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Controlling Health Care Spending in Massachusetts: An Analysis of Options

Submitted to:
Commonwealth of Massachusetts
Division of Health Care Finance and Policy

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Christine E. Eibner
Peter S. Hussey
M. Susan Ridgely
Elizabeth A. McGlynn



RAND HEALTH

Executive Summary

Introduction

In 2006, Massachusetts passed landmark legislation, Chapter 58 of the Acts of 2006, ensuring near universal health insurance to residents of the state through a combination of mechanisms. With that historic action, Massachusetts became the proving ground for the next generation of health care reform in the United States. Since that time, policymakers (at the federal and state levels), policy analysts, politicians, the press, and the public have watched with interest the implementation of health care reform Massachusetts-style, which was designed to expand insurance coverage to nearly every uninsured person in the Commonwealth. Other states have attempted to emulate the Massachusetts approach, proposing employer and individual mandates; thus far, no state has achieved the bipartisan coalition necessary to enact this kind of wide-reaching reform.

A report celebrating the critical first year of implementation of Chapter 58 highlighted challenges the Commonwealth faces as it goes forward. Rising health care costs, which have increased with the current economic downturn, are among the more acute challenges. According to this analysis, health care reform and, in particular, universal coverage, “will become unaffordable—for individuals, employers, and government—unless health care spending can be brought under control.”¹ The report warned that, if health care costs rise out of proportion with government estimates of health care inflation, or the state economy weakens, the reform could be jeopardized. Unless costs can be contained (or the rate of growth moderated), the Commonwealth could face a series of unattractive options, such as reducing health benefits or increasing enrollee contributions. To address these issues, Chapter 305 of the Acts of 2008 (Senate No. 2863), an act to promote cost containment, transparency and efficiency in the delivery of quality health care, was signed into law on August 10, 2008.

Massachusetts is not alone in facing health care inflation; however, health care costs in Massachusetts are higher than in other states, and at the same time the state is attempting to cover nearly all of its uninsured. A variety of approaches to cost containment have been proposed by stakeholders in Massachusetts—both formally and informally—but there is little consensus on which ones are the most effective and appropriate. Any health care system, such as the system in the Commonwealth, faces three critical challenges: enabling access to care for everyone who needs it, delivering services at a cost that is affordable, and ensuring that the care delivered meets quality standards. Chapter 58 focused on the goal of providing access to health care coverage for all residents of Massachusetts, and also authorized the development of a Health Care Quality and Cost Council (QCC) to establish statewide goals for improving health care quality, containing health care costs, and reducing racial and ethnic disparities in health care. A general consensus is that widespread problems exist in the health care system that are driving health care costs; yet, this consensus has not been translated into agreement about solutions.

¹ A.G. Raymond, *The 2006 Massachusetts Health Care Reform Law: Progress and Challenges after One Year of Implementation*. 2007. Blue Cross Blue Shield of Massachusetts Foundation, the Massachusetts Medicaid Policy Institute, and the Massachusetts Health Policy Forum: Boston, MA.

Such a consensus is necessary for the second phase of health care reform to proceed. Chapter 305 is a beginning step, but further action will be necessary.

The Division of Health Care Finance and Policy (DHCFP) contracted with The RAND Corporation, an independent policy research organization, to develop a comprehensive menu and assessment of cost containment strategies and options and to determine their potential effect on the health care system in Massachusetts. We considered the potential effect of reforms on all sectors of the health care system, including state and federal government, providers, individuals, insurers, and employers. We were explicitly instructed not to consider political feasibility in our analysis. In collaboration with DHCFP, and in consultation with the QCC, RAND undertook a two-part study to assist stakeholders in Massachusetts in developing a consensus on approaches for the second stage of health care reform.

For the first phase of the study, RAND investigators used a combination of strategies (including local stakeholder interviews and an environmental scan) to identify approximately 75 broad approaches to cost containment. With input from DHCFP and the QCC, we selected 21 high-priority policy options and then assessed the theoretical, empirical, and experiential evidence on spending reductions associated with these options. In some instances, policy options were proposed that have been designed for purposes other than cost containment (e.g., pay-for-performance) and the evidence available for accomplishing the goal of reducing spending was often less robust than for the original purpose. We determined whether there was evidence that savings would be likely and evaluated the strength of that evidence. If savings were possible, we assessed whether they would occur in the near or long term, and (if sufficient evidence existed) provided an order of magnitude estimate of those savings.

In the second phase of the study, for the options that had some promise of savings, and for which existing data were sufficient to make projections, we developed upper- and lower-bound estimates of potential cost savings over 10 years. We estimated the effect of these options individually; however, as policymakers look for implementation strategies, some combination of approaches will likely be necessary. We discuss below some of the challenges in estimating combined effects.

Two Basic Approaches to Reducing Spending

Before we discuss the specific policy options that were assessed in this study, it is useful to take a step back and consider the two basic approaches to reducing spending: reducing prices and reducing volume. That is, to save money, we must identify ways to pay less for care or to use fewer services. Within those two basic approaches, two common methods are used: incentives and regulation. We can either make a change that uses market forces to bring prices down or reduce volume, or we can institute a regulatory process that sets prices below current levels or limits the volume of services delivered. Stakeholders tend to have clear philosophical preferences for using either market mechanisms or regulation. Our challenge in this study was to get beyond philosophy and assess the evidence available today that a particular approach within a particular context was likely to produce a reduction in health care spending. Although we were asked to explicitly set aside political feasibility, the availability of evidence in certain areas may well reflect the political infeasibility of testing a particular approach in prior efforts to reduce

health care spending. In looking at the policy options under consideration, we considered the general ways in which the options seek to reduce spending.

Spending on health could be reduced if the prices paid per unit of service were lower:

- A number of options effectively seek to substitute less-expensive for more-expensive services. The substitution can be for services provided at a point in time (e.g., nurse practitioners substituted for physicians) or for services provided now rather than later (e.g., preventive care substituted for treatment later of acute or chronic illness).
- Other options seek to change prices directly by regulating the price paid for services. Both the private and public sectors employ price-setting strategies (for example, the Medicare physician fee schedule or contracts between insurers and providers). An example of this approach would be all-payer rate setting.

Spending on health could be reduced if the volume of services provided were lower:

- One approach to reducing volume is to provide incentives for more-efficient delivery of health care, including the elimination of services that do not add value. Incentives are usually monetary, although some options envision producing better information as a basis for informed decisionmaking. An example of this type of policy option would be ending payment for serious reportable events to provide an incentive for providers to reduce the volume of such events. Many of the waste-reduction strategies considered employ market forces to spur providers or patients to make a change in utilization patterns.
- Other approaches to reducing volume use regulatory mechanisms to constrain the growth in health care infrastructure. This approach is based on the idea that increased supply can induce demand for services and therefore increase the volume of services provided. An example of a regulatory mechanism to constrain supply would be extending the Determination of Need (DoN) process to limit growth in hospital construction.

One more note on the interaction between these two approaches is warranted because it points to the potential for unintended consequences. Consider for the moment a well-functioning health care market. Economic theory tells us that if we are successful in reducing prices, volume is likely to increase. Similarly, if we were able to reduce volume (supply), we would expect to see prices increase. However, the modeling used in this report does not enable us to estimate the dynamic responses to policy changes by various stakeholders. If dynamic responses dampen the long run effects of cost containment policies, our results will likely overestimate savings.

We return at the end of the Executive Summary to consider how well these basic approaches are likely to work when viewed through the lens of specific policy options. This generalized framing should help stakeholders generate additional ideas to pursue in the future. It is clear to most who have considered the challenge of reducing health care spending that no single, magic bullet exists that can fundamentally alter the course we are on. Particularly in the short run, combined approaches will be necessary.

Summary of Analyses

Using data from the Medical Expenditure Panel Survey (MEPS), we estimate that spending on health care in Massachusetts will be \$43 billion in 2010 and that cumulative spending between 2010 and 2020 will be \$670 billion. We use data from the MEPS rather than the Centers for Medicare and Medicaid Services (CMS) State Health Expenditure Accounts (SHEA) because the MEPS can be disaggregated to generate estimates for specific service categories and populations, such as spending for office visits, or spending for adults ages 18 to 64. However, the MEPS does not capture all spending in the SHEA; notably, MEPS omits spending on long-term care, over-the-counter medications, incarcerated individuals, the military, and several other categories. Using SHEA data, we project that Massachusetts health spending would be \$68 billion by 2010, with cumulative spending totaling more than \$1 trillion by 2020. We do not anticipate that modeled reforms would have a significant impact on the SHEA spending categories that are excluded from MEPS. A more complete discussion of the MEPS and the SHEA can be found in our technical appendix.

In estimating the spending trajectory for Massachusetts over the next decade, we assume that cost growth will average about 5.7 percent annually (our assumptions are explained in more detail in the technical appendix to this report). To achieve no increase in health spending, we would have to identify policy options that would reduce spending by about that amount annually. For 9 of the 21 policy options we evaluated, there was not enough empirical evidence on which to base a quantitative estimate of the likely effects. For the remaining 12 options, only one—bundled payment—by itself could achieve this level of savings in the long run, and only if the upper-bound scenario is reasonable. This suggests that combining policies might be the best approach to achieving significant reductions in spending. However, savings from implementing multiple policy options are not likely to be additive, rather we expect that combinations would in many cases save less than the sum of the individual options would suggest. For example, the most promising options in the upper-bound estimates—bundled payment, hospital rate regulation, and rate regulation for academic medical centers (AMCs)—all seek to save money by reducing the price of hospital services. When options target the same dollars, policymakers might consider selecting the option that is most effective and most feasible to implement.

Even when our bounding analyses suggest potential savings, in most cases the ability to capture savings from policy changes is unknown, so we offer bounded estimates that provide a range of possible savings. Greater differences between the upper and lower bounds suggest higher levels of uncertainty.

Figure 1 gives a snapshot view of the upper- and lower-bound cumulative savings (as a share of projected spending) between 2010 and 2020, with the 12 modeled policy options ordered from most- to least-promising. Payment reform strategies, including bundled payment, hospital rate regulation, and rate regulation for AMCs, yield the highest potential for savings. However, there is a large difference between the upper- and lower-bound estimates for these options, and the total level of savings is uncertain. Policies that would increase the use of health information technology (HIT), eliminate potentially preventable readmissions (PPRs) and hospital-acquired infections (HAIs), and increase the use of nurse practitioners (NPs) and physician assistants (PAs) all yield moderate savings. With the exception of HIT, we estimate

relatively little difference between the upper and lower bounds. Policies that target spending on chronic illness, including disease management, medical homes, and increased use of value-based insurance design, yield limited savings and could be cost-increasing. These policies typically require up-front investments, with limited or mixed evidence on the opportunity for savings. Policies to reduce spending on chronic illness for the non-elderly did not yield significant savings because they affect a small portion of the population and spending.

We should also note that many of the promising policy options take different approaches to reducing spending by the same population for the same health services. For example, the potential savings from HIT, end-of-life, bundled payment, medical home, disease management, and some preventive care strategies primarily rely on reducing spending on chronic disease care. These are likely not additive, may be complementary, but could be counterproductive if not implemented in a coordinated manner. An option's potential to save money may also be limited simply by the scope of spending that can be targeted with that option. For example, most of the options we evaluated focus on spending for the non-Medicare population, which—based on our analysis of the MEPS—accounts for 65 percent of health spending in Massachusetts. Non-Medicare spending on 6 chronic conditions commonly targeted by disease management programs (diabetes, depression, asthma, chronic obstructive pulmonary disease, coronary artery disease, and congestive heart failure) accounts for only 21 percent of the total. Among health services, spending on hospital inpatient care accounts for the largest share of any MEPS spending category (including hospital outpatient care, emergency department visits, office visits, and prescriptions), yet only encompasses 35 percent of total health spending in the state.

We did not estimate the effect of combinations of policy options. A framework for determining which policies are likely to overlap might consider the type of spending targeted (e.g., hospital, office-based, other) and the mechanism through which savings are achieved (a reduction in price or a reduction in volume). A promising, multipronged strategy for reducing spending might include a payment reform strategy, such as bundled payment, which provides a lump sum payment for combinations of certain services and gives incentives to reduce duplication and avoidable complications; a mechanism to eliminate waste, such as HIT; and a strategy to strengthen primary care, such as increased use of NPs and PAs, which expands the availability of primary care at a lower price.

Another issue that emerged in our review of the literature is that reforms that are cost-effective may not reduce spending. When an intervention is cost-effective, it may increase both spending and value. Although a value judgment is involved in determining when the benefits of an intervention are “worth it,” the literature usually categorizes interventions that cost less than \$114,000 per quality-adjusted life-year (QALY) as being good investments.² In a recent review of the literature on prevention, Cohen, Neumann, and Weinstein found that the majority of preventive services both add value to the health system and increase total costs.³ Our findings

² R. M. Kaplan and J. W. Bush, in *Health-Related Quality of Life Measurement for Evaluation Research and Policy Analysis*. Health Psychology, 1982. 1(1): p. 61-80, proposed \$50,000 per QALY as a threshold for making resource-allocation decisions; we have inflated this value to 2008 price levels using the Consumer Price Index.

³ J.T. Cohen, P.J. Neumann, and M.C. Weinstein, *Perspective—Does Preventive Care Save Money? Health Economics and the Presidential Candidates*. N Engl J Med, 2008. 358(7): p. 3.

suggest that comparative effectiveness analysis and disease management programs may have a similar effect: They have strong potential to improve health outcomes, but may also increase costs.^{4,5} Although promoting policy options that add value to the health system may be desirable, these reforms will not address the concern about the rapid growth of health care spending.

A final question that was raised by stakeholders in Massachusetts was whether or not cost containment lessons could be gleaned from other countries. Considering international health systems was not a main focus of our analysis, but the evidence suggests that the factors driving growth in health spending are universal and not specific to the United States. Granted, health spending in the United States has been higher than that in other countries for many years; yet, growth trends in the United States have been similar to the median levels in other industrialized countries.⁶ The difference in spending levels is mainly due to the prices of services provided.⁷ The quantity of health care services used (e.g., hospital admissions, physician visits, length of stay) is lower in the United States than in other countries, but the intensity of services used within each encounter in the health system (e.g., tests, procedures) is higher.⁸ Several reasons have been given for higher prices in the United States: relatively strong concentration of market power on the supply side of health care as a result of fragmented organization and financing; greater compensation of health professionals; higher national income; and administrative complexity and costs.⁹ With the exception of the issue of higher national income, we address all of these areas to reduce spending in our report.

We turn now to a more detailed summary of the individual policy options that were selected for assessment and the results of our evaluation.

Identifying, Classifying, and Evaluating Policy Options

Starting with materials from local discussions about health care cost containment (e.g., the series of breakfast meetings sponsored by Brandeis University, Partners HealthCare, Blue Cross Blue Shield of Massachusetts, and the Greater Boston Chamber of Commerce) and early legislative and administrative proposals provided by DHCFP, we collected as many documents as we could identify that described potential cost containment ideas for Massachusetts. We also conducted a quick environmental scan of national proposals to identify additional areas of reform that had not been raised in discussions in Massachusetts. Using these materials, we developed an initial menu of 75 health care cost containment ideas (some of these were

⁴ N. Devlin and D. Parkin, *Does Nice Have a Cost-Effectiveness Threshold and What Other Factors Influence Its Decisions? A Binary Choice Analysis*. Health Economics, 2004. 13(5): p. 437-52.

⁵ N. McCall, J. Cromwell, and S. Bernard, *Evaluation of Phase I of Medicare Health Support (Formerly Voluntary Chronic Care Improvement) Pilot Program under Traditional Fee-for-Service Medicare. Report to Congress*. 2007. RTI International. CMS contract 500-00-0022.

⁶ Organisation for Economic Cooperation and Development, *Health at a Glance 2007*. 2007. OECD: Paris, France.

⁷ G.F. Anderson, U.E. Reinhardt, P.S. Hussey, et al., *It's the Prices, Stupid: Why the United States Is So Different from Other Countries*. Health Aff (Millwood), 2003. 22(3): p. 89-105.

⁸ Congressional Research Service, *U.S. Health Care Spending: Comparison with Other OECD Countries*, Washington, D.C.: U.S. Congress, September 17, 2007. As of June 25, 2009: <http://openers.com/document/RL34175>

⁹ U.E. Reinhardt, P.S. Hussey, and G.F. Anderson, *U.S. Health Care Spending in an International Context*. Health Aff (Millwood), 2004. 23(3): p. 10-25.

well-developed policy options, but many more were general concepts). Options were grouped into five broad categories: (1) Reform payment systems to better align financial incentives; (2) redesign health care delivery to improve efficiency and quality; (3) reduce waste; (4) encourage consumers to make good health choices; and (5) change medical liability laws to reduce the number and average payout of claims. We shared the resulting list with stakeholders in a series of conversations convened by DHCFP in April 2008. Local stakeholders (such as members of the QCC, health care providers, insurers, business leaders, and representatives of consumer organizations) provided feedback on how they would prioritize the options and which, if any, options they felt were not worth pursuing. We collaborated with DHCFP and consulted with the QCC to select 21 options for full review, making sure to select options within each of the 5 broad categories. The 21 options considered are listed in Table 1 and discussed in greater detail below. We indicate in the table those options for which we produced quantitative estimates of their likely effect on reducing health spending in the state using a spreadsheet modeling method described below.

Table 1
Cost Containment Policy Options Selected for Study

Policy Option	Modeled?
Reform Payment Systems	
Institute hospital all-payer rate setting	Yes
Utilize bundled payment strategies	Yes
Increase use of pay-for-performance	No
Regulate insurance premiums	No
Increase Medicaid reimbursement	No
Pay academic medical centers (AMCs) a community rate	Yes
Use reference pricing for AMCs	Yes
Redesign the Healthcare Delivery System	
Promote the growth of retail clinics	Yes
Create medical homes	Yes
Change scope of practice and payment policies for NPs and PAs	Yes
Increase the use of preventive care	No
Increase the use of disease management	Yes
Reduce Waste	
Reduce administrative overhead	No
Extend the Determination of Need (DON) process	No
Increase adoption of health information technology (HIT)	Yes
Use comparative effectiveness analysis to guide coverage and payment rules	No
Eliminate payment for preventable readmissions and hospital-acquired infections	Yes
Decrease intensity of resource use for end-of-life care	Yes
Encourage Consumers to Make Good Health Choices	
Encourage value-based insurance design	Yes
Promote wellness/healthy behavior	No
Change Medical Liability Laws	
Change laws related to the non-economic damages cap and expert witnesses	No

For each of these options, we conducted a comprehensive literature review to determine whether existing theory or empirical evidence suggested a potential for reducing spending. These results are summarized in the main body of this report. Options were selected for modeling if theory and/or evidence were adequate for making estimates of savings in Massachusetts, and if data were available to conduct analyses. We used a technique commonly referred to as spreadsheet modeling which produces quantitative estimates of likely spending reductions based on assumptions about the expected effect of a policy change on the price or volume of services delivered. This method is described in more detail in the technical appendix.

Reasons Options Were Not Modeled

Options were excluded from the modeling analysis if the evidence regarding cost-savings potential was weak, or if there was insufficient data and evidence to form a sound basis for modeling. Below, we list non-modeled options and provide a brief explanation for why these reforms were not modeled:

- Pay-for-performance (P4P) was excluded from modeling because there is little empirical evidence to support cost savings, and most P4P programs are designed to redistribute spending without changing overall health expenditures.
- Regulating premium growth rates was excluded because we could find no empirical studies or other relevant data to inform our bounding analyses.
- Increases in Medicaid reimbursement rates were not modeled because such changes are unlikely to produce systemwide savings, although they may reduce cost-shifting to private insurers.
- Prevention was not modeled in part due to evidence that many preventive medical interventions (e.g., mammography) are cost-effective but not cost saving.
- Reducing administrative costs was excluded from modeling due to difficulty in finding data that would allow us to separate necessary administrative spending (e.g., spending required to maintain accurate payment systems) from unnecessary spending.
- Determination of need was excluded from modeling because the best empirical evidence suggested that DoN regulations implemented in the past have not reduced spending.
- Comparative effectiveness analysis was excluded because we could find no empirical studies or other relevant data to inform systematic analyses.
- Options to promote wellness and healthy behavior were not modeled because evidence on these policies comes largely from small-scale programs that have not been systematically evaluated to address cost implications.¹⁰

¹⁰ K.G. Volpp, M.V. Pauly, G. Loewenstein, et al., *P4P4P: An Agenda for Research on Pay-for-Performance for Patients*. Health Aff (Millwood), 2009. 28(1): p. 206-14.

- Changing medical liability laws was excluded from modeling because Massachusetts already has a cap on non-economic damages, and we concluded that there was little evidence to determine the likely effect of strengthening the existing law. In addition, we could find no empirical studies regarding changes in rules regarding the qualification of expert witnesses.

In the main body of the report, we discuss in greater detail the empirical literature and the strength of the evidence for both modeled and unmodeled options. The decision to exclude an option from modeling should not be taken to imply that spending reductions are not possible. For many of the unmodeled options, the decision not to model simply reflected a judgment that modeled results would be too speculative. We acknowledge that the evidence to support many of the modeled policies is also relatively limited; however, data to inform bounding analyses was, on balance, stronger for modeled than unmodeled options. Finally, our task was to evaluate these policy options for their potential to reduce health care spending. Many options are designed for purposes other than spending reductions, have been demonstrated to achieve other important goals in the health care system, and may be worth implementing even if we did not conclude that they are likely to reduce spending.

Modeling Potential Savings Relative to the Status Quo

To estimate health care spending between 2010 and 2020 in the absence of any major changes in policy or external conditions, we used Massachusetts-specific data from the Medical Expenditure Panel Survey (MEPS),¹¹ pooled from 2000–2005. Both the cost literature^{12,13} and government budget offices commonly use a 10-year time frame for estimating changes in spending. We projected per capita spending over time, accounting for population change and health care inflation. We assumed that per capita health spending would increase by 7.42 percent annually through 2010, the average rate of growth in the Centers for Medicare and Medicaid Services (CMS) State Health Expenditure Accounts for Massachusetts from 2000 to 2004 (the most recent year available). After 2010, we assumed that the growth rate would revert to its average since 1991, 5.7 percent annually. We allowed for a small increase in spending in 2007 to account for health care reform, and we applied a 16-percent adjustment to address potential under-counting in the MEPS.¹⁴ With these assumptions, we estimated that status quo health care spending will be \$43 billion in 2010 and that status quo cumulative spending between 2010 and 2020 will be \$670 billion (Table 2). A more complete description of our modeling methodology, data, and assumptions can be found in the technical appendix.

¹¹ The Medical Expenditure Panel Survey, which began in 1996, is a set of large-scale surveys of families and individuals, their medical providers (doctors, hospitals, pharmacies, etc.), and employers across the United States. MEPS collects data on the specific health services that Americans use, how frequently they use them, the cost of those services, and how those services are paid for, as well as data on the cost, scope, and breadth of health insurance held by and available to U.S. workers. The MEPS is collected and maintained by the Agency for Healthcare Research and Quality (AHRQ).

¹² C. Schoen and Commonwealth Fund, *Bending the Curve: Options for Achieving Savings and Improving Value in U.S. Health Spending*. 2007, New York, N.Y.: Commonwealth Fund. xxii, 89 p.

¹³ United States Congressional Budget Office, *Budget Options Volume I: Health Care*. CBO Paper. 2008, Washington, D.C.: United States Congressional Budget Office. 236 p.

¹⁴ M. Sing, J.S. Banthin, T.M. Selden, et al., *Reconciling Medical Expenditure Estimates from the MEPS and NHEA, 2002*. Health Care Financ Rev, 2006. 28(1): p. 25-40.

Our analysis focuses on health care spending, and does not account for other societal savings that might result from improved health, worker productivity, or increased life expectancy. We focus on the potential to reduce spending (without adversely affecting health outcomes) rather than to add value, because, in the current economic climate, health care affordability is of paramount concern. In addition, we excluded savings related to Medicare spending if federal legislative or regulatory action would be required to apply a particular policy option to Medicare.

We note that there are several concepts that are related to, but slightly different from, health care spending. Reimbursement rates (or payment rates) are what individuals and insurers pay to consume health care goods and services. Charges are list prices set by providers, and costs are measures of the actual resources used to produce health care goods and services. In theory, charges and reimbursement rates should reflect the underlying costs of goods and services, but this is not necessarily the case in health care.¹⁵ For example, negotiated contracts may result in reimbursements to hospitals and physicians that are lower than stated charges. Because reimbursement rates reflect actual spending on health care services by individuals and their insurance carriers, we try to be as consistent as possible throughout this report in using reimbursement rates or expenditure data to evaluate health care spending.¹⁶

Health insurance premiums reflect both expected health care spending and an administrative loading factor that covers insurer's operating expenses and profits. Because administrative costs are not captured in either the MEPS or the National Health Expenditure Accounts (NHEA), our modeling focuses on health care expenditures only and not the administrative component of premiums. Some of the options we analyze in this report—strategies to reduce administrative overhead and strategies to reduce the rate of premium growth—would specifically target administrative spending, but these options have not been modeled.

Projected Savings Due to Policy Options (Modeled)

Below, we briefly describe each of the 12 policy options that we modeled and the key assumptions that we used to develop our estimates. For each option, we produced an upper-bound estimate that drew from optimistic evidence and theory, and a lower-bound estimate that took a more pessimistic view (but was also grounded in existing theory and data). Because empirical evidence surrounding the effectiveness of many policy options is relatively scant, the results are sensitive to the assumptions made and the available data. The scenarios are designed to help policymakers consider the potential effects of the policies under alternative assumptions about the effectiveness of those policies. Because our analysis is based on projections, we cannot be certain that—if implemented—savings achieved by the reforms would fall within the bounds we estimated. However, the results reported herein represent realistic high and low estimates based on existing theory and evidence. Table 2 summarizes the projected effects of each reform we modeled on health spending.

¹⁵ S.A. Finkler, *The Distinction between Cost and Charges: Cost Vs. Charges*. 1981, Philadelphia, PA: National Health Care Management Center, University of Pennsylvania. 28 p.

¹⁶ There is debate about whether it is more appropriate to model spending or costs in this context. Spending is the relevant concept from the state's perspective, since it reflects expected state outlays as well as premiums that will be paid by state residents. Costs are more appropriate from an economics perspective, since a reduction in spending without a commensurate reduction in costs could distort incentives and cause some providers to go out of business. Throughout this analysis we focus on spending because this report is intended for the state, and because reliable cost data are not always available.

Goal 1:
Reform Payment Systems to Better Align Financial Incentives

There is widespread agreement that the way health care services are paid for contributes to rising health care costs. The strategies considered for this policy goal focus on reducing the price paid for services through a change in the way payments are determined or through regulatory approaches that set prices at a new level.

1. Institute Traditional Hospital All-Payer Rate Setting

■ **Description of the modeled policy option**

Traditional hospital rate setting would establish a regulatory board to determine appropriate rates for hospital inpatient, outpatient, and emergency department care, limiting payment to the minimum amount necessary to cover hospital operating expenses, and requiring all payers to adhere to the rates set. This option represents a regulatory approach to reducing prices. Massachusetts would need to obtain a waiver from the Centers for Medicare and Medicaid Services (CMS) to include Medicare and Medicaid in an all-payer rate setting strategy.

■ **Summary of evidence on the potential for savings**

- The literature on hospital rate setting shows mixed results with respect to cost savings. For example, the most comprehensive study on this topic found no effect of rate setting on hospital costs.¹⁷
- Even when the programs are effective, the results dissipate over time. Research has failed to identify the factors that make some programs successful and others not successful.
- To involve all payers, Massachusetts would require a waiver from CMS. Such waivers are generally contingent on demonstrating that Medicare costs in the state are rising faster than those in the nation, which may be difficult for Massachusetts to prove.
- Previous studies show that it takes at least 2 years for savings to accrue.
- The literature suggests that the most likely result is that hospital rate setting will not reduce spending; the most optimistic scenario is a 2-percent annual reduction in spending on hospital services.¹⁸

■ **Assumptions used in modeling**

Our upper-bound estimate assumed that, after a 2-year start-up period, rate setting reduces hospital spending by 2 percent per year. To implement rate setting, Massachusetts must establish and operate a regulatory agency; we based the cost of this agency on the budget

¹⁷ J.J. Antel, R.L. Ohsfeldt, and E.R. Becker, *State Regulation and Hospital Costs*. Rev Econ Stat, 1995. 77(3): p. 416-422.

¹⁸ M.A. Morrisey, F.A. Sloan, and S.A. Mitchell, *State Rate Setting: An Analysis of Some Unresolved Issues*. Health Aff (Millwood), 1983. 2(2): p. 36-47.

for the Maryland Health Services Cost Review Commission (HSCRC).¹⁹ We assumed that Medicare would be subject to the regulation, since states have historically received waivers to allow Medicare participation.

Our lower-bound estimate assumed that Massachusetts incurs costs associated with regulation, but that spending is unchanged.

■ Results

We projected that cumulative spending from 2010 to 2020 would range from an increase of \$57 million to a reduction of \$26 billion (0 to 4.0%) compared with the status quo.

2. Utilize Bundled Payment Strategies

■ Description of the modeled policy option

Provider payment strategies differ widely in the degree that individual services are “bundled” into a single unit of payment. Fee for service is a common method of payment for health care services whereby each service provided is priced and paid for separately. Episode-based payments provide a single payment for all care related to a particular treatment or condition for a particular patient. Capitation payments, which provide a single lump-sum payment for all care required by a patient for a defined time period, represent another form of bundled payment. The Massachusetts Special Commission on the Health Care Payment System recommended in July 2009 (after this report was completed) the use of global payments, a variant of capitation that aims to overcome concerns with previous implementation through careful transitions, robust monitoring, financial incentives for access and quality, improved risk adjustment models, and health information technology infrastructure and support.²⁰ In the stakeholder consultation process we used to identify high-priority policy options in 2008, capitation was assigned relatively low priority compared to bundled payment for episodes of related care. The Special Commission identified episode-based payment as a potential transition step to global payments.²¹

The policy option we modeled would encourage insurers to provide a single payment for all services related to a treatment or condition. The payment could cover services delivered by multiple providers and in multiple settings. For example, the expected cost of routine care for a chronic disease such as diabetes could be calculated and used as the basis for a bundled payment to the provider managing the patient’s diabetes. We modeled a scenario in which all private payers and Medicaid adopt a bundled payment strategy. This approach is a method of reducing the overall price of providing a set of services and also provides a financial incentive to reduce the volume or intensity of services.

¹⁹ *Health Services Cost Review Commission—Sunset Extension and Program Evaluation*, 2007. Department of Legislative Services, Maryland General Assembly, Bill number HB 844, Introduced by Chair—Health and Government Operations Committee. As of June 25, 2009: http://mlis.state.md.us/2007RS/fnotes/bil_0004/hb0844.pdf

²⁰ Kirwan LA, Iselin S. on behalf of the Massachusetts Special Commission on the Health Care Payment System, *Recommendations of the Special Commission on the Health Care Payment System*. July 16, 2009. Massachusetts Division of Health Care Finance and Policy. As of July 28, 2009: <http://www.mass.gov/dhcfp/paymentcommission>

²¹ Ibid.

■ Summary of evidence on the potential for savings

- The best evidence to date is from Medicare demonstration projects, which provide limited but promising results (10 percent reduction in a project bundling payment for coronary artery bypass graft surgery).
- Significant up-front work would be required to define bundles, set payment amounts, address shared-accountability approaches (e.g., how payments are distributed across multiple providers, what entity will receive and distribute the bundled payment), adjust for differences in the case mix of patients served, and deal with operational challenges.

■ Assumptions used in modeling

Bundled payments are created for specific episodes of care received by Massachusetts adults ages 18–64. In the lower-bound scenario, bundled payments were applied to four hospital conditions (knee replacement, hip replacement, bariatric surgery, acute myocardial infarction); in the upper-bound scenario, bundled payments were applied to these four hospital conditions and to six chronic conditions (diabetes, congestive heart failure, chronic obstructive pulmonary disease, asthma, hypertension, and coronary artery disease). Prices for the bundles reflect the expected costs of appropriate care, plus a 50-percent discount on services related to potentially avoidable complications. As a result, savings come from reducing spending on complications for selected conditions by 50 percent. Payments were determined using Prometheus Payment analyses of a large, commercial insurance database.²² Medicare spending was excluded.

■ Results

We projected cumulative savings of \$685 million to \$39 billion (0.1 to 5.9 percent) for 2010 to 2020 compared with the status quo.

3. *Institute Rate Regulation for Academic Medical Centers*

■ Description of the modeled policy option

This policy option would limit reimbursement for non–tertiary care provided at academic medical centers (AMCs) to the average community-hospital reimbursement rate through a regulatory strategy. It would lower the price paid for certain types of admissions. We excluded Medicare from this option because current diagnosis-related group (DRG) payment rates allow limited variation between teaching and community hospitals. Since this option is equivalent to setting reimbursement levels for all hospitals at the average community rate, it illustrates the potential effect of reducing excessive spending at highly reimbursed community hospitals and AMCs.

²² A.G. Gosfield, *Making Prometheus Payment Rates Real: Ya' Gotta Start Somewhere*. 2008. Prometheus Payment, Inc. As of June 25, 2009: <http://www.prometheuspayers.org/publications/index.htm>

■ Summary of evidence on the potential for savings

- AMC's charges are more than double those of community hospitals for like admissions.
- The proportion of patients in Massachusetts who are treated in AMCs increased by 16 percent between 1998 and 2006 and is high relative to other states or the United States as a whole.
- There is growing concern about high reimbursement rates at select community hospitals in Massachusetts.
- A study specific to Massachusetts found large differentials in charges for maternity care between AMCs and community hospitals, but no evidence for quality differences.²³ Another Massachusetts-specific study found large differences in end-of-life care spending, and that only a fraction of these differences were explained by case mix.²⁴
- Unintended consequences for AMCs are possible if the policy is effective in reducing revenue, which, in turn, leaves AMCs without adequate funds to accomplish their teaching mission.

■ Assumptions used in modeling

We modeled scenarios in which hospital reimbursement rates for certain DRGs were set at the average community hospital rate. Total savings are equal to the difference between the average AMC rate and the average community rate, multiplied by the number of discharges occurring at AMCs. We assumed that, to set rates and ensure compliance, Massachusetts would establish a regulatory body comparable to the Maryland HSCRC and that regulatory costs would vary proportionately with the amount of care subject to community rates.

For the upper-bound scenario, we assumed that 97 percent of DRGs would be subject to rate regulation, allowing exceptions for a limited amount of complex care that might require the AMC setting. In the lower-bound scenario, we assumed that only maternity care (15 percent of non-Medicare hospital discharges in Massachusetts) would be subject to the regulation.

■ Results

Spending is projected to be \$1.3 to \$18 billion (0.2 to 2.7 percent) less than the status quo for 2010 to 2020 cumulatively.

²³ Analysis in Brief. Massachusetts Division of Health Care Finance and Policy (DHCFP), *Maternal Outcomes at Massachusetts Hospitals*. 2003. Office of Health and Human Services (EOHHS). Analysis in Brief.

²⁴ J. Cai and M. Schiff, *Variation in Use of Hospital Inpatient Resources in End-of-Life Care in Massachusetts*. 2006. Massachusetts Division of Health Care Finance and Policy.

4. Institute Reference Pricing for Academic Medical Centers (AMCs)

■ Description of the modeled policy option

An alternative approach to reducing spending on AMC services would be to encourage insurers to adopt reference pricing policies, whereby reimbursement is based on the community hospital rate for a given service, and consumers must pay the difference if they wish to obtain care at an AMC. We modeled a policy in which reference pricing for AMCs is phased in over time.

■ Summary of evidence on the potential for savings

- The difference in costs between AMCs and community hospitals is well established.
- The proportion of patients in Massachusetts who are treated in AMCs grew 16 percent between 1998 and 2006.
- No studies have evaluated the option of reference pricing for AMCs.
- Reference pricing in other contexts, such as reimbursement for prescription drugs, has reduced spending.

■ Assumptions used in modeling

We modeled scenarios in which private payers and Medicaid in Massachusetts adopt reference pricing for AMC care. We assume that reference pricing could be adopted in the Medicaid program, despite potential limitations on copayments that can be charged by Medicaid. Because some consumers might not have easy access to a community hospital in the status quo, we assumed that reference pricing would apply to only 20 percent of consumers in 2010, growing to 100 percent of consumers by 2020. We assumed that, among those patients subject to reference pricing, a fraction would be willing and able to pay for care at teaching hospitals.

For the upper-bound scenario, we assumed that 97 percent of DRGs would be subject to reference pricing, allowing exceptions for a limited amount of complex care that might require the AMC setting. In the lower-bound scenario, we assumed that only maternity care (15 percent of hospital discharges in Massachusetts) would be subject to reference pricing.

■ Results

Savings are projected to range from \$526 million to \$8.6 billion cumulatively between 2010 and 2020, or 0.1 to 1.3 percent less than projected spending in the status quo. Savings from this option are lower than savings associated with AMC rate regulation, both because we allow reference pricing to phase in over time and because some consumers opt to purchase AMC care in spite of the higher rates.

**Goal 2:
Redesign Health Care Delivery to Improve Efficiency and Quality**

A second goal for many cost containment efforts is to redesign the delivery of health care services to improve both quality and efficiency. Most of the policy options use incentives to reduce spending.

5. Promote the Growth of Retail Clinics**■ Description of the modeled option**

This option would encourage the growth of limited service clinics by modifying regulations (e.g., expedited review of retail clinic applications, changes in corporate practice of medicine laws, and a relaxation of physician oversight requirements for nurse practitioners). The intent of the option is to encourage patients to substitute routine care from retail clinics for more expensive urgent care clinics and emergency departments. Although policies to encourage retail clinic entry would operate primarily through regulatory strategies, the greater availability of such clinics could lead to additional policy options that provide incentives for their use.

■ Summary of evidence on the potential for savings

- Evidence about the effect of retail clinics on spending is limited. Prices are lower at retail clinics, but it is unclear whether or at what rate retail clinics substitute for utilization at higher-price settings (emergency departments), or if they create demand for care that would not have occurred otherwise.
- To estimate effects, we have to estimate the degree of substitution; no current evidence exists to inform this estimate.
- Start-up costs for retail clinics have been estimated at \$500,000 per clinic, with 3 years of operation necessary to break even (although the investment cost itself would not be counted in Health Expenditure Accounts).
- On-site clinics are similar to retail clinics but are located within the offices of large employers rather than in retail stores. We did not explicitly model the cost effect of on-site clinics, but we expect that they could be similar to retail clinics in savings potential. A key difference, however, is that on-site clinics are generally accessible only to employees and dependents of the sponsoring firm, which could limit their reach and ultimate effect.
- The trend in retail and on-site clinics is worth watching, and it may stimulate changes in health services delivery within the traditional medical care system (which has happened to some degree in Minnesota), but the effect on spending at this point is unknown.

■ Assumptions used in modeling

For both the upper- and lower-bound estimates, we assumed that start-up costs are borne by investors outside the health care system.²⁵

For the upper-bound estimate, we assumed that the number of retail clinics in Massachusetts grows from 40 in 2010 to 220 in 2020, and the number of patients seen annually at retail clinics increases from 330,000 to 2.2 million.²⁶ We assumed that one-third of retail clinic visits replace an office visit, one-third replace an emergency department visit, and one-third will be newly induced.

For the lower-bound estimate, we assumed that retail clinics never take hold as a business strategy in Massachusetts and that any spending changes are negligible. We derived the lower-bound assumptions from reports that have questioned the economic viability of retail clinics, coupled with input from the Massachusetts Department of Public Health indicating that initial retail clinic utilization in Massachusetts has been low.

■ Results

Cumulative spending is projected to be 0 to \$6.1 billion (0 to 0.9 percent), lower than the status quo for 2010 to 2020.

6. Create Medical Homes to Enhance Primary Care

■ Description of the modeled option

The “medical home” is designed to respond both to the need for patients to have someone orchestrating their care and to the inadequacy of payment for primary care services. A *medical home* is defined as “a practice-based structure that facilitates the delivery of comprehensive care and promotes strong relationships between patients and their primary care, physician-led team.”²⁷ This policy option would increase payments to physician practices that function as a medical home (by managing chronic illness, improving access and coordination of acute care across settings and providers, and using health information technology [HIT]). The goal of the policy would be to encourage providers to offer, and patients to use, care settings that are structured to provide a comprehensive set of services in place of fragmented, episodic care from a variety of different providers. We excluded Medicare beneficiaries, since Medicare is separately testing a medical home model.

■ Summary of evidence on the potential for savings

- Several pilot projects are under way in Massachusetts (The Massachusetts Medical Project for children with special health care needs; a demonstration within MassHealth authorized under Chapter 305; and private trials, such as

²⁵ D. Armstrong, *Health Clinics Inside Stores Likely to Slow Their Growth*, in *Wall Street Journal (Eastern Edition)*. 2008. p. B-1.

²⁶ Estimates based on state projections and information reported by M.K. Scott and California HealthCare Foundation, *Health Care in the Express Lane: Retail Clinics Go Mainstream*. 2007, Oakland, CA: California HealthCare Foundation. 32 p. As of June 18, 2009: <http://www.chcf.org/topics/view.cfm?itemID=133464>

²⁷ M. Sepulveda (2008) *The Medical Home, Round Two: Building on a Solid Foundation*. The Commonwealth Fund April 21, 2008, As of June 25, 2009: http://www.commonwealthfund.org/publications/publications_show.htm?doc_id=678201

- those by Cambridge Health Associates and Harvard Pilgrim Health Care). To date, no empirical evidence exists about their effect on overall spending.
- The cost of setting up a medical home has been estimated to be \$5–\$150 per person per month. The “savings” have been estimated at \$250 per person per year (exclusive of operating costs).
 - Estimates to date suggest that it takes a practice 2–5 years to fully transform from a traditional practice into a medical home. No estimates exist about the number of practices in Massachusetts that would be willing to participate and would be likely to meet the conditions.
 - The medical home concept continues to evolve; however, at present, there is relatively little empirical information on which to base estimates about potential savings.

■ Assumptions used in modeling

Although various paradigms have been proposed, we assumed that medical homes would achieve savings by managing chronic illness more efficiently, implementing health information technology (HIT), and improving access to care.

Our upper-bound assumed that each medical home is paid \$6 per-member per-month (PMPM), and achieves a 25-percent reduction in emergency department (ED) spending for all patients, a 25-percent reduction in hospital spending for patients with 6 chronic conditions (asthma, chronic obstructive pulmonary disease [COPD], coronary artery disease [CAD], congestive heart failure [CHF], diabetes, and depression), and savings of \$65,587 per FTE physician resulting from the use of HIT.²⁸ We also assumed a 3-percent increase in pharmacy spending for patients with chronic conditions, resulting from improved adherence to prescribed medications. The upper-bound scenario incorporated an aggressive implementation time line, with 20 percent of eligible practices adopting by 2010, increasing to 100 percent within 5 years.

The lower-bound scenario assumed a payment of \$12 per-member per-month (PMPM) and that savings are achieved only through the use of HIT. The lower-bound scenario incorporated a less-aggressive implementation time line, with adoption increasing from 10 percent to 50 percent of practices in 5 years.

■ Results

We projected changes in cumulative spending relative to the status quo for 2010 to 2020 ranging from a \$2.8-billion increase to a \$5.7-billion decrease (+0.4 to –0.9%).

²⁸ The \$6 PMPM figure is at the low end of estimates of medical home costs; see R. Berenson. *Payment Approaches and Cost of the Patient-Centered Medical Home*. in *Stakeholders' Working Meeting, Patient-Centered Primary Care Collaborative*. 2006. Washington, DC. July 16, 2006. As of June 26, 2009: www.pcpc.net/files/July16th/IIa.%20Berenson.ppt. The HIT savings are based on the upper-bound estimates calculated in Option 9. Our assumptions about changes in utilization are consistent with estimates of disease management (Option 8).

7. Encourage Greater Use of Nurse Practitioners and Physician Assistants

■ Description of the modeled option

This policy option would change the law, regulations, and financing practices that currently limit patients' reliance on physician assistants (PAs) and nurse practitioners (NPs). The policy option could save money by encouraging the use of low-cost providers, but it would require regulatory action. We included Medicare in our savings projections, because Medicare enrollees would be able to see NPs and PAs for routine primary care.

■ Summary of evidence on the potential for savings

- No direct empirical evidence exists on the relationship between expanding scope of practice and health care spending.
- Studies have shown that NPs and PAs provide care that is comparable to that of primary care physicians in certain settings. These professionals are usually paid less; thus, substitution has the potential to decrease costs.
- Given the shortage of primary care physicians, expanding the independent practice of these other health professionals could be another approach to increasing the availability of primary care at a lower cost than physician-based strategies.
- The literature suggests that this policy option is promising, although savings are uncertain.
- Related policies, which we did not model, could involve substituting primary care physicians for specialists or making use of other lower cost providers.

■ Assumptions used in modeling

We modeled an increase in the use of NPs/PAs for basic primary care in Massachusetts, assuming that any additional utilization of NPs/PAs would substitute for existing visits with physicians.

In the upper-bound estimate, we assumed that, within 5 years, NP/PA utilization in Massachusetts would grow from 4.8 percent to 18.1 percent of all office visits. The upper-bound scenario assumed that NPs/PAs would eventually cover all office-based care related to coughs, throat symptoms, fevers, earaches, skin rashes, nasal congestion, general medical examinations, and well-baby visits. Assumptions regarding the total share of care that could be provided by NPs and PAs are described in more detail in the main text of the report, and are based on figures reported by Mehrotra et al. (2008)²⁹ and Cherry et al. (2008).³⁰

The lower-bound estimate assumed NP/PA utilization increases from 4.8 percent to 9.2 percent of office visits and that NPs/PAs could provide care for the acute symptoms listed above, but not well-baby visits or general medical examinations.

²⁹ A. Mehrotra, M.C. Wang, J.R. Lave, et al., *Retail Clinics, Primary Care Physicians, and Emergency Departments: A Comparison of Patients' Visits*. Health Aff (Millwood), 2008. 27(5): p. 1272-82.

³⁰ D.K. Cherry, E. Hing, D.A. Woodwell, et al., *National Ambulatory Medical Care Survey: 2006 Summary*. Natl Health Stat Report, 2008(3): p. 1-39.

■ Results

For 2010 to 2020, we projected cumulative savings of \$4.2 to \$8.4 billion (0.6–1.3%) relative to the status quo.

8. Increase Use of Disease Management

■ Description of the modeled option

Disease management (DM) aims to encourage healthy behaviors, medication adherence, and appropriate utilization of care for persons with chronic illnesses. This policy option would expand the use of disease management by public and private payers, and it could save money if better management led to reduced use of higher-cost services later. Medicare beneficiaries are not included because implementation of DM in Medicare would require CMS to create a new program and the demonstration projects have not produced promising results to date.

■ Summary of evidence on the potential for savings

- Although disease management programs have been shown to improve adherence to guidelines and achieve better intermediate outcomes, little evidence exists to show that they save money.³¹
- The recent Medicare demonstration project was not continued into a second phase because the vendors failed to meet the cost-savings targets (5-percent savings net of operating expenses) that were set. This project had significant implementation challenges that may well have undermined its ability to appropriately demonstrate the potential for Medicare. Nonetheless, we have no reliable estimate of the effect of such programs on spending on which to base our assessment.³²
- One review of the literature concluded that, although study findings have been mixed and inconclusive, there is evidence to support savings in DM programs that are targeted at sicker individuals and that perform more-intensive interventions.³³
- Disease management continues to be one of the strategies people believe will help control spending on chronic disease, but evidence to support those beliefs is lacking at this time. We concluded that there is considerable uncertainty around the likelihood that this approach will reduce spending, but it is possible that this conclusion may be premature, given the state of the science.

³¹ R.Z. Goetzel, R.J. Ozminkowski, V.G. Villagra, et al., *Return on Investment in Disease Management: A Review*. Health Care Financ Rev, 2005. 26(4): p. 1-19.

³² N. McCall, J. Cromwell, and S. Bernard, *Evaluation of Phase I of Medicare Health Support (Formerly Voluntary Chronic Care Improvement) Pilot Program under Traditional Fee-for-Service Medicare. Report to Congress*. 2007. RTI International. CMS contract 500-00-0022.

³³ J. Meyer and B. Smith, *Chronic Disease Management: Evidence of Predictable Savings*. 2008. Health Management Associates. As of June 12, 2009: <http://www.healthmanagement.com/files/Chronic%20Disease%20Savings%20Report%20final.pdf>

■ Assumptions used in modeling

We modeled a scenario in which Massachusetts adults ages 18–64 with one or more of 6 chronic conditions (asthma, COPD, CAD, CHF, depression, and diabetes) enroll in DM. Based on our analysis of the MEPS data, individuals with one or more of these chronic conditions represent 19 percent of Massachusetts adults ages 18–64 and account for 21 percent of overall spending and 38 percent of spending among non-elderly adults.

For both the upper- and lower-bound scenarios, we assumed that the cost of DM is \$500 per patient per year, an average of the costs of programs of varying intensities.³⁴ In the upper-bound scenario, we assumed a 25-percent reduction in average inpatient and ED spending among DM enrollees, and a 3-percent increase in average pharmaceutical costs resulting from better drug adherence. These savings take 3 years to achieve.

For the lower-bound scenario, we assumed that costs associated with delivering DM are incurred, but that there is otherwise no effect on health spending.

■ Results

Change in spending is projected to range from an increase of \$7.0 billion to savings of \$308 million (+1% to –0.05%) for 2010–2020 cumulatively.

Goal 3: Policies to Reduce Waste

We considered options for reducing waste in three categories:³⁵ administrative waste, operational waste, and clinical waste. These strategies are primarily aimed at reducing the volume of non-value added activities, either through the use of incentives or of regulatory changes (including eliminating or streamlining existing regulations).

9. Increase Adoption of Health Information Technology

■ Description of modeled policy option

This policy option focuses on improving the information infrastructure for the health care system to enable more-efficient delivery of health care services. HIT is an enabling technology that may allow other cost containment strategies to be implemented (e.g., better claims-transaction processes, more-efficient management of patients within systems, reduction of unnecessary utilization through more clinically detailed criteria for matching patients with interventions). In this option, we consider the approaches to accelerating adoption, including financial incentives, direct provision, regulatory mandates, development of standards,

³⁴ Reviewing the literature, J. Meyer and B. Smith, in *Chronic Disease Management: Evidence of Predictable Savings* (Health Management Associates, November 2008) report annual DM program costs ranging from \$100 to \$1,399 per capita (as of June 25, 2009: <http://www.healthmanagement.com/files/Chronic%20Disease%20Savings%20Report%20final.pdf>). D.M. Bott, M.C. Kapp, L.B. Johnson, et al., *Disease Management for Chronically Ill Beneficiaries in Traditional Medicare*. Health Aff (Millwood), 2009. 28(1): p. 86–98.

³⁵ T. Bentley, R. Effros, K. Palar, et al., *Waste in the U.S. Health Care System: A Conceptual Framework*. Milbank Q, 2009, 86(4): p. 629-59.

and establishment of health information exchanges. Medicare is included in this option because HIT would be used setting-wide rather than for selected patients.

■ Summary of evidence on potential for savings

- Little empirical evidence exists to prove that health information technology saves money; estimates to date are based primarily on microsimulation-modeling analyses and small case studies.
- The modeling has in part been based on successful experiences in other industries and the productivity gains experienced in those industries.
- The experience with the Massachusetts eHealth Collaborative (MAeHC) pilot program offers the best opportunity for setting policy in the Commonwealth going forward. Among the important lessons from the pilot studies will be the expected cost of the investment and the time required to obtain a return on the initial investment.
- Many ideas to improve the functioning of the health care system—including improving quality, expanding access, and reducing spending—rely on the availability of substantially more-sophisticated and more-powerful information systems than are typically available today.
- The potential for savings, under the assumptions around penetration, interoperability, and process redesign, are great but will likely not produce short-term reductions in cost (i.e., over the next 10 years), and significant investments are likely.

■ Assumptions used in modeling

We considered scenarios in which HIT adoption in Massachusetts is accelerated from current rates to full adoption by 2015 and by 2017. We calculated savings relative to status quo adoption rates, under which we projected full adoption for all Massachusetts physicians and hospitals by 2025.³⁶ We derived projected savings in the upper-bound scenario, as well as implementation and maintenance costs, from analyses by Girosi, Meili, and Scoville and scaled them to reflect the Massachusetts population.³⁷ For our lower-bound estimates, we assumed that implementation and maintenance costs are incurred, but no savings are attained. The lower-bound estimates take a pessimistic view, because the literature on HIT savings is limited. Additionally, while Girosi, Meili, and Scoville assumed that poorly performing technologies would be abandoned quickly, mandates requiring HIT adoption in Massachusetts may cause providers to maintain HIT systems that do not save money.

³⁶ We derived the status quo adoption rate from S.R. Simon, M.L. McCarthy, R. Kaushal, et al., *Electronic Health Records: Which Practices Have Them, and How Are Clinicians Using Them?* Journal of Evaluation in Clinical Practice, 2008. 14(1): p. 43-47.; and C.M. DesRoches, et al., *Electronic Health Records in Ambulatory Care—a National Survey of Physicians*. N Engl J Med, 2008. 359(1): p. 50-60.

³⁷ F. Girosi, R. Meili, and R.P. Scoville, *Extrapolating Evidence of Health Information Technology Savings and Costs*. 2005, Santa Monica, CA: RAND Health. xiii, 94 p. As of June 25, 2009: <http://www.rand.org/pubs/monographs/MG410/>

■ Results

In our upper-bound scenario, we estimated savings of \$12.1 billion (–1.8 percent), and in our lower-bound scenario, we estimated a \$3.7 billion (+0.6 percent) *increase* in spending, cumulatively between 2010 and 2020.

10. Eliminate Payment for Adverse Hospital Events

■ Description of the modeled policy option

This policy option would identify specific serious, preventable medical errors (and other indicators of poor care) and allow public and private payers to deny or reduce payment for the costs associated with such care. This option would be expected to provide a financial incentive to reduce the volume of poor care and thus reduce clinical waste. Because the Medicare program has already introduced policies to eliminate payment for avoidable complications, we included Medicare spending in our savings estimates. For example, in October of 2008 Medicare implemented a policy to eliminate payment for certain conditions that could be “reasonably prevented by following generally accepted guidelines.”³⁸

■ Summary of evidence on the potential for savings

- Evidence from the literature establishes that the events on the list for nonpayment by Medicare are avoidable; other evidence establishes that providers respond to financial incentives.
- Savings should accrue immediately; however, the mechanism for translating such savings into reductions in overall health spending is unclear. Experience with Medicare policy (implemented in October 2008) will provide the first empirical evidence of effect.
- A potential unintended consequence is whether hospitals undertake other activities to offset lost revenues.
- Various estimates of potential savings for specific areas exist, and they suggest savings could be at the level of tens to hundreds of millions of dollars for Massachusetts.

■ Assumptions used in modeling

We modeled scenarios in which reduced payment leads to the elimination of adverse hospital events. For the upper-bound scenario, we assumed that payments are eliminated for potentially preventable readmissions (PPRs) occurring within 15 days of hospitalization and all hospital-acquired infections (HAIs). We estimated that the annual cost of HAIs and

³⁸ CMS Office of Public Affairs. *CMS Proposes to Expand Quality Program for Hospital Inpatient Services in FY 2009 (Press Release)*. [Web Page] 2008. Online at <http://www.cms.hhs.gov/apps/media/press/release.asp?Counter=3041&intNumPerPage=10&checkDate=&checkKey=&srchType=1&numDays=3500&srchOpt=0&srchData=&srchOpt=0&srchData=&keywordType=All&chkNewsType=1%2C+2%2C+3%2C+4%2C+5&intPage=&showAll> (as of Thursday, April 14, 2008).

PPRs in Massachusetts is \$617 million,³⁹ although—because some PPRs may not actually be preventable—this estimate may be overly optimistic. We projected savings associated with eliminating these events through 2020, adjusting for population change in Massachusetts and assuming that it takes 3 years to fully achieve savings. To estimate implementation and maintenance costs, we used average annual licensing fees for software reported by a large vendor. Since there may be overlap between HAIs and PPRs, our lower-bound calculations included PPRs only.

■ Results

We projected savings of \$7.6–12.3 billion (–1.1–1.9 percent) cumulatively from 2010 through 2020 relative to the status quo. Again, because these estimates assume that all PPRs could be eliminated, they may be on the high end of what is feasible.

11. Decrease Intensity of Resource Use for End-of-Life Care

■ Description of the modeled policy option

This policy option would encourage the use of less-expensive sources of care, such as community hospitals and hospice care settings, at the end of life. Specific policy levers to achieve this goal could include lower cost-sharing for hospice care, as well as programs to encourage doctors to talk about palliative care and to consider less-intensive treatments for patients nearing the end of life. We excluded Medicare from this policy option because we anticipate that legislative or regulatory action would be required.

■ Summary of evidence on the potential for savings

- Strong evidence exists for variation in spending at the end of life across different geographic regions, but the evidence associated with specific approaches to reducing spending is relatively weak because the studies have had methodological problems.
- The studies that establish the potential savings are based on retrospective analysis; to make this policy change effective would require the ability to prospectively identify patients for whom additional, extraordinary measures are unlikely to change the quality or length of life. New tools may have to be developed and disseminated (although the presence of palliative care and hospice programs might accelerate adoption of best practices).
- The major beneficiary of policy changes affecting spending at the end of life would be Medicare, because it pays for 80 percent of spending at the end of life. However, changes in the overall approach to end-of-life care could result in reductions in per capita spending in the state for other payers.

³⁹ PPR incidence was calculated by DHCFP using 3M software. HAI incidence was reported by the Betsy Lehman Center and John Snow, Inc. (JSI), Betsy Lehman Center for Patient Safety and Medical Error Reduction and JSI Research and Training Institute Inc., *Prevention and Control of Healthcare-Associated Infections in Massachusetts. Part 1: Final Recommendations of the Expert Panel. 2008.* Massachusetts Department of Public Health: Boston (MA). We applied a cost-to-charge ratio of 0.493, supplied by DHCFP, to hospital charges.

■ Assumptions used in modeling

We modeled scenarios in which a portion of end-of-life care for adults under the age of 65 is shifted from hospitals to hospice settings. Of the remaining hospital-based care, we shifted a portion from AMCs to community hospitals. Savings phase in linearly over 5 years in both scenarios.

In the upper-bound scenario, we assumed that, over time, 50 percent of end-of-life care for adults under age 65 could be shifted to hospice settings, and that 90 percent of remaining care could be provided by community hospitals.

In our lower-bound scenario, we assumed that 25 percent of end-of-life care for adults under age 65 could be shifted to hospice settings and that the portion of remaining care provided by AMCs could return to 1995 levels (68 percent provided by community hospitals, versus 59 percent currently).

■ Results

We projected savings of \$850 million to \$1.4 billion (–0.1 to –0.2 percent) cumulatively between 2010 and 2020.

Goal 4:

Policies That Encourage Consumers to Make Good Health Choices

This policy goal seeks to identify mechanisms by which consumers could be enlisted to control costs through the use of different types of incentives for selecting efficient health plans and providers and for engaging in healthy behaviors. Policy options in this area require that information be developed and made available to assist consumers in making value-based choices (i.e., payments tied to expected benefits) and aligning financial incentives such that consumers are rewarded for those behaviors. These policies operate through incentives both to reduce the prices paid for services (through substitution) and to reduce the volume of care used.

12. Encourage Value-Based Insurance Design

■ Description of the modeled option

Value-based insurance design ties co-payments to the expected benefit of the health care service being consumed.⁴⁰ For example, to encourage better medication adherence, patients with chronic conditions might be given reduced copayments for medications necessary to treat those conditions. The logic behind this approach is that better drug adherence may ultimately save money by preventing costly and avoidable complications. Co-payments could differ based on individual patient characteristics, so that patients with a greater need for a drug would receive lower copayments. For example, a patient taking beta-blockers following a heart attack might have a lower copayment than a patient taking beta-blockers for migraines. Although value-based design could be applied to any health care service, it is

⁴⁰ M.E. Chernew, A.B. Rosen, and A.M. Fendrick, *Value-Based Insurance Design*. Health Aff (Millwood), 2007. 26(2): p. W195. (published online January 30, 2007; 10.1377/hlthaff.26.2.w195).

commonly considered in the context of pharmaceutical co-payments. Medicare is excluded because legislative or regulatory changes in Part D would be required.

■ Summary of evidence on the potential for savings

- Although substantial evidence suggests that lower co-payments lead to better medication adherence among chronically ill patients, there is limited evidence regarding whether value-based pricing reduces health spending.⁴¹
- Savings depend on whether reduced ED and inpatient use outweigh the increase in drug spending that results from lower co-payments.
- The policy could lead to a small increase in inpatient and ED spending among patients without chronic illness, who could face higher co-payments for certain drugs.

■ Assumptions used in modeling

Our upper-bound scenario assumed that reduced co-payments for adults ages 18–64 with 6 chronic conditions (asthma, chronic obstructive pulmonary disease, congestive heart failure, coronary artery disease, depression, and diabetes) would lead to a 25-percent reduction in ED use and a 5-percent reduction in inpatient utilization. We assumed that lower co-payments for chronically ill patients are offset by higher co-payments among individuals without chronic conditions and that, as a result of the higher co-payments, ED and inpatient spending among patients without the target chronic conditions increases by 1.5 percent.

Our lower-bound estimate assumed higher co-payments for patients without chronic illness lead to slight increases in health spending, with no reduction in spending by individuals with chronic conditions. Medicare enrollees were excluded from our calculations.

■ Results

Changes in spending ranged from an increase of \$1.1 billion to savings of \$1.2 billion (+0.2 to –0.2%) relative to the status quo for 2010–2020.

What the Literature Suggests About Other Policy Options

As mentioned above, there were 9 additional policy options that we did not model, either because the literature did not show promise of savings or because existing data were insufficient to make projections. We review the evidence for each of these options below.

⁴¹ J.J. Mahoney, *Reducing Patient Drug Acquisition Costs Can Lower Diabetes Health Claims*. Am J Manag Care, 2005. 11(5 Suppl): p. S170-6, D.P. Goldman, G.F. Joyce, and P. Karaca-Mandic, *Varying Pharmacy Benefits with Clinical Status: The Case of Cholesterol-Lowering Therapy*. Am J Manag Care, 2006. 12(1): p. 21-8.

Additional Policy Options to Reduce Waste

13. *Reduce Administrative Overhead*

■ Description of the policy option

Health care providers and insurers must incur some administrative spending if they are to carry out necessary organizational functions. For example, insurance companies must have a structure in place to pay bills, and doctors must have staff who can schedule appointments, file paperwork, and bill for services. Other administrative spending, such as investments in health information technology, might add value. However, the general consensus is that some portion of administrative spending does not add value or is not necessary to effectively execute business functions. We identified a number of areas in which administrative spending might be reduced, including billing, general management activities, sales and marketing, management of clinical care, and compliance with regulatory requirements. The approaches are designed to reduce the volume of administrative activity through either incentives or regulations.

■ Summary of evidence on potential for savings

- The evidence in this area is generally limited to estimates of the magnitude of the problem and cross-sectional comparisons of components of cost.
- No studies have quantified spending on necessary versus unnecessary administrative procedures.
- It is uncertain whether reduced administrative spending would translate into lower charges or insurance premiums.
- Through the Washington Health Care Forum, Washington State has developed partnerships between government, health plans and hospitals to reduce administrative costs. However, no studies have assessed the degree to which changes in administrative procedures in Washington have reduced spending.
- Most of the interventions require up-front investments (e.g., new IT systems, training personnel on new procedures), so they may increase costs in the short run.
- Because typical medical loss ratios (MLRs, which are the proportion of premium dollars that is spent on the direct delivery of medical care) among Massachusetts' insurers exceed 85 percent, limits on the MLR are unlikely to reduce administrative waste in Massachusetts.

14. *Extend Determination of Need (DoN) Program*

■ Description of the policy option

Determination of Need (DoN) is a regulatory strategy that requires health care institutions to seek permission to make substantial capital expenditures (e.g., build new or expanded facilities, purchase high-cost technologies). The intent of the policy is to reduce the volume of utilization by constraining the supply of available resources. Because Massachusetts al-

ready has DoN laws on its books, this option would focus on strengthening or expanding the existing DoN statute or processes, including the types of expenditures or dollar thresholds that are subject to DoN or the criteria for evaluating requests. Arguments have also been made in favor of limiting the DoN to situations in which it is likely to be effective in controlling costs or eliminating DoN altogether and allowing the free market to operate.

■ Summary of evidence on potential for savings

- The literature offers no evidence that DoN programs reduce health care spending. In fact, a 2006 study found higher rates of utilization and inpatient spending in states with DoN laws than states those without such laws.⁴²
- There is some evidence that DoN programs may have a marginal effect on quality by reducing the number of competitors and thereby increasing the volume of complex medical procedures in existing programs. However, although such an effect might plausibly increase value, it would not necessarily decrease health spending.⁴³
- To make DoN programs more effective would likely require larger staffs and more-rigorous review processes, both of which add costs. Whether greater potential savings could justify the costs of undertaking a stronger program remains uncertain.

15. Use Comparative Effectiveness Analyses to Guide Coverage and Payment Rules

■ Description of the policy option

Comparative effectiveness research examines the relative effect of alternative interventions for the same condition on health outcomes. In addition to examining how well different interventions achieve an improvement in health, these studies may examine the side effects or other unintended consequences associated with different interventions. Some studies also evaluate the relative cost of achieving equivalent outcomes under alternative approaches (called cost-effectiveness). This option is proposed as a means of generating information necessary to enable public- and private-sector payers to make coverage decisions that favor more-effective, and, potentially, also less-costly, treatments over less-effective ones. Some comparative effectiveness information already exists, but most proponents of this approach favor investing in the capacity to develop much more of such information. Comparative effectiveness information could be used to create incentives for both price and volume reductions.

■ Summary of evidence on the potential for savings

- No empirical studies have evaluated this policy option.
- A summary of the literature on cost-effectiveness found that less than 20 percent of health interventions save money, 4–6 percent increase costs and lead

⁴² W.S. Custer, P. Ketsche, B. Sherman, et al., *The Effect of Certificate of Need Laws on Cost, Quality and Access*. 2006. Georgia State University.

⁴³ V. Ho, M. H. Ku-Goto and J. G. Jollis, *Certificate of Need (CON) for Cardiac Care: Controversy over the Contributions of CON*. Health Serv Res, 2009. 44(2 Pt 1): p. 483-500

- to worse health outcomes, and 75 percent confer a health benefit but also increase costs.
- The UK's National Institute for Health and Clinical Effectiveness (NICE), which employs methods similar to those envisioned for this policy option, has shown an improvement in value but not a reduction in spending.
 - The consequence of NICE approval has meant increased costs for the National Health Service, because approval results in a mandate for funding new treatments. New treatments are approved more frequently than older ineffective treatments are removed.
 - Depending on the size of the agency responsible for conducting reviews, the number of areas that can be investigated may be quite small. For example, Washington State initiated a program in 2006 that has reviewed just 10 technologies.
 - For many interventions, the decisions are not whether or not a technology provides benefit but rather for which patients do the benefits exceed the risks and costs.
 - To optimize the effectiveness of this policy, substantial investment in developing new information and translating that into benefit design and payment rules would be required. For example, clinical trials of new medications cost \$100 to \$800 million per drug.
 - The potential for savings from this approach is unknown, and we would expect to see an increase in overall spending initially as new evidence is developed. The timeframe within which one might expect to see savings exceed spending is highly uncertain.

Additional Policy Options to Reform Payment Systems

16. Increase Use of Pay-for-Performance (P4P) Programs

■ Description of the policy option

Pay-for-performance programs reward health plans, hospitals, and physicians for performance on a selected set of measures. The approach has been used primarily to reward delivery of better-quality care, but purchasers are becoming interested in using similar approaches to reward better performance on measures of relative cost of care. Under this policy option, private and public purchasers would use financial incentives (such as increased payment for services or bonuses) to stimulate hospitals and physicians to improve efficiency of care. The intent of the program is to encourage providers to deliver care at lower prices (e.g., through substitution of less-expensive for more-expensive care) or to reduce the volume of services delivered. An argument might also be made that, if these incentive programs improved quality, they might decrease costs associated with the treatment of complications over time.

■ Summary of evidence on the potential for savings

- Only one study has examined the relationship between P4P and cost savings.⁴⁴ It reported positive findings for diabetes but it is uncertain whether those results are generalizable to other conditions or settings.
- Program design features—including size of the incentive, how payment is structured, what measures are used, and whether providers understand how to change behavior to obtain rewards—are critical in determining the likely effect.
- In general, programs to date have not made large amounts of money available to pay incentives. For many clinicians, greater financial rewards can be achieved at lower cost by seeing additional patients rather than by meeting performance targets.
- The programs are generally designed in a budget-neutral manner, so that there is no net increase (or decrease) in spending. Rather, existing spending is redistributed. Money to fund the “reward” pool may come from forgoing inflation adjustments.
- The administrative costs of the more-effective P4P programs tend to be high.
- The measures of efficiency are not as mature as the measures of quality and have not yet been demonstrated to be effective in inducing changes in physician or practice behavior.
- It appears likely that experimentation with P4P programs will continue; however, they do not appear to be a promising source of savings.

17. Regulate Insurance Premium Rate Increases

■ Description of the policy option

This policy option would use rate regulation to limit increases in health insurance premiums, either by establishing a minimum MLR (the proportion of premium dollars that is spent on the direct delivery of medical care) or by limiting premium growth rates. Although this policy option regulates prices, it might indirectly work to reduce volume as insurers implement strategies to operate within the premium limits.

■ Summary of evidence on the potential for savings

- No empirical literature has evaluated the effect of setting a minimum MLR.
- The MLR is an accounting statistic that, by itself, does not indicate anything about the level of spending. For example, the average MLR in Massachusetts is 85 percent, considered desirable by proponents of this approach, but spending is high.

⁴⁴ K. Curtin, H. Beckman, G. Pankow, et al., *Return on Investment in Pay-for-performance: A Diabetes Case Study*. *J Healthc Manag*, 2006. 51(6): p. 365-74; discussion 375-6.

- No empirical studies have evaluated the effect of limiting growth in premium rates. The likelihood that savings can be realized from premium rate regulation is quite small, and it may have unintended consequences, such as a reduction in the quality and availability of insurance policies.⁴⁵

18. Increase Medicaid Reimbursement Rates

■ Description of the policy option

Medicaid reimbursement rates for most providers and services are low relative to those of other payers in Massachusetts (this is generally true throughout the country). This policy option would increase Medicaid reimbursement rates for all providers and services to stem cost-shifting from public to private payers. Increasing Medicaid reimbursement is intended to increase the number of primary care physicians who accept Medicaid patients, which, in turn, could contribute to lower prices by substituting visits to primary care physicians for care from urgent care clinics or emergency departments. Over the long run, it might also reduce the volume of hospitalizations by increasing the likelihood that problems are identified and addressed early in a course of illness.

■ Summary of evidence on the potential for savings

- There is evidence that increasing Medicaid reimbursement rates will reduce cost-shifting to private payers, but the effect is likely to be small.
- Studies that have evaluated related changes in Medicaid reimbursement policy have found either no effect or short-lived effects on access and spending among Medicaid enrollees.
- A relatively new program in North Carolina has shown early savings (11 percent), but it includes many more elements than just increased payment to primary care providers.
- The only studies looking at improvements in quality were conducted in nursing homes.
- Higher reimbursement rates, which are generally designed to increase access, might also increase spending.
- Given the gaps in the research, it is difficult to extrapolate from the studies that have been done to estimate an effect of this specific policy.
- The challenge with this policy is finding the balance between a guaranteed increase in costs (due to higher rates) and the potential for saving money in other areas.

⁴⁵ N. Sood, A. Alpert, D. Goldman, et al., *Health Insurance: Should California Regulate Health Insurance Premiums? (Issue Brief)*. 2004. California HealthCare Foundation.

Additional Policy Options to Redesign Health Care Delivery

19. Increase the Use of Preventive Care

■ Description of the option

Preventable illnesses represent about 40 percent of mortality in the United States. Rates of use of both primary preventive care (e.g., immunizations, counseling to improve health habits) and secondary preventive care (e.g., early detection of disease through screening) are lower than is desirable. This option would increase the use of preventive services by, for example, expanding mandates for coverage of preventive services in public and private insurance and supporting educational campaigns to increase utilization of services. This option would save money by substituting preventive services now for treatment services later.

■ Summary of the evidence on the potential for savings

- Interest is increasing in pursuing strategies that reverse the trends in obesity and related diseases. Defining what is included in “preventive care” is critical to establishing expectations about the effect of investments in this area on spending and over what time period.
- The evidence shows that 19 percent of preventive services save money, whereas the remaining 81 percent increase longevity or the quality of additional years of life (i.e., value) but increase costs.⁴⁶ Cost-increasing services include screening tests for colon, cervical and breast cancer; flu shots; pneumococcal vaccines; and cholesterol-lowering medication.⁴⁷
- Some community-based primary prevention interventions (e.g., raising taxes on cigarettes, Shape Up Somerville) may be effective and cost-saving. Most of the community interventions are relatively small demonstration projects that have not been replicated on a large scale.
- Prior RAND work examining the effect of significant improvements in the management of chronic disease found that only reductions in the rate of obesity had the potential to reduce Medicare spending. Savings in disease-specific spending as a result of improvements in managing other chronic diseases were offset by costs associated with increased longevity.⁴⁸
- Savings, if any, may not accrue to the entity that paid for the preventive service. For example, employers might invest in prevention services, but the long-run savings are likely to accrue to the Medicare program.

⁴⁶ J.T. Cohen, P.J. Neumann, and M.C. Weinstein, *Perspective—Does Preventive Care Save Money? Health Economics and the Presidential Candidates*. *N Engl J Med*, 2008. 358(7): p. 3.

⁴⁷ L.B. Russell, *Preventing Chronic Disease: An Important Investment, but Don't Count on Cost Savings*. *Health Aff (Millwood)*, 2009. 28(1): p. 42-5.

⁴⁸ G.F. Joyce, E.B. Keeler, B. Shang, et al., *The Lifetime Burden of Chronic Disease among the Elderly*. *Health Aff (Millwood)*, 2005. 24 Suppl 2: p. W5R18-29.

- There is considerable controversy around the likely savings from prevention, with many analysts concluding that no savings are likely⁴⁹ and others providing estimates of very large savings.⁵⁰ Greater clarity around the preventive interventions and activities that might be included in a policy option will be important, as will laying out the set of assumptions and logic chain required to arrive at an estimate.
- We are skeptical that this is a likely source of significant short-term savings, but efforts to address obesity may return long-term savings.
- Our analysis did not consider the potential public health benefits of increased use of preventive care, such as improved quality-of-life.

Additional Policy Options to Affect the Behavior of Consumers

20. Provide Incentives to Consumers for Wellness and Healthy Behaviors

■ Description of the option

The link is strong between lifetime health care costs and healthy behaviors. This link has inspired some employers to look for strategies that would reward consumers who engage in healthy behaviors. Under this policy option, public and private employers would provide premium discounts or rebates to promote enrollment in programs designed to promote healthy behaviors (smoking cessation, exercise, weight loss). This policy could save money through reducing premium prices (assuming that the improved health profile of the population eventually led to experience-related discounts) or reducing overall spending through reduced volume of services used.

■ Summary of the evidence on the potential for savings

- Little empirical evidence exists on the effect of this option. The evidence is based on generalized observations of response to price incentives.
- No evidence exists to inform the size of the incentive that would be required to change different health habits. For example, do smoking cessation and weight loss require higher financial incentives than exercise?
- The Health Insurance Portability and Accountability Act (HIPAA) sets limits on premium differentials as part of its nondiscrimination provisions. According to the Department of Labor, such programs must meet five specific requirements:
 - The premium differential must not exceed 20 percent of the base premium.

⁴⁹ L.B. Russell, *Preventing Chronic Disease: An Important Investment, but Don't Count on Cost Savings*. Health Aff (Millwood), 2009. 28(1): p. 42-5.

⁵⁰ Prevention Institute and the California Endowment with the Urban Institute, *Reducing Health Care Costs through Prevention*. 2007. As of June 28, 2009: http://www.calendow.org/Collection_Publications.aspx?coll_id=44&ItemID=310#

- The program must be reasonably designed to promote health and prevent disease.
 - The program must give individuals the opportunity to qualify for the discount at least once a year.
 - The program must accommodate individuals for whom it is unreasonably difficult to quit using tobacco products because of addiction by providing a reasonable alternative standard (such as a discount in return for attending educational classes or for trying a nicotine patch).
 - Plan materials describing the terms of the premium differential must describe the availability of the reasonable alternative standard to qualify for the lower premium.
- Systematic reviews of the literature suggest that certain types of workplace health-promotion programs, when carefully targeted to high-risk individuals, are likely to produce a positive return on investment. However, some of this return involves nonmedical costs (e.g. reduced employee absenteeism) that would not directly affect premium prices.

Goal 5:**Change Medical Liability Laws to Reduce the Number and Average Payout of Claims**

21. *Change Laws Related to the Non-economic Damages Cap and Expert Witnesses***■ Description of the option**

Massachusetts already has a law limiting the size of non-economic damages, which is one of the most effective malpractice reform options that have been advocated. This policy option is a regulatory strategy that would strengthen the existing limits on malpractice damages and/or modify rules regarding the qualification of expert witnesses. The policy would save money through a reduction in malpractice premium prices and through a potential reduction in defensive medicine practices (e.g., ordering more tests than necessary to make a diagnosis, providing treatments with little expected health benefit to the patient).

■ Summary of evidence on the potential for savings

- The empirical evidence on the effect of changing medical liability laws on spending is mixed, likely because of differences in study methodologies.
- Caps on non-economic damages have been studied most frequently and, in one study, were shown to reduce the average payout per claim by \$15,000.
- No evidence exists on the relationship between expert witness qualifications and the outcomes of legal action.
- The costs of defensive medicine have been difficult to estimate, and there is no empirical evidence that changes in malpractice laws lead to changes in physician practice.

- The direct effect would be on malpractice premiums, and it is likely to be small. To observe reductions in health spending, reductions in malpractice payouts would have to be translated into reductions in premium, which, in turn, would have to be translated into reductions in per-unit charges and/or a reduction in the volume of defensive medicine practices.
- Given that Massachusetts already has a law on the books, the marginal effect of strengthening the law is uncertain but unlikely to produce significant savings.

Who Holds the Levers?

One of the principles guiding this work was that we should identify a set of options that include all stakeholders in the effort to reduce health care spending. We summarize here the options from the perspective of the Commonwealth, private employers, insurers, providers, and consumers.

The Commonwealth of Massachusetts (the administration and the legislature) holds the lever to make many of these policy changes. State government can set Medicaid policy (within the parameters allowed by federal law and regulations), encourage or offer incentives for insurers to make certain changes (within the parameters the Employment Retirement Income Security Act [ERISA] allows for self-insured employers), provide information and education to consumers to help make them better purchasers of health care, affect consumer and employer behavior through tax policy, change laws to encourage the use of efficient providers and retail clinics, require providers and insurers to report information, regulate premiums and hospital rates, alter mandatory benefit requirements for insurers, negotiate insurance packages of plans offered through the Connector, and conduct demonstration projects to study the effects of promising but yet-to-be proven reforms.

For many of these reforms, however, private sector stakeholders hold the important levers. Employers can alter employee premium contributions to encourage selection of low-cost plans, implement wellness programs, encourage the use of preventive care (e.g., through on-site flu shots), reduce administrative costs by purchasing standard plans from insurers, and negotiate with insurance companies to alter the mix of services offered.

Insurers can attempt to alter consumer purchasing behavior through cost-sharing structures, utilize bundled payments to reduce costs, take steps to reduce administrative waste, offer providers incentives to use evidence-based treatments, offer providers incentives to use health IT, and limit reimbursement for less-efficient or less-desirable care. The power of employers and insurers to make these changes might be limited, however, if consumers respond negatively to such changes and “push back” on reforms.

Providers will play a significant role in reducing health care costs. They can implement health IT, improve patient safety, eliminate administrative waste, and ensure that patients receive appropriate preventive and treatment services delivered at the right time, in the most-efficient setting, and by the most-efficient providers. Yet, unless the payment incentives are changed, many of these improvements will lead to reductions in revenue for providers. Further, some cost savings achieved by providers may not be passed back to payers in the form of reduced

rates or smaller-than-expected increases in rates. The majority of promising strategies for reducing costs will affect hospitals and are likely to disproportionately target academic medical centers.

Consumers can play a critical role in reducing costs. Individuals, by and large, have not been well-informed and demanding consumers of health care, in part because of a lack of transparency about price, quality, and safety, but also because they have not had significant financial incentives to be more discriminating in making choices. However, when offered information, a choice of plans, and appropriate incentives, consumers can shop to find the best deal on health plans, choose to use the most-efficient settings and providers, and take charge of their own health behaviors (stop smoking, lose weight, and exercise). Consumers armed with information can “vote with their feet” and begin to affect the market share of providers and health plans not offering optimal products or care in the safest environment.

To achieve the kind of savings necessary to keep universal coverage affordable in Massachusetts will require that all stakeholders participate in “belt-tightening” measures. The status quo may not be sustainable, and sacrifices by a single group of stakeholders will not be sufficient to accomplish significant reductions in spending.

Other Consequences of Cost Containment Policies

Cost containment policies may have effects that go beyond simply reducing the amount of health care spending. Other potential positive consequences could include quality improvements, lower occurrence of adverse events, enhanced doctor-patient relationships, and improved patient satisfaction. At the same time, all of the cost containment mechanisms that we identified could lead to negative, unintended consequences, ranging from increased spending with little or no added benefit to adverse health outcomes. The evidence on the likelihood that negative, unintended consequences will occur varies across policy options and is at times theoretical rather than experience-based. There are, however, empirical examples of negative, unintended consequences from cost containment policies. For example, studies have shown that increased consumer cost-sharing leads to a reduction of both necessary and unnecessary care,^{51,52} premium rate regulations enacted in the 1990s often increased costs and may have led to a decline in coverage,⁵³ and an article published in the *New England Journal of Medicine* found an association between hospital all-payer rate setting and elevated hospital mortality rates.⁵⁴ In the detailed report, we highlight for each option the potential unintended consequences that might result.

⁵¹ E. Keeler, J. Buchanan, and J. Rolph, *The Demand for Episodes of Treatment in the Health Insurance Experiment*. 1998. RAND Corporation: Santa Monica, CA. RAND Report No. R-3454-HHS. As of June 25, 2009: <http://www.rand.org/pubs/reports/R3454/>

⁵² D.P. Goldman, et al., *Pharmacy Benefits and the Use of Drugs by the Chronically Ill*. JAMA, 2004. 291(19): p. 2344-50.

⁵³ C.H. Williams and B.C. Fuchs, *Expanding the Individual Health Insurance Market: Lessons from the State Reforms of the 1990s*. 2004. Robert Wood Johnson Foundation: Princeton, NJ.

⁵⁴ S.M. Shortell and E.F. Hughes, *The Effects of Regulation, Competition, and Ownership on Mortality Rates among Hospital Inpatients*. N Engl J Med, 1988. 318(17): p. 1100-7.

For many policy options, it is unclear whether such consequences will be positive or negative. For example, proponents of hospital rate regulation often argue that—with reduced payment—hospitals would be forced to identify and eliminate unnecessary and wasteful spending. But, lower reimbursement rates could also mean that hospitals would struggle to provide necessary care. Similarly, standard economic theory predicts that regulations aimed at lowering prices will cause providers to reduce the quantity of care supplied. However, if providers are attempting to achieve fixed earnings or revenue targets, then the quantity of care supplied could increase following implementation of rate setting.⁵⁵ Below, we summarize the likely effects of cost containment policies on different stakeholders, and describe their potential responses.

Providers

A number of policy options seek to reduce provider reimbursement (e.g., rate setting, bundled payment), impose new requirements on providers (e.g., P4P, HIT, medical homes), or substitute less-costly for more-costly providers (e.g., reference pricing for AMCs, retail clinics, encourage use of NPs/PAs). As described above, the potential effect of reduced reimbursement on quantity and quality of care is ambiguous. To protect against threats to quality if payment rates are reduced, payment reform strategies could be combined with incentives to promote quality, such as P4P or provider report cards. Options such as P4P that impose new requirements on providers may have a positive effect on quality if they are designed and implemented well, but—to the extent that they are onerous and difficult—new requirements could induce provider fatigue. Finally, options to substitute less-costly for more-costly providers could put downward pressure on prices and reimbursement for costly providers (e.g., physicians), and upward pressure on prices/reimbursement for less-costly providers (e.g., NPs). Over the long term, these demand effects may limit the cost-saving potential of policies aimed at substituting low-cost for high-cost providers. Another potential consequence of substituting lower- for higher-cost providers would occur if advanced training received by higher-cost providers is necessary to ensure high-quality care in certain circumstances. While strategies such as value-based insurance design could be applied to ensure that high-risk patients receive care from specialized providers, there could be challenges in implementing these strategies—such as determining what set of conditions or attributes require treatment by specialists.

Consumers

Several policies that we considered would provide incentives to encourage patients to make healthier choices or to choose less-costly providers. If effective, these policies could have positive consequences that go beyond the health care system. For example, policies to encourage healthy behavior could improve quality of life and reduce absenteeism at work. However, a potential unintended consequence is that patients may not always prefer health plans or government policies designed to promote healthy or cost-conscious behavior. A backlash could occur if policies required consumers to pay more out of pocket for AMC care. Policies aimed at encouraging healthy behavior could also engender consumer backlash if they require tax

⁵⁵ In a well-known example from the economics literature, Camerer et al. (*Labor Supply of New York City Cab Drivers: One Day at a Time*. 1996, Pasadena, Calif.: Division of the Humanities and Social Sciences, California Institute of Technology. 20, [13] p.) found that taxicab drivers in New York City worked longer hours on days when business was poor, a result consistent with target earnings behavior but not with standard economic theory.

increases, or if they are perceived to unfairly reward individuals who have made unhealthy choices in the past. Finally, policies that would control costs by requiring higher cost-sharing for certain patients or certain types of care—such as value-based insurance design or reference pricing for AMCs—could have the effect of discouraging necessary as well as unnecessary care.

State Government

Many of the policies under consideration would require increased regulatory oversight on the part of the state government. Where possible, we have accounted for such regulatory costs in our models, but it may not always be possible to capture or even to fully foresee the extent of regulatory involvement that would be necessary to achieve certain policy goals.

Insurers

To be viable, most of the policies that we evaluated would require some form of insurer participation. For example, bundled payment policies would require insurers pay providers differently than they have been, and may even require changes in the way care is organized and delivered. Insurers may resist participating in cost containment initiatives, particularly if they believe that consumers will gravitate away from plans implementing cost control policies. Insurers who do participate may face implementation, recordkeeping, and administrative challenges, particularly in the early years, as systems must be changed to adopt new policies. Rapid change requiring new business models could be threatening to insurers' profitability.

Limitations

A key limitation of our modeling is that we have used a simple, spreadsheet approach that does not allow us to account for complex behavioral responses, such as those described above in the section on other consequences of cost containment. We have not attempted to model these behavioral responses because, for most of the policy options, there is limited or no experiential evidence on the likely magnitude or even direction of effects.

Consistent with the approach taken by the Congressional Budget Office (CBO) and other modelers who have considered long-term health spending (e.g. Schoen et al., 2008),⁵⁶ we present results in nominal dollars rather than using net present value. This approach is appropriate from a budget planning standpoint since policymakers often need to know the nominal dollar amount that will have to be raised or spent in a given year rather than the net present value of those dollars. However, results presented in nominal dollars may be less useful from a societal perspective, since individuals may value savings that will accrue in the near term more than savings that will accrue in the future.

Where possible, we have relied on past evidence and experience to generate model parameters and to draw conclusions about the likely effects of policy changes. Some readers may view this as a limitation, since the health care system has had the opportunity to learn from past

⁵⁶ C. Schoen and Commonwealth Fund, *Bending the Curve: Options for Achieving Savings and Improving Value in U.S. Health Spending*. 2007, New York, N.Y.: Commonwealth Fund. xxii, 89 p.

attempts at reform, and policymakers and other stakeholders could potentially implement such policies more effectively now—based on those lessons learned. On the other hand, it may be unrealistic to assume that we could do significantly better now than we have done in the past, particularly when we do not have a strong understanding of why previous attempts at implementing cost containment options failed. One aspect of the environment that has clearly changed in recent years is the general willingness across the range of stakeholders to consider cost control an imperative. This change in perspective represents an opportunity; yet, it will not necessarily make it easier to achieve the desired end result.

A more general limitation is that, for many reforms—both modeled and unmodeled—there is simply a lack of strong, systematic evidence in support of cost savings. The absence of evidence should not be taken to imply that “nothing works,” but, rather, that caution, evaluation, and monitoring are needed. In some cases, it might be prudent to consider implementing a policy option on a smaller scale (e.g., in a demonstration project) to test its performance before mandating a change on a wider scale. In other cases, careful monitoring of a newly implemented policy might be required to ensure that it is working as intended. Implementation should take into account that policy options may need to be amended—or, if necessary, discontinued—should significant unintended consequences arise or the policy proves to be ineffective.

Finally, although we have attempted to be comprehensive in assessing potential policy options, there are many reforms that are not included in this analysis. Two in particular that are garnering public attention include the use of accountable care organizations (ACOs)—provider networks that are jointly responsible for patient care⁵⁷—and capitation—a global approach to limiting spending that was tried with some apparent success in the 1990s but lost favor with consumers.⁵⁸ Global payments, a policy recently endorsed by the Massachusetts Special Commission on the Health Care Payment System, is a form of capitation that is typically paired with incentives to promote health care quality, such as pay-for-performance. As noted earlier, we did not consider global payments in our analysis because this policy was not identified as one of the highest-priority options in our stakeholder-consultation process. Another potentially promising option is competitive bidding, whereby insurers would contract for particular services (e.g., durable medical equipment) through a competitive process. The fact that we did not consider an option should not be taken to imply that the option does not hold promise, or that the option should not be analyzed in future work. The methods used in the analyses presented here can be extended to estimate the potential effect of additional options.

Conclusion

Starting with a list of more than 75 potential ideas for reducing health care spending in Massachusetts, we identified 21 options that represented five approaches to cost containment that emerged from our conversations with stakeholders and a review of documents proposing solutions to rising health care costs. The approaches are reforming payments systems, redesigning care delivery, reducing waste, engaging consumers in cost containment, and reforming medical

⁵⁷ E.S. Fisher, D.O. Staiger, J.P.W. Bynum, et al., *Creating Accountable Care Organizations: The Extended Hospital Medical Staff*. Health Aff (Millwood), 2007. 26(1): p. w44.

⁵⁸ J.C. Robinson, *The End of Managed Care*. JAMA, 2001. 285(20): p. 7.

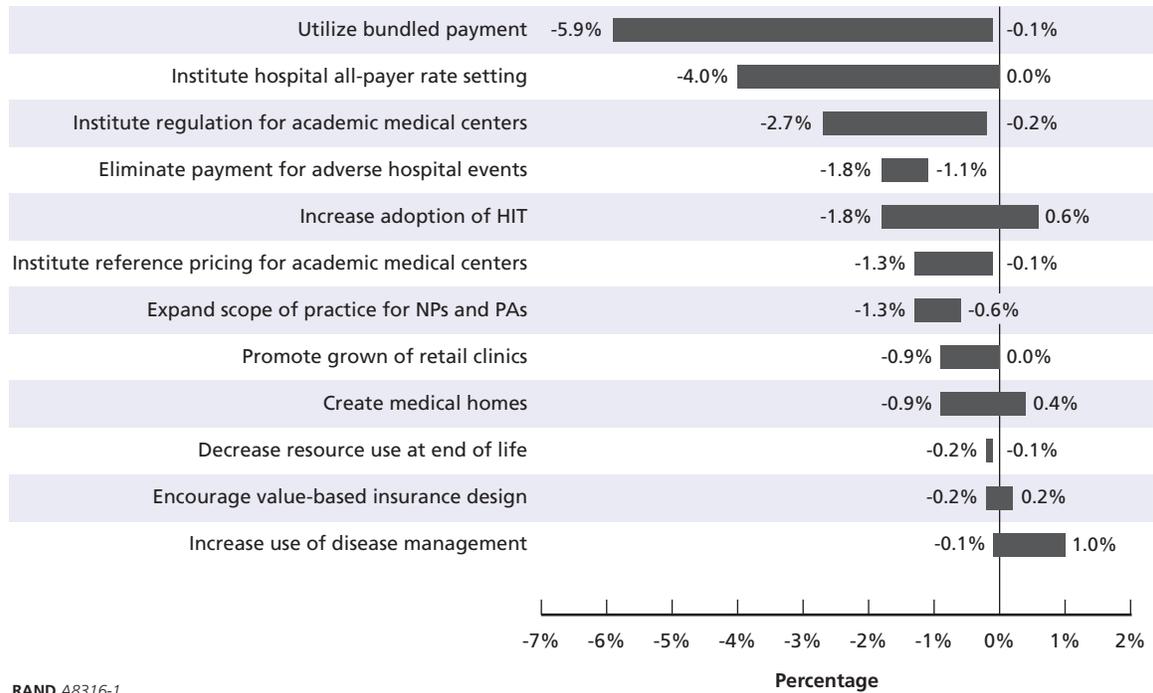
malpractice laws. Within any of these approaches, there are two fundamental mechanisms for controlling rising costs: reducing prices paid and reducing the volume of services consumed. These mechanisms can be implemented using either incentive (market-based) or regulatory strategies. The options we reviewed demonstrate a mix of these basic approaches to cost containment.

The purpose of this report was to evaluate whether evidence currently exists to support any of these approaches to cost containment and the strength of that evidence. We were also asked to consider whether options would be likely to produce savings in the short or long run. In general, the evidence for many of these reforms is limited, and the hope for cost savings is based on theory or analogy rather than demonstrated experience. We identified 12 options that had the strongest evidence supporting their potential for cost control. All but 3 of the options rely on incentive strategies rather than regulatory strategies.

Under the upper-bound (optimistic) scenario, all of the modeled options have the potential to produce savings in the long run (cumulatively over 10 years), but only 6 are estimated to return savings in the lower-bound scenario. Just half of the options modeled have the potential to return savings in the first year of implementation under the lower-bound scenario, ranging from \$11 million for reference pricing for inpatient care to \$732 million for bundled payment. Three of the options (hospital all-payer rate regulation, disease management, and HIT) are estimated to increase spending in the first year of implementation from up-front investments, even though long-run savings in the upper-bound scenario could be attained. In the upper-bound scenario, the range of first-year savings (not including options that may increase costs) is estimated to be \$28 million for reducing the intensity of resource use for end-of-life care to \$1.8 billion for bundled payment.

Not surprisingly, we found no easy solutions to the problem of rising health care costs in Massachusetts. We have identified a set of policy options that have reasonable evidence of potential savings to start the discussion. However, finding long-term solutions to rising health care costs will require significant investments in infrastructure and in fundamentally changing the way health care is delivered. These solutions are likely to take at least a decade to implement and show a return. But, if policymakers do not begin down this path, rising health care costs will continue to pose a threat to the goal of maintaining universal coverage for the residents of Massachusetts.

Figure 1
Projected Savings as a Share of Spending, 2010–2020, for 12 Modeled Policy Options



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Table 2
Effect of Policy Options on Health Spending in Massachusetts

POLICY OPTION	System-level effect: price or volume change?	Modeled population	Problem addressed	How would savings be achieved?	ESTIMATED EFFECT ON SPENDING							
					First-year spending effect (lower bound, \$M)	% of total status quo (\$43B)	First-year spending effect (upper bound, \$M)	% of total status quo (\$43B)	Cumulative spending effect, 2010–2020 (lower bound, \$M)	% of total status quo (\$670B)	Cumulative spending effect, 2010–2020 (upper bound, \$M)	% of total status quo (\$670B)
Institute hospital all-payer rate setting	Price	All	High and rising costs of inpatient care; control rate of increase and set rates that all payers use.	All-payer regulatory authority would set rates that would include Medicare reimbursement.	\$5	0.0%	\$5	0.0%	\$57	0.0%	–\$26,361	–3.9%
Utilize bundled payment strategies	Volume & price	18–64-year-olds	Fee-for-service payments encourage overuse of care, and pay for potentially preventable complications.	Medicaid and private insurers would need to adopt bundled payment reimbursement policies.	–\$32	–0.1%	–\$1,832	–4.2%	–\$685	–0.1%	–\$39,317	–5.9%
Institute rate regulation for academic medical centers	Price	<65 years old	Higher costs of academic medical centers; increased use of this setting of care.	State regulatory authority would set rates for AMCs that are in line with community hospital rates; commercial insurers would not be able to pay higher rates.	–\$93	–0.2%	–\$1,217	–2.8%	–\$1,364	–0.2%	–\$17,887	–2.7%

Table 2 (continued)
Effect of Policy Options on Health Spending in Massachusetts

POLICY OPTION	System-level effect: price or volume change?	Modeled population	Problem addressed	How would savings be achieved?	ESTIMATED EFFECT ON SPENDING							
					First-year spending effect (lower bound, \$M)	% of total status quo (\$43B)	First-year spending effect (upper bound, \$M)	% of total status quo (\$43B)	Cumulative spending effect, 2010–2020 (lower bound, \$M)	% of total status quo (\$670B)	Cumulative spending effect, 2010–2020 (upper bound, \$M)	% of total status quo (\$670B)
Institute reference pricing for academic medical centers	Price	<65 years	Higher costs of academic medical centers; increased use of this setting of care.	Consumer pays difference between cost of community hospital care and AMC charge; would require private insurers to use this pricing model.	–\$11	0.0%	–\$182	–0.4%	–\$526	–0.1%	–\$8,597	–1.3%
Promote the growth of retail clinics	Price and Volume	All	Expensive emergency departments and urgent care clinics are used for problems that do not require a high level of care because of the availability of services after hours.	Providing an alternative to emergency departments and urgent care clinics that is convenient, accessible, and less expensive will shift care to that setting.	\$0	0.0%	–\$108	–0.3%	\$0	0.0%	–\$6,271	–0.9%

Table 2 (continued)
Effect of Policy Options on Health Spending in Massachusetts

POLICY OPTION	System-level effect: price or volume change?	Modeled population	Problem addressed	How would savings be achieved?	ESTIMATED EFFECT ON SPENDING							
					First-year spending effect (lower bound, \$M)	% of total status quo (\$43B)	First-year spending effect (upper bound, \$M)	% of total status quo (\$43B)	Cumulative spending effect, 2010–2020 (lower bound, \$M)	% of total status quo (\$670B)	Cumulative spending effect, 2010–2020 (upper bound, \$M)	% of total status quo (\$670B)
Create medical homes	Volume and Price	18–64-year-olds	Increased investments in primary care could eliminate waste and discourage the use of inappropriate care.	Medicaid and private insurers would need to begin reimbursing primary care practices as medical homes, and requiring better chronic care management, use of HIT, and improved access.	\$46	0.1%	–\$91	–0.2%	\$2,882	0.4%	–\$5,713	–0.9%
Expand scope of practice for NPs and PAs	Price	All	NPs and PAs are underutilized, despite being qualified to provide primary care at a low cost.	Some payment and scope-of-practice policies might encourage consumers and physician practices to make greater use of NPs and PAs.	–\$66	–0.2%	–\$130	–0.3%	–\$4,246	–0.6%	–\$8,353	–1.3%

Table 2 (continued)
Effect of Policy Options on Health Spending in Massachusetts

POLICY OPTION	System-level effect: price or volume change?	Modeled population	Problem addressed	How would savings be achieved?	ESTIMATED EFFECT ON SPENDING							
					First-year spending effect (lower bound, \$M)	% of total status quo (\$43B)	First-year spending effect (upper bound, \$M)	% of total status quo (\$43B)	Cumulative spending effect, 2010–2020 (lower bound, \$M)	% of total status quo (\$670B)	Cumulative spending effect, 2010–2020 (upper bound, \$M)	% of total status quo (\$670B)
Increase use of disease management	Volume	18–64-year-olds	Chronic care is poorly managed and coordinated, leading to potential unnecessary expenses for health problems that could have been avoided.	External service provided to help fill the gap in care-management systems; provider or insurance systems would have to adopt these programs in greater numbers than is now the case.	\$457	1.1%	\$131	0.3%	\$6,968	1.0%	–\$308	–0.1%
Increase adoption of HIT	Volume and Price	All	Through mandates and financial incentives, full adoption of HIT is achieved by 2015 or 2017.	All hospitals and physicians would need to be motivated to adopt and make appropriate use of HIT.	\$259	0.6%	\$82	0.2%	\$3,657	0.6%	–\$12,171	–1.8%
Eliminate payment for adverse hospital events	Price	All	Potentially preventable readmissions and avoidable complications add costs and reduce quality; eliminating these events would save money and increase value in the health system.	Insurers would need to agree to eliminate payment for these events (and, we assume that eliminating payment eliminates the problem).	–\$346	–0.8%	–\$558	–1.3%	–\$7,636	–1.1%	–\$12,297	–1.8%

Table 2 (continued)
Effect of Policy Options on Health Spending in Massachusetts

POLICY OPTION	System-level effect: price or volume change?	Modeled population	Problem addressed	How would savings be achieved?	ESTIMATED EFFECT ON SPENDING							
					First-year spending effect (lower bound, \$M)	% of total status quo (\$43B)	First-year spending effect (upper bound, \$M)	% of total status quo (\$43B)	Cumulative spending effect, 2010–2020 (lower bound, \$M)	% of total status quo (\$670B)	Cumulative spending effect, 2010–2020 (upper bound, \$M)	% of total status quo (\$670B)
Decrease intensity of resource use for end-of-life care	Price	18–64-year-olds	Spending on end-of-life care in hospitals can be very expensive, with little benefit; patients are often more satisfied with less-costly hospice care.	Encourage the use of hospice settings over hospital settings, and of community hospitals over teaching hospitals	–\$15	0.0%	–\$28	–0.1%	–\$847	–0.1%	–\$1,404	–0.2%
Encourage value-based insurance design	Volume	18–64-year-olds	Reimbursement is not currently related to the health benefit expected from certain interventions; since utilization is not related to benefit, there is considerable waste in the system	Drug co-payments would be reduced for patients with certain chronic diseases to provide patients with incentives to better manage their illnesses; commercial insurers would have to adopt this approach when structuring policies.	\$74	0.2%	–\$79	–0.2%	\$1,082	0.2%	–\$1,160	–0.2%