HEALTH REFORM IN MASSACHUSETTS:

AN UPDATE AS OF FALL 2009

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Sharon K. Long and Karen Stockley

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EXPANDING ACCESS TO HEALTH CARE

EXECUTIVE SUMMARY

In April 2006, Massachusetts enacted a health reform bill, entitled *An Act Providing Access To Affordable, Quality, Accountable Health Care* (Chapter 58 of the Acts of 2006), that sought to move the state to near universal insurance coverage and improve access to health care in the state. In order to track the impacts of Chapter 58, the Blue Cross Blue Shield of Massachusetts Foundation began funding an annual survey of nonelderly adults (aged 18 to 64) in the Commonwealth in fall 2006, just prior to the implementation of key elements of health reform. That survey, called the Massachusetts Health Reform Survey (MHRS), has been fielded in the fall of each subsequent year.[1] This report provides an update on the impacts of health reform in the state as of fall 2009. In presenting the findings, we report on the outcomes for adults in the state as of fall 2009 and estimates of how those adults would have fared in Massachusetts in earlier years. We focus on changes under health reform (comparing fall 2009 to the pre-reform period of fall 2006) and changes between fall 2008 to fall 2009, when the effects of the economic recession in the state were most severe. The outcomes examined include health insurance coverage (both insurance coverage at the time of the survey and coverage over the prior year), health care access and use, and the affordability of health care. We also examine support for health reform in the state over time.

1 The first three years of the survey (2006, 2007, and 2008) were funded jointly with the Commonwealth Fund and the Robert Wood Johnson Foundation.

OVERVIEW OF PROGRESS IN ACCOMPLISHING THE GOALS OF CHAPTER 58

The major components of Chapter 58 were directed at making comprehensive insurance coverage available and affordable for most residents as a first step towards improving access, affordability, and quality of health care. In fall 2009, more than 95 percent of nonelderly adults in the state were insured, up from 87.5 percent in fall 2006. Importantly, the strong system of public coverage in Massachusetts has offset some of the declines in employer-sponsored coverage observed during the economic recession. Compared to an analysis for the nation as a whole, health reform in Massachusetts appears to have provided more protection against a loss of insurance due to the economic downturn for nonelderly adults. Despite the importance of public coverage in the state, the majority of Massachusetts residents continue to obtain insurance coverage through their employer, with no evidence that public coverage has crowded-out employer coverage.

The higher level of insurance coverage in the state has been associated with improvements in health care access, use, and affordability. These important achievements provide evidence that residents are obtaining meaningful, comprehensive coverage. Furthermore, racial and ethnic disparities in health insurance coverage, health care access and use, and the affordability of care in the state have been reduced and, in some cases, eliminated. Most notably, the difference in insurance coverage between minority adults (defined as non-white and Hispanic adults) and white, non-Hispanic adults was eliminated in fall 2009, likely due to the strong increase in insurance coverage among racial/ethnic minority adults in the state under health reform. However, insurance coverage in and of itself has not completely eliminated all barriers to care in the state, nor has it addressed the underlying drivers of ever-increasing costs within the health care system. The latter problem, which extends beyond Massachusetts to the nation as a whole, is the considerable challenge now facing Massachusetts and the nation.

While Massachusetts deferred addressing health care costs in the 2006 legislation so as not to hold up the expansion in coverage, there is broad consensus in the state about the need to control health care costs and robust discussion about how to move forward on cost containment. Last year, the state's Special Commission on the Health Care Payment System proposed substantial changes in the state's health care delivery and payment systems. More recently, several state agencies have commissioned investigations into the factors driving high health care costs. With escalating health care costs a serious problem in every state, there is a clear need for strong federal leadership to address the systematic problems with the health care payment system across the nation.

KEY FINDINGS

Overall Impacts of Health Reform on Nonelderly Adults

- Under health reform in Massachusetts, health insurance coverage among nonelderly adults in Massachusetts rose by 7.7 percentage points between fall 2006 and fall 2009, to 95.2 percent covered. As a result, only 4.8 percent of nonelderly Massachusetts adults were uninsured at the time of the survey in fall 2009, a drop of more than 60 percent from fall 2006.

- The share of adults who were ever uninsured over the prior year and the share always uninsured over the prior year were also lower under health reform. The share ever uninsured over the prior year was at 9.7 percent in fall 2009, a drop of nearly half from fall 2006, while the share always uninsured over the prior year was at 2.5 percent, a drop of almost 70 percent from fall 2006.

- Despite the worsening of the economic recession between fall 2008 and fall 2009, uninsurance in Massachusetts remained at a historic low level in fall 2009. Compared to an analysis for the nation as a whole, health reform in Massachusetts appears to have provided more protection against loss of insurance due to the economic downturn for nonelderly adults.

- There is no evidence of public coverage "crowding out" employer-sponsored insurance coverage under health reform in Massachusetts.

- Access to and use of health care improved between fall 2006 and fall 2009, with more adults reporting visits to doctors and other providers (including visits for preventive care) and fewer adults reporting unmet need for care in fall 2009.

- There were also gains in the affordability of care in fall 2009 relative to fall 2006, with adults reporting lower out-of-pocket health care spending relative to family income and lower levels of unmet need because of costs. The latter was lower in fall 2009 than fall 2006 overall and for each of the specific types of care examined, including doctor care; specialist care; medical tests, treatment, or follow-up care; preventive care screenings; prescription drugs; and dental care.

- Nonetheless, some barriers to care persisted in fall 2009: About one in five adults reported problems finding a doctor who would see them and similar proportions reported unmet need for health care and problems paying medical bills.

Impacts of Health Reform on Population Subgroups

- Some of the most vulnerable adults in the state, including lower-income adults and adults with a chronic health condition, reported some of the strongest gains under health reform. Both groups reported significant gains in insurance coverage, health care access and use, and the affordability of care between fall 2006 and fall 2009. For example, insurance coverage rose by 14.1 percentage points for lower-income adults and 6.6 percentage points for adults with a chronic health condition between fall 2006 and fall 2009.

- Adults without dependent children, who were seldom eligible for public support prior to health reform, reported strong gains in insurance coverage, access to and use of health care, and the affordability of care between fall 2006 and fall 2009. For this group, insurance coverage increased by 10.0 percentage points between fall 2009 and fall 2006.

- Middle-class adults, who often make too much to qualify for public support but not enough to easily afford to purchase coverage on their own, also reported gains under health reform in insurance coverage (up 4.7 percentage points) and gains in health care access and use between fall 2006 and fall 2009. There were no improvements in the affordability of care, however, for middle-class adults over this period.

Impacts of Health Reform on Racial/Ethnic Disparities

- Massachusetts' health reform initiative eliminated or narrowed some of the racial/ethnic disparities in health insurance coverage, access to and use of health care, and health care affordability that were present in fall 2006.

- Most notably, under health reform, racial/ethnic minority adults were just as likely as white, non-Hispanic adults to have insurance coverage in fall 2009 after controlling for differences in health care needs and other factors, a significant change from their lower level of coverage in fall 2006.

- Minority adults also gained ground in terms of the affordability of health care. Between fall 2006 and fall 2009, minority adults reported stronger reductions in the share paying medical bills over time and in unmet need for preventive care due to costs than did white adults.

- In fall 2009, minority adults were less likely to report unmet need for care because of costs than were white, non-Hispanic adults, likely reflecting the strong gains in public and other coverage among minority adults under health reform.

- Remaining racial/ethnic disparities in the site of usual source of care, non-emergency emergency department use, and ratings of quality of care highlight the need to address additional barriers to health care beyond differences in insurance coverage.

Uninsured Adults

- As was true in fall 2006, adults in Massachusetts who were uninsured at the time of the survey continued to be disproportionately young, male, single, and healthy in fall 2009.
- However, in fall 2009, more of the adults who were uninsured at the time of the survey had insurance coverage at some point in the prior year. In fall 2009, 43.5 percent of the adults who were uninsured at the time of the survey had coverage at some point in the prior year, as compared to 32.6 percent in fall 2006.
- In addition to reporting higher levels of partial-year coverage, adults who were uninsured at the time of the survey in fall 2009 also reported better access to and use of health care and fewer problems with the affordability of care over the prior year than did their counterparts in fall 2006.
- Relatively few (20.1 percent) uninsured adults in fall 2009 had access to coverage through their employer.
- Cost remained a key barrier to obtaining coverage among those who remained uninsured in fall 2009.

The Adequacy of Insurance Coverage Under Health Reform

- In fall 2009, insured adults generally rated their health insurance coverage as being as good as it was prior to health reform in fall 2006.
- Affordability of care was a greater problem for insured adults in Massachusetts in fall 2009 than it was in fall 2006, as health care costs in the state continued to rise.
- In fall 2009, problems paying medical bills affected insured adults of all ages and across all population groups in the state, but were more common among those with high health care needs and lower incomes.

Support for Health Reform

- Support for health reform among nonelderly adults in Massachusetts was quite high when reform began in fall 2006 (68.5 percent), and has remained high over time, with 67.0 percent of nonelderly adults supporting health reform in fall 2009.
- Support for health reform among nonelderly adults in fall 2009 was similar to that in fall 2006 across nearly all major population groups in Massachusetts.

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I. INTRODUCTION

In April 2006, Massachusetts enacted a health reform bill that sought to move the state to near universal insurance coverage through a combination of Medicaid expansions, subsidized private health insurance coverage, insurance market reforms, and requirements for individuals and employers.[2] The key features of Massachusetts' initiative, entitled *An Act Providing Access To Affordable, Quality, Accountable Health Care* (Chapter 58 of the Acts of 2006), are:

- An expansion of Massachusetts' Medicaid program (MassHealth) to children with family income up to 300 percent of the federal poverty level (FPL),
- The elimination of enrollment caps for MassHealth coverage for several populations, including long-term unemployed adults, disabled working adults and persons with HIV,
- Income-related subsidies for health insurance (Commonwealth Care) for adults with family income up to 300 percent of the FPL,
- A new purchasing arrangement (Commonwealth Choice) that links individuals to private health plans,
- Health insurance market reforms that merge the small and non-group markets in an effort to reduce the cost of non-group premiums,
- An individual mandate that requires adults to have health insurance if they have access to an affordable health plan or face state tax penalties, and
- Requirements that employers with 11 or more employees (1) set up a Section 125 plan (or "cafeteria plan")[3] so that workers can pay for health insurance premiums with pre-tax dollars and (2) make a "fair and reasonable" contribution towards their workers' health insurance or face an assessment not to exceed $295 per full-time equivalent worker per year.

In order to track the impacts of Chapter 58, the Blue Cross Blue Shield of Massachusetts Foundation began funding an annual survey of nonelderly adults in the Commonwealth in fall 2006. That survey, called the Massachusetts Health Reform Survey (MHRS), has been fielded in the fall of each subsequent year.[4] To date, the first three annual MHRS (2006 to 2008) have provided the

2 For a summary of the provisions of the legislation, see Health Care Reform Bill Summary [Internet]. Boston: Blue Cross Blue Shield of Massachusetts Foundation; 2006 [cited 2010 May 19]. Available from: http://www.bcbsmafoundation.org/foundationroot/en_US/documents/MassHCReformLawSummary.pdf.

3 Under Section 125 of the Internal Revenue Code, employers can allow their employees to pay for health coverage (and other benefits) on a pre-tax basis. Pre-tax benefits lower payroll-related taxes for both the employer and employees.

4 The first three years of the survey (2006, 2007, and 2008) were funded jointly with the Commonwealth Fund and the Robert Wood Johnson Foundation.

foundation for a number of studies of the impacts of health reform in Massachusetts (Exhibit I.1). This report, which incorporates data from the 2009 MHRS, provides an update on the impacts of health reform in the state as of fall 2009. We focus on changes under health reform (comparing fall 2009 to the pre-reform period of fall 2006) and changes between fall 2008 and fall 2009, when the effects of the economic recession in the state were most severe. The outcomes examined include health insurance coverage (both insurance coverage at the time of the survey and coverage over the prior year), health care access and use, and the affordability of health care. We also examine support for health reform in the state over time.

EXHIBIT I.1: List of Prior Studies Using the Massachusetts Health Reform Survey to Examine Health Reform in Massachusetts, 2007-2009

2007

Long SK, Cohen M. Getting Ready for Reform: Insurance Coverage and Access to and Use of Care in Massachusetts in Fall 2006. Washington, DC: The Urban Institute; 2007.

2008

Long SK. On the Road to Universal Coverage: Impacts of Health Reform in Massachusetts at One Year. Health Aff (Millwood). 2008; 27(4): w270-84.

Long SK. The Impact of Health Reform on Underinsurance in Massachusetts: Do the Insured Have Adequate Protection? Washington, DC: The Urban Institute; 2008 October.

Long SK. Who Gained the Most Under Health Reform in Massachusetts? Washington, DC: The Urban Institute; 2008 October.

Long SK, Masi PB. How Have Employers Responded to Health Reform in Massachusetts? Findings at the End of One Year. Health Aff (Millwood). 2008; 27(6): w576-83.

2009

Long SK, Masi PB. Access and Affordability: An Update on Health Reform in Massachusetts, Fall 2008. Health Aff (Millwood). 2009; 28(4): w578-87.

Long SK, Masi PB. Access to and Affordability of Care in Massachusetts as of Fall 2008: Geographic and Racial/Ethnic Differences. Washington, DC: The Urban Institute; 2009 May.

Long SK, Stockley K. Health Reform in Massachusetts: An Update on Insurance Coverage and Support for Reform as of Fall 2008. Washington, DC: The Urban Institute; 2009 September.

Long SK, Stockley K. Massachusetts Health Reform: Employer Coverage from Employees' Perspective. Health Aff (Millwood). 2009; 28(6): w1079-87.

Long SK, Stockley K. Emergency Department Visits in Massachusetts: Who Uses Emergency Care and Why? Washington, DC: The Urban Institute; 2009 September.

II. DATA AND METHODS

A. DATA

The Massachusetts Health Reform Survey is fielded by Social Science Research Solutions (formerly International Communications Research). The survey relies on telephone interviews with a random sample of adults aged 18 to 64 years old in Massachusetts. The survey sample is based on a stratified random sample of households with a landline telephone,[5] with oversamples of the low- and moderate-income populations targeted by many of the elements of Massachusetts' health reform initiative—uninsured adults, adults with family income below 300 percent of the FPL, and adults with family income between 300 and 500 percent of the FPL.[6,7] In 2009, the poverty level[8] for a family of three was $18,310 per year; thus, 300 percent of the FPL would be equivalent to $54,930, and 500 percent of the FPL would be equivalent to $91,550. To place these income levels in context, median family income in Massachusetts was $81,569 in 2008.[9]

In order to identify uninsured adults for the oversample of uninsured working-age adults, the survey includes a set of screening questions that determines whether there are any household members aged 18 to 64 years old and, if there are, whether those household members are currently covered by any type of health insurance. The question asks about all types of health insurance coverage, including insurance obtained through a job or purchased directly from an insurance company; government programs like Medicare, MassHealth, and Commonwealth Care; and programs that provide health care to military personnel and their families. Based on the responses to that question, one working-age adult is selected at random from each eligible household to complete the full survey,

5 The MHRS does not include households without telephones or cell-phone-only households since including them in the survey would have been quite costly. Analysis of the Massachusetts Health Insurance Survey, which supplements a telephone-based random-digit-dial survey sample much like that used by the MHRS with an address-based sample to capture households without a landline telephone, found no difference in estimates of the uninsurance rate for Massachusetts generated from the two samples after post-stratification. See Long SK, Triplett T, Dutwin D, Sherr S. 2008 Massachusetts Health Insurance Survey Methodology Report [Internet]. Boston: Massachusetts Division of Health Care Finance and Policy; 2008 [cited 2010 Mar 24]. Available from: http://www.mass.gov/Eeohhs2/docs/dhcfp/r/survey/08his_methodology_rev.pdf .

6 To achieve these oversamples, disproportionate shares of the sample were drawn from areas in the state with high concentrations of low- and moderate-income households. These income strata for the survey were identified based on the distribution of household income within and across the telephone exchanges in the state.

7 The fall 2008 survey also included two additional oversamples: an oversample of African American and Hispanic adults and an oversample of adults in less populated geographic areas of the state.

8 This corresponds to the federal poverty guidelines for 2009, which are the administrative measures of poverty that are used for program administration, as distinct from the federal poverty thresholds, which are used for statistical purposes. See http://aspe.hhs.gov/poverty/09poverty.shtml.

9 2008 American Community Survey 1-year estimates. Massachusetts Selected Economic Characteristics: 2008 [Internet]. Washington (DC): US Census Bureau; 2008 [cited 2010 Mar 24]. Available from: http://factfinder.census.gov/servlet/ADPTable?_bm=y&-geo_id=04000US25&-qr_name=ACS_2008_1YR_G00_DP3&-context=adp&-ds_name=&-tree_id=308&-_lang=en&-redoLog=false&-format=. The US Census Bureau defines family as a group of two or more people residing together who are related by birth, marriage, or adoption.

with an oversample of adults reported to be uninsured. The full survey includes more detailed insurance-related questions to identify the specific types of coverage held by the survey respondents.

In addition to questions on insurance status, the survey includes sections that focus on the individual's access to and use of health care; out-of-pocket health care costs and medical debt; insurance premiums and covered services (for those with insurance); and health and disability status. The survey also includes an opinion question drawn from a September 2006 telephone survey in Massachusetts that asked adults about their impressions of Massachusetts' newly enacted health reform law to track support for health reform over time.[10]

With few exceptions, the survey relies on questions drawn from established, well-validated surveys.[11] While we sought to maintain consistency with those prior surveys, some questions were modified to ensure that they addressed the issues of particular concern for this study. In addition, we developed new questions for some issues specific to the context of Massachusetts' reform initiative.[12]

Like all survey-based research, the MHRS relies on self-reported information. The quality of the data depends on the survey respondent's ability to understand the questions and the response categories, to remember the relevant information, and to report it accurately. We would expect the quality of the information reported by the respondent to be better for more recent circumstances and events and for events with greater saliency (e.g., current insurance status). Problems with recall are more likely for events that are more distant in time (e.g., number of doctor visits over the prior year), while problems with misreporting are more likely for sensitive or embarrassing questions (e.g., problems paying medical bills) or questions that are more difficult to answer (e.g., the amount of out-of-pocket health care costs over the prior year).

Response rate. Several strategies are employed in the MHRS to increase the response rate to the survey. First, a $10 incentive is offered to all those who complete the survey. Second, when addresses are available from reverse directory services, letters are sent to households that initially refused to complete the survey and to those for whom six call attempts are made without any contact. Third, a toll-free number is provided in the letters to allow sample households to call in to complete the survey if they are so motivated. Finally, telephone numbers with no answers or voice messages are called at least 12 times, with attempts made at different times and days of the week. The 12 call attempts also include a rest period of at least seven days between the sixth and seventh calls. The overall response rate for the survey was 49 percent in 2006 (N=3,007), 45 percent in 2007 (N=2,937),

10 Blendon RJ, Buhr T, Fleischfresser C, Benson JM. The Massachusetts Health Reform Law: Public Opinion and Perception. Boston: Blue Cross Blue Shield of Massachusetts Foundation; 2006.

11 These include government-sponsored surveys, such as the National Health Interview Survey (NHIS), the Medical Expenditure Panel Survey (MEPS), and the Consumer Assessment of Healthcare Providers and Systems (CAHPS); and special surveys, such as the Massachusetts Division of Health Care Finance and Policy's Survey of Health Insurance Status, the Commonwealth Fund's Biennial Health Insurance Survey and Consumerism in Health Care Survey, the Kaiser Family Foundation's Low-income Survey, The Urban Institute's National Survey of America's Families, and the RAND Corporation's Survey of Individual Market Candidates in California, among others.

12 The MHRS instruments are available from: http://www.urban.org/url.cfm?ID=411649.

43 percent in 2008 (N=4,041) and 45 percent (N=3,165) in 2009.[13] These response rates are comparable to those achieved in other recent social science and health surveys, as is the decline in the response rate to the survey over time.[14, 15]

Sample weights. All tabulations based on the survey data were prepared using weights that adjust for the complex design of the survey, undercoverage, and survey nonresponse. The final weights are constructed from a base weight for each adult that reflects his or her probability of selection for the survey and a post-stratification adjustment to ensure that the characteristics of the overall sample are consistent with the characteristics of the Massachusetts population as projected by the US Census Bureau.[16] Specifically, the final weights include an adjustment to ensure that the age, gender, race/ethnicity, and geographic distribution of the sample is consistent with the distribution of the population in Massachusetts. This adjustment is needed since some adults are less likely than others to reside in a household with a landline telephone[17] and some adults are less likely than others to respond to the survey, resulting in their being under-represented in the sample.

Item non-response. For the most part, survey respondents answered all the questions in the survey. As a result, there was very little missing data or item nonresponse; however, family income was missing for roughly 8 percent of the sample in each year. For about 40 percent of those with missing income data, information was available on whether family income was above or below 300 percent of the FPL.[18] We used hotdeck procedures[19] to assign values for the missing income data based on the individual's age, gender, marital status, family type (parent or adult without a dependent child), educational attainment and, where available, income category (above or below 300 percent of the FPL).

Insurance coverage. Survey respondents were asked a series of "yes/no" questions about whether they had each of the different types of insurance coverage available in the state, such as Medicare, employer-sponsored insurance (ESI), direct purchase coverage, and the range of publicly-funded

13 The larger sample size in 2008 reflects several oversamples that were added to that round of the MHRS: oversamples of African American and Hispanic adults and oversamples by geographic areas.

14 Davern M, Call KT, Good MG, Ziegenfuss J. Are Low Response Rates Hazardous to Your Health Survey? Paper presented at the 61st Annual Meeting of the American Association of Public Opinion Research; 2006 May 21; Montreal, Canada.

15 The disposition codes used to calculate the response rate are consistent with the American Association for Public Opinion Research (AAPOR) standards. The response rates were derived using the APPOR response rate calculator

16 For a discussion of the derivation of the population control totals generated by the US Census Bureau for the Current Population Survey, see Appendix D (Derivation of Independent Population Controls) of the Current Population Survey Technical Paper 63RV: Design and Methodology [Internet]. Washington (DC): US Census Bureau; 2002 March. Available from: http://www.census.gov/prod/2002pubs/tp63rv.pdf.

17 As noted in footnote 5, the Massachusetts Health Insurance Survey (MHIS) supplements a random-digit-dial (RDD) telephone sample much like that used by the MHRS with an address-based sample to capture households without a landline telephone. After post-stratification, there was no difference in the estimates of the uninsurance rate in the MHIS based on the RDD sample and the address-based sample. See Long SK, Triplett T, Dutwin D, Sherr S. 2008 Massachusetts Health Insurance Survey Methodology Report [Internet]. Boston: Massachusetts Division of Health Care Finance and Policy; 2008 [cited 2010 Mar 24]. Available from: http://www.mass.gov/Eeohhs2/docs/dhcfp/r/survey/08his_methodology_rev.pdf.

18 In order to identify adults within the income groups that are of relevance to the policy changes in Massachusetts, we asked about income relative to the federal poverty level. To facilitate asking about income in a telephone survey, we rounded the income cut-offs for the poverty level categories up to the nearest thousand dollars.

19 Hot deck imputation uses the reported values of variables for individuals who responded to the question to fill in or impute values for similar individuals with incomplete data. Hot deck imputation procedures are a common strategy for addressing item nonresponse in surveys and are used in the decennial census and many national surveys, including the Current Population Survey and the American Community Survey.

programs.[20] The primary insurance coverage questions focus on insurance coverage at the time of the survey (i.e., current insurance coverage); however, the survey also asks those who are currently *insured* whether they were *uninsured* at any time in the prior year and asks those who are currently *uninsured* whether they were *insured* at any time in the prior year. Thus, there are three measures of insurance coverage available from the survey: the individuals' current insurance coverage, whether the individual was ever uninsured over the prior year (versus always insured over the prior year), and whether the individual was ever insured over the prior year (versus always uninsured over the prior year). Unless otherwise noted, we use "uninsured" in the text to refer to individuals who are uninsured at the time of the survey.

While most people are believed to report accurately whether they have insurance coverage in surveys, there is evidence of some misreporting of coverage type.[21] In Massachusetts, where several of the public programs have similar names, respondents in the survey often reported being enrolled in multiple programs (e.g., Commonwealth Care and Commonwealth Choice) or having both direct purchase and public coverage. As this raises concerns about the accuracy of the reporting of coverage type for the various public programs and for direct purchase coverage, the analysis of source of coverage is limited to ESI coverage and "all other types of insurance." An individual reporting both public coverage and ESI coverage (perhaps because they have coverage through the Insurance Partnership program under MassHealth or wraparound services under MassHealth) would be assigned to ESI coverage.

B. METHODS

The study compares the outcomes for cross-sectional samples of adults in periods following the implementation of health reform (fall 2007, fall 2008, and fall 2009) to the outcomes for a similar cross-sectional sample of adults just prior to the implementation of health reform (fall 2006).[22] Under this pre-post framework, any differences between the baseline time period (fall 2006) and the follow-up time periods (fall 2007, fall 2008, and fall 2009) are attributed to the state's reform efforts. The primary risk to pre-post analyses is that other factors beyond health reform changed during the time period, biasing the estimates of the impacts of health reform. This would include, for example, the continuing increase in health care costs, a trend that predates health reform, and the economic recession that began in December 2007. The recession raises the possibility that the estimates of the impacts of health reform may be biased downward, as the recession would be expected to lead to a drop in health insurance coverage (as unemployment increased and individuals lost employer-sponsored coverage)[23] and, as a result, to poorer access to health care and more difficulties with health care costs.[24]

20 Respondents were told to exclude health care plans that covered a single type of care (e.g., dental care, prescription drugs). Individuals who received care under the state's free care program were counted as uninsured.

21 Call KT, Davidson G, Sommers AS, Feldman R, Farseth P, Rockwood T. Uncovering the Missing Medicaid Cases and Assessing Their Bias for Estimates of the Uninsured. Inquiry. 2001/2002; 38(4): 396-408; Cantor JC, Monheit AC, Brownlee S, Schneider C. The Adequacy of Household Survey Data for Evaluating the Nongroup Health Insurance Market. Health Services Research. 2007; 42(4): 1739-57.

22 The fall 2006 survey was fielded as the Commonwealth Care program was beginning for adults with family income under 100 percent of the FPL; however, enrollment started slowly.

23 Although some of these adults would obtain other coverage (e.g., coverage through a spouse or public coverage), others would become uninsured.

24 The impacts of the recession on insurance coverage were mitigated to some extent by the fiscal relief provided to states under the American Recovery and Reinvestment Act and the changes under the Children's Health Insurance Program Reauthorization Act.

An analysis using data from 2006 to 2008 from the Current Population Survey found that pre-post estimates of the impacts of health reform on insurance coverage through 2008 in Massachusetts were not substantially affected by such confounding factors.[25] However, with the worsening of the recession in Massachusetts in 2009, it is likely that differences between fall 2006 and fall 2009 will capture both the effects of health reform and the effects of the recession, as well as the effects of the continuing increase in health care costs in the state (a trend that predates health reform).

Unemployment among working-age adults in Massachusetts was 4.4 percent in December 2006, 4.3 percent in December 2007, 6.4 percent in December 2008, and 9.1 percent in December 2009.[26] Accordingly, we might expect to see a loss of ground in Massachusetts in coverage, access to care, and affordability of care between fall 2008 and fall 2009 due to the economic downturn. The analyses needed to disentangle the effects of health reform from that of the recession and other changes between 2006 and 2009 require national data that will not be available until late 2010.

For much of this work, we report estimates based on multivariate regression models that control for characteristics of the individual and his or her family and the region of the state in which he or she lives.[27] Overall, the characteristics of the samples for the survey have remained relatively stable from year to year. However, as of fall 2009, there was a significant drop in the share of sample members who were working and there have been increasing shares of sample members in the lowest income families since fall 2006 (Exhibit II.1). Both trends likely reflect the impacts of the recession.

For ease of comparison across models, we estimate linear probability models. We control for the complex design of the sample using the survey estimation procedures (svy) in Stata 11.[28]

In examining the impacts of health reform, we consider the effects on the overall population of nonelderly adults in the state, the effects on important population subgroups, and the effects on racial/ethnic disparities. In presenting the estimates of the impacts of health reform on the overall population of nonelderly adults, we report on the outcomes for adults in the state as of fall 2009 and estimates of how those adults would have fared in Massachusetts in earlier years. To calculate the latter, we use the parameter estimates from the regression models to predict the outcomes that the adults in the 2009 sample would have had if they had been observed in each of the preceding study years. This approach controls for changes in the characteristics of the Massachusetts population over time. Estimates of simple (unadjusted) differences for the overall population are provided in supplemental exhibits in the Appendix.

The analysis of the impacts of health reform on population subgroups in the state focuses on lower-income adults, middle-class adults, adults without dependent children, and adults with one or more chronic health conditions. As we do in presenting the regression-adjusted estimates for the overall population, we report outcomes for the population subgroups in fall 2009 and predictions of how

25 Long SK, Stockley K, Yemane A. State Strategies to Expand Insurance Coverage: A Comparison of the Impacts of Health Reform for Adults in New York and Massachusetts. Working paper. Washington (DC): The Urban Institute; 2010.

26 Labor Force and Unemployment Data [Internet]. Boston: Massachusetts Executive Office of Labor and Workforce Development; 2010 [cited 2010 Apr 6]. Available from: http://lmi2.detma.org/Lmi/lmi_lur_a.asp.

27 The variables included in the model included age, gender, race/ethnicity, citizenship, marital status, parent status, education, employment, firm size, health status, disability status, whether the individual has chronic conditions or is pregnant, family income, and region fixed effects. The analysis sample is limited to observations with complete data for the variables included in the regression models.

28 StataCorp. Stata Statistical Software: Release 11. College Station, TX: StataCorp LP; 2009.

those adults would have fared in Massachusetts in earlier years based on the parameter estimates from multivariate regression models. As with the models for all nonelderly adults, the regression models for population subgroups control for characteristics of the individual and his or her family and the region of the state in which he or she lives.

For the analysis of the impacts of health reform on racial/ethnic disparities, we compare the outcomes under health reform for racial/ethnic minority adults (defined as non-white and Hispanic adults) and white, non-Hispanic adults, controlling for differences in other characteristics across time and between the two population subgroups in a comparative change or difference-in-differences model.[29] Although earlier work showed differences in insurance coverage, access and use, and affordability of care across subgroups of the racial/ethnic population in Massachusetts, we do not have the sample sizes needed to examine the impacts of health reform for different subgroups of non-white and Hispanic adults.[30]

For the analysis of racial/ethnic disparities, we estimated two different specifications of the regression model. In addition to estimating regression models that control for the full set of variables outlined above for the core analysis of the impacts of health reform, we also estimated regression models that only control for differences in the health care needs of racial/ethnic minority adults and white, non-Hispanic adults. These models, which control for age, gender, and health and disability status, align more closely with the Institute of Medicine's definition of disparities as all differences *except* those due to health care needs and preferences.[31] Since the health status and demographic and socioeconomic characteristics of the minority and white adults in the study samples were relatively stable over the time period of this study, the estimates of the impacts of health reform on racial and ethnic disparities in Massachusetts were quite similar between the two specifications of the regression models. Consequently, we report the findings for the full regression model in the text and provide the estimates based on the model limited to health care needs in a supplemental exhibit in the Appendix. The predicted values for the racial/ethnic disparities portion of the analysis are calculated using the entire sample from 2009 (both racial/ethnic minority adults and white, non-Hispanic adults) to control for differences in population characteristics beyond race and ethnicity in comparing the impacts of health reform.

29 Wooldridge JM. What's New in Econometrics? Lecture 10, Differences-in-Differences Estimation. Cambridge (MA): NBER Summer Institute; 2007. Available from: www.nber.org.

30 The earlier work relied on oversamples of African American and Hispanic adults that were added to the fall 2008 survey. See Long SK, Masi PB. Access to and Affordability of Care in Massachusetts as of Fall 2008: Geographic and Racial/Ethnic Differences. Washington (DC): The Urban Institute; 2009 May.

31 Institute of Medicine. Unequal Treatment: Confronting Racial and Ethnic Disparities in Health Care. Washington (DC): National Academies Press; 2002.

EXHIBIT II.1: CHARACTERISTICS OF MASSACHUSETTS ADULTS 18 TO 64, FALL 2006 TO FALL 2009

	FALL 2006	FALL 2007	FALL 2008	FALL 2009
AGE (%)				
18 to 25 years	15.5	16.1	13.9	14.8
26 to 34 years	17.4	18.6	17.5	17.5
35 to 49 years	38.3	38.8	37.9	37.9
50 to 64 years	28.8	26.5	30.6	29.8
RACE/ETHNICITY (%)				
White, non-Hispanic	80.0	79.8	79.9	79.9
Non-white, non-Hispanic	13.3	13.7	12.4	12.3
Hispanic	6.7	6.5	7.7	7.8
FEMALE (%)	52.1	51.3	51.4	51.6
U.S. CITIZEN (%)	93.1	93.2	94.1	95.2 **
MARITAL STATUS (%)				
Married	57.8	57.6	58.4	57.6
Living with partner	7.1	8.3	7.4	6.7
Divorced, separated, widowed	12.2	10.3 **	10.6 *	11.8
Never married	22.9	23.8	23.6	23.9
PARENT OF ONE OR MORE CHILDREN UNDER 18 (%)	44.9	44.3	45.3	44.4
EDUCATION (%)				
Less than high school	5.6	7.2 *	6.6	5.2
High school graduate (includes some college)	51.2	51.9	48.4	49.6
College graduate or higher	43.2	40.9	45.0	45.2
WORK STATUS (%)				
Full-time	51.5	53.2	51.5	49.1
Part-time	22.7	21.7	21.7	20.5 *
Not working	25.9	25.0	26.8	30.5 ***
SELF-EMPLOYED (%)	8.4	8.7	9.1	7.9
WORKS AT A FIRM WITH <=50 EMPLOYEES (%)	18.9	18.6	15.9 **	16.8
SELF-REPORTED HEALTH STATUS (%)				
Very good or excellent	59.6	61.9	64.2 ***	64.7 ***
Good	27.3	26.4	23.2 ***	22.3 ***
Fair or poor	13.1	11.7	12.6	13.0
ANY CHRONIC CONDITION [a] (%)	51.7	51.8	52.7	52.5
ACTIVITIES ARE LIMITED BY HEALTH PROBLEM (%)	17.9	16.6	17.2	18.1
FAMILY INCOME (%)				
Less than 100% of FPL	11.9	15.2 **	14.1 *	15.4 **
100-299% of FPL	30.0	27.5	27.0 *	26.2 **
300-499% of FPL	26.8	23.1 *	21.3 ***	24.1
500% of FPL or more	31.4	34.1	37.5 ***	34.4 *
REGION (%)				
Boston	10.2	10.0	11.0	11.3
MetroWest	32.0	32.4	33.1	32.9
Northeast	11.8	11.6	11.1	11.4
Central	12.4	12.4	12.7	12.3
West	12.9	13.0	12.5	12.9
Southeast	20.7	20.6	19.5	19.2
SAMPLE SIZE	2,925	2,836	3,907	3,041

Source: 2006-2009 Massachusetts Health Reform Surveys.
Note: FPL is Federal Poverty Level.

* (**) (***) Significantly different from fall 2006 at the .10 (.05) (.01) level, two-tailed test.

[a] Includes adults who report they have ever been told by a doctor or other health professional that they have at least one of the following: hypertension or high blood pressure; heart disease or congestive heart failure; diabetes or sugar diabetes; asthma; any other chronic or long-term health condition or health problem; or are pregnant.

III. OVERALL IMPACTS OF HEALTH REFORM ON NONELDERLY ADULTS

KEY FINDINGS

- Under health reform in Massachusetts, health insurance coverage among nonelderly adults in Massachusetts rose by 7.7 percentage points between fall 2006 and fall 2009, to 95.2 percent insured. As a result, only 4.8 percent of nonelderly Massachusetts adults were uninsured at the time of the survey in fall 2009, a drop of more than 60 percent from fall 2006.

- The share of adults who were ever uninsured over the prior year and the share always uninsured over the prior year were also lower under health reform. The share ever uninsured over the prior year was at 9.7 percent in fall 2009, a drop of nearly half from fall 2006, while the share always uninsured over the prior year was at 2.5 percent, a drop of almost 70 percent from fall 2006.

- Despite the worsening of the economic recession between fall 2008 and fall 2009, uninsurance in Massachusetts remained at a historic low level in fall 2009. Compared to an analysis for the nation as a whole, health reform in MA appears to have provided more protection against loss of insurance due to the economic downturn for nonelderly adults.

- There is no evidence of public coverage "crowding out" employer-sponsored insurance coverage under health reform in Massachusetts.

- Access to and use of health care improved between fall 2006 and fall 2009, with more adults reporting visits to doctors and other providers (including visits for preventive care) and fewer adults reporting unmet need for care in fall 2009.

- There were also gains in the affordability of care in fall 2009 relative to fall 2006, with lower out-of-pocket health care spending relative to family income and lower levels of unmet need because of costs. Unmet need because of costs was lower in fall 2009 than in fall 2006 overall and for each of the specific types of care examined, including doctor care; specialist care; medical tests, treatment, or follow-up care; preventive care screenings; prescription drugs; and dental care.

- Nonetheless, some barriers to care persisted in fall 2009: About one in five adults reported problems finding a doctor who would see them and similar proportions reported unmet need for health care and problems paying medical bills.

A. INSURANCE COVERAGE FOR ALL NONELDERLY ADULTS

In fall 2009, 95.2 percent of nonelderly adults in Massachusetts were insured (Exhibit III.1).[32, 33] This coverage rate is well above the 87.5 percent insured in fall 2006, just prior to health reform. The increase in insurance coverage between fall 2006 and fall 2009 reflects significant increases in both employer-sponsored insurance (ESI) coverage and public and other coverage over the period, with ESI coverage up 2.7 percentage points and public and other coverage up 5.0 percentage points. Thus, there is no evidence that the expansion in eligibility for public coverage under health reform has led to the "crowding out" of ESI coverage in the state.

While there was not a significant change in insurance coverage between fall 2008 and fall 2009, concurrent with the worsening of the recession, there does appear to have been a shift in coverage type. ESI coverage decreased 2.1 percentage points (from 70.4 percent to 68.3 percent) and public and other coverage increased 1.4 percentage points (from 25.5 percent to 26.9 percent). The increase in public and other coverage, however, is not statistically significant.

Estimates based on national data by Holahan and Garrett[34] of the impact of a recession on insurance coverage suggest that the 3 percentage point increase in the unemployment rate in Massachusetts between fall 2008 and fall 2009 should have resulted in a drop in ESI coverage of 2.8 percentage points and an increase in public and other coverage of 1.0 percentage points, for a net increase in uninsurance of 1.8 percentage points. Relative to national patterns, the drop in ESI coverage was smaller and the gain in public and other coverage was greater in Massachusetts. As a result, there was little change in the uninsurance rate in the state over this period. Compared to an analysis for the nation as a whole, health reform in MA appears to have provided more protection against loss of insurance due to the economic downturn.

The share of adults who were uninsured at the time of the survey and the share who were ever uninsured over the prior year changed by only negligible amounts between fall 2008 and fall 2009 (Exhibit III.2). There was, however, a small increase in the share of adults uninsured over the *entire* prior year between fall 2008 and fall 2009 (up 0.8 percentage points). Despite these changes between fall 2008 and fall 2009, the levels for all three measures of uninsurance remained lower and the share of adults with ESI coverage remained higher in fall 2009 than prior to health reform. As noted above, the share uninsured at the time of the survey was at 4.8 percent in fall 2009, a decrease of more than 60 percent from fall 2006. The share ever uninsured over the prior year was at 9.7 percent in fall 2009, a drop of nearly half from fall 2006, while the share always uninsured over the prior year was at 2.5 percent, a drop of nearly 70 percent from fall 2006. To date, the recession has not eliminated the overall gains in coverage the state achieved under health reform, as Massachusetts continued to report record low levels of uninsurance in fall 2009.

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32 As noted above, these are regression-adjusted estimates. Simple (unadjusted) estimates are reported in Appendix Exhibit III.1. An example of the regression model that underlies the regression-adjusted estimates is provided in Appendix Exhibit III.2.

33 The estimate for the uninsurance rate for nonelderly adults from the MHRS for fall 2009, at 4.8 percent, is higher than the 3.5 percent estimate from the 2009 Massachusetts Health Insurance Survey (MHIS), which was fielded in the spring of 2009. For more information on the 2009 MHIS, see Long SK, Phadera L. Estimates of Health Insurance Coverage in Massachusetts from the 2009 Massachusetts Health Insurance Survey. Boston: Massachusetts Division of Health Care Finance and Policy: 2009. Differences in the MHRS and MHIS uninsurance estimates likely reflect many factors, including differences in the time periods for the surveys. For a discussion of differences in insurance estimates from surveys in Massachusetts, see Long SK, Zuckerman S, Triplett T, Cook A, Nordahl K, Siegrist T, Wacks C. Estimates of the Uninsurance Rate in Massachusetts from Survey Data: Why Are They So Different? Boston: Massachusetts Division of Health Care Finance and Policy: 2008.

34 Holahan J, Garrett AB. Rising Unemployment, Medicaid and the Uninsured. Washington (DC): Kaiser Family Foundation; 2009.

B. ACCESS TO AND USE OF HEALTH CARE FOR ALL NONELDERLY ADULTS

Coincident with maintaining the gains in health insurance coverage, Massachusetts has largely maintained the gains in access to and use of health care achieved under health reform by fall 2008. For example, between fall 2006 and fall 2009, nonelderly adults were more likely to have a place they usually go to when they are sick or need advice about their health (up 2.9 percentage points), more likely to have a general doctor visit (up 5.7 percentage points), and more likely to have a visit for preventive care (up 6.7 percentage points). They were also less likely to have unmet need for care (down 5.4 percentage points overall and down about 2 to 3 percentage points for each of the specific types of care examined).[35]

Further, the increases in unmet need between fall 2007 and fall 2008 that were reported in earlier work[36] were reversed between fall 2008 and fall 2009, with unmet need for specialist care down 2.5 percentage points and unmet need for medical tests, treatment, and follow-up care down 1.9 percentage points from fall 2008. Unmet need for dental care was also lower in fall 2009—down 2.2 percentage points. The earlier increases in unmet need between fall 2007 and fall 2008 were hypothesized to reflect, in part, increased demand for follow-up care as individuals obtained insurance coverage or gained access to newly covered benefits in the early transition period under health reform. The decline in these measures between fall 2008 and fall 2009 is consistent with more continuous insurance coverage for adults under health reform, as fewer adults were ever uninsured over the prior year in fall 2009.

Beyond those reductions in unmet need for care, we find no changes in access to and use of care between fall 2008 and fall 2009, with the exception of a drop in the share of adults reporting that they had a usual source of health care (down from 92.1 percent in fall 2008 to 89.9 percent in fall 2009). This decline, which is similar in magnitude to the decline in ESI coverage, may reflect a need to change providers as individuals lost coverage or changed coverage type over the fall 2008 to fall 2009 period.

Along with the increase in insurance coverage and the higher levels of health care use under health reform, there has been an increase in the share of adults rating the quality of the care they have received as very good or excellent. This measure reflects the individual's experience with health care over the prior year rather than a measure of clinical quality. In fall 2009, 68.7 percent of adults rated the quality of their care as very good or excellent, as compared to 64.3 percent in fall 2006.

Despite the gains under health reform, there is evidence of some persistent access problems in Massachusetts. The fall 2008 survey began tracking the share of individuals who reported difficulties obtaining care because a provider was not accepting patients (either not accepting any new patients or not accepting patients with the respondent's type of insurance coverage). The data for fall 2009 suggest that those barriers to care persist, with similar shares of adults reporting problems in fall 2009 as in fall 2008. In both years, roughly 15 percent of adults reported being told that a provider was not accepting new patients and 12 percent reported being told that a provider was not accepting patients with their type of insurance, with 21 percent reporting some type of difficulty finding a provider (data not shown). Perhaps consistent with these provider barriers, we see no

35 The estimates from the MHRS for fall 2009 on health care access, use, and affordability measures are generally similar to estimates for similar measures from the 2009 Massachusetts Health Insurance Survey (MHIS), which was fielded in the spring of 2009, since the two surveys tend to rely on similar questions. However, there are some exceptions. In particular, the two surveys differ on questions related to unmet need for health care and out-of-pocket health care expenditures, with the MHRS asking more detailed questions on both topics.

36 Long SK, Masi PB. Access and Affordability: An Update on Health Reform in Massachusetts, Fall 2008. Health Aff (Millwood). 2009; 28(4): w578-87.

change in the share of adults reporting emergency department (ED) visits for non-emergency conditions (defined as a condition that the respondent thought could have been treated by a regular doctor if one had been available). Such ED use remained high in Massachusetts in fall 2009, at about 15 percent of adults, with no change from the pre-reform level.

C. AFFORDABILITY OF HEALTH CARE FOR ALL NONELDERLY ADULTS

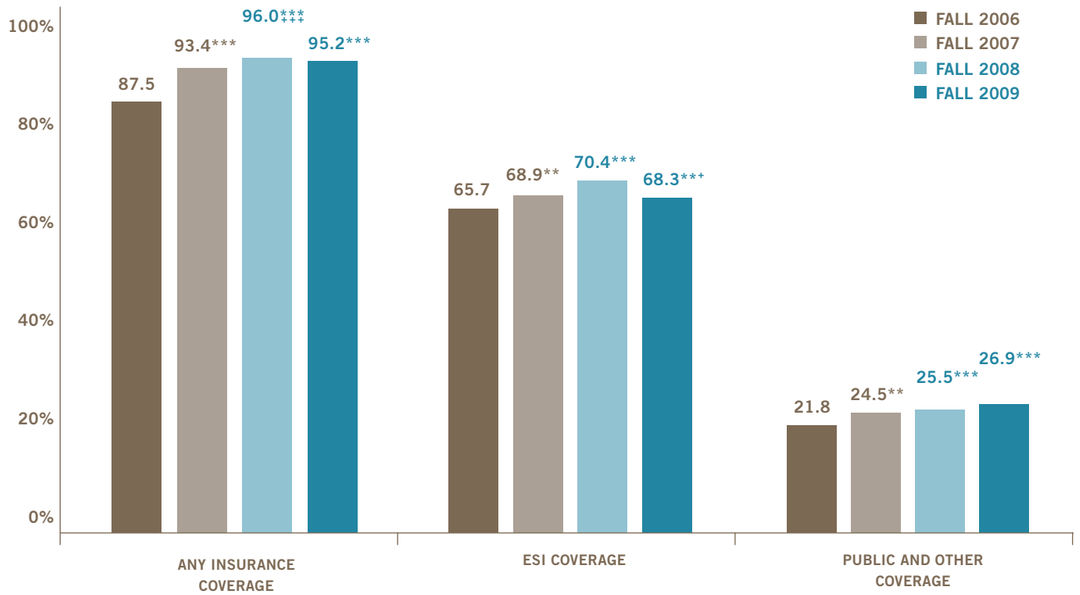
Prior work showed gains in the affordability of health care in the first year under health reform, with significant reductions in out-of-pocket (OOP) spending on health care, problems paying medical bills, medical debt, and unmet need for care because of costs in fall 2007 as compared to fall 2006.[37] However, some of those gains had eroded by fall 2008 as health care costs in the state continued to increase, as is also the case in the nation as a whole.[38,39] By fall 2009, there continued to be gains in the affordability of care relative to the pre-reform period across a number of measures, including lower levels of both OOP health care spending relative to income and unmet need because of costs. However, the reductions in the share of adults reporting problems paying medical bills and the share reporting medical debt that were seen in fall 2007 were not sustained in fall 2009. In fall 2009, as in fall 2006, roughly one in five adults in Massachusetts reported problems paying medical bills over the prior year, and one in five reported medical debt that they were paying off over time. This likely reflects the effects of the continued rapid increase in health care costs in the state (which pre-dates health reform) and the worsening of the recession in 2009.

37 Long SK. On the Road to Universal Coverage: Impacts of Reform in Massachusetts at One Year. Health Aff (Millwood). 2008; 27(4): 270-84.

38 Long SK, Masi PB. Access and Affordability: An Update on Health Reform in Massachusetts, Fall 2008. Health Aff (Millwood). 2009; 28(4): w578-87.

39 Chollet D, Liu S, Barrett A, Stewart K, Bell T. Massachusetts Health Care Cost Trends Part III: Health Spending Trends for Privately Insured 2006-2008, Technical Report [Internet]. Boston: Massachusetts Division of Health Care Finance and Policy; 2010 [cited 2010 Apr 6]. Available from: http://www.mass.gov/dhcfp.

EXHIBIT III.1: REGRESSION-ADJUSTED ESTIMATES OF INSURANCE COVERAGE FOR MASSACHUSETTS ADULTS 18 TO 64, FALL 2006 TO FALL 2009



Source: 2006-2009 Massachusetts Health Reform Surveys (N=13,150)

Note: Simple (unadjusted) differences are provided in Appendix Exhibit III.1. The regression-adjusted estimates are derived from models that control for age, gender, race/ethnicity, citizenship, marital status, parent status, education, employment, firm size, health status, disability status, whether the individual has chronic conditions or is pregnant, family income, and region fixed effects. The reported values for adults in 2009 are the actual values for that year. The estimates for earlier years are calculated using the parameter estimates from the regression models to predict the outcomes that the individuals in the 2009 sample would have had if they had been observed in each of the preceding study years.

* (**) (***) Significantly different from fall 2006 at the .10 (.05) (.01) level, two-tailed test.

+ (++) (+++) Significantly different from the prior year at the .10 (.05) (.01) level, two-tailed test.

EXHIBIT III.2: REGRESSION-ADJUSTED ESTIMATES OF HEALTH INSURANCE COVERAGE AND HEALTH CARE ACCESS, USE, AND COSTS FOR MASSACHUSETTS ADULTS 18 TO 64, FALL 2006 TO FALL 2009

	CHANGE SINCE 2006			CHANGE OVER THE LAST YEAR	
	FALL 2006	FALL 2009	2009-2006 DIFFERENCE	FALL 2008	2009-2008 DIFFERENCE
INSURANCE COVERAGE (%)					
Current coverage					
Any insurance coverage	87.5	95.2	7.7 ***	96.0	-0.8
ESI coverage	65.7	68.3	2.7 **	70.4	-2.1 *
Public and other coverage	21.8	26.9	5.0 ***	25.5	1.4
Coverage over the past 12 months					
Ever uninsured	18.1	9.7	-8.4 ***	10.4	-0.7
Always uninsured	8.1	2.5	-5.6 ***	1.7	0.8 **
HEALTH CARE ACCESS AND USE (%)					
Has a usual source of care (excluding the ED)	87.0	89.9	2.9 **	92.1	-2.1 **
Usual source of care is doctor's office or clinic	67.0	72.9	5.9 ***	72.5	0.4
Any general doctor visit in past 12 months	80.5	86.2	5.7 ***	84.7	1.5
Visit for preventive care	70.9	77.7	6.7 ***	77.0	0.7
Any specialist visit in past 12 months	50.9	53.0	2.1	53.4	-0.4
Any dental care visit in past 12 months	68.8	74.6	5.7 ***	76.2	-1.6
Took any prescription drugs in past 12 months	55.5	58.2	2.8 *	59.6	-1.4
Did not get needed care for any reason in past 12 months	24.9	19.5	-5.4 ***	21.9	-2.4
Doctor care	7.7	5.3	-2.3 **	6.5	-1.1
Specialist care	6.8	4.9	-2.0 **	7.4	-2.5 ***
Medical tests, treatment, or follow-up care	9.1	5.7	-3.4 ***	7.7	-1.9 **
Preventive care screening	6.8	4.9	-1.9 **	5.6	-0.7
Prescription drugs	7.9	5.7	-2.1 **	6.4	-0.6
Dental care	12.1	9.2	-3.0 ***	11.4	-2.2 **
Any ED visits in past 12 months	34.0	33.8	-0.3	33.5	0.3
Three or more ED visits	9.1	8.9	-0.2	8.3	0.6
Most recent ED visit was for non-emergency condition [a]	15.8	14.7	-1.1	14.6	0.1
Share of those who used care in the past 12 months rating quality of care as very good or excellent	64.3	68.7	4.4 **	69.2	-0.5
HEALTH CARE COSTS AND AFFORDABILITY (%)					
Out-of-pocket health care costs over the past 12 months					
At 5% or more of family income for those less than 500% of FPL [b]	21.8	18.0	-3.8 *	18.4	-0.4
At 10% or more of family income for those less than 500% of FPL [b]	9.4	6.7	-2.7 **	7.3	-0.6
Had problems paying medical bills in past 12 months	19.1	19.1	-0.1	17.5	1.6
Have medical bills that are paying off over time	19.5	20.3	0.8	19.9	0.5
Had problems paying other bills in past 12 months	23.7	25.5	1.8	23.9	1.5
Did not get needed care because of costs in the past 12 months	16.3	11.7	-4.6 ***	11.6	0.1
Doctor care	5.5	2.7	-2.8 ***	2.5	0.1
Specialist care	4.7	2.5	-2.2 ***	3.4	-0.9
Medical tests, treatment, or follow-up care	6.0	2.7	-3.3 ***	3.5	-0.8
Preventive care screening	3.3	2.3	-1.0 **	2.2	0.1
Prescription drugs	5.3	3.6	-1.7 ***	3.7	0.0
Dental care	9.7	6.9	-2.8 ***	7.7	-0.8

Source: 2006-2009 Massachusetts Health Reform Surveys (N=13,150)

Note: Simple (unadjusted) estimates are provided in Appendix Exhibit III.1. The regression-adjusted estimates are derived from models that control for age, gender, race/ethnicity, citizenship, marital status, parent status, education, employment, firm size, health status, disability status, whether the individual has chronic conditions or is pregnant, family income, and region fixed effects. An example of the regression output is provided in Appendix Exhibit III.2. The reported values for adults in 2009 are the actual values in that year. The estimates for earlier years are calculated using the parameter estimates from the regression models to predict the outcomes that the adults in the 2009 sample would have had if they had been observed in each of the preceding study years. ED is emergency department. FPL is Federal Poverty Level.

* (**) (***) Significantly different from zero at the .10 (.05) (.01) level, two-tailed test.

[a] A condition that the respondent thought could have been treated by a regular doctor if one had been available.

[b] Because of the way the income information is collected in the survey, the measure of OOP costs relative to family income cannot be constructed for adults with family income above 500% of FPL.

IV. IMPACTS OF HEALTH REFORM ON POPULATION SUBGROUPS

KEY FINDINGS

- Some of the strongest gains under health reform were reported by some of the most vulnerable adults in the state, including lower-income adults and adults with a chronic health condition. Both groups reported significant gains in insurance coverage, health care access and use, and the affordability of care between fall 2006 and fall 2009. For example, insurance coverage rose by 14.1 percentage points for lower-income adults and 6.6 percentage points for adults with a chronic health condition between fall 2006 and fall 2009.

- Adults without dependent children, who were seldom eligible for public support prior to health reform, also reported strong gains in insurance coverage, access to and use of health care, and the affordability of care between fall 2006 and fall 2009. For this group, insurance coverage increased by 10.0 percentage points in fall 2009 relative to fall 2006.

- Middle-class adults, who often earn too much to qualify for public support but not enough to easily afford to purchase coverage on their own, also reported gains under health reform in insurance coverage (up 4.7 percentage points) and gains in health care access and use between fall 2006 and fall 2009. There were no improvements in the affordability of care, however, for middle-class adults over this period.

Given the diversity of the population of nonelderly adults in Massachusetts, it is useful to consider the impacts of health reform across different population subgroups in the state. In this section, we examine the impacts of reform on lower-income adults, middle-class adults, adults without dependent children (defined as adults without a child of their own under age 19 living with them), and adults with a chronic health condition. The focus here is on changes in coverage, access and use, and affordability of care from prior to health reform (fall 2006) to fall 2009.

A. LOWER-INCOME ADULTS

Lower-income adults (defined as those with family income less than 300 percent of the FPL) were a target population for many of the elements of Massachusetts' health reform initiative given their historically higher level of uninsurance. Earlier work has shown that many of the gains under health reform were concentrated among lower-income adults in the state, including significant gains in coverage, access to and use of care, and the affordability of care.[40, 41] As shown in Exhibit IV.1,[42] those gains persisted in fall 2009. Lower-income adults reported significant increases in insurance coverage, with both ESI coverage and public and other coverage higher in fall 2009 than in fall 2006. The net result was a drop in the uninsurance rate of 14.1 percentage points for lower-income adults by fall 2009, from an uninsurance rate of 23.2 percent in fall 2006 to an uninsurance rate of 9.1 percent in fall 2009.

With the increase in insurance coverage, access to and use of health care improved significantly for lower-income adults. Relative to fall 2006, lower-income adults were more likely to have a usual source of care (including a doctor's office or clinic as their usual source of care), to have health care visits (including doctor visits, preventive care visits and dental care visits), and to take prescription drugs in fall 2009. In addition, they were less likely to have had unmet need for all of the types of care specifically examined, including doctor care; specialist care; medical tests, treatment, or follow-up care; preventive care screening; prescription drugs; and dental care. They were also much more likely to rate the quality of the care that they received as very good or excellent under health reform (62.7 percent in fall 2009, as compared to 53.2 percent in fall 2006).

Even with the recession and the continuing rise in health care costs in the state, the affordability of health care improved for lower-income adults between fall 2006 and fall 2009. In fall 2009, lower-income adults were less likely to report high OOP costs relative to family income, problems paying medical bills, and unmet need for care because of cost. As with unmet need for care overall, unmet need for care because of costs was lower in fall 2009 than in fall 2006 for all of the types of care that were examined. Nonetheless, some lower-income adults continued to face OOP health costs at 10 percent or more of family income (8.5 percent) and to have problems paying medical bills (25.8 percent) in fall 2009.

B. MIDDLE-CLASS ADULTS

Middle-income adults (defined here as those with family income between 300 and 500 percent of the FPL) often face financial difficulties in obtaining health insurance coverage since their incomes are generally too high to qualify for Medicaid but may not be high enough to make ESI or other private coverage easily affordable. Massachusetts' health reform legislation included a number of provisions that could potentially affect the coverage of middle-class adults, most notably the creation of Commonwealth Choice to facilitate access to private coverage for adults with family income above 300 percent of the FPL and the requirement that employers establish Section 125 plans to allow employees to pay health insurance premiums with pre-tax dollars. Additionally, the individual mandate may have prompted some in this population group to take up their employer's offer of coverage.

Defining middle-income or "middle-class" adults is fairly arbitrary as there is no standard definition of the middle-class. For this analysis, we define middle class as having family income between 300 and 500 percent of the FPL. For a family of three in fall 2009, this corresponds roughly to an annual income between $55,000 and $92,000.

40 Long SK, Masi PB. Access and Affordability: An Update on Health Reform in Massachusetts, Fall 2008. Health Aff (Millwood). 2009; 28(4): w578-87.

41 Long SK, Stockley K. Health Reform in Massachusetts: An Update on Insurance Coverage and Support for Reform as of Fall 2008. Washington (DC): The Urban Institute; 2009.

42 Simple (unadjusted) estimates are provided in Appendix Exhibit IV.1.

In Massachusetts, middle-class adults reported significant gains under health reform, with uninsurance reduced by 4.7 percentage points between fall 2006 and fall 2009 (Exhibit IV.2).[43] By fall 2009, 97.2 percent of middle-class adults in Massachusetts were insured.

Consistent with these coverage gains, access to care also improved for middle-class adults under health reform. More middle-class adults reported that they had a usual source of health care and that their usual source of care was a doctor's office or clinic in fall 2009 than in fall 2006. Middle-class adults were also more likely to have had a doctor visit over the prior year, including a doctor visit for preventive care, and to have used prescription drugs under health reform. Finally, unmet need for care declined for middle-class adults between fall 2006 and fall 2009.

The increases in preventive care visits and prescription drug use for middle-class adults are consistent with both the expansion in coverage as well as the expansion of benefits as a result of the "Minimum Creditable Coverage" standards introduced under health reform. Minimum Creditable Coverage standards require, among other things, that health plans cover doctor visits for preventive care before any deductibles apply and that health plans cover prescription drugs.

In contrast to the gains in access to and use of care, there were no improvements in the affordability of care under health reform for middle class adults. The share of middle-class adults reporting problems paying medical bills increased from 16.0 percent in fall 2006 to 20.7 percent in fall 2009. This finding may suggest more problems with the costs of care over time, as health care costs in the state are continuing to rise faster than wages, as is true for the nation as a whole.[44]

C. ADULTS WITHOUT DEPENDENT CHILDREN

Adults without dependent children, particularly lower-income adults without dependent children, generally report very high levels of uninsurance, in part because they are not typically eligible for Medicaid coverage. This was true prior to health reform in Massachusetts, where adults without dependent children were only eligible for MassHealth if they were severely disabled, long-term unemployed, or had access to ESI coverage through a small business.[45] Massachusetts' health reform initiative expanded eligibility for subsidized care to adults without dependent children, which led to significant gains in insurance coverage, health care access and use, and the affordability of care for that population (Exhibit IV.3).[46] Most notably, uninsurance dropped by 10.0 percentage points between fall 2006 and fall 2009 for adults without dependent children, largely due to a 7.7 percentage point gain in public and other coverage. By fall 2009, 93.4 percent of adults without a dependent child in Massachusetts had health insurance coverage.

Consistent with the strong gain in insurance coverage, adults without dependent children had significant gains in access to and use of health care, including increases in the shares reporting doctor visits, preventive care visits, and dental visits between fall 2006 and fall 2009. They also reported reductions in unmet need for health care overall and across each specific type of health care examined.

43 Simple (unadjusted) estimates are provided in Appendix Exhibit IV.2.

44 Chollet D, Liu S, Barrett A, Stewart K, Bell T. Massachusetts Health Care Cost Trends Part III: Health Spending Trends for Privately Insured 2006-2008, Technical Report [Internet].

45 The latter group was eligible for a premium subsidy under MassHealth so long as family income was at or below 200 percent of the FPL.

46 Simple (unadjusted) estimates are provided in Appendix Exhibit IV.3.

Adults without dependent children also had gains in the affordability of care, with fewer of these adults reporting high OOP health care costs relative to income and fewer reporting unmet need for health care because of costs in fall 2009 than in fall 2006. As with overall unmet need for care, unmet need for care because of cost was lower in fall 2009 for adults without dependent children across each type of health care examined.

D. ADULTS WITH A CHRONIC HEALTH CONDITION

Adults with chronic health conditions often have difficulty obtaining and paying for private insurance coverage as many are limited in their ability to work. For these adults, health insurance coverage and its associated gains in health care access and use are particularly important since medical care can be effective in reducing morbidity and mortality.[47,48,49] Expanding access to health care for these vulnerable adults offers the potential both to improve their quality of life and to reduce their health care costs by providing more timely and consistent care.

For this analysis, we define an individual as having a chronic health condition if he or she reported having a chronic or long-term health condition or health problem.[50] The share of sample members reporting one or more chronic health conditions was stable over time, at 49.4 percent in fall 2006, 48.9 percent in fall 2007, 49.7 percent in fall 2008, and 50.2 percent in fall 2009 (data not shown).[51]

Adults with a chronic health condition reported significant gains under health reform in Massachusetts in terms of insurance coverage, access to and use of health care, and the affordability of care (Exhibit IV.4).[52] Nearly 96 percent of nonelderly adults with a chronic health condition were insured in fall 2009, as compared to 89.1 percent in fall 2006—an increase of 6.6 percentage points. This expansion resulted from both gains in public and other coverage (up 4.3 percentage points) and ESI coverage (up 2.3 percentage points), although the latter change is not statistically significant.[53]

Along with the gain in insurance coverage, adults with chronic conditions reported improved access to care and health care use under health reform. The shares of adults with a chronic condition who had a usual source of health care, a doctor visit (including a preventive care visit), and a dental care

47 Hoffman C, Schwartz K. Eroding Access Among Nonelderly U.S. Adults with Chronic Conditions: Ten Years of Change. Health Aff (Millwood). 2008; 27(5): 340-8.

48 Pizer SD, Frakt AB, Iezzoni LI. Uninsured Adults with Chronic Conditions or Disabilities: Gaps in Public Insurance Programs. Health Aff (Millwood). 2009; 28(6): 1141-50.

49 McWilliams JM, Meara E, Zaslavsky AM, Ayanian JZ. Health of Previously Uninsured Adults After Acquiring Medicare Coverage. JAMA. 2007; 298(24): 2886-94

50 The MHRS survey asks whether the individual has ever been told by a doctor or other health professional that he or she had four specific chronic conditions: (1) hypertension or high blood pressure, (2) heart disease or congestive heart failure, (3) diabetes, or (4) asthma. A follow-up question asked about any other chronic or long-term health condition or health problem. The specific question was: "Beyond the health problems and conditions we've already talked about, have you ever been told by a doctor or other health professional that you have any other chronic or long-term health conditions or health problems?"

51 This is similar to national data from the Medical Expenditure Panel Survey, which shows 53.7 percent of nonelderly adults with one or more chronic conditions. See, Machlin S, Woodwell D. Healthcare Expenses for Chronic Conditions among Non-elderly Adults: Variations by Insurance Coverage, 2005-2006 (Average Annual Estimates). Statistical Brief 243. Rockville, MD: Agency for Healthcare Research and Quality, May 2009.

52 Simple (unadjusted) estimates are provided in Appendix Exhibit IV.4.

53 Public programs were available to some disabled adults (many of whom also have a chronic condition) prior to health reform. Low-income adults who are eligible for the Supplemental Security Income (SSI) program because of a severe disability were automatically eligible for MassHealth, and severely disabled adults at higher income levels were eligible for the CommonHealth program.

visit increased significantly between fall 2006 and fall 2009. Along with those increases in health care use, adults with chronic conditions were less likely to report unmet need for care in fall 2009 relative to fall 2006. If these gains in access to health care are maintained over time, we would expect to see reductions in morbidity and mortality and health care costs among the adults with chronic conditions in the state.

In addition to the gains in access to care, health reform also led to improvements in the affordability of health care for adults with chronic conditions. As of fall 2009, those adults were less likely to have high out-of-pocket health care costs and less likely to have unmet need for care because of costs than they were prior to health reform. These gains suggest that health reform has provided protections against the financial burden of health care costs for those with greater health care needs.

Nonetheless, as is true for all adults in the state, health care costs continue to be an issue for many adults with chronic conditions, with roughly one in five reporting problems paying medical bills and one in seven reporting unmet need for health care because of costs in fall 2009. Prior work examining the link between reported unmet need for health care and hospital and emergency care use among disabled adults found that self-reported unmet need for care is a strong predictor for future hospital and emergency care use, including use for health conditions that could potentially have been addressed in less expensive settings.[54] In fall 2009, ED use and ED use for a non-emergency condition remained high for adults with a chronic condition, at 41.5 percent and 17.5 percent, respectively. For nonelderly adults without a chronic condition, ED use and ED use for non-emergency conditions were 26.0 percent and 11.9 percent, respectively (data not shown).

Problems with the affordability of health care are not unique to Massachusetts adults with chronic conditions. One recent national study estimates that having a single chronic health condition increases annual out-of-pocket health care spending by 90 percent, having two conditions triples spending, and having three or more conditions more than quintuples spending.[55] Addressing the high out-of-pocket costs faced by individuals with chronic conditions, perhaps by eliminating cost-sharing for high-value services and drugs, has the potential to improve the continuity of care that they receive and, by providing better control of their chronic conditions, to reduce the likelihood of more costly health care needs in the future.[56, 57, 58]

54 Long SK, King J, Coughlin TA. The Implications of Unmet Need for Future Health Care Use: Findings for a Sample of Disabled Medicaid Beneficiaries in New York. Inquiry. 2005/2006; 42(Winter): 413-20.

55 Paez KA, Zhao L, Hwang W. Out-of-Pocket Spending for Chronic Conditions: A Ten Year Trend. Health Aff (Millwood). 2009, 28(1): 15-25.

56 Chernew ME, Shah MR, Wegh A, Rosenberg SN, Juster IA, Rosen AB, Sokol MC, Yu-Isenberg K, Fendrick MA. Impact of Decreasing Copayments on Medication Adherence with a Disease Management Environment. Health Aff (Millwood). 2008, 27(1): 103-12.

57 Busch SH, Barry CL, Vegso SJ, Sindelar JL, Cullen MR. Effects of a Cost-Sharing Exemption on Use of Preventive Services at One Large Employer. Health Aff (Millwood). 2006, 25(6): 1529-36.

58 Goldman DP, Joyce GF, Zheng Y. Prescription Drug Cost Sharing: Associations with Medication and Medical Utilization and Spending and Health. JAMA. 2007, 298(1): 68-69.

EXHIBIT IV.1: REGRESSION-ADJUSTED ESTIMATES OF HEALTH INSURANCE COVERAGE AND HEALTH CARE ACCESS, USE, AND COSTS FOR LOWER-INCOME MASSACHUSETTS ADULTS 18 TO 64, FALL 2006 TO FALL 2009

	FALL 2006	FALL 2009	2009-2006 DIFFERENCE
INSURANCE COVERAGE (%)			
Any insurance coverage	76.8	90.9	14.1 ***
ESI coverage	35.5	39.5	4.0 *
Public and other coverage	41.3	51.4	10.1 ***
Uninsured	23.2	9.1	-14.1 ***
HEALTH CARE ACCESS AND USE (%)			
Has a usual source of care (excluding the ED)	80.0	84.5	4.5 **
Usual source of care is doctor's office or private clinic	50.9	57.5	6.6 **
Any general doctor visit in past 12 months	75.8	84.1	8.3 ***
Visit for preventive care	65.4	74.7	9.3 ***
Multiple doctor visits	61.9	69.9	7.9 ***
Any specialist visit in past 12 months	46.3	49.3	2.9
Any dental care visit in past 12 months	49.9	61.4	11.5 ***
Took any prescription drugs in past 12 months	55.0	60.3	5.3 **
Did not get needed care for any reason in past 12 months	34.3	26.4	-7.9 ***
Doctor care	12.7	7.8	-4.9 ***
Specialist care	10.6	6.4	-4.3 ***
Medical tests, treatment, or follow-up care	13.5	6.8	-6.7 ***
Preventive care screening	7.9	5.8	-2.1 *
Prescription drugs	12.1	7.9	-4.1 ***
Dental care	20.2	13.3	-6.8 ***
Any ED visits in past 12 months	45.9	46.2	0.3
Most recent ED visit was for non-emergency condition [a]	23.3	22.0	-1.3
Share of those who used care in past 12 months rating quality of care as very good or excellent	53.2	62.7	9.5 ***
HEALTH CARE COSTS AND AFFORDABILITY (%)			
Out-of-pocket health care costs over the past 12 months			
At 5% or more of family income for those less than 500% of FPL [b]	25.1	19.3	-5.7 **
At 10% or more of family income for those less than 500% of FPL [b]	12.5	8.5	-4.0 ***
Had problems paying medical bills in past 12 months	30.7	25.8	-4.9 **
Have medical bills that are paying off over time	25.7	22.9	-2.8
Had problems paying other bills in past 12 months	35.5	38.4	2.9
Did not get needed care because of costs in the past 12 months	26.3	15.1	-11.3 ***
Doctor care	10.5	3.8	-6.6 ***
Specialist care	8.1	2.6	-5.5 ***
Medical tests, treatment, or follow-up care	10.6	2.9	-7.8 ***
Preventive care screening	5.4	3.0	-2.4 ***
Prescription drugs	9.6	5.1	-4.5 ***
Dental care	16.8	8.8	-8.0 ***

Source: 2006-2009 Massachusetts Health Reform Surveys (N=13,150)

Notes: Simple (unadjusted) estimates are provided in Appendix Exhibit IV.1. The regression-adjusted estimates are derived from models that control for age, gender, race/ethnicity, citizenship, marital status, parent status, education, employment, firm size, health status, disability status, whether the individual has chronic conditions or is pregnant, and region fixed effects. The reported values for adults in 2009 are the actual values in that year. The estimates for earlier years are calculated using the parameter estimates from the regression models to predict the outcomes that the adults in the 2009 sample would have had if they had been observed in 2006. ED is emergency department. FPL is Federal Poverty Level. Lower-income adults are those with income below 300% of the FPL.

[a] A condition that the respondent thought could have been treated by a regular doctor if one had been available.

[b] Because of the way the income information is collected in the survey, the measure of OOP costs relative to family income cannot be constructed for adults with family income above 500% of FPL.

* (**) (***) The fall 2009-fall 2006 difference is significantly different from zero at the .10 (.05) (.01) level, two-tailed test.

EXHIBIT IV.2: REGRESSION-ADJUSTED ESTIMATES OF HEALTH INSURANCE COVERAGE AND HEALTH CARE ACCESS, USE, AND COSTS FOR MIDDLE-CLASS MASSACHUSETTS ADULTS 18 TO 64, FALL 2006 TO FALL 2009

	FALL 2006	FALL 2009	2009-2006 DIFFERENCE
INSURANCE COVERAGE (%)			
Any insurance coverage	92.5	97.2	4.7 ***
ESI coverage	84.0	86.8	2.8
Public and other coverage	8.6	10.4	1.9
Uninsured	7.5	2.8	-4.7 ***
HEALTH CARE ACCESS AND USE (%)			
Has a usual source of care (excluding the ED)	89.5	94.8	5.3 ***
Usual source of care is doctor's office or private clinic	74.9	83.7	8.8 ***
Any general doctor visit in past 12 months	82.9	87.7	4.7 **
Visit for preventive care	73.3	81.4	8.1 ***
Multiple doctor visits	65.9	68.8	2.9
Any specialist visit in past 12 months	49.2	48.8	-0.4
Any dental care visit in past 12 months	77.6	76.2	-1.5
Took any prescription drugs in past 12 months	50.9	56.4	5.4 *
Did not get needed care for any reason in past 12 months	22.2	16.9	-5.3 *
Doctor care	5.8	3.9	-1.9
Specialist care	5.9	4.2	-1.7
Medical tests, treatment, or follow-up care	6.2	6.0	-0.2
Preventive care screening	8.1	5.8	-2.3
Prescription drugs	6.2	5.1	-1.1
Dental care	8.8	8.3	-0.4
Any ED visits in past 12 months	25.6	29.5	3.9
Most recent ED visit was for non-emergency condition [a]	11.1	9.2	-1.9
Share of those who used care in past 12 months rating quality of care as very good or excellent	67.1	69.2	2.1
HEALTH CARE COSTS AND AFFORDABILITY (%)			
Out-of-pocket health care costs over the past 12 months			
At 5% or more of family income for those less than 500% of FPL [b]	15.6	15.8	0.2
At 10% or more of family income for those less than 500% of FPL [b]	3.4	3.7	0.2
Had problems paying medical bills in past 12 months	16.0	20.7	4.6 *
Have medical bills that are paying off over time	20.0	23.1	3.1
Had problems paying other bills in past 12 months	21.9	26.1	4.3
Did not get needed care because of costs in the past 12 months	13.6	12.4	-1.2
Doctor care	3.0	2.7	-0.3
Specialist care	3.5	3.5	0.0
Medical tests, treatment, or follow-up care	3.4	3.4	0.0
Preventive care screening	2.7	3.3	0.6
Prescription drugs	3.4	4.0	0.6
Dental care	7.1	7.5	0.5

Source: 2006-2009 Massachusetts Health Reform Surveys (N=13,150)

Note: Simple (unadjusted) estimates are provided in Appendix Exhibit IV.2. The regression-adjusted estimates are derived from models that control for age, gender, race/ethnicity, citizenship, marital status, parent status, education, employment, firm size, health status, disability status, whether the individual has chronic conditions or is pregnant, and region fixed effects. The reported values for adults in 2009 are the actual values in that year. The estimates for earlier years are calculated using the parameter estimates from the regression models to predict the outcomes that the adults in the 2009 sample would have had if they had been observed in 2006. ED is emergency department. FPL is Federal Poverty Level. Middle-class adults are those with income between 300% and 500% FPL.

[a] A condition that the respondent thought could have been treated by a regular doctor if one had been available.

[b] Because of the way the income information is collected in the survey, the measure of OOP costs relative to family income cannot be constructed for adults with family income above 500% of FPL.

* (**) (***) The fall 2009-fall 2006 difference is significantly different from zero at the .10 (.05) (.01) level, two-tailed test.

EXHIBIT IV.3: REGRESSION-ADJUSTED ESTIMATES OF HEALTH INSURANCE COVERAGE AND HEALTH CARE ACCESS, USE, AND COSTS FOR MASSACHUSETTS ADULTS 18 TO 64 WITHOUT DEPENDENT CHILDREN, FALL 2006 TO FALL 2009

	FALL 2006	FALL 2009	2009-2006 DIFFERENCE
INSURANCE COVERAGE (%)			
Any insurance coverage	83.4	93.4	10.0 ***
ESI coverage	61.4	63.7	2.3
Public and other coverage	22.1	29.7	7.7 ***
Uninsured	16.6	6.6	-10.0 ***
HEALTH CARE ACCESS AND USE (%)			
Has a usual source of care (excluding the ED)	84.3	87.8	3.4 **
Usual source of care is doctor's office or private clinic	64.2	69.1	4.9 **
Any general doctor visit in past 12 months	79.4	84.3	4.9 **
Visit for preventive care	69.9	76.4	6.4 ***
Multiple doctor visits	65.2	70.3	5.0 **
Any specialist visit in past 12 months	51.7	52.8	1.1
Any dental care visit in past 12 months	66.2	70.6	4.4 **
Took any prescription drugs in past 12 months	57.6	61.7	4.1 **
Did not get needed care for any reason in past 12 months	25.7	19.4	-6.3 ***
Doctor care	8.1	5.5	-2.6 **
Specialist care	7.7	5.1	-2.5 **
Medical tests, treatment or follow-up care	9.6	5.5	-4.1 ***
Preventive care screening	6.9	4.8	-2.1 **
Prescription drugs	7.9	5.5	-2.4 **
Dental care	13.3	9.7	-3.6 **
Any ED visits in past 12 months	35.8	34.6	-1.2
Most recent ED visit was for non-emergency condition [a]	15.6	14.9	-0.7
Share of those who used care in past 12 months rating quality of care as very good or excellent	63.7	70.1	6.4 ***
HEALTH CARE COSTS AND AFFORDABILITY (%)			
Out-of-pocket health care costs over the past 12 months			
At 5% or more of family income for those less than 500% of FPL [b]	24.2	20.6	-3.7
At 10% or more of family income for those less than 500% of FPL [b]	12.7	9.1	-3.6 **
Had problems paying medical bills in past 12 months	18.7	16.5	-2.2
Have medical bills that are paying off over time	17.6	16.2	-1.4
Had problems paying other bills in past 12 months	20.6	19.6	-1.0
Did not get needed care because of costs in the past 12 months	17.6	12.1	-5.6 ***
Doctor care	6.5	2.9	-3.6 ***
Specialist care	5.1	3.0	-2.1 **
Medical tests, treatment or follow-up care	6.9	2.7	-4.2 ***
Preventive care screening	4.1	2.3	-1.9 ***
Prescription drugs	5.5	3.5	-2.0 **
Dental care	10.8	6.8	-4.0 ***

Source: 2006-2009 Massachusetts Health Reform Surveys (N=13,150)

Note: Simple (unadjusted) estimates are provided in Appendix Exhibit IV.3. The regression-adjusted estimates are derived from models that control for age, gender, race/ethnicity, citizenship, marital status, education, employment, firm size, family income, health status, disability status, whether the individual has chronic conditions or is pregnant, and region fixed effects. The reported values for adults in 2009 are the actual values in that year. The estimates for earlier years are calculated using the parameter estimates from the regression models to predict the outcomes that the adults in the 2009 sample would have had if they had been observed in 2006. Adults without dependent children are those with no child of their own under 19 living in the household. ED is emergency department. FPL is Federal Poverty Level.

[a] A condition that the respondent thought could have been treated by a regular doctor if one had been available.

[b] Because of the way the income information is collected in the survey, the measure of OOP costs relative to family income cannot be constructed for adults with family income above 500% of FPL.

* (**) (***) The fall 2009-fall 2006 difference is significantly different from zero at the .10 (.05) (.01) level, two-tailed test.

EXHIBIT IV.4: REGRESSION-ADJUSTED ESTIMATES OF HEALTH INSURANCE COVERAGE AND HEALTH CARE ACCESS, USE, AND COSTS FOR MASSACHUSETTS ADULTS 18 TO 64 WITH A CHRONIC HEALTH CONDITION, FALL 2006 TO FALL 2009

	FALL 2006	FALL 2009	2009-2006 DIFFERENCE
INSURANCE COVERAGE (%)			
Any insurance coverage	89.1	95.7	6.6 ***
ESI coverage	61.4	63.7	2.3
Public and other coverage	27.8	32.0	4.3 ***
Uninsured	10.9	4.3	-6.6 ***
HEALTH CARE ACCESS AND USE (%)			
Has a usual source of care (excluding the ED)	89.7	92.3	2.5 **
Usual source of care is doctor's office or private clinic	67.8	73.4	5.6 ***
Any general doctor visit in past 12 months	88.0	91.7	3.7 ***
Visit for preventive care	77.6	83.9	6.3 ***
Multiple doctor visits	79.4	82.8	3.4 *
Any specialist visit in past 12 months	62.0	64.5	2.5
Any dental care visit in past 12 months	66.2	73.0	6.8 ***
Took any prescription drugs in past 12 months	77.7	79.8	2.1
Did not get needed care for any reason in past 12 months	30.2	22.9	-7.3 ***
Doctor care	10.1	6.1	-4.0 ***
Specialist care	8.7	5.7	-3.1 **
Medical tests, treatment or follow-up care	11.5	6.0	-5.5 ***
Preventive care screening	7.7	5.7	-2.0 *
Prescription drugs	10.7	7.6	-3.1 **
Dental care	14.3	10.5	-3.8 **
Any ED visits in past 12 months	41.3	41.5	0.2
Most recent ED visit was for non-emergency condition [a]	17.5	17.5	-0.1
Share of those who used care in past 12 months rating quality of care as very good or excellent	65.3	69.2	3.9
HEALTH CARE COSTS AND AFFORDABILITY (%)			
Out-of-pocket health care costs over the past 12 months			
At 5% or more of family income for those less than 500% of FPL [b]	29.4	21.6	-7.8 ***
At 10% or more of family income for those less than 500% of FPL [b]	13.7	9.3	-4.4 **
Had problems paying medical bills in past 12 months	25.1	22.4	-2.7
Have medical bills that are paying off over time	23.0	23.2	0.2
Had problems paying other bills in past 12 months	27.4	29.3	1.9
Did not get needed care because of costs in the past 12 months	20.2	13.8	-6.4 ***
Doctor care	7.3	2.9	-4.4 ***
Specialist care	6.2	2.7	-3.5 ***
Medical tests, treatment or follow-up care	7.5	2.5	-5.0 ***
Preventive care screening	4.1	2.7	-1.4 **
Prescription drugs	7.7	4.9	-2.8 **
Dental care	11.1	7.7	-3.4 **

Source: 2006-2009 Massachusetts Health Reform Surveys (N=13,150)

Note: Simple (unadjusted) estimates are provided in Appendix Exhibit IV.4. The regression-adjusted estimates are derived from models that control for age, gender, race/ethnicity, citizenship, marital status, parent status, education, employment, firm size, family income health status, disability status, and region fixed effects. The reported values for adults in 2009 are the actual values in that year. The estimates for earlier years are calculated using the parameter estimates from the regression models to predict the outcomes that the adults in the 2009 sample would have had if they had been observed in 2006. Adults with chronic conditions are those who report they have ever been told by a doctor or other health professional that they have at least one of the following: hypertension or high blood pressure; heart disease or congestive heart failure; diabetes or sugar diabetes; asthma; any other chronic or long-term health condition or health problem. ED is emergency department. FPL is Federal Poverty Level.

[a] A condition that the respondent thought could have been treated by a regular doctor if one had been available.

[b] Because of the way the income information is collected in the survey, the measure of OOP costs relative to family income cannot be constructed for adults with family income above 500% of FPL.

* (**) (***) The fall 2009-fall 2006 difference is significantly different from zero at the .10 (.05) (.01) level, two-tailed test.

V. IMPACTS OF HEALTH REFORM ON RACIAL/ETHNIC DISPARITIES

KEY FINDINGS

- Massachusetts' health reform initiative eliminated or narrowed some of the racial/ethnic disparities in health insurance coverage, access to and use of health care, and health care affordability that were present in fall 2006.
- Most notably, under health reform, racial/ethnic minority adults were just as likely as white, non-Hispanic adults to have insurance coverage in fall 2009 after controlling for differences in health care needs and other factors, a significant change from their lower level of coverage in fall 2006.
- Minority adults also gained ground in terms of the affordability of health care. Between fall 2006 and fall 2009, minority adults reported stronger reductions in the share paying medical bills over time and in unmet need for preventive care due to costs than white adults.
- In fall 2009, minority adults were less likely to report unmet need for care because of costs than were white, non-Hispanic adults, likely reflecting the strong gains in public and other coverage among minority adults under health reform.
- Remaining racial/ethnic disparities in the site of usual source of care, non-emergency emergency department use, and ratings of quality of care highlight the need to address additional barriers to health care beyond differences in insurance coverage.

Disparities in access to health care across racially and ethnically diverse populations reflect both differences in insurance coverage and differences in the ability to access care among those with coverage.[59] Aiming to achieve near universal insurance coverage in the state and to reduce racial and ethnic disparities in access to care, affordability of care, and quality of care, Massachusetts' 2006 health reform legislation included provisions to address both sources of disparities.[60] In this analysis, we compare the impacts of health reform on non-white and Hispanic adults (referred to as minority adults) relative to white, non-Hispanic adults (referred to as white adults).[61]

59 Lillie-Blanton M, Hoffman C. The Role of Health Insurance Coverage in Reducing Racial/Ethnic Disparities in Health Care. Health Aff (Millwood). 2005; 24(2): 398-408.

60 The legislation included several provisions intended to reduce racial and ethnic disparities in health and health care, including the creation of the Health Disparities Council.

61 While the 2008 survey included oversamples of African-American and Hispanic adults, there are relatively small sample sizes for minority populations in the other years of the survey, preventing our looking in more detail at different subgroups of the population of minority adults. An analysis of disparities in access to care in fall 2008 using the larger sample sizes for African-American and Hispanic adults in that round of the survey is available in Long SK, Masi PB. Access to and Affordability of Care in Massachusetts as of Fall 2008: Geographic and Racial/Ethnic Differences. Washington (DC): The Urban Institute; 2009 May.

A. RACIAL/ETHNIC DISPARITIES PRIOR TO HEALTH REFORM

In fall 2006, just prior to health reform, racial/ethnic minority adults were much more likely to be uninsured than were white adults (20.6 percent versus 11.2 percent), as shown by the simple (unadjusted) differences reported in Exhibit V.1. They also reported poorer access to care, less use of health care services, and more problems with the cost of care in fall 2006. For minority adults, their rating of the quality of care they received was also lower than that reported by white adults, with less than half of minority adults (47.3 percent) rating that care as very good or excellent, as compared to two-thirds of white adults (66.8 percent).

Racial/ethnic differences in insurance coverage, access to and use of care, and the affordability of health care may reflect differences in the characteristics of the two population subgroups, including differences in their health care needs and economic circumstances. As shown in Exhibit V.2, racial/ethnic minority adults tend to be younger, in poorer health, and with lower family incomes than do white adults. After controlling for those differences in multivariate regression models, many of the racial/ethnic disparities that existed prior to health reform in fall 2006 were reduced or eliminated (Exhibit V.3). For example, after controlling for health care needs and other factors, the minority adults v. white adults difference in insurance coverage narrowed from 9.5 to 5.3 percentage points and differences in health care use, including differences in the probabilities of a general doctor visit and a specialist visit, were smaller than the simple (unadjusted) differences between the two groups. In addition, after controlling for other factors, minority adults appear to have been somewhat better off than white adults in terms of unmet need for health care in fall 2006. Minority adults were less likely to report any unmet need for doctor care and less likely to report unmet need due to costs for specialist care prior to health reform.

B. RACIAL/ETHNIC DISPARITIES UNDER HEALTH REFORM

In Exhibit V.4, we report the regression-adjusted estimates of the impact of health reform on racial/ethnic minority and white adults.[62] As shown, both minority and white adults experienced strong gains in insurance coverage, access to and use of care, and the affordability of care between fall 2006 and fall 2009 (Exhibit V.4). Most notably, insurance coverage increased by 11.8 percentage points between fall 2006 and fall 2009 for minority adults and by 6.7 percentage points for white adults. Thus, minority adults, who started out with higher levels of uninsurance prior to health reform, gained ground under health reform relative to white adults in terms of insurance coverage. By fall 2009, there was no difference in the share of minority and white adults with insurance coverage, after controlling for differences in health status and other factors (Exhibit V.5).

The gain in insurance coverage among minority adults under health reform was driven by a substantial increase in public and other coverage. Between fall 2006 and fall 2009, minority adults increased enrollment in public and other coverage by 11.0 percentage points, as compared to a 3.6 percentage point increase for white adults (Exhibit V.4).

Minority adults also gained ground relative to white adults in terms of the affordability of health care. Compared to white adults, minority adults reported stronger reductions in the share with problems paying medical bills over time and in unmet need for preventive care due to costs between fall 2006 and fall 2009 (Exhibit V.4). By fall 2009, minority adults were *less* likely than white adults to report unmet need for care because of costs after controlling for other characteristics. The greater gains in some measures of health care costs for minority adults relative to white adults may reflect the larger gains in insurance coverage for minority adults under health reform, as well as their greater gains in public coverage, given the lower cost-sharing requirements in public programs relative to private plans.

Despite the strong gains by minority adults under health reform, racial/ethnic disparities persisted in some of the access, use, and affordability measures in fall 2009. In fall 2009, minority adults were less likely than white adults to report a doctor's office or clinic as the site of their usual source of care, were more likely have non-emergency emergency department (ED) visits, and were less likely to rate the quality of care they received as very good or excellent (Exhibit V.5).

The finding that the gains in health insurance coverage under health reform narrowed but did not eliminate racial/ethnic gaps in access to care is consistent with research showing that racial/ethnic disparities in access to care reflect more than differences in insurance coverage.[63] With some racial/ethnic disparities in access to health care persisting in Massachusetts despite the significant expansion of insurance coverage under health reform, there is a clear need for initiatives that seek to address directly racial/ethnic gaps in access to care. It will be important to continue to track differences in access to health care among racial and ethnic minority adults in Massachusetts as the state begins to implement strategies designed to reduce health disparities among Massachusetts residents, such as the recommendations from the new state Health Disparities Council and the Health Care Quality and Cost Council.

62 Appendix Exhibit V.1 provides regression-adjusted estimates based on the simpler model that controls for age, gender, and health and disability status, as described in Chapter II. Appendix Exhibit V.2 provides unadjusted estimates for fall 2009 that correspond to the fall 2006 estiimates in Exhibit V.1.

63 Zuvekas SH, Taliaferro GS. Pathways to Access: Health Insurance, the Health Care Delivery System, and Racial/ethnic Disparities, 1996-1999. Health Aff (Millwood). 2003; 22(2): 139-53.

EXHIBIT V.1: SIMPLE (UNADJUSTED) ESTIMATES OF HEALTH INSURANCE COVERAGE AND HEALTH CARE ACCESS, USE, AND COSTS PRIOR TO HEALTH REFORM FOR RACIAL/ETHNIC MINORITY AND WHITE, NON-HISPANIC MASSACHUSETTS ADULTS 18 TO 64, FALL 2006

	RACIAL/ETHNIC MINORITY ADULTS	WHITE, NON-HISPANIC ADULTS	DIFFERENCE
INSURANCE COVERAGE (%)			
Any insurance coverage	79.4	88.8	-9.5 ***
ESI coverage	51.9	70.1	-18.1 ***
Public and other coverage	27.5	18.8	8.7 ***
Uninsured	20.6	11.2	9.5 ***
HEALTH CARE ACCESS AND USE (%)			
Has a usual source of care (excluding the ED)	79.9	88.0	-8.1 **
Usual source of care is doctor's office or private clinic	41.7	72.9	-31.2 ***
Any general doctor visit in past 12 months	70.6	82.3	-11.7 ***
Visit for preventive care	63.5	71.8	-8.4 **
Multiple doctor visits	57.4	67.6	-10.2 ***
Any specialist visit in past 12 months	41.9	52.5	-10.6 ***
Any dental care visit in past 12 months	59.2	70.1	-10.9 ***
Took any prescription drugs in past 12 months	44.2	57.9	-13.8 ***
Did not get needed care for any reason in past 12 months	26.3	25.5	0.7
Doctor care	7.8	8.1	-0.3
Specialist care	8.5	6.7	1.7
Medical tests, treatment or follow-up care	9.3	9.5	-0.2
Preventive care screening	7.1	6.9	0.2
Prescription drugs	8.4	8.0	0.4
Dental care	15.6	11.9	3.7 *
Any ED visits in past 12 months	42.5	32.2	10.4 ***
Most recent ED visit was for non-emergency condition [a]	25.9	13.4	12.5 ***
Share of those who used care in past 12 months rating quality of care as very good or excellent	47.3	66.8	-19.6 ***
HEALTH CARE COSTS AND AFFORDABILITY (%)			
Out-of-pocket health care costs over the past 12 months			
At 5% or more of family income for those less than 500% of FPL [b]	18.9	22.7	-3.8
At 10% or more of family income for those less than 500% of FPL [b]	10.0	8.5	1.5
Had problems paying medical bills in past 12 months	25.0	19.2	5.8 **
Have medical bills that are paying off over time	26.7	19.2	7.5 **
Had problems paying other bills in past 12 months	32.4	22.8	9.6 ***
Did not get needed care because of costs in the past 12 months	17.5	16.8	0.6
Doctor care	5.8	5.7	0.0
Specialist care	4.6	5.0	-0.5
Medical tests, treatment or follow-up care	6.4	6.3	0.1
Preventive care screening	4.8	3.2	1.7 *
Prescription drugs	5.2	5.6	-0.5
Dental care	11.5	9.9	1.5
SAMPLE SIZE	634	2,291	

Source: 2006 Massachusetts Health Reform Survey

Note: Minority adults includes individuals who are non-white and Hispanic. ED is emergency department. FPL is Federal Poverty Level.

[a] A condition that the respondent thought could have been treated by a regular doctor if one had been available.

[b] Because of the way the income information is collected in the survey, the measure of OOP costs relative to family income cannot be constructed for adults with family income above 500% of FPL.

* (**) (***) Significantly different from zero at the .10 (.05) (.01) level, two-tailed test.

EXHIBIT V.2: CHARACTERISTICS OF RACIAL/ETHNIC MINORITY AND WHITE, NON-HISPANIC MASSACHUSETTS ADULTS 18 TO 64, FALL 2006

	RACIAL/ETHNIC MINORITY ADULTS	WHITE, NON-HISPANIC ADULTS	DIFFERENCE
AGE (%)			
18 to 25 years	28.4	12.3	16.1 ***
26 to 34 years	20.3	16.7	3.6
35 to 49 years	32.8	39.6	-6.8 **
50 to 64 years	18.5	31.4	-12.9 ***
FEMALE (%)	46.5	53.5	-7.0 **
U.S. CITIZEN (%)	73.7	97.9	-24.2 ***
PARENT OF CHILD LESS THAN 19 IN HOUSEHOLD (%)	44.3	45.0	-0.8
EDUCATION (%)			
Less than high school	10.4	4.4	6.0 ***
High school graduate	29.0	25.9	3.1
Some college	28.4	23.8	4.6
College graduate	32.2	45.9	-13.7 ***
HEALTH STATUS IS FAIR OR POOR (%)	17.4	12.0	5.4 **
ACTIVITIES ARE LIMITED BY HEALTH PROBLEM (%)	19.7	17.5	2.2
HAS A CHRONIC CONDITION (%)	49.7	52.2	-2.5
WORK STATUS (%)			
Full-time	48.3	52.2	-3.9
Part-time	20.9	23.1	-2.2
Not working	30.8	24.7	6.1 **
FAMILY INCOME (%)			
Less than 100% of FPL	22.2	9.3	13.0 ***
100 to 299% of FPL	41.6	27.1	14.5 ***
300 to 499% of FPL	18.6	28.8	-10.2 ***
500% of FPL	17.6	34.9	-17.3 ***
REGION (%)			
Boston	23.4	6.9	16.6 ***
MetroWest	33.5	31.7	1.8
Northeast	9.0	12.5	-3.5 *
Central	10.0	13.0	-3.0
West	10.1	13.6	-3.5 **
Southeast	14.1	22.4	-8.3 ***
SAMPLE SIZE	634	2,291	

Source: 2006 Massachusetts Health Reform Survey.

Note: FPL is Federal Poverty Level.

Notes: Minority adults includes individuals who are non-white and Hispanic.

* (**) (***) Significantly different from zero at the .10 (.05) (.01) level, two-tailed test.

EXHIBIT V.3: REGRESSION-ADJUSTED ESTIMATES OF HEALTH INSURANCE COVERAGE AND HEALTH CARE ACCESS, USE, AND COSTS PRIOR TO HEALTH REFORM FOR RACIAL/ETHNIC MINORITY AND WHITE, NON-HISPANIC MASSACHUSETTS ADULTS 18 TO 64, FALL 2006

	RACIAL/ETHNIC MINORITY ADULTS	WHITE, NON-HISPANIC ADULTS	DIFFERENCE
INSURANCE COVERAGE (%)			
Any insurance coverage	83.3	88.5	-5.3 ***
ESI coverage	62.2	66.6	-4.4 *
Public and other coverage	21.0	21.9	-0.9
Uninsured	16.7	11.5	5.3 ***
HEALTH CARE ACCESS AND USE (%)			
Has a usual source of care (excluding the ED)	84.2	87.6	-3.5
Usual source of care is doctor's office or private clinic	53.3	70.5	-17.2 ***
Any general doctor visit in past 12 months	74.9	81.9	-6.9 **
Visit for preventive care	68.9	71.4	-2.4
Multiple doctor visits	62.0	66.9	-4.9
Any specialist visit in past 12 months	47.0	51.8	-4.7
Any dental care visit in past 12 months	67.9	68.9	-1.0
Took any prescription drugs in past 12 months	45.9	57.7	-11.8 ***
Did not get needed care for any reason in past 12 months	22.2	25.7	-3.5
Doctor care	5.2	8.3	-3.1 **
Specialist care	6.3	7.0	-0.6
Medical tests, treatment or follow-up care	7.8	9.5	-1.7
Preventive care screening	6.3	6.9	-0.5
Prescription drugs	6.6	8.2	-1.6
Dental care	12.6	12.0	0.6
Any ED visits in past 12 months	37.3	33.2	4.1
Most recent ED visit was for non-emergency condition [a]	22.7	14.0	8.7 ***
Share of those who used care in past 12 months rating quality of care as very good or excellent	54.4	66.6	-12.2 ***
HEALTH CARE COSTS AND AFFORDABILITY (%)			
Out-of-pocket health care costs over the past 12 months			
At 5% or more of family income for those less than 500% of FPL [b]	20.0	22.3	-2.3
At 10% or more of family income for those less than 500% of FPL [b]	9.5	9.2	0.3
Had problems paying medical bills in past 12 months	21.8	18.5	3.3
Have medical bills that are paying off over time	25.9	18.0	7.9 ***
Had problems paying other bills in past 12 months	28.5	22.6	5.9 **
Did not get needed care because of costs in the past 12 months	14.7	16.7	-2.0
Doctor care	4.5	5.7	-1.2
Specialist care	3.1	5.1	-2.0 *
Medical tests, treatment or follow-up care	5.4	6.1	-0.8
Preventive care screening	4.1	3.1	0.9
Prescription drugs	4.0	5.7	-1.7
Dental care	9.4	9.8	-0.4

Source: 2006-2009 Massachusetts Health Reform Surveys (N=13,150)

Note: The regression-adjusted estimates are derived from models that control for age, gender, citizenship, marital status, parent status, education, employment, firm size, family income, health status, disability status, whether the individual has chronic conditions or is pregnant, and region fixed effects. Appendix Exhibit V.1 provides regression-adjusted estimates based on the simpler model that controls for age, gender, and health and disability status. To provide consistency in the estimates across exhibits, the reported values here are predicted values for 2006 based on the 2009 sample. These are calculated using the parameter estimates from the regression models to predict the outcomes that the adults in the entire 2009 sample would have had if they had been observed as minority and white adults in 2006. Minority adults includes individuals who are non-white and Hispanic. ED is emergency department. FPL is Federal Poverty Level.

[a] A condition that the respondent thought could have been treated by a regular doctor if one had been available.

[b] Because of the way the income information is collected in the survey, the measure of OOP costs relative to family income cannot be constructed for adults with family income above 500% of FPL.

* (**) (***) Significantly different from zero at the .10 (.05) (.01) level, two-tailed test.

EXHIBIT V.4: REGRESSION-ADJUSTED ESTIMATES OF HEALTH INSURANCE COVERAGE AND HEALTH CARE ACCESS, USE, AND COSTS FOR RACIAL/ETHNIC MINORITY AND WHITE, NON-HISPANIC MASSACHUSETTS ADULTS 18 TO 64, FALL 2006 TO FALL 2009

	RACIAL/ETHNIC MINORITY ADULTS			WHITE, NON-HISPANIC ADULTS		
	FALL 2006	FALL 2009	2009-2006 DIFFERENCE	FALL 2006	FALL 2009	2009-2006 DIFFERENCE
INSURANCE COVERAGE (%)						
Any insurance coverage	83.3	95.1	11.8 ***	88.5	95.2	6.7 ***
ESI coverage	62.2	63.0	0.8	66.6	69.6	3.1 **
Public and other coverage	21.0	32.1	11.0 ***	21.9	25.6	3.6 ***
Uninsured	16.7	4.9	-11.8 ***	11.5	4.8	-6.7 ***
HEALTH CARE ACCESS AND USE (%)						
Has a usual source of care (excluding the ED)	84.2	90.6	6.5 **	87.6	89.7	2.1
Usual source of care is doctor's office or private clinic	53.3	59.7	6.4	70.5	76.2	5.7 ***
Any general doctor visit in past 12 months	74.9	84.0	9.0 **	81.9	86.8	4.9 ***
Visit for preventive care	68.9	79.9	10.9 ***	71.4	77.1	5.8 ***
Multiple doctor visits	62.0	71.2	9.2 **	66.9	70.9	4.0 **
Any specialist visit in past 12 months	47.0	48.8	1.7	51.8	54.0	2.3
Any dental care visit in past 12 months	67.9	72.3	4.4	68.9	75.1	6.2 ***
Took any prescription drugs in past 12 months	45.9	54.7	8.8 **	57.7	59.1	1.4
Did not get needed care for any reason in past 12 months	22.2	21.0	-1.2	25.7	19.2	-6.5 ***
Doctor care	5.2	3.9	-1.2	8.3	5.7	-2.6 **
Specialist care	6.3	3.9	-2.4	7.0	5.1	-1.9 **
Medical tests, treatment or follow-up care	7.8	3.8	-4.0 **	9.5	6.2	-3.2 ***
Preventive care screening	6.3	3.2	-3.1 **	6.9	5.3	-1.6 *
Prescription drugs	6.6	6.9	0.2	8.2	5.4	-2.7 ***
Dental care	12.6	9.7	-3.0	12.0	9.0	-3.0 **
Any ED visits in past 12 months	37.3	39.6	2.3	33.2	32.3	-0.9
Most recent ED visit was for non-emergency condition [a]	22.7	22.8	0.1	14.0	12.7	-1.3
Share of those who used care in past 12 months rating quality of care as very good or excellent	54.4	61.5	7.1 *	66.6	70.4	3.8 *
HEALTH CARE COSTS AND AFFORDABILITY (%)						
Out-of-pocket health care costs over the past 12 months						
At 5% or more of family income for those less than 500% of FPL [b]	16.8	20.0	-3.1	18.4	22.3	-3.9 *
At 10% or more of family income for those less than 500% of FPL [b]	7.7	9.5	-1.9	6.4	9.2	-2.8 ***
Had problems paying medical bills in past 12 months	21.5	21.8	-0.4	18.5	18.5	-0.1
Have medical bills that are paying off over time	17.5	25.9	-8.4 **	21.0	18.0	3.1 **
Had problems paying other bills in past 12 months	32.8	28.5	4.3	23.6	22.6	1.0
Did not get needed care because of costs in the past 12 months	9.3	14.7	-5.4 **	12.3	16.7	-4.4 ***
Doctor care	1.0	4.5	-3.5 ***	3.1	5.7	-2.6 ***
Specialist care	1.2	3.1	-2.0 *	2.8	5.1	-2.3 ***
Medical tests, treatment or follow-up care	1.7	5.4	-3.7 **	2.9	6.1	-3.2 ***
Preventive care screening	1.1	4.1	-3.0 ***	2.6	3.1	-0.5
Prescription drugs	3.9	4.0	-0.1	3.6	5.7	-2.1 ***
Dental care	4.7	9.4	-4.7 **	7.5	9.8	-2.4 **

Source: 2006-2009 Massachusetts Health Reform Surveys (N=13,150)

Note: The regression-adjusted estimates are derived from models that control for age, gender, citizenship, marital status, parent status, education, employment, firm size, family income, health status, disability status, whether the individual has chronic conditions or is pregnant, and region fixed effects. Estimation results based on the more limited model that controls for age, gender and health and disability status are provided in Appendix Table V.1. The estimates are calculated using the parameter estimates from the regression models to predict the outcomes that the adults in the entire 2009 sample would have had if they had been observed as minority and white adults in each year. Minority adults includes individuals who are non-white and Hispanic. ED is emergency department. FPL is Federal Poverty Level.

[a] A condition that the respondent thought could have been treated by a regular doctor if one had been available.

[b] Because of the way the income information is collected in the survey, the measure of OOP costs relative to family income cannot be constructed for adults with family income above 500% of FPL.

* (**) (***) Significantly different from zero at the .10 (.05) (.01) level, two-tailed test.

EXHIBIT V.4 (CONTINUED): REGRESSION-ADJUSTED ESTIMATES OF HEALTH INSURANCE COVERAGE AND HEALTH CARE ACCESS, USE, AND COSTS FOR RACIAL/ETHNIC MINORITY AND WHITE, NON-HISPANIC MASSACHUSETTS ADULTS 18 TO 64, FALL 2006 TO FALL 2009

	CHANGE FOR RACIAL/ETHNIC MINORITY ADULTS RELATIVE TO CHANGE FOR WHITE, NON-HISPANIC ADULTS	WHO GAINED MORE?
INSURANCE COVERAGE (%)		
Any insurance coverage	5.1 **	Minority adults
ESI coverage	-2.3	
Public and other coverage	7.4 **	Minority adults
Uninsured	-5.1 **	Minority adults
HEALTH CARE ACCESS AND USE (%)		
Has a usual source of care (excluding the ED)	4.4	
Usual source of care is doctor's office or private clinic	0.7	
Any general doctor visit in past 12 months	4.1	
Visit for preventive care	5.2	
Multiple doctor visits	5.1	
Any specialist visit in past 12 months	-0.5	
Any dental care visit in past 12 months	-1.9	
Took any prescription drugs in past 12 months	7.4 *	Minority adults
Did not get needed care for any reason in past 12 months	5.3 *	Non-minority adults
Doctor care	1.4	
Specialist care	-0.5	
Medical tests, treatment, or follow-up care	-0.8	
Preventive care screening	-1.6	
Prescription drugs	3.0	
Dental care	0.0	
Any ED visits in past 12 months	3.2	
Most recent ED visit was for non-emergency condition [a]	1.4	
Share of those who used care in past 12 months rating quality of care as very good or excellent	3.3	
HEALTH CARE COSTS AND AFFORDABILITY (%)		
Out-of-pocket health care costs over the past 12 months		
At 5% or more of family income for those less than 500% of FPL [b]	0.7	
At 10% or more of family income for those less than 500% of FPL [b]	0.9	
Had problems paying medical bills in past 12 months	-0.3	
Have medical bills that are paying off over time	-11.5 ***	Minority adults
Had problems paying other bills in past 12 months	3.3	
Did not get needed care because of costs in the past 12 months	-1.0	
Doctor care	-0.9	
Specialist care	0.3	
Medical tests, treatment, or follow-up care	-0.5	
Preventive care screening	-2.5 **	Minority adults
Prescription drugs	2.1	
Dental care	-2.3	

Source: 2006-2009 Massachusetts Health Reform Surveys (N=13,150)

Note: The regression-adjusted estimates are derived from models that control for age, gender, citizenship, marital status, parent status, education, employment, firm size, family income, health status, disability status, whether the individual has chronic conditions or is pregnant, and region fixed effects. Estimation results based on the more limited model that controls for age, gender and health and disability status are provided in Appendix Table V.1. The estimates are calculated using the parameter estimates from the regression models to predict the outcomes that the adults in the entire 2009 sample would have had if they had been observed as minority and white adults in each year. Minority adults includes individuals who are non-white and Hispanic. ED is emergency department. FPL is Federal Poverty Level.

[a] A condition that the respondent thought could have been treated by a regular doctor if one had been available.

[b] Because of the way the income information is collected in the survey, the measure of OOP costs relative to family income cannot be constructed for adults with family income above 500% of FPL.

* (**) (***) Significantly different from zero at the .10 (.05) (.01) level, two-tailed test.

EXHIBIT V.5: REGRESSION-ADJUSTED ESTIMATES OF HEALTH INSURANCE COVERAGE AND HEALTH CARE ACCESS, USE, AND COSTS FOR RACIAL/ETHNIC MINORITY AND WHITE, NON-HISPANIC MASSACHUSETTS ADULTS 18 TO 64, FALL 2009

	RACIAL/ETHNIC MINORITY ADULTS	WHITE, NON-HISPANIC ADULTS	DIFFERENCE
INSURANCE COVERAGE (%)			
Any insurance coverage	95.1	95.2	-0.1
ESI coverage	63.0	69.6	-6.6 **
Public and other coverage	32.1	25.6	6.5 **
Uninsured	4.9	4.8	0.1
HEALTH CARE ACCESS AND USE (%)			
Has a usual source of care (excluding the ED)	90.6	89.7	0.9
Usual source of care is doctor's office or private clinic	59.7	76.2	-16.5 ***
Any general doctor visit in past 12 months	84.0	86.8	-2.8
Visit for preventive care	79.9	77.1	2.7
Multiple doctor visits	71.2	70.9	0.2
Any specialist visit in past 12 months	48.8	54.0	-5.3
Any dental care visit in past 12 months	72.3	75.1	-2.9
Took any prescription drugs in past 12 months	54.7	59.1	-4.4 *
Did not get needed care for any reason in past 12 months	21.0	19.2	1.8
Doctor care	3.9	5.7	-1.8
Specialist care	3.9	5.1	-1.2
Medical tests, treatment, or follow-up care	3.8	6.2	-2.5 **
Preventive care screening	3.2	5.3	-2.1 **
Prescription drugs	6.9	5.4	1.4
Dental care	9.7	9.0	0.6
Any ED visits in past 12 months	39.6	32.3	7.3 ***
Most recent ED visit was for non-emergency condition [a]	22.8	12.7	10.1 ***
Share of those who used care in past 12 months rating quality of care as very good or excellent	61.5	70.4	-8.9 **
HEALTH CARE COSTS AND AFFORDABILITY (%)			
Out-of-pocket health care costs over the past 12 months			
At 5% or more of family income for those less than 500% of FPL [b]	16.8	18.4	-1.6
At 10% or more of family income for those less than 500% of FPL [b]	7.7	6.4	1.2
Had problems paying medical bills in past 12 months	21.5	18.5	3.0
Have medical bills that are paying off over time	17.5	21.0	-3.5
Had problems paying other bills in past 12 months	32.8	23.6	9.1 ***
Did not get needed care because of costs in the past 12 months	9.3	12.3	-3.0 *
Doctor care	1.0	3.1	-2.1 ***
Specialist care	1.2	2.8	-1.6 **
Medical tests, treatment, or follow-up care	1.7	2.9	-1.2
Preventive care screening	1.1	2.6	-1.5 **
Prescription drugs	3.9	3.6	0.3
Dental care	4.7	7.5	-2.8 *

Source: 2006-2009 Massachusetts Health Reform Surveys (N=13,150)

Note: Simple (unadjusted) estimates are provided in Appendix Exhibit V.2. The regression-adjusted estimates are derived from models that control for age, gender, citizenship, marital status, parent status, education, employment, firm size, family income, health status, disability status, whether the individual has chronic conditions or is pregnant, and region fixed effects. The estimates are calculated using the parameter estimates from the regression models to predict the outcomes that the adults in the entire 2009 sample would have had if they had been observed as minority and white adults in 2009. Minority adults includes individuals who are non-white and Hispanic. ED is emergency department. FPL is Federal Poverty Level.

[a] A condition that the respondent thought could have been treated by a regular doctor if one had been available.

[b] Because of the way the income information is collected in the survey, the measure of OOP costs relative to family income cannot be constructed for adults with family income above 500% of FPL.

VI. UNINSURED ADULTS

KEY FINDINGS

- As was true in fall 2006, adults in Massachusetts who were uninsured at the time of the survey continued to be disproportionately young, male, single, and healthy in fall 2009.
- However, in fall 2009, more of the adults who were uninsured at the time of the survey had insurance coverage at some point in the prior year. In fall 2009, 43.5 percent of the adults who were uninsured at the time of the survey had coverage at some point in the prior year, as compared to 32.6 percent in fall 2006.
- In addition to reporting higher levels of partial-year coverage, the adults who were uninsured at the time of the survey in fall 2009 also reported better access to and use of health care and fewer problems with the affordability of care than did their counterparts in fall 2006.
- Relatively few (20.1 percent) of the uninsured adults in fall 2009 had access to coverage through their employer.
- Cost remained a key barrier to obtaining coverage among those who remained uninsured in fall 2009.

As was reported in Exhibit III.2, in fall 2009, 4.8 percent of nonelderly adults in Massachusetts were uninsured at the time of the survey (i.e., currently uninsured), 2.5 percent were uninsured for the entire year prior to the survey, and 9.7 percent were uninsured at some point over the year prior to the survey. This section focuses on the adults who were uninsured at the time of the survey and those who were ever uninsured over the prior year. The sample of adults who were uninsured for the entire year prior to the survey is too small to support an in-depth analysis.

As was true prior to health reform, the adults in Massachusetts who were uninsured at the time of the survey in fall 2009 were likely to be young (less than 35 years), male, single, and/or healthy—population groups that can be difficult to convince of the need for insurance coverage (Exhibit VI.1).[64] Relative to adults uninsured at the time of the survey in fall 2006, adults who were uninsured at the time of the survey in fall 2009 were more likely to be working (up 9.8 percentage points) and to be self-employed (up 6.1 percentage points).

Adults who were uninsured at the time of the survey in fall 2009 were also more likely than their counterparts in fall 2006 to have had some insurance coverage over the prior year (Exhibit VI.2). In fall 2006, about one-third of adults who were uninsured at the time of the survey had had coverage at some point in the prior year. That figure increased to 43.5 percent in fall 2009. Among the adults who were ever uninsured over the prior year, nearly three-quarters (72.7 percent) reported having had insurance coverage at some point over the year in fall 2009, up from 55.2 percent in fall 2006.

It is likely that the increased coverage, even if only temporary, is responsible for improved access, use and affordability of care among the uninsured adults in fall 2009. As shown in Exhibit VI.2, uninsured adults (whether defined as those uninsured at the time of the survey or those who were ever uninsured over the year) reported some significant gains in access to care, use of care, and affordability of care in fall 2009, compared to fall 2006. Thus, there appear to have been gains under health reform even among those for whom health reform has not led to full-year insurance coverage.[65]

Exhibit VI.3 reports on coverage options and reasons for being uninsured among the adults who were uninsured at the time of the survey in fall 2009. As shown, relatively few (20.1 percent) of the remaining uninsured adults reported that they had access to ESI coverage through their employer. Of those who did, nearly half (46.6 percent) reported that they did not take up that coverage because it was too expensive. Many of those who remained uninsured in fall 2009 reported that they had tried obtaining coverage through MassHealth or Commonwealth Care (41.4 percent) or through Commonwealth Choice or direct purchase (22.8 percent). The majority of uninsured adults (70.4 percent) cited cost as the main reason for not purchasing individual coverage through Commonwealth Choice or direct purchase, while the most cited reason they gave for not obtaining coverage through MassHealth or Commonwealth Care was that they were not eligible for such coverage (32.4 percent).

Consistent with the importance of the cost of coverage in the decision to remain uninsured, half of the uninsured adults in fall 2009 reported that they had tried to obtain coverage in order to comply with the individual mandate but were unable to find coverage that they deemed affordable (Exhibit VI.4). Roughly another quarter reported that they had decided not to obtain coverage and would just pay the penalty associated with failing to comply with the individual mandate. Among the remaining uninsured adults, 6.2 percent reported that they were not aware of the individual mandate. Finally, one-tenth of uninsured adults reported that they had requested an exemption from the individual mandate or filed a hardship appeal.

64 Long SK, Cohen M. Getting Ready for Reform: Insurance Coverage and Access to Care in Massachusetts in Fall 2006. Washington (DC): The Urban Institute; 2007.

65 Although we control for observable characteristics in the regression models, there are likely to be unobserved differences across the yearly samples of uninsured adults (e.g., attitudes toward insurance coverage or health care, risk aversion related to the individual mandate). To the extent those unobserved differences are correlated with the outcomes, changes in the outcomes may also reflect changes in the characteristics of the uninsured population.

EXHIBIT VI.1: CHANGE IN CHARACTERISTICS OF UNINSURED MASSACHUSETTS ADULTS 18 TO 64 IN MASSACHUSETTS UNDER HEALTH REFORM, FALL 2006 TO FALL 2009

	FALL 2006	FALL 2009	2009-2006 DIFFERENCE
AGE (%)			
18 to 25 years	44.7	42.6	2.0
26 to 34 years	19.1	15.5	3.6
35 to 49 years	23.1	28.1	-5.0
50 to 64 years	13.2	13.8	-0.6
RACE/ETHNICITY (%)			
White, non-Hispanic	70.5	68.4	2.1
Non-white, non-Hispanic	16.4	17.8	-1.4
Hispanic	13.0	13.8	-0.8
FEMALE (%)	31.1	35.3	-4.3
U.S. CITIZEN (%)	89.9	89.3	0.6
MARITAL STATUS (%)			
Married	20.5	25.1	-4.6
Living with partner	9.2	12.0	-2.7
Divorced, separated, widowed	11.3	11.9	-0.7
Never married	59.0	51.0	8.0 *
PARENT OF ONE OR MORE CHILDREN UNDER 18 (%)	24.1	27.0	-2.9
EDUCATION (%)			
Less than high school	11.7	11.5	0.3
High school graduate (includes some college)	64.5	69.3	-4.8
College graduate or higher	23.7	19.2	4.5
WORK STATUS (%)			
Full-time	30.6	38.1	-7.5
Part-time	28.0	30.3	-2.3
Not working	41.3	31.6	9.8 *
SELF-EMPLOYED (%)	7.7	13.7	-6.1 **
WORKS AT A FIRM WITH <=50 EMPLOYEES (%)	25.8	30.5	-4.7
HEALTH STATUS (%)			
Very good or excellent	49.7	46.4	3.3
Good	28.2	34.0	-5.8
Fair or poor	22.2	19.6	2.6
ANY CHRONIC CONDITION [a] (%)	45.5	42.8	2.7
ACTIVITIES ARE LIMITED BY HEALTH PROBLEM (%)	15.0	18.5	-3.5
FAMILY INCOME (%)			
Less than 100% of FPL	32.4	26.6	5.9
100-299% of FPL	45.9	49.8	-3.9
300-499% of FPL	14.0	17.3	-3.3
500% of FPL or more	7.7	6.3	1.4
REGION (%)			
Boston	14.5	10.7	3.8
MetroWest	31.3	26.1	5.2
Northeast	8.3	12.0	-3.7 *
Central	7.6	13.1	-5.5 **
West	14.5	14.0	0.4
Southeast	23.9	24.2	-0.2
SAMPLE SIZE	679	369	

Source: 2006 and 2009 Massachusetts Health Reform Surveys.
Note: FPL is Federal Poverty Level.

* (**) (***) Significantly different from zero at the .10 (.05) (.01) level, two-tailed test.

[a] Includes adults who report they have ever been told by a doctor or other health professional that they have at least one of the following: hypertension or high blood pressure; heart disease or congestive heart failure; diabetes or sugar diabetes; asthma; any other chronic or long-term health condition or health problem; or are pregnant.

EXHIBIT VI.2: REGRESSION-ADJUSTED ESTIMATES OF CHANGES IN HEALTH INSURANCE COVERAGE AND HEALTH CARE ACCESS, USE, AND COSTS FOR UNINSURED MASSACHUSETTS ADULTS 18 TO 64, FALL 2006 TO FALL 2009

	UNINSURED AT THE TIME OF THE SURVEY			EVER UNINSURED IN PAST 12 MONTHS		
	FALL 2006	FALL 2009	2009-2006 DIFFERENCE	FALL 2006	FALL 2009	2009-2006 DIFFERENCE
EVER INSURANCE COVERAGE IN PAST 12 MONTHS (%)	32.6	43.5	10.9 **	55.2	72.7	17.5 ***
HEALTH CARE ACCESS AND USE (%)						
Has a usual source of care (excluding the ED)	51.6	56.9	5.3	61.1	67.0	5.9
Usual source of care is doctor's office or clinic	21.5	31.9	10.5 **	31.2	46.3	15.1 ***
Any general doctor visit in past 12 months	49.0	52.3	3.4	54.6	61.9	7.3 *
Visit for preventive care	36.9	43.4	6.5	41.9	50.4	8.6 *
Multiple doctor visits	33.1	37.3	4.2	37.1	48.0	10.9 ***
Any specialist visit in past 12 months	25.4	22.4	-3.0	29.8	33.6	3.8
Any dental care visit in past 12 months	36.7	45.6	8.8 *	40.4	48.6	8.1 *
Took any prescription drugs in past 12 months	33.6	27.7	-5.9	35.1	38.8	3.7
Did not get needed care for any reason in past 12 months	56.2	45.4	-10.8 **	49.0	39.9	-9.1 **
Doctor care	28.5	25.9	-2.6	23.3	18.9	-4.4
Specialist care	20.0	14.0	-6.0 **	17.3	13.2	-4.0 *
Medical tests, treatment, or follow-up care	28.7	18.5	-10.2 **	23.1	15.8	-7.3 ***
Preventive care screening	21.0	19.2	-1.8	16.6	12.7	-3.8
Prescription drugs	20.0	14.6	-5.4	17.6	13.4	-4.2
Dental care	33.3	26.6	-6.7	28.5	23.4	-5.1
Any ED visits in past 12 months	38.7	37.6	-1.2	40.1	34.4	-5.7
Three or more ED visits	9.5	5.7	-3.9 *	9.6	6.7	-2.9
Most recent ED visit was for non-emergency condition [a]	22.7	16.2	-6.5	21.8	12.4	-9.4 ***
Among those who used care in the past 12 months, share rating quality of care as very good or excellent	34.2	38.1	3.9	42.9	40.5	-2.4
HEALTH CARE COSTS AND AFFORDABILITY (%)						
Out-of-pocket health care costs over the past 12 months						
At 5% or more of family income for those less than 500% of FPL [b]	28.2	18.8	-9.5 **	24.0	15.2	-8.8 ***
At 10% or more of family income for those less than 500% of FPL [b]	15.1	8.3	-6.8 **	13.3	5.3	-8.0 ***
Had problems paying medical bills in past 12 months	45.9	37.0	-8.9 *	41.8	35.7	-6.1
Have medical bills that are paying off over time	34.8	28.0	-6.8 *	33.8	22.4	-11.3 ***
Had problems paying other bills in past 12 months	40.7	42.2	1.5	42.8	42.4	-0.4
Did not get needed care because of costs in the past 12 months	49.8	38.8	-11.0 **	42.4	32.1	-10.3 **
Doctor care	26.5	21.8	-4.8	21.0	14.9	-6.1 **
Specialist care	17.6	11.4	-6.2 **	14.3	10.8	-3.5
Medical tests, treatment, or follow-up care	25.8	14.5	-11.2 ***	20.7	12.8	-7.9 ***
Preventive care screening	19.0	17.4	-1.6	14.0	11.5	-2.4
Prescription drugs	18.4	12.1	-6.2 *	14.5	11.5	-3.0
Dental care	30.3	23.0	-7.3	25.6	19.5	-6.1 *

Source: 2006-2009 Massachusetts Health Reform Surveys

Note: The regression-adjusted estimates are derived from models that control for age, gender, race/ethnicity, citizenship, marital status, parent status, education, employment, firm size, health status, disability status, whether the individual has chronic conditions or is pregnant, family income, and region fixed effects. The reported values for 2009 are the actual values for adults in that year. Regression-adjusted estimates are predicted values calculated using the parameter estimates from the regression models to predict the outcomes that the individuals in the 2009 sample would have had if they had been observed in 2006. ED is emergency department. FPL is Federal Poverty Level.

* (**) (***) Significantly different from zero at the .10 (.05) (.01) level, two-tailed test.

[a] A condition that the respondent thought could have been treated by a regular doctor if one had been available.

[b] Because of the way the income information is collected in the survey, the measure of OOP costs relative to family income cannot be constructed for adults with family income above 500% of FPL.

EXHIBIT VI.3: COVERAGE OPTIONS AND REASONS FOR BEING UNINSURED FOR UNINSURED MASSACHUSETTS ADULTS 18 TO 64, FALL 2009

	PERCENT
HAD ACCESS TO ESI COVERAGE THROUGH A JOB (%)	20.1
Among those adults, main reason did not take-up ESI coverage	
Cost	46.6
Other reason	44.1
Don't know	9.3
HAD TRIED PURCHASING INDIVIDUAL COVERAGE (%)	22.8
Among those adults, main reason did not buy individual coverage	
Cost	70.4
Other reason	27.5
Don't know	2.1
HAD TRIED OBTAINING MASSHEALTH OR COMMONWEALTH CARE (%)	41.4
Among those adults, main reason did not enroll in MassHealth or Commonwealth Care	
Not eligible	32.4
Cost	12.9
Other reason	38.6
Don't know	16.0
SAMPLE SIZE	369

Source: 2009 Massachusetts Health Reform Survey

EXHIBIT VI.4: EXPERIENCES WITH THE INDIVIDUAL MANDATE FOR UNINSURED MASSACHUSETTS ADULTS 18 TO 64 UNDER HEALTH REFORM, FALL 2009

	PERCENT
REPORTED IMPACT OF INDIVIDUAL MANDATE (%)	
Tried to obtain coverage by couldn't find affordable coverage	49.6
Decided not to obtain coverage and pay the penalty	24.3
Some other response to the individual mandate	17.8
Not aware of the individual mandate	6.2
Did not answer question	2.1
PAID A PENALTY FOR NOT HAVING INSURANCE COVERAGE IN THE PRIOR YEAR (%)	24.6
REQUESTED AN EXEMPTION FROM THE MANDATE OR FILED A HARDSHIP APPEAL (%)	9.5
SAMPLE SIZE	369

Source: 2009 Massachusetts Health Reform Surveys

Note: Some survey respondents reported both not being aware of the individual mandate and having a response to the mandate. In this tabulation, we have assumed that those individuals who reported a response to the mandate were aware of the mandate.

VII. THE ADEQUACY OF INSURANCE COVERAGE UNDER HEALTH REFORM

KEY FINDINGS

- Insured adults were asked to assess the care provided by their insurance plan. Between fall 2006 and fall 2007, there was an increase in the share of adults with full-year insurance coverage rating the services covered by their health plan and the choice of providers under their health plan as very good or excellent. There was also a decrease in the share reporting expensive medical bills that were not covered by their health plan in fall 2007, relative to fall 2006.

- In fall 2009, insured adults generally rated their health coverage as being as good as it was prior to reform in fall 2006, but often not quite as good as it was in fall 2007, the first year under health reform. As of fall 2009, full-year insured adults were no worse off under health reform than they were prior to health reform in fall 2006, but were not as well off as they were in the early period under reform.

- Affordability of care was more of a problem for adults with full-year insurance coverage in Massachusetts in fall 2009 than it was in fall 2006, as health care costs in the state continued to rise.

- In fall 2009, problems paying medical bills affected adults with full-year insurance coverage of all ages and across all population groups in the state, but were more common among those with high health care needs and lower incomes.

Beyond expanding health insurance coverage, another goal of Massachusetts' health reform initiative was to ensure that the individuals who were required to have health insurance coverage would not be forced into plans that offered limited benefits or little financial protection. As part of the health reform effort, Massachusetts established a standard for "minimum creditable coverage" (MCC) that outlines the key benefits and cost-sharing provisions that must be included in a health insurance plan if it is to satisfy the state's individual mandate for health insurance coverage. The required benefits, which are intended to protect those with insurance from high health care costs, include preventive and primary care, prescription drugs, a maximum annual deductible, and a maximum on out-of-pocket spending (excluding premiums), among other things.[66,67]

66 For more information on minimum creditable coverage, see Health reform: Key Decisions [page on the Internet]. Boston: Commonwealth Health Insurance Connector Authority [cited 2010 Mar 25]. Available from: http://www.mahealthconnector.org/portal/site/connector/menuitem.9ccd4bd144d4e8b2dbef6f47d7468a0c/.

67 A version of the MCC standards went into effect at the same time that the individual mandate went into effect (July 1, 2007), with stricter MMC standards starting on January 1, 2009. However, many firms offered health plans that met the stricter MMC standards prior to that date.

In addressing the adequacy of coverage for insured adults in Massachusetts, we focus on the nonelderly adults who had insurance coverage at the time of the survey and who had insurance coverage for the entire prior year.[68] In this section, we refer to these adults with full-year insurance coverage as "full-year insured adults." The sample sizes for this part of the study were 2,103 in fall 2006, 2,271 in fall 2007, 3,247 in fall 2008, and 2,552 in fall 2009.

A. CONSUMERS' ASSESSMENT OF THEIR INSURANCE COVERAGE

In the initial year under health reform there were strong gains in consumers' assessment of their health plans (Exhibit VII.1). As shown, between fall 2006 and fall 2007, there were gains in the share of full-year insured adults rating the services covered by their plan as very good or excellent, which may reflect the effects of the minimum creditable coverage standards that were introduced under health reform and the restoration of dental care under MassHealth. There were also gains in consumers' rating of the choice of providers under their health plan as very good or excellent. Finally, there was a significant drop in the share of full-year insured adults reporting expensive medical bills that were not covered by their health plan in fall 2007 relative to fall 2006.

In fall 2009, consumers generally rated their health coverage as being as good as it was prior to reform (fall 2006), but often not quite as good as in the first year under health reform (fall 2007). The shares of adults rating the range of services covered and choice of providers under their health plan as very good or excellent in fall 2009 were not significantly different from those of fall 2006. As of fall 2009, full-year insured adults were no worse off under health reform than they were prior to health reform in fall 2006, but were not as well off as they were in the early period under reform.

B. THE AFFORDABILITY OF HEALTH CARE FOR FULL-YEAR INSURED ADULTS

Adults with full-year insurance coverage faced increasing problems paying medical bills over time as the recession worsened and health care costs in the state continued to increase, as was happening in the nation as a whole. The share of full-year insured adults reporting problems paying medical bills, which was 14.4 percent in fall 2006, rose to 17.3 percent in fall 2009 (Exhibit VII.2).

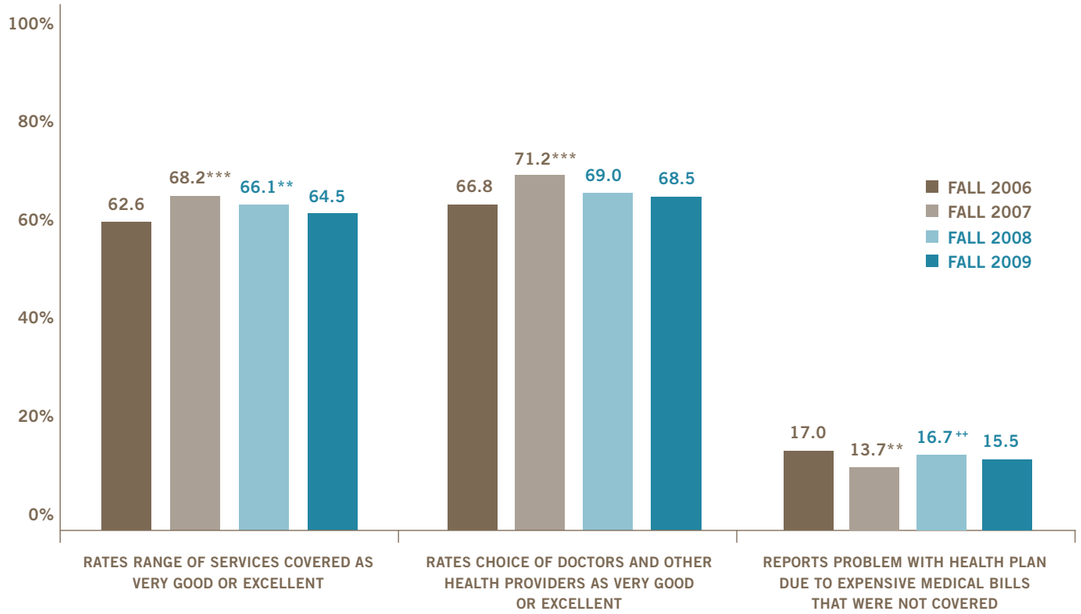
When we look at the full-year insured adults who reported problems paying medical bills in fall 2009, we find that problems with medical bills affected adults of all ages and across all population groups (Exhibit VII.3). However, problems with medical bills were more concentrated among some groups of adults, including full-year insured adults with health problems and those with more limited financial resources. Full-year insured adults who reported problems paying their medical bills in fall 2009 were more likely to report that they were in fair or poor health, had a disability, or had a chronic health condition, and were therefore more likely to have high health care needs than other adults. Full-year insured adults with problems with health care affordability were also much more likely to report lower family incomes and medical debt that they were paying off over time (either from current health bills or past bills). Medical debt likely exacerbates the burden of high health care costs; the persistence of debt makes it more probable that adults will have difficulty paying new bills, causing those new bills to be added to existing medical debt over time.

In addition to financial difficulties paying for health care, full-year insured adults reporting problems with the affordability of health care in fall 2009 were also significantly more likely to report that they did not get needed health care due to cost over the prior year (Exhibit VII.4). While only 6.2 percent of full-year insured adults without problems paying medical bills reported any unmet need due to cost, 25.1 percent of full-year insured adults with problems paying medical bills reported such unmet need. Unmet need due to cost for these adults was highest for dental care and prescription drugs. While we cannot attribute the unmet need for health care to the presence of affordability issues given the data available in this study, it is clear that adults who report affordability issues are much more likely to go without needed care than are other adults.

The extent to which health insurance protects individuals from the burden of high health care costs is an important metric by which to judge the adequacy and comprehensiveness of health insurance coverage in the state. Although health reform expanded coverage and improved access to health care for adults in Massachusetts, a subset of the insured population still has difficulty paying for health care, with some of those insured adults forgoing needed care. For some insured adults in Massachusetts, insurance coverage does not always translate into access to affordable care, one of the goals of the 2006 legislation.

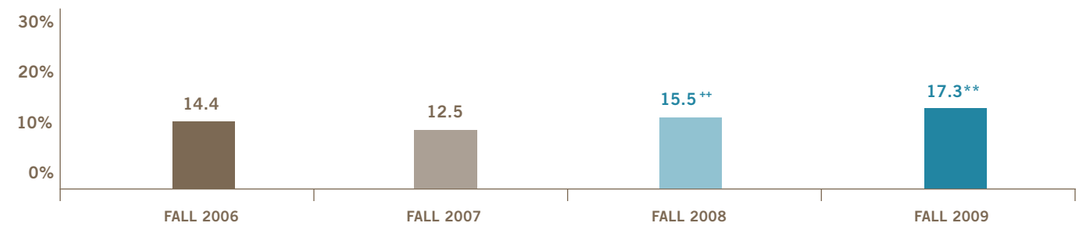
68 The adults were not necessarily covered under the same insurance plan for the entire year.

EXHIBIT VII.1: REGRESSION-ADJUSTED ESTIMATES OF CONSUMERS' ASSESSMENT OF HEALTH INSURANCE COVERAGE FOR MASSACHUSETTS ADULTS 18 TO 64 WITH COVERAGE FOR THE ENTIRE YEAR, FALL 2006 TO FALL 2009



Source: 2006-2009 Massachusetts Health Reform Surveys (N=13,150)
Note: The regression-adjusted estimates are derived from models that control for age, gender, race/ethnicity, citizenship, marital status, parent status, education, employment, firm size, health status, disability status, whether the individual has chronic conditions or is pregnant, family income, and region fixed effects. The reported values for adults in 2009 are the actual values for that year. Regression-adjusted estimates are predicted values calculated using the parameter estimates from the regression models to predict the outcomes that the individuals in the 2009 sample would have had if they had been observed in each of the preceding study years.
* (**) (***) Significantly different from fall 2006 at the .10 (.05) (.01) level, two-tailed test.
+ (++) (+++) Significantly different from the prior year at the .10 (.05) (.01) level, two-tailed test.

EXHIBIT VII.2: REGRESSION-ADJUSTED ESTIMATES OF REPORTED PROBLEMS PAYING MEDICAL BILLS FOR MASSACHUSETTS ADULTS 18 TO 64 WITH COVERAGE FOR THE ENTIRE YEAR, FALL 2006 TO FALL 2009



Source: 2006-2009 Massachusetts Health Reform Surveys (N=13,150)
Note: The regression-adjusted estimates are derived from models that control for age, gender, race/ethnicity, citizenship, marital status, parent status, education, employment, firm size, health status, disability status, whether the individual has chronic conditions or is pregnant, family income, and region fixed effects. The reported values for adults in 2009 are the actual values for that year. Regression-adjusted estimates are predicted values calculated using the parameter estimates from the regression models to predict the outcomes that the individuals in the 2009 sample would have had if they had been observed in each of the preceding study years.
* (**) (***) Significantly different from fall 2006 at the .10 (.05) (.01) level, two-tailed test.
+ (++) (+++) Significantly different from the prior year at the .10 (.05) (.01) level, two-tailed test.

EXHIBIT VII.3: CHARACTERISTICS OF MASSACHUSETTS ADULTS 18 TO 64 WITH COVERAGE FOR THE ENTIRE YEAR, BY PROBLEMS PAYING MEDICAL BILLS, FALL 2009

	DID NOT HAVE PROBLEMS PAYING MEDICAL BILLS	HAD PROBLEMS PAYING MEDICAL BILLS
AGE (%)		
18 to 25 years	13.2	7.2 **
26 to 34 years	16.6	20.1
35 to 49 years	37.8	44.9 *
50 to 64 years	32.3	27.7
RACE/ETHNICITY (%)		
White, non-Hispanic	82.2	73.6 ***
Black, non-Hispanic	4.5	9.9 ***
Other, non-Hispanic	6.2	7.9
Hispanic	7.1	8.6
FEMALE (%)	51.4	60.7 **
U.S. CITIZEN (%)	95.5	95.6
PARENT OF CHILD LESS THAN 19 IN HOUSEHOLD (%)	45.0	55.9 ***
EDUCATION (%)		
Less than high school	4.8	5.8
High school graduate	19.1	27.0 **
Some college	25.2	37.5 ***
College graduate	51.0	29.7 ***
HEALTH STATUS IS FAIR OR POOR (%)	10.5	21.5 ***
ACTIVITIES ARE LIMITED BY HEALTH PROBLEM (%)	15.5	32.0 ***
HAS A CHRONIC CONDITION [a] (%)	49.4	58.5 **
FAMILY INCOME (%)		
Less than 150% of FPL	21.7	25.1
150 to 299% of FPL	13.6	27.2 ***
300 to 499% of FPL	24.2	26.9
500% of FPL	40.5	20.7 ***
INSURANCE COVERAGE OVER THE PAST 12 MONTHS (%)		
Ever employer-sponsored insurance coverage	76.7	69.5 *
Ever public or other coverage	27.1	33.7 *
REGION (%)		
Boston	10.4	13.3
MetroWest	34.9	25.9 **
Northeast	11.6	11.1
Central	12.0	16.7 *
West	12.5	13.4
Southeast	18.6	19.5
HAVE MEDICAL BILLS THAT ARE PAYING OFF OVER TIME (%)	11.2	63.4 ***
Medical bills under $2,000 that are paying off over time	7.1	35.5 ***
Medical bills of $2,000 or more that are paying off over time	4.0	27.8 ***
OUT-OF-POCKET HEALTH CARE COSTS OVER THE PAST 12 MONTHS (%)		
At 5% or more of family income for those less than 500% of FPL [b]	11.1	42.0 ***
At 10% or more of family income for those less than 500% of FPL [b]	3.8	16.4 ***
SAMPLE SIZE	2,094	454

Source: 2009 Massachusetts Health Reform Survey.
Note: FPL is Federal Poverty Level.

[a] Includes adults who report they have ever been told by a doctor or other health professional that they have at least one of the following: hypertension or high blood pressure; heart disease or congestive heart failure; diabetes or sugar diabetes; asthma; any other chronic or long-term health condition or health problem.

[b] Because of the way the income information is collected in the survey, the measure of OOP costs relative to family income cannot be constructed for adults with family income above 500% of FPL.

* (**) (***) Significantly different from those who do not report problems paying medical bills at the .10 (.05) (.01) level, two-tailed test.

EXHIBIT VII.4: UNMET NEED FOR HEALTH CARE BECAUSE OF COSTS AMONG MASSACHUSETTS ADULTS 18 TO 64 WITH COVERAGE FOR THE ENTIRE YEAR, BY PROBLEMS PAYING MEDICAL BILLS, FALL 2009

	DID NOT HAVE PROBLEMS PAYING MEDICAL BILLS	HAD PROBLEMS PAYING MEDICAL BILLS
ANY UNMET NEED FOR CARE BECAUSE OF COSTS IN THE PAST 12 MONTHS (%)	6.2	25.1 ***
UNMET NEED FOR SPECIFIC TYPES OF CARE BECAUSE OF COSTS IN THE PAST 12 MONTHS: (%)		
Doctor care	0.6	5.3 ***
Specialist care	0.5	6.8 ***
Medical tests, treatment or follow-up care	0.9	5.2 ***
Preventive care screening	0.9	3.5 **
Prescription drugs	1.4	9.2 ***
Dental care	4.2	12.2 ***
SAMPLE SIZE	2,094	454

Source: 2009 Massachusetts Health Reform Survey

* (**) (***) Significantly different from those who do not report problems paying medical bills at the .10 (.05) (.01) level, two-tailed test.

VIII. SUPPORT FOR HEALTH REFORM

KEY FINDINGS

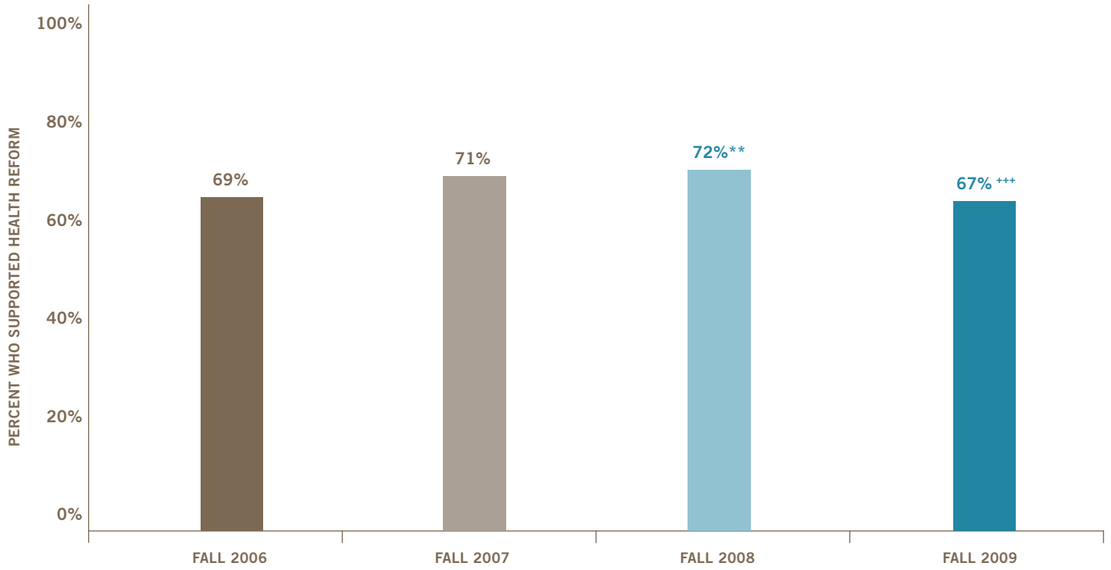
- Support for health reform among nonelderly adults in Massachusetts was quite high when reform began in fall 2006 (68.5 percent), and has remained high over time, with 67.0 percent of nonelderly adults supporting health reform in fall 2009.
- Support for health reform in fall 2009, although not significantly different from the level of support in fall 2006, was below the peak level of support reported in fall 2008 (71.8 percent). The drop in support between fall 2008 and fall 2009 likely reflects the economic downturn and the resulting pressures on the state's safety net and public coverage programs.
- Support for health reform among nonelderly adults in fall 2009 was similar to that in fall 2006 across nearly all major population groups in Massachusetts.

Massachusetts' health reform initiative has relied on broad support from employers, providers, insurers, and citizens both to pass the original legislation and to sustain the initiative as it has evolved over time. Support for health reform among nonelderly adults in Massachusetts was quite high when reform began in fall 2006 (68.5 percent), and has remained high over time, with 67.0 percent of nonelderly adults supporting health reform in fall 2009 (Exhibit VIII.1). This support continues despite the economic downturn, resulting pressures on the state's safety net and public coverage programs, and the fact that health reform was a hotly contested national political issue in fall 2009. Perhaps reflecting those issues, support in fall 2009 was not quite as high as it had been in fall 2008, when support for reform peaked at 71.8 percent of adults in the state.

There was little change in support for health reform between fall 2006 and fall 2009 for lower-income adults (those with family income below 300 percent of the FPL) and higher-income adults (Exhibit VIII.2). Thus, support remained high among those most likely to gain from the recent coverage expansions (lower-income adults) and among those least likely to gain from those expansions (higher-income adults). Similar patterns of support in fall 2006 and fall 2009 were also reported for other population groups as well, including groups defined by gender, age, race/ethnicity, work status, and geography. Two exceptions to this trend were the youngest adults (18 to 25 years old) and racial/ethnic minority adults for whom support for health reform was lower in fall 2009 than it was in fall 2006. However, in fall 2009, support was still quite high among both groups: 65 percent for young adults and 73 percent for racial/ethnic minority adults.

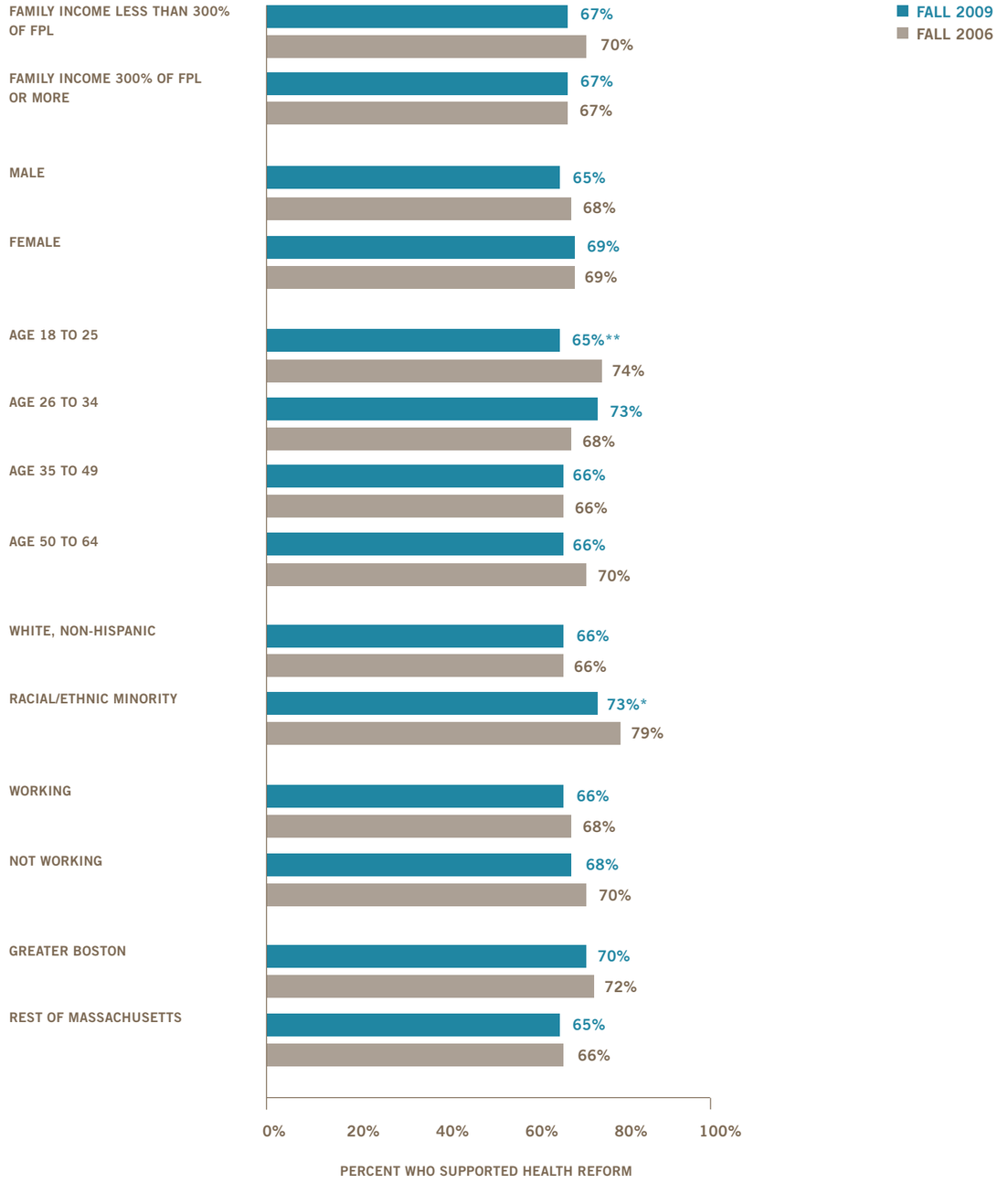
One population group that had reported a drop in support for reform in the initial year under health reform—adults who were uninsured at the time of the survey—has continued to show gains in support since fall 2007 (Exhibit VIII.3). After falling to 44.8 percent supporting reform in fall 2007, the level of support among uninsured adults rose to 57.2 percent in fall 2009, which was not significantly different from the level of support in fall 2006 (63.4 percent).

EXHIBIT VIII.1: PERCENT SUPPORTING HEALTH REFORM AMONG MASSACHUSETTS ADULTS 18 TO 64, FALL 2006 TO FALL 2009



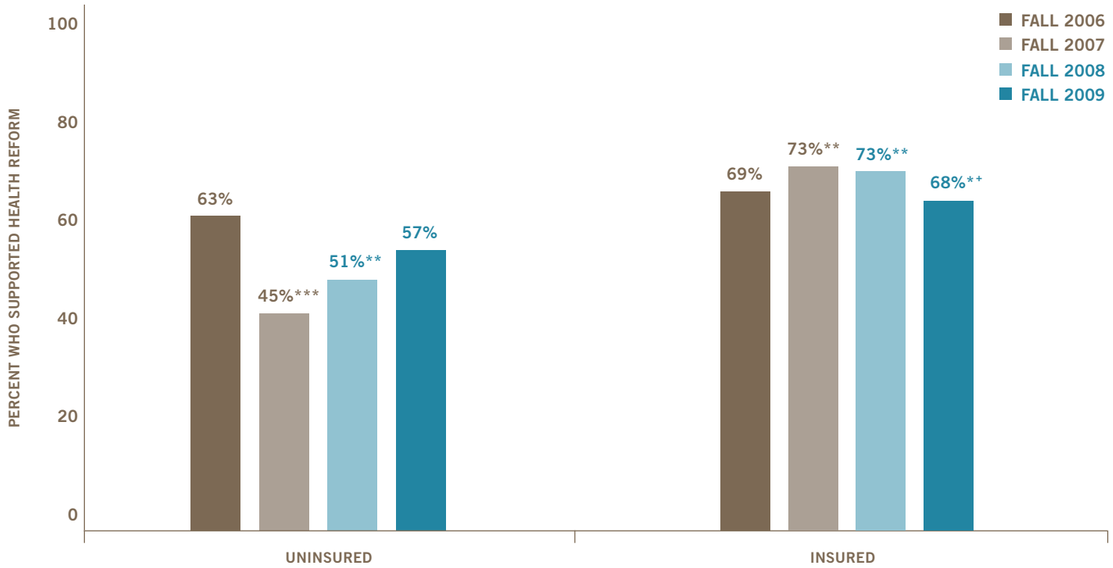
Source: 2006- 2009 Massachusetts Health Reform Surveys, N=13,150
* (**) (***) Significantly different from fall 2006 at the .10 (.05) (.01) level, two-tailed test.
+ (++) (+++) Significantly different from the prior year at the .10 (.05) (.01) level, two-tailed test.

EXHIBIT VIII.2: PERCENT SUPPORTING HEALTH REFORM AMONG MASSACHUSETTS ADULTS 18 TO 64, BY FAMILY INCOME, DEMOGRAPHIC CHARACTERISTICS, WORK STATUS, AND GEOGRAPHY, FALL 2006 TO FALL 2009



Source: 2006-2009 Massachusetts Health Reform Surveys, N=13,150
* (**) (***) Significantly different from fall 2006 at the .10 (.05) (.01) level, two-tailed test.

EXHIBIT VIII.3: PERCENT SUPPORTING HEALTH REFORM AMONG MASSACHUSETTS ADULTS 18 TO 64, BY INSURANCE STATUS, FALL 2006 TO FALL 2009



Source: 2006-2009 Massachusetts Health Reform Surveys, N=13,150
* (**) (***) Significantly different from fall 2006 at the .10 (.05) (.01) level, two-tailed test.
+ (++) (+++) Significantly different from the prior year at the .10 (.05) (.01) level, two-tailed test.

IX. PROGRESS IN ACCOMPLISHING THE GOALS OF CHAPTER 58

Massachusetts' health reform initiative, entitled *An Act Providing Access To Affordable, Quality, Accountable Health Care* (Chapter 58 of the Acts of 2006), aimed to make comprehensive insurance coverage available and affordable for residents as a first step towards improving access, use, affordability, and quality of health care, and towards racial/ethnic disparities in coverage and care in the state. Results from the MHRS suggest that Massachusetts has made significant progress toward each of these goals in the three years since reform was implemented, but some disparities remain, especially with respect to the affordability of health care.

With over 95 percent of working-aged adults insured in fall 2009, Massachusetts has reached near universal insurance coverage. Importantly, the strong system of public coverage in Massachusetts has offset some of the declines in employer-sponsored coverage observed during the economic recession, providing a safety net for Massachusetts residents not available to the nation as a whole. Despite the importance of public coverage in the state, the majority of Massachusetts residents continued to obtain insurance coverage through their employer in fall 2009.[69]

Along with their higher levels of insurance coverage under health reform, access to and use of health care has improved for nonelderly adults in Massachusetts between fall 2006 and fall 2009. More adults reported having a usual source of care and having health care visits (including visits for preventive care), and fewer adults reported unmet need for care overall and unmet need for care due to costs in fall 2009 than prior to health reform. Among adults who were uninsured at the time of the survey, there were also increases in health care access and use under health reform, as more of those adults had health insurance coverage at some point over the prior year in fall 2009 than prior to health reform in fall 2006.

However, despite improvements in access to care, we continue to observe some barriers to accessing care under health reform. In fall 2009, about one in five adults reported unmet need for health care, and one in five reported having problems finding a doctor who would see them. In addition, nearly 15 percent of the adults in the state visited the emergency department for a non-emergency condition, which suggests that some of the problems obtaining care in the community that existed in fall 2006 persist in fall 2009.

While assessing the quality of care is a complex undertaking in household surveys and was not the focus of this study, the one indicator we do observe in this survey suggests that access to high quality

69 Earlier work using MHRS data examined Massachusetts employers' responses to health reform though fall 2008 from the perspective of their employees. See Long SK, Stockley K. Employer Coverage Remains Strong: An Update on Health Reform in Massachusetts from the Perspective of Employees, Fall 2008. Health Aff (Millwood). 2009, 28(6): w1079-1087. An update of that analysis using data through fall 2009 is currently underway.

care has improved under health reform. Among those adults who used care in the prior year, we see an increase in the share rating that care as very good or excellent. This improvement was reported across all adults, as well as among vulnerable adults, such as those with a chronic health condition. Nonetheless, with more than 30 percent of nonelderly adults rating their care as less than very good, opportunities exist for additional improvement.

Massachusetts has also made progress in improving the affordability of care for its residents under health reform. In fall 2009, there were reductions in the share of adults reporting high out-of-pocket health care spending relative to family income and reductions in the share of adults reporting unmet need for care due to costs, relative to fall 2006. Again, these gains were particularly strong for adults with a chronic health condition, who are more vulnerable to unmet health care needs. Nonetheless, difficulties paying for health care continue to be a problem for some Massachusetts residents. Nearly one in five adults reported problems paying medical bills in fall 2009, the same share as prior to health reform in fall 2006. Problems paying medical bills were most common among adults with high health care needs and those with more limited incomes.

These results suggest that Massachusetts's drive toward universal coverage has spurred increases in both public and private insurance coverage, and this increase in coverage has translated into increases in the access, use, affordability, and quality of care in the state. These important achievements provide evidence that Massachusetts residents are obtaining meaningful, comprehensive coverage. Of particular note, Massachusetts has eliminated the racial/ethnic disparity in insurance coverage that existed prior to health reform, leading to significant gains in access to care and improvements in the affordability of care for racial/ethnic minority adults in the state. However, insurance coverage in and of itself has not eliminated all barriers to care in the state nor has it addressed the underlying drivers of ever increasing costs within the health care system. The latter problem, which extends beyond Massachusetts to the nation as a whole, is the considerable challenge now facing Massachusetts and the nation.

While Massachusetts deferred addressing health care costs in the 2006 legislation so as not to hold up the expansion in coverage, there is broad consensus in the state about the need to control health care costs and robust discussion about how to move forward on cost containment. Last year, the state's Special Commission on the Health Care Payment System proposed substantial changes to the state's health care delivery and payment systems and, more recently, several state agencies have commissioned investigations into the factors driving high health care costs. With escalating health care costs a serious problem in every state, there is a clear need for strong federal leadership to address the systematic problems with the health care payment system across the nation.

APPENDIX

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APPENDIX EXHIBIT IV.1: Simple (unadjusted) Estimates of Health Insurance Coverage and Health Care Access, Use, and Costs for Lower-Income Massachusetts Adults 18 to 64, Fall 2006 to Fall 2009

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APPENDIX EXHIBIT V.2: Simple (unadjusted) Estimates of Health Insurance Coverage and Health Care Access, Use, and Costs after Health Reform for Racial/Ethnic Minority and White, non-Hispanic Massachusetts Adults 18 to 64, Fall 2009

APPENDIX EXHIBIT III.1: HEALTH INSURANCE COVERAGE AND HEALTH CARE ACCESS, USE, AND COSTS FOR MASSACHUSETTS ADULTS 18 TO 64, FALL 2006 TO FALL 2009

	CHANGE SINCE 2006					
	SIMPLE (UNADJUSTED) ESTIMATES			REGRESSION-ADJUSTED ESTIMATES		
	FALL 2006	FALL 2009	2009-2006 DIFFERENCE	FALL 2006	FALL 2009	2009-2006 DIFFERENCE
INSURANCE COVERAGE (%)						
Current coverage						
Any insurance coverage	87.0	95.2	8.2 ***	87.5	95.2	7.7 ***
ESI coverage	66.4	68.3	1.9	65.7	68.3	2.7 **
Public and other coverage	20.5	26.9	6.3 ***	21.8	26.9	5.0 ***
Coverage over the past 12 months						
Ever uninsured	18.9	9.7	-9.2 ***	18.1	9.7	-8.4 ***
Always uninsured	8.5	2.5	-6.0 ***	8.1	2.5	-5.6 ***
HEALTH CARE ACCESS AND USE (%)						
Has a usual source of care (excluding the ED)	86.4	89.9	3.5 ***	87.0	89.9	2.9 **
Usual source of care is doctor's office or clinic	66.6	72.9	6.3 ***	67.0	72.9	5.9 ***
Any general doctor visit in past 12 months	80.0	86.2	6.3 ***	80.5	86.2	5.7 ***
Visit for preventive care	70.2	77.7	7.5 ***	70.9	77.7	6.7 ***
Any specialist visit in past 12 months	50.4	53.0	2.6	50.9	53.0	2.1
Any dental care visit in past 12 months	67.9	74.6	6.7 ***	68.8	74.6	5.7 ***
Took any prescription drugs in past 12 months	55.2	58.2	3.1 *	55.5	58.2	2.8 *
Did not get needed care for any reason in past 12 months	25.7	19.5	-6.2 ***	24.9	19.5	-5.4 ***
Doctor care	8.0	5.3	-2.7 ***	7.7	5.3	-2.3 **
Specialist care	7.1	4.9	-2.2 **	6.8	4.9	-2.0 **
Medical tests, treatment, or follow-up care	9.4	5.7	-3.7 ***	9.1	5.7	-3.4 ***
Preventive care screening	7.0	4.9	-2.0 ***	6.8	4.9	-1.9 **
Prescription drugs	8.1	5.7	-2.4 ***	7.9	5.7	-2.1 **
Dental care	12.6	9.2	-3.5 ***	12.1	9.2	-3.0 ***
Any ED visits in past 12 months	34.3	33.8	-0.5	34.0	33.8	-0.3
Three or more ED visits	9.0	8.9	-0.1	9.1	8.9	-0.2
Most recent ED visit was for non-emergency condition [a]	15.9	14.7	-1.2	15.8	14.7	-1.1
Share of those who used care in the past 12 months rating quality of care as very good or excellent	63.0	68.7	5.6 ***	64.3	68.7	4.4 **
HEALTH CARE COSTS AND AFFORDABILITY (%)						
Out-of-pocket health care costs over the past 12 months						
At 5% or more of family income for those less than 500% of FPL [b]	21.8	18.0	-3.8 *	21.8	18.0	-3.8 *
At 10% or more of family income for those less than 500% of FPL [b]	8.9	6.7	-2.2 *	9.4	6.7	-2.7 **
Had problems paying medical bills in past 12 months	20.4	19.1	-1.3	19.1	19.1	-0.1
Have medical bills that are paying off over time	20.7	20.3	-0.4	19.5	20.3	0.8
Had problems paying other bills in past 12 months	24.7	25.5	0.7	23.7	25.5	1.8
Did not get needed care because of costs in the past 12 months	17.0	11.7	-5.3 ***	16.3	11.7	-4.6 ***
Doctor care	5.8	2.7	-3.1 ***	5.5	2.7	-2.8 ***
Specialist care	4.9	2.5	-2.5 ***	4.7	2.5	-2.2 ***
Medical tests, treatment, or follow-up care	6.3	2.7	-3.6 ***	6.0	2.7	-3.3 ***
Preventive care screening	3.5	2.3	-1.2 ***	3.3	2.3	-1.0 **
Prescription drugs	5.6	3.6	-1.9 ***	5.3	3.6	-1.7 ***
Dental care	10.2	6.9	-3.3 ***	9.7	6.9	-2.8 ***
SAMPLE SIZE	2,925	3,041				

Source: 2006-2009 Massachusetts Health Reform Surveys (N=13,150)

Note: The regression-adjusted estimates are derived from models that control for age, gender, race/ethnicity, citizenship, marital status, parent status, education, employment, firm size, health status, disability status, whether the individual has chronic conditions or is pregnant, family income, and region fixed effects. The reported values for 2009 are the actual values for adults in that year. Regression-adjusted estimates are predicted values calculated using the parameter estimates from the regression models to predict the outcomes that the individuals in the 2009 sample would have had if they had been observed in each of the preceding study years. ED is emergency department. FPL is Federal Poverty Level.

* (**) (***) Significantly different from zero at the .10 (.05) (.01) level, two-tailed test.

[a] A condition that the respondent thought could have been treated by a regular doctor if one had been available.

[b] Because of the way the income information is collected in the survey, the measure of OOP costs relative to family income cannot be constructed for adults with family income above 500% of FPL.

APPENDIX EXHIBIT III.1 (CONTINUED): HEALTH INSURANCE COVERAGE AND HEALTH CARE ACCESS, USE, AND COSTS FOR MASSACHUSETTS ADULTS 18 TO 64, FALL 2006 TO FALL 2009

	CHANGE OVER THE LAST YEAR					
	SIMPLE (UNADJUSTED) ESTIMATES			REGRESSION-ADJUSTED ESTIMATES		
	FALL 2008	FALL 2009	2009-2008 DIFFERENCE	FALL 2008	FALL 2009	2009-2008 DIFFERENCE
INSURANCE COVERAGE (%)						
Current coverage						
Any insurance coverage	96.0	95.2	-0.8 *	96.0	95.2	-0.8
ESI coverage	71.3	68.3	-2.9 *	70.4	68.3	-2.1 *
Public and other coverage	24.8	26.9	2.1	25.5	26.9	1.4
Coverage over the past 12 months						
Ever uninsured	10.2	9.7	-0.5	10.4	9.7	-0.7
Always uninsured	1.8	2.5	0.8 **	1.7	2.5	0.8 **
HEALTH CARE ACCESS AND USE (%)						
Has a usual source of care (excluding the ED)	92.1	89.9	-2.2 **	92.1	89.9	-2.1 **
Usual source of care is doctor's office or clinic	72.5	72.9	0.4	72.5	72.9	0.4
Any general doctor visit in past 12 months	84.6	86.2	1.6	84.7	86.2	1.5
Visit for preventive care	76.9	77.7	0.8	77.0	77.7	0.7
Any specialist visit in past 12 months	53.4	53.0	-0.5	53.4	53.0	-0.4
Any dental care visit in past 12 months	76.4	74.6	-1.9	76.2	74.6	-1.6
Took any prescription drugs in past 12 months	59.7	58.2	-1.5	59.6	58.2	-1.4
Did not get needed care for any reason in past 12 months	21.7	19.5	-2.2	21.9	19.5	-2.4
Doctor care	6.4	5.3	-1.1	6.5	5.3	-1.1
Specialist care	7.3	4.9	-2.4 ***	7.4	4.9	-2.5 ***
Medical tests, treatment, or follow-up care	7.7	5.7	-1.9 **	7.7	5.7	-1.9 **
Preventive care screening	5.5	4.9	-0.6	5.6	4.9	-0.7
Prescription drugs	6.3	5.7	-0.6	6.4	5.7	-0.6
Dental care	11.1	9.2	-2.0 *	11.4	9.2	-2.2 **
Any ED visits in past 12 months	33.2	33.8	0.5	33.5	33.8	0.3
Three or more ED visits	8.2	8.9	0.7	8.3	8.9	0.6
Most recent ED visit was for non-emergency condition [a]	14.6	14.7	0.1	14.6	14.7	0.1
Share of those who used care in the past 12 months rating quality of care as very good or excellent	69.4	68.7	-0.7	69.2	68.7	-0.5
HEALTH CARE COSTS AND AFFORDABILITY (%)						
Out-of-pocket health care costs over the past 12 months						
At 5% or more of family income for those less than 500% of FPL [b]	18.9	18.0	-0.8	18.5	18.0	-0.4
At 10% or more of family income for those less than 500% of FPL [b]	7.4	6.7	-0.7	7.3	6.7	-0.6
Had problems paying medical bills in past 12 months	17.5	19.1	1.6	17.5	19.1	1.6
Have medical bills that are paying off over time	19.9	20.3	0.5	19.9	20.3	0.5
Had problems paying other bills in past 12 months	23.7	25.5	1.8	23.9	25.5	1.5
Did not get needed care because of costs in the past 12 months	11.4	11.7	0.3	11.6	11.7	0.1
Doctor care	2.5	2.7	0.2	2.5	2.7	0.1
Specialist care	3.3	2.5	-0.8	3.4	2.5	-0.9
Medical tests, treatment, or follow-up care	3.5	2.7	-0.8	3.5	2.7	-0.8
Preventive care screening	2.2	2.3	0.1	2.2	2.3	0.1
Prescription drugs	3.6	3.6	0.1	3.7	3.6	0.0
Dental care	7.5	6.9	-0.6	7.7	6.9	-0.8
SAMPLE SIZE	3,907	3,041				

Source: 2006-2009 Massachusetts Health Reform Surveys (N=13,150)

Note: The regression-adjusted estimates are derived from models that control for age, gender, race/ethnicity, citizenship, marital status, parent status, education, employment, firm size, health status, disability status, whether the individual has chronic conditions or is pregnant, family income, and region fixed effects. The reported values for 2009 are the actual values for adults in that year. Regression-adjusted estimates are predicted values calculated using the parameter estimates from the regression models to predict the outcomes that the individuals in the 2009 sample would have had if they had been observed in each of the preceding study years. ED is emergency department. FPL is Federal Poverty Level.

* (**) (***) Significantly different from zero at the .10 (.05) (.01) level, two-tailed test.

[a] A condition that the respondent thought could have been treated by a regular doctor if one had been available.

[b] Because of the way the income information is collected in the survey, the measure of OOP costs relative to family income cannot be constructed for adults with family income above 500% of FPL.

APPENDIX EXHIBIT III.2 : EXAMPLE OF REGRESSION OUTPUT—MODEL OF PROBABILITY OF BEING INSURED FOR MASSACHUSETTS ADULTS 18 TO 64, FALL 2006 TO FALL 2009

EXPLANATORY VARIABLES	COEFFICIENT ESTIMATE	STANDARD ERROR
Interviewed in Fall 2007	0.059	0.006
Interviewed in Fall 2008	0.085	0.006
Interviewed in Fall 2009	0.077	0.005
Aged 26-34	0.046	0.014
Aged 35-49	0.056	0.013
Aged 50-64	0.069	0.014
Female	0.041	0.005
Hispanic	-0.011	0.012
Non-white, non-hispanic	-0.004	0.008
Living with a partner	-0.053	0.010
Divorced, separated, widowed	-0.023	0.006
Never married	-0.035	0.008
Parent of one or more children under 18	0.031	0.005
High school graduate or some college	0.005	0.017
College graduate or higher	0.022	0.017
Works full-time	0.020	0.009
Unemployed	-0.009	0.011
Self-employed	-0.076	0.009
Works at a firm with <=50 employees	-0.039	0.008
Good health status	-0.038	0.007
Fair or poor health status	-0.060	0.010
Has any chronic condition, or pregnant	0.020	0.006
Hypertension	0.019	0.006
Heart disease	0.017	0.010
Diabetes	0.026	0.007
Asthma	0.004	0.008
US citizen	0.014	0.015
Activities are limited by health problem	0.046	0.008
Family income 100-299% of FPL	-0.021	0.013
Family income 300-499% of FPL	0.026	0.013
Family income 500% of FPL or more	0.048	0.013
Boston region	0.004	0.009
Northeast region	0.002	0.008
Central region	0.001	0.007
Western region	0.005	0.008
Southeast region	-0.014	0.008
Constant	0.760	0.026
Sample size	12,709	
R^2	0.114	

Source: 2006-2009 Massachusetts Health Reform Surveys.
Note: FPL is Federal Poverty Level.

APPENDIX EXHIBIT IV.1: SIMPLE (UNADJUSTED) ESTIMATES OF HEALTH INSURANCE COVERAGE AND HEALTH CARE ACCESS, USE, AND COSTS FOR LOWER-INCOME MASSACHUSETTS ADULTS 18 TO 64, FALL 2006 TO FALL 2009

	FALL 2006	FALL 2009	2009-2006 DIFFERENCE
INSURANCE COVERAGE (%)			
Any insurance coverage	76.2	90.9	14.7 ***
ESI coverage	37.4	39.5	2.2
Public and other coverage	38.8	51.4	12.6 ***
Uninsured	23.8	9.1	-14.7 ***
HEALTH CARE ACCESS AND USE (%)			
Has a usual source of care (excluding the ED)	79.4	84.5	5.2 **
Usual source of care is doctor's office or private clinic	50.5	57.5	7.0 **
Any general doctor visit in past 12 months	75.3	84.1	8.8 ***
Visit for preventive care	64.8	74.7	9.9 ***
Multiple doctor visits	61.8	69.9	8.0 ***
Any specialist visit in past 12 months	46.2	49.3	3.0
Any dental care visit in past 12 months	49.1	61.4	12.3 ***
Took any prescription drugs in past 12 months	55.5	60.3	4.8 *
Did not get needed care for any reason in past 12 months	35.4	26.4	-9.0 ***
Doctor care	13.5	7.8	-5.6 ***
Specialist care	11.1	6.4	-4.7 ***
Medical tests, treatment, or follow-up care	14.3	6.8	-7.4 ***
Preventive care screening	8.3	5.8	-2.4 **
Prescription drugs	12.4	7.9	-4.5 ***
Dental care	20.7	13.3	-7.4 ***
Any ED visits in past 12 months	46.0	46.2	0.2
Most recent ED visit was for non-emergency condition [a]	23.3	22.0	-1.3
Share of those who used care in past 12 months rating quality of care as very good or excellent	52.4	62.7	10.3 ***
HEALTH CARE COSTS AND AFFORDABILITY (%)			
Out-of-pocket health care costs over the past 12 months			
At 5% or more of family income for those less than 500% of FPL [b]	25.8	19.3	-6.5 ***
At 10% or more of family income for those less than 500% of FPL [b]	12.7	8.5	-4.2 **
Had problems paying medical bills in past 12 months	32.0	25.8	-6.2 **
Have medical bills that are paying off over time	26.7	22.9	-3.8 *
Had problems paying other bills in past 12 months	36.1	38.4	2.4
Did not get needed care because of costs in the past 12 months	27.1	15.1	-12.0 ***
Doctor care	11.1	3.8	-7.3 ***
Specialist care	8.5	2.6	-5.9 ***
Medical tests, treatment, or follow-up care	11.3	2.9	-8.4 ***
Preventive care screening	5.7	3.0	-2.8 ***
Prescription drugs	9.9	5.1	-4.8 ***
Dental care	17.3	8.8	-8.4 ***

Source: 2006-2009 Massachusetts Health Reform Surveys (N=13,150)

Note: Lower-income adults are those with family income below 300% of the FPL. ED is emergency department. FPL is Federal Poverty Level.

[a] A condition that the respondent thought could have been treated by a regular doctor if one had been available.

[b] Because of the way the income information is collected in the survey, the measure of OOP costs relative to family income cannot be constructed for adults with family income above 500% of FPL.

* (**) (***) Significantly different from zero at the .10 (.05) (.01) level, two-tailed test.

APPENDIX EXHIBIT IV.2: SIMPLE (UNADJUSTED) ESTIMATES OF HEALTH INSURANCE COVERAGE AND HEALTH CARE ACCESS, USE, AND COSTS FOR MIDDLE-CLASS MASSACHUSETTS ADULTS 18 TO 64, FALL 2006 TO FALL 2009

	FALL 2006	FALL 2009	2009-2006 DIFFERENCE
INSURANCE COVERAGE (%)			
Any insurance coverage	91.6	97.2	5.6 ***
ESI coverage	82.4	86.8	4.4
Public and other coverage	9.2	10.4	1.3
Uninsured	8.4	2.8	-5.6 ***
HEALTH CARE ACCESS AND USE (%)			
Has a usual source of care (excluding the ED)	88.7	94.8	6.1 ***
Usual source of care is doctor's office or private clinic	74.5	83.7	9.2 ***
Any general doctor visit in past 12 months	82.3	87.7	5.4 **
Visit for preventive care	72.4	81.4	9.1 ***
Multiple doctor visits	64.6	68.8	4.2
Any specialist visit in past 12 months	48.6	48.8	0.2
Any dental care visit in past 12 months	77.2	76.2	-1.1
Took any prescription drugs in past 12 months	49.3	56.4	7.0 **
Did not get needed care for any reason in past 12 months	23.0	16.9	-6.2 **
Doctor care	5.9	3.9	-2.0
Specialist care	6.1	4.2	-1.9
Medical tests, treatment, or follow-up care	6.4	6.0	-0.4
Preventive care screening	7.9	5.8	-2.1
Prescription drugs	6.3	5.1	-1.2
Dental care	9.5	8.3	-1.1
Any ED visits in past 12 months	26.7	29.5	2.8
Most recent ED visit was for non-emergency condition [a]	11.2	9.2	-2.0
Share of those who used care in past 12 months rating quality of care as very good or excellent	65.3	69.2	3.9
HEALTH CARE COSTS AND AFFORDABILITY (%)			
Out-of-pocket health care costs over the past 12 months			
At 5% or more of family income for those less than 500% of FPL [b]	15.6	15.8	0.2
At 10% or more of family income for those less than 500% of FPL [b]	3.0	3.7	0.6
Had problems paying medical bills in past 12 months	16.5	20.7	4.2
Have medical bills that are paying off over time	21.5	23.1	1.6
Had problems paying other bills in past 12 months	22.5	26.1	3.6
Did not get needed care because of costs in the past 12 months	14.3	12.4	-1.9
Doctor care	3.1	2.7	-0.4
Specialist care	3.7	3.5	-0.2
Medical tests, treatment, or follow-up care	3.6	3.4	-0.1
Preventive care screening	2.6	3.3	0.6
Prescription drugs	3.4	4.0	0.5
Dental care	7.6	7.5	0.0

Source: 2006-2009 Massachusetts Health Reform Surveys (N=13,150)

Note: Middle-class adults are those with income between 300% and 500% of the FPL. ED is emergency department. FPL is Federal Poverty Level.

[a] A condition that the respondent thought could have been treated by a regular doctor if one had been available.

[b] Because of the way the income information is collected in the survey, the measure of OOP costs relative to family income cannot be constructed for adults with family income above 500% of FPL.

* (**) (***) Significantly different from zero at the .10 (.05) (.01) level, two-tailed test.

APPENDIX EXHIBIT IV.3: SIMPLE (UNADJUSTED) ESTIMATES OF HEALTH INSURANCE COVERAGE AND HEALTH CARE ACCESS, USE, AND COSTS FOR MASSACHUSETTS ADULTS 18 TO 64 WITHOUT DEPENDENT CHILDREN, FALL 2006 TO FALL 2009

	FALL 2006	FALL 2009	2009-2006 DIFFERENCE
INSURANCE COVERAGE (%)			
Any insurance coverage	82.7	93.4	10.7 ***
ESI coverage	61.0	63.7	2.7
Public and other coverage	21.7	29.7	8.0 ***
Uninsured	17.3	6.6	-10.7 ***
HEALTH CARE ACCESS AND USE (%)			
Has a usual source of care (excluding the ED)	83.3	87.8	4.5 **
Usual source of care is doctor's office or private clinic	62.4	69.1	6.7 ***
Any general doctor visit in past 12 months	78.1	84.3	6.2 ***
Visit for preventive care	68.5	76.4	7.9 ***
Multiple doctor visits	64.1	70.3	6.1 ***
Any specialist visit in past 12 months	50.6	52.8	2.2
Any dental care visit in past 12 months	64.6	70.6	6.0 ***
Took any prescription drugs in past 12 months	56.0	61.7	5.7 **
Did not get needed care for any reason in past 12 months	26.3	19.4	-6.9 ***
Doctor care	8.4	5.5	-2.9 **
Specialist care	7.8	5.1	-2.6 **
Medical tests, treatment, or follow-up care	10.0	5.5	-4.5 ***
Preventive care screening	7.0	4.8	-2.2 **
Prescription drugs	8.0	5.5	-2.5 **
Dental care	13.7	9.7	-4.0 **
Any ED visits in past 12 months	35.9	34.6	-1.3
Most recent ED visit was for non-emergency condition [a]	15.6	14.9	-0.7
Share of those who used care in past 12 months rating quality of care as very good or excellent	62.0	70.1	8.1 ***
HEALTH CARE COSTS AND AFFORDABILITY (%)			
Out-of-pocket health care costs over the past 12 months			
At 5% or more of family income for those less than 500% of FPL [b]	24.1	20.6	-3.5
At 10% or more of family income for those less than 500% of FPL [b]	12.4	9.1	-3.3 *
Had problems paying medical bills in past 12 months	19.4	16.5	-2.9
Have medical bills that are paying off over time	18.2	16.2	-1.9
Had problems paying other bills in past 12 months	21.6	19.6	-2.0
Did not get needed care because of costs in the past 12 months	18.1	12.1	-6.0 ***
Doctor care	6.8	2.9	-3.8 ***
Specialist care	5.3	3.0	-2.3 ***
Medical tests, treatment, or follow-up care	7.2	2.7	-4.5 ***
Preventive care screening	4.3	2.3	-2.1 ***
Prescription drugs	5.6	3.5	-2.1 **
Dental care	11.1	6.8	-4.3 ***

Source: 2006-2009 Massachusetts Health Reform Surveys (N=13,150)

Note: Adults without dependent children are those with no children of their own under 19 living in the household. ED is emergency department. FPL is Federal Poverty Level.

[a] A condition that the respondent thought could have been treated by a regular doctor if one had been available.

[b] Because of the way the income information is collected in the survey, the measure of OOP costs relative to family income cannot be constructed for adults with family income above 500% of FPL.

* (**) (***) Significantly different from zero at the .10 (.05) (.01) level, two-tailed test.

APPENDIX EXHIBIT IV.4: SIMPLE (UNADJUSTED) ESTIMATES OF HEALTH INSURANCE COVERAGE AND HEALTH CARE ACCESS, USE, AND COSTS FOR MASSACHUSETTS ADULTS 18 TO 64 WITH A CHRONIC HEALTH CONDITION, FALL 2006 TO FALL 2009

	FALL 2006	FALL 2009	2009-2006 DIFFERENCE
INSURANCE COVERAGE (%)			
Any insurance coverage	89.0	95.7	6.7 ***
ESI coverage	62.2	63.7	1.4
Public and other coverage	26.8	32.0	5.2 ***
Uninsured	11.0	4.3	-6.7 ***
HEALTH CARE ACCESS AND USE (%)			
Has a usual source of care (excluding the ED)	89.7	92.3	2.5 **
Usual source of care is doctor's office or private clinic	68.5	73.4	4.9 ***
Any general doctor visit in past 12 months	88.1	91.7	3.7 ***
Visit for preventive care	77.4	83.9	6.5 ***
Multiple doctor visits	79.8	82.8	3.0
Any specialist visit in past 12 months	62.6	64.5	1.9
Any dental care visit in past 12 months	66.0	73.0	7.1 ***
Took any prescription drugs in past 12 months	78.3	79.8	1.5
Did not get needed care for any reason in past 12 months	31.2	22.9	-8.3 ***
Doctor care	10.4	6.1	-4.4 ***
Specialist care	9.0	5.7	-3.4 **
Medical tests, treatment, or follow-up care	12.3	6.0	-6.3 ***
Preventive care screening	8.0	5.7	-2.3 **
Prescription drugs	11.3	7.6	-3.7 ***
Dental care	14.6	10.5	-4.1 **
Any ED visits in past 12 months	42.0	41.5	-0.5
Most recent ED visit was for non-emergency condition [a]	17.8	17.5	-0.3
Share of those who used care in past 12 months rating quality of care as very good or excellent	64.1	69.2	5.1 *
HEALTH CARE COSTS AND AFFORDABILITY (%)			
Out-of-pocket health care costs over the past 12 months			
At 5% or more of family income for those less than 500% of FPL [b]	29.8	21.6	-8.2 ***
At 10% or more of family income for those less than 500% of FPL [b]	13.4	9.3	-4.1 **
Had problems paying medical bills in past 12 months	27.4	22.4	-5.0 **
Have medical bills that are paying off over time	25.2	23.2	-2.0
Had problems paying other bills in past 12 months	30.1	29.3	-0.8
Did not get needed care because of costs in the past 12 months	21.2	13.8	-7.4 ***
Doctor care	7.7	2.9	-4.8 ***
Specialist care	6.6	2.7	-3.9 ***
Medical tests, treatment, or follow-up care	8.0	2.5	-5.5 ***
Preventive care screening	4.2	2.7	-1.5 **
Prescription drugs	8.1	4.9	-3.1 ***
Dental care	11.6	7.7	-3.9 ***

Source: 2006-2009 Massachusetts Health Reform Surveys (N=13,150)

Note: Adults with chronic conditions are those who report they have ever been told by a doctor or other health professional that they have at least one of the following: hypertension or high blood pressure; heart disease or congestive heart failure; diabetes or sugar diabetes; asthma; any other chronic or long-term health condition or health problem. ED is emergency department. FPL is Federal Poverty Level.

[a] A condition that the respondent thought could have been treated by a regular doctor if one had been available.

[b] Because of the way the income information is collected in the survey, the measure of OOP costs relative to family income cannot be constructed for adults with family income above 500% of FPL.

* (**) (***) Significantly different from zero at the .10 (.05) (.01) level, two-tailed test.

APPENDIX EXHIBIT V.1: REGRESSION-ADJUSTED ESTIMATES OF HEALTH INSURANCE COVERAGE AND HEALTH CARE ACCESS, USE, AND COSTS FOR RACIAL/ETHNIC MINORITY AND WHITE, NON-HISPANIC MASSACHUSETTS ADULTS 18 TO 64 BASED ON REGRESSION MODEL THAT INCLUDES ONLY AGE, GENDER, AND HEALTH AND DISABILITY STATUS, FALL 2006 TO FALL 2009

	RACIAL/ETHNIC MINORITY ADULTS			WHITE, NON-HISPANIC ADULTS		
	FALL 2006	FALL 2009	2009-2006 DIFFERENCE	FALL 2006	FALL 2009	2009-2006 DIFFERENCE
INSURANCE COVERAGE (%)						
Any insurance coverage	82.3	94.5	12.1 ***	88.6	95.4	6.8 ***
ESI coverage	58.4	56.5	-2.0	69.1	71.3	2.2
Public and other coverage	23.9	38.0	14.1 ***	19.5	24.1	4.6 ***
Uninsured	17.7	5.5	-12.1 ***	11.4	4.6	-6.8 ***
HEALTH CARE ACCESS AND USE (%)						
Has a usual source of care (excluding the ED)	83.2	90.2	7.1 **	87.7	89.8	2.2
Usual source of care is doctor's office or private clinic	46.1	52.4	6.3	72.3	78.1	5.8 ***
Any general doctor visit in past 12 months	72.9	82.8	9.9 ***	82.0	87.1	5.1 ***
Visit for preventive care	66.1	78.6	12.5 ***	71.5	77.4	5.9 ***
Multiple doctor visits	60.1	70.0	9.9 ***	67.0	71.2	4.2 **
Any specialist visit in past 12 months	45.3	47.4	2.1	51.8	54.4	2.5
Any dental care visit in past 12 months	63.4	69.1	5.7	69.6	75.9	6.4 ***
Took any prescription drugs in past 12 months	46.3	54.8	8.5 **	57.5	59.1	1.6
Did not get needed care for any reason in past 12 months	22.9	21.3	-1.7	25.8	19.1	-6.7 ***
Doctor care	5.9	4.3	-1.6	8.3	5.6	-2.6 **
Specialist care	7.0	4.3	-2.6	6.9	5.0	-1.9 **
Medical tests, treatment, or follow-up care	7.8	3.7	-4.1 **	9.5	6.2	-3.3 ***
Preventive care screening	6.8	3.4	-3.3 ***	6.9	5.3	-1.6 *
Prescription drugs	7.1	7.0	0.0	8.2	5.4	-2.8 ***
Dental care	13.5	10.0	-3.5	12.1	8.9	-3.2 **
Any ED visits in past 12 months	37.4	41.1	3.7	32.8	31.9	-0.9
Most recent ED visit was for non-emergency condition [a]	22.7	23.7	1.1	13.9	12.5	-1.4
Share of those who used care in past 12 months rating quality of care as very good or excellent	53.4	60.5	7.1 *	66.5	70.6	4.1 *
HEALTH CARE COSTS AND AFFORDABILITY (%)						
Out-of-pocket health care costs over the past 12 months						
At 5% or more of family income for those less than 500% of FPL [b]	18.9	16.4	-2.5	22.4	18.5	-3.9 *
At 10% or more of family income for those less than 500% of FPL [b]	9.4	8.0	-1.4	8.7	6.3	-2.3 **
Had problems paying medical bills in past 12 months	23.1	21.8	-1.2	19.1	18.4	-0.7
Have medical bills that are paying off over time	25.6	16.6	-9.0 ***	19.0	21.3	2.3
Had problems paying other bills in past 12 months	29.5	33.8	4.3	22.9	23.4	0.5
Did not get needed care because of costs in the past 12 months	15.1	9.2	-5.9 **	17.0	12.3	-4.7 ***
Doctor care	4.5	0.8	-3.7 ***	5.8	3.2	-2.7 ***
Specialist care	3.5	1.3	-2.2 *	5.1	2.8	-2.3 ***
Medical tests, treatment, or follow-up care	5.3	1.4	-3.9 **	6.3	3.0	-3.3 ***
Preventive care screening	4.4	1.2	-3.2 ***	3.2	2.6	-0.6
Prescription drugs	4.2	3.9	-0.3	5.7	3.6	-2.2 ***
Dental care	10.0	4.7	-5.3 **	10.0	7.5	-2.6 **

Source: 2006-2009 Massachusetts Health Reform Surveys (N=13,150)

Note: The regression-adjusted estimates are derived from models that control for age, gender, health status, disability status, whether the individual has chronic conditions or is pregnant. The estimates are calculated using the parameter estimates from the regression models to predict the outcomes that the adults in the entire 2009 sample would have had if they had been observed as minority and white adults in each year. Minority adults includes individuals who are non-white and Hispanic. ED is emergency department. FPL is Federal Poverty Level.

[a] A condition that the respondent thought could have been treated by a regular doctor if one had been available.

[b] Because of the way the income information is collected in the survey, the measure of OOP costs relative to family income cannot be constructed for adults with family income above 500% of FPL.

* (**) (***) Significantly different from zero at the .10 (.05) (.01) level, two-tailed test.

APPENDIX EXHIBIT V.1 (CONTINUED): REGRESSION-ADJUSTED ESTIMATES OF HEALTH INSURANCE COVERAGE AND HEALTH CARE ACCESS, USE, AND COSTS FOR RACIAL/ETHNIC MINORITY AND WHITE, NON-HISPANIC MASSACHUSETTS ADULTS 18 TO 64 BASED ON REGRESSION MODEL THAT INCLUDES ONLY AGE, GENDER, AND HEALTH AND DISABILITY STATUS, FALL 2006 TO FALL 2009

	CHANGE FOR RACIAL/ETHNIC MINORITY ADULTS RELATIVE TO CHANGE FOR WHITE, NON-HISPANIC ADULTS	WHO GAINED MORE?
INSURANCE COVERAGE (%)		
Any insurance coverage	5.3 **	Minority adults
ESI coverage	-4.2	
Public and other coverage	9.5 **	Minority adults
Uninsured	-5.3 **	Minority adults
HEALTH CARE ACCESS AND USE (%)		
Has a usual source of care (excluding the ED)	4.9	
Usual source of care is doctor's office or private clinic	0.6	
Any general doctor visit in past 12 months	4.8	
Visit for preventive care	6.6	
Multiple doctor visits	5.8	
Any specialist visit in past 12 months	-0.5	
Any dental care visit in past 12 months	-0.7	
Took any prescription drugs in past 12 months	6.9 *	Minority adults
Did not get needed care for any reason in past 12 months	5.0	
Doctor care	1.0	
Specialist care	-0.7	
Medical tests, treatment, or follow-up care	-0.8	
Preventive care screening	-1.8	
Prescription drugs	2.8	
Dental care	-0.3	
Any ED visits in past 12 months	4.6	
Most recent ED visit was for non-emergency condition [a]	2.5	
Share of those who used care in past 12 months rating quality of care as very good or excellent	3.0	
HEALTH CARE COSTS AND AFFORDABILITY (%)		
Out-of-pocket health care costs over the past 12 months		
At 5% or more of family income for those less than 500% of FPL [b]	1.4	
At 10% or more of family income for those less than 500% of FPL [b]	0.9	
Had problems paying medical bills in past 12 months	-0.5	
Have medical bills that are paying off over time	-11.3 ***	Minority adults
Had problems paying other bills in past 12 months	3.7	
Did not get needed care because of costs in the past 12 months	-1.2	
Doctor care	-1.0	
Specialist care	0.1	
Medical tests, treatment, or follow-up care	-0.6	
Preventive care screening	-2.6 **	Minority adults
Prescription drugs	1.9	
Dental care	-2.7	

Source: 2006-2009 Massachusetts Health Reform Surveys (N=13,150)

Note: The regression-adjusted estimates are derived from models that control for age, gender, health status, disability status, whether the individual has chronic conditions or is pregnant. The estimates are calculated using the parameter estimates from the regression models to predict the outcomes that the adults in the entire 2009 sample would have had if they had been observed as minority and white adults in each year. Minority adults includes individuals who are non-white and Hispanic. ED is emergency department. FPL is Federal Poverty Level.

[a] A condition that the respondent thought could have been treated by a regular doctor if one had been available.

[b] Because of the way the income information is collected in the survey, the measure of OOP costs relative to family income cannot be constructed for adults with family income above 500% of FPL.

* (**) (***) Significantly different from zero at the .10 (.05) (.01) level, two-tailed test.

APPENDIX EXHIBIT V.2: SIMPLE (UNADJUSTED) ESTIMATES OF HEALTH INSURANCE COVERAGE AND HEALTH CARE ACCESS, USE AND COSTS AFTER HEALTH REFORM FOR RACIAL/ETHNIC MINORITY AND WHITE, NON-HISPANIC MASSACHUSETTS ADULTS 18 TO 64, FALL 2009

	RACIAL/ETHNIC MINORITY ADULTS	WHITE, NON-HISPANIC ADULTS	DIFFERENCE
INSURANCE COVERAGE (%)			
Any insurance coverage	92.9	95.8	-2.8 ***
Employer-sponsored insurance coverage	50.6	72.8	-22.2 ***
Public and other coverage	42.4	23.0	19.4 ***
Uninsured	7.1	4.2	2.8 ***
HEALTH CARE ACCESS AND USE (%)			
Has a usual source of care (excluding the ED)	88.4	90.3	-1.8
Usual source of care is doctor's office or private clinic	49.4	78.8	-29.4 ***
Any general doctor visit in past 12 months	81.8	87.3	-5.5 *
Visit for preventive care	77.1	77.8	-0.7
Multiple doctor visits	69.3	71.4	-2.1
Any specialist visit in past 12 months	46.5	54.6	-8.1 **
Any dental care visit in past 12 months	65.8	76.8	-11.0 ***
Took any prescription drugs in past 12 months	54.8	59.1	-4.4
Did not get needed care for any reason in past 12 months	24.5	18.3	6.2 **
Doctor care	5.9	5.2	0.7
Specialist care	5.7	4.6	1.0
Medical tests, treatment or follow-up care	5.0	5.9	-0.9
Preventive care screening	3.9	5.2	-1.2
Prescription drugs	8.4	5.1	3.4 ***
Dental care	12.0	8.4	3.6 *
Any ED visits in past 12 months	46.3	30.6	15.7 ***
Most recent ED visit was for non-emergency condition [a]	26.4	11.8	14.6 ***
Share of those who used care in past 12 months rating quality of care as very good or excellent	55.7	71.8	-16.1 ***
HEALTH CARE COSTS AND AFFORDABILITY (%)			
Out-of-pocket health care costs over the past 12 months			
At 5% or more of family income for those less than 500% of FPL [b]	16.8	18.4	-1.6
At 10% or more of family income for those less than 500% of FPL [b]	8.7	6.1	2.5
Had problems paying medical bills in past 12 months	24.4	17.7	6.7 ***
Have medical bills that are paying off over time	18.3	20.9	-2.6
Had problems paying other bills in past 12 months	37.7	22.4	15.3 ***
Did not get needed care because of costs in the past 12 months	11.4	11.8	-0.4
Doctor care	1.8	2.9	-1.1 *
Specialist care	2.2	2.5	-0.3
Medical tests, treatment or follow-up care	2.3	2.8	-0.4
Preventive care screening	1.6	2.5	-0.9
Prescription drugs	4.9	3.3	1.6
Dental care	6.1	7.1	-1.0
SAMPLE SIZE	687	2,354	

Source: 2009 Massachusetts Health Reform Survey

Note: Minority adults includes individuals who are non-white and Hispanic. ED is emergency department. FPL is federal poverty level.

[a] A condition that the respondent thought could have been treated by a regular doctor if one had been available.

[b] Because of the way the income information is collected in the survey, the measure of OOP costs relative to family income cannot be constructed for adults with family income above 500% of poverty.

* (**) (***) Significantly different from zero at the .10 (.05) (.01) level, two-tailed test.