

Did the Massachusetts Individual Mandate Mitigate Adverse Selection?

This brief summarizes NBER Working Paper 19149, "Adverse Selection and an Individual Mandate: When Theory Meets Practice," by Martin B. Hackmann, Jonathan T. Kolstad, and Amanda E. Kowalski. The paper has been revised and resubmitted to the *American Economic Review*, and the most recent version is available at <http://www.shadac.org/share/grant/Kowalski>.

Introduction

The Massachusetts health reforms, signed into law in 2006, served as a model for the federal Affordable Care Act (ACA), passed in 2010. Both reforms contain five core elements: an individual mandate to purchase health insurance coverage that meets a minimum set of standards; a requirement for employers of a certain size to provide health insurance for their employees; an expansion of Medicaid to cover individuals at a higher percentage of the Federal Poverty Level (FPL); the implementation of health insurance exchanges to serve the individual and small group markets; and the establishment of subsidized private insurance plans offered through the exchanges for individuals up to a 300 percent FPL.

The individual mandate is simultaneously the most critical and the most controversial component of both health reform laws. The goal of the mandate is to offset the potential for adverse risk selection in the individual market by moving more—and presumably healthier—people into the individual market's risk pool. If unmitigated through a mechanism like the individual mandate, adverse selection can lead to a "death spiral" effect, wherein the insured population is ever-sicker and premiums rise until no one can afford coverage, as a result of which the coverage is discontinued altogether. Massachusetts had community rating and guaranteed issue regulations (see text box) in place for its individual market beginning in 1996 without a mandate and presumably experienced adverse selection as a result.

The Individual Mandate in Massachusetts

Massachusetts' 2006 individual mandate regulation requires that almost all individuals above 150 percent FPL purchase a qualified health plan or pay a penalty. This penalty, which is dependent on both age and income, is applied when income taxes are filed and can be as high as 50 percent of the premium price of the lowest price plan available on the state's insurance exchange (\$1,260 in 2012).

This brief summarizes the work of Hackmann, Kolstad, and Kowalski (2014), in which they

(a) examine whether adverse selection was indeed present in the Massachusetts individual health insurance market before the state's 2006 health reforms and (b) estimate the welfare impact of the individual mandate based on the presence of adverse selection before reform. Reform-related changes in health insurance coverage, annual premiums, and average annual costs will be quantified between the pre- and post-reform years to estimate the welfare gain after reform.

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Guaranteed Issue is a policy requiring insurance companies to offer insurance coverage to everyone who applies, regardless of pre-existing conditions.

Community Rating is the policy of setting insurance rates based on the average cost of providing health services to all people in a geographic area, without adjusting for each individual's medical history or likelihood of using medical services.

Data & Methods

The investigators used two data sources for this analysis: an SNL Financial database and the National Health Interview Survey (NHIS). The SNL database is an aggregation of 2004 to 2011 data from the National Association of Insurance Commissioners (NAIC) and provides information on insurer enrollment, premiums, and costs. The NHIS is a national household interview survey that collects information about health insurance coverage, among other topics.

Enrollment data from SNL Financial was combined with coverage information from the NHIS for 18 to 64 year-olds earning more than 300 percent FPL (i.e., those who did not qualify for the state's Medicaid expansion or subsidized coverage) between 2004 and 2010. The NHIS was used primarily to convert enrollment data from the SNL data into coverage percentages both in Massachusetts and the rest of the country using representative population weights for each state.

The authors applied a cost curve test (Einav, Finelsten, & Levin 2010) to test for the presence of adverse selection in the Massachusetts pre-reform individual market, and they extended the model to include the individual mandate and changes market competitiveness due to reform. The model allowed for total welfare gains to be calculated, as well as for welfare gains to be separated into effects due to reductions in adverse selection and effects due to changes in market competitiveness. The researchers also used the model to estimate the magnitude of the optimal tax penalty applied by the individual mandate. The analysis compared changes in Massachusetts to changes nationally between the state's pre-reform and post-reform years, while controlling for national trends that were unrelated to the Massachusetts reform.

Results

The results from this analysis suggest that the individual market in Massachusetts was adversely selected prior to reform but that the effect lessened after reform as a result of the individual mandate. As coverage increased in the post-reform period, decreases were seen in average insurer expenditures per enrollee and average annual premiums—a scenario that is

consistent with the influx of healthy, inexpensive individuals into the market. In the following sections, the authors describe the implications of the individual mandate in Massachusetts for coverage, average annual premiums, average annual insurer expenditures, and consumer welfare. They also identify the socially optimal tax penalty for failure to comply with the individual mandate. A summary of the findings from this analysis can be found in Tables 1 and 2.

Coverage

The analysis shows that coverage in Massachusetts' individual market increased by 21.7 percentage points—raising coverage from 70.3 percent to 92 percent—following the introduction of the state's reforms. Of this increase, 78 percent (i.e., 17 percentage points) is attributable to the removal of adverse selection and 22 percent (4.7 percent points) is attributable to smaller post-reform markups by insurers (i.e., increased market competitiveness). This pronounced increase in coverage on the individual market was not seen in the post-reform period in other states, with a national post-reform coverage level for the individual market remaining at 67 percent.

Premiums

Premiums on the Massachusetts individual market were higher than the national average before the implementation of the state's reform, at which point there was not an individual mandate in place. Other states that had guaranteed issue and community rating regulations in place also experienced above-average premiums, suggesting the presence of adverse selection. In the Massachusetts post-reform individual market, average annual premiums decreased by \$1,368 per person (23.3 percent of the pre-reform base of \$5,871) relative to national trends. The authors' analysis suggests that 23 percent (\$317) of the premium decrease is attributable to the removal of adverse selection, and 77 percent (\$1,051) is attributable to smaller post-reform markups of price beyond cost, reflecting increased competition in the market after reform.

¹Dollar figures have been normalized to 2012 prices using the Medical Consumer Price Index.

²These decreases in premiums are similar to those found by Graves and Gruber (2012) using data from the Association for Health Insurance Plans.

Table 1: Estimates of the Impact of Massachusetts Health Reform on the Individual Market

	Estimate
Change in Coverage	21.7pp
Change in coverage from removal of adverse selection	17.0 pp (78% of total change)
Change in coverage due to lower markups	4.7 pp (22% of total change)
Change in Average Annual Premiums (Per Person)	-\$1,368
Change in premiums from removal of adverse selection	-\$317 (23% of total change)
Change in premiums due to lower markups	-\$1,051 (77% of total change)
Change in Average Annual Expenditures (Per Person)	-\$459

Source: 2004-2011 SNL Financial and National Health Interview Survey

Expenditures

Insurer expenditures (i.e., claims) per person also decreased in Massachusetts during the post-reform period, while the national trend did not appear to change. Relative to expenditures in other states, average annual claims fell by \$459 per person (8.7 percent of the pre-reform base of \$5,271) in Massachusetts due to the influx of new, healthy consumers after the reform.

Welfare Gain Attributable to Elimination of Adverse Selection

The findings above indicate that the individual mandate, by mitigating adverse selection, increased

consumer welfare on the individual market. The authors estimate the total welfare gain—or economic benefit—from Massachusetts reform to be \$299 per person in the individual market earning more than 300 percent FPL. The estimated welfare gain for the entire individual market of 212,000 individuals is \$63.5 million per year. Approximately 80 percent of the welfare gain (i.e., \$241 per person or \$51.1 million for the market) is due to the removal of adverse selection. The remaining 20 percent (\$59 per person or \$12.4 million for the entire individual market) of total welfare gain resulted from decreased insurer markups and a change in premium rating methodology.

Table 2: Estimates of the Post-Reform Welfare Gain in the Massachusetts Individual Market

	Estimate
Welfare Gain (Per Person, Per Year)	299
Welfare gain from removal of adverse selection	\$241 (80% of total change)
Welfare gain due to lower markups	\$59 (20% of total change)
Welfare Gain (Individual Market, Per Year)	\$63.5 million
Welfare gain from removal of adverse selection	\$51.1 million (80% of total gain)
Welfare gain due to lower markups	\$12.4 million (20% of total gain)

Source: 2004-2011 SNL Financial and National Health Interview Survey

Optimal Tax Penalty

Although the individual mandate is shown to increase consumer welfare, the present analysis suggests that welfare could be increased even further if universal coverage levels were achieved. According to the model used, universal coverage could be attained by implementing a tax penalty of \$1,462, which would compel the consumer with the lowest willingness-to-pay to purchase health insurance at the average market price. This penalty is slightly larger than the Massachusetts penalty (either \$996 or \$1,260 for household incomes above 300 percent FPL), but it is less than the 2016 ACA penalty (\$2,085 for a family or 2.5 percent of annual household income). If the outcome of the Massachusetts reform is representative of the outcome of national reform, then the 2016 ACA penalty is sufficiently high to induce universal coverage.

Discussion

The findings from this analysis of the 2006 Massachusetts health reforms indicate that the individual health insurance market was adversely selected before the reforms and that the individual mandate reduced adverse selection and enhanced welfare in the post-reform period. These findings are consistent with results earlier work by Hackmann et al. (2012).

Will the findings from Massachusetts generalize nationally under the ACA? It is important to keep in mind that there are many differences between Massachusetts and other states. One of the most important differences in this context is that Massachusetts was among a handful of states that had guaranteed issue and community rating regulations in place before the implementation of national health reform. These regulations might have increased adverse selection. While the reduction in adverse selection experienced in Massachusetts is likely to be representative of what will happen in other states that had these regulations (Maine, Massachusetts, New Jersey, New York, Vermont, and Washington), adverse selection might have been smaller in other states.

However, all states now have guaranteed issue and community rating regulations under the Affordable Care Act. There was some discussion during the Su-

preme Court oral arguments about striking down the individual mandate while keeping the guarantee issue and community rating restrictions nationally. Had that happened, the whole country would have resembled pre-reform Massachusetts. This analysis shows that adding the individual mandate to the Massachusetts individual health insurance market increased consumer well being. Conversely, the results imply that the nation would have been worse off had the Supreme Court struck down the individual mandate while upholding the guarantee issue and community rating regulations.

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