On The Road To Universal Coverage: Impacts Of Reform In Massachusetts At One Year

A year into the implementation, coverage rates in Massachusetts have improved, and no signs of crowd-out appear.

by Sharon K. Long

ABSTRACT: In April 2006, Massachusetts passed legislation intended to move the state to near-universal coverage within three years and, in conjunction with that expansion, to improve access to affordable, high-quality health care. In roughly the first year under reform, uninsurance among working-age adults was reduced by almost half among those surveyed, dropping from 13 percent in fall 2006 to 7 percent in fall 2007. At the same time, access to care improved, and the share of adults with high out-of-pocket costs and problems paying medical bills dropped. Despite higher-than-anticipated costs, most residents of the state continued to support reform. [*Health Affairs* 27, no. 4 (2008): w270–w284 (published online 3 June 2008; 10.1377/hlthaff.27.4.w270)]

UNINSURANCE, PARTICULARLY AMONG working-age adults, is one of the most pressing challenges facing the United States, and much of the policy innovation aimed at expanding coverage is occurring at the state level. In April 2006, Massachusetts enacted a comprehensive health care reform bill that seeks to move the state to (almost) universal coverage through a combination of Medicaid expansions, subsidized private insurance coverage, insurance market reforms, and required actions for both individuals and employers. Funding for the reform initiative includes federal and state dollars, along with assessments on hospitals, insurers, and employers, as well as consumer cost sharing.

This paper provides an early look at the impacts of health reform in Massachusetts on working-age adults—the primary target population for the initiative. The focus here is on changes in insurance coverage, access to health care, and the costs of obtaining health care for adults during the first year under reform.

Overview Of The Policy Changes In Massachusetts

Massachusetts's health reform includes expansions to the Medicaid program (called MassHealth), the creation of a new program that provides income-related

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subsidies for health insurance (the Commonwealth Care Health Insurance Program, or CommCare), the creation of a new purchasing arrangement (Commonwealth Choice, or CommChoice) via the new Commonwealth Connector, health insurance market reforms, and requirements that both individuals and employers participate in the health insurance system (Exhibit 1).

Under the individual mandate, adults must have health insurance, if they have access to an affordable health plan, or face tax penalties (which began in 2008

EXHIBIT 1
Key Components Of The Massachusetts Health Reform Bill (Chapter 58) And The Populations Targeted By The Policy Changes

		Adults, by percent of poverty		
Key components	**Children**	**<150%**	**150–300%**	**>300%**
Expansion of MassHealth (Medicaid) to children up to 300% of poverty	●			
Expansion of MassHealth Insurance Partnership Program, which provides insurance subsidies and employer tax credits to workers in small firms to 300% of poverty		●	●	
Increase in enrollment caps for MassHealth programs for long-term unemployed adults (eligible up to 100% of poverty), disabled working adults (eligible at any income level), and people with HIV (eligible up to 200% of poverty)		●	●	● (limited)
Restoration of dental, vision, and other MassHealth benefits to adults		●	●	● (limited)
Creation of new MassHealth wellness benefit/incentive program	●	●	●	● (limited)
Increase in hospital and physician rates under MassHealth	●	●	●	● (limited)
Creation of CommCare, which provides subsidized insurance for adults up to 300% poverty who are not eligible for MassHealth and do not have access to employer coverage		●	●	
Creation of Connector Authority, which provides purchasing vehicle for individuals without access to employer coverage and small employers (<51 employees) via CommChoice				●
Creation of new Young Adult products for up to 26-year-olds who do not have access to employer coverage				●
Extend dependent coverage rules up to age 26 or two years after loss of IRS dependent status, whichever is earlier		●	●	●
Requirement that employers with 11+ employees offer access to Section 125 plan or face potential of a "free-rider surcharge" if employees use substantial amounts of care through the Health Safety Net Trust Fund (formerly the Uncompensated Care Pool)		●	●	●
Requirement that employers must make a "fair and reasonable" contribution toward the cost of health insurance or pay a "fair share" assessment of $295 per employee		●	●	●
Merger of nongroup and small-group markets	●	●	●	●
Requirement that all adults age 18 and older have health insurance if it is affordable ("individual mandate")		●	●	●
Replace the Uncompensated Care Pool (free care) with the Health Safety Net Trust Fund, with changes in eligibility requirements, services covered, and cost sharing		●	●	●
Creation of new standards for Minimum Creditable Coverage for health plans in the state	●	●	●	●

SOURCE: Based on K. Nordahl, "Appendix A: Key Components of Chapter 58—An Act Providing Access to Affordable, Quality, and Accountable Health Care" in *Forging Consensus: The Path to Health Reform in Massachusetts,* ed. I.M. Wielawski (Boston: Blue Cross Blue Shield of Massachusetts Foundation, 2007).

based on coverage as of 31 December 2007). The definition of *affordable* varies with income. In 2007, adults with family income at or below 150 percent of the federal poverty level were assumed to be unable to afford any payments for coverage, while those with incomes roughly 500 percent of poverty or higher were deemed able to afford coverage by virtue of their income. For the remaining adults, the standard for affordability ranged from about 2 percent to 10 percent of income.[1]

Employers face two requirements under the reform. First, they are required to set up a Section 125 "cafeteria" plan for their workers, so that employees can pay for health insurance premiums with pretax dollars. Second, employers with more than ten employees who do not make a "fair and reasonable" contribution toward their workers' health insurance will be subjected to an assessment not to exceed $295 per full-time-equivalent worker per year.

Finally, effective in 2009, to satisfy the individual mandate, the individual's health plan must cover some key benefits (called minimum creditable coverage, or MCC), including, among other things, prescription drugs and physician visits for preventive care.

The intended effect of the reform effort is to lower the cost of insurance coverage for many residents of the state, particularly low-income adults, young adults ages 18–25, and workers in firms with new Section 125 plans. However, some elements of reform could lead to higher insurance costs for some. The cost of insurance coverage is likely to be higher for benefit packages that are expanded to meet the MCC standards and to provide coverage for dependents up to age twenty-six. In addition, the merger of the individual and small-group markets may lead to higher costs for people enrolled in small-group plans. Finally, some firms may decide to reduce their spending on health insurance (either by scaling back coverage or by shifting more of the cost to workers) or may choose to drop employer coverage altogether and pay the "fair share assessment."

At the same time, the health reform initiative also raises the costs of not having coverage, both through the individual mandate and by making care under the state's safety-net program more restrictive, with more limited services and new cost-sharing requirements.

Study Data And Methods

■ **Data.** The study uses two rounds of interviews with adults ages 18–64 conducted in fall 2006, just prior to the implementation of many of the key elements of reform, and fall 2007, approximately one year after the reform efforts began. The surveys were fielded by ICR/International Communications Research, using a computer-assisted telephone interviewing (CATI) system.[2] People were interviewed in English, Spanish, and (in fall 2007) Portuguese.[3]

The surveys relied on a stratified random sample of households, with a response rate of 49 percent (sample size of 3,010) in 2006 and 45 percent (2,938) in 2007. These response rates are comparable to those in other recent social science and

health surveys.[4] All of the analyses used poststratification weights that adjusted for the complex design of the survey, undercoverage, and survey nonresponse.

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, including Medicare, employer coverage, and nongroup coverage as well as the range of publicly funded programs.[5] Although it is believed that most people accurately report in surveys whether they have insurance coverage, there is evidence of some misreporting of coverage type.[6] In Massachusetts, where several of the public programs have similar names, respondents often reported being enrolled in multiple programs (for example, CommCare and CommChoice) or having both nongroup and public coverage. Because this raises concerns about the accuracy of the reporting of coverage type for the various public programs and nongroup coverage, the analysis of source of coverage is limited to those with employer coverage and those with all other types of insurance. A person reporting both public and employer coverage (perhaps because they have coverage through the Insurance Partnership program under MassHealth) would be assigned to the employer coverage category.[7]

In addition to questions on health insurance coverage, the survey also asked about respondents' experiences obtaining health care over the prior year. This paper focuses on the impacts of reform on measures of access to care (for example, whether the person has a place he or she usually goes when care is needed, visits to doctors and other providers, and unmet need for health care); out-of-pocket health care costs (for prescription drugs, dental and vision care, and all other medical expenses, including doctors, hospitals, tests, and equipment); medical debt; and more general problems paying mortgage, rent, or utility bills.

Finally, the survey included several questions that focused on the Massachusetts health reform initiative, including questions about support for the health reform law, awareness of the individual mandate, and the effect of the individual mandate on the insurance decision.

■ **Methods.** Determining the effect of health care reform in Massachusetts requires comparing the outcomes under reform (such as health insurance coverage, access to care, and out-of-pocket costs) to the outcomes that would have occurred in the absence of reform. This study compares the outcomes for a cross-sectional sample of adults in the period following the implementation of health reforms (fall 2007) to the outcomes for a similar cross-sectional sample of adults in the period just prior to the implementation of key elements of reform (fall 2006).[8] Under this pre-post framework, any differences between the two time periods are attributed to the state's reform efforts.

The primary risk in the pre-post analysis is that other factors, beyond health reform, changed during the same time period (for example, an economic downturn).[9] These confounding changes, if they affected the outcomes of interest, would bias the estimates of the impacts of the state's reform efforts reported

here.[10] Available data suggest that the Massachusetts economy was fairly stable during the period we studied.[11]

The pre-post design is strongest in cases where the policy change is large and implemented relatively quickly (as occurred in Massachusetts) and where the pre- and postimplementation data collection periods are closely aligned to the timing of the policy change. As noted above, the preimplementation data are from fall 2006 and the postimplementation data are from fall 2007, following the implementation of many (but not all) of the policy changes. Nevertheless, other events occurring in tandem with the implementation of health reform may still be captured in the impact estimates reported here.

This paper examines the effects of the reform efforts on the overall adult population as well as on low-income adults, because low-income adults face a more extensive set of policy changes under reform than do higher-income adults (Exhibit 1). The estimates of program effects were based on multivariate regression models that controlled for the characteristics of the individual and his or her family and characteristics of the local health care market and economy in each year, where "local" is based on the individual's county of residence. Since the outcomes are binary variables (for example, any insurance coverage, any doctor visit in the last year), probit regression models were estimated, controlling for the complex design of the sample using the survey estimation procedures (svy) in Stata 10. Both unadjusted impacts and regression-adjusted impacts are reported in the exhibits, where the unadjusted impacts are the simple differences between the mean outcome in the fall 2006 and the mean outcome in fall 2007. The focus in presenting the results is on the regression-adjusted differences. In general, the estimated impacts of reform based on the simple differences and regression-adjusted differences were quite similar.

Study Findings

■ **Health insurance coverage at a point in time.** The uninsurance rate for adults ages 18–64 in Massachusetts dropped by almost half (Exhibit 2). As a result, in fall 2007, roughly one year after the state's health reform initiative began, nearly 93 percent of nonelderly adults in the state were insured.

For adults with incomes below 300 percent of poverty (the target population for CommCare), the uninsurance rate dropped by nearly eleven percentage points as a result of health reform, down to about 13 percent in fall 2007.[12] Further, among adults with income less than 100 percent of poverty, who were eligible for fully subsidized coverage under CommCare, the uninsurance rate dropped by more than two-thirds, down to 10 percent in fall 2007 (data not shown).

For higher-income adults, who were less likely to be uninsured in 2006 and who are not eligible for publicly subsidized coverage under the reform, the drop in uninsurance was smaller, but still significant. Under reform, uninsurance fell two percentage points for those with incomes above 300 percent of poverty. As a re-

EXHIBIT 2
Impact Of Health Reform On The Health Insurance Status Of Adults (Ages 18–64) In Massachusetts, 2006 And 2007

	Unadjusted impact			
	Fall 2006	Fall 2007	2007–2006 simple difference	Regression-adjusted impact
All adults (N = 5,835)				
Uninsured	13.0%	7.1%	−5.8***	−5.6***
Had employer coverage	66.6	69.3	2.6*	2.9**
Had other insurance	20.4	23.6	3.2**	2.9**
Ever uninsured in past year	18.8	14.5	−4.3***	−3.8***
Adults with family income less than 300% of poverty (n = 2,702)				
Uninsured	23.8	12.9	−10.9***	−10.5***
Had employer coverage	37.7	42.3	4.7	4.9**
Had other insurance	38.5	44.8	6.3**	5.9***
Ever uninsured in past year	35.1	24.4	−10.7***	−10.2***
Adults with family income at 300% of poverty or more (n = 3,133)				
Uninsured	5.2	2.9	−2.3***	−1.8***
Had employer coverage	87.3	89.3	2.0	0.9
Had other insurance	7.4	7.8	0.4	1.0
Ever uninsured in past year	7.2	7.3	0.1	0.6

SOURCE: Massachusetts Health Reform Surveys, 2006 and 2007.

NOTES: Regression-adjusted impacts are derived from regression models that control for age, sex, race/ethnicity, citizenship, marital status, parental status, education, literacy, employment, firm size, health status, disability status, whether the person has chronic conditions or is pregnant, family income, and the following county characteristics: unemployment rate, number of physicians per 1,000 population, and number of hospital beds per 1,000 population. Statistical significance denotes difference from zero based on two-tailed test.

*$p < 0.10$ **$p < 0.05$ ***$p < 0.01$

sult, 97 percent of higher-income adults had insurance in fall 2007 (Exhibit 2).

Although the data available here cannot be used to disentangle the effects of the different components of health reform in Massachusetts, self-reported data on the importance of the individual mandate suggest that it has played a role (data not shown). Among all adults, 7 percent reported that the individual mandate had influenced their insurance coverage decision in fall 2007, which is generally consistent with the drop in uninsurance of about 6 percentage points under reform. Similarly, among low-income adults, for whom uninsurance dropped by eleven percentage points, almost 11 percent reported that the individual mandate had affected their insurance decision. Finally, among higher-income adults, 4 percent reported that the individual mandate affected their coverage decision, compared to a drop in uninsurance of two percentage points.

■ **Health insurance coverage over a year.** Although coverage at a point in time is important, continuity of coverage over time helps ensure that health care is available to people when it is needed. In step with the drop in uninsurance at the time of the survey, the share of adults who were ever uninsured during the prior year also

fell during the first year of health reform. For all adults, the share ever uninsured during the year dropped by four percentage points (to 14.5 percent), while the share of ever-uninsured low-income adults fell ten percentage points (to 24 percent). For higher-income adults, there was not a significant change in the share reporting that they were ever uninsured during the year.

■ **Potential crowd-out of employer coverage.** With the expansion in eligibility for coverage under MassHealth and CommCare, one concern is that enrollment in those programs may represent a "crowding out" of employer coverage rather than a reduction in the share of adults who are uninsured. This crowd-out could take two forms: a reduction in the number of employers offering coverage to their workers, or a reduction in the number of workers taking up the coverage that is offered.

There is no evidence from this survey that employers are less likely to offer coverage to their workers under health reform than before. The share of adults overall and the share of working adults who reported that they had a coverage offer through their employer remained stable between fall 2006 and fall 2007 (data not shown). This is consistent with the findings from a survey of employers in Massachusetts in 2007 that found little evidence that employers anticipated dropping coverage or restricting eligibility for coverage in response to health reform.[13]

If there were crowd-out of employer coverage because workers were dropping employer coverage to take up publicly funded coverage, it would occur among the low-income adults who are eligible for coverage under MassHealth and CommCare. There is no evidence of crowd-out of employer coverage for low-income adults (Exhibit 2). Instead, employer coverage increased by five percentage points for this group between fall 2006 and fall 2007. This suggests that the expansion in public insurance coverage in the state was drawn from the ranks of the uninsured.

■ **Health care access and use.** Beyond the push toward universal coverage in the state, Massachusetts' health reform effort is also intended to expand access to care. There were significant gains in access to care across the overall population under reform, with the gains concentrated among low-income adults (Exhibit 3). There were very few changes in access to care for higher-income adults, however, the changes that were observed suggest that there have been some improvements in access to care for that group as well (data not shown).

As a result of reform, low-income adults in Massachusetts were more likely to have a place that they usually go to when they are sick or need advice about their health—an important indicator for continuity of care. They were also more likely to have had a doctor visit for preventive care (for example, a visit for a check-up or physical examination) in the past year. The latter indicator increased by six percentage points from 2006. There was also an increase in the share of low-income adults with a dental care visit over the past year, up nine percentage points from 2006. Dental care benefits were expanded under MassHealth as part of the state's health reform effort.

Two additional measures were examined to capture changes in barriers to care

EXHIBIT 3
Impacts Of Health Reform On Access To And Use Of Care By Adults (Ages 18–64) In Massachusetts, 2006 And 2007

	All adults				Adults with family income <300% of poverty			
	Unadjusted impact				Unadjusted impact			
	Fall 2006	Fall 2007	2007–2006 simple difference	Regression-adjusted impact	Fall 2006	Fall 2007	2007–2006 simple difference	Regression-adjusted impact
Has usual source of care (excluding ED)	86.5%	88.7%	2.1*	2.4**	79.5%	83.1%	3.6	4.6**
Any doctor visit in past year	80.0	81.6	1.6	1.9	75.3	76.6	1.3	2.4
Preventive care	70.1	73.4	3.3**	3.1**	64.5	70.2	5.7**	6.1**
Specialist	50.7	48.7	−2.0	−1.1	46.1	42.3	−3.8	−1.5
Any dental care visit in past year	67.9	71.9	3.9**	3.8**	49.0	58.5	9.5***	9.3***
Took any Rx drugs in past year	55.3	54.4	−0.9	−0.2	55.4	54.0	−1.4	0.5
Any ED visits in past year	34.1	34.9	0.8	0.6	45.6	49.2	3.6	3.2
Most recent ED visit was for nonemergency condition[a]	15.8	15.6	−0.2	−0.8	23.0	24.0	1.0	0.2
Did not get needed care in past year	25.6	21.4	−4.2**	−3.9**	35.5	29.9	−5.6*	−4.8*
Did not get needed care in past year because of cost	17.0	11.2	−5.8***	−5.2***	27.3	16.9	−10.4***	−9.7***
Doctor care	5.8	3.0	−2.8***	−2.4***	11.3	4.8	−6.4***	−5.5***
Specialist care	4.9	2.1	−2.8***	−2.5***	8.5	3.6	−4.9***	−4.1***
Medical tests, treatment, or follow-up recommended by a doctor	6.3	2.3	−3.9***	−3.7***	11.3	4.4	−6.9***	−6.1***
Preventive care screening	3.5	1.9	−1.6***	−1.5***	5.8	2.8	−2.9***	−2.8***
Prescription drugs	5.6	3.5	−2.2***	−1.9***	10.1	6.1	−3.9***	−3.5***
Dental care	10.2	6.5	−3.7***	−3.3***	17.4	9.4	−8.0***	−7.6***
Did not get needed care in past year because of trouble finding a doctor or other provider who would see them or trouble getting an appointment	3.5	4.8	1.3*	1.2*	4.1	6.9	2.7**	2.5**
Rates health care received in past year as fair or poor	10.0	7.1	−2.9**	−3.2***	14.6	11.4	−3.2	−3.5*
N	2,966	2,869			1,426	1,276		

SOURCE: Massachusetts Health Reform Surveys, 2006 and 2007.

NOTES: Regression-adjusted impacts are derived from regression models that control for age, sex, race/ethnicity, citizenship, marital status, parental status, education, literacy, employment, firm size, health status, disability status, whether the person has chronic conditions or is pregnant, family income, and the following county characteristics: unemployment rate, number of physicians per 1,000 population, and number of hospital beds per 1,000 population. Statistical significance denotes difference from zero based on two-tailed test. ED is emergency department.

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

*$p < 0.10$ **$p < 0.05$ ***$p < 0.01$

in the state. The first is unmet need for health care, which is based on the person's reporting that he or she did not get needed care in the past year. The focus here is on unmet need for care because of the cost of that care, because of trouble finding a doctor or other health care provider who would see them, or because of trouble

getting an appointment with a doctor or other health care provider.

The second measure is emergency department (ED) use for nonemergency conditions that could have been treated in the community by a doctor if one had been available. ED use for nonemergency conditions may indicate difficulties obtaining care in the community.

Reported levels of unmet need for care because of cost dropped for both low-income and higher-income adults (data not shown), resulting in a five-percentage-point decline across all adults (down from 17 percent). For low-income adults, the decline in unmet need because of cost was almost ten percentage points. Overall and among low-income adults, significant reductions in unmet need because of cost were reported for the full range of health care services considered in the survey: doctor care, specialist care, medical tests and treatments, prescription drugs, and dental care.

At the same time, unmet need because of trouble finding a health care provider who would see them or getting an appointment with a provider increased for low-income adults. This could reflect difficulty navigating the health care system for those newly insured under health reform as well as stress on providers as the newly insured attempt to obtain care.[14]

There was no significant effect of health reform on ED use overall or on use for nonemergency conditions, which were quite high in the state. Given the high levels of ED use reported for nonemergency conditions (roughly 24 percent for low-income adults) and the unmet need reported because of trouble getting to see a health care provider, it would appear that there are opportunities to improve access to community-based care.[15] Such improvements would offer the possibility of care in more appropriate settings and cost savings for individuals, health plans, and state programs.

■ **The financial burden of health care.** Yet another goal of Massachusetts' health care initiative is to improve access to affordable care both by expanding health insurance coverage and by raising the standard for what counts as insurance. Although the survey does not provide direct measures of the cost of health care, it does have two measures that address the financial burden of obtaining health care for individuals. The first, described above, is unmet need for health care because of cost. There was a drop in unmet need because of costs between fall 2006 and fall 2007 (Exhibit 3).

The second measure is out-of-pocket health care spending during the past year (which excludes health insurance premiums). Out-of-pocket spending provides a measure of the financial burden of obtaining health care for a family. There was a drop in out-of-pocket spending for adults in Massachusetts as a result of reform (Exhibit 4). For example, the share of all adults reporting out-of-pocket spending in excess of $500 dropped by about four percentage points under reform (to 57 percent in 2007), largely driven by a drop in out-of-pocket spending for prescription drugs. This reduction was concentrated among low-income adults, with the

EXHIBIT 4
Impacts Of Health Reform On Out-Of-Pocket Spending, Problems Paying Bills, And Medical Debt Of Adults (Ages 18–64) In Massachusetts, 2006 And 2007

	All adults				Adults with family income <300% of poverty			
	Unadjusted impact				Unadjusted impact			
	Fall 2006	Fall 2007	2007–2006 simple difference	Regression-adjusted impact	Fall 2006	Fall 2007	2007–2006 simple difference	Regression-adjusted impact
Out-of-pocket health care spending of $500 or more	62.0%	56.6%	−5.3***	−4.1***	48.2%	37.4%	−10.8***	−9.4***
Rx drugs	27.0	23.7	−3.3*	−2.9*	20.8	14.2	−6.7***	−6.0***
Dental, vision care	34.0	32.6	−1.4	−0.8	22.4	18.5	−3.9**	−3.5**
All other med. exp.	28.4	26.1	−2.4	−1.5	24.2	15.2	−9.0***	−7.9***
Out-of-pocket health care spending of $1,000 or more	44.3	40.2	−4.1**	−3.2*	32.9	23.7	−9.2***	−7.9***
Rx drugs	14.1	11.4	−2.7**	−2.5**	12.1	6.4	−5.7***	−4.9***
Dental, vision care	18.7	18.1	−0.5	−0.1	11.1	10.1	−1.0	−0.6
All other med. exp.	17.1	14.1	−3.0**	−2.3*	15.1	8.9	−6.2***	−5.1***
Out-of-pocket health care spending of $3,000 or more	15.5	14.2	−1.3	−0.9	12.1	8.4	−3.7**	−3.2**
Rx drugs	2.4	2.0	−0.4	−0.3	2.0	1.3	−0.7	−0.4
Dental, vision care	4.1	4.8	0.7	0.8	2.7	2.5	−0.2	−0.2
All other med. exp.	4.6	3.6	−1.0	−0.8	4.4	2.9	−1.5	−1.1
Had problems paying medical bills in past year	20.5	16.7	−3.9**	−3.4**	32.2	23.8	−8.5***	−7.7***
Paying off medical bills over time	20.9	18.2	−2.7**	−2.5*	27.1	22.6	−4.5**	−4.4**
Had problems paying other bills in past year	24.8	23.4	−1.4	−1.2	36.5	35.3	−1.2	−1.3
N	2,966	2,869			1,426	1,276		

SOURCE: Massachusetts Health Reform Surveys, 2006 and 2007.

NOTES: Regression-adjusted impacts are derived from regression models that control for age, sex, race/ethnicity, citizenship, marital status, parental status, education, literacy, employment, firm size, health status, disability status, whether the person has chronic conditions or is pregnant, family income, and the following county characteristics: unemployment rate, number of physicians per 1,000 population, and number of hospital beds per 1,000 population. Statistical significance denotes difference from zero based on two-tailed test.

*$p < 0.10$ **$p < 0.05$ ***$p < 0.01$

share of adults reporting out-of-pocket spending in excess of $500 down by ten percentage points, to 37 percent. Among low-income adults, there was also a decline in the share reporting very high out-of-pocket spending (more than $3,000 per year), which fell to about 8 percent under reform. Note that $3,000 in out-of-pocket spending represents a sizable share of income for low-income families: nearly 20 percent of family income for a family of three at 100 percent of poverty and 6 percent for a similar family at 300 percent of poverty.

Consistent with the drop in out-of-pocket spending, fewer adults reported that they were having problems paying medical bills or that they had medical bills that they were paying off over time under health reform. As would be expected, the greatest reductions were reported by lower-income adults (Exhibit 4).

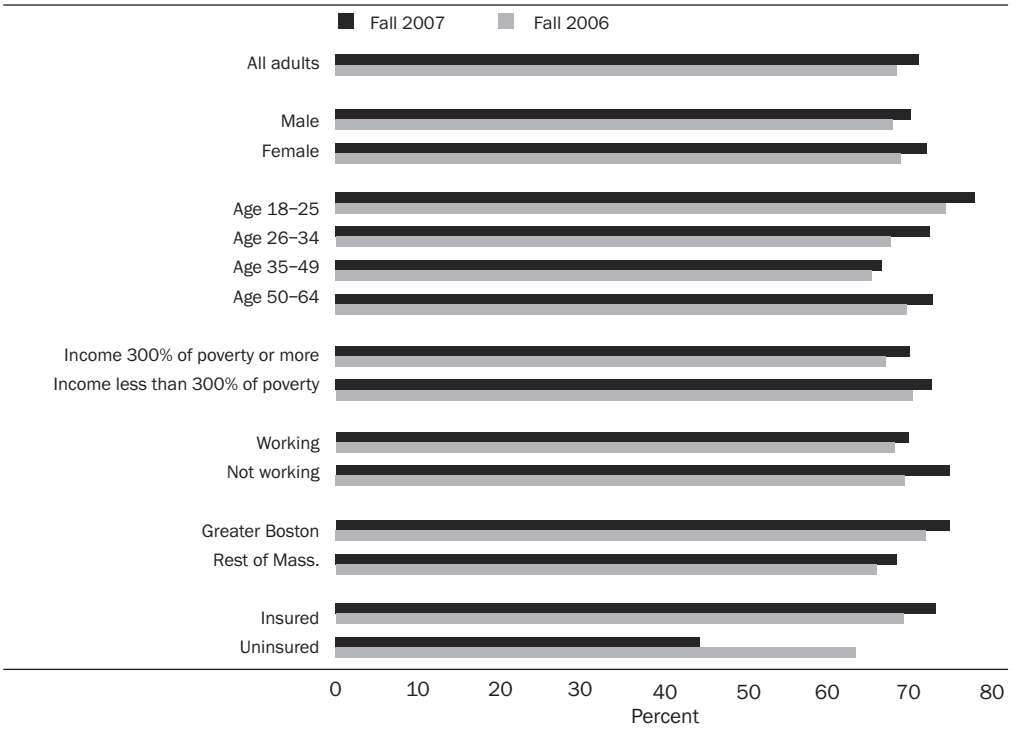
■ **Support for reform.** At the end of 2007, the majority of working-age adults in

Massachusetts supported the state's health reform efforts (71 percent). Support for reform remained widespread, including men and women, younger and older adults, lower-income and higher-income adults, working and nonworking adults, and adults in the Boston area and those in the rest of the state (Exhibit 5).

One group among whom support dropped between fall 2006 and fall 2007 was uninsured adults, many of whom are likely to be negatively affected in the future as the penalty for failing to comply with the individual mandate increases. Yet even among this group, 44 percent reported that they supported Massachusetts reform efforts in fall 2007 (down from 63 percent in fall 2006).

■ **Characteristics of uninsured adults in fall 2007.** Continued progress toward universal coverage will require that Massachusetts expand coverage to many of the adults who remained uninsured in Fall 2007. Exhibit 6 provides an overview of the characteristics of those adults, who tended to be young, male, and low-income. Most reported that their health status was good, very good, or excellent. Thus, many of the remaining uninsured people in fall 2007 were in groups that can be difficult to convince to purchase insurance.

EXHIBIT 5
Support For Health Reform Among Adults (Ages 18–64) In Massachusetts, Fall 2006 And Fall 2007



SOURCE: Massachusetts Health Reform Surveys, 2006 and 2007.
NOTE: N = 5,835.

EXHIBIT 6
Characteristics Of Uninsured Adults (Ages 18–64) In Massachusetts, Fall 2007

Characteristic	Percent
Age (years)	
18–25	35.3
26–34	25.1
35–49	26.0
50–64	13.6
Male	58.9
Family income (percent of poverty)	
Less than 150%	38.5
150%–299%	38.3
300%–499%	17.9
500% or more	5.3
Current health status	
Very good or excellent	56.4
Good	29.2
Fair or poor	14.4
Has work limitation or chronic health condition or problem	28.2
Employed	67.7
Had access to employer coverage through own job	11.3
Considered obtaining MassHealth, CommCare, CommChoice, or nongroup coverage	78.3
Reported that it would be somewhat or very difficult to come up with the funds needed to get health insurance	80.1
Had problems paying other bills in past 12 months	41.3
Not aware of individual mandate	32.0
Sample size	387

SOURCE: Massachusetts Health Reform Surveys, 2006 and 2007.

Not surprisingly, for uninsured adults in fall 2007, the cost of obtaining coverage was an important issue. More than two-thirds of the uninsured in 2007 were working, although few reported having access to coverage through their job (Exhibit 6). Of those who did have an employer coverage offer, most reported that they did not take up that coverage because of cost (data not shown). Further, by fall 2007, most of the uninsured (78 percent) had considered obtaining coverage through MassHealth, CommCare, CommChoice, or nongroup coverage purchased on their own. Again, cost was a major reason why they had not obtained that coverage, although many of those who reported trying to obtain coverage under MassHealth or CommCare reported that they were not eligible (data not shown). Altogether, 80 percent of those who were uninsured in 2007 reported that it would be difficult to come up with the funds that would be needed to purchase insurance. With 41 percent reporting problems paying other bills, purchasing health insurance is likely to be a hardship for at least some of the remaining unin-

sured population. Adding to the challenge of covering the remaining uninsured people, in fall 2007, 32 percent of uninsured adults reported that they were not aware of the individual mandate.

Discussion

At roughly the end of the first year after implementation of the new legislation began in Massachusetts, uninsurance among working-age adults was reduced by almost half (from 13 percent to 7 percent). The entire increase in coverage appears to have been drawn from the ranks of the uninsured, because there is no evidence that publicly funded programs are crowding out employer coverage. It remains an open question as to whether the higher cost of failing to comply with the individual mandate in 2009 and beyond, along with the state's efforts to lower the cost of insurance for most uninsured adults, will provide strong enough incentives to encourage the remaining uninsured adults to obtain coverage.

In addition to the gains in insurance coverage, there were also improvements in access to care in Massachusetts between fall 2006 and fall 2007, along with reductions in out-of-pocket health care spending, problems paying medical bills, and medical debt. One area where there may be problems under reform is in access to health care providers for low-income adults. For those adults, unmet need for care because of problems finding a health care provider who would see them or problems getting an appointment with a health care provider increased between fall 2006 and fall 2007.

The cost of reform to the state has exceeded initial cost projections, in part because the number of uninsured adults exceeded initial state projections.[16] The long-run success of Massachusetts's efforts will hinge in part on sustaining support for the new policies in the face of these higher costs. At the end of 2007, 71 percent of working-age adults reported support for Massachusetts' health reform efforts, with adults across a range of demographic and economic groups supporting reform. For now, it appears that broad-based support exists for Massachusetts to continue to pursue health reform.

■ **Limitations to the study.** This study had several limitations. First, the study provides estimates of the early impacts of health reform in Massachusetts. Because Massachusetts' health reform initiative was not fully implemented by fall 2007, a longer follow-up is needed to capture the full effects. To begin to address longer-term impacts, a third round of the survey reported on here will be fielded in fall 2008.

Second, the study design assumes all changes in insurance status and other outcomes between fall 2006 and fall 2007 reflect the impacts of health reform in the state, ignoring the possibility of confounding changes that might have been occurring during the same time period. Addressing this issue will require making use of data from other national data sources (such as the Current Population Survey) that will become available later in 2008.

Third, the study relies on survey data, which are subject to several types of error (for example, coverage, sampling, measurement, and nonresponse error). As a result, differences in estimates across surveys are quite common.[17] This study provides one estimate of the uninsurance rate in Massachusetts; other surveys may yield different estimates.

Finally, the sample size for uninsured adults in fall 2007 was relatively small, which makes estimates of the characteristics of that population less precise than those for the overall sample of adults in Massachusetts.

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NOTES

1. Commonwealth Health Insurance Connector Authority, *Affordability and Premium Schedules* (corrected 26 June 2007) (Boston: Commonwealth of Massachusetts, June 2007).
2. Random-digit-dial telephone surveys miss adults in households without landline telephones (including cell-phone-only households) and homeless people. The possible bias from undercoverage in the sample frame is addressed through poststratification survey weights.
3. More details about the survey are available in Urban Institute and International Communications Research/ICR, *The Massachusetts Health Reform Survey, Round 1—Fall 2006, Round 2—Fall 2007,* 9 April 2008, http://www.urban.org/UploadedPDF/411649_mass_reform_survey.pdf (accessed 9 May 2008).
4. There has been a downward trend in response rates for telephone surveys occurring nationally. See R. Curtin, S. Presser, and E. Singer, "Changes in Telephone Survey Nonresponse over the Past Quarter Century," *Public Opinion Quarterly* 69, no. 1 (2005): 87–98. For information on recent survey response rates, see State Health Access and Data Assistance Center, "Are Low Response Rates Hazardous to Your Health Survey?" Issue Brief no. 13, 2008, http://www.shadac.umn.edu/img/assets/18528/IssueBrief13.pdf (accessed 3 March 2008).
5. Respondents were told to exclude health care plans that covered a single type of care (such as dental care or prescription drugs). People who received care under the state's free care program were counted as uninsured.
6. K.T. Call et al., "Uncovering the Missing Medicaid Cases and Assessing Their Bias for Estimates of the Uninsured," *Inquiry* 38, no. 4 (2001/2002): 396–408; and J.C. Cantor et al., "The Adequacy of Household Survey Data for Evaluating the Nongroup Health Insurance Market," *Health Services Research* 42, no. 4 (2007): 1739–1757.
7. Changing the hierarchy to focus on those who report only employer coverage yields similar findings to those reported here.
8. The fall 2006 sample was being fielded as the CommCare program was beginning for adults with incomes under 100 percent of poverty. Enrollment in that program started slowly and was relatively low in fall 2006.
9. L.B. Mohr, *Impact Analysis for Program Evaluation,* 2d ed. (Thousand Oaks, Calif.: Sage Publications, 1995).
10. One strategy to control for the possibility of contemporaneous changes in other factors would be to use a similar state as a comparison group. Unfortunately, comparable survey data are not available for any additional states, and data on insurance coverage for 2007 from national data sources (such as the Current Population Survey or the National Health Interview Survey) are not yet available. Part of the motivation for this study was to provide a more timely assessment of the effects of reform than would be possible from

national data sources.

11. The share of working-age adults in Massachusetts who were employed was stable at 64 percent in both fall 2006 and fall 2007 (and into spring 2008). Data available at Massachusetts Labor and Workforce Development Department, "Labor Force and Unemployment Data," http://lmi2.detma.org/Lmi/lmi_lur_a.asp (accessed 10 April 2008). Further, the Federal Reserve's *Beige Book*, which provides an assessment of local economic conditions, reported that the economy for the Boston region was generally stable in 2007. See Federal Reserve Board, *Beige Book: Federal Reserve Districts: First District—Boston*, 28 November 2007. http://www.federalreserve.gov/FOMC/BEIGEBOOK/2007/20071128/1.htm (accessed 18 April 2008).
12. These estimates of the early impacts of health reform in Massachusetts for low-income adults are similar in magnitude to estimates for parents under fully implemented programs in Wisconsin and Massachusetts in the last 1990s, and larger than the impact estimates obtained for programs in a number of other states, including Maine's recent reform effort. See R. Kronick and T. Gilmer, "Insuring Low-Income Adults: Does Public Coverage Crowd Out Private?" *Health Affairs* 21, no. 1 (2002): 225–239; S.K. Long, S. Zuckerman, and J.A. Graves, "Are Adults Benefiting from State Coverage Expansions?" *Health Affairs* 25, no. 2 (2006): w1–w14 (published online 17 January 2006; 10.1377/hlthaff.25.w1); and D.J. Lipson, J.M. Verdier, and L. Quincy, *Leading the Way? Maine's Initial Experience in Expanding Coverage through the Dirigo Health Reforms* (Washington: Mathematica Policy Research, December 2007).
13. J.R. Gabel, H. Whitmore, and J. Pickreign, "Report from Massachusetts: Employers Largely Support Health Care Reform, and Few Signs of Crowd-Out Appear," *Health Affairs* 27, no. 1 (2008): w13–w23 (published online 14 November 2007; 10.1377/hlthaff.27.1.w13).
14. K. Sack, "In Massachusetts, Universal Coverage Strains Care," *New York Times*, 5 April 2008.
15. These estimates are generally consistent with administrative data, which showed that 21 percent of outpatient ED visits were attributable to "nonemergent" conditions (that is, conditions where immediate care is not required) and 19.5 percent were for "emergent, but primary care treatable" conditions (that is, conditions were immediate care is needed but could be provided in a typical primary care setting or care could have been avoided with better primary care). See Massachusetts Division of Health Care Finance and Policy, "Non-Emergent and Preventable ED Visits, FY05," Analysis in Brief no. 11, February 2007, http://www.mass.gov/Eeohhs2/docs/ dhcfp/r/pubs/analysisbrief/aib_11.pdf (accessed 23 May 2008).
16. In 2006, Massachusetts estimated that there were 328,000 uninsured nonelderly adults in the state. See A.M. Lischko, *Health Insurance Status of Massachusetts Residents*, 5th ed. (Boston: Division of Health Care Finance and Policy, December 2006).
17. K.T. Call, M. Davern, and L.A. Blewett, "Estimates of Health Insurance Coverage: Comparing State Surveys with the Current Population Survey," *Health Affairs* 26, no. 1 (2007): 269–278.