82.5
BLACK	888	5.6
HISPANIC	1420	8.6
ASIAN	266	3.3
DISABILITY¶		
DISABILITY	1268	21.2
NO DISABILITY	3421	78.8
EDUCATION		
< HIGH SCHOOL	1788	7.4
HIGH SCHOOL	4281	24.3
COLLEGE 1–3 YRS	3877	23.9
COLLEGE 4+ YRS	6686	44.4
HOUSEHOLD INCOME		
<\$25,000	3858	19.6
\$25,000–34,999	1448	8.6
\$35,000–49,999	1782	12.5
\$50,000–74,999	2020	14.0
\$75,000+	4790	45.2
REGION		
I–WESTERN	2568	16.5
II–CENTRAL	2151	14.0
III–NORTH EAST	4017	18.5
IV–METRO WEST	2080	22.7
V–SOUTH EAST	4061	20.0
VI–BOSTON	1854	8.3

\* White, Black, and Asian race categories refer to non-Hispanic

† See BRFS methodology in “Terms, Definitions and Methodology Used in this Report”

¶ Disability defined as having one or more of the following conditions for at least one year: (1) impairment or health problem that limited activities or caused cognitive difficulties; (2) used special equipment or required help from others to get around; or (3) reported a disability of any kind.

# Commonwealth of Massachusetts



Region 1	N = 2568
Region 2	N = 2151
Region 3	N = 4017
Region 4	N = 2080
Region 5	N = 4061
Region 6	N = 1854
<b>Total N</b>	<b>= 16,731</b>

- EOHHS Regions**
- Region 1: Western
  - Region 2: Central
  - Region 3: North East
  - Region 4: Metro West
  - Region 5: South East
  - Region 6: Boston

## Executive Office of Health and Human Services Regions

# SUMMARY OF RESULTS

The 2009 Massachusetts BRFSS contained questions pertaining to social and demographic information including gender, race and ethnicity, income level, education level, disability status, and region of the state in which the respondent lived in order to examine potential disparities in health status and access to health care among these groups. A selected list of statistically significant results for these groups is presented below.

## GENDER

### **Description of overall health:**

- Females were more likely (10%) than males (7%) to report 15 or more days of poor mental health in the past month.
- Females reported having experienced sexual violence at significantly higher rates (15%) than males (5%).

See tables 1.2 and 5.3

### **Health care access and utilization:**

- Females were less likely (2%) than males (5%) to report that they had no health insurance, were more likely (93%) than males (86%) to report having a personal health care provider, and were more likely (81%) than males (71%) to report that they had had a routine checkup in the past year.

See tables 2.1 and 2.2

### **Health risk factors:**

- Females were less likely (33%) than males (44%) to report that they were exposed to environmental tobacco smoke, were less likely than males to report engaging in binge drinking (13% vs. 23%), and were less likely to report being overweight (48% vs. 68%) or obese (19% vs. 25%).

See tables 3.3, 3.4, and 3.5

### **Chronic health conditions:**

- Females were more likely (13%) than males (8%) to report that they currently have asthma, had ever been diagnosed with asthma (18% vs. 13%) or had ever been diagnosed with arthritis (30% vs. 20%), but were less likely than males to report that they had ever experienced a heart attack or angina (4% vs. 7%) or been diagnosed with diabetes (7% vs. 9%).
- Females were more likely (23%) than males (16%) to report seeing a health care provider for chronic pain, anxiety, insomnia or hyperactivity.

See tables 4.1, 4.2, 4.3, and 4.4 and 4.5

### **Prevention measures:**

- Females were more likely (86%) than males (82%) to report having their cholesterol checked in the past five years, but were less likely to report having high cholesterol (32% vs. 39%)
- Females age 65 and older were more likely to have ever received a pneumonia vaccination (74%) than males in the same age group (67%)
- Among those with high blood pressure, females were more likely (83%) than males (75%) to report taking medication to control their blood pressure.
- Females were less likely (28%) than males (34%) to report engaging in vigorous physical activity.

- Females were more likely to report consuming 5 or more servings of fruits and vegetables daily (32% vs. 20%)
- Among both men and women, fewer than one-third of Massachusetts adults consume 5 or more servings of fruits and vegetables per day.
- Among both men and women, only about one-half of Massachusetts adults report 30 minutes or more of moderate physical activity at least 5 days per week, and only one-third of Massachusetts adults report 20 minutes or more of vigorous physical activity at least 3 days per week.

See tables 3.6, 3.7, 3.8, 3.9, and 3.10

## **AGE**

Discussed below are selected statistically significant differences in health and behavioral indicators observed in three broad age groups: young (18-34), middle-aged (35-64) and older (65+) respondents. Some preventive health measures are recommended for people ages 50 and over, and therefore the variables dealing with these activities address only prevalence among the adult population in those age groups. Questions about certain health indicators were not asked of respondents 65 years and older; in these cases, comparisons were made between the two younger age groups.

### **ADULTS AGES 18-34:**

#### **Description of overall health:**

Adults ages 18-34 were:

- less likely (6%) to report that their health was fair or poor than adults ages 35-64 (12%) or adults ages 65 and older (23%) and less likely to experience 15 or more days of poor physical health in the past month (5%) than adults ages 35-64 (8%) or adults ages 65 and older (15%)

See tables 1.1, and 1.2

#### **Health care access and utilization:**

Adults ages 18-34 were:

- more likely to report not having health insurance (6%) than adults ages 35-64
- less likely to report having a personal health care provider (79%) than adults ages 35-64 (93%) or adults ages 65 and older (96%).
- more likely to report not being able to see a doctor at some point in the past year due to cost (11%) than adults ages 35-64 (6%) or adults ages 65 and older (3%).
- less likely to report having a routine checkup in the past year (67%) than adults ages 35-64 (77%) or adults ages 65 and older (90%).

See tables 2.1 and 2.2

#### **Health risk factors:**

Adults ages 18-34 were:

- more likely to report current smoking (19%) than adults ages 65 or older (8%) and more likely to report exposure to environmental tobacco smoke (57%) than adults ages 35-64 (34%) or adults ages 65 and older (23%).
- more likely to engage in binge drinking (30%) than adults ages 35-64 (16%) or adults ages 65 and older (4%)
- less likely to be overweight (46%) or obese (18%) than were adults ages 35-64 (62% overweight, 24% obese) or adults ages 65 and older (63% overweight, 22% obese).
- less likely to report having high cholesterol (17%) than adults ages 35-64 (37%) or adults 65 and older (51%).

See tables 3.1, 3.3, 3.4, 3.5 and 3.8

**Chronic health conditions:**

- Adults ages 18-34 were less likely to report that they had ever been diagnosed with diabetes (2%) than were adults ages 35-64 (8%) or adults ages 65 or older (18%) but were more likely to report ever being diagnosed with asthma (21%) than were adults ages 35-64 (15%) or adults ages 65 and older (12%).

See tables 4.1 and 4.2

**Prevention measures:**

Adults ages 18-34 were:

- more likely to report that they had ever been tested for HIV (50%) than adults ages 35-64 (40%) and three times more likely than adults ages 35-64 to have been tested in the past year (19% vs. 6%)
- more likely to meet recommendations for moderate physical activity (58%) than were adults 65 and over (42%) and more meet recommendations for vigorous physical activity (39%) than adults ages 35-64 (32%) or adults 65 and over (15%)

See tables 3.6 and 5.2

**ADULTS AGES 65 AND OVER****Description of overall health:**

Adults ages 65 and older were:

- more likely to report fair or poor health (23%) than adults ages 18-34 (6%) or 35-64 (12%) and more likely to report 15 or more days of poor physical health in the past month (15%) than were adults ages 18-34 (5%) or adults ages 35-64 (8%)
- less likely to report 15 or more days of poor mental health in the past month (6%) than adults in other age groups (10% for both groups).
- more likely to report a disability (34%) or a disability for which they needed help with activities (11%) than were adults ages 18-34 (16% for disabled) or adults ages 35-64 (20% for disabled, 5% for needed help).

See tables 1.1, 1.2, and 1.3

**Health care access and utilization:**

- Adults ages 65 and older were less likely than any other age group to report not being able to see a doctor at some point in the past year due to cost (3%) and more likely than any other age group to have had a routine checkup in the past year (90%).

See table 2.2

**Health risk factors:**

Adults ages 65 and older were

- less likely to report current smoking (8%) than adults ages 18-34 (19%) or adults ages 35-64 (16%) and less likely to report exposure to environmental tobacco smoke (23%) than any other age group.
- much less likely to report binge drinking (4%) than were adults ages 18-34 (30%) or ages 35-64 (16%).
- more likely to report having high cholesterol (51%) than any other age group.

See tables 3.1, 3.3, 3.4 and 3.8

**Chronic health conditions:**

Adults ages 65 and older were:

- approximately nine times as likely (18%) to report that they had been diagnosed with diabetes as were adults ages 18-34 (2%) and approximately twice as likely as adults ages 35-64 (8%)
- more likely (9% for adults 65-74; 16% for adults 75 and over) than adults ages 55-64 (6%) to report that they had ever experienced a heart attack and more likely (4% for adults ages 65-

74; 8% for adults ages 75 and older) than adults ages 55-64 (2%) to report that they had experienced a stroke.

- much more likely to report being diagnosed with arthritis (54%) than adults ages 18-34 (4%) or adults ages 35-64 (26%).

See tables 4.1, 4.3, and 4.4

#### **Prevention measures:**

- Adults ages 65 and over were less likely to report meeting recommendations for moderate physical activity (42%) or vigorous physical activity (15%) than any other age group.
- Adults ages 65-74 were less likely to report ever having had a pneumonia vaccine (65%) than were adults ages 75 and older (78%).
- Adults age 65 and older were more likely to report receiving a flu shot in the past year (73%) than adults ages 50-64 (49%).

See tables 3.6 and 3.10

## **DISABILITY**

Presented below are statistically significant differences in health and behavioral indicators by disability status. Disability was defined as having one or more of the following conditions for at least one year: (1) impairment or health problem that limited activities or caused cognitive difficulties; (2) used special equipment or required help from others to get around; or (3) a reported disability of any kind.

#### **Description of overall health:**

- Adults with a disability were over seven times as likely to report fair or poor health (38%) as adults without a disability (5%), were more than four times as likely to report 15 or more days of poor mental health in the past month (21%) as adults without a disability (5%), and were six times as likely to report 15 or more days of poor physical health in the past month (26%) as adults without a disability (4%).
- Adults with a disability (males and females combined) were three times as likely to report experiencing sexual violence (22%) as adults without a disability (7%).

See tables 1.1, 1.2, and 5.3

#### **Health care access and utilization**

- Adults with a disability were more likely to report having a routine checkup in the past year (83%) than adults without a disability (76%); however, adults with a disability were more than twice as likely as adults without a disability to report not being able to see a doctor at some point in the past year due to cost (14% vs. 5%).

See table 2.2

#### **Health risk factors:**

Adults with a disability were:

- more likely (20%) to report being current smokers than adults without a disability (13%) and less likely to report living in a household where smoking is not allowed (73%) than adults without a disability (82%)
- more likely to be overweight (63%) or obese (31%) than adults without a disability (55% overweight, 19% obese)
- more likely to report having high cholesterol (49%) than adults without a disability (34%).

See tables 3.1, 3.3, 3.5, and 3.8

#### **Chronic health conditions:**

Adults with a disability were:

- more likely to report being diagnosed with high blood pressure (41%) than those without a disability (22%).

- twice as likely (8%) to report being diagnosed with pre-diabetes as adults without a disability (3%) and almost three times as likely (14%) to report being diagnosed with diabetes as adults without a disability (6%)
- more likely to report ever being diagnosed with asthma (26%) as adults without a disability (14%) and more than twice as likely (20%) as adults without a disability (9%) to report that they currently have asthma
- almost three times as likely to report that they had ever experienced a heart attack (11%) as people without a disability (4%) and approximately six times as likely (7%) as adults without a disability (1%) to report that they had ever experienced a stroke.

See tables 3.9, 4.1, 4.2, and 4.4

#### **Prevention measures:**

- Adults with a disability were less likely to report moderate (48%) or vigorous (22%) physical activity than adults without a disability (57% moderate, 36% vigorous).
- Adults 18-64 years of age with a disability were more likely to report ever having been tested for HIV (51%) than those without a disability (40%).
- Among adults 50-64 years of age, those with a disability were more likely to report receiving a flu shot in the past year (62%) than those without a disability (47%).
- Among those 65 years of age and older, those with a disability were more likely to report ever having received a pneumonia vaccination (81%) than those without a disability (67%).

See table 3.6, 3.10 and 5.2

## **EDUCATION**

Below we present differences between groups based on educational attainment. For this summary of findings, we compare the lowest level of educational attainment (“less than high school”) to the highest level of educational attainment (“four years of college or more”) as these show the greatest differences.

#### **Description of overall health:**

- Adults with less than a high school education reported the highest percentage (33%) of fair or poor health among adults at any educational level.
- Adults with less than a high school education were four times as likely (18%) to report poor physical health as those with four or more years of college education (4%) and were more likely (15%) than adults with four or more years of college education (6%) to report 15 or more days of poor mental health in the past month.
- Adults with less than a high school education were almost three times as likely to report having a disability (45%) as adults with four or more years of college education (16%).

See tables 1.1, 1.2 and 1.3

#### **Health care access and utilization:**

Adults with less than a high school education were:

- more likely than adults at any other educational level to report not having health insurance (15%), less likely to report having a personal health care provider (79%) than adults with four or more years of college education (92%), and more likely to report not being able to see a doctor at some point in the past year due to cost (15%) than adults with four or more years of college education (4%).

See tables 2.1 and 2.2

#### **Health risk factors:**

Adults with less than a high school education were:

- more likely than adults with four or more years of college education to report current smoking (27% vs. 7%), less likely to live in a household where smoking is not allowed



(70% vs. 88%), and more likely than adults with four or more years of college education to report being exposed to environmental tobacco smoke (46% vs. 30%).

- more likely to report being obese (26%) than adults with four or more years of college education (17%)
- less likely than adults with four or more years of college education to report having their cholesterol checked within the past five years (72% vs. 90%), but more likely to have been told their cholesterol was high (40% vs. 33%).

See tables 3.1, 3.3, 3.5, and 3.8

### **Chronic health conditions:**

Adults with less than a high school education were:

- more likely to report current asthma (15%) and diabetes (12%) than those with 4 or more years of college education (10% for asthma, 6% for diabetes)
- more likely to report having been diagnosed with high blood pressure (33%), having experienced a heart attack (11%) or having had a stroke (6%) than those with 4 or more years of college education (21% for high blood pressure 4% for heart attack, 2% for stroke).
- more likely to report being diagnosed with arthritis (29%) and having limitations due to arthritis (17%) than those with 4 or more years of college education (21% for diagnosis, 8% for limitations)

See tables 3.9, 4.1, 4.2, 4.3 and 4.4

### **Prevention measures:**

Adults with less than a high school education were:

- more likely (24%) to report having been tested for HIV in the past year than were adults with 4 or more years of college education (9%).
- less likely than adults with four or more years of college education to report meeting recommendations for moderate (40% vs. 58%) or vigorous physical activity (21% vs. 36%).
- less likely to report consuming five or more servings of fruits and vegetables daily (20%) than adults with four or more years of college education (31%).

See tables 3.6, 3.7, and 5.2

## **HOUSEHOLD INCOME**

Household income is a sensitive topic among survey respondents; approximately **17%** of respondents to the 2009 survey refused to answer questions about their household income levels. Thus, caution should be exercised when interpreting results based on income level. Results for the lowest level of household income (“less than \$25,000”) and the highest level of household income (“\$75,000 or higher”) are presented below; more detailed figures are contained in the tables in the report.

### **Description of overall health:**

- Adults with a household income less than \$25,000 a year were almost seven times more likely to report fair or poor health status (29%) than adults with a household income of \$75,000 or higher (4%), five times more likely to report 15 or more days of poor physical health in the past month (19% vs. 4%), and three times more likely to report 15 or more days of poor mental health in the past month (17% vs. 6%).
- Adults with a household income less than \$25,000 a year were more likely to report having a disability (38%) and were more likely to report needing help with activities (14%) than adults with a household income of \$75,000 or higher (13% for disability, 2% for need help).

See tables 1.1, 1.2, and 1.3

### **Health care access and utilization**

- Adults with a household income less than \$25,000 a year were less likely to have a personal health care provider (84%) than adults with a household income of \$75,000 or

higher (93%) and were more likely than adults with a household income of \$75,000 or higher to report not being able to see a doctor at some point in the past year due to cost (13% vs. 2%).

See table 2.2

### **Health risk factors:**

Adults with a household income less than \$25,000 per year were:

- more likely to report being current smokers (25%) and exposure to environmental tobacco smoke (43%) than adults with a household income of \$75,000 or higher (10% for current smoking, 32% for environmental tobacco smoke)
- less likely to report living in a household where smoking is not allowed (70%) than adults with a household income of \$75,000 or higher (88%).
- more likely to be obese (27%) than those with an annual household income of more than \$75,000 (19%)
- less likely to report engaging in binge drinking (12%) and heavy drinking (4%) than adults with a household income of \$75,000 or higher (21% for binge drinking, 7% for heavy drinking).
- less likely than with a household income of \$75,000 or higher to report having their cholesterol checked within the past five years (75% vs. 90%), but more likely to have been told their cholesterol was high (40% vs. 33%).

See tables 3.1, 3.3, 3.4, 3.5 and 3.8

### **Chronic health conditions:**

Adults with a household income less than \$25,000 per year were:

- nearly twice as likely to report having been diagnosed with high blood pressure (36%) as adults with a household income of \$75,000 or higher (19%).
- more likely to report having been told they have pre-diabetes (7%) or diagnosed with diabetes (13%) than adults with a household income of \$75,000 or higher (4% for pre-diabetes, 5% for diabetes).
- more likely to report having current asthma (15%) than adults with a household income of \$75,000 or higher (9%)
- more likely to report a diagnosis of arthritis (31%) than adults with a household income of \$75,000 or higher (19%) and were three times more likely than adults with a household income of \$75,000 or higher to report having activity limitations due to arthritis (18% vs. 6%).
- approximately four times as likely to report that they had experienced a heart attack (11%) or angina (9%) as adults with an income of \$75,000 or above (3% for both heart attack and angina)
- more likely to report having a stroke (6%) than adults in higher income groups.

See tables 3.9, 4.1, 4.2, 4.3, and 4.4

### **Prevention measures:**

Adults with a household income less than \$25,000 per year were:

- more likely to report ever having been tested for HIV (55%) and being tested for HIV within the past year (21%) than adults with a household income of \$75,000 or higher (42% for ever tested, 8% for tested in past year)
- less likely than adults with a household income of \$75,000 or higher to report meeting recommendations for moderate (45% vs. 60%) or vigorous physical activity (22% vs. 40%).
- less likely than adults with a household income of \$75,000 or higher to report consuming five or more servings of fruits and vegetables daily (22% vs. 29%).

See tables 3.6, 3.7 and 5.2

## **REGION**

There were some regional differences in response to questions asked on the 2009 BRFSS. Below are some of the statistically significant differences among EOHHS regions.

### **Description of overall health:**

- Metro West residents were the least likely to report fair or poor health (7%) as compared to residents in any other region of the state.

See table 1.1

### **Health risk factors:**

- Those living in the Metro West region (11%) were less likely to report being a current smoker than residents in any other region of the state except Northeast.

See table 3.1

### **Prevention measures:**

- Adults living in Boston were more likely to report ever having been tested for HIV (57%) and having been tested for HIV in the past year (21%) than adults living in any other region in the state.

See table 5.2

## **RACE/ETHNICITY**

All figures and percentages concerning race/ethnicity disparities presented below refer to age-adjusted proportions in order to reduce the confounding effect of different age composition of population subgroups. Age-adjusted percentages will differ from those found in Sections 1-5 of this report and are presented in the Appendix (pp 91-98) (See p.6 for more details about the age adjustment). This does not include some preventive measure indicators where the age ranges were restricted.

### **Description of overall health:**

- Hispanic adults (32%) and Black adults (16%) were more likely to report fair or poor health than were White adults (10%).
- Hispanic adults were more likely than were White adults to report poor physical health (15% vs. 8%) and poor mental health (12% vs. 8%)
- Hispanic adults were more likely to report being disabled and needing help with activities (12%) than were White adults (5%).
- Hispanic women (7%) were less likely to report ever experiencing sexual violence than were White women (15%).

See appendix for age-adjusted tables

### **Health care access and utilization:**

- Hispanic adults (11%) were more likely than White adults (2%) or Black adults (5%) to report not having health insurance.
- Black adults (84%) and Hispanic adults (82%) were less likely to have a personal health care provider than were White adults (91%).
- Hispanic adults (16%) and Black adults (11%) were more likely to report not being able to see a doctor at some point in the past year due to cost than were White adults (6%).
- Hispanic adults were more likely than White adults to report having a routine checkup in the past year (80% vs. 75%).

See appendix for age-adjusted tables

**Health risk factors:**

- White adults were more likely to report binge drinking (21%) and heavy drinking (7%) than either Black adults (10% binge drinking) or Hispanic adults (11% binge, 2% heavy drinking).
- Black (68%) and Hispanic (67%) adults were more likely to report being overweight than White (56%) adults. Asian adults were the least likely of all racial/ethnic groups to report being overweight (39%).
- Black (32%) and Hispanic (29%) adults were more likely to report being obese than White (21%) adults.
- Hispanics (72%) were less likely than all non-Hispanics to have had cholesterol checked in the past five years

See appendix for age-adjusted tables

**Chronic health conditions:**

- Black adults (34%) and Hispanic adults (31%) were more likely than White adults (24%) or Asian adults (18%) to report that they had been diagnosed with high blood pressure.
- Black adults (13%), Hispanic adults (14%) and Asian adults (16%) were more likely than White adults (7%) to report that they had ever been diagnosed with diabetes.
- Asian adults (9%) were less likely than White adults (16%), Black adults (18%) or Hispanic adults (17%) to report that they had ever been diagnosed with asthma.
- Asian adults (14%) were less likely than White adults (24%), Black adults (22%) or Hispanic adults (24%) to report that they had been diagnosed with arthritis.
- Hispanic adults (14%) were more likely to report having limitations due to arthritis than were White adults (10%).

See appendix for age-adjusted tables

**Prevention measures:**

- Black adults (46%), Hispanic adults (33%) and Asian adults (44%) were all less likely to report meeting recommendations for moderate physical activity than White adults (56%).
- Black adults (26%), Hispanic adults (17%) and Asian adults (24%) were all less likely to report meeting recommendations for vigorous physical activity than White adults (34%).
- Black adults (20%) were less likely than White adults (27%) to report consuming five or more servings of fruits and vegetables per day.
- Of those ages 65 and older, Black adults (59%) were less likely to report having had the flu vaccine in the past year than White adults (75%); in addition, Black (58%) and Hispanic (54%) adults over age 65 were less likely to report ever having had a pneumonia vaccination as compared to White adults in the same age group (72%).
- White adults (42%) and Asian adults (39%) were less likely than Black adults (63%) and Hispanic adults (57%) to report ever having had an HIV test and White adults were also less likely (10%) than Black adults (30%) or Hispanic adults (21%) to report that they had been tested for HIV in the past year.

See appendix and table 3.10

**TIME TRENDS 2000-2009**

Where available, annual MA data on overall prevalence of indicators is presented graphically for 2000 through 2009 and analyzed to determine whether or not there was a significant linear trend. For comparison, national estimates, where available, are presented as well. National estimates are provided for visual comparison only –we did not perform statistical analysis to compare US and MA trends. Selected findings of trend analysis are presented below.

**Description of overall health:**

- There were no significant changes in the percent of adults reporting fair or poor overall health status, 15 or more days of poor physical health in the past month, or 15 or more

days of poor mental health in the past month. Estimates remain at approximately 12%, 8.5% and 9%, respectively. The percent of MA adults reporting fair or poor overall health status was consistently lower than national estimates. However there was a slight or no difference between MA and US trends in percent of adults reporting poor physical health in the past month or poor mental health in the past month.

- The percent of MA adults who reported having a disability lasting for one year or longer remained relatively stable at approximately 20.5% from 2000 through 2009. Comparison with US is not available because MA uses a more stringent definition of disability than is used in national surveillance, e.g. the MA definition of disability requires that the condition has persisted for at least one year.

See figures 1.1, 1.2, and 1.3

#### **Health care access and utilization:**

- The percent of MA adults reporting not having health insurance increased by an average of 7.6% per year between 2000 and 2005, and then decreased by an average of 45.3% per year through 2008, reaching 3.3% in 2008. There was no change in the percentage of adults without health insurance between 2008 and 2009. More years of observations are needed to determine whether the downward trend is flattened.
- The percent of MA adults who reported that they had a personal health care provider increased by an average of 0.4% per year from 2001 through 2009. National estimates (available only since 2006) are consistently lower than MA.
- There was no significant change in the percent of MA adults who reported that they could not see a doctor at some point in the past year due to cost between 2003 and 2009. Estimates fluctuated between 6.3% and 8.8%.

See figures 2.1 and 2.2

#### **Health risk factors:**

- The percent of MA adults who reported being current smokers decreased by an average of 1.9% per year between 2000 and 2006 and then decreased by an average of 5.4% per year through 2009. MA estimates are consistently lower than national estimates.
- The percent of MA adults who reported that they live in a household where smoking is not permitted increased by an average of 3.6% per year from 2001 through 2006, reaching 79.9%, and then remained relatively stable.
- The percent of MA adults who reported being exposed to environmental tobacco smoke decreased by an average of 10.2% per year from 2002 through 2009, reaching 38.1% in 2009.
- The percent of MA adults who reported being overweight (based on calculated BMI>25) increased by an average of 1.2% per year between 2000 and 2009. MA estimates are consistently lower than national estimates. Both state and national data show an upward trend.
- The percent of MA adults who reported being obese (based on calculated BMI>30) increased by an average of 3.5% per year between 2000 and 2009. MA estimates are consistently lower than national estimates. Both state and national data show an upward trend.

See figures 3.1, 3.3, and 3.5

#### **Chronic health conditions:**

- The percent of MA adults who reported being diagnosed with diabetes increased by an average of 4.1% per year between 2000 and 2009. MA estimates are consistently lower than national estimates although diabetes prevalence increases both statewide and nationwide.
- The percent of MA adults who reported that they were ever diagnosed with asthma increased by an average of 2.6% per year between 2000 and 2009. Those who reported currently having asthma increased by an average of 1.7% per year between 2000 and

2009, reaching 10.8% in 2009. MA estimates for asthma prevalence (both ever and current) are consistently higher than national estimates.  
See figures 4.1 and 4.2

**Prevention measures:**

- The percent of MA adults ages 50-64 who reported receiving a seasonal flu vaccination in the past year increased by an average of 3.5% per year between 2001 and 2009. These estimates were similar to national estimates.
- There was no significant trend in the percent of MA adults ages 65 and older who reported receiving a seasonal flu vaccination between 2000 and 2009. This was similar to national data.
- The percent of MA adults ages 65 and older who reported ever receiving pneumonia vaccine increased by an average of 1.4% per year between 2000 and 2009. MA estimates were about the same as national estimates.
- The percent of MA adults ages 18-64 who reported that they have ever been tested for HIV decreased by an average of 2.3% per year between 2000 and 2009. MA estimates were slightly higher than national estimates.
- The percent of MA adults ages 18-64 who reported that they had been tested for HIV within the previous year decreased by an average of 6.1% per year between 2000 and 2009. The national estimates were slightly lower than MA estimates.

See figures 3.10 and 5.2

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## SECTION 1: OVERALL HEALTH MEASURES

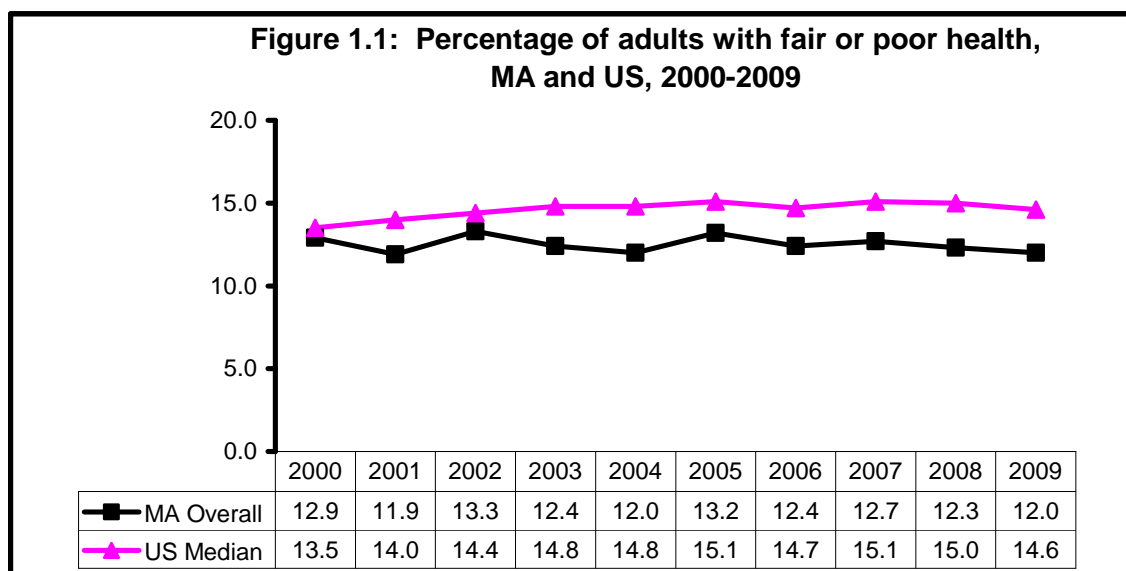
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## **SECTION 1: OVERALL HEALTH MEASURES**

### **Section 1.1: Overall Health Status**

General health status is a self-rated assessment of one's perceived health, which may be influenced by all aspects of life, including behaviors, the physical environment, and social factors. Self-assessed health status is a predictor of mortality and morbidity [7]. General health status is useful in determining unmet health needs, identifying disparities among subpopulations, and characterizing the burden of chronic diseases within a population [8].

Respondents were asked to describe their overall health as excellent, very good, good, fair, or poor. Presented here are the percentages of adults who reported that their overall health was fair or poor.



The percent of MA adults reporting fair or poor health status remained stable from 2000 through 2009. MA estimates have consistently been lower than national estimates, which have also remained stable since 2000.



**TABLE 1.1 – OVERALL HEALTH STATUS AMONG MASSACHUSETTS ADULTS, 2009**

	FAIR OR POOR HEALTH		
	N	%	95% CI
OVERALL	16699	12.0	11.2 - 12.7
GENDER			
MALE	6203	11.3	10.1 - 12.5
FEMALE	10496	12.6	11.6 - 13.5
AGE GROUP			
18–24	†		
25–34	1527	7.2	5.3 - 9.0
35–44	2580	8.6	7.0 - 10.2
45–54	3599	11.2	9.8 - 12.6
55–64	3502	16.6	14.9 - 18.4
65–74	2456	18.7	16.5 - 20.8
75 AND OLDER	2292	26.4	24.0 - 28.8
RACE-ETHNICITY*			
WHITE	13548	10.5	9.7 - 11.2
BLACK	883	14.7	11.3 - 18.1
HISPANIC	1416	25.4	20.8 - 29.9
ASIAN	†		
DISABILITY¶			
DISABILITY	1263	38.3	33.7 - 42.9
NO DISABILITY	3417	4.9	4.0 - 5.9
EDUCATION			
< HIGH SCHOOL	1777	33.1	28.3 - 37.8
HIGH SCHOOL	4272	16.6	14.8 - 18.3
COLLEGE 1–3 YRS	3876	12.8	11.2 - 14.5
COLLEGE 4+ YRS	6677	5.5	4.8 - 6.2
HOUSEHOLD INCOME			
<\$25,000	3848	29.1	26.4 - 31.8
\$25,000–34,999	1445	15.9	12.6 - 19.1
\$35,000–49,999	1780	11.2	9.0 - 13.5
\$50,000–74,999	2019	6.9	5.4 - 8.4
\$75,000+	4788	4.2	3.4 - 5.0
REGION			
I–WESTERN	2562	13.5	11.8 - 15.2
II–CENTRAL	2146	12.1	10.2 - 13.9
III–NORTH EAST	4014	12.7	10.6 - 14.8
IV–METRO WEST	2076	7.4	6.2 - 8.5
V–SOUTH EAST	4054	13.1	11.4 - 14.8
VI–BOSTON	1847	16.9	14.3 - 19.5

\* White, Black, and Asian race categories refer to non-Hispanic

† Insufficient Data

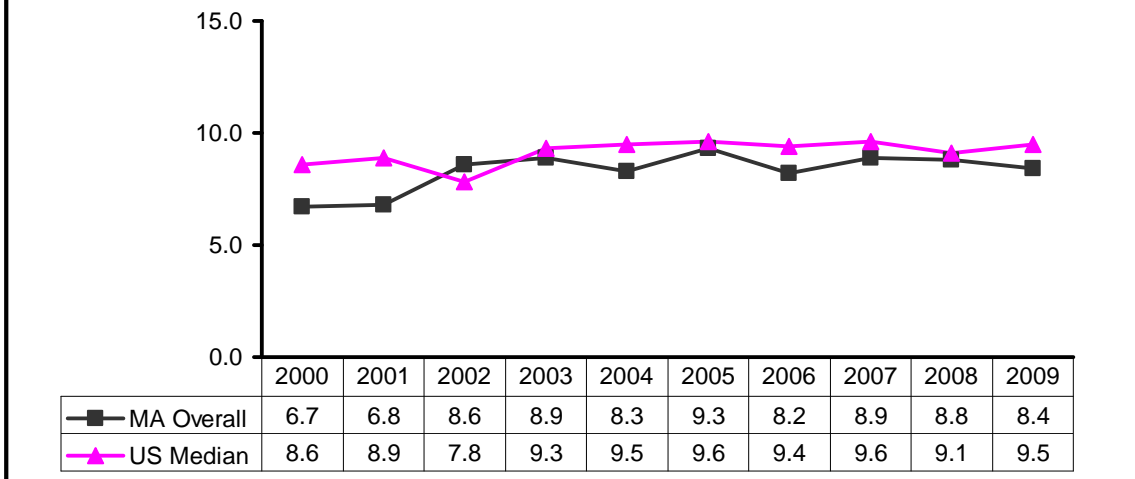
¶ Disability defined as having one or more of the following conditions for at least one year: (1) impairment or health problem that limited activities or caused cognitive difficulties; (2) used special equipment or required help from others to get around; or (3) reported a disability of any kind.

## **Section 1.2: Quality of Life**

A person's perceived physical and mental health is used to measure the effects of numerous disorders, short- and long-term disabilities, and diseases. Healthy People 2010 identified quality of life as a central public health goal. Perceived quality of life can help guide public health policies and interventions to improve health and fulfill unmet health needs [9].

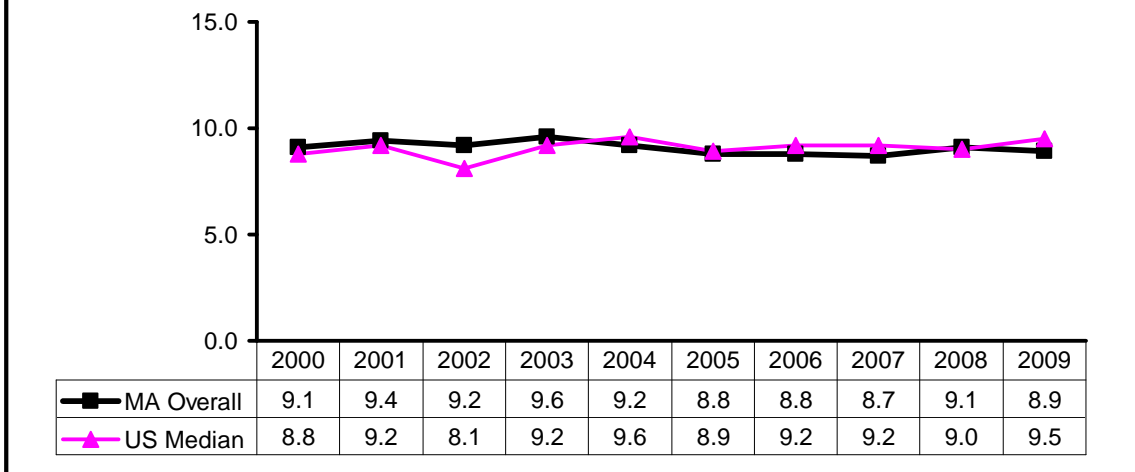
All respondents were asked to report: (1) the number of days during the past month that their physical health, which includes physical illness and injury, had not been good; and (2) the number of days during the past month they would describe their mental health as not good. Presented here are the percentages of respondents who reported that (1) they had experienced at least 15 days of poor physical health in the previous month; and (2) their mental health was not good for at least 15 days during the past month.

**Figure 1.2.1: Percentage of adults with 15 or more days of poor physical health in the past month, 2000-2009**



The percent of MA adults reporting poor physical health for 15 or more days in the past month remained stable from 2000 through 2009. Despite slight fluctuations, MA estimates have been approximately the same as national estimates.

**Figure 1.2.2: Percentage of adults with poor mental health for 15 or more days in past month, 2000-2009**



The percent of MA adults reporting poor mental health for 15 or more days in the past month remained stable from 2000 through 2009. MA estimates have remained about equal to US estimates for the past decade.

**TABLE 1.2 – QUALITY OF LIFE AMONG MASSACHUSETTS ADULTS, 2009**

	15+ DAYS OF POOR PHYSICAL HEALTH			15+ DAYS OF POOR MENTAL HEALTH		
	N	%	95% CI	N	%	95% CI
OVERALL	16377	8.4	7.7 - 9.0	16397	8.9	8.1 - 9.6
GENDER						
MALE	6097	7.4	6.4 - 8.4	6113	7.3	6.3 - 8.3
FEMALE	10280	9.3	8.3 - 10.2	10284	10.3	9.2 - 11.5
AGE GROUP						
18–24	†			469	10.5	6.5 - 14.4
25–34	1510	4.1	2.7 - 5.4	1504	9.2	7.0 - 11.4
35–44	2555	5.8	4.6 - 6.9	2560	8.4	6.9 - 9.8
45–54	3554	8.1	6.9 - 9.3	3553	9.8	8.5 - 11.1
55–64	3431	12.2	10.7 - 13.8	3421	10.7	9.2 - 12.3
65–74	2400	13.1	11.2 - 15.0	2406	5.6	4.4 - 6.9
75 AND OLDER	2197	16.2	14.1 - 18.2	2221	5.4	4.2 - 6.6
RACE-ETHNICITY*						
WHITE	13308	8.0	7.2 - 8.7	13321	8.3	7.5 - 9.2
BLACK	861	8.6	5.7 - 11.5	873	11.9	8.7 - 15.1
HISPANIC	1377	11.5	8.0 - 15.1	1370	10.9	8.4 - 13.4
ASIAN	†			†		
DISABILITY <sup>¶</sup>						
DISABILITY	1225	26.2	22.3 - 30.1	1232	20.7	17.0 - 24.4
NO DISABILITY	3379	4.2	2.7 - 5.6	3380	4.5	3.4 - 5.6
EDUCATION						
< HIGH SCHOOL	1690	17.9	13.8 - 22.0	1690	15.0	12.1 - 18.0
HIGH SCHOOL	4170	11.2	9.8 - 12.6	4190	11.0	9.2 - 12.8
COLLEGE 1–3 YRS	3818	10.1	8.3 - 11.9	3817	11.1	9.3 - 12.9
COLLEGE 4+ YRS	6605	4.4	3.8 - 5.0	6604	5.6	4.6 - 6.5
HOUSEHOLD INCOME						
<\$25,000	3743	19.2	16.7 - 21.7	3767	17.0	15.0 - 19.0
\$25,000–34,999	1413	9.0	6.6 - 11.3	1420	11.2	7.7 - 14.8
\$35,000–49,999	1759	9.6	7.1 - 12.1	1751	7.5	4.9 - 10.0
\$50,000–74,999	2004	5.0	3.8 - 6.3	1998	8.4	6.3 - 10.5
\$75,000+	4752	3.6	3.0 - 4.3	4758	5.5	4.3 - 6.8
REGION						
I–WESTERN	2491	10.4	8.6 - 12.2	2509	8.3	6.7 - 10.0
II–CENTRAL	2106	8.9	7.0 - 10.8	2104	9.4	7.0 - 11.7
III–NORTH EAST	3946	8.2	6.4 - 10.0	3951	9.0	7.3 - 10.8
IV–METRO WEST	2047	6.0	4.6 - 7.4	2054	6.8	5.0 - 8.5
V–SOUTH EAST	3971	8.7	7.4 - 10.0	3963	10.7	8.9 - 12.4
VI–BOSTON	1816	9.5	7.5 - 11.4	1816	10.3	8.3 - 12.2

\* White, Black, and Asian race categories refer to non-Hispanic

† Insufficient data

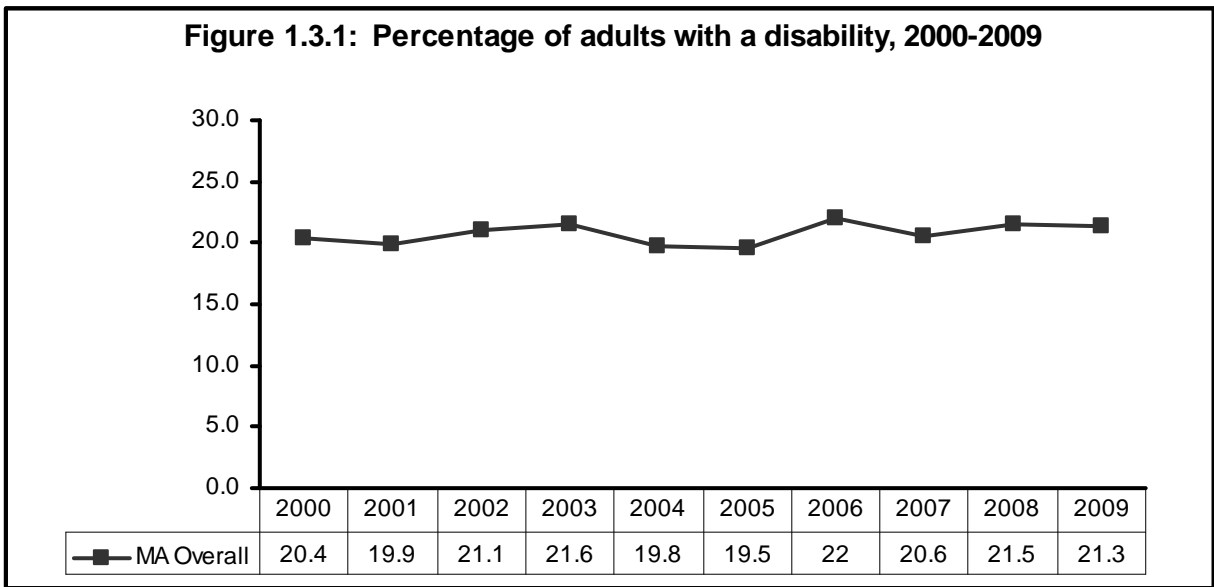
¶ Disability defined as having one or more of the following conditions for at least one year: (1) impairment or health problem that limited activities or caused cognitive difficulties; (2) used special equipment or required help from others to get around; or (3) reported a disability of any kind.

## Section 1.3: Disability

*Healthy People 2010* defines disability as “the interaction between an individual’s health condition and barriers in their environment.” These barriers may include limited access to programs, services, and activities aimed at promoting healthy living. Approximately 50 million people (19%) in the United States, ages five and over, have a disability. Thus a major goal of *Healthy People 2010* is to “promote the health of people with disabilities, prevent secondary conditions, and eliminate disparities between people with and without disabilities” [10, 11].

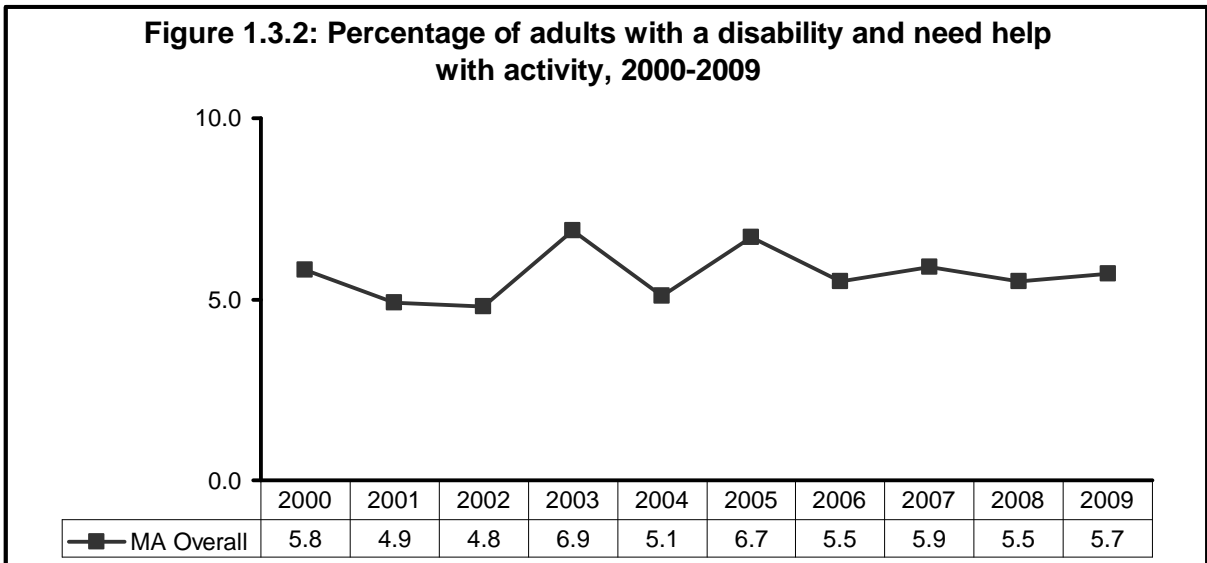
In 2009, respondents to the Massachusetts BRFSS were asked about disabilities and activity limitations. Respondents were classified as having a disability or activity limitation if, for at least one year: (1) they had an impairment or health problem that limited activities or caused cognitive difficulties; (2) they used special equipment or required help from others to get around, or; (3) they reported a disability of any kind. Those who answered yes to one or more of the conditions above but had been limited by their disability for less than one year were not considered to have a disability. Respondents who reported having a disability were also asked if their disability or limitation required them to need help with routine needs or personal care.

**Figure 1.3.1: Percentage of adults with a disability, 2000-2009**



The percent of MA adults who reported having a disability lasting for one year or longer remained relatively stable from 2000 through 2009. Due to the more stringent definition of disability utilized by Massachusetts, comparable national data is not available.

**Figure 1.3.2: Percentage of adults with a disability and need help with activity, 2000-2009**



The percent of MA adults who reported having a disability and needing help with activities remained relatively stable from 2000 through 2009. Slightly higher fluctuations were seen in 2003 and 2005. Due to the more stringent definition of disability utilized by Massachusetts, comparable national data is not available.

**TABLE 1.3 – DISABILITY AMONG MASSACHUSETTS ADULTS, 2009**

	HAVE DISABILITY			DISABILITY / NEED HELP WITH ACTIVITY		
	N	%	95% CI	N	%	95% CI
OVERALL	4689	21.3	19.3 - 23.2	4683	5.7	4.8 - 6.7
GENDER						
MALE	1730	22.0	18.9 - 25.1	1729	4.5	3.0 - 5.9
FEMALE	2959	20.6	18.3 - 22.9	2954	6.9	5.7 - 8.0
AGE GROUP						
18–24	149	16.5	8.4 - 24.6	†		
25–34	410	15.3	9.8 - 20.7	†		
35–44	751	16.7	12.7 - 20.6	751	4.5	2.6 - 6.3
45–54	1024	18.7	15.5 - 21.8	1024	5.2	3.6 - 6.8
55–64	997	25.8	22.0 - 29.5	993	6.5	4.5 - 8.6
65–74	679	29.1	24.3 - 33.9	678	7.7	5.1 - 10.3
75 AND OLDER	615	37.8	32.5 - 43.1	614	14.6	10.9 - 18.4
RACE-ETHNICITY*						
WHITE	3865	21.0	19.0 - 23.1	3861	5.2	4.2 - 6.1
BLACK	258	24.8	14.9 - 34.7	†		
HISPANIC	363	18.0	11.2 - 24.9	361	9.4	5.5 - 13.3
ASIAN	†			†		
DISABILITY <sup>¶</sup>						
DISABILITY	1268	100.0	100 - 100	1262	27.0	23.0 - 31.0
NO DISABILITY	†			†		
EDUCATION						
< HIGH SCHOOL	416	44.8	34.4 - 55.2	414	12.1	7.8 - 16.5
HIGH SCHOOL	1159	26.5	22.1 - 30.9	1157	7.6	5.6 - 9.7
COLLEGE 1–3 YRS	1156	20.5	16.6 - 24.4	1156	5.9	3.8 - 7.9
COLLEGE 4+ YRS	1953	16.1	13.7 - 18.5	1951	3.9	2.7 - 5.0
HOUSEHOLD INCOME						
<\$25,000	1082	37.7	32.1 - 43.3	1079	13.7	10.7 - 16.8
\$25,000–34,999	412	27.7	19.1 - 36.4	412	8.6	3.9 - 13.3
\$35,000–49,999	502	27.2	20.3 - 34.1	502	5.9	2.9 - 9.0
\$50,000–74,999	635	14.0	10.5 - 17.5	635	2.5	1.0 - 3.9
\$75,000+	1376	12.5	9.8 - 15.2	1375	2.0	0.9 - 3.0
REGION						
I–WESTERN	665	23.9	18.7 - 29.2	665	7.5	4.6 - 10.3
II–CENTRAL	658	23.9	18.8 - 29.0	658	8.1	5.7 - 10.4
III–NORTH EAST	1130	21.7	16.8 - 26.6	1127	5.9	3.2 - 8.6
IV–METRO WEST	587	16.1	12.7 - 19.6	586	3.4	1.9 - 4.8
V–SOUTH EAST	1119	21.0	17.0 - 24.9	1118	5.0	3.3 - 6.7
VI–BOSTON	530	25.4	19.3 - 31.6	529	6.1	3.2 - 8.9

\* White, Black, and Asian race categories refer to non-Hispanic

† Insufficient data

¶ Disability defined as having one or more of the following conditions for at least one year: (1) impairment or health problem that limited activities or caused cognitive difficulties; (2) used special equipment or required help from others to get around; or (3) reported a disability of any kind.

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## SECTION 2: HEALTH CARE ACCESS AND UTILIZATION

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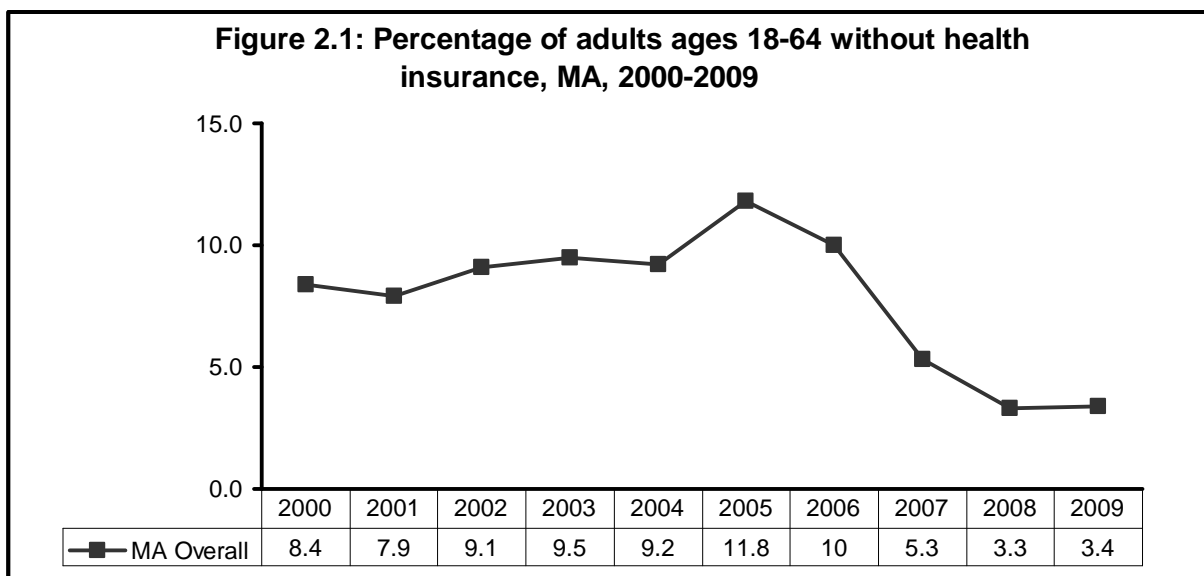


## **SECTION 2: HEALTH CARE ACCESS AND UTILIZATION**

### **Section 2.1: Health Insurance Status**

Health insurance status is a key factor affecting access to health care. Adults who do not have health insurance are more likely to have poor health and are at greater risk for chronic diseases than those with health insurance. Those without health insurance are less likely to access health care services, including preventative care, primary care, and tertiary care, and more likely to delay getting needed medical attention [12, 13].

All respondents were asked if they had any type of health care coverage at the time of the interview. Those who indicated that they had no coverage were asked a follow-up question to be certain that they had considered all types of health care coverage. This included health care coverage from their employer or someone else's employer, a plan that they had bought on their own, Medicare, MassHealth, and coverage through the military, or the Indian Health Service. CDC estimates of uninsured adults, based solely upon the CDC core health insurance question, may differ from estimates derived from the Massachusetts BRFSS estimates, which were based on the CDC core health insurance question and the Massachusetts follow-up question. Table 2.1 presents the Massachusetts BRFSS data.



The percent of MA adults reporting not having health insurance increased by an average of 7.6% per year between 2000 and 2005, and then decreased by an average of 45.3% per year through 2008. In 2009, the percent remained approximately equal to 2008; however, more years of data are necessary to assess whether or not this indicates that the downward trend has been flattened. National data is not available for comparison as Massachusetts includes state-added questions to assess this indicator.

**TABLE 2.1 – HEALTH INSURANCE STATUS AMONG MASSACHUSETTS ADULTS,  
AGES 18-64, 2009**

	NO HEALTH INSURANCE		
	N	%	95% CI
OVERALL	11680	3.4	2.7 - 4.1
GENDER			
MALE	4436	4.6	3.4 - 5.9
FEMALE	7244	2.2	1.6 - 2.8
AGE GROUP			
18–24	469	7.2	3.7 - 10.7
25–34	1526	4.7	3.2 - 6.3
35–44	2579	3.3	2.1 - 4.5
45–54	3600	1.8	1.2 - 2.4
55–64	3506	0.9	0.5 - 1.2
RACE-ETHNICITY*			
WHITE	9155	2.2	1.6 - 2.7
BLACK	695	4.9	2.2 - 7.6
HISPANIC	1204	13.0	8.1 - 18.0
ASIAN	†		
DISABILITY¶			
DISABILITY	†		
NO DISABILITY	2542	2.4	1.1 - 3.8
EDUCATION			
< HIGH SCHOOL	1010	15.3	8.9 - 21.8
HIGH SCHOOL	2663	5.3	3.6 - 6.9
COLLEGE 1–3 YRS	2760	3.1	1.7 - 4.4
COLLEGE 4+ YRS	5193	1.0	0.6 - 1.3
HOUSEHOLD INCOME			
<\$25,000	2254	9.2	6.7 - 11.8
\$25,000–34,999	867	7.8	3.5 - 12.1
\$35,000–49,999	1226	5.4	2.6 - 8.2
\$50,000–74,999	1601	1.1	0.6 - 1.6
\$75,000+	†		
REGION			
I–WESTERN	1733	3.4	1.6 - 5.3
II–CENTRAL	1535	3.1	1.8 - 4.3
III–NORTH EAST	2872	2.9	1.6 - 4.2
IV–METRO WEST	1447	2.2	1.0 - 3.3
V–SOUTH EAST	2763	4.4	2.4 - 6.3
VI–BOSTON	1330	6.0	2.6 - 9.5

\* White, Black, and Asian race categories refer to non-Hispanic

† Insufficient Data

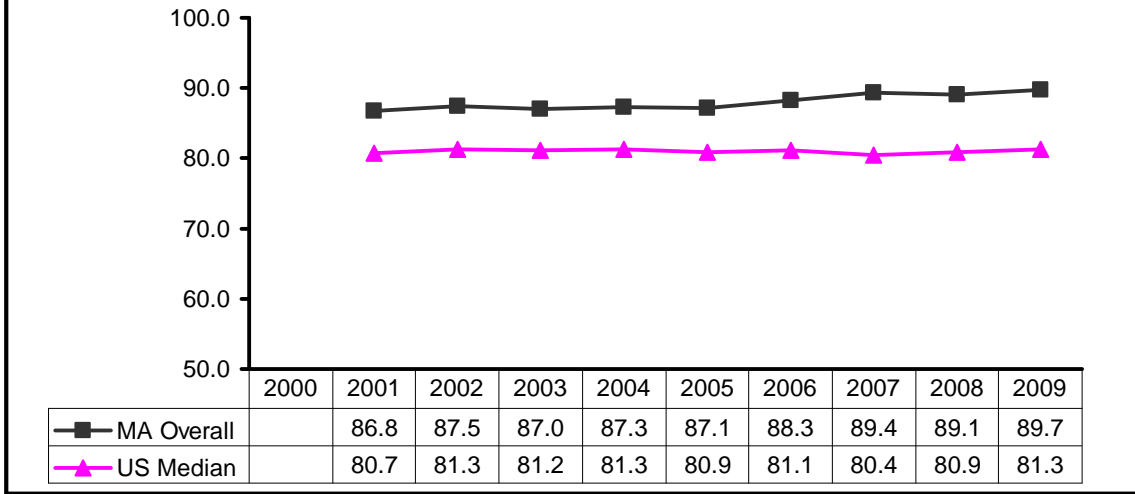
¶ Disability defined as having one or more of the following conditions for at least one year: (1) impairment or health problem that limited activities or caused cognitive difficulties; (2) used special equipment or required help from others to get around; or (3) reported a disability of any kind.

## **Section 2.2: Health Care Access**

All respondents were asked if they had a person that they thought of as their personal doctor or health care provider. All respondents were also asked whether they were unable to see a doctor in the past year due to cost and about how long since they last visited a doctor for a routine checkup. Presented here are the percentages of respondents who reported that they did not have a personal health care provider, the percentages of respondents who reported that cost had prevented them from seeing a doctor at some point in the past year, and the percentage of respondents who had visited a medical provider for a checkup in the past year.

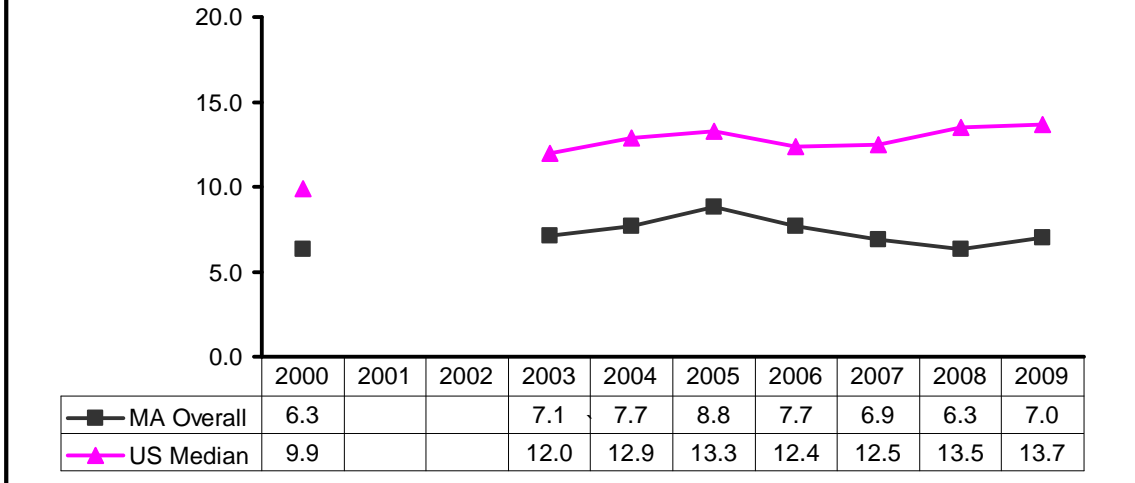
This report does not include a trend chart for the percentage of MA adults who had a routine checkup in the past year due to an insufficient number of years of continuous data to use for analysis.

**Figure 2.2.1: Percentage of adults who have a personal health care provider, 2000-2009**



The percent of MA adults who reported that they had a personal health care provider increased by an average of 0.4% per year from 2001 through 2009. Overall, between 2001 and 2009, the percent of MA adults who reported having a personal care provider increased by 3%. Data for 2000 is not available. MA estimates have been consistently higher than national estimates.

**Figure 2.2.2: Percentage of adults who were unable to see a doctor due to cost, MA and US, 2000-2009**



Between 2003 and 2009, there was no significant trend in the percent of MA adults who reported that they could not see a doctor due to cost at some point in the past year. Data are not available for 2001 or 2002. MA estimates have been consistently lower than national estimates.

**TABLE 2.2 HEALTH CARE ACCESS AMONG MASSACHUSETTS ADULTS, 2009**

	HAVE PERSONAL HEALTH CARE PROVIDER			COULD NOT SEE DOCTOR DUE TO COST		
	N	%	95% CI	N	%	95% CI
OVERALL	16686	89.7	88.7 - 90.7	16694	7.0	6.2 - 7.7
<b>GENDER</b>						
MALE	6195	85.7	83.9 - 87.4	6198	7.0	5.8 - 8.2
FEMALE	10491	93.4	92.6 - 94.3	10496	7.0	6.0 - 7.9
<b>AGE GROUP</b>						
18-24	466	75.5	69.8 - 81.1	473	12.7	8.4 - 17.0
25-34	1526	81.6	78.7 - 84.6	1525	8.9	6.9 - 11.0
35-44	2580	91.1	89.4 - 92.8	2580	7.0	5.5 - 8.5
45-54	3597	93.7	92.7 - 94.8	3597	6.6	5.5 - 7.7
55-64	3504	95.6	94.7 - 96.6	3506	5.6	4.4 - 6.7
65-74	2454	95.6	94.5 - 96.8	2454	3.0	2.1 - 3.9
75 AND OLDER	2291	96.8	95.7 - 97.9	2292	2.7	1.8 - 3.7
<b>RACE-ETHNICITY*</b>						
WHITE	13540	91.9	91.0 - 92.8	13549	5.3	4.7 - 6.0
BLACK	886	82.6	77.4 - 87.9	883	11.4	7.6 - 15.2
HISPANIC	1414	76.9	71.5 - 82.4	1411	17.5	12.7 - 22.4
ASIAN	262	84.6	77.2 - 92.0	†		
<b>DISABILITY<sup>¶</sup></b>						
DISABILITY	1266	92.1	88.4 - 95.9	1268	13.5	9.7 - 17.3
NO DISABILITY	3413	89.1	87.0 - 91.3	3417	5.4	3.9 - 6.9
<b>EDUCATION</b>						
< HIGH SCHOOL	1776	79.4	73.4 - 85.4	1776	15.3	10.2 - 20.3
HIGH SCHOOL	4267	88.1	86.0 - 90.2	4268	9.6	7.8 - 11.4
COLLEGE 1-3 YRS	3869	90.2	88.2 - 92.3	3872	7.8	6.1 - 9.4
COLLEGE 4+ YRS	6675	92.0	90.9 - 93.1	6682	3.7	3.1 - 4.4
<b>HOUSEHOLD INCOME</b>						
<\$25,000	3848	84.1	81.2 - 87.1	3846	13.2	10.9 - 15.6
\$25,000-34,999	1445	86.8	82.9 - 90.8	1446	14.1	10.0 - 18.3
\$35,000-49,999	1776	89.2	85.9 - 92.5	1782	9.6	6.8 - 12.4
\$50,000-74,999	2017	93.1	91.1 - 95.2	2017	5.1	3.7 - 6.6
\$75,000+	4787	92.8	91.5 - 94.1	4789	1.7	1.2 - 2.3
<b>REGION</b>						
I-WESTERN	2559	89.1	86.5 - 91.6	2559	7.9	6.0 - 9.8
II-CENTRAL	2145	92.7	90.6 - 94.8	2148	5.4	4.0 - 6.9
III-NORTH EAST	4006	89.9	87.5 - 92.3	4005	7.4	5.4 - 9.4
IV-METRO WEST	2076	90.9	89.0 - 92.9	2079	4.7	3.3 - 6.1
V-SOUTH EAST	4052	88.7	86.4 - 91.0	4055	8.3	6.5 - 10.0
VI-BOSTON	1848	84.9	81.5 - 88.4	1848	10.0	6.7 - 13.2

\* White, Black, and Asian race categories refer to non-Hispanic

† Insufficient data

¶ Disability defined as having one or more of the following conditions for at least one year: (1) impairment or health problem that limited activities or caused cognitive difficulties; (2) used special equipment or required help from others to get around; or (3) reported a disability of any kind.

**TABLE 2.2 (CONTINUED) HEALTH CARE ACCESS AMONG MASSACHUSETTS ADULTS, 2009**

	HAVE HAD A CHECKUP IN THE PAST YEAR		
	N	%	95% CI
OVERALL	16590	76.3	75.0 - 77.6
<b>GENDER</b>			
MALE	6170	71.3	69.2 - 73.3
FEMALE	10420	80.9	79.4 - 82.4
<b>AGE GROUP</b>			
18–24	469	68.3	61.9 - 74.8
25–34	1518	65.9	62.2 - 69.6
35–44	2571	70.8	68.2 - 73.4
45–54	3565	77.2	75.3 - 79.2
55–64	3491	84.2	82.4 - 85.9
65–74	2439	87.4	85.5 - 89.2
75 AND OLDER	2273	92.6	91.1 - 94.0
<b>RACE-ETHNICITY*</b>			
WHITE	13467	76.4	75.0 - 77.7
BLACK	878	76.8	71.2 - 82.4
HISPANIC	1407	75.3	69.2 - 81.4
ASIAN	264	74.0	65.7 - 82.2
<b>DISABILITY<sup>†</sup></b>			
DISABILITY	1248	82.9	79.0 - 86.9
NO DISABILITY	3403	75.7	73.1 - 78.4
<b>EDUCATION</b>			
< HIGH SCHOOL	1747	76.5	70.5 - 82.5
HIGH SCHOOL	4253	75.5	72.7 - 78.4
COLLEGE 1–3 YRS	3850	80.0	77.6 - 82.3
COLLEGE 4+ YRS	6644	74.7	73.0 - 76.4
<b>HOUSEHOLD INCOME</b>			
<\$25,000	3818	77.9	74.7 - 81.2
\$25,000–34,999	1438	79.4	75.1 - 83.8
\$35,000–49,999	1769	70.1	65.4 - 74.8
\$50,000–74,999	2008	76.7	73.6 - 79.7
\$75,000+	4776	74.5	72.5 - 76.5
<b>REGION</b>			
I–WESTERN	2541	76.6	73.6 - 79.6
II–CENTRAL	2129	76.7	73.4 - 80.1
III–NORTH EAST	3993	76.3	73.4 - 79.3
IV–METRO WEST	2061	73.9	71.1 - 76.7
V–SOUTH EAST	4022	77.5	74.5 - 80.4
VI–BOSTON	1844	78.8	75.3 - 82.3

\* White, Black, and Asian race categories refer to non-Hispanic

† Insufficient Data

¶ Disability defined as having one or more of the following conditions for at least one year: (1) impairment or health problem that limited activities or caused cognitive difficulties; (2) used special equipment or required help from others to get around; or (3) reported a disability of any kind.

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## SECTION 3: RISK FACTORS AND PREVENTIVE BEHAVIORS

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## **SECTION 3: RISK FACTORS AND PREVENTIVE BEHAVIORS**

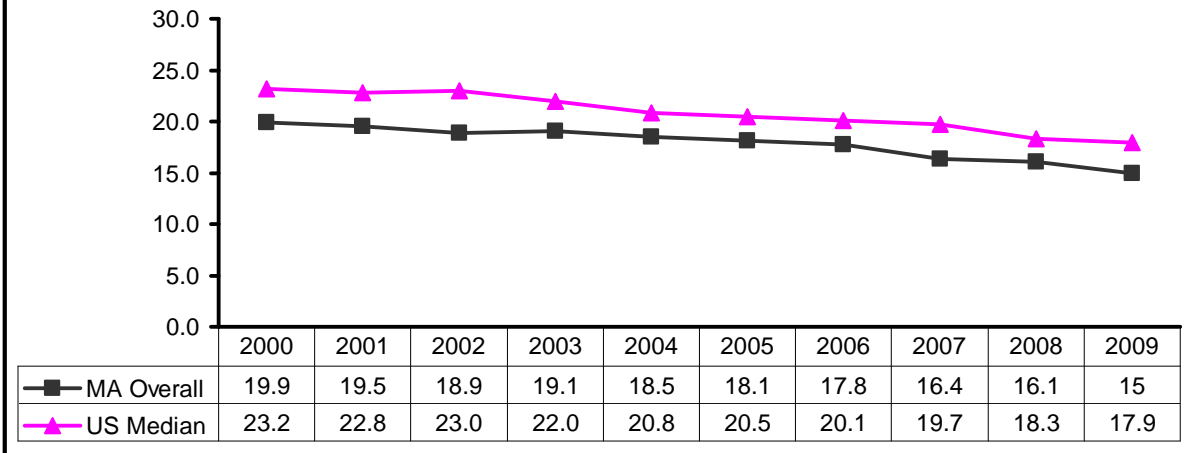
### **Section 3.1: Tobacco Use**

Tobacco use is the leading preventable cause of death in the United States, resulting in approximately 440,000 deaths each year. More than 8.6 million people in the United States have at least one serious illness caused by smoking. It is a major risk factor for cancer, heart, and lung diseases [14]. In Massachusetts, more than 9,000 residents die each year from the effects of tobacco. The health and economic burden of tobacco use has resulted in more than 3.9 billion dollars per year in health care costs in Massachusetts. The Massachusetts Tobacco Control Program was established in 1993 to control tobacco use and since the implementation of the program, the number of adults who smoke in Massachusetts has declined [15].

A current smoker was defined as someone who has smoked at least 100 cigarettes in his/her lifetime and who currently smokes either some days or everyday. A former smoker was defined as someone who has smoked at least 100 cigarettes in his/her lifetime but no longer smokes. Presented here are the percentage of adults who reported being current smokers and the percentage of adults who reported being former smokers.

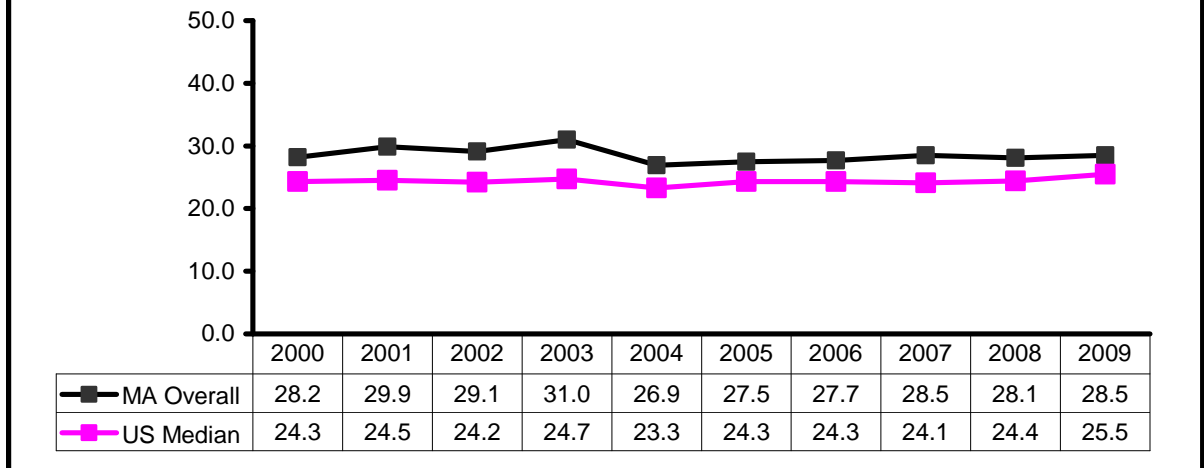


**Figure 3.1.1: Percentage of adults who currently smoke, MA and US, 2000-2009**



The percent of MA adults who reported being a current smoker decreased by an average of 1.9% per year between 2000 and 2006, and then decreased by an average of 5.4% per year through 2009. Although national estimates are also declining, MA estimates remain consistently lower than national estimates. This may be due in part to Massachusetts' prolific statewide anti-tobacco campaigns.

**Figure 3.1.2: Percentage of adult former smokers, MA and US, 2000-2009**



The percent of MA adults who reported being a former smoker did not change significantly between 2000 and 2009. MA estimates of those who are a former smoker have been consistently higher than national estimates.

**TABLE 3.1 – TOBACCO USE AMONG MASSACHUSETTS ADULTS, 2009**

	CURRENT SMOKER			FORMER SMOKER		
	N	%	95% CI	N	%	95% CI
OVERALL	16633	15.0	14.0 - 16.0	16633	28.5	27.4 - 29.5
<b>GENDER</b>						
MALE	6178	16.1	14.5 - 17.7	6178	28.7	27.0 - 30.4
FEMALE	10455	14.0	12.8 - 15.1	10455	28.2	26.8 - 29.6
<b>AGE GROUP</b>						
18–24	473	21.1	15.9 - 26.2	473	6.1	2.8 - 9.4
25–34	1519	16.7	13.9 - 19.6	1519	18.7	15.7 - 21.7
35–44	2569	15.5	13.6 - 17.5	2569	21.8	19.6 - 24.1
45–54	3592	17.0	15.3 - 18.6	3592	30.0	27.8 - 32.1
55–64	3500	13.7	12.1 - 15.3	3500	39.2	36.8 - 41.5
65–74	2442	9.6	8.1 - 11.2	2442	51.1	48.3 - 53.9
75 AND OLDER	2274	5.4	4.1 - 6.6	2274	48.6	45.7 - 51.5
<b>RACE-ETHNICITY*</b>						
WHITE	13491	14.9	13.8 - 15.9	13491	31.0	29.8 - 32.2
BLACK	881	18.1	13.8 - 22.4	881	18.7	14.6 - 22.9
HISPANIC	1413	14.6	11.3 - 17.9	1413	14.5	11.5 - 17.5
ASIAN	†			265	16.9	7.5 - 26.3
<b>DISABILITY<sup>¶</sup></b>						
DISABILITY	1258	19.5	15.6 - 23.4	1258	36.3	31.9 - 40.7
NO DISABILITY	3401	12.8	10.7 - 14.8	3401	26.9	24.6 - 29.2
<b>EDUCATION</b>						
< HIGH SCHOOL	1774	27.4	22.8 - 32.0	1774	25.7	21.1 - 30.4
HIGH SCHOOL	4254	22.5	20.0 - 25.0	4254	29.0	26.8 - 31.3
COLLEGE 1–3 YRS	3856	17.9	15.8 - 20.1	3856	31.4	28.9 - 33.9
COLLEGE 4+ YRS	6650	7.4	6.4 - 8.4	6650	27.1	25.6 - 28.6
<b>HOUSEHOLD INCOME</b>						
<\$25,000	3832	24.7	21.9 - 27.6	3832	24.7	22.5 - 26.9
\$25,000–34,999	1444	16.6	13.0 - 20.2	1444	30.0	26.1 - 33.8
\$35,000–49,999	1773	19.9	16.4 - 23.3	1773	30.4	26.9 - 33.9
\$50,000–74,999	2011	14.5	12.1 - 16.9	2011	33.2	30.1 - 36.4
\$75,000+	4775	9.5	8.1 - 10.8	4775	28.5	26.7 - 30.3
<b>REGION</b>						
I–WESTERN	2553	15.8	13.5 - 18.2	2553	27.5	25.0 - 30.1
II–CENTRAL	2139	16.4	13.7 - 19.2	2139	28.9	25.7 - 32.2
III–NORTH EAST	3991	13.8	12.0 - 15.7	3991	27.7	25.2 - 30.2
IV–METRO WEST	2071	10.7	8.8 - 12.6	2071	27.9	25.5 - 30.3
V–SOUTH EAST	4038	19.2	16.5 - 22.0	4038	31.7	29.2 - 34.3
VI–BOSTON	1841	14.9	12.4 - 17.4	1841	24.8	22.1 - 27.5

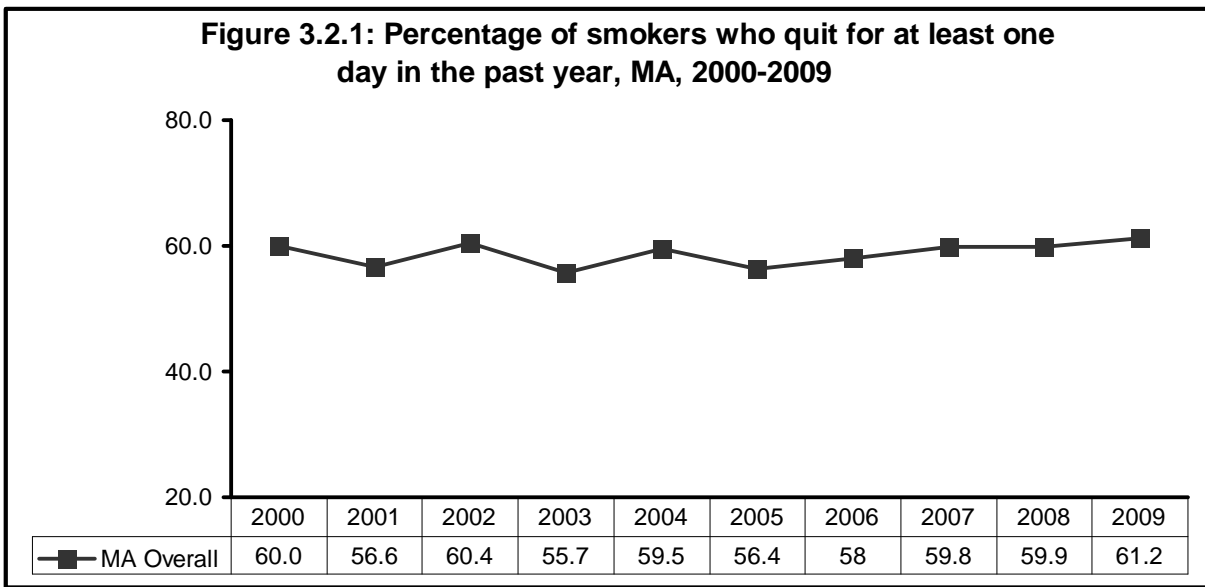
\* White, Black, and Asian race categories refer to non-Hispanic

† Insufficient data

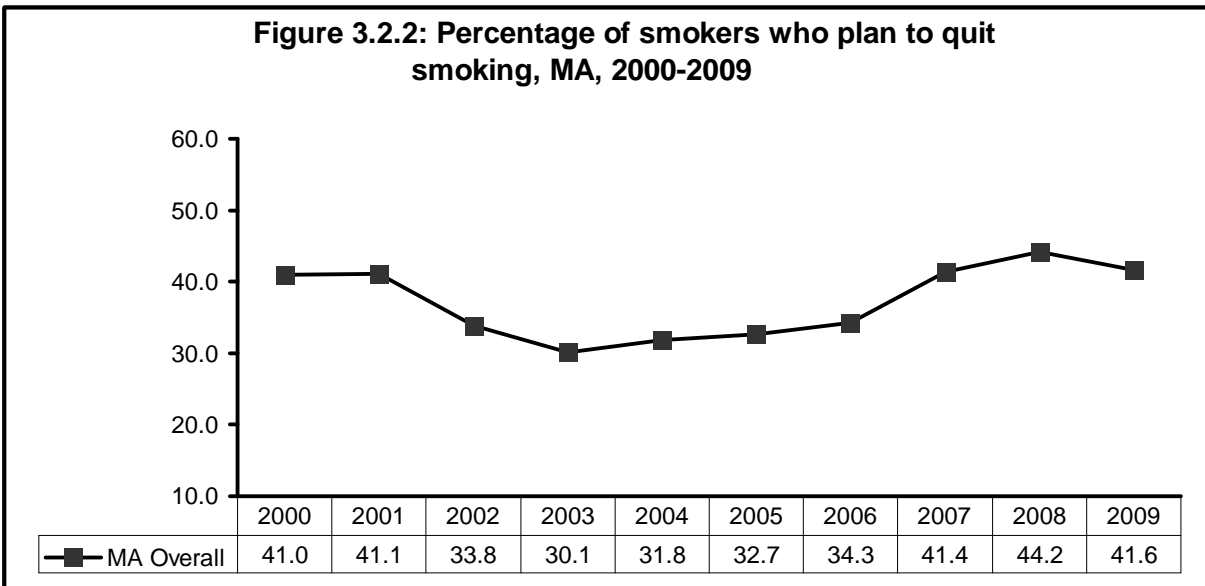
¶ Disability defined as having one or more of the following conditions for at least one year: (1) impairment or health problem that limited activities or caused cognitive difficulties; (2) used special equipment or required help from others to get around; or (3) reported a disability of any kind.

## **Section 3.2: Smoking Cessation**

Respondents who were current smokers were asked if they had stopped smoking for one day or longer in the past 12 months because they were trying to quit smoking. They were also asked if they had any intention of trying to quit smoking within the next 30 days. Presented here is the percentage of adult current smokers who reported that they had attempted to quit smoking for one day or longer in the past 12 months and the percentage of adult current smokers who reported that they had plans to quit smoking within the next 30 days.



The percent of MA adult smokers who reported quitting for at least one day in the past year did not change significantly between 2000 and 2009. National data is not available for comparison.



The percent of MA adult smokers who reported planning to quit decreased slightly from 2000 to 2003 and then increased by an average of 6.6% per year through 2009. National data is not available for comparison.

**TABLE 3.2 – SMOKING CESSATION AMONG MASSACHUSETTS ADULTS, 2009**

	QUIT ATTEMPT			PLANNING TO QUIT		
	N	%	95% CI	N	%	95% CI
OVERALL	2665	61.2	57.8 - 64.6	2233	41.6	37.7 - 45.5
<b>GENDER</b>						
MALE	1045	60.4	55.0 - 65.9	874	41.7	35.5 - 47.8
FEMALE	1620	62.0	58.0 - 66.0	1359	41.5	36.7 - 46.4
<b>AGE GROUP</b>						
18–24	115	77.6	65.7 - 89.5	85	40.3	24.5 - 56.1
25–34	284	65.4	56.4 - 74.4	232	43.8	33.4 - 54.2
35–44	473	54.3	47.5 - 61.2	405	38.5	31.4 - 45.5
45–54	752	53.4	48.0 - 58.8	634	41.1	35.4 - 46.8
55–64	587	61.9	56.1 - 67.7	511	47.0	40.3 - 53.6
65–74	290	47.5	39.1 - 56.0	245	38.6	29.7 - 47.6
75 AND OLDER	134	63.1	52.3 - 73.8	102	46.3	33.2 - 59.5
<b>RACE-ETHNICITY*</b>						
WHITE	2124	58.8	54.9 - 62.7	1787	39.9	35.5 - 44.3
BLACK	178	75.3	65.8 - 84.8	152	51.6	37.3 - 65.9
HISPANIC	222	59.8	48.0 - 71.5	179	46.0	33.4 - 58.6
ASIAN	†			†		
<b>DISABILITY<sup>¶</sup></b>						
DISABILITY	280	51.7	40.4 - 62.9	263	34.4	24.7 - 44.2
NO DISABILITY	456	61.7	53.6 - 69.9	434	37.2	28.6 - 45.9
<b>EDUCATION</b>						
< HIGH SCHOOL	414	66.7	58.9 - 74.6	344	51.3	40.9 - 61.6
HIGH SCHOOL	917	58.6	52.2 - 65.0	758	40.6	33.4 - 47.8
COLLEGE 1–3 YRS	741	64.8	58.9 - 70.7	624	38.8	31.7 - 45.9
COLLEGE 4+ YRS	584	57.5	50.6 - 64.3	507	41.0	33.7 - 48.3
<b>HOUSEHOLD INCOME</b>						
<\$25,000	921	63.7	57.0 - 70.3	782	48.1	40.7 - 55.6
\$25,000–34,999	248	70.9	62.2 - 79.5	217	37.6	25.9 - 49.4
\$35,000–49,999	320	59.0	49.7 - 68.4	276	35.3	25.5 - 45.2
\$50,000–74,999	326	57.0	48.3 - 65.7	279	42.3	32.0 - 52.7
\$75,000+	449	58.7	51.2 - 66.2	397	36.3	28.8 - 43.9
<b>REGION</b>						
I–WESTERN	437	55.1	46.9 - 63.3	338	35.6	27.2 - 44.0
II–CENTRAL	349	64.6	56.4 - 72.7	300	41.9	32.0 - 51.8
III–NORTH EAST	629	55.4	48.4 - 62.4	525	42.5	34.9 - 50.2
IV–METRO WEST	215	61.6	53.1 - 70.2	177	44.0	33.3 - 54.6
V–SOUTH EAST	743	66.4	58.5 - 74.2	651	41.6	32.6 - 50.6
VI–BOSTON	292	63.0	54.8 - 71.2	242	46.9	37.9 - 55.8

\* White, Black, and Asian race categories refer to non-Hispanic

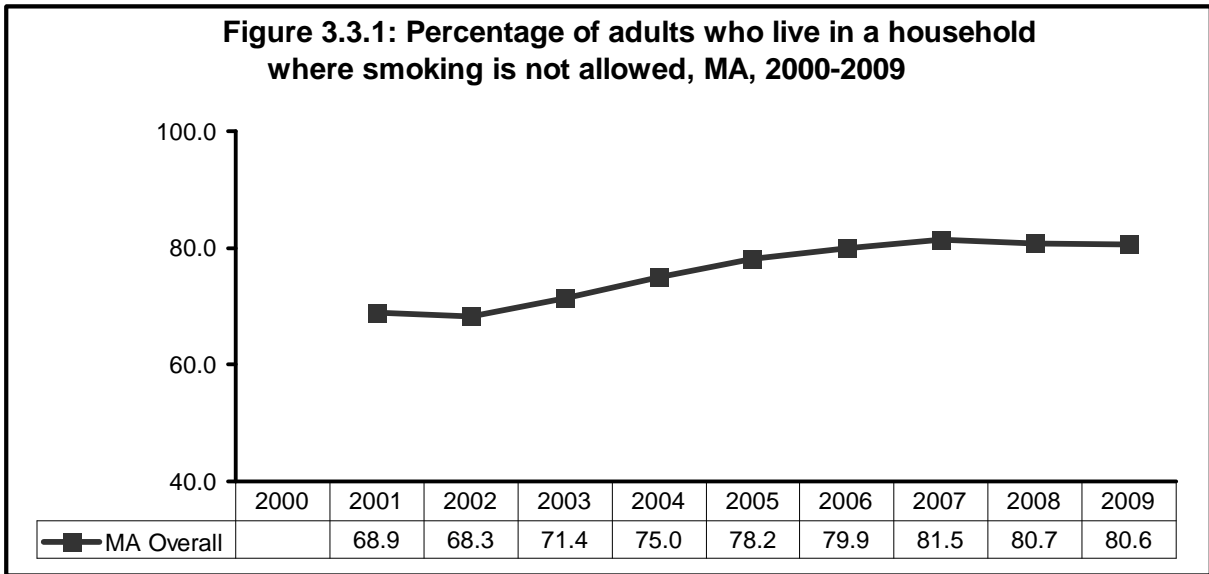
† Insufficient data

¶ Disability defined as having one or more of the following conditions for at least one year: (1) impairment or health problem that limited activities or caused cognitive difficulties; (2) used special equipment or required help from others to get around; or (3) reported a disability of any kind.

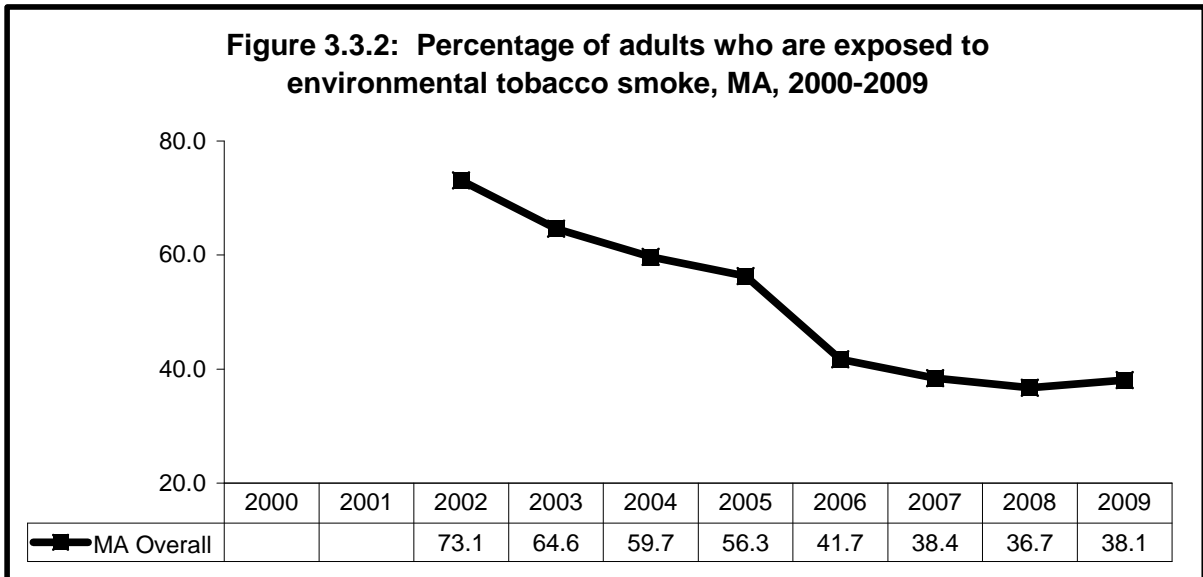
### **Section 3.3: Environmental Tobacco Smoke**

Environmental tobacco smoke (ETS) is also referred to as secondhand smoke. Secondhand smoke includes both the smoke given off the burning end of tobacco products and the smoke exhaled by the smoker. Secondhand smoke has been linked to lung cancer deaths, heart disease, and respiratory illnesses, such as asthma and bronchitis in non-smoking adults. Nonsmokers exposed to secondhand smoke at home or work increase their risk of developing heart disease by 25 to 30 percent and lung cancer by 20 to 30 percent compared to those not exposed to secondhand smoke [16].

Respondents were asked about rules regarding smoking in their households. Answer selections were: no smoking is allowed, smoking is allowed in some places or at some times, or smoking is permitted anywhere in the household. Presented here is the percentage of respondents reporting that no smoking was allowed in their household. Respondents were also asked about exposure to environmental tobacco smoke at their home, work, or other places. ETS exposure was defined in one of two ways depending on whether respondents reported working outside the home or not on an earlier employment status question. Among the employed (including the self-employed), ETS exposure was defined as any report of exposure to ETS at work, at home, or in other places in the past 7 days. Among those not employed outside the home, ETS exposure was defined as any exposure to ETS at home or in other places in the past 7 days.



The percent of MA adults who reported that they live in a household where smoking is not permitted increased by an average of 3.6% per year from 2001 through 2006 and then remained relatively stable. Data is not available for 2000. National data is not available for comparison.



The percent of MA adults who reported being exposed to environmental tobacco smoke decreased by an average of 10.2% per year from 2002 through 2009. Data is not available for 2000 or 2001. This drop in environmental smoke exposure correlates closely with initiatives in Massachusetts to ban smoking in public places and work places, beginning in 2004. National data is not available for comparison.

**TABLE 3.3 – ENVIRONMENTAL TOBACCO AMONG MASSACHUSETTS ADULTS, 2009**

	LIVE IN A HOUSEHOLD WHERE SMOKING IS NOT ALLOWED			EXPOSED TO ENVIRONMENTAL TOBACCO SMOKE		
	N	%	95% CI	N	%	95% CI
OVERALL	14652	80.6	79.3 - 81.8	14415	38.1	36.6 - 39.6
GENDER						
MALE	5425	78.9	76.9 - 80.8	5338	43.6	41.3 - 45.9
FEMALE	9227	82.1	80.5 - 83.7	9077	33.2	31.3 - 35.0
AGE GROUP						
18–24	402	68.1	61.0 - 75.2	393	64.6	57.5 - 71.7
25–34	1318	83.7	80.4 - 86.9	1290	50.5	46.3 - 54.6
35–44	2277	84.4	82.2 - 86.7	2234	36.4	33.5 - 39.3
45–54	3197	82.8	81.1 - 84.6	3154	32.7	30.4 - 35.0
55–64	3132	79.7	77.7 - 81.7	3087	31.0	28.6 - 33.4
65–74	2202	79.9	77.6 - 82.3	2161	27.8	25.1 - 30.6
75 AND OLDER	1934	81.4	79.0 - 83.9	1910	16.8	14.5 - 19.2
RACE-ETHNICITY*						
WHITE	12010	81.1	79.8 - 82.4	11843	36.5	35.0 - 38.1
BLACK	737	77.7	72.2 - 83.3	713	42.6	36.3 - 48.9
HISPANIC	1214	76.3	69.9 - 82.8	1187	44.9	38.3 - 51.4
ASIAN	214	86.2	75.5 - 96.9	210	45.7	35.0 - 56.5
DISABILITY <sup>†</sup>						
DISABILITY	1258	72.9	68.3 - 77.5	1239	42.9	37.9 - 48.0
NO DISABILITY	3389	82.1	79.5 - 84.7	3346	37.5	34.4 - 40.6
EDUCATION						
< HIGH SCHOOL	1509	69.7	63.8 - 75.5	1434	45.6	39.5 - 51.7
HIGH SCHOOL	3661	71.7	68.6 - 74.9	3590	44.3	41.0 - 47.6
COLLEGE 1–3 YRS	3428	77.8	75.0 - 80.6	3383	45.2	42.0 - 48.4
COLLEGE 4+ YRS	6031	88.3	87.0 - 89.6	5986	30.0	28.2 - 31.8
HOUSEHOLD INCOME						
<\$25,000	3378	70.9	67.8 - 74.1	3267	43.0	39.5 - 46.6
\$25,000–34,999	1282	76.0	70.9 - 81.0	1257	46.7	41.3 - 52.0
\$35,000–49,999	1611	74.1	69.5 - 78.7	1580	45.2	40.3 - 50.0
\$50,000–74,999	1837	80.5	77.7 - 83.3	1821	38.6	34.9 - 42.2
\$75,000+	4341	88.3	86.6 - 90.0	4323	31.8	29.6 - 34.1
REGION						
I–WESTERN	2104	76.7	73.1 - 80.3	2060	41.6	37.7 - 45.5
II–CENTRAL	1919	82.2	78.8 - 85.5	1888	37.8	33.8 - 41.7
III–NORTH EAST	3506	79.8	76.8 - 82.9	3442	39.0	35.5 - 42.4
IV–METRO WEST	1861	85.6	83.4 - 87.7	1862	31.8	28.8 - 34.8
V–SOUTH EAST	3620	76.8	73.7 - 79.9	3549	41.5	38.1 - 45.0
VI–BOSTON	1642	82.1	79.3 - 84.9	1614	39.3	35.4 - 43.1

\* White, Black, and Asian race categories refer to non-Hispanic

† Insufficient data

¶ Disability defined as having one or more of the following conditions for at least one year: (1) impairment or health problem that limited activities or caused cognitive difficulties; (2) used special equipment or required help from others to get around; or (3) reported a disability of any kind.

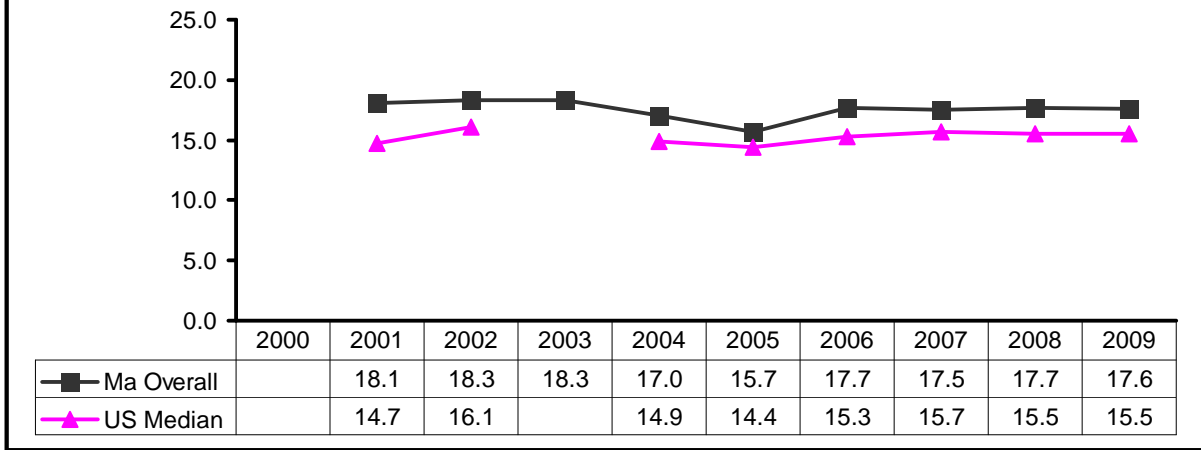


### **Section 3.4: Alcohol Use**

Excessive alcohol consumption is the third leading preventable cause of death in the United States [17]. Excessive drinking, including binge and heavy drinking, has numerous chronic effects including cirrhosis of the liver, pancreatitis, high blood pressure, stroke, and various cancers. Alcohol abuse can cause unintentional injuries, motor vehicle accidents, alcohol poisonings, and contributes to violence, and suicides [18]. In 2008, driving while under the influence of alcohol accounted for 124 alcohol-related fatalities in Massachusetts – 34% of the total traffic fatalities for the year [19].

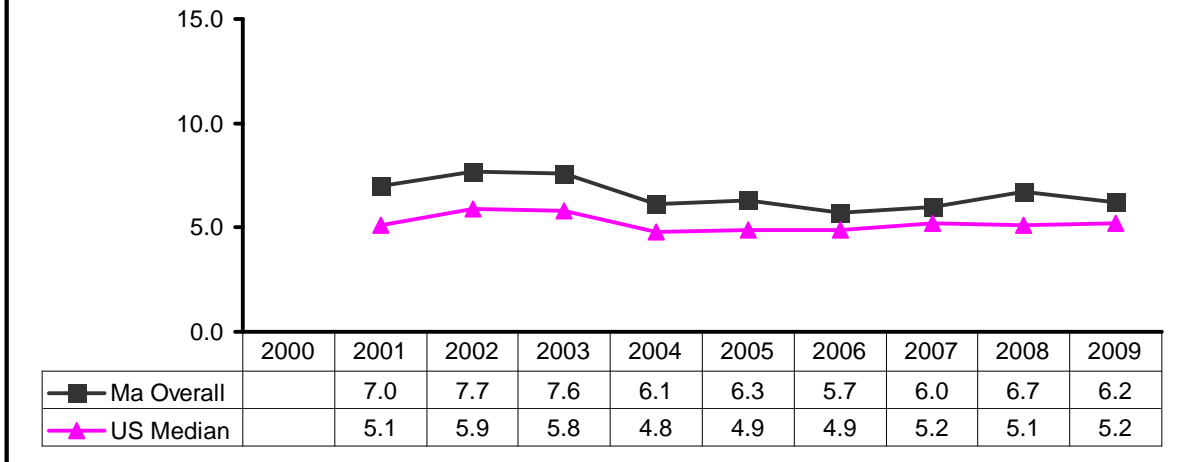
All respondents were asked about their consumption of alcohol in the past month. A drink of alcohol was defined as one can or bottle of beer, one glass of wine, one can or bottle of wine cooler, one cocktail, or one shot of liquor. Binge drinking was defined as consumption of five or more drinks for men or four or more drinks for women, on any one occasion in the past month. Heavy drinking was defined as consumption of more than 60 drinks in the past month for men and consumption of more than 30 drinks in the past month for women. Presented here are the percentage of adults who reported binge drinking and the percentage of adults who reported heavy drinking.

**Figure 3.4.1: Percentage of adults who report binge drinking, MA and US, 2000-2009**



Since 2001, there has been no significant trend in the annual percentage of MA adults who report either heavy drinking or binge drinking. MA estimates remain consistently slightly higher than national estimates for both heavy drinking and binge drinking. The percentage of adults at highest-risk for binge drinking, those ages 18-24, remained the same over the years, at about 30-35%. Data is not available for 2000.

**Figure 3.4.2: Percentage of adults who report heavy drinking, MA and US, 2000-2009**



**TABLE 3.4 – ALCOHOL USE AMONG MASSACHUSETTS ADULTS, 2009**

	BINGE DRINKING			HEAVY DRINKING**		
	N	%	95% CI	N	%	95% CI
OVERALL	15740	17.6	16.4 - 18.8	15614	6.2	5.5 - 6.9
<b>GENDER</b>						
MALE	5820	22.7	20.8 - 24.6	5756	5.8	4.8 - 6.7
FEMALE	9920	13.0	11.5 - 14.6	9858	6.6	5.5 - 7.7
<b>AGE GROUP</b>						
18–24	444	34.5	27.9 - 41.1	438	7.6	3.7 - 11.5
25–34	1438	26.4	22.9 - 30.0	1432	6.6	4.4 - 8.8
35–44	2447	19.8	17.5 - 22.1	2430	5.2	4.0 - 6.4
45–54	3398	16.3	14.6 - 18.0	3370	7.1	5.9 - 8.3
55–64	3313	9.7	8.3 - 11.2	3298	6.2	5.0 - 7.4
65–74	2342	5.5	4.2 - 6.9	2327	6.1	4.8 - 7.5
75 AND OLDER	2143	2.3	1.3 - 3.3	2114	4.0	2.8 - 5.3
<b>RACE-ETHNICITY*</b>						
WHITE	12813	18.9	17.5 - 20.3	12729	7.1	6.3 - 8.0
BLACK	817	11.5	7.2 - 15.8	807	†	
HISPANIC	1338	13.3	9.7 - 16.9	1324	2.4	1.0 - 3.8
ASIAN	†			†		
<b>DISABILITY<sup>¶</sup></b>						
DISABILITY	1253	12.7	9.0 - 16.3	1254	5.3	2.6 - 8.0
NO DISABILITY	3375	18.1	15.4 - 20.8	3329	5.9	4.6 - 7.1
<b>EDUCATION</b>						
< HIGH SCHOOL	1668	16.7	11.8 - 21.5	1651	6.7	3.8 - 9.6
HIGH SCHOOL	4012	18.9	16.2 - 21.7	3975	6.2	4.5 - 8.0
COLLEGE 1–3 YRS	3669	18.8	16.1 - 21.5	3647	7.2	5.4 - 8.9
COLLEGE 4+ YRS	6362	16.4	14.8 - 18.0	6311	5.6	4.9 - 6.4
<b>HOUSEHOLD INCOME</b>						
<\$25,000	3669	11.5	9.5 - 13.5	3644	4.2	3.2 - 5.3
\$25,000–34,999	1385	18.7	13.8 - 23.5	1369	5.4	3.0 - 7.7
\$35,000–49,999	1702	18.2	14.4 - 22.0	1705	7.8	5.1 - 10.5
\$50,000–74,999	1950	16.3	13.7 - 19.0	1939	6.7	4.9 - 8.4
\$75,000+	4611	21.1	19.0 - 23.1	4590	7.1	5.8 - 8.4
<b>REGION</b>						
I–WESTERN	2226	18.9	15.6 - 22.1	2212	5.3	3.8 - 6.7
II–CENTRAL	2039	15.5	12.7 - 18.3	2027	5.9	3.8 - 8.1
III–NORTH EAST	3816	18.2	15.5 - 20.9	3783	6.1	4.4 - 7.9
IV–METRO WEST	1997	18.2	15.2 - 21.1	1979	6.8	5.2 - 8.4
V–SOUTH EAST	3873	17.1	14.5 - 19.8	3851	7.0	5.3 - 8.7
VI–BOSTON	1789	16.9	14.1 - 19.7	1762	5.0	3.6 - 6.5

\* White, Black, and Asian race categories refer to non-Hispanic

† Insufficient data

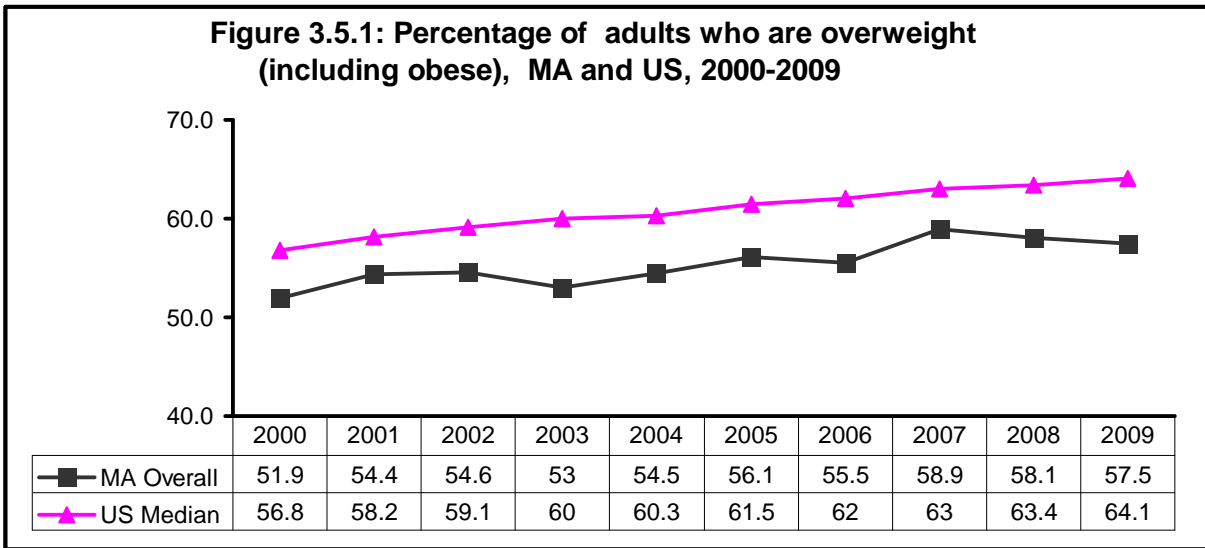
\*\* Rates may not be comparable to rates published prior to 2001 due to a change in the definition of heavy drinking.

¶ Disability defined as having one or more of the following conditions for at least one year: (1) impairment or health problem that limited activities or caused cognitive difficulties; (2) used special equipment or required help from others to get around; or (3) reported a disability of any kind.

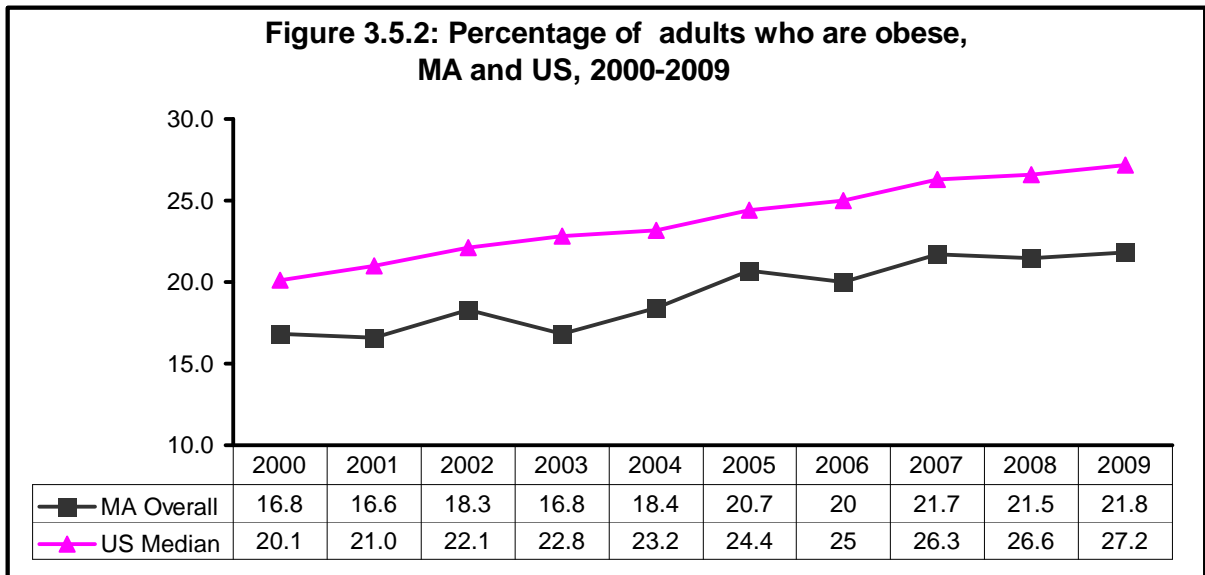
### **Section 3.5: Overweight and Obesity Status**

Obese and/or overweight adults are at increased risk of developing serious health conditions such as hypertension, dyslipidemia (a disorder of lipoprotein metabolism, which may include overproduction of blood cholesterol), type 2 diabetes, coronary heart disease, stroke, gallbladder disease, osteoarthritis, sleep apnea, respiratory problems, and certain cancers, including endometrial, breast, and colon cancer. An estimated 1.82 billion dollars in medical expenses are attributable to adult obesity in Massachusetts [20].

All respondents were asked to report their height and weight. Respondents' overweight status and obesity status were categorized based on their Body Mass Index (BMI), which equals weight in kilograms divided by height in meters squared. Using the Healthy People 2010 standards (HP2010), all adults with a BMI between 25.0 and 29.9 were classified as being overweight and adults with a BMI greater than or equal to 30.0 were classified as being obese. For example, a person who is 5'6" would be considered overweight at 155 pounds (BMI = 25) and obese at 186 pounds (BMI = 30). Presented here are the percentages of respondents who were determined to be overweight and obese. Please note that the overweight category includes all adults with a BMI of greater than 25.0, including obese respondents.



The percent of MA adults who reported being overweight (based on calculated BMI) increased by an average of 1.2% per year between 2000 and 2009. However, MA estimates remain consistently lower than national estimates, which are also increasing.



The percent of MA adults who reported being obese (based on calculated BMI) increased by an average of 3.5% per year between 2000 and 2009. However, MA estimates continue to be consistently lower than national estimates, which are also increasing.

**TABLE 3.5 – OVERWEIGHT AND OBESE AMONG MASSACHUSETTS ADULTS, 2009**

	OVERWEIGHT (BMI ≥ 25.0)			OBESE (BMI ≥ 30.0)		
	N	%	95% CI	N	%	95% CI
OVERALL	15592	57.5	56.1 - 58.9	15592	21.8	20.7 - 22.9
GENDER						
MALE	6050	67.6	65.5 - 69.7	6050	24.7	22.9 - 26.5
FEMALE	9542	47.7	45.9 - 49.5	9542	19.1	17.8 - 20.4
AGE GROUP						
18–24	448	35.9	29.4 - 42.3	448	11.7	7.6 - 15.9
25–34	1426	54.5	50.6 - 58.5	1426	22.2	18.9 - 25.5
35–44	2418	59.8	57.0 - 62.6	2418	23.6	21.0 - 26.2
45–54	3402	61.6	59.3 - 63.8	3402	23.5	21.5 - 25.5
55–64	3290	64.9	62.6 - 67.3	3290	26.4	24.2 - 28.6
65–74	2303	70.4	67.8 - 72.9	2303	25.8	23.3 - 28.3
75 AND OLDER	2140	55.5	52.6 - 58.4	2140	17.6	15.4 - 19.8
RACE-ETHNICITY*						
WHITE	12696	56.9	55.4 - 58.4	12696	21.1	20.0 - 22.3
BLACK	829	67.4	61.7 - 73.2	829	32.3	26.8 - 37.9
HISPANIC	1299	62.6	56.4 - 68.9	1299	28.1	23.0 - 33.1
ASIAN	249	38.1	28.9 - 47.2	†		
DISABILITY¶						
DISABILITY	1218	62.5	57.5 - 67.6	1218	31.1	26.6 - 35.5
NO DISABILITY	3250	54.9	51.8 - 57.9	3250	18.7	16.7 - 20.7
EDUCATION						
< HIGH SCHOOL	1606	61.1	54.8 - 67.4	1606	26.0	21.9 - 30.2
HIGH SCHOOL	4003	61.8	58.7 - 64.9	4003	26.2	23.6 - 28.8
COLLEGE 1–3 YRS	3629	59.0	55.9 - 62.2	3629	25.1	22.7 - 27.5
COLLEGE 4+ YRS	6331	53.8	51.9 - 55.7	6331	17.2	15.8 - 18.6
HOUSEHOLD INCOME						
<\$25,000	3629	59.9	56.4 - 63.5	3629	27.4	24.6 - 30.2
\$25,000–34,999	1386	61.3	56.3 - 66.4	1386	24.7	20.7 - 28.7
\$35,000–49,999	1713	63.0	58.7 - 67.3	1713	27.0	23.3 - 30.8
\$50,000–74,999	1926	61.1	57.6 - 64.6	1926	22.1	19.0 - 25.2
\$75,000+	4630	55.8	53.5 - 58.0	4630	18.9	17.2 - 20.6
REGION						
I–WESTERN	2272	57.2	53.6 - 60.9	2272	24.6	22.0 - 27.3
II–CENTRAL	2024	60.9	57.1 - 64.7	2024	23.6	20.7 - 26.6
III–NORTH EAST	3753	59.7	56.3 - 63.0	3753	23.0	20.4 - 25.5
IV–METRO WEST	1970	53.6	50.6 - 56.7	1970	18.0	15.5 - 20.4
V–SOUTH EAST	3815	59.0	55.8 - 62.2	3815	21.7	19.3 - 24.1
VI–BOSTON	1758	54.4	50.7 - 58.2	1758	21.9	19.0 - 24.9

\* White, Black, and Asian race categories refer to non-Hispanic

† Insufficient data

¶ Disability defined as having one or more of the following conditions for at least one year: (1) impairment or health problem that limited activities or caused cognitive difficulties; (2) used special equipment or required help from others to get around; or (3) reported a disability of any kind.

### **Section 3.6: Physical Activity**

Regular physical activity reduces a person's risk for heart attack, colon cancer, diabetes, and high blood pressure, and helps to reduce the risk of stroke. Additionally, it helps to control weight, contributes to healthy bones, muscles, and joints, reduces falls among older adults, helps to relieve the pain of arthritis, reduces symptoms of anxiety and depression, and is associated with fewer hospitalizations, physician visits, and medications [21].

In 2009 all respondents were asked if they had participated in any moderate or vigorous physical activity. Moderate is defined as active for at least 10 minutes at a time, such as brisk walking, bicycling, vacuuming, gardening, or anything else that causes some increase in breathing or heart rate. Vigorous is defined as active for at least 10 minutes at a time, such as running, aerobics, heavy yard work, or anything else that causes large increases in breathing or heart rate. Respondents were also asked how many days per week they were engaged in the activity. Presented here is the percentage of respondents who reported 30 minutes or more of moderate physical activity at least 5 days per week, or 20 minutes or more of vigorous physical activity at least 3 days per week..

This report does not include trend charts for either of these indicators due to an insufficient number of years of continuous data to use for analysis.

**TABLE 3.6 – MODERATE OR VIGOROUS LEISURE TIME PHYSICAL ACTIVITY AMONG MASSACHUSETTS ADULTS, 2009**

	MODERATE PHYSICAL ACTIVITY			VIGOROUS PHYSICAL ACTIVITY		
	N	%	95% CI	N	%	95% CI
OVERALL	14763	53.0	51.6 - 54.4	15047	30.8	29.5 - 32.2
GENDER						
MALE	5519	54.7	52.5 - 56.9	5578	34.4	32.2 - 36.6
FEMALE	9244	51.5	49.7 - 53.3	9469	27.6	25.9 - 29.3
AGE GROUP						
18–24	401	61.4	54.3 - 68.5	409	42.1	35.0 - 49.3
25–34	1350	56.2	52.3 - 60.2	1361	35.9	32.1 - 39.8
35–44	2333	54.3	51.4 - 57.3	2350	35.5	32.7 - 38.3
45–54	3250	54.9	52.5 - 57.3	3279	34.3	32.0 - 36.6
55–64	3136	50.8	48.3 - 53.3	3212	23.9	21.8 - 26.1
65–74	2197	47.7	44.7 - 50.6	2239	20.4	18.1 - 22.8
75 AND OLDER	1900	36.5	33.5 - 39.6	1995	10.0	8.1 - 11.9
RACE-ETHNICITY*						
WHITE	12078	55.5	54.0 - 57.0	12303	32.3	30.8 - 33.8
BLACK	742	46.0	39.9 - 52.1	762	26.1	20.5 - 31.8
HISPANIC	1239	35.6	29.8 - 41.5	1268	20.5	14.9 - 26.0
ASIAN	221	37.7	28.4 - 47.0	223	20.7	13.5 - 27.9
DISABILITY†						
DISABILITY	1222	47.5	42.5 - 52.6	1255	21.5	17.0 - 26.0
NO DISABILITY	3319	56.5	53.7 - 59.4	3376	35.8	32.9 - 38.8
EDUCATION						
< HIGH SCHOOL	1507	39.5	33.7 - 45.3	1568	21.1	15.8 - 26.4
HIGH SCHOOL	3678	48.6	45.4 - 51.8	3779	24.7	21.5 - 27.8
COLLEGE 1–3 YRS	3444	52.4	49.3 - 55.5	3507	30.4	27.4 - 33.4
COLLEGE 4+ YRS	6114	57.6	55.8 - 59.5	6170	35.8	34.0 - 37.7
HOUSEHOLD INCOME						
<\$25,000	3353	44.6	41.2 - 48.0	3463	22.4	19.0 - 25.8
\$25,000–34,999	1287	47.8	42.7 - 52.9	1321	23.6	19.3 - 27.9
\$35,000–49,999	1623	51.9	47.4 - 56.5	1655	28.4	23.8 - 33.1
\$50,000–74,999	1874	54.5	50.9 - 58.0	1879	29.5	26.3 - 32.8
\$75,000+	4439	59.7	57.5 - 61.9	4459	39.6	37.3 - 41.8
REGION						
I–WESTERN	2100	54.0	50.4 - 57.7	2146	32.9	29.3 - 36.5
II–CENTRAL	1921	50.2	46.4 - 54.0	1962	27.7	24.6 - 30.9
III–NORTH EAST	3571	53.6	50.4 - 56.7	3629	29.7	26.6 - 32.9
IV–METRO WEST	1891	52.1	49.0 - 55.2	1911	32.8	29.8 - 35.9
V–SOUTH EAST	3615	56.4	53.3 - 59.5	3703	31.0	27.7 - 34.4
VI–BOSTON	1665	49.1	45.3 - 53.0	1696	28.7	25.3 - 32.0

\* White, Black, and Asian race categories refer to non-Hispanic

† Insufficient data

‡ Disability defined as having one or more of the following conditions for at least one year: (1) impairment or health problem that limited activities or caused cognitive difficulties; (2) used special equipment or required help from others to get around; or (3) reported a disability of any kind.



### Section 3.7: Fruit and Vegetable Consumption

A diet rich in fruits and vegetables not only aids in weight management, but also has been associated with a decreased risk for chronic diseases [22]. The goal for Healthy People 2010 is to ensure that at least 75% of adults consume at least two servings of fruit and for 50% of adults to consume at least 3 daily servings of vegetables (including at least one serving of dark green or orange vegetables) per day.

All respondents were asked approximately how many servings of fruits and vegetables they consumed each day. Presented here is the percentage of respondents who stated that they consumed at least five servings of fruits or vegetables per day.

A trend chart of the percent of MA adults who reported that they consume five or more servings of fruits or vegetables per day is not provided here because these questions are only asked in alternate years, resulting in too few data points for analysis. Table 3.7.1 shows that available state data remained relatively stable and was slightly higher than national estimates over the years..

<b>TABLE 3.7.1: PERCENTAGE OF ADULTS WHO CONSUME 5 OR MORE SERVINGS OF FRUIT AND VEGETABLE PER DAY, MA AND US, 2000-2009</b>										
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
MA Overall	30.0		29.7	29.0		28.6		27.5		26.2
US Median	23.2		22.6	22.6		23.2		24.3		23.5

**TABLE 3.7.2 – FRUIT AND VEGETABLE CONSUMPTION AMONG MASSACHUSETTS ADULTS, 2009**

	5 OR MORE SERVINGS OF FRUIT OR VEGETABLES PER DAY		
	N	%	95% CI
OVERALL	15489	26.2	25.0 - 27.4
<b>GENDER</b>			
MALE	5745	20.1	18.4 - 21.8
FEMALE	9744	31.7	30.1 - 33.4
<b>AGE GROUP</b>			
18–24	427	26.3	20.4 - 32.3
25–34	1402	23.4	20.1 - 26.6
35–44	2411	25.3	22.8 - 27.9
45–54	3367	27.6	25.5 - 29.7
55–64	3281	25.3	23.2 - 27.4
65–74	2314	25.0	22.5 - 27.4
75 AND OLDER	2079	33.0	30.2 - 35.9
<b>RACE-ETHNICITY*</b>			
WHITE	12639	27.0	25.7 - 28.3
BLACK	789	20.0	15.9 - 24.1
HISPANIC	1310	23.3	18.6 - 28.0
ASIAN	234	25.8	18.1 - 33.5
<b>DISABILITY<sup>†</sup></b>			
DISABILITY	1268	23.8	19.8 - 27.8
NO DISABILITY	3414	27.5	24.9 - 30.0
<b>EDUCATION</b>			
< HIGH SCHOOL	1627	20.3	15.8 - 24.9
HIGH SCHOOL	3917	20.2	17.8 - 22.5
COLLEGE 1–3 YRS	3606	25.9	23.3 - 28.6
COLLEGE 4+ YRS	6314	30.6	28.9 - 32.3
<b>HOUSEHOLD INCOME</b>			
<\$25,000	3579	22.4	19.7 - 25.0
\$25,000–34,999	1357	23.2	19.6 - 26.9
\$35,000–49,999	1691	23.9	20.5 - 27.4
\$50,000–74,999	1916	25.8	22.9 - 28.8
\$75,000+	4558	29.1	27.1 - 31.2
<b>REGION</b>			
I–WESTERN	2201	28.4	25.1 - 31.8
II–CENTRAL	2014	24.5	21.6 - 27.3
III–NORTH EAST	3753	27.4	24.5 - 30.2
IV–METRO WEST	1961	28.1	25.4 - 30.7
V–SOUTH EAST	3812	23.1	20.7 - 25.5
VI–BOSTON	1748	25.0	22.1 - 27.9

\* White, Black, and Asian race categories refer to non-Hispanic

† Insufficient Data

¶ Disability defined as having one or more of the following conditions for at least one year: (1) impairment or health problem that limited activities or caused cognitive difficulties; (2) used special equipment or required help from others to get around; or (3) reported a disability of any kind.

### Section 3.8: Cholesterol Awareness

High cholesterol, defined as total serum cholesterol over 199 mg/dL, is an important risk factor for cardiovascular disease [23]. Researchers consider it important to discern cholesterol awareness in various populations so that prevention efforts may be more targeted [23]. Reducing the proportion of people with high serum cholesterol levels to 17% or less is one of the objectives listed in Healthy People 2010.

All respondents were asked about whether they had ever had their cholesterol tested, and, if so, how long it had been since they last had it tested. Respondents who indicated that they had ever had their cholesterol tested were asked if they had ever been told by a doctor, nurse, or other medical professional that they had high cholesterol. Below are the percentages of respondents who indicated that they had had their cholesterol tested in the past five years and the percentage of respondents who had ever been tested and told that they have high cholesterol.

Trend charts are not provided for either of these indicators as questions are only asked in alternate years and not enough points are available for analysis. However, as shown in tables 3.8.1 and 3.8.2, available state data has remained relatively stable with MA estimates of percentage of adults who had their cholesterol checked in the past year slightly higher than national estimates and MA estimates of the percentage of adults who were told their cholesterol was high being similar to national estimates.

<b>TABLE 3.8.1: PERCENTAGE OF ADULTS WHO HAD CHOLESTEROL CHECKED IN PAST 5 YEARS, MA AND US, 2000-2009</b>										
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
MA Overall		81.5		81.7		79.3		84.6		84.0
US Median		72.5		73.0		73.0		74.8		76.9

<b>TABLE 3.8.2: PERCENTAGE OF ADULTS WHO WERE TOLD BY A HEALTH PROVIDER THAT THEY HAD HIGH CHOLESTEROL, MA AND US, 2000-2009</b>										
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
MA Overall		29.7		32.4		35.7		35.6		35.6
US Median		30.3		33.2		35.6		37.5		37.4

**TABLE 3.8.3 – CHOLESTEROL AWARENESS AMONG MASSACHUSETTS ADULTS, 2009**

	CHOLESTEROL CHECKED IN PAST 5 YEARS			HIGH CHOLESTEROL**		
	N	%	95% CI	N	%	95% CI
OVERALL	16206	84.0	82.7 - 85.3	14972	35.6	34.4 - 36.8
GENDER						
MALE	6018	82.1	80.1 - 84.2	5471	39.3	37.3 - 41.3
FEMALE	10188	85.7	84.0 - 87.3	9501	32.4	30.8 - 33.9
AGE GROUP						
18–24	406	48.2	40.8 - 55.5	219	18.3	10.4 - 26.2
25–34	1451	71.2	67.7 - 74.8	1105	17.0	13.7 - 20.3
35–44	2516	85.6	83.6 - 87.6	2263	26.6	23.9 - 29.3
45–54	3528	93.2	92.2 - 94.3	3347	36.2	33.9 - 38.5
55–64	3442	95.2	94.2 - 96.2	3315	49.9	47.4 - 52.4
65–74	2420	95.6	94.4 - 96.7	2344	53.3	50.4 - 56.1
75 AND OLDER	2187	96.5	95.6 - 97.5	2135	48.3	45.3 - 51.2
RACE-ETHNICITY*						
WHITE	13162	86.4	85.1 - 87.8	12443	36.2	34.9 - 37.5
BLACK	853	78.7	73.0 - 84.3	754	31.6	25.9 - 37.3
HISPANIC	1370	65.4	59.0 - 71.7	1049	34.8	29.2 - 40.3
ASIAN	256	85.6	78.5 - 92.7	233	32.4	23.6 - 41.2
DISABILITY <sup>†</sup>						
DISABILITY	1216	87.5	83.4 - 91.5	1146	49.0	43.9 - 54.0
NO DISABILITY	3336	82.6	79.5 - 85.6	3070	33.5	31.0 - 36.0
EDUCATION						
< HIGH SCHOOL	1698	71.6	65.4 - 77.7	1460	40.3	35.0 - 45.5
HIGH SCHOOL	4110	78.4	75.2 - 81.6	3710	39.1	36.3 - 41.8
COLLEGE 1–3 YRS	3771	81.9	78.9 - 84.9	3486	36.2	33.5 - 38.8
COLLEGE 4+ YRS	6533	90.2	89.0 - 91.4	6233	33.3	31.5 - 35.0
HOUSEHOLD INCOME						
<\$25,000	3720	75.3	71.8 - 78.9	3261	40.2	37.1 - 43.3
\$25,000–34,999	1414	82.1	78.1 - 86.1	1279	38.8	34.2 - 43.4
\$35,000–49,999	1735	82.6	78.0 - 87.2	1620	37.4	33.5 - 41.2
\$50,000–74,999	1978	85.1	81.8 - 88.4	1860	35.6	32.4 - 38.8
\$75,000+	4702	90.1	88.4 - 91.9	4518	32.6	30.6 - 34.6
REGION						
I–WESTERN	2467	80.5	77.1 - 83.9	2235	33.9	30.9 - 36.8
II–CENTRAL	2088	85.8	82.6 - 89.1	1944	36.0	32.7 - 39.4
III–NORTH EAST	3911	82.0	78.8 - 85.2	3554	37.8	34.9 - 40.7
IV–METRO WEST	2031	88.6	86.2 - 91.0	1941	34.9	32.1 - 37.6
V–SOUTH EAST	3927	83.2	79.9 - 86.4	3659	35.9	33.3 - 38.5
VI–BOSTON	1782	81.3	77.4 - 85.2	1639	34.8	31.4 - 38.3

\*White, Black, and Asian race categories refer to non-Hispanic

\*\* Analysis conducted among those who reported having their cholesterol checked

† Insufficient data

¶ Disability defined as having one or more of the following conditions for at least one year: (1) impairment or health problem that limited activities or caused cognitive difficulties; (2) used special equipment or required help from others to get around; or (3) reported a disability of any kind.

### Section 3.9: Hypertension Awareness

Hypertension, commonly known as “high blood pressure,” is a risk factor for many conditions including heart disease, kidney failure, stroke, and disability [24]. According to the CDC, approximately one in four U.S. adults has hypertension [24]. Hypertension is defined as having an average systolic blood pressure greater than or equal to 140 mm Hg or diastolic blood pressure greater than or equal to 90 mm Hg [24]. To reduce the incidence of chronic diseases and potentially fatal conditions resulting from hypertension, the Healthy People 2010 goal is to reduce the proportion of U.S. adults with high blood pressure to 14% or less.

All respondents were asked if a doctor, nurse, or other health professional had ever told them that they had high blood pressure. Respondents who answered yes were then asked if they were taking medication for their high blood pressure. Presented below are the percentages of respondents who had been told that they had high blood pressure and, if so, if they are currently taking medication to treat it. This report does not include the trend chart for reporting taking medicine for high blood pressure due to an insufficient number of continuous years of data to use in analyzing the trend.

Trend charts for these indicators are not provided because these questions are only asked in alternate years, resulting in too few data points for analysis. As table 3.9.1 shows, the available data has remained relatively stable with MA estimates similar to national estimates

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
MA Overall		23.3		23.1		25.3		26.4		25.7
US Median		25.6		24.9		25.8		27.1		28.7

**TABLE 3.9.2 – HYPERTENSION AWARENESS AMONG MASSACHUSETTS ADULTS, 2009**

	HIGH BLOOD PRESSURE			TAKE MEDICINE FOR HIGH BLOOD PRESSURE**		
	N	%	95% CI	N	%	95% CI
OVERALL	16690	25.7	24.7 - 26.8	5905	78.8	76.7 - 80.9
GENDER						
MALE	6197	26.9	25.2 - 28.5	2335	74.8	71.4 - 78.1
FEMALE	10493	24.7	23.5 - 26.0	3570	82.8	80.2 - 85.4
AGE GROUP						
18–24	473	5.5	2.4 - 8.5	†		
25–34	1525	10.1	7.8 - 12.3	152	26.3	16.9 - 35.8
35–44	2582	13.3	11.4 - 15.2	408	52.1	44.4 - 59.7
45–54	3600	24.7	22.7 - 26.7	948	74.8	70.6 - 79.0
55–64	3505	40.1	37.7 - 42.4	1496	88.6	86.2 - 90.9
65–74	2450	54.2	51.4 - 57.0	1384	94.0	92.2 - 95.9
75 AND OLDER	2287	60.3	57.5 - 63.1	1409	95.7	93.8 - 97.6
RACE-ETHNICITY*						
WHITE	13538	26.2	25.1 - 27.3	4783	80.2	77.8 - 82.5
BLACK	888	30.3	25.6 - 35.0	369	80.5	72.9 - 88.0
HISPANIC	1415	22.3	18.6 - 26.1	505	69.2	60.7 - 77.7
ASIAN	264	13.3	7.6 - 19.1	†		
DISABILITY¶						
DISABILITY	1265	40.9	36.4 - 45.5	635	81.2	75.0 - 87.3
NO DISABILITY	3417	22.1	20.0 - 24.2	1029	79.4	74.7 - 84.2
EDUCATION						
< HIGH SCHOOL	1777	32.5	28.3 - 36.6	922	83.4	79.1 - 87.8
HIGH SCHOOL	4271	31.4	29.0 - 33.8	1802	80.4	76.0 - 84.9
COLLEGE 1–3 YRS	3869	26.6	24.3 - 28.8	1345	77.1	72.5 - 81.7
COLLEGE 4+ YRS	6676	21.1	19.8 - 22.4	1798	77.5	74.2 - 80.7
HOUSEHOLD INCOME						
<\$25,000	3845	35.6	32.7 - 38.5	1811	79.1	74.1 - 84.1
\$25,000–34,999	1444	30.0	26.3 - 33.7	596	88.6	84.2 - 93.1
\$35,000–49,999	1781	28.5	25.1 - 31.9	623	76.5	69.8 - 83.1
\$50,000–74,999	2018	25.0	22.3 - 27.7	605	77.7	72.0 - 83.5
\$75,000+	4784	19.3	17.8 - 20.8	1101	73.6	69.4 - 77.7
REGION						
I–WESTERN	2562	27.2	24.6 - 29.8	967	78.8	74.0 - 83.6
II–CENTRAL	2149	25.3	22.7 - 27.9	732	76.8	71.4 - 82.1
III–NORTH EAST	4005	23.8	21.6 - 25.9	1400	83.2	79.4 - 86.9
IV–METRO WEST	2078	22.6	20.5 - 24.7	631	80.2	75.4 - 85.0
V–SOUTH EAST	4046	29.6	27.0 - 32.2	1546	77.2	71.6 - 82.8
VI–BOSTON	1850	27.3	24.4 - 30.2	629	74.6	68.2 - 81.0

\*White, Black, and Asian race categories refer to non-Hispanic

\*\* Analysis conducted among those who reported having high blood pressure

† Insufficient data

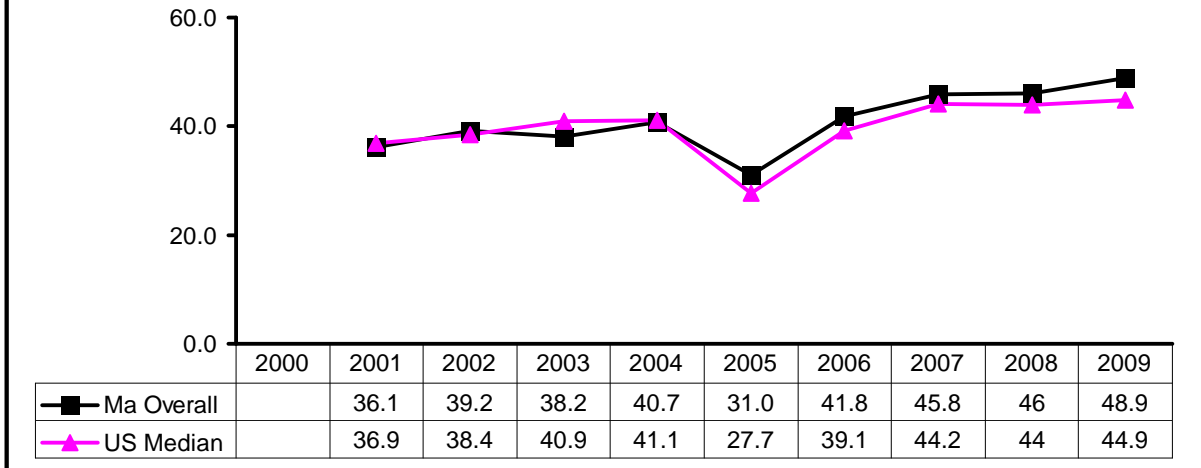
¶ Disability defined as having one or more of the following conditions for at least one year: (1) impairment or health problem that limited activities or caused cognitive difficulties; (2) used special equipment or required help from others to get around; or (3) reported a disability of any kind.

### **Section 3.10: Flu Vaccine and Pneumonia Vaccine**

Influenza, or the flu, is a contagious respiratory illness caused by influenza viruses. It can cause mild to severe illness and can even lead to death. Every year in the United States, on average, between 5 and 20 percent of the population acquires the flu; more than 200,000 people are hospitalized from flu complications, and about 36,000 people die from the flu [25]. Adults 65 years or older, children younger than 2 years old, and individuals with chronic medical conditions are at increased risk for pneumococcal infection. In Massachusetts, flu and pneumonia were the seventh leading causes of death in 2007 among adults 65 and older [26].

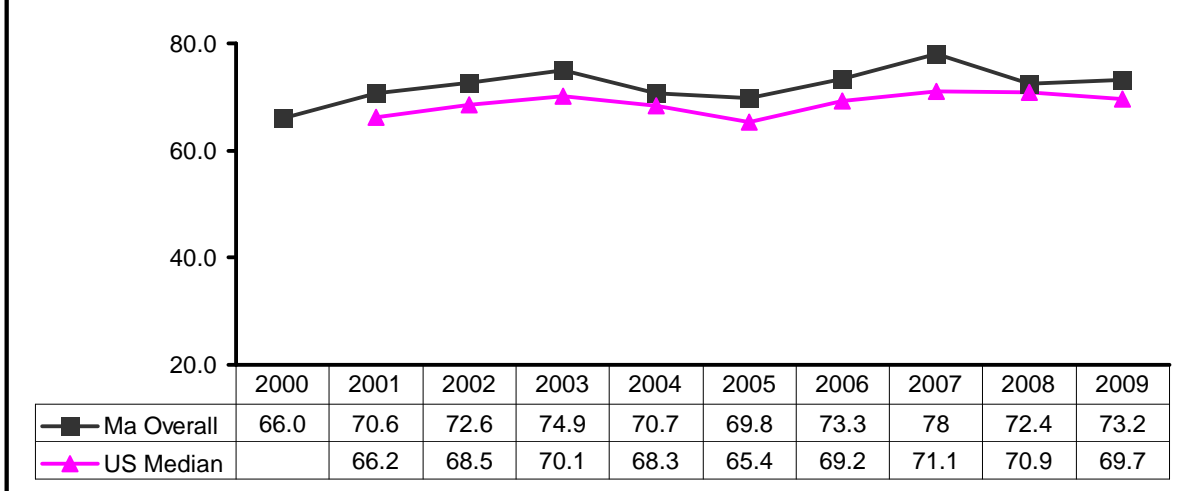
All respondents were asked if they had received an influenza vaccine (flu shot) or nasal flu spray (flu mist) within the past 12 months. In addition, all respondents were asked if they had ever received a pneumonia vaccine. Presented here are the percentages of adults ages 50-64 years and ages 65 and older who received a flu vaccine or spray in the past year, and the percentage of adults, ages 65 and older, who reported that they had ever had a pneumonia vaccination.

**Figure 3.10.1: Percentage of adults ages 50-64 who have had a flu shot in past year, 2000-2009**



The percent of MA adults ages 50-64 who reported receiving a seasonal flu vaccination in the past year increased by an average of 3.5% per year between 2001 and 2009. Data is not available for 2000. MA estimates are similar to national estimates. The dip in the percent of those receiving vaccine in 2005 may be due to an influenza vaccine shortage in that year.

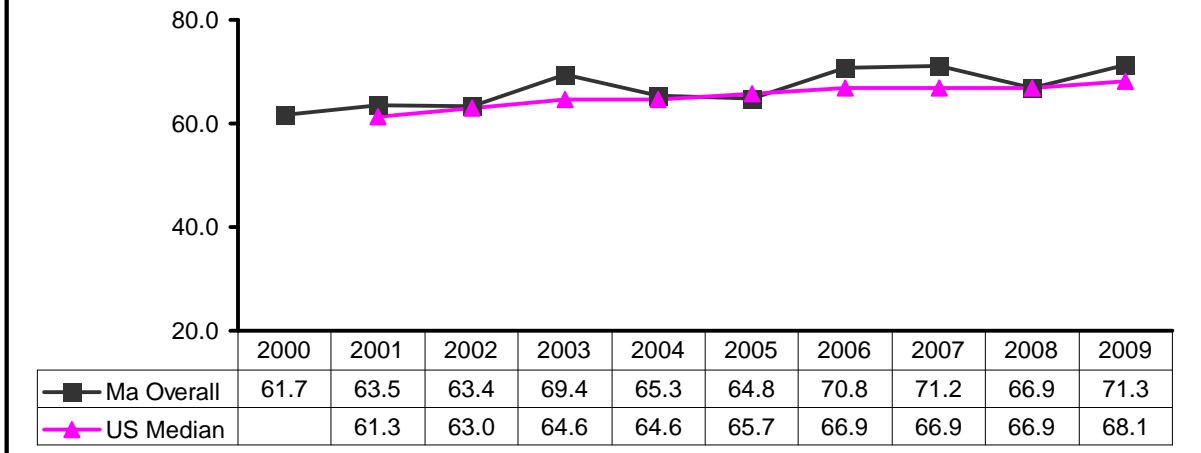
**Figure 3.10.2: Percentage of adults ages 65 and older who have had a flu shot in the past year, MA and US, 2000-2009**



There was no significant trend in the percent of MA adults ages 65 and older who reported receiving a seasonal flu vaccination between 2000 and 2009. National data is not available for 2000. MA estimates are slightly higher than national estimates.



**Figure 3.10.3: Percentage of adults ages 65 and older who have ever had a pneumonia shot, MA and US, 2000-2009**



The percent of MA adults ages 65 and older who reported ever receiving pneumonia vaccine increased by an average of 1.4% per year between 2000 and 2009. National data is not available for 2000. MA estimates are similar to national estimates.

**TABLE 3.10.1 – FLU VACCINE AMONG MASSACHUSETTS ADULTS, AGES 50 YEARS AND OLDER, 2009**

	AGES 50-64			AGES 65+		
	N	%	95% CI	N	%	95% CI
OVERALL	5156	48.9	46.9 - 50.9	4481	73.2	71.4 - 75.0
GENDER						
MALE	1980	45.6	42.6 - 48.7	1599	73.4	70.3 - 76.4
FEMALE	3176	51.8	49.3 - 54.4	2882	73.1	70.8 - 75.4
AGE GROUP						
50-64	5156	48.9	46.9 - 50.9			
65-74				2355	67.7	65.0 - 70.4
75 AND OLDER				2126	78.9	76.5 - 81.3
RACE-ETHNICITY*						
WHITE	4395	49.6	47.5 - 51.7	3970	74.5	72.7 - 76.4
BLACK	239	41.6	31.5 - 51.7	154	59.3	48.4 - 70.2
HISPANIC	323	47.4	38.7 - 56.1	195	70.2	60.3 - 80.1
ASIAN	52	58.8	40.8 - 76.8	†		
DISABILITY¶						
DISABILITY	449	61.7	55.1 - 68.3	460	77.5	71.9 - 83.0
NO DISABILITY	1085	47.0	42.8 - 51.2	824	71.2	66.9 - 75.4
EDUCATION						
< HIGH SCHOOL	458	46.7	38.8 - 54.5	706	71.1	66.1 - 76.1
HIGH SCHOOL	1177	39.5	35.4 - 43.5	1475	71.3	68.0 - 74.6
COLLEGE 1-3 YRS	1178	47.2	43.1 - 51.3	990	72.3	68.3 - 76.4
COLLEGE 4+ YRS	2337	53.7	50.8 - 56.5	1301	76.3	73.2 - 79.3
HOUSEHOLD INCOME						
<\$25,000	959	51.0	45.8 - 56.2	1487	70.3	66.9 - 73.8
\$25,000-34,999	398	44.5	37.4 - 51.6	544	73.1	67.8 - 78.4
\$35,000-49,999	582	41.7	35.9 - 47.6	527	70.6	65.0 - 76.2
\$50,000-74,999	748	44.9	39.7 - 50.1	390	73.3	67.7 - 78.9
\$75,000+	1818	50.2	47.1 - 53.3	520	76.1	71.4 - 80.8
REGION						
I-WESTERN	720	46.6	41.7 - 51.5	659	68.7	63.8 - 73.5
II-CENTRAL	679	48.2	43.0 - 53.4	559	73.2	68.5 - 77.8
III-NORTH EAST	1171	47.6	42.9 - 52.3	1042	72.5	68.0 - 76.9
IV-METRO WEST	667	55.7	51.3 - 60.1	574	80.3	76.7 - 84.0
V-SOUTH EAST	1316	43.2	38.9 - 47.6	1187	70.5	66.5 - 74.6
VI-BOSTON	603	51.6	46.1 - 57.1	460	70.4	65.2 - 75.6

\* White, Black, and Asian race categories refer to non-Hispanic

† Insufficient data

¶ Disability defined as having one or more of the following conditions for at least one year: (1) impairment or health problem that limited activities or caused cognitive difficulties; (2) used special equipment or required help from others to get around; or (3) reported a disability of any kind.

**TABLE 3.10.2 – PNEUMONIA VACCINE AMONG MASSACHUSETTS ADULTS, AGES 65 YEARS AND OLDER, 2009**

	EVER HAD PNEUMONIA VACCINE		
	N	%	95% CI
OVERALL	4277	71.3	69.4 - 73.2
GENDER			
MALE	1503	67.4	64.1 - 70.7
FEMALE	2774	73.9	71.7 - 76.2
AGE GROUP			
65–74	2245	64.8	61.9 - 67.6
75 AND OLDER	2032	77.9	75.5 - 80.4
RACE-ETHNICITY*			
WHITE	3806	72.4	70.5 - 74.4
BLACK	143	58.3	47.5 - 69.2
HISPANIC	177	53.5	41.9 - 65.1
ASIAN	†		
DISABILITY¶			
DISABILITY	437	80.8	75.6 - 86.0
NO DISABILITY	788	67.2	62.6 - 71.7
EDUCATION			
< HIGH SCHOOL	661	67.9	62.6 - 73.2
HIGH SCHOOL	1419	71.8	68.4 - 75.1
COLLEGE 1–3 YRS	952	73.2	69.3 - 77.2
COLLEGE 4+ YRS	1237	70.6	67.3 - 73.9
HOUSEHOLD INCOME			
<\$25,000	1420	72.3	68.9 - 75.7
\$25,000–34,999	518	71.2	65.5 - 76.8
\$35,000–49,999	513	65.8	60.0 - 71.7
\$50,000–74,999	373	76.9	71.6 - 82.2
\$75,000+	495	67.5	62.3 - 72.6
REGION			
I–WESTERN	632	69.7	64.8 - 74.5
II–CENTRAL	529	73.6	68.9 - 78.3
III–NORTH EAST	996	71.5	67.1 - 76.0
IV–METRO WEST	547	73.5	69.3 - 77.7
V–SOUTH EAST	1143	70.5	66.4 - 74.5
VI–BOSTON	430	65.7	60.1 - 71.3

\* White, Black, and Asian race categories refer to non-Hispanic

† Insufficient Data

¶ Disability defined as having one or more of the following conditions for at least one year: (1) impairment or health problem that limited activities or caused cognitive difficulties; (2) used special equipment or required help from others to get around; or (3) reported a disability of any kind.

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## SECTION 4: CHRONIC HEALTH CONDITIONS

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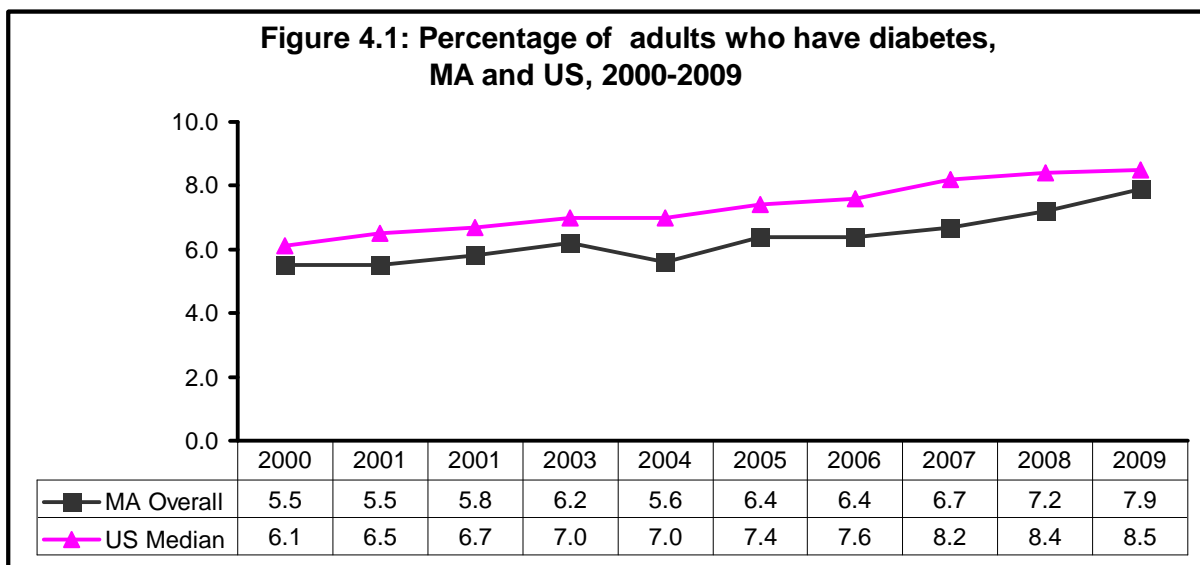
## SECTION 4: CHRONIC HEALTH CONDITIONS

### Section 4.1: Diabetes

Diabetes is a disease in which the body does not produce or properly use insulin. Insulin is a hormone which is used to convert sugar, starches, and other food into the energy needed for everyday life [27]. There are two types of diabetes: type 1 and type 2. In type 1 diabetes, the body is unable to produce insulin. In type 2 diabetes, the body is able to produce insulin, but is unable to utilize it efficiently.

Obesity, poor diet, and physical inactivity are risk factors associated with the increase in the prevalence of type 2 diabetes. In 2007, diabetes was the ninth leading cause of death in Massachusetts [26]. Overall, the risk for death among people with diabetes is about twice that of people without diabetes of a similar age [28]. In Massachusetts, 9.9 percent of the Commonwealth's medical care costs are attributable to diabetes [29].

All respondents were asked if a doctor had ever told them that they had diabetes or pre-diabetes (defined as a blood glucose level that is higher than normal but not yet diabetic). Women who reported that they had diabetes only during pregnancy (gestational diabetes) were categorized as not having diabetes. Presented here is the percentage of respondents who reported that a doctor had ever told them that they had diabetes and the percentage of respondents who reported that a doctor had ever told them that they have pre-diabetes. Trend data is not shown for pre-diabetes as this is a recently added question with too few data points for analysis.



The percent of MA adults who reported being diagnosed with diabetes increased by an average of 4.1% per year between 2000 and 2009, which corresponds with the national increase. However, MA estimates have remained consistently lower than US estimates.

MA began asking questions about prediabetes in 2007; therefore not enough data is available for trend analysis.

**TABLE 4.1 – DIABETES AMONG MASSACHUSETTS ADULTS, 2009**

	PRE-DIABETES			DIABETES		
	N	%	95% CI	N	%	95% CI
OVERALL	13139	4.6	4.1 - 5.1	16716	7.9	7.3 - 8.5
GENDER						
MALE	4804	4.2	3.5 - 4.9	6210	8.9	7.9 - 9.9
FEMALE	8335	5.0	4.3 - 5.7	10506	7.0	6.3 - 7.7
AGE GROUP						
18–24	†			†		
25–34	1290	2.3	1.2 - 3.4	†		
35–44	2173	2.6	1.7 - 3.5	2580	4.3	3.0 - 5.5
45–54	2980	4.3	3.3 - 5.3	3604	6.9	5.7 - 8.1
55–64	2683	7.5	6.0 - 8.9	3508	14.2	12.4 - 16.0
65–74	1785	10.4	8.4 - 12.3	2458	19.5	17.2 - 21.8
75 AND OLDER	1645	8.7	6.7 - 10.6	2296	17.1	15.0 - 19.2
RACE-ETHNICITY*						
WHITE	10893	4.6	4.1 - 5.2	13560	7.2	6.6 - 7.8
BLACK	636	4.6	2.6 - 6.5	887	11.0	8.0 - 14.1
HISPANIC	1003	4.5	2.4 - 6.7	1416	8.8	6.9 - 10.6
ASIAN	†			266	11.8	5.9 - 17.6
DISABILITY <sup>¶</sup>						
DISABILITY	1001	7.8	5.3 - 10.3	1266	13.5	10.9 - 16.1
NO DISABILITY	3135	3.2	2.4 - 4.0	3419	5.6	4.5 - 6.7
EDUCATION						
< HIGH SCHOOL	1181	5.7	3.5 - 8.0	1783	14.2	11.6 - 16.8
HIGH SCHOOL	3203	5.6	4.5 - 6.7	4277	10.1	8.8 - 11.5
COLLEGE 1–3 YRS	3068	5.3	4.1 - 6.4	3876	7.6	6.5 - 8.7
COLLEGE 4+ YRS	5666	3.7	3.0 - 4.3	6682	5.7	4.9 - 6.5
HOUSEHOLD INCOME						
<\$25,000	2753	6.7	5.1 - 8.2	3854	13.3	11.7 - 15.0
\$25,000–34,999	1133	5.8	3.8 - 7.8	1446	12.4	9.7 - 15.0
\$35,000–49,999	1449	4.6	3.3 - 5.9	1781	8.3	6.5 - 10.1
\$50,000–74,999	1713	5.6	4.0 - 7.1	2020	6.6	4.9 - 8.2
\$75,000+	4152	3.5	2.8 - 4.3	4789	4.6	3.7 - 5.4
REGION						
I–WESTERN	1861	4.8	3.7 - 5.9	2566	7.6	6.4 - 8.8
II–CENTRAL	1731	5.0	3.5 - 6.4	2149	7.7	6.2 - 9.2
III–NORTH EAST	3129	4.5	3.2 - 5.7	4013	7.5	6.1 - 8.9
IV–METRO WEST	1736	3.4	2.4 - 4.4	2079	7.6	6.2 - 9.0
V–SOUTH EAST	3193	5.6	4.4 - 6.9	4057	8.9	7.5 - 10.2
VI–BOSTON	1489	5.0	3.4 - 6.6	1852	8.2	6.7 - 9.7

\*White, Black, and Asian race categories refer to non-Hispanic

† Insufficient data

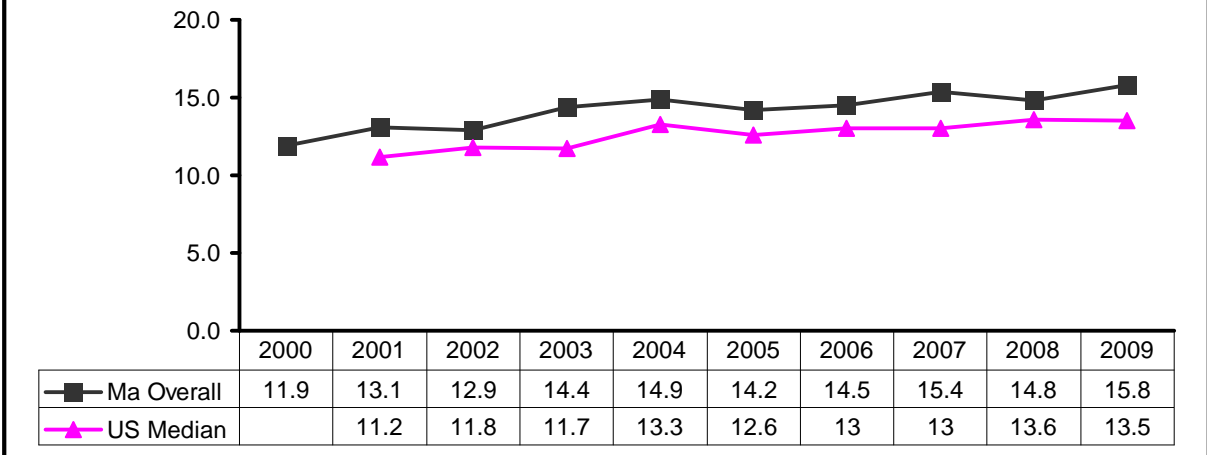
¶ Disability defined as having one or more of the following conditions for at least one year: (1) impairment or health problem that limited activities or caused cognitive difficulties; (2) used special equipment or required help from others to get around; or (3) reported a disability of any kind.

## **Section 4.2: Asthma**

Asthma is a chronic inflammatory disorder that affects the lungs, causing repeated episodes of wheezing, breathlessness, coughing, and chest tightness [30]. Asthma attacks can be triggered by a variety of causes, such as second hand smoke, outdoor air pollution, allergens, irritants, and respiratory viral infections. These environmental irritants are also potential risk factors associated with the development of asthma [31]. The prevalence of asthma in the state of Massachusetts is one of the highest reported for a state across the nation, and the costs are increasing each year: the total charges for hospitalization due to asthma in Massachusetts increased 77.7% from \$50 million in 2000 to \$89 million in 2006. [32].

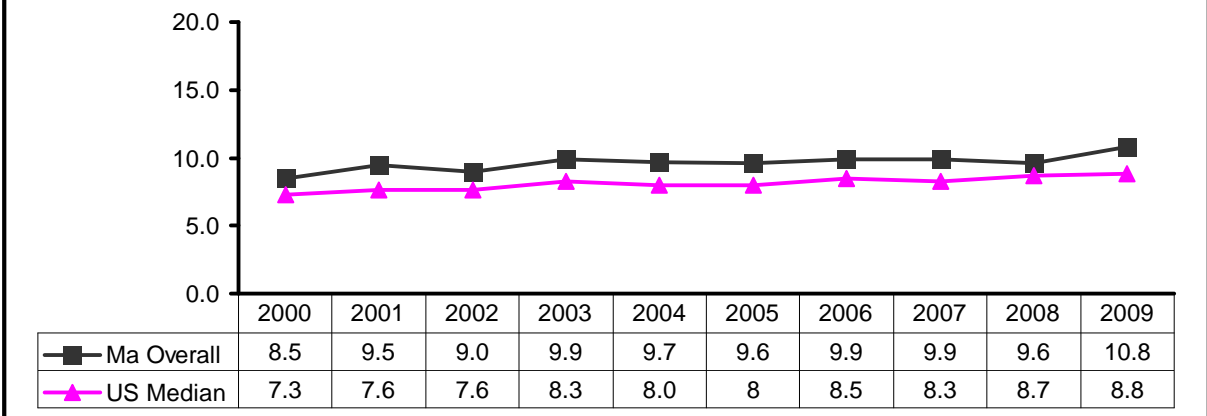
All respondents were asked if a doctor, nurse, or other health care professional had ever told them that they had asthma. Those who reported ever having asthma were then asked if they currently have asthma. Reported here are the percentages of adult respondents who reported ever having asthma and those who reported currently having asthma.

**Figure 4.2.1: Percentage of adults who have ever had asthma, MA and US, 2000-2009**



The percent of MA adults who reported that they were ever diagnosed with asthma increased by an average of 2.6% per year between 2000 and 2009. While both national and statewide estimates trend upward, MA estimates remain consistently higher than national estimates.

**Figure 4.2.2: Percentage of adults who currently have asthma, MA and US, 2000-2009**



The percent of MA adults who report that they currently have asthma increased by an average of 1.7% per year between 2000 and 2009. MA estimates continue to be consistently higher than national estimates.



**TABLE 4.2 – ASTHMA AMONG MASSACHUSETTS ADULTS, 2009**

	EVER HAD ASTHMA			CURRENTLY HAVE ASTHMA		
	N	%	95% CI	N	%	95% CI
OVERALL	16679	15.8	14.7 - 16.8	16598	10.8	9.9 - 11.7
GENDER						
MALE	6196	13.3	11.8 - 14.8	6167	8.4	7.1 - 9.6
FEMALE	10483	18.0	16.6 - 19.4	10431	13.1	11.8 - 14.3
AGE GROUP						
18–24	472	23.2	17.5 - 28.9	465	14.7	9.8 - 19.5
25–34	1529	18.6	15.7 - 21.4	1517	12.4	9.9 - 14.9
35–44	2581	15.6	13.7 - 17.5	2574	10.8	9.2 - 12.5
45–54	3596	13.6	12.0 - 15.1	3581	9.6	8.3 - 10.9
55–64	3499	14.1	12.5 - 15.8	3486	10.5	9.1 - 11.9
65–74	2446	13.3	11.4 - 15.2	2428	9.1	7.6 - 10.6
75 AND OLDER	2289	10.8	8.9 - 12.7	2280	7.8	6.1 - 9.4
RACE-ETHNICITY*						
WHITE	13521	15.8	14.6 - 17.0	13450	11.0	10.0 - 12.0
BLACK	887	18.5	13.9 - 23.2	885	14.6	10.1 - 19.0
HISPANIC	1419	16.0	12.3 - 19.7	1414	8.5	6.5 - 10.5
ASIAN	266	9.7	4.1 - 15.3	†		
DISABILITY¶						
DISABILITY	1261	25.7	21.0 - 30.4	1255	19.5	15.0 - 24.1
NO DISABILITY	3414	14.2	11.9 - 16.5	3400	9.0	7.1 - 11.0
EDUCATION						
< HIGH SCHOOL	1783	20.4	16.3 - 24.6	1770	14.5	11.2 - 17.7
HIGH SCHOOL	4261	14.8	12.8 - 16.9	4238	10.7	8.9 - 12.5
COLLEGE 1–3 YRS	3871	17.7	15.2 - 20.1	3854	12.0	10.0 - 14.1
COLLEGE 4+ YRS	6666	14.6	13.1 - 16.0	6638	9.6	8.4 - 10.9
HOUSEHOLD INCOME						
<\$25,000	3843	19.9	17.2 - 22.6	3815	14.9	12.6 - 17.3
\$25,000–34,999	1444	17.5	13.5 - 21.5	1436	12.7	9.1 - 16.3
\$35,000–49,999	1779	16.6	13.1 - 20.1	1773	13.9	10.5 - 17.4
\$50,000–74,999	2017	15.1	12.6 - 17.7	2010	9.0	7.0 - 11.0
\$75,000+	4778	13.6	11.9 - 15.2	4759	8.6	7.3 - 9.9
REGION						
I–WESTERN	2556	16.6	13.9 - 19.4	2543	10.3	8.3 - 12.3
II–CENTRAL	2146	15.1	12.4 - 17.8	2135	11.2	8.7 - 13.8
III–NORTH EAST	4006	16.0	13.7 - 18.3	3988	11.5	9.4 - 13.6
IV–METRO WEST	2075	16.1	13.6 - 18.5	2061	10.6	8.7 - 12.5
V–SOUTH EAST	4048	15.3	13.0 - 17.6	4030	11.1	9.0 - 13.1
VI–BOSTON	1848	15.0	12.7 - 17.3	1841	9.6	7.8 - 11.3

\* White, Black, and Asian race categories refer to non-Hispanic

† Insufficient data

¶ Disability defined as having one or more of the following conditions for at least one year: (1) impairment or health problem that limited activities or caused cognitive difficulties; (2) used special equipment or required help from others to get around; or (3) reported a disability of any kind.

### **Section 4.3: Arthritis**

The term arthritis refers to many different conditions that affect the joints, and includes such conditions as rheumatoid arthritis, systematic lupus erythematosus (SLE), and gout [33]. The pain experienced due to arthritis can be so severe that it disrupts daily activities or makes them difficult to perform. A goal of Healthy People 2010 is to reduce the percentage of those who have limitations on their activities due to their arthritis to 33% or less.

All respondents were asked if a doctor or other health professional had ever told them they had arthritis. Respondents who indicated that they had been diagnosed with arthritis or who indicated that they had “symptoms of pain, aching, or stiffness in or around a joint” that had begun more than three months ago were then asked if they were limited in any way in any of their usual physical activities due to the arthritis or joint symptoms. Presented below is the percentage of respondents who indicated that they had been diagnosed with arthritis and, if they had been or if they had the symptoms described above for more than three months, the percentage of respondents who experienced limitations in their usual daily activities due to the arthritis or symptoms.

The age range of those asked about arthritis in the MA BRFSS was broadened beginning in 2005. Therefore, estimates of arthritis published in this report are not comparable to estimates published in years prior to 2005. For this reason, we do not provide trend charts for the arthritis indicators summarized in this report.

**TABLE 4.3 – ARTHRITIS AMONG MASSACHUSETTS ADULTS, 2009**

	DOCTOR DIAGNOSED ARTHRITIS			LIMITATIONS DUE TO ARTHRITIS		
	N	%	95% CI	N	%	95% CI
OVERALL	15628	24.8	23.8 - 25.8	15590	10.7	10.1 - 11.4
GENDER						
MALE	5791	19.6	18.2 - 21.0	5781	8.6	7.6 - 9.5
FEMALE	9837	29.5	28.1 - 30.9	9809	12.7	11.8 - 13.6
AGE GROUP						
18–24	†			†		
25–34	1425	6.2	4.5 - 8.0	1425	3.3	2.0 - 4.7
35–44	2425	15.3	13.2 - 17.4	2422	6.6	5.3 - 8.0
45–54	3390	25.6	23.6 - 27.6	3387	11.6	10.1 - 13.1
55–64	3310	39.8	37.4 - 42.2	3301	18.1	16.2 - 19.9
65–74	2329	53.3	50.4 - 56.2	2320	20.0	17.8 - 22.3
75 AND OLDER	2107	55.3	52.4 - 58.3	2093	24.4	21.8 - 26.9
RACE-ETHNICITY*						
WHITE	12753	26.4	25.3 - 27.5	12721	11.1	10.4 - 11.8
BLACK	800	19.5	15.3 - 23.7	798	9.0	5.8 - 12.1
HISPANIC	1314	16.7	13.4 - 20.0	1312	9.7	7.6 - 11.8
ASIAN	236	9.4	5.1 - 13.8	†		
DISABILITY <sup>¶</sup>						
DISABILITY	1260	52.8	47.8 - 57.7	1253	36.9	32.5 - 41.2
NO DISABILITY	3419	17.9	16.1 - 19.6	3417	3.9	3.1 - 4.6
EDUCATION						
< HIGH SCHOOL	1639	29.3	25.2 - 33.4	1629	16.6	13.8 - 19.4
HIGH SCHOOL	3972	28.5	26.3 - 30.8	3962	13.3	11.7 - 14.8
COLLEGE 1–3 YRS	3638	27.2	24.9 - 29.5	3630	11.5	10.0 - 12.9
COLLEGE 4+ YRS	6353	20.9	19.6 - 22.2	6343	8.1	7.3 - 8.9
HOUSEHOLD INCOME						
<\$25,000	3618	31.4	28.8 - 33.9	3600	18.4	16.5 - 20.3
\$25,000–34,999	1374	31.0	27.0 - 35.0	1370	12.0	9.7 - 14.4
\$35,000–49,999	1703	29.1	25.5 - 32.7	1702	12.9	10.5 - 15.3
\$50,000–74,999	1933	26.2	23.4 - 29.1	1930	10.3	8.5 - 12.2
\$75,000+	4578	18.8	17.3 - 20.3	4574	6.3	5.4 - 7.1
REGION						
I–WESTERN	2214	26.1	23.5 - 28.7	2209	12.9	11.1 - 14.6
II–CENTRAL	2038	27.0	24.2 - 29.8	2030	11.6	9.7 - 13.4
III–NORTH EAST	3786	21.9	19.8 - 24.0	3774	9.4	8.0 - 10.7
IV–METRO WEST	1992	23.7	21.6 - 25.8	1989	9.0	7.7 - 10.3
V–SOUTH EAST	3837	27.7	25.3 - 30.2	3830	11.8	10.3 - 13.4
VI–BOSTON	1761	21.4	19.0 - 23.8	1758	10.8	9.1 - 12.6

\* White, Black, and Asian race categories refer to non-Hispanic

† Insufficient data

¶ Disability defined as having one or more of the following conditions for at least one year: (1) impairment or health problem that limited activities or caused cognitive difficulties; (2) used special equipment or required help from others to get around; or (3) reported a disability of any kind.

## Section 4.4: Heart Disease and Stroke

Heart disease includes a number of different heart conditions, the most common of which is coronary heart disease, a condition that can lead to a heart attack. A stroke occurs when blood to the brain is blocked or a blood vessel in the brain bursts, causing damage to the individual's brain. Heart disease and stroke are the principal causes of more than 910,000 cardiovascular disease deaths each year in the United States [34]. They are also major causes of disability. In 2007, heart disease and stroke were the second (after cancer-related deaths) and third leading causes of death, respectively, in Massachusetts [26].

All respondents ages 35 and older were asked about whether a doctor, nurse, or other health professional had ever told them that they had had a myocardial infarction ("MI," also called a "heart attack"), angina, or a stroke. Presented here are the percentages of adults 35 and older who reported being told that they had experienced a heart attack, angina, or a stroke.

These questions are asked in alternate years; therefore, there are too few points available for trend analysis. Available data indicates that prevalence of these indicators has remained relatively stable and that MA estimates are similar to national estimates. In table 4.4.1, heart disease and stroke were combined (cardiovascular disease) due to low prevalence.

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
MA Overall		9.7		9.3		10.1		9.0		9.8
US Median		10.2		10.1		11.2		10.9		10.3

**TABLE 4.4.2 – HEART DISEASE AMONG MASSACHUSETTS ADULTS,  
AGES 35 YEARS AND OLDER, 2009**

	MYOCARDIAL INFARCTION			ANGINA		
	N	%	95% CI	N	%	95% CI
OVERALL	14370	5.4	4.9 - 5.9	14329	5.3	4.8 - 5.8
<b>GENDER</b>						
MALE	5335	7.2	6.3 - 8.0	5315	6.7	5.9 - 7.6
FEMALE	9035	3.8	3.3 - 4.4	9014	4.0	3.4 - 4.5
<b>AGE GROUP</b>						
35–44	2576	1.4	0.7 - 2.0	2574	0.9	0.4 - 1.4
45–54	3591	2.6	1.8 - 3.3	3592	2.3	1.6 - 3.0
55–64	3490	5.7	4.7 - 6.8	3486	6.1	4.9 - 7.2
65–74	2435	9.3	7.5 - 11.0	2425	10.2	8.5 - 12.0
75 AND OLDER	2278	16.0	13.9 - 18.1	2252	15.2	13.1 - 17.2
<b>RACE-ETHNICITY*</b>						
WHITE	12017	5.3	4.8 - 5.8	11968	5.4	4.9 - 5.9
BLACK	681	4.8	2.0 - 7.6	680	4.5	2.3 - 6.7
HISPANIC	1031	5.8	3.4 - 8.2	1036	4.6	2.9 - 6.4
ASIAN	†			†		
<b>DISABILITY¶</b>						
DISABILITY	1154	10.9	8.3 - 13.5	1148	12.1	9.2 - 15.0
NO DISABILITY	2894	3.6	2.6 - 4.5	2883	3.7	2.7 - 4.6
<b>EDUCATION</b>						
< HIGH SCHOOL	1550	11.4	8.9 - 13.8	1536	8.9	6.7 - 11.1
HIGH SCHOOL	3708	7.5	6.3 - 8.7	3700	6.3	5.3 - 7.4
COLLEGE 1–3 YRS	3234	5.7	4.5 - 6.8	3222	6.2	5.1 - 7.3
COLLEGE 4+ YRS	5803	3.5	2.9 - 4.1	5796	3.8	3.2 - 4.5
<b>HOUSEHOLD INCOME</b>						
<\$25,000	3279	10.9	9.4 - 12.5	3260	9.3	7.9 - 10.8
\$25,000–34,999	1244	8.7	6.5 - 11.0	1244	8.5	6.4 - 10.7
\$35,000–49,999	1545	6.6	4.8 - 8.5	1538	6.7	5.0 - 8.4
\$50,000–74,999	1751	3.6	2.5 - 4.8	1749	4.5	3.1 - 5.8
\$75,000+	4209	2.5	1.9 - 3.1	4204	2.5	1.9 - 3.1
<b>REGION</b>						
I–WESTERN	2170	6.3	5.0 - 7.5	2161	5.8	4.6 - 7.0
II–CENTRAL	1851	5.9	4.6 - 7.2	1846	5.2	4.0 - 6.4
III–NORTH EAST	3413	5.7	4.5 - 6.9	3400	5.4	4.3 - 6.6
IV–METRO WEST	1845	4.1	3.1 - 5.1	1842	4.7	3.6 - 5.7
V–SOUTH EAST	3539	5.9	4.7 - 7.1	3528	5.5	4.4 - 6.6
VI–BOSTON	1552	4.7	3.3 - 6.1	1552	5.2	3.6 - 6.9

\* White, Black, and Asian race categories refer to non-Hispanic

† Insufficient data

¶ Disability defined as having one or more of the following conditions for at least one year: (1) impairment or health problem that limited activities or caused cognitive difficulties; (2) used special equipment or required help from others to get around; or (3) reported a disability of any kind.

**TABLE 4.4.3 – STROKE AMONG MASSACHUSETTS ADULTS,  
AGES 35 YEARS AND OLDER, 2009**

	STROKE		
	N	%	95% CI
OVERALL	14410	2.7	2.3 - 3.0
<b>GENDER</b>			
MALE	5359	2.7	2.2 - 3.2
FEMALE	9051	2.7	2.2 - 3.1
<b>AGE GROUP</b>			
35–44	†		
45–54	3597	1.7	1.1 - 2.3
55–64	3501	2.1	1.5 - 2.6
65–74	2446	4.3	3.2 - 5.3
75 AND OLDER	2284	8.3	6.7 - 10.0
<b>RACE-ETHNICITY*</b>			
WHITE	12039	2.7	2.3 - 3.0
BLACK	†		
HISPANIC	†		
ASIAN	†		
<b>DISABILITY¶</b>			
DISABILITY	1164	6.6	4.7 - 8.4
NO DISABILITY	2893	1.3	0.8 - 1.8
<b>EDUCATION</b>			
< HIGH SCHOOL	1560	6.2	4.1 - 8.3
HIGH SCHOOL	3729	3.1	2.3 - 3.9
COLLEGE 1–3 YRS	3240	3.3	2.5 - 4.1
COLLEGE 4+ YRS	5806	1.7	1.3 - 2.1
<b>HOUSEHOLD INCOME</b>			
<\$25,000	3306	5.7	4.5 - 6.8
\$25,000–34,999	1248	4.4	2.8 - 5.9
\$35,000–49,999	1546	2.5	1.6 - 3.4
\$50,000–74,999	1753	2.7	1.6 - 3.8
\$75,000+	4208	0.8	0.5 - 1.1
<b>REGION</b>			
I–WESTERN	2174	3.3	2.3 - 4.3
II–CENTRAL	1859	2.2	1.4 - 3.0
III–NORTH EAST	3427	2.6	1.8 - 3.4
IV–METRO WEST	1843	2.1	1.5 - 2.8
V–SOUTH EAST	3548	3.0	2.1 - 3.8
VI–BOSTON	1559	3.4	2.2 - 4.7

\* White, Black, and Asian race categories refer to non-Hispanic

† Insufficient Data

¶ Disability defined as having one or more of the following conditions for at least one year: (1) impairment or health problem that limited activities or caused cognitive difficulties; (2) used special equipment or required help from others to get around; or (3) reported a disability of any kind.

## Section 4.5: Drug Use and Health

Prescription medications such as narcotic pain relievers (e.g. Vicodin, Percocet, codeine, OxyContin, or Darvon), tranquilizers (e.g. Xanax, Klonopin, Ativan or Valium), stimulants (e.g. Ritalin, Adderall, or Dexedrine) and sedatives (or sleeping pills such as Nembutal, Quaalude, Restoril, or Seconal) are useful for treating medical conditions such as chronic pain, anxiety, insomnia or hyperactivity. However, these medications may become addictive if not taken as directed. Patients who are prescribed these medications are at increased risk of addiction. Inappropriate or nonmedical use of prescription medications is a serious public health concern. Non medical use can lead to compulsive drug seeking and abuse. In addition, misuse can lead to drug overdose or other injuries.

Respondents were asked if they have ever seen a doctor for chronic pain, anxiety, insomnia, or hyperactivity. If respondent answered Yes, they were then asked if a doctor or other health professional had ever prescribed any of the following medications: tranquilizers, pain killers, stimulants or sedatives. Table 4.5 presents the percentages of MA adults who reported having one of these conditions and the percentage who were prescribed one or more of these medications to treat the condition.

**TABLE 4.5 – PRESCRIPTION DRUG USE AND HEALTH AMONG MASSACHUSETTS ADULTS, 2009**

	EVER SEEN HEALTH CARE PROVIDER FOR CHRONIC PAIN, ANXIETY, INSOMNIA, OR HYPERACTIVITY				EVER PRESCRIBED MEDICATION FOR CHRONIC PAIN, ANXIETY, INSOMNIA, OR HYPERACTIVITY			
	N	%	95% CI		N	%	95% CI	
OVERALL	4789	19.9	17.8	- 21.9	4722	48.3	45.6	- 50.9
GENDER								
MALE	1758	16.1	13.0	- 19.1	1725	44.5	40.3	- 48.7
FEMALE	3031	23.2	20.6	- 25.8	2997	51.6	48.3	- 54.9
AGE GROUP								
18–24	†				119	40.9	27.3	- 54.4
25–34	426	16.6	11.2	- 22.1	421	48.6	41.4	- 55.8
35–44	744	21.5	17.5	- 25.5	735	48.8	43.6	- 54.0
45–54	1042	21.3	17.8	- 24.7	1030	51.1	46.9	- 55.4
55–64	1014	23.5	20.0	- 27.0	1013	53.9	49.4	- 58.3
65–74	712	19.6	15.6	- 23.5	693	48.6	43.4	- 53.8
75 AND OLDER	672	20.7	16.4	- 25.0	655	41.2	36.1	- 46.2
RACE-ETHNICITY*								
WHITE	3913	20.6	18.4	- 22.8	3858	51.6	48.7	- 54.5
BLACK	226	13.5	5.6	- 21.4	227	48.9	37.2	- 60.6
HISPANIC	416	22.0	13.5	- 30.4	405	30.8	21.9	- 39.7
ASIAN	†				†			
EDUCATION								
< HIGH SCHOOL	485	21.3	15.2	- 27.4	462	41.6	31.5	- 51.6
HIGH SCHOOL	1200	19.7	14.8	- 24.7	1186	43.5	37.1	- 49.9
COLLEGE 1–3 YRS	1082	24.8	20.0	- 29.6	1064	56.1	50.5	- 61.8
COLLEGE 4+ YRS	2014	17.4	15.0	- 19.8	2003	48.3	45.0	- 51.5
HOUSEHOLD								
<\$25,000	1073	30.9	25.4	- 36.5	1051	44.4	38.0	- 50.8
\$25,000–34,999	396	17.8	12.5	- 23.1	393	44.0	35.4	- 52.6
\$35,000–49,999	535	21.6	15.0	- 28.2	531	53.3	44.7	- 61.8
\$50,000–74,999	611	21.0	16.0	- 26.0	608	49.0	41.9	- 56.1
\$75,000+	1444	15.8	12.3	- 19.3	1432	49.1	44.7	- 53.4
REGION								
I–WESTERN	740	20.5	16.5	- 24.4	729	54.6	49.0	- 60.3
II–CENTRAL	625	25.9	17.7	- 34.0	613	51.8	43.9	- 59.7
III–NORTH EAST	1159	17.8	14.0	- 21.6	1145	48.5	42.4	- 54.6
IV–METRO WEST	633	18.4	14.6	- 22.1	629	49.8	44.6	- 55.0
V–SOUTH EAST	1119	19.3	15.2	- 23.4	1097	42.6	36.2	- 48.9
VI–BOSTON	513	18.1	13.4	- 22.8	509	38.7	32.6	- 44.8

\* White, Black, and Asian race categories refer to non-Hispanic

† Insufficient data

¶ Disability defined as having one or more of the following conditions for at least one year: (1) impairment or health problem that limited activities or caused cognitive difficulties; (2) used special equipment or required help from others to get around; or (3) reported a disability of any kind.



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## SECTION 5: OTHER TOPICS

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## **Section 5.1: Sexual Orientation**

Health research indicates that health disparities exist between the homosexual (gay, lesbian)/bisexual population and the heterosexual population [35]. Differences exist with respect to access to health care, overall health status, cancer screening, chronic health conditions, mental health, substance use including tobacco smoking, sexual health, and violence/victimization. Fear of discrimination and stigma keep many from seeking care or disclosing relevant information once in care [36].

All respondents aged 18-64 were asked if they considered themselves to be heterosexual or straight, homosexual (gay, lesbian), bisexual or other. The percentage of those who self-identified as homosexual, bisexual or other is presented.

**TABLE 5.1 SEXUAL ORIENTATION AMONG MASSACHUSETTS ADULTS, 18-64, 2009**

	SELF-IDENTIFIED AS HOMOSEXUAL, BISEXUAL OR OTHER		
	N	%	95% CI
OVERALL	11016	3.1	2.5 - 3.6
<b>GENDER</b>			
MALE	4210	3.1	2.4 - 3.8
FEMALE	6806	3.0	2.2 - 3.8
<b>AGE GROUP</b>			
18-24	452	†	
25-34	1456	2.8	1.7 - 3.9
35-44	2447	2.7	1.9 - 3.5
45-54	3389	3.3	2.5 - 4.0
55-64	3272	2.4	1.7 - 3.0
<b>RACE-ETHNICITY*</b>			
WHITE	8703	3.1	2.5 - 3.8
BLACK	†		
HISPANIC	1133	3.2	1.6 - 4.8
ASIAN	†		
<b>DISABILITY<sup>¶</sup></b>			
DISABILITY	†		
NO DISABILITY	2473	2.6	1.6 - 3.6
<b>EDUCATION</b>			
< HIGH SCHOOL	†		
HIGH SCHOOL	2503	2.7	1.5 - 3.9
COLLEGE 1-3 YRS	2625	2.7	1.6 - 3.9
COLLEGE 4+ YRS	4931	3.3	2.6 - 3.9
<b>HOUSEHOLD INCOME</b>			
<\$25,000	2129	3.9	2.8 - 5.0
\$25,000-34,999	†		
\$35,000-49,999	1165	2.2	1.1 - 3.3
\$50,000-74,999	1550	2.6	1.6 - 3.7
\$75,000+	4066	2.6	1.9 - 3.3
<b>REGION</b>			
I-WESTERN	1543	3.3	1.8 - 4.9
II-CENTRAL	1467	1.8	1.0 - 2.7
III-NORTH EAST	2730	3.7	2.0 - 5.5
IV-METRO WEST	1369	2.5	1.6 - 3.5
V-SOUTH EAST	2631	2.5	1.5 - 3.4
VI-BOSTON	1276	6.1	4.4 - 7.7

\* White, Black, and Asian race categories refer to non-Hispanic

† Insufficient Data

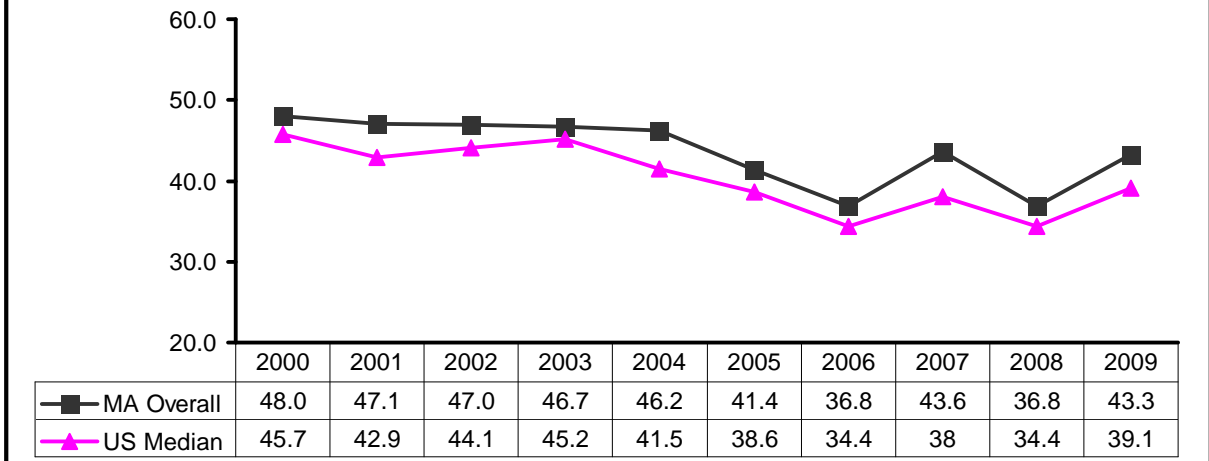
¶ Disability defined as having one or more of the following conditions for at least one year: (1) impairment or health problem that limited activities or caused cognitive difficulties; (2) used special equipment or required help from others to get around; or (3) reported a disability of any kind.

## **Section 5.2: HIV Testing**

In Massachusetts, the number of people living with HIV/AIDS increases each year due to the fact that 1) new HIV infection diagnoses exceed the number of deaths among people reported with HIV/AIDS and 2) there are more survivors due to improved treatment options over time. One-fourth of people infected with HIV do not know they have it. Early awareness of an HIV infection through HIV testing can prevent further spread of the disease [37].

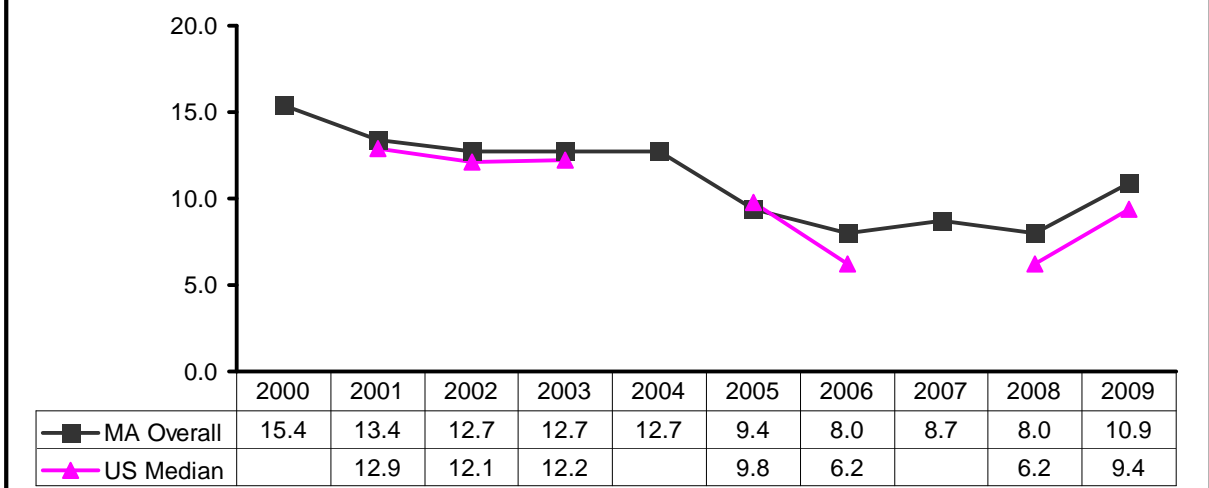
All respondents ages 18-64 were asked if they had ever been tested for HIV. Respondents were told not to include times that HIV testing had been done as part of a blood donation. Respondents who reported that they had ever been tested for HIV were asked the date of their most recent HIV test. Presented here are the percentage of respondents who report ever having been tested for HIV and the percentage of those who had been tested in the past year.

**Figure 5.2.1: Percentage of adults who were ever tested for HIV, MA and US, 2000-2009**



The percent of MA adults ages 18-64 who reported that they have ever been tested for HIV decreased by an average of 2.3% per year between 2000 and 2009. MA estimates remain slightly higher than national estimates.

**Figure 5.2.2: Percentage of adults who were tested for HIV in the past year, MA and US, 2000-2009**



The percent of MA adults ages 18-64 who reported that they had been tested for HIV within the previous year decreased by an average of 6.1% per year between 2000 and 2009. MA estimates continue to be approximately the same or slightly lower than national estimates. National data is not available for 2000, 2004, 2007 or 2009.

**TABLE 5.2 – HIV TESTING AMONG MASSACHUSETTS ADULTS, AGES 18-64, 2009**

	EVER TESTED FOR HIV			TESTED FOR HIV IN PAST YEAR		
	N	%	95% CI	N	%	95% CI
OVERALL	10358	43.3	41.6 - 45.0	9300	10.9	9.6 - 12.2
<b>GENDER</b>						
MALE	3905	42.1	39.5 - 44.6	3498	11.0	9.1 - 12.9
FEMALE	6453	44.5	42.3 - 46.7	5802	10.8	9.0 - 12.5
<b>AGE GROUP</b>						
18–24	411	38.5	31.5 - 45.5	388	19.9	14.1 - 25.7
25–34	1339	58.0	53.9 - 62.0	1183	18.3	14.9 - 21.7
35–44	2282	57.9	54.9 - 60.9	2017	10.6	8.6 - 12.7
45–54	3204	36.9	34.6 - 39.3	2856	4.8	3.8 - 5.9
55–64	3122	20.9	18.9 - 22.9	2856	3.3	2.3 - 4.3
<b>RACE-ETHNICITY*</b>						
WHITE	8175	39.8	37.9 - 41.6	7435	8.2	7.0 - 9.4
BLACK	603	63.6	57.3 - 69.9	531	27.6	20.8 - 34.4
HISPANIC	1054	57.7	51.2 - 64.2	872	20.7	14.7 - 26.7
ASIAN	192	38.4	27.4 - 49.3	†		
<b>DISABILITY¶</b>						
DISABILITY	768	51.4	45.0 - 57.7	673	13.0	8.0 - 17.9
NO DISABILITY	2482	39.9	36.6 - 43.3	2237	11.6	8.9 - 14.4
<b>EDUCATION</b>						
< HIGH SCHOOL	877	47.3	39.8 - 54.7	739	22.8	14.3 - 31.2
HIGH SCHOOL	2321	38.4	34.4 - 42.3	2075	10.4	7.9 - 12.8
COLLEGE 1–3 YRS	2461	44.9	41.2 - 48.6	2214	12.8	9.6 - 15.9
COLLEGE 4+ YRS	4692	44.4	42.3 - 46.6	4265	8.6	7.2 - 9.9
<b>HOUSEHOLD INCOME</b>						
<\$25,000	2010	54.7	50.1 - 59.2	1739	19.2	15.0 - 23.4
\$25,000–34,999	781	47.8	41.1 - 54.5	676	15.9	10.3 - 21.4
\$35,000–49,999	1107	46.7	40.9 - 52.5	1010	12.5	8.1 - 17.0
\$50,000–74,999	1465	40.3	36.3 - 44.4	1338	7.0	5.0 - 9.1
\$75,000+	3809	41.5	39.1 - 43.9	3494	7.6	6.1 - 9.1
<b>REGION</b>						
I–WESTERN	1457	41.0	36.7 - 45.2	1298	11.6	8.4 - 14.9
II–CENTRAL	1373	41.9	37.4 - 46.4	1249	9.3	5.6 - 12.9
III–NORTH EAST	2533	43.4	39.6 - 47.2	2273	10.4	7.9 - 13.0
IV–METRO WEST	1299	41.7	38.1 - 45.3	1176	9.6	7.0 - 12.2
V–SOUTH EAST	2490	42.2	38.2 - 46.2	2254	9.8	6.9 - 12.7
VI–BOSTON	1206	56.7	52.4 - 61.1	1050	19.5	14.7 - 24.2

\* White, Black, and Asian race categories refer to non-Hispanic

† Insufficient data

¶ Disability defined as having one or more of the following conditions for at least one year: (1) impairment or health problem that limited activities or caused cognitive difficulties; (2) used special equipment or required help from others to get around; or (3) reported a disability of any kind.

### **Section 5.3: Sexual Violence**

Sexual violence results in harmful and lasting consequences for victims, families, and communities. In addition to the potential for injury and the psychological consequences of being a victim of sexual violence, many victims experience physiological problems. Physiological problems include chronic headaches, back pain, fatigue, sleep disturbances, recurrent nausea, decreased appetite, menstrual pain, and sexual dysfunction [38]. Psychological problems include post traumatic stress disorder, suicidal behavior, anxiety, eating disorders, and substance abuse [39, 40].

Respondents were asked if they had experienced sexual violence at any time in their lifetimes. Sexual violence was defined as having the sexual parts of the body touched without consent or attempted or completed sex without consent. Presented here are the percentages of men and women who reported that they had experienced sexual violence at some time in their lifetimes.

Trend data is not presented as these questions were modified in 2006, providing too few years for analysis.

**TABLE 5.3 – SEXUAL VIOLENCE\*\* AMONG MASSACHUSETTS ADULTS, 2009**

	SEXUAL VIOLENCE, WOMEN			SEXUAL VIOLENCE, MEN		
	N	%	95% CI	N	%	95% CI
OVERALL	2725	14.6	12.3 - 17.0	1629	5.3	3.7 - 6.9
AGE GROUP						
18–24	†			†		
25–34	236	17.8	10.4 - 25.3	†		
35–44	441	15.3	10.8 - 19.8	260	6.7	2.8 - 10.7
45–54	599	20.0	15.7 - 24.3	358	4.5	2.0 - 7.0
55–64	562	14.6	9.9 - 19.2	†		
65–74	405	8.1	4.9 - 11.3	†		
75 AND OLDER	†			†		
RACE-ETHNICITY*						
WHITE	2243	14.5	11.9 - 17.1	1371	5.4	3.5 - 7.2
BLACK	150	24.7	11.1 - 38.3	†		
HISPANIC	235	7.2	3.1 - 11.2	†		
ASIAN	†			†		
DISABILITY <sup>¶</sup>						
DISABILITY	725	30.0	23.3 - 36.7	407	13.4	7.8 - 19.0
NO DISABILITY	1912	10.8	8.5 - 13.1	1144	3.0	1.7 - 4.2
EDUCATION						
< HIGH SCHOOL	†			†		
HIGH SCHOOL	692	7.0	4.0 - 10.0	†		
COLLEGE 1–3 YRS	687	16.5	11.2 - 21.8	†		
COLLEGE 4+ YRS	1085	16.5	13.3 - 19.7	729	4.8	2.6 - 7.0
HOUSEHOLD INCOME						
<\$25,000	687	15.6	10.0 - 21.2	299	10.4	4.8 - 16.1
\$25,000–34,999	†			†		
\$35,000–49,999	308	8.7	4.7 - 12.6	†		
\$50,000–74,999	364	19.9	13.4 - 26.3	242	5.2	2.2 - 8.3
\$75,000+	705	15.5	11.6 - 19.4	604	3.5	1.5 - 5.6
REGION						
I–WESTERN	385	15.6	8.7 - 22.6	†		
II–CENTRAL	367	16.2	9.9 - 22.4	†		
III–NORTH EAST	643	11.8	7.5 - 16.2	†		
IV–METRO WEST	338	14.3	8.9 - 19.7	†		
V–SOUTH EAST	670	14.8	9.8 - 19.7	†		
VI–BOSTON	322	16.3	9.0 - 23.5	†		

\* White, Black, and Asian race categories refer to non-Hispanic

† Insufficient data

¶ Disability defined as having one or more of the following conditions for at least one year: (1) impairment or health problem that limited activities or caused cognitive difficulties; (2) used special equipment or required help from others to get around; or (3) reported a disability of any kind.

\*\* In 2005 the sexual violence questions were changed. As such, percentages are not comparable to year prior to 2005.



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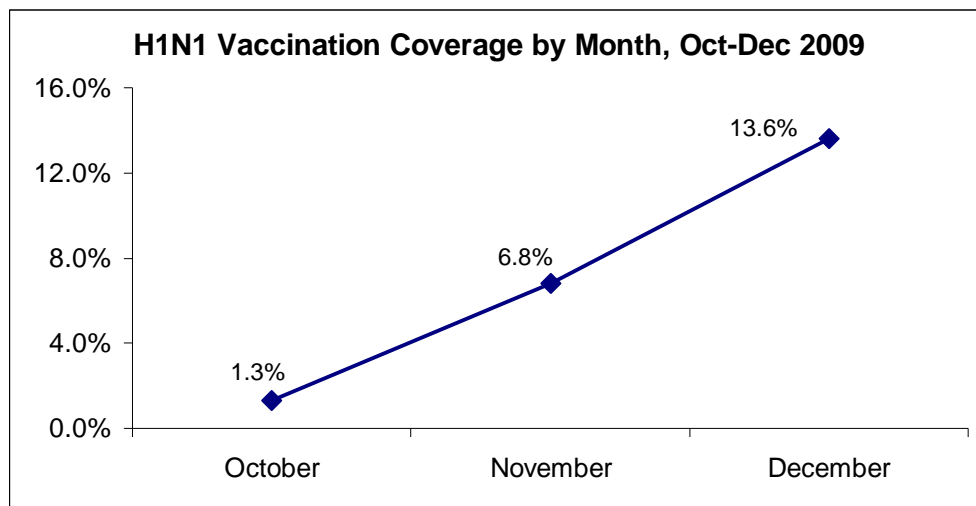
# APPENDIX

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## H1N1 Influenza Vaccine Coverage

In response to the H1N1 influenza pandemic, CDC's Advisory Committee on Immunization Practices (ACIP) identified initial priority groups for vaccination consisting of pregnant women, household contacts and caregivers for children younger than 6 months of age, healthcare and emergency medical services personnel, all people from 6 months through 24 years of age, and persons aged 25 through 64 years who have health conditions associated with higher risk of medical complications from influenza. Once demand for vaccine among the initial priority groups was met, ACIP recommended that all persons ages 25-64 receive the vaccine and then those ages 65 and older [41].

In order to monitor vaccination coverage, an emergency core survey was added to BRFSS. Beginning in October 2009, all respondents were asked: "There are two ways to get the H1N1 flu vaccination. One is a shot in the arm and the other is a spray, mist, or drop in the nose. Since September 2009, have you been vaccinated either way for the H1N1 flu?" Those who responded affirmatively were then asked: "During what month did you receive your H1N1 flu vaccine? Was this a shot or was it a vaccine sprayed in the nose?" Collected state data were reported to CDC on a biweekly basis. Below are selected results from Massachusetts presented by month of interview, age groups and high risk groups.



	October			November			December		
	N	Weighted Percent	95%CI	N	Weighted Percent	95%CI	N	Weighted Percent	95%CI
Overall	1452	1.3%	0.4 - 2.2	1253	6.8%	4.5 - 9.2	849	13.6%	9.9 - 17.4
Ages 18-34	178	1.8%	0.0 - 4.2	140	9.7%	2.9 - 16.6	95	16.8%	6.2 - 27.4
Ages 35-49	376	1.4%	0.0 - 2.9	334	4.6%	1.8 - 7.3	217	14.2%	7.5 - 21.0
Ages 50-64	471	0.6%	0.0 - 1.3	404	8.4%	4.5 - 12.3	287	15.2%	8.5 - 22.0
Ages 65+	408	1.1%	0.0 - 2.6	352	3.9%	1.4 - 6.5	232	7.1%	3.2 - 11.1
Ages 18-49HR*	114	2.5%	0.0 - 7.4	87	14.1%	0.0 - 32.7	65	24.7%	6.5 - 42.9
Ages 25-64HR*	257	2.1%	0.0 - 5.5	222	14.9%	3.2 - 26.6	163	13.8%	4.9 - 22.6

\*HR (High Risk) includes asthma, other lung problems, diabetes, heart disease, kidney problems, anemia, and/or weakened immune system.

N=Total number of respondents answering 'Yes' or 'No' to question "Have you been vaccinated either way for the H1N1 flu?"

CI=Confidence Interval

**Between October and December 2009:**

H1N1 vaccination coverage increased overall and among all age groups.

- Overall coverage increased from 1.3% to 13.6%.
- Among adults ages 18-34, coverage increased from 1.8% to 16.8%.
- Among adults ages 35-49, coverage increased from 1.4% to 14.2%.
- Among adults ages 50-64, coverage increased from 0.6% to 15.2%.
- Among adults 65 and older, coverage increased from 1.1% to 7.1%.

Notes: The overall number of respondents who responded 'Yes' to receiving the H1N1 vaccine in the time period from September to December 2009 was 187. Therefore, the weighted percent of the vaccinated population is volatile, especially when broken down by age group, risk status and month of interview. We made an exception to our usual suppression rules in order to present the range and increase of vaccination coverage over time. However, the results must be interpreted with caution due to the high level of variability in the estimates.

A recent CDC publication [42] presents the state-specific cumulative vaccination coverage estimates through January 2010. Our estimates are not comparable to those published because the analysis for this publication combined two surveys (BRFSS and National 2009 H1N1 Flu Survey), included an additional month, and provided cumulative as opposed to monthly estimates.

## AGE-ADJUSTED PERCENTAGES FOR SELECTED TOPICS

<b>MASSACHUSETTS BEHAVIORAL RISK FACTOR SURVEILLANCE SYSTEM, 2009</b>										
	FAIR OR POOR HEALTH			POOR MENTAL HEALTH		POOR PHYSICAL HEALTH		DISABILITY		
	%	95% CI		%	95% CI	%	95% CI	%	95% CI	
OVERALL	11.7	10.4	- 13.1	8.0	6.7 - 9.2	8.5	7.1 - 10.0	20.8	18.9	- 22.7
GENDER										
MALE	11.3	10.1	- 12.5	7.2	6.1 - 8.2	7.3	6.3 - 8.2	21.7	18.5	- 24.8
FEMALE	11.9	11.0	- 12.8	10.5	9.3 - 11.7	8.9	8.0 - 9.9	19.9	17.6	- 22.2
RACE-ETHNICITY*										
WHITE	9.7	9.0	- 10.4	8.4	7.5 - 9.4	7.5	6.7 - 8.2	20.1	17.9	- 22.2
BLACK	16.4	12.9	- 19.8	11.5	8.6 - 14.5	9.4	6.7 - 12.1	23.6	15.3	- 31.9
HISPANIC	32.1	28.2	- 36.1	12.2	9.7 - 14.7	14.6	11.7 - 17.5	21.6	14.9	- 28.2
ASIAN	†			†		†				
DISABILITY										
DISABILITY	36.8	31.6	- 42.0	23.4	18.6 - 28.2	24.5	20.1 - 29.0			
NO DISABILITY	5.0	4.1	- 5.9	4.5	3.4 - 5.6	4.2	2.9 - 5.6			
EDUCATION										
< HIGH SCHOOL	35.2	31.0	- 39.4	17.7	14.3 - 21.0	18.3	15.2 - 21.4	47.5	38.3	- 56.7
HIGH SCHOOL	15.7	13.9	- 17.4	11.2	9.4 - 13.1	10.5	9.1 - 11.8	25.6	21.0	- 30.3
COLLEGE 1-3 YRS	13.3	11.6	- 14.9	11.2	9.6 - 12.9	10.1	8.5 - 11.7	21.5	17.7	- 25.3
COLLEGE 4+ YRS	5.2	4.6	- 5.9	6.2	4.5 - 8.0	4.3	3.7 - 4.9	16.8	13.3	- 20.2
HOUSEHOLD INCOME										
<\$25,000	29.9	27.2	- 32.5	18.7	16.6 - 20.8	19.2	16.9 - 21.4	40.1	34.9	- 45.2
\$25,000-34,999	14.8	11.5	- 18.1	12.5	8.7 - 16.3	9.1	6.4 - 11.9	25.7	18.0	- 33.3
\$35,000-49,999	10.7	8.6	- 12.8	7.3	5.1 - 9.6	9.5	6.6 - 12.3	26.1	19.3	- 32.8
\$50,000-74,999	6.4	4.9	- 8.0	8.8	6.0 - 11.6	4.6	3.4 - 5.8	14.0	10.2	- 17.9
\$75,000+	4.5	3.6	- 5.3	5.9	4.2 - 7.6	4.0	3.2 - 4.7	14.9	10.5	- 19.4
REGION										
I-WESTERN	13.2	11.6	- 14.9	8.3	6.7 - 9.9	10.3	8.6 - 12.1	24.2	19.2	- 29.1
II-CENTRAL	11.9	10.1	- 13.7	9.4	7.0 - 11.9	8.9	6.9 - 10.9	24.2	18.8	- 29.7
III-NORTH EAST	12.6	10.5	- 14.7	9.1	7.4 - 10.9	8.0	6.3 - 9.7	21.4	16.2	- 26.6
IV-METRO WEST	6.9	5.8	- 8.0	6.9	4.9 - 8.8	5.7	4.2 - 7.3	16.0	12.5	- 19.5
V-SOUTH EAST	12.6	11.0	- 14.3	10.6	8.7 - 12.5	8.2	6.9 - 9.4	19.4	15.7	- 23.1
VI-BOSTON	17.0	14.3	- 19.6	10.3	8.3 - 12.3	9.5	7.4 - 11.5	25.9	19.3	- 32.5

## AGE- ADJUSTED PERCENTAGES FOR SELECTED TOPICS (CONTINUED)

<b>MASSACHUSETTS BEHAVIORAL RISK FACTOR SURVEILLANCE SYSTEM, 2009</b>											
	DISABILITY/NEED HELP		NO HEALTH INSURANCE		PERSONAL DOCTOR		NO DOCTOR DUE TO COST		CHECKUP IN PAST YEAR		
	%	95% CI	%	%	%	%	%	95% CI	%	95% CI	
OVERALL	5.7	4.7 - 6.7	2.9	1.7 - 4.1	89.5	87.7 - 91.3	7.3	5.8 - 8.8	76.6	74.2 - 78.9	
GENDER											
MALE	4.5	3.0 - 6.0	4.8	3.5 - 6.1	85.3	83.6 - 87.0	7.0	5.8 - 8.2	70.9	68.9 - 73.0	
FEMALE	6.5	5.4 - 7.7	2.3	1.6 - 3.0	93.1	92.1 - 94.1	7.2	6.2 - 8.3	80.3	78.7 - 81.9	
RACE-ETHNICITY*											
WHITE	5.0	3.9 - 6.1	2.3	1.7 - 2.9	91.2	90.2 - 92.2	5.6	4.8 - 6.3	75.0	73.5 - 76.4	
BLACK	†		4.7	2.2 - 7.1	83.9	79.6 - 88.2	10.6	7.2 - 14.0	78.2	73.3 - 83.0	
HISPANIC	11.8	7.3 - 16.3	11.1	7.3 - 14.9	81.5	77.8 - 85.2	16.3	12.7 - 19.8	80.1	76.4 - 83.9	
ASIAN	†		†		84.3	76.4 - 92.3	†		75.9	68.7 - 83.1	
DISABILITY											
DISABILITY	26.5	21.8 - 31.2	†		90.4	86.1 - 94.7	16.6	11.7 - 21.5	80.8	75.7 - 85.9	
NO DISABILITY	†		2.5	1.2 - 3.7	89.3	87.3 - 91.3	5.4	3.9 - 6.8	75.6	72.9 - 78.2	
EDUCATION											
< HIGH SCHOOL	15.5	9.6 - 21.5	14.1	8.7 - 19.5	81.0	76.6 - 85.5	15.8	11.5 - 20.2	77.6	72.9 - 82.4	
HIGH SCHOOL	7.0	4.8 - 9.1	5.4	3.8 - 7.1	87.7	85.6 - 89.8	10.1	8.3 - 12.0	73.8	71.0 - 76.6	
COLLEGE 1-3 YRS	6.4	4.2 - 8.6	3.0	1.9 - 4.1	90.6	88.8 - 92.3	7.8	6.3 - 9.3	79.8	77.6 - 82.0	
COLLEGE 4+ YRS	3.8	2.6 - 5.1	1.0	0.6 - 1.4	90.9	89.2 - 92.7	4.0	3.1 - 5.0	74.1	71.7 - 76.6	
HOUSEHOLD INCOME											
<\$25,000	14.4	11.0 - 17.8	9.1	6.8 - 11.4	83.8	81.3 - 86.3	14.2	12.0 - 16.5	77.5	74.7 - 80.4	
\$25,000-34,999	7.6	3.5 - 11.7	6.9	3.5 - 10.4	86.2	82.2 - 90.1	15.2	11.1 - 19.3	77.7	73.2 - 82.2	
\$35,000-49,999	5.9	2.7 - 9.0	6.3	2.9 - 9.7	88.6	85.0 - 92.3	10.5	7.2 - 13.8	68.5	64.0 - 73.0	
\$50,000-74,999	†		†		92.3	89.8 - 94.7	5.3	3.7 - 6.9	76.1	72.6 - 79.6	
\$75,000+	†		†		91.9	90.2 - 93.6	1.7	1.1 - 2.2	75.3	72.9 - 77.7	
REGION											
I-WESTERN	8.2	4.9 - 11.4	3.2	1.7 - 4.8	88.9	86.6 - 91.3	7.9	6.1 - 9.7	75.8	72.8 - 78.7	
II-CENTRAL	8.1	5.9 - 10.2	3.2	1.8 - 4.5	92.6	90.4 - 94.7	5.4	3.9 - 6.9	76.4	72.9 - 79.8	
III-NORTH EAST	6.1	3.0 - 9.3	3.0	1.7 - 4.4	89.6	87.4 - 91.9	7.3	5.4 - 9.2	75.8	72.9 - 78.7	
IV-METRO WEST	3.2	1.7 - 4.7	2.3	1.0 - 3.6	90.1	87.8 - 92.3	4.9	3.3 - 6.5	72.7	69.7 - 75.8	
V-SOUTH EAST	5.0	3.2 - 6.7	4.6	2.5 - 6.6	88.1	85.6 - 90.5	8.6	6.7 - 10.6	76.5	73.5 - 79.6	
VI-BOSTON	5.6	2.9 - 8.3	†		84.4	81.2 - 87.6	10.4	7.2 - 13.5	78.5	75.0 - 82.0	

## AGE- ADJUSTED PERCENTAGES FOR SELECTED TOPICS (CONTINUED)

<b>MASSACHUSETTS BEHAVIORAL RISK FACTOR SURVEILLANCE SYSTEM, 2009</b>															
	CURRENT SMOKER			FORMER SMOKER			QUIT ATTEMPT			PLANNING TO QUIT			NO SMOKING IN HOUSE		
	%	95% CI		%	95% CI		%	95% CI		%	95% CI		%	95% CI	
OVERALL	14.1	12.2	- 15.9	28.3	26.4	- 30.2	55.9	49.8	- 62.0	36.9	30.9	- 42.8	80.6	78.4	- 82.7
GENDER															
MALE	15.9	14.3	- 17.6	28.6	27.0	- 30.2	58.6	53.7	- 63.6	41.8	36.2	- 47.4	78.8	76.8	- 80.8
FEMALE	14.3	13.1	- 15.5	27.0	25.6	- 28.4	61.7	58.1	- 65.2	41.4	36.8	- 46.1	82.3	80.7	- 84.0
RACE-ETHNICITY*															
WHITE	15.2	14.0	- 16.4	29.1	28.0	- 30.3	57.5	53.8	- 61.1	39.8	35.6	- 43.9	81.2	79.7	- 82.6
BLACK	17.2	13.3	- 21.1	20.3	16.4	- 24.2	72.7	63.9	- 81.5	48.5	36.3	- 60.7	77.9	73.0	- 82.8
HISPANIC	13.7	10.8	- 16.5	19.2	16.1	- 22.4	54.3	44.4	- 64.3	52.4	41.8	- 62.9	79.4	74.8	- 84.0
ASIAN	†			18.6	9.7	- 27.4	59.0	54.4	- 63.6	35.1	18.8	- 51.3	86.2	79.8	- 92.5
DISABILITY															
DISABILITY	21.5	16.5	- 26.4	32.4	27.7	- 37.2	47.6	37.3	- 57.9	38.1	28.6	- 47.6	72.3	66.8	- 77.8
NO DISABILITY	12.5	10.5	- 14.5	27.1	25.0	- 29.1	58.7	51.2	- 66.1	35.6	28.4	- 42.8	82.5	80.2	- 84.8
EDUCATION															
< HIGH SCHOOL	31.1	26.6	- 35.6	25.1	21.0	- 29.2	62.8	55.6	- 70.0	50.5	42.0	- 59.0	69.6	64.3	- 74.8
HIGH SCHOOL	23.7	21.1	- 26.3	27.9	25.8	- 30.0	57.6	52.0	- 63.2	40.8	34.6	- 47.1	71.5	68.4	- 74.6
COLLEGE 1-3 YRS	18.4	16.3	- 20.6	32.6	30.3	- 34.9	62.8	57.3	- 68.4	39.1	32.0	- 46.1	78.2	75.7	- 80.8
COLLEGE 4+ YRS	7.8	6.1	- 9.5	25.6	24.1	- 27.0	58.0	50.2	- 65.8	38.6	31.7	- 45.4	86.6	84.4	- 88.8
HOUSEHOLD INCOME															
<\$25,000	27.5	24.5	- 30.4	21.8	19.9	- 23.7	63.0	57.5	- 68.6	47.5	41.2	- 53.9	70.2	67.0	- 73.3
\$25,000-34,999	17.8	14.0	- 21.6	27.7	24.0	- 31.4	70.9	63.6	- 78.1	39.2	27.0	- 51.3	75.7	70.8	- 80.6
\$35,000-49,999	19.8	16.3	- 23.3	28.6	25.5	- 31.7	59.1	51.5	- 66.7	32.1	24.6	- 39.7	74.1	69.4	- 78.8
\$50,000-74,999	14.1	11.1	- 17.0	30.8	28.0	- 33.7	58.2	48.6	- 67.7	45.4	35.7	- 55.1	81.3	78.4	- 84.3
\$75,000+	9.6	7.8	- 11.4	29.1	27.2	- 31.0	57.7	50.2	- 65.2	34.2	26.5	- 41.8	86.9	84.6	- 89.3
REGION															
I-WESTERN	16.2	13.8	- 18.5	27.5	25.1	- 29.8	54.1	46.6	- 61.7	37.4	29.4	- 45.3	77.5	74.4	- 80.6
II-CENTRAL	16.4	13.5	- 19.2	28.8	25.4	- 32.1	63.5	56.3	- 70.7	42.3	33.3	- 51.3	82.1	78.7	- 85.5
III-NORTH EAST	14.0	12.1	- 15.9	27.2	24.8	- 29.5	55.5	48.0	- 63.1	42.6	34.5	- 50.7	79.8	76.9	- 82.8
IV-METRO WEST	10.8	8.6	- 13.0	26.7	24.4	- 29.0	60.8	53.8	- 67.8	43.1	32.9	- 53.3	85.9	83.6	- 88.3
V-SOUTH EAST	19.7	16.9	- 22.5	30.1	27.9	- 32.2	63.8	57.3	- 70.4	41.6	34.3	- 49.0	76.8	73.6	- 80.0
VI-BOSTON	14.7	12.1	- 17.4	24.3	21.9	- 26.7	62.2	54.3	- 70.0	45.8	36.6	- 55.0	82.7	79.9	- 85.5

## AGE- ADJUSTED PERCENTAGES FOR SELECTED TOPICS (CONTINUED)

<b>MASSACHUSETTS BEHAVIORAL RISK FACTOR SURVEILLANCE SYSTEM, 2009</b>															
	ENVIRONMENTAL SMOKE			BINGE DRINKING			HEAVY DRINKING			OVERWEIGHT			OBESITY		
	%	95% CI		%	95% CI		%	95% CI		%	95% CI		%	95% CI	
OVERALL	39.2	36.7	- 41.7	17.5	15.3	- 19.7	5.7	4.6	- 6.9	56.3	53.7	- 58.8	21.3	19.4	- 23.1
GENDER															
MALE	44.1	41.9	- 46.3	23.0	21.1	- 25.0	5.8	4.8	- 6.8	67.5	65.4	- 69.5	24.6	22.8	- 26.4
FEMALE	34.3	32.4	- 36.2	13.9	12.4	- 15.5	6.6	5.4	- 7.7	47.1	45.3	- 48.9	19.0	17.7	- 20.3
RACE-ETHNICITY*															
WHITE	38.3	36.6	- 39.9	20.6	19.1	- 22.1	7.2	6.3	- 8.2	56.1	54.5	- 57.7	20.9	19.6	- 22.1
BLACK	40.3	34.9	- 45.7	10.1	6.7	- 13.6	†			68.2	63.7	- 72.7	32.4	27.3	- 37.6
HISPANIC	38.5	33.8	- 43.3	11.4	8.4	- 14.3	2.2	1.0	- 3.5	67.3	62.8	- 71.8	29.1	25.0	- 33.3
ASIAN	42.8	33.9	- 51.8	†			†			38.5	30.1	- 47.0	†		
DISABILITY															
DISABILITY	47.4	41.8	- 53.0	15.5	10.6	- 20.4	6.0	2.5	- 9.5	60.5	54.7	- 66.3	30.5	25.3	- 35.7
NO DISABILITY	37.4	34.6	- 40.2	18.0	15.5	- 20.5	5.8	4.6	- 7.1	55.1	52.2	- 57.9	18.8	16.8	- 20.7
EDUCATION															
< HIGH SCHOOL	46.8	41.4	- 52.2	17.2	12.8	- 21.6	6.9	4.2	- 9.6	65.8	61.2	- 70.4	29.7	25.4	- 34.0
HIGH SCHOOL	45.5	42.4	- 48.6	20.3	17.6	- 23.0	6.5	4.7	- 8.3	62.7	59.8	- 65.6	27.6	24.9	- 30.3
COLLEGE 1–3 YRS	43.9	41.1	- 46.7	18.6	16.2	- 21.0	6.9	5.4	- 8.4	61.4	58.7	- 64.0	26.7	24.3	- 29.1
COLLEGE 4+ YRS	30.8	28.4	- 33.3	19.5	17.2	- 21.9	5.5	4.7	- 6.3	52.4	49.8	- 55.0	16.9	14.9	- 18.9
HOUSEHOLD INCOME															
<\$25,000	46.1	42.6	- 49.6	12.3	10.2	- 14.4	4.3	3.2	- 5.3	61.3	58.1	- 64.5	29.9	27.0	- 32.7
\$25,000–34,999	47.7	42.7	- 52.7	20.0	15.2	- 24.8	6.1	3.4	- 8.8	61.4	56.3	- 66.5	26.1	21.8	- 30.4
\$35,000–49,999	45.5	41.0	- 50.0	18.6	14.9	- 22.4	7.5	5.1	- 9.9	63.1	58.5	- 67.7	26.5	23.2	- 29.8
\$50,000–74,999	39.9	35.6	- 44.3	16.9	13.7	- 20.1	6.4	4.6	- 8.1	59.4	55.2	- 63.6	22.0	18.0	- 26.0
\$75,000+	33.5	30.7	- 36.4	22.2	19.7	- 24.7	7.6	5.8	- 9.4	54.5	52.0	- 57.1	18.1	16.1	- 20.0
REGION															
I–WESTERN	41.0	37.7	- 44.3	19.0	16.0	- 22.1	5.2	3.8	- 6.7	58.3	55.2	- 61.4	25.3	22.7	- 27.9
II–CENTRAL	38.0	34.1	- 42.0	15.6	12.7	- 18.6	5.8	3.6	- 8.0	60.3	56.6	- 64.0	23.5	20.5	- 26.4
III–NORTH EAST	40.1	36.9	- 43.3	19.1	16.3	- 21.9	6.1	4.4	- 7.9	60.1	57.0	- 63.1	23.3	20.8	- 25.9
IV–METRO WEST	32.7	29.3	- 36.1	20.0	17.1	- 22.9	6.8	5.0	- 8.6	53.1	49.8	- 56.4	18.2	15.4	- 20.9
V–SOUTH EAST	42.6	39.3	- 45.8	18.2	15.4	- 21.1	7.1	5.3	- 8.9	58.2	54.9	- 61.6	21.3	18.8	- 23.9
VI–BOSTON	39.4	35.2	- 43.5	17.2	14.2	- 20.2	5.1	3.6	- 6.7	54.3	50.7	- 57.9	21.9	19.0	- 24.9

## AGE- ADJUSTED PERCENTAGES FOR SELECTED TOPICS (CONTINUED)

<b>MASSACHUSETTS BEHAVIORAL RISK FACTOR SURVEILLANCE SYSTEM, 2009</b>															
	MODERATE PHYSICAL ACTIVITY			VIGOROUS PHYSICAL ACTIVITY			FRUITS AND VEGETABLES		CHOLESTEROL CHECKED		HIGH CHOLESTEROL				
	%	95% CI		%	95% CI		%	95% CI		%	95% CI				
OVERALL	54.6	52.0	- 57.1	33.1	30.6	- 35.6	26.6	24.3	- 28.8	82.1	79.9	- 84.4	33.1	30.6	- 35.6
GENDER															
MALE	54.8	52.6	- 57.1	34.7	32.5	- 37.0	20.2	18.4	- 21.9	81.0	79.1	- 82.9	35.9	33.9	- 37.9
FEMALE	51.9	50.0	- 53.8	28.4	26.6	- 30.2	31.6	29.8	- 33.3	83.9	82.3	- 85.6	29.4	27.3	- 31.4
RACE-ETHNICITY*															
WHITE	56.3	54.6	- 57.9	33.6	31.9	- 35.2	26.8	25.3	- 28.2	84.0	82.5	- 85.4	32.4	30.7	- 34.0
BLACK	46.0	40.1	- 51.9	25.8	20.3	- 31.2	20.2	16.1	- 24.3	80.1	76.0	- 84.1	32.2	26.4	- 38.1
HISPANIC	33.0	28.5	- 37.6	17.1	13.4	- 20.7	24.5	20.3	- 28.6	72.0	68.2	- 75.8	36.6	31.6	- 41.6
ASIAN	44.0	35.4	- 52.6	23.6	15.8	- 31.4	23.2	16.8	- 29.6	87.6	82.0	- 93.2	37.7	28.8	- 46.6
DISABILITY															
DISABILITY	50.6	45.4	- 55.8	24.4	18.7	- 30.0	23.6	18.6	- 28.5	82.2	77.1	- 87.3	46.5	40.0	- 53.0
NO DISABILITY	56.2	53.4	- 59.1	35.4	32.6	- 38.1	27.4	24.9	- 29.9	81.9	79.5	- 84.3	30.6	27.7	- 33.5
EDUCATION															
< HIGH SCHOOL	36.3	31.3	- 41.2	19.1	14.9	- 23.3	19.2	15.2	- 23.2	71.6	66.9	- 76.4	37.0	31.9	- 42.1
HIGH SCHOOL	49.3	46.1	- 52.5	25.3	22.3	- 28.3	19.7	17.3	- 22.1	77.3	74.6	- 80.0	34.2	31.0	- 37.4
COLLEGE 1–3 YRS	51.8	48.9	- 54.6	29.8	27.1	- 32.5	25.3	22.9	- 27.8	83.1	80.9	- 85.3	33.4	30.7	- 36.1
COLLEGE 4+ YRS	56.7	54.1	- 59.4	35.5	33.0	- 38.0	30.8	28.5	- 33.1	88.3	86.3	- 90.3	32.0	29.1	- 34.9
HOUSEHOLD INCOME															
<\$25,000	45.2	41.8	- 48.5	22.8	19.8	- 25.8	22.3	19.4	- 25.2	74.5	71.5	- 77.5	35.5	32.3	- 38.7
\$25,000–34,999	48.2	42.9	- 53.6	24.9	20.4	- 29.4	22.7	19.0	- 26.5	80.3	76.0	- 84.6	35.7	30.2	- 41.1
\$35,000–49,999	51.6	46.9	- 56.3	28.4	23.9	- 32.9	23.5	19.9	- 27.1	81.0	77.2	- 84.8	32.4	28.8	- 35.9
\$50,000–74,999	55.1	50.8	- 59.5	30.3	26.4	- 34.2	25.9	22.3	- 29.4	81.3	77.5	- 85.0	30.9	27.9	- 33.9
\$75,000+	60.0	57.3	- 62.7	39.3	36.5	- 42.2	29.9	27.3	- 32.6	88.0	85.7	- 90.4	31.6	28.8	- 34.4
REGION															
I–WESTERN	53.9	50.3	- 57.5	33.3	29.8	- 36.7	27.9	24.7	- 31.1	79.7	76.8	- 82.7	30.2	27.0	- 33.4
II–CENTRAL	49.6	45.9	- 53.3	27.3	24.2	- 30.4	24.2	21.3	- 27.0	84.6	81.2	- 88.0	33.5	29.7	- 37.2
III–NORTH EAST	54.1	50.9	- 57.3	30.3	27.1	- 33.5	27.3	24.3	- 30.3	80.7	77.8	- 83.5	35.8	32.1	- 39.5
IV–METRO WEST	52.2	48.8	- 55.6	33.6	30.3	- 37.0	28.4	25.4	- 31.5	86.8	84.1	- 89.6	32.0	28.6	- 35.3
V–SOUTH EAST	56.8	53.7	- 60.0	32.0	28.7	- 35.3	22.7	20.2	- 25.2	81.0	78.0	- 84.0	30.8	28.5	- 33.1
VI–BOSTON	49.2	45.1	- 53.2	28.9	25.3	- 32.4	25.1	22.2	- 28.1	79.5	76.5	- 82.6	32.6	28.4	- 36.9



## AGE- ADJUSTED PERCENTAGES FOR SELECTED TOPICS (CONTINUED)

<b>MASSACHUSETTS BEHAVIORAL RISK FACTOR SURVEILLANCE SYSTEM, 2009</b>												
	HIGH BLOOD PRESSURE			MEDICINE FOR HIGH BP		PRE-DIABETES		DIABETES		EVER HAD ASTHMA		
	%	95% CI		%	95% CI	%	95% CI	%	95% CI	%	95% CI	
OVERALL	24.8	23.1	- 26.4	58.7	52.8 - 64.6	4.1	3.3 - 4.9	7.0	6.0 - 7.9	16.6	14.5	- 18.6
GENDER												
MALE	26.6	25.1	- 28.1	57.5	52.7 - 62.4	4.2	3.5 - 5.0	8.8	7.9 - 9.8	13.4	11.8	- 14.9
FEMALE	22.4	21.4	- 23.5	60.8	56.9 - 64.7	4.8	4.1 - 5.5	6.4	5.7 - 7.0	18.4	16.9	- 19.9
RACE-ETHNICITY*												
WHITE	23.7	22.6	- 24.7	57.9	54.0 - 61.9	4.3	3.8 - 4.9	6.5	5.9 - 7.1	16.4	15.1	- 17.7
BLACK	34.0	30.1	- 38.0	68.3	56.9 - 79.7	5.7	3.2 - 8.1	12.8	9.7 - 15.9	18.1	13.9	- 22.4
HISPANIC	30.7	27.2	- 34.2	59.8	52.7 - 67.0	4.8	2.9 - 6.7	14.2	11.8 - 16.6	16.6	13.5	- 19.7
ASIAN	18.4	12.5	- 24.2	51.7	40.3 - 63.2	†		16.0	9.9 - 22.1	8.5	4.2	- 12.7
DISABILITY												
DISABILITY	34.9	30.5	- 39.2	64.2	53.0 - 75.4	7.1	4.6 - 9.5	11.0	8.8 - 13.2	27.6	21.9	- 33.2
NO DISABILITY	22.2	20.4	- 24.0	56.2	50.2 - 62.3	3.3	2.5 - 4.2	5.7	4.6 - 6.8	13.9	11.7	- 16.0
EDUCATION												
< HIGH SCHOOL	32.1	29.1	- 35.2	61.2	56.0 - 66.5	6.5	3.7 - 9.4	14.1	11.7 - 16.4	20.8	16.9	- 24.7
HIGH SCHOOL	28.6	26.5	- 30.7	57.5	52.2 - 62.8	5.4	4.3 - 6.5	9.4	8.0 - 10.8	15.1	13.1	- 17.1
COLLEGE 1-3 YRS	26.9	24.9	- 28.9	60.9	54.5 - 67.2	5.3	4.2 - 6.4	7.7	6.6 - 8.7	17.5	15.4	- 19.7
COLLEGE 4+ YRS	20.2	19.0	- 21.3	59.0	51.7 - 66.3	3.7	2.7 - 4.7	5.6	4.7 - 6.5	16.3	14.0	- 18.6
HOUSEHOLD INCOME												
<\$25,000	32.4	29.8	- 34.9	58.7	52.8 - 64.6	6.3	4.9 - 7.8	12.5	10.8 - 14.1	20.4	17.9	- 22.9
\$25,000-34,999	26.2	23.3	- 29.2	68.9	61.4 - 76.5	5.5	3.7 - 7.4	11.9	8.9 - 14.9	18.8	14.5	- 23.0
\$35,000-49,999	26.9	23.8	- 30.0	54.8	48.7 - 60.9	4.5	3.2 - 5.8	7.8	6.1 - 9.5	16.9	13.2	- 20.6
\$50,000-74,999	23.5	21.0	- 26.0	58.7	50.5 - 66.8	5.2	3.7 - 6.7	6.1	4.6 - 7.7	15.8	12.6	- 19.0
\$75,000+	20.3	18.8	- 21.9	54.5	49.9 - 59.0	4.0	3.0 - 5.0	5.0	4.0 - 6.0	14.4	12.2	- 16.5
REGION												
I-WESTERN	26.3	24.1	- 28.6	64.8	57.1 - 72.4	4.8	3.7 - 5.8	7.3	6.2 - 8.4	16.3	13.9	- 18.8
II-CENTRAL	24.8	22.6	- 27.0	55.7	46.5 - 64.9	5.1	3.7 - 6.6	7.6	6.2 - 9.0	15.3	12.4	- 18.1
III-NORTH EAST	23.1	21.3	- 24.8	63.3	56.2 - 70.4	4.5	3.2 - 5.7	7.4	6.0 - 8.8	16.2	13.8	- 18.5
IV-METRO WEST	20.9	19.1	- 22.7	57.7	52.8 - 62.6	3.4	2.3 - 4.4	7.1	5.7 - 8.6	16.7	14.0	- 19.4
V-SOUTH EAST	27.5	25.1	- 30.0	56.2	51.5 - 60.8	5.4	4.2 - 6.6	8.2	7.0 - 9.4	15.6	13.2	- 17.9
VI-BOSTON	27.2	24.5	- 29.8	57.1	48.4 - 65.7	5.1	3.5 - 6.6	8.0	6.6 - 9.4	14.6	12.4	- 16.9

## AGE- ADJUSTED PERCENTAGES FOR SELECTED TOPICS (CONTINUED)

<b>MASSACHUSETTS BEHAVIORAL RISK FACTOR SURVEILLANCE SYSTEM, 2009</b>										
	CURRENT ASTHMA		ARTHRITIS		LIMITATIONS DUE TO ARTHRITIS		EVER TESTED FOR HIV YEAR		TESTED FOR HIV PAST YEAR	
	%	95% CI	%	95% CI	%	95% CI	%	95% CI	%	95% CI
OVERALL	11.2	9.4 - 13.0	24.0	22.5 - 25.6	10.2	9.2 - 11.2	43.7	40.7 - 46.7	13.0	10.5 - 15.6
GENDER										
MALE	8.4	7.2 - 9.7	19.1	17.9 - 20.4	8.3	7.4 - 9.2	43.3	40.6 - 46.0	12.2	10.1 - 14.3
FEMALE	13.3	12.0 - 14.6	27.1	25.9 - 28.3	11.7	10.9 - 12.4	46.8	44.6 - 48.9	12.7	10.8 - 14.5
RACE-ETHNICITY*										
WHITE	11.3	10.2 - 12.5	23.6	22.7 - 24.5	10.0	9.3 - 10.6	42.1	40.2 - 44.1	9.6	8.2 - 11.0
BLACK	13.9	10.1 - 17.8	21.6	17.6 - 25.5	9.9	7.0 - 12.8	63.4	57.4 - 69.5	30.0	22.8 - 37.2
HISPANIC	9.8	7.7 - 11.9	23.6	20.3 - 27.0	14.0	11.6 - 16.5	56.7	51.1 - 62.4	20.8	15.6 - 26.0
ASIAN	†		13.7	7.9 - 19.5	†		38.5	27.5 - 49.4	†	
DISABILITY										
DISABILITY	21.4	16.0 - 26.7	45.0	40.4 - 49.6	31.5	27.7 - 35.3	55.9	49.0 - 62.7	16.8	10.3 - 23.2
NO DISABILITY	8.8	7.0 - 10.7	18.2	16.6 - 19.7	3.9	3.1 - 4.6	41.2	37.9 - 44.4	12.3	9.5 - 15.1
EDUCATION										
< HIGH SCHOOL	14.7	11.8 - 17.6	28.4	25.1 - 31.6	17.0	14.3 - 19.6	48.9	42.4 - 55.3	21.3	15.7 - 27.0
HIGH SCHOOL	11.0	9.2 - 12.8	26.4	24.4 - 28.4	12.5	11.0 - 13.9	40.5	36.8 - 44.2	11.9	9.1 - 14.7
COLLEGE 1-3 YRS	12.2	10.3 - 14.1	27.7	25.6 - 29.8	11.6	10.2 - 13.1	47.6	44.3 - 50.9	13.0	10.2 - 15.8
COLLEGE 4+ YRS	11.0	9.0 - 13.0	19.9	18.8 - 21.0	7.8	7.0 - 8.5	45.5	42.5 - 48.5	10.7	8.6 - 12.8
HOUSEHOLD INCOME										
<\$25,000	15.5	13.3 - 17.7	28.1	26.2 - 30.1	17.8	16.0 - 19.5	55.1	51.0 - 59.2	20.8	17.0 - 24.6
\$25,000-34,999	13.7	9.8 - 17.6	28.6	24.8 - 32.3	11.3	8.7 - 13.9	50.6	44.5 - 56.6	16.6	11.3 - 21.9
\$35,000-49,999	14.4	10.8 - 18.0	28.0	24.7 - 31.3	12.1	9.9 - 14.4	48.0	42.7 - 53.3	13.6	9.1 - 18.1
\$50,000-74,999	9.4	6.9 - 12.0	24.3	21.8 - 26.8	9.4	7.7 - 11.2	42.1	37.3 - 46.8	8.2	5.5 - 10.9
\$75,000+	8.9	7.2 - 10.5	19.7	18.3 - 21.1	6.6	5.6 - 7.5	42.4	39.4 - 45.3	9.3	7.1 - 11.5
REGION										
I-WESTERN	10.2	8.3 - 12.1	25.3	23.1 - 27.5	12.5	10.9 - 14.2	42.4	38.2 - 46.6	12.2	9.1 - 15.2
II-CENTRAL	11.4	8.7 - 14.0	26.2	23.9 - 28.5	11.3	9.6 - 12.9	43.7	39.1 - 48.3	10.4	6.6 - 14.2
III-NORTH EAST	11.6	9.5 - 13.8	20.8	19.0 - 22.7	8.9	7.7 - 10.2	45.3	41.5 - 49.0	11.9	9.1 - 14.7
IV-METRO WEST	10.9	8.8 - 13.1	21.5	19.9 - 23.2	8.2	7.1 - 9.4	42.6	39.0 - 46.3	11.4	8.3 - 14.5
V-SOUTH EAST	11.3	9.1 - 13.4	25.6	23.4 - 27.7	10.8	9.4 - 12.3	44.7	40.6 - 48.8	11.6	8.1 - 15.0
VI-BOSTON	9.4	7.6 - 11.1	21.3	19.3 - 23.2	10.7	9.2 - 12.3	57.6	53.1 - 62.2	21.5	16.8 - 26.3

## AGE- ADJUSTED PERCENTAGES FOR SELECTED TOPICS (CONTINUED)

	SEXUAL VIOLENCE - WOMEN			SEXUAL VIOLENCE - MEN		
	%	95% CI		%	95% CI	
<b>RACE-ETHNICITY*</b>						
WHITE	14.9	12.1	- 17.8	5.3	3.4	- 7.3
BLACK	20.1	8.8	- 31.5	†		
HISPANIC	6.8	3.1	- 10.5	†		
ASIAN	†			†		
<b>DISABILITY</b>						
DISABILITY	36.5	29.0	- 44.0	14.1	7.8	- 20.5
NO DISABILITY	10.7	8.4	- 12.9	2.9	1.7	- 4.1
<b>EDUCATION</b>						
< HIGH SCHOOL	22.3	12.5	- 32.1	†		
HIGH SCHOOL	8.5	4.6	- 12.3	†		
COLLEGE 1–3 YRS	17.1	12.4	- 21.9	†		
COLLEGE 4+ YRS	15.8	12.2	- 19.3	4.4	2.1	- 6.6
<b>HOUSEHOLD INCOME</b>						
<\$25,000	19.1	14.0	- 24.2	†		
\$25,000–34,999	14.0	7.1	- 20.9	†		
\$35,000–49,999	9.0	4.8	- 13.3	†		
\$50,000–74,999	20.2	12.9	- 27.4	†		
\$75,000+	16.6	10.4	- 22.8	†		
<b>REGION</b>						
I–WESTERN	15.8	9.8	- 21.8	†		
II–CENTRAL	16.3	10.8	- 21.8	†		
III–NORTH EAST	11.8	7.0	- 16.6	†		
IV–METRO WEST	14.1	8.4	- 19.8	†		
V–SOUTH EAST	15.2	10.2	- 20.2	†		
VI–BOSTON	17.0	11.2	- 22.8	†		

\* White, Black, and Asian race categories refer to non-Hispanic; † Insufficient data

# MASSACHUSETTS ESTIMATES, NATIONAL ESTIMATES, AND HP 2010<sup>^</sup>

<b>MASSACHUSETTS BEHAVIORAL RISK FACTOR SURVEILLANCE SYSTEM, 2009</b>				
VARIABLES	MA %	US MEDIAN¶ %	US RANGE¶ %	HP 2010 <sup>^</sup> %
<b>OVERALL HEALTH MEASURES</b>				
FAIR OR POOR HEALTH	12.0	14.6	10.1-30.9	X
15+ POOR MENTAL HEALTH DAYS	8.9	9.5	5.3-14.3	X
15+ DAYS IN POOR PHYSICAL HEALTH	8.4	9.5	4.6-15.8	X
DISABILITY	21.3	†		X
DISABILITY / NEED HELP WITH ACTIVITIES	5.7	†		X
<b>HEALTH CARE ACCESS AND UTILIZATION</b>				
NO HEALTH INSURANCE (18-64)	3.4	†		0.0
HAVE PERSONAL HEALTH CARE PROVIDER	89.7	81.3	67.6-89.9	85.0
COULD NOT SEE DOCTOR DUE TO COST	7.0	13.7	6.2-19.7	X
CHECKUP IN PAST YEAR (ADDED)	76.3			X
<b>RISK FACTORS AND PREVENTIVE BEHAVIORS</b>				
CURRENT SMOKER	15.0	17.9	6.4-25.6	12.0
FORMER SMOKER	28.5			X
QUIT ATTEMPT AMONG CURRENT SMOKERS	61.2	59.1	53.2-73.5	75.0
PLAN TO QUIT AMONG CURRENT SMOKERS	41.6			X
LIVE IN HOUSEHOLD WHERE SMOKING IS NOT EXPOSED TO ENVIRONMENTAL SMOKE	80.6			X
BINGE DRINKING	17.6	15.5	6.8-23.9	6.0
HEAVY DRINKING	6.2	5.2	1.9-8.1	X
OVERWEIGHT (BASED ON HP 2010)	57.5	64.1	51.8-70.3	X
OBESITY	21.8	27.2	19.0-35.4	15.0
MODERATE PHYSICAL ACTIVITY	53.0	50.6	28.0-60.7	70.0
VIGOROUS PHYSICAL ACTIVITY	30.8	29.2	13.7-40.1	30.0
FRUIT AND VEGETABLE CONSUMPTION	26.2	23.5	14.6-31.5	X
CHOLESTEROL CHECKED IN PAST 5 YEARS	84.0	76.9	67.5-85.3	80.0
HIGH CHOLESTEROL	35.6	37.4	24.4-41.8	17.0
HIGH BLOOD PRESSURE	25.7	28.7	21.6-37.6	14.0
TAKE MEDICINE FOR HIGH BLOOD PRESSURE	78.8	79.0	66.9-86.7	X
FLU VACCINE IN PAST YEAR (50-64)	48.9	44.9	12.6-55.9	X
FLU VACCINE IN PAST YEAR (65+)	73.2	69.7	26.6-76.8	90.0
EVER HAD PNEUMONIA VACCINATION (65+)	71.3	68.1	19.1-73.9	90.0
<b>CHRONIC HEALTH CONDITIONS</b>				
DIABETES	7.9	8.5	5.9-13.0	2.5
EVER HAD ASTHMA	15.8	13.5	9.6-16.9	X
CURRENTLY HAVE ASTHMA	10.8	8.8	4.4-11.1	X
HAVE ARTHRITIS	24.8	25.9	10.7-35.6	X
LIMITATIONS DUE TO ARTHRITIS	10.7	11.7	5.1-18.1	X
MYOCARDIAL INFARCTION (35+)	5.4	5.4	1.8-8.9	X
ANGINA (35+)	5.3	5.3	2.0-9.6	X
STROKE (35+)	2.7	3.3	1.9-5.3	X
<b>OTHER TOPICS</b>				
EVER TESTED FOR HIV (18-64)	43.3	39.1	26.6-74.7	X
TESTED FOR HIV IN PAST YEAR (18-64)	11.6	9.4	5.4-32.6	X
SEXUAL VIOLENCE (WOMEN)	14.6	†		X

¶ The US median percentage and range are based on data for all 50 states, District of Columbia, and Puerto Rico.  
<sup>^</sup> HP2010 = Health People 2010 Objectives.  
X No applicable objective.  
† No comparable US data available  
\*\*\*flu shot only, nasal spray not included

## ITEM-SPECIFIC NON-RESPONSE

<b>MASSACHUSETTS BEHAVIORAL RISK FACTOR SURVEILLANCE SYSTEM, 2009</b>	
	PERCENTAGE OF NON-RESPONSE* %
<b>OVERALL HEALTH MEASURES</b>	
FAIR OR POOR HEALTH	0.2
15+ DAYS IN POOR PHYSICAL HEALTH	2.1
15+ POOR MENTAL HEALTH DAYS	2.0
DISABILITY	15.4
DISABILITY / NEED HELP WITH ACTIVITIES	15.5
<b>HEALTH CARE ACCESS AND UTILIZATION</b>	
NO HEALTH INSURANCE	0.2
NO PERSONAL HEALTH CARE PROVIDER	0.3
COULD NOT SEE DOCTOR DUE TO COST	0.2
HAD CHECKUP IN PAST YEAR	0.8
<b>RISK FACTORS AND PREVENTIVE BEHAVIORS</b>	
CURRENT SMOKER	0.6
FORMER SMOKER	0.6
QUIT ATTEMPT AMONG CURRENT SMOKERS	0.4
PLAN TO QUIT AMONG CURRENT SMOKERS	16.6
LIVE IN HOUSEHOLD WHERE SMOKING IS NOT ALLOWED	12.4
EXPOSED TO ENVIRONMENTAL SMOKE	13.8
BINGE DRINKING	5.9
HEAVY DRINKING	6.7
OVERWEIGHT (BASED ON HP 2010)	6.8
OBESITY	6.8
MODERATE PHYSICAL ACTIVITY	11.8
VIGOROUS PHYSICAL ACTIVITY	10.1
5 OR MORE SERVINGS OF FRUIT OR VEGETABLES	7.4
CHOLESTEROL CHECKED IN PAST 5 YEARS	3.1
HIGH CHOLESTEROL	10.5
HIGH BLOOD PRESSURE	0.3
FLU VACCINE IN THE PAST YEAR (50-64)	4.7
FLUE VACCINE IN THE PAST YEAR (65+)	5.9
EVER HAD PNEUMONIA VACCINE(65+)	10.2
<b>CHRONIC HEALTH CONDITIONS</b>	
PRE-DIABETES	10.3
DIABETES	0.1
EVER HAD ASTHMA	0.3
CURRENTLY HAVE ASTHMA	0.8
DOCTOR DIAGNOSED ARTHRITIS	6.6
LIMITATIONS DUE TO ARTHRITIS	0.7
HEART DISEASE (35+)	1.5
STROKE (35+)	0.3
<b>OTHER TOPICS</b>	
EVER TESTED FOR HIV (18-64)	11.5
TESTED FOR HIV IN PAST YEAR (18-64)	24.5
SEXUAL VIOLENCE IN PAST YEAR (WOMEN)	21.7
<p>* The item-specific unweighted non-response % was calculated using the number of respondents who had finished the demographic section of the 2006 BRFSS as the denominator and those who reported don't know or refused as the numerators.</p> <p>†Non-response rate given is approximate for these 3 variables.</p>	

# LIMITATIONS

There are some limitations that should be considered when interpreting results from the BRFSS, based on the nature of the survey data:

- The health characteristics estimated from the BRFSS pertain to the adult population, aged 18 years and older, who live in households.
- As noted above, respondents are identified through telephone-based methods.
- Telephone penetration in the United States is estimated at 95.0%; in Massachusetts, telephone penetration is estimated at 96.1%, meaning that only 3.9% of households do not have any telephone service [43].
- Telephone coverage varies across population subgroups: minorities and those in lower socioeconomic groups typically have lower telephone coverage. No direct method of compensating for non-telephone coverage is employed by the BRFSS; however, post-stratification weights are used, which may partially correct for any bias caused by non-telephone coverage. Post-stratification is designed to make the total number of cases equal to some desired number which, for MA BRFSS data, is the number of people in the state who are aged 18 years and older. In the BRFSS, such post-stratification serves as a blanket adjustment for non coverage and non response and forces the total number of cases to equal population estimates.
- Evidence of acceptable performance on surveys is measured by the following quality assurance indicators: CASRO or other response rate, refusal rate, refusal conversion, and timeliness of providing data. A high response rate indicates low potential bias. CASRO response rate is a main indicator of survey quality. The CASRO rate is a measure of respondent cooperation and is generally defined as the proportion of all eligible respondents in the sample for whom an interview has been completed. In 2009, the MA BRFSS had an average CASRO rate of 49%, which is higher than the required BRFSS standard of 40%.
- Another factor to consider is the growth of cellular telephone only households. Preliminary results from the 2009 National Health Interview Survey indicate that almost 23% of American households had wireless telephone service only [44]. Cellular telephones were not included as part of the regular BRFSS sample in 2009. However a survey of cell phone-only users was conducted in 2009 and new estimates of main health indicators based on the addition of the cell-only sample to the traditional landline-only sample will be released as a supplement to this report later this year.
- All data collected by the BRFSS are based on self-report from the respondents. By its nature, self-reported data may be subject to error for several reasons. An individual may have difficulty remembering events that occurred a long time ago or the frequency of certain behaviors. Some respondents may over report socially desirable behaviors, while underreporting behaviors they perceive to be less acceptable. Finally, because the BRFSS surveys a randomly selected sample of Massachusetts adults, these results may differ from another random sample to some extent simply due to chance.
- Persons with the most severe limitations and with certain disabilities are not represented in this sample since individuals living in institutions are not included in the BRFSS. BRFSS methodology also precludes anyone from assisting respondents in completing the interview if the selected adult had difficulty in participating for any reason, such as an intellectual or developmental disability.

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