Costs of Vermont's Health Care System
Comparison of Baseline and Reformed System

Final Report
November 1, 2011

Prepared by
Vermont Legislative Joint Fiscal Office and the
Department of Banking, Insurance, Securities and Health Care Administration

With assistance from Policy Integrity, LLC

Contents

Executive Summary 3
Introduction 5
The Hsiao Report 6
Spending 7
A Note about Costs 7
Drivers of Health Care Spending 7
Population 7
Utilization - Disease 8
Utilization - Treatment 8
Prices 9
Background – Current Health Care Spending in Vermont, the United States, and Selected Countries 11
United States 11
Vermont and the United States 17
International Comparisons 19
Baseline Spending Projections – Vermont 22
Methodology 22
Savings 26
Introduction 26
Areas and Approaches for Savings 29
Administrative Simplification and Streamlining 30
Fraud 35
Malpractice Reform 36
Planning and Investment Controls 36
Clinical Reforms 38
Payment Reform 38
Benefit Design and Value-Based Care 38
Changes in the Care Process 40
Prevention and Public Health 41
A Note on Investments and Other Offsetting Costs 41
Estimated Spending Net of Savings and Investments 43
Appendix 1 – Spending and Savings Model 44
Appendix 2 – U.S. Spending Growth 45

Executive Summary

No. 48 of the Acts of 2011 (Act 48) required that the Joint Fiscal Office (JFO) and the Department of Banking, Insurance, Securities and Health Care Administration (BISHCA) develop an "estimate of the costs of Vermont's current health care system compared to the costs of a reformed health care system upon implementation of Green Mountain Care and the additional provisions of this act." The authors interpreted this language to include policy changes that could occur as a result of processes established in Act 48, not just the direct impact of the act on spending.

Many of the estimates will be refined and updated as additional data become available and several focused reports called for in Act 48 are released. While this report addresses the financial consequences, finances are only one facet of reform. Ultimately, accomplishments will be measured against several standards, including the health of the population, satisfaction of both providers and patients, and the financial sustainability of the system.

The analysis indicates that without reform, Vermont health care spending will more than double from 2009 to 2019, from $4.7 billion to $10 billion. Our estimates, based on national trends, indicate that average growth in Vermont will be about 7% a year. However, we conclude that it is possible to reduce this rate of growth through a wide range of policy initiatives. The actual savings will be determined by decisions yet to be made by the Green Mountain Care Board, the Executive Branch, and the General Assembly, as well as the impact of national initiatives and policy changes, including the amount of federal financial support that we can anticipate.

Savings will be dependent upon the types and scope of cost-containment measures that are implemented, such as regulation, payment reform, or delivery system changes. System-wide savings that result from reductions in provider costs (e.g., simplified administration) will also be affected by the mechanism by which those cost reductions are passed on to payers.

If action is taken in each area of potential savings discussed in this report, savings will begin in 2014 and rise rapidly for the next several years. In 2020, savings are estimated to range from $553 million (5.5%) to $1.8 billion (18.3% of total spending). The table below shows estimated low- and high-range savings in each category discussed in this report.

In order to achieve these savings, substantial investments will be needed. While total investments, including projects already under way, could be higher, in this report, we estimate the portion of those investments attributable to Act 48 to be from $50 to $150 million.

The major goal of this report is to establish an analytical approach with which we can identify costs and savings in the future as information becomes available and decisions are made. The report relies on a model that we hope will continue to be used in reform discussions. As part of the ongoing development process, we will:

- Refine our estimates of savings in selected areas
- Narrow the range of uncertainty around savings estimates
- Split total expenditures into sources of funds, starting with identification of federal dollars

In addition, we hope that this report will inform subsequent reform discussions by providing a range of background materials and establishing an approach for future analyses.

Achieving savings in health care spending is a difficult process. In this context, success is measured as reduction in the rate of growth – achieving absolute savings (spending less than in the prior year) is extremely unlikely.

In order to reduce the rate of growth in health care spending, difficult decisions must be made. Both the size and timing of savings are dependent on those decisions. It is our hope that this report and the model upon which it is based will provide decision-makers with a useful framework as they work to reform Vermont's health care system.

The tables below summarize the findings in this report. The "baseline" is our estimated spending in the absence of state policy changes. The two other tables reflect the range of our estimates. The "Low" table shows savings and spending using our most conservative assumptions about savings and our high-end estimate of investments required. The "High" table uses the upper end of our savings estimates and the low end of our estimate of investments required. Each table includes percent savings from the baseline for that year.

Summary of Report Findings

$Millions	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**
Projected Baseline	**$6,471**	**$6,939**	**$7,469**	**$8,015**	**$8,601**	**$9,278**	**$10,029**
Trend		7.2%	7.6%	7.3%	7.3%	7.9%	8.1%
Low							
Payer Administration	$0	($8)	($9)	($31)	($59)	($90)	$0
Provider Administration	$0	($27)	($31)	($27)	($30)	($45)	$0
Fraud Reduction	($12)	($13)	($15)	($17)	($20)	$0	$0
Clinical Reforms	($0)	($1)	($35)	($58)	($150)	($316)	($553)
Investments	$15	$30	$60	$30	$15	$0	$0
Total Savings	$3	($19)	($30)	($103)	($244)	($451)	($553)
Percent Savings	0.0%	-0.3%	-0.4%	-1.3%	-2.8%	-4.9%	-5.5%
Projected Spending	**$6,474**	**$6,920**	**$7,439**	**$7,912**	**$8,356**	**$8,828**	**$9,476**
Trend		6.9%	7.5%	6.4%	5.6%	5.6%	7.3%
High							
Payer Administration	$0	($13)	($15)	($52)	($99)	($149)	$0
Provider Administration	$0	($54)	($62)	($53)	($60)	($90)	$0
Fraud Reduction	($32)	($37)	($43)	($48)	($55)	$0	$0
Clinical Reforms	($0)	($49)	($208)	($430)	($764)	($1,240)	($1,834)
Investments	$5	$10	$20	$10	$5	$0	$0
Total Savings	($27)	($143)	($307)	($573)	($973)	($1,480)	($1,834)
Percent Savings	0.0%	-2.1%	-4.1%	-7.2%	-11.3%	-16.0%	-18.3%
Projected Spending	**$6,443**	**$6,797**	**$7,162**	**$7,442**	**$7,628**	**$7,798**	**$8,195**
Trend		5.5%	5.4%	3.9%	2.5%	2.2%	5.1%

Note: figures may not sum to totals due to rounding

Introduction

This report has several purposes. Most importantly, it develops cost and savings estimates as required by No. 48 of the Acts of 2011 (Act 48).

> Sec. 14. COST ESTIMATES; MEETINGS
> (a) No later than April 21, 2011, the legislative joint fiscal office and the department of banking, insurance, securities, and health care administration shall provide to the house committee on health care and the senate committee on health and welfare an initial, draft estimate of the costs of Vermont's current health care system compared to the costs of a reformed health care system upon implementation of Green Mountain Care and the additional provisions of this act. To the extent possible, the estimates shall be based on the department of banking, insurance, securities, and health care administration's expenditure report and additional data available in the multi-payer database established in 18 V.S.A. § 9410.
>
> (b) The legislative joint fiscal office and the department of banking, insurance, securities, and health care administration shall report their final estimates of the costs described in subsection (a) of this section to the committees of jurisdiction no later than November 1, 2011.

In order to meet that requirement, the report is built around a series of estimates, including a new baseline (projected Vermont spending in the absence of state policy changes) and estimates for several different opportunities for savings. See the Appendix 1 for a discussion of the model upon which these estimates are based.

In addition, we hope that this report will inform subsequent reform discussions by providing a range of background materials and establishing an approach for future analyses.

The report is organized into two major sections. The first addresses health care spending, including historical patterns (both Vermont and national) and projections for future spending, prior to the effects of Vermont's reform efforts. This section also includes a discussion of the drivers of health care spending – the multiple factors that result in spending growth in excess of broader income and economic growth. The model is built on this base.

The second section looks at savings – the consequences of different policy choices that Vermont must make as it reforms its health care system. There are many different tools which may affect the growth in health care spending. Each operates differently and has different consequences. These must be understood as part of the policy development process.

It is important to understand that projection of health care spending and estimation of savings are inexact sciences. Many of the factors that must be considered in the projection process, such as the broader economy, are difficult to project individually. Interactions among these factors add to the complexity.

All estimates in this report are based on the best available information and methodologies, but will still have a substantial margin of error. The Vermont Department of Banking, Insurance, Securities and Health Care Administration (BISHCA) has been preparing both estimates of current spending (upon which the analyses in this report are based) and projections of future spending. As part of its most recent projection report[1], it looked back at how accurate its projections had been in prior years. Accuracy has been good, with maximum errors of plus or minus five percent, but the Expenditure

[1] http://www.bishca.state.vt.us/sites/default/files/2009-EA-InForecast-Final.pdf

Analysis projections are for three years and projections in this report are for ten, so errors may be larger.

Savings can be more difficult to project because, in addition to the difficulties in estimating current spending (e.g., how much are providers currently spending on the claims process), not all current activities will change (claims may still need to be sent to out-of-state payers), savings are influenced by which costs are fixed, and savings may be partially offset by both investment costs and behavioral changes.

In recognition of the uncertainty that is a part of the estimation process, savings figures in this report are presented as a range.

For example, different studies have identified different costs to providers in dealing with multiple insurance companies and public payers. While some studies have compared those costs to costs faced by providers in other countries with true single-payer systems, provider costs in single-payer environments will not be the same as those that providers will face in Vermont's reformed system. This is due to remaining system complexities that are less significant in other countries.

Estimates in this report are based on historical Vermont and U.S. data, health policy literature, and discussions with Vermont providers and payers.

The Hsiao Report

While independent estimates have been developed for this report, it has been influenced by the work of Professor William Hsiao and his team. The Hsiao report[2], delivered in February 2011, projected that by 2024, the state could reduce its health care spending by up to 25 percent from what would have been spent in the absence of state health care reform (but counting the impacts of federal reform).

This report relies on more recent BISHCA expenditure data and on the most recent national health spending growth estimates from the Centers for Medicare and Medicaid Services, adjusted to reflect historical differences between the state and the United States.

The Hsiao report also included a proposal for financing health care coverage for all Vermonters, which is outside the scope of this report. In Act 48, the Secretary of Administration was charged by the legislature with developing a financing proposal, to be reported in January 2013.

[2] http://www.leg.state.vt.us/JFO/healthcare/FINAL%20REPORT%20Hsiao%20Final%20Report%20-%2017%20February%202011_3.pdf

Spending

A Note about Costs

Use of the term "costs" in health care policy discussion often leads to confusion. What are health care costs from a payer's view are revenues from a provider's point of view. For the provider, costs include such things as salaries, equipment, supplies, and insurance. In this report, we will use the term costs to refer to provider costs. Spending or expenditures will refer to money paid to providers for care or to third-party payers (premiums). While these may not be the definitions used in ongoing policy discussions, it is essential to agree on some set of consistent terms.

Drivers of Health Care Spending

In order to develop tools to control the growth of health care spending, it is necessary to first understand the drivers of that growth. Basic economics tells us that spending is always the product of two factors – the quantity of goods or services purchased and the price paid for each. In health care, there are several different factors that drive changes in price and especially in quantity. For example, the quantity of health care services used by a population can be influenced by the health of the population (prevalence and severity of diseases) and by differences in the ways those diseases are treated.

It is important to distinguish between forces that increase health care spending and policies that change how the needed revenue is raised. For example, when public payers (Medicare and Medicaid) reduce the prices that they pay providers, that reduction in revenue is often offset by providers that are able to demand higher prices from other payers. High-deductible health plans primarily shift costs from insurers to beneficiaries, although to the extent that they reduce utilization, they also reduce aggregate spending.

While this section discusses the drivers of health care costs, it does not try to indicate the relative magnitude of the influence of each. Other than population growth, which has a fairly small effect, especially in Vermont[3], it is difficult to allocate relative importance to specific drivers.

Population

Population affects health care in two ways. The first is simply population growth. All other things held the same, the number of services used will increase as a population grows or more people have coverage. This is true whether the growth is a function of broad forces such as natural increase or migration, a consequence of a change in program eligibility or, in the case of the Medicare program, the aging of the population.

The second population effect is demographic. Age is one of the most reliable predictors of health care utilization, so as a population ages (e.g., average age increases, proportion of seniors increases), the number of health services that it uses will increase. This effect is independent of the growth in the number of people covered.

[3] From 2000 to 2010, Vermont's population grew at less than 0.3% per year.

Utilization - Disease

There is a close relationship between disease and health care spending. The simplest way to structure the relationship is that increasing prevalence of disease leads to increased utilization of services. This may be a result of an increase in the true prevalence of the disease in a population or an increase in the rate at which the disease is diagnosed. Ken Thorpe's work has identified the major role of the increase in the rate of diagnosed disease in increased health care spending[4].

Increase in the prevalence of disease may be a consequence of demographic change (as a population ages, age-related disease increases), behavioral change (e.g., rates of smoking or obesity), or the advent of new diseases, such as AIDS.

An increase in the rate of diagnosis, as opposed to rate of prevalence, can happen as a result of a new screening program or the introduction of a new diagnostic tool.

Another disease-based effect is the severity of illness. Anything that reduces severity at time of treatment will reduce spending. For example, many infectious diseases are less expensive to treat when identified early in the disease process, and much more expensive to treat when treatment is delayed.

The final disease-based effect is "medicalization" – the process by which nonmedical conditions are reclassified as being diseases. Once conditions are defined as diseases, they are often covered by private insurance and public programs.

Utilization - Treatment

At a given level of disease prevalence, how those diseases are treated also affects utilization. There are many ways that treatment can affect utilization. The first is increasing capability to treat, usually in the form of new technology. This driver includes both introduction of treatments for diseases that had no treatment previously and new, more effective (and possibly more expensive) treatments that replace older treatments. Some researchers, David Cutler among them, attribute much of the growth in health care spending to increasing capability[5].

The second treatment driver is found in the relationship between available resources and utilization. Numerous studies, including the work of John Wennberg and Elliot Fisher[6] have identified a close correlation between the level of resources available and health care spending. This is the justification for regulation of capital investment, such as Vermont's Certificate of Need process. Note that any health care system needs some capacity above its day-to-day utilization in case of an event such as an epidemic.

The third driver in this category is quality of care. Both overuse (treatments whose benefits are outweighed by their risks) and misuse (medical errors) lead to increased medical spending. The financial consequences of underuse (nonuse of treatments which would benefit the patient) are more difficult to predict, because additional spending in the short run will often produce savings in the long run. For

---

[4] Thorpe KT, Florence CS, Howard DH, Joski P "The Rising Prevalence Of Treated Disease: Effects On Private Health Insurance Spending" Health Affairs, June, 2005

[5] Cutler DM, Your Money or Your Life, Oxford University Press, 2004

[6] Fisher ES, Wennberg JE, et al.; "Associations among hospital capacity, utilization, and mortality of US Medicare beneficiaries, controlling for sociodemographic factors." Health Services Research, 2000 Feb;34(6):1351-62.

example, greater use of examinations and tests to monitor the progress of diabetes can reduce the number of expensive complications in the future.

A fourth driver is patient expectation and demand. This may be a consequence of patients having better information or of effective advertising (not necessarily different things). The role of patient demand is also a consequence of third party payment. By reducing or eliminating the financial consequences of care choices, patients may choose to use more care than they would if they were paying directly for care. As mentioned above, increased use of care can have both positive and negative effects on patient health.

The fifth treatment-related driver is medical uncertainty. In many instances, the best treatment (however that is defined) is not certain. Uncertainty may lead to increased use of services (and spending) in the belief that the service may improve the patient's health. For example, should a service be provided whenever

- The likelihood of harm is small
- The possible benefits outweigh the possible risks
- The possible benefits outweigh the costs

The final treatment-related driver is defensive medicine. In response to a fear of lawsuits, practitioners may choose to provide or order additional services.

Prices

As with treatments, there are several drivers associated with price (the cost to treat). The first of these is inflation. As elsewhere in the economy, prices for medical care are subject to inflation. Some of the inputs to the health care process, such as fuel and electricity, grow at the general inflation rate, while others, such as medical equipment, may grow faster.

The second factor, somewhat related to inflation, is workforce shortage. Generally, health care salaries would be expected to rise at a similar rate to salaries in other sectors, but for classes of employees where there is a shortage, such as nurses or medical technicians, salaries will rise faster than the overall rate of wage growth.

Third, prices are also driven in part by reimbursement policies. Providers may gravitate to services that have a higher margin. Most reimbursement systems pay relatively more for interventions, especially those that require expensive equipment, than they do for basic care.

The fourth factor is one of the more controversial areas of discussion - how market forces (or their lack) affect health care spending. One position is that a lack of competition permits unfettered price increases. Others believe that competition leads to redundancy and excess capacity (which as discussed above, leads to higher utilization).

Closely related to the role of markets is the role of price regulation. Some states, most notably Maryland, regulate prices tightly, usually in the hospital sector, while others regulate at a more global level (e.g., Vermont's hospital budget process). Many states have no regulation at all in this area.

The final factor in pricing is the cost of malpractice insurance. As with any other cost of doing business, providers must recover the cost of their coverage through the prices that they charge so when their malpractice premiums rise, so do prices.

Background – Current Health Care Spending in Vermont, the United States, and Selected Countries

One way to understand Vermont's health care spending is through comparison. These comparisons may be at a point in time (e.g., how does Vermont's per-capita spending compare to U.S. spending?), but it is often more valuable to make these comparisons across time.

While these comparisons can be valuable, they should be made cautiously. Often, comparison of changes over time can be more reliable than comparisons at a single point in time. For example, due to differences in definitions and methodology, estimates of Vermont health spending done by the federal Centers for Medicare and Medicaid Services (CMS) for a specific year can differ from those done by BISHCA. However, changes over time can be more readily compared because both organizations have used consistent methodologies over time.

Concern about growth in health care spending has a long history both nationally and in Vermont. In 1976, *Trustee*, a journal for hospital governing boards, included an article titled "Health Care Spending: at its Limit?"[7] In 1976, health care expenditures (NHE)[8] accounted for about 8.6% of the U.S. economy. By 2009, that figure had more than doubled, to 17.6%.

In Vermont, health care spending (using a slightly different definition) accounted for just over 10% of the state economy in 1992. In 2009, health care spending was estimated to represent over 19%.

	1965	1992	2009
United States	5.8%	13.5%	17.6%
Vermont	Not available	10.4%	19.1%

A number of different factors contribute to the growth of health care spending including technological advances, changes in how medicine is practiced, and changes in demographics (an aging population). While different studies emphasize different factors, there is no question that health care is consuming a greater and greater share of state and US economies.

In this report, we will use consumption spending unless otherwise indicated. This is done to enable us to make the most accurate comparisons between Vermont and the United States.

United States

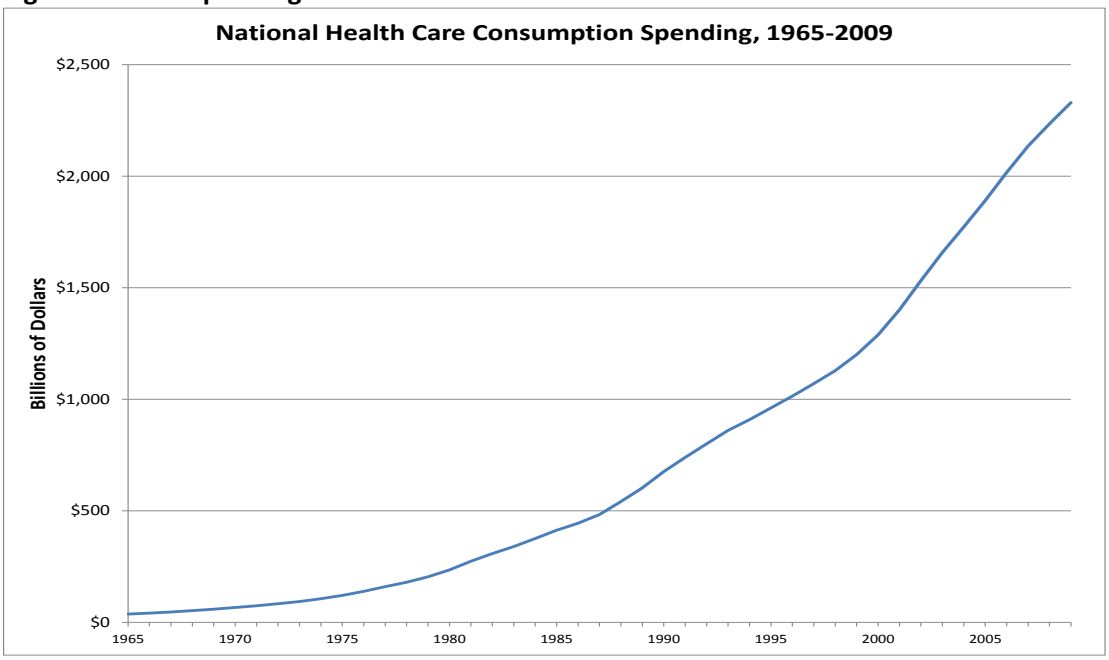
National estimates of health care spending have a long history. The Centers for Medicare and Medicaid Services, CMS, and its predecessor organization, the Health Care Financing Administration, HCFA, have been issuing estimates since HCFA's creation in 1965.

[7] Trustee. 1976 Oct;29(10):36-7.

[8] The federal government measures health care spending three different ways. Personal Health Care (PHC) just includes direct payments for health care goods and services. Health Care Consumption (HCC) adds administrative costs and spending on public health activities. National Health Expenditures (NHE) is the most comprehensive measure, adding construction and research. While NHE is the most-quoted number, HCC is most comparable to BISHCA's Expenditure Analysis. CMS state-level estimates measure PHC.

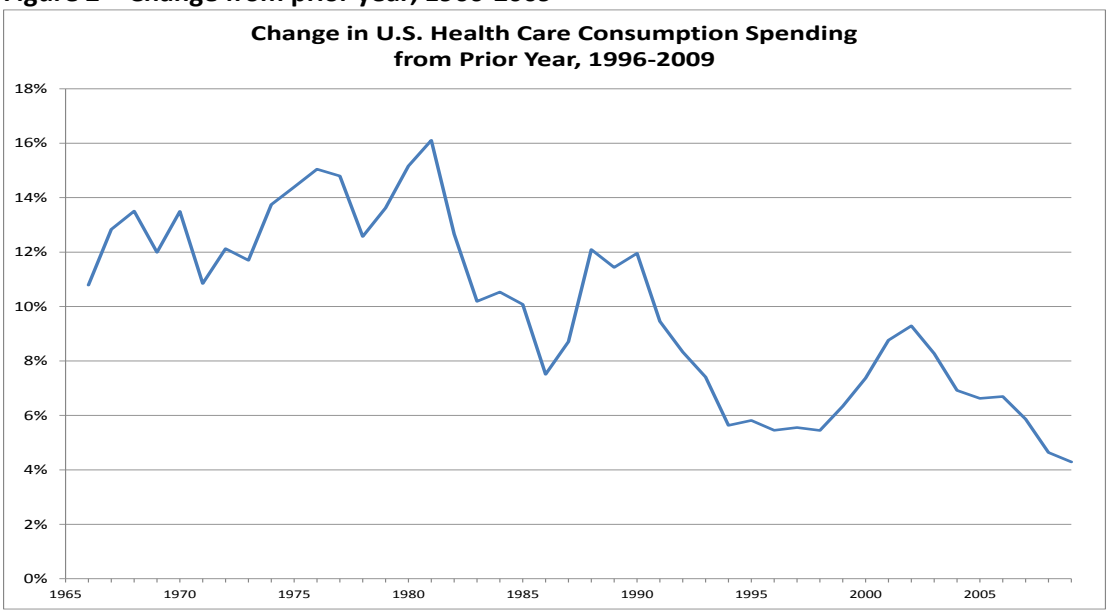
In 1965, total national health expenditures (NHE) were $41.9 billion and health consumption expenditures (excluding investments and research) were $37.1 billion. Forty-four years later, in 2009, NHE were $2.49 trillion and consumption expenses were $2.33 trillion. For both statistics, spending has increased roughly sixtyfold. In contrast, the US GDP has grown slightly less than twentyfold in the same time period.

Figure 1 - Total spending 1965-2009



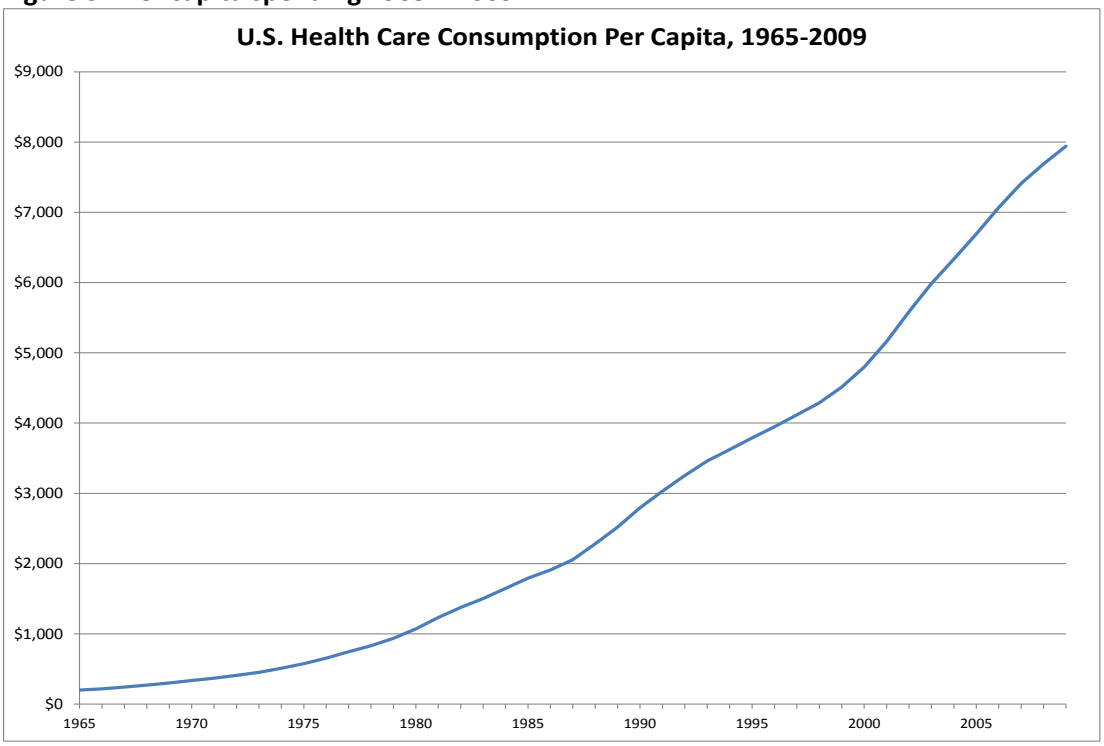
The average annual increase in NHE during this period has been 9.7%. However, that rate has not been constant. There has been quite a bit of year-to-year variability, but there has also been a long-term slowing in the rate of increase, from 11.5% per year during the period 1966-1975 to 6% during the most recent 10 years.

Figure 2 – Change from prior year, 1966-2009



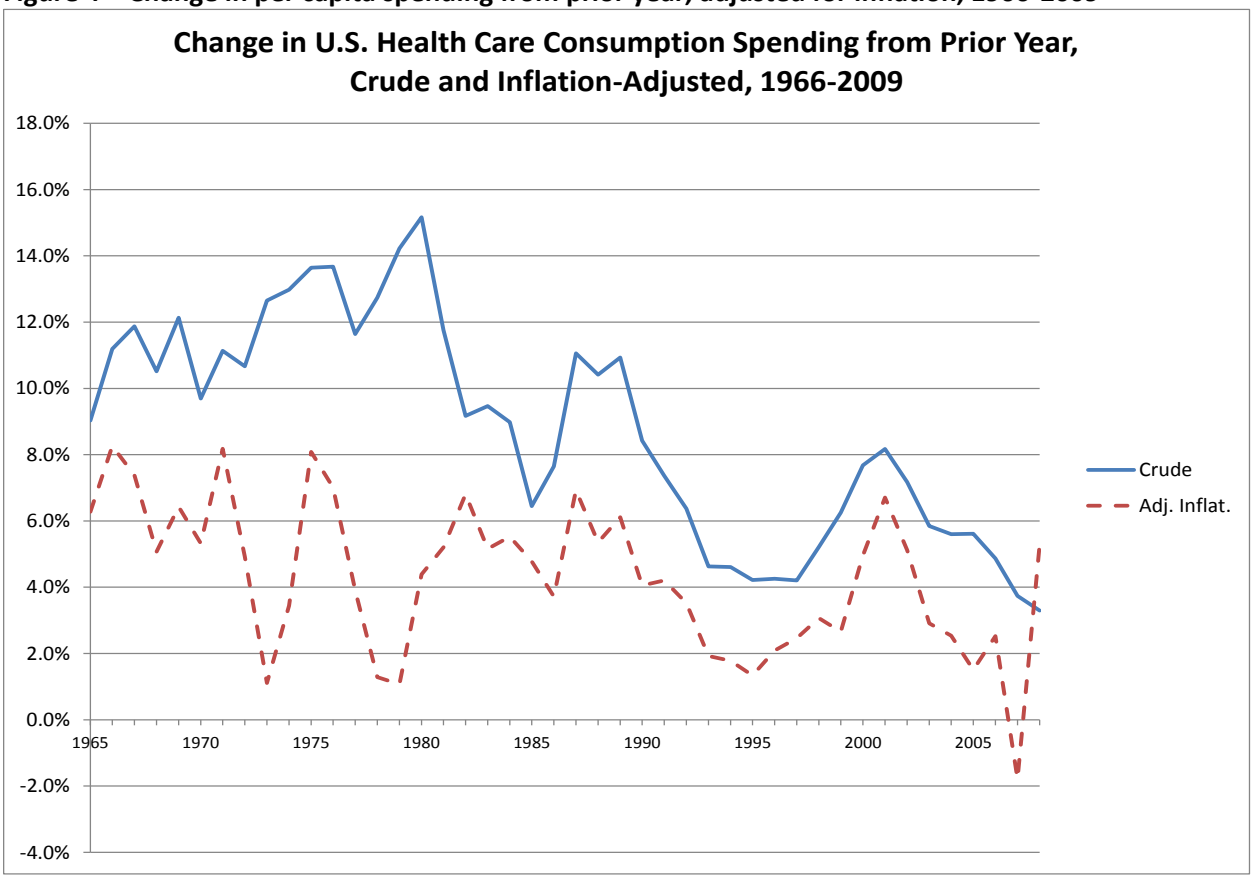
Part of the increase in total spending is attributable to population growth. We can remove this factor by looking at the growth in *per capita* (per person) spending over time.

Figure 3 - Per capita spending 1965 – 2009



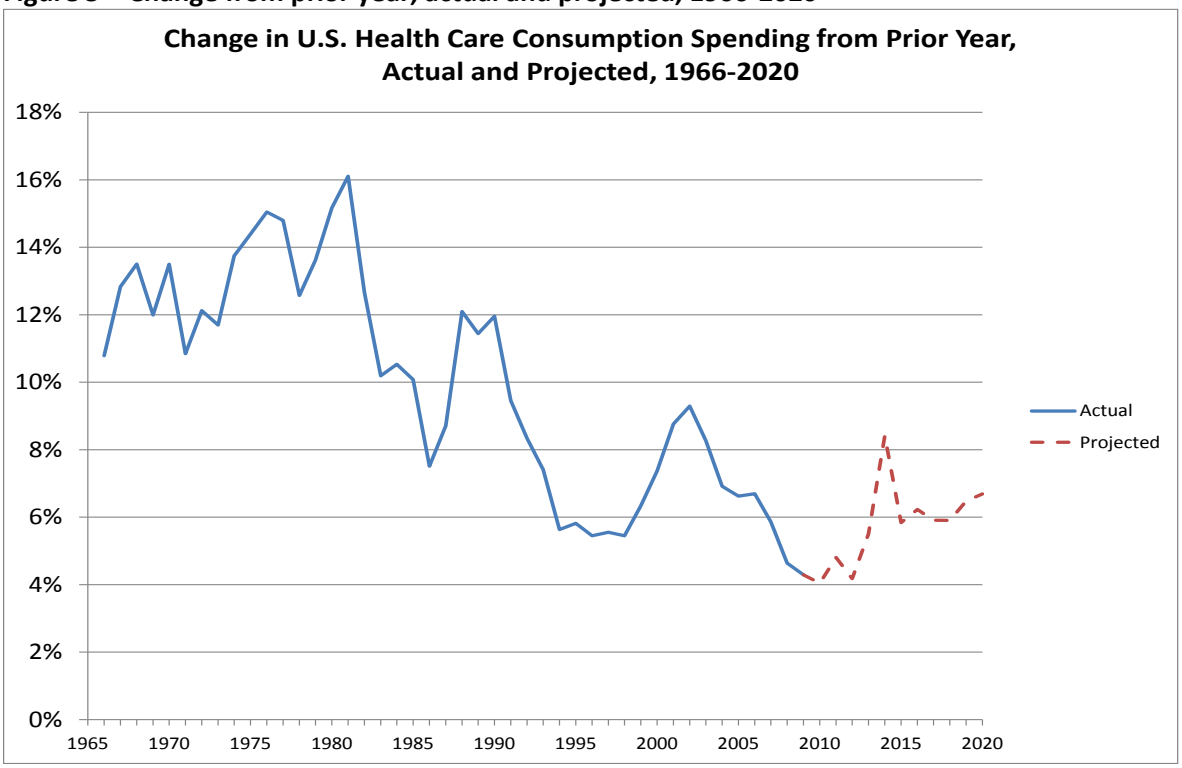
Another factor that contributes to growth in health spending is general inflation. If we remove this effect, we can look at the growth in health spending in "constant dollars," which lets us focus on growth in excess of inflation. As can be seen below, general inflation is a significant factor in health care spending growth, but growth rates of 3 to 4% above inflation are typical.

Figure 4 – Change in per capita spending from prior year, adjusted for inflation, 1966-2009



Finally, how might historical patterns play out in the future? Figure 5 shows historical and projected changes in total health care consumption spending. Figures from 2010 on are projections. Note that these projections incorporate estimates of the impact of federal reform. The jump in 2014 reflects the implementation of federal reforms, especially the insurance mandate, which requires all Americans to have coverage.

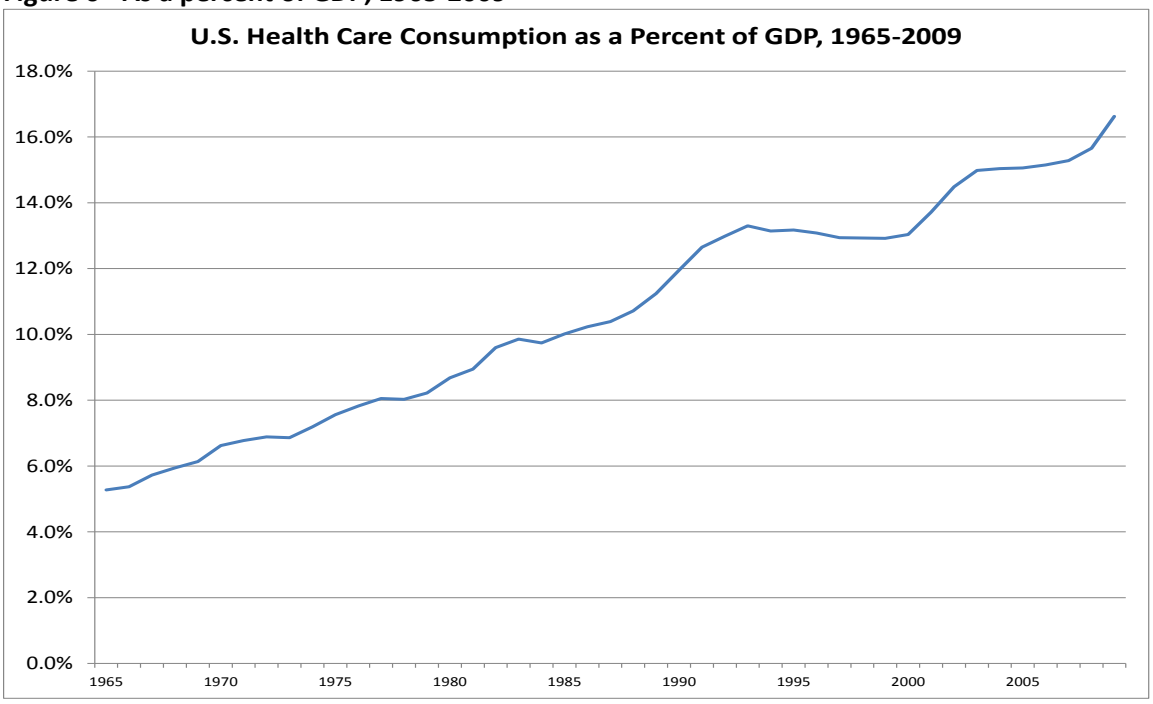
Figure 5 – Change from prior year, actual and projected, 1966-2020



A different way of looking at the growth in health care spending is to examine changes in its share of the US Gross Domestic Product over time. This analysis incorporates a measure of the economy's capacity to support health care spending. For example, if the economy as a whole was growing at the same rate as health care spending, the impact of health spending would be very different from a situation where health care spending is growing much faster than the economy. This is because as health takes a larger share of the economy, other goods and services are at increased risk of being squeezed out.

Note that during times of strong economic growth, the percentage stays fairly constant, while in times of weaker growth, such as the recent recession, the percentage jumps sharply.

Figure 6 - As a percent of GDP, 1965-2009



Vermont and the United States

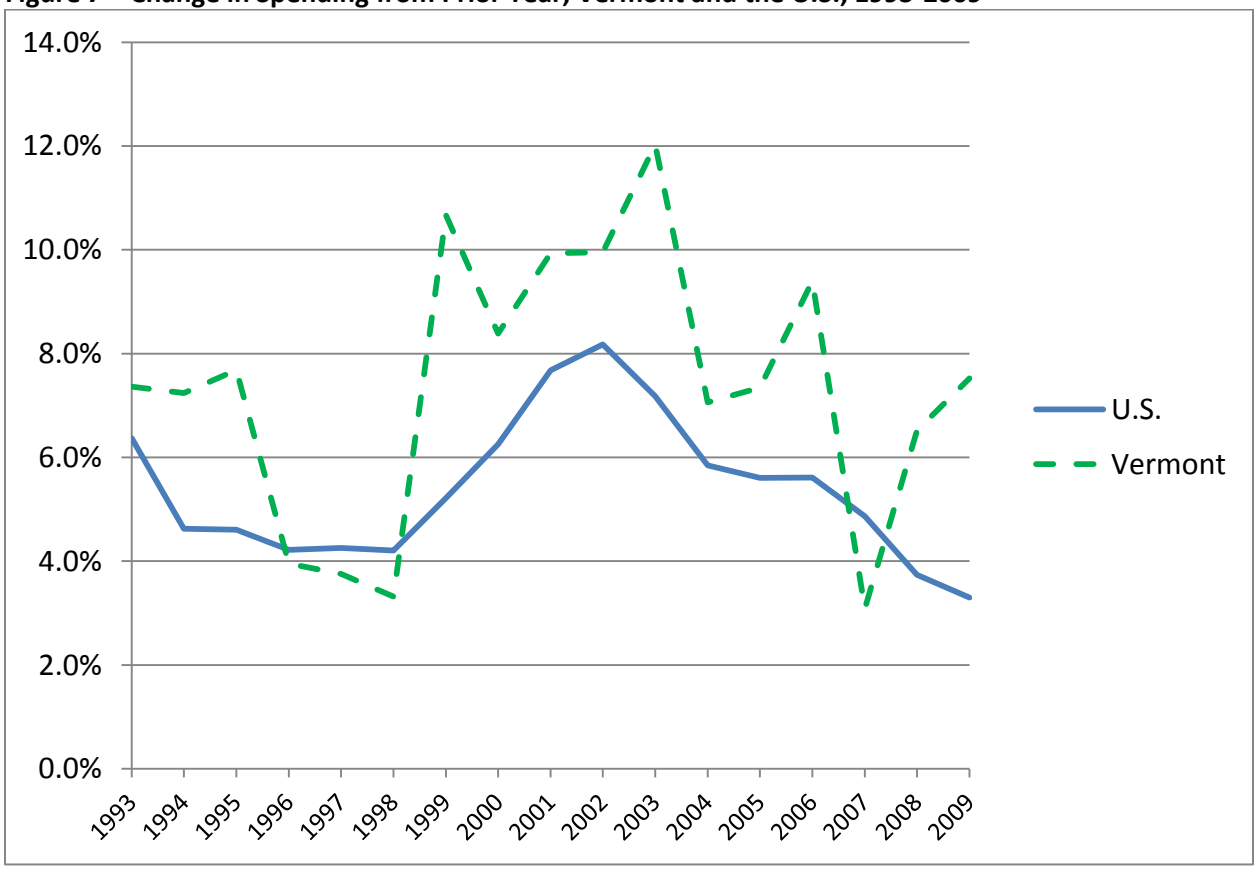
While national estimates have a long history, state-level estimates first became available for the early 1990s. CMS has issued state estimates for the period 1991-2004. The Vermont Department of Banking, Insurance, Securities and Health Care Administration (BISHCA) produced its first annual estimates for Vermont for 1992. BISHCA's most recent estimates are for 2009.

There are some methodological differences between these two sets of estimates, but the most important difference is that the CMS state estimates are for personal health care spending, while the BISHCA estimates include payer administration and public health spending (see note 8 above).

Although estimates differ slightly for individual years, both sets of estimates have been done consistently over time, and the difference between them has also been quite consistent, so use of either set for measuring growth is appropriate. In the comparisons below, we use BISHCA figures compared to national estimates for Health Care Consumption.

The rate of annual growth for both Vermont and U.S. health spending increased each year from the early 1990s onward, peaking in 2002 or 2003. Growth rates declined for both VT and the United States until 2008. Vermont's growth rate increased slightly from 2008 to 2009, while the national growth rate continued to decline.

Figure 7 – Change in Spending from Prior Year, Vermont and the U.S., 1993-2009



Although the patterns were similar, Vermont's growth rate was typically one to two percent higher than the U.S. rate (average difference over this period was 1.9% per capita and 1.4% total spending[9]). As a result, Vermont has gone from being a relatively low-spending state to one of the highest over 16 years. In 1991, Vermont's per-capita spending was about 88% of U.S. spending, ranking 41st among the states. In 2004, Vermont's spending was almost 115% of U.S. spending, ranking 8th.

There are a number of different theories as to why this is, including state efforts to reduce the number of uninsured, a population which is much more heavily concentrated in the 50 to 65 age group than the U.S. population and an expanding definition of medical necessity as reflected in insurance mandates and Medicaid benefits. Regardless of the reasons, health care spending in Vermont is rising at a rapid rate, even in comparison with the United States.

[9] The lower difference in total spending is attributable to Vermont's much slower population growth.

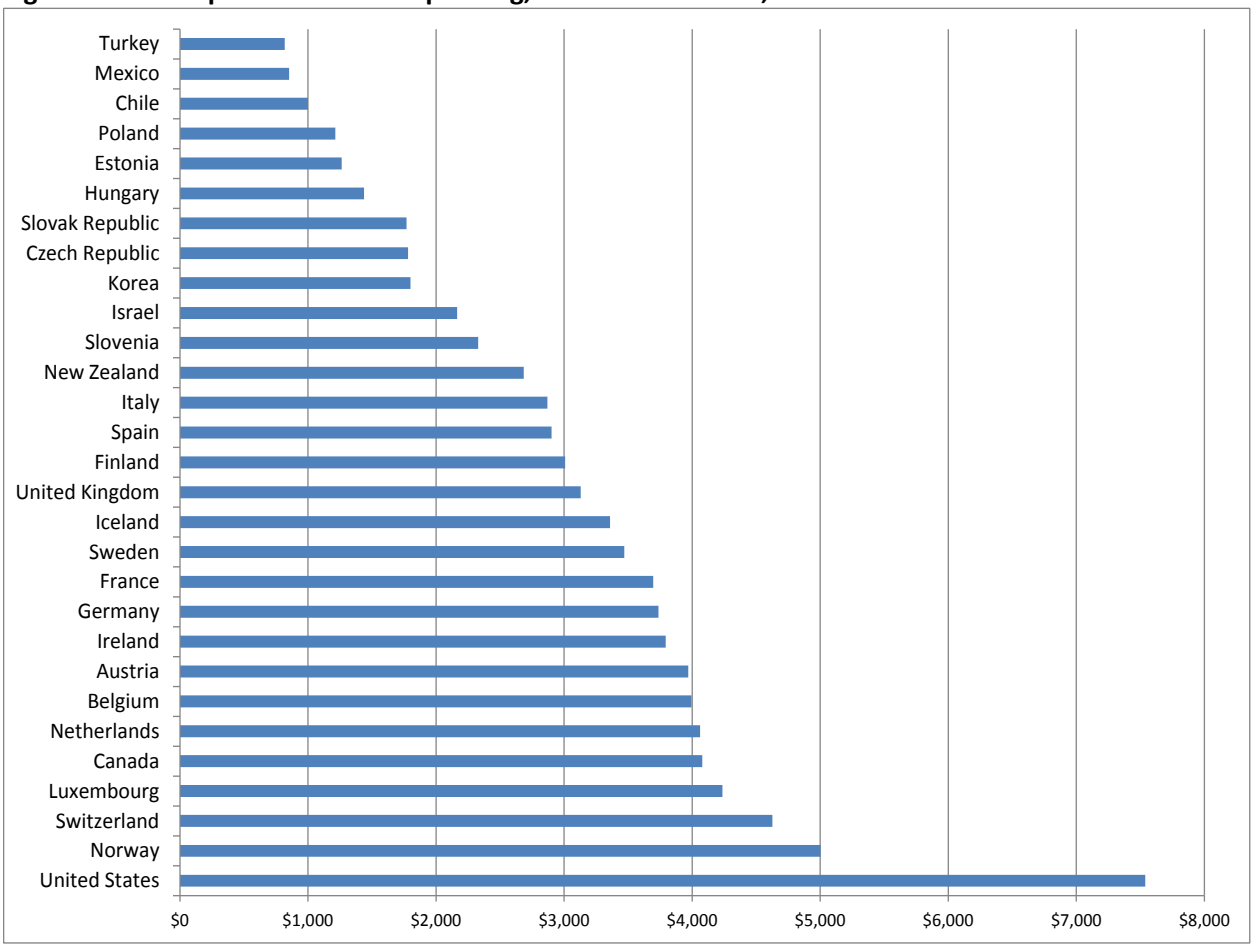
International Comparisons

Most other countries finance and regulate health care differently from the United States. It can be instructive to compare their experiences with those the United States.

The Organization for Economic Co-operation and Development (OECD) collects a wide range of information from its member nations, including many on health care spending. They make international comparisons two ways. The first is health spending as a percent of GDP. The second is per capita health spending, standardized to the U.S. dollar using a technique called purchasing power parity (PPP). PPP is a technique to adjust the values of different currencies so that a standard basket of goods and services will cost the same in each country being compared.[10]

Per capita spending figures for 58 OECD countries were available for 2008. These ranged from $818 in Turkey to $7,538 in the United States. Figure 8, below, shows the distribution.

Figure 8 – Per-Capita Health Care Spending, O.E.C.D. Countries, 2008



One way to explore the difference between the United States and other countries is to look at differences across time. This will allow us to separate rate of growth from initial spending levels. In other words, does the difference between the United States and other countries result from different starting points, but similar rates of growth or does it reflect faster spending growth in the United States.

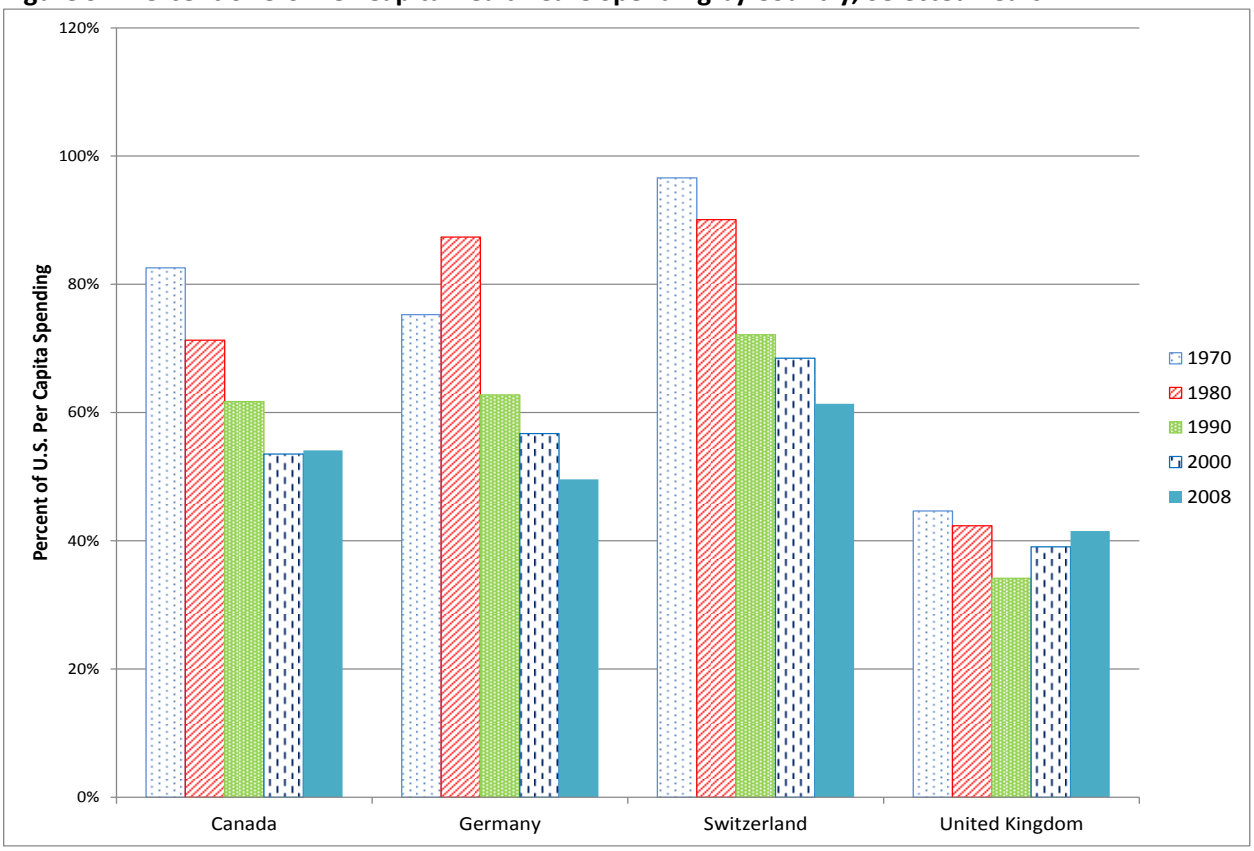
[10] For additional information on PPP, see http://www.oecd.org/dataoecd/18/46/47359870.pdf

In order to make this comparison, we can focus on countries with similar economies, but very different financing and regulatory structures, including Germany and Switzerland, which have public-private financing systems that are not all that different from the United States, but have a very different and more comprehensive regulatory structure, and Canada and Great Britain, which use variants of a single-payer model.

Figure 9 shows the percentage of U.S. per-capita health care spending for each country in 1970, 1980, 1990, 2000, and 2008. If the difference in spending levels in 2008 were attributable only to differences in starting point, the percentages would not change. As can be seen, in Canada, Germany, and Switzerland, the percentages have declined substantially over time, indicating that growth is slower in those countries than in the United States.

Interestingly, while it is the lowest-spending of the five countries, the United Kingdom's percentage of United States per-capita spending has stayed fairly stable across time. In part, this reflects major investments that the UK made in its system in the 1990s and 2000s.

Figure 9 – Percent of U.S. Per-Capita Health Care Spending by Country, Selected Years



The most important conclusion that we can draw from international comparisons is that while other countries have not been able to reduce their rates of growth much more effectively than the United States has, small differences in growth rate, when compounded over 15 or 20 years, can produce large differences in spending. Despite the higher rate of growth in U.S. spending, there is no evidence that, measured broadly, care is better in the United States than in other countries[11].

[11] Hussey PS, Anderson GF et al., How Does The Quality Of Care Compare In Five Countries? Health Affairs 23(3) 2004

Baseline Spending Projections – Vermont

Methodology

Projections of health care spending require two types of information – a starting point (how much is being spent now) and a growth rate or trend (how fast will spending grow over time).

Since 1992, BISHCA has been producing an annual "Expenditure Analysis[12]," which provides estimates of health care spending by type of care (e.g., hospitals, physicians, prescription drugs) and source of payment (e.g., Medicare, Medicaid, private insurance). These estimates are done on two different bases – "Resident" (all care received by Vermonters, regardless of where it was obtained) and "Provider" (all care in Vermont, regardless of where the patient lives). All estimates in this report are based on 2009 Resident figures, the most recent data available.

We explored several different options for trend. These included

- Using the same estimates as were used in the Hsiao report
- Using existing BISHCA projections
- Developing our own estimated trends
- Adjusting federal estimated trends

We ultimately chose to adjust federal trends. The figures in the Hsiao report were national, not Vermont-specific. Historically, BISHCA has created three-year projections while this report needed a longer time horizon. The cost and complexity of developing our own figures from scratch would be prohibitive.

The federal Centers for Medicare and Medicaid Services (CMS) and its predecessor, the Health Care Financing Administration (HCFA), have a long history of producing national estimates of current spending and projections of growth. CMS uses a sophisticated methodology that goes beyond history to include factors such as changes in demographics and the general economy.

However, we needed to explore the question of how applicable CMS growth rates are to Vermont. As discussed above, this was done by comparing historical Vermont (using the Expenditure Analysis) and U.S. growth. While there were differences in single-year growth, the pattern over time was remarkably consistent. The annual rate of growth in total Vermont spending has been 1.4% higher than U.S. spending.

In creating Vermont-specific trends, we altered this relationship in one year, 2014. Federal projections for that year are substantially higher than in the years prior to and after that date. The main cause of that spike is the eligibility expansion included in federal health care reform. We believe that while expansion will have some impact in Vermont, it is likely to be much smaller than what is projected nationally because Vermont's Medicaid eligibility will not be expanded beyond what is already covered.[13]

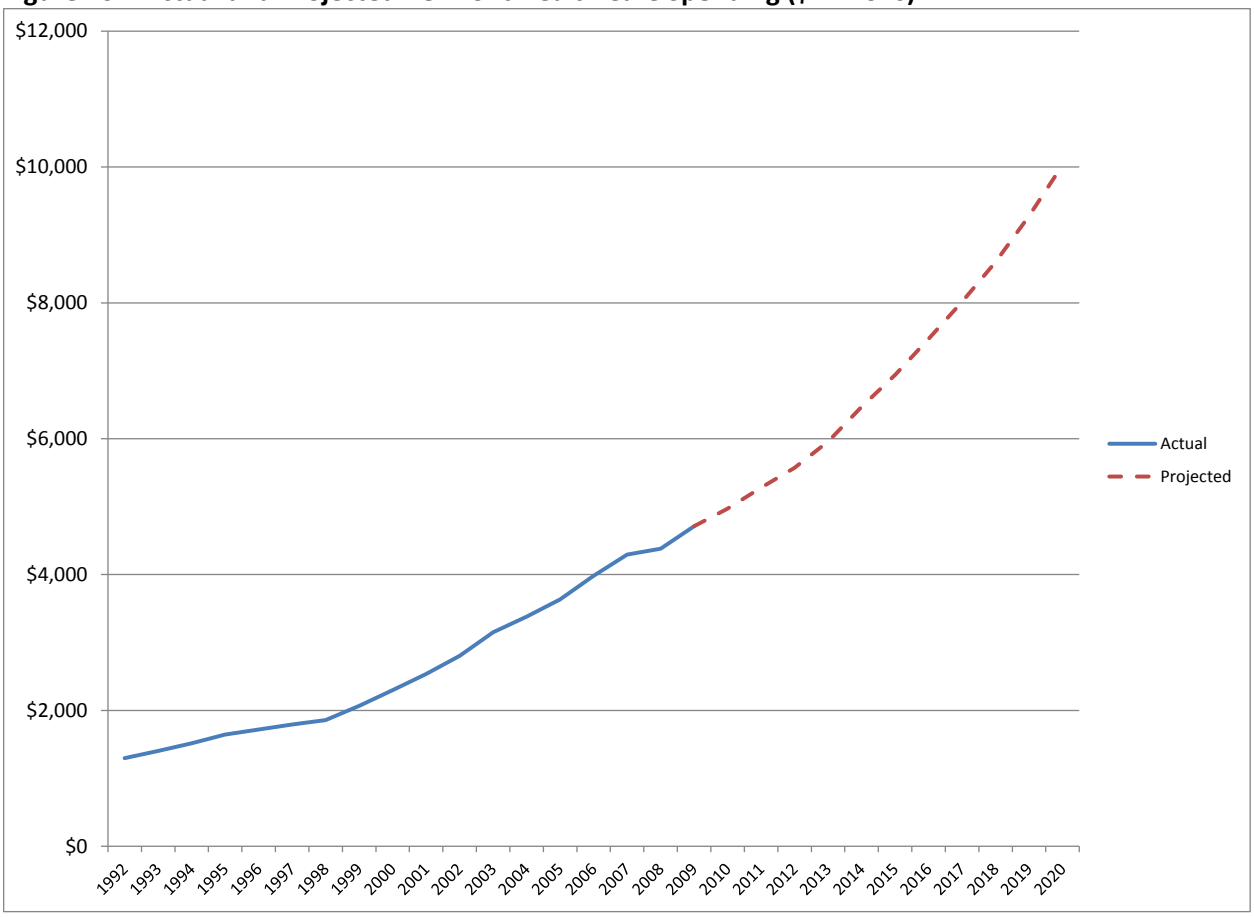
---

[12] http://www.bishca.state.vt.us/health-care/hospitals-health-care-practitioners/health-care-expenditure-analysis-reports

[13] Currently, there is a wide range of Medicaid eligibility levels among states. In one-half of the states, eligibility for low-income parents is limited to families with incomes lower than 65%, and in most states, low-income adults

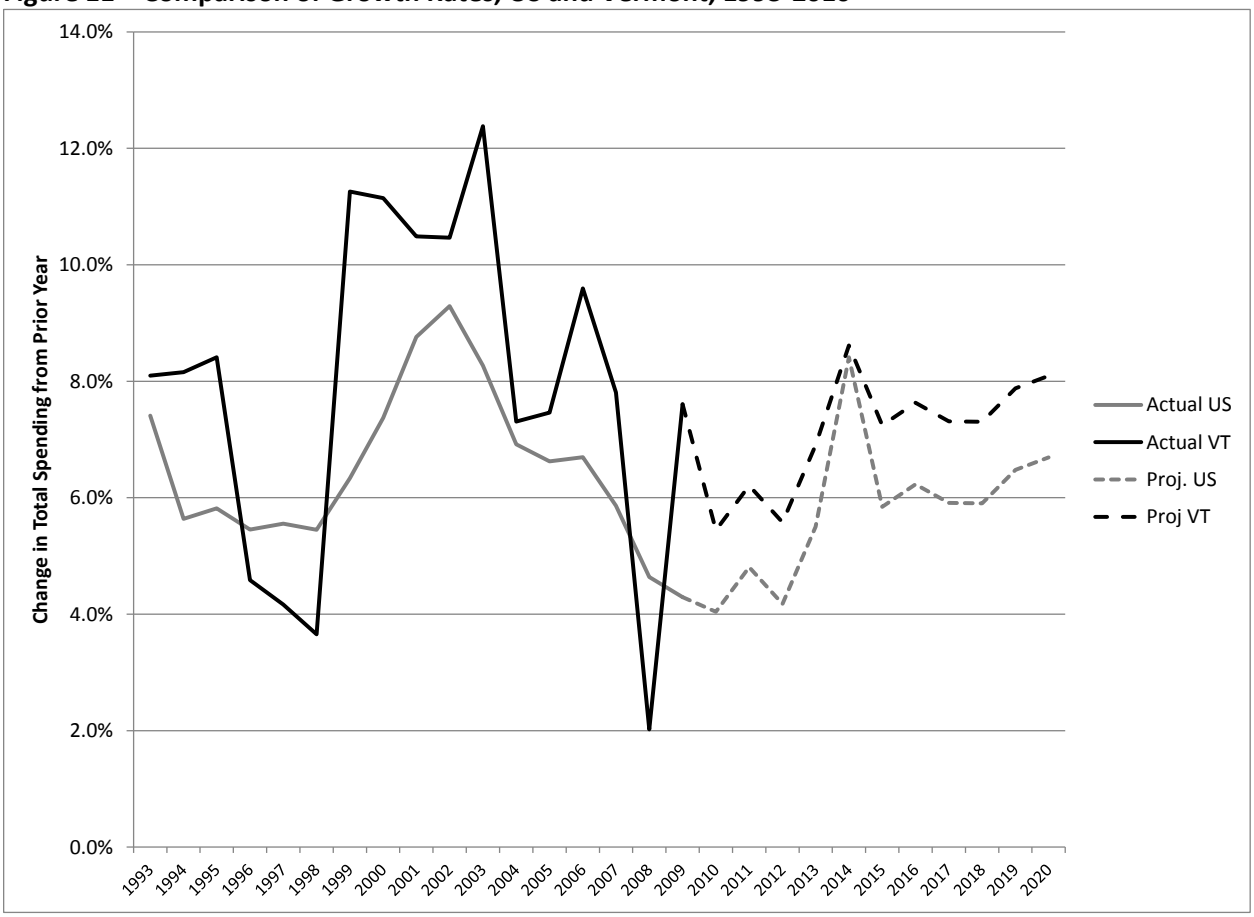
Using the BISHCA data as the base and the modified CMS trends for growth, Vermont resident health spending will more than double in 11 years, from $4.7 billion in 2009 to $10.0 billion in 2020.

Figure 10 – Actual and Projected Vermont Health Care Spending ($millions)



without children are never eligible for Medicaid (http://www.statehealthfacts.org/comparereport.jsp?rep=54&cat=4). After reform, everyone under 133% of poverty will be eligible. Currently in Vermont, childless adults below 150% of poverty are eligible for Medicaid (depending on why they are uninsured) and eligibility for parents is capped at 185%.

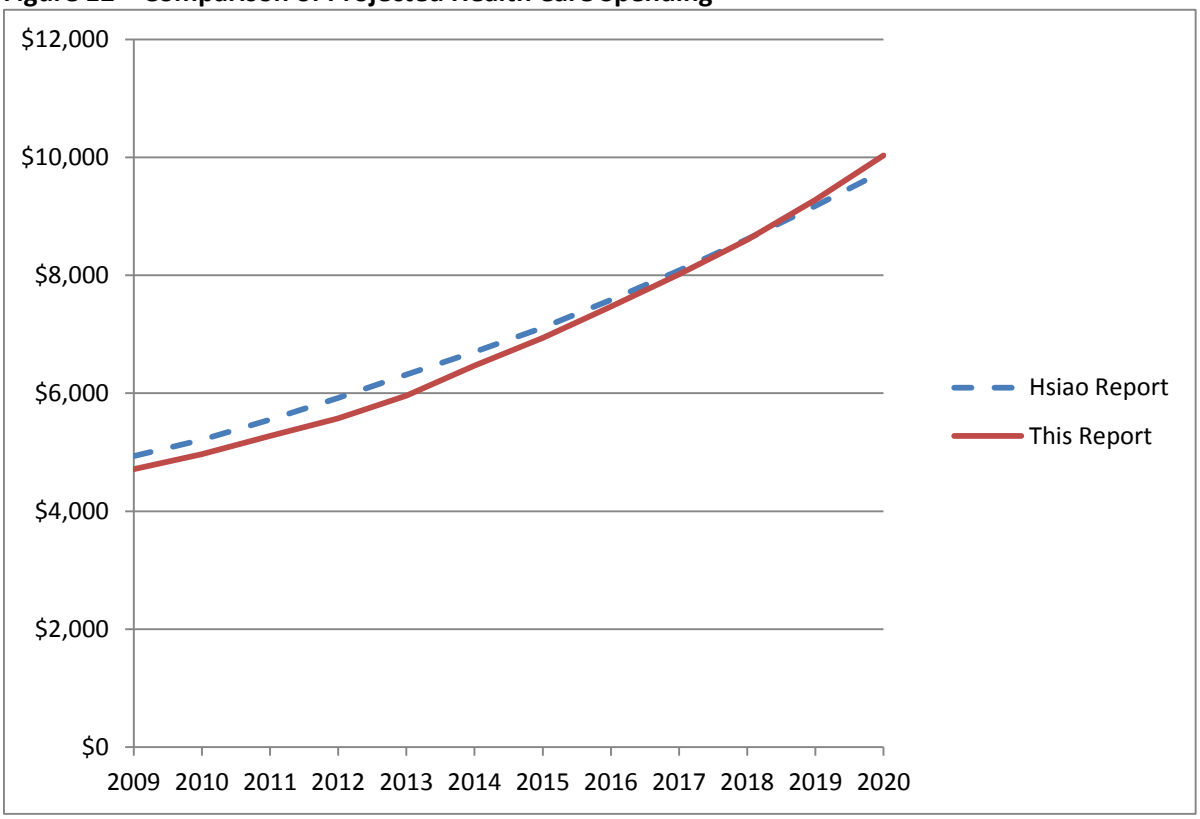
Figure 11 – Comparison of Growth Rates, US and Vermont, 1993-2010



These figures are somewhat different from those in the Hsiao report for several reasons. First, the Hsiao report presented all spending figures in constant dollars (adjusted for inflation). Figures in this report are not adjusted for inflation. Second, the Hsiao report used 2008 Expenditure Analysis figures for its base. Subsequent to the release of the Hsiao report, BISHCA updated those 2008 figures and released estimates for 2009. This report uses 2009 as its base. Third, the Hsiao report used an assumption of 6% annual per-capita spending growth (5.5% in 2014 and 2015), while this report follows CMS projections which vary from year to year.

Through 2013, estimates of total state spending in the Hsiao report are about 5% higher than those used in this report. Starting in 2014, the difference decreases. 2018 estimates in the two reports are nearly identical. In 2019 and 2020, estimates in the Hsiao report are 1% to 2% lower.

Figure 12 – Comparison of Projected Health Care Spending



Savings

Introduction

Act 48 requires that the Joint Fiscal Office and the Department of Banking, Insurance, Securities and Health Care Administration prepare an "estimate of the costs of Vermont's current health care system compared to the costs of a reformed health care system upon implementation of Green Mountain Care and the additional provisions of this act." In this section, we chose to interpret this direction broadly – to look at both the savings directly attributable to Act 48 and also, in order to make this report as useful as possible, to look at savings that could occur as a result of processes set in place by Act 48.

For example, while Act 48 assigns the responsibility for setting payment rates for health care professionals (18 V.S.A. § 9376) to the Green Mountain Care Board, it does not establish the method by which rates should be set nor set a goal for savings. In this report, we attempt to estimate the range of savings that could be achieved through payment reform (as part of clinical reform), based on available literature.

The Hsiao report included estimated savings from reform of the medical liability system. Act 48 requires the administration to submit a proposal to the legislature to address malpractice costs, but does not specify any actions, so estimates in this area have not been included in this report.

Estimating savings always requires us to think about the question "compared to what"? The answer to this question will have a major influence on the size of savings. In this report, both the baseline to which we are comparing and the savings themselves are estimated. In future years, we will be able to compare actual spending with the baseline in order to measure the savings that have been achieved, recognizing that differences between the baseline and actual spending can come from three different sources.

- Projection inaccuracies (differences between what was projected and what would have actually happened in the absence of reform)
- The impact of policy changes
- Exogenous factors (influences other than specific policy initiatives)

While estimation of future baseline spending is challenging, estimation of savings under different reform scenarios is even more difficult. One of the key issues for policymakers and others is understanding how savings will occur – as a reduction in base or as a reduction in trend. One way to think about the difference is to consider a savings account. A change in base is similar to a deposit or withdrawal, while a change in trend is similar to getting a different interest rate. A change in base has a one-time impact while a change in trend often has a small immediate impact but a large impact over time.

For example, suppose you have $1,000 in a savings account earning 4% per year. The table below shows what your account would be worth in 2021 and 2031 if you do not change anything, if you withdraw $100 in 2011 (a change in base), and if you move the account to a bank that pays 3%, but make no additional deposits (a change in trend). The two changes produce similar results in 2021, but the reduction in interest has a much bigger impact in 2031.

	4%	($100)	3%
2011	$1,000	$900	$1,000
2021	$1,480	$1,338	$1,344
2031	$2,191	$1,980	$1,806

There are two main areas in which savings are possible – the cost of transactions (administration) and spending on care. Achieving savings in administration is more straightforward than achieving savings in care. It involves a combination of reducing the volume of transactions that surround the care process (claims, eligibility verifications, benefit checks) and making remaining transactions more efficient.

Achieving savings in the area of care can happen three different ways

- Reducing the price paid for individual services
- Reducing the quantity of services
    - Through increasing the efficiency of the care process
    - Through improvements in population health (public health)
- Changing the mix of services (e.g., using more of a lower-price service and less of a higher-price service)

Each of these interventions has its own set of difficulties. For example, what is the right price to pay for a medical service? Is it the amount it costs to produce? Is it the amount at which an adequate provider supply is available? Is it the amount someone without insurance would be willing to pay for it (and who – Bill Gates or someone working at a minimum wage job)? Finally, is it the amount we as a society can afford to pay?

Efforts to reduce the quantity of services often assume that there is a "right" level of service. In many analyses, such as those done by the Dartmouth Institute, the assumption is that differences in utilization are due primarily to differences in the way that medicine is practiced, and that the lowest level of utilization that can be achieved <u>without a decline in outcome</u> is optimal.

However, there is disagreement among researchers about how much of the difference in utilization among geographic areas is attributable to practice patterns and how much is attributable to other factors such as the health of the population. Without a much better understanding of the contribution of practice patterns, population, and other factors, it is premature to assume that utilization in high-use areas can be substantially reduced solely by changing practice patterns.

There are several factors that can dampen the effect of any effort to control prices. These include

- Fixed costs
- Capture mechanisms
- Behavioral responses
- Investments needed to achieve savings

Providers (and most other enterprises) have two types of costs that they must manage – fixed and variable. Fixed costs are those expenses that do not vary (or vary minimally) with volume. For example, the interest that a hospital must pay on its debts is fixed. It is completely unaffected by the number of patients that the hospital treats. In contrast, the amount that the hospital spends on surgical supplies is highly dependent on the number of surgeries performed in the hospital.

The reason that this distinction matters is because as a result of fixed costs, the impact of a reduction in utilization does not convert directly into a reduction in a provider's costs (or in the revenue that it needs to meet them).

For example, suppose a hospital has only three equal cost centers – repaying the bond that it issued to expand, nursing salaries, and bandages. As a result of a very successful prevention campaign, the number of patients that the hospital sees goes down by 10%. Obviously, the cost of bandages will go down by 10% but the cost of bond payments will be unaffected. The impact on nursing salaries is harder to predict. Small changes in utilization may have no impact at all, but larger changes may permit a reduction in staffing. Assume that a 10% utilization reduction allows the hospital to reduce nurse hours by 5%.

The ultimate effect of this mix of costs (assuming that each of the three cost centers is one-third of the total budget) is that a 10% reduction in utilization equates to a 5% reduction in costs. An additional consequence of this relationship is that, all other factors remaining the same, the hospital would have to increase its prices in order to cover its costs.

The Vermont hospital budget review process recognizes this issue in the assumptions that it permits hospitals to make about the connection between utilization and budgets. BISHCA's Uniform Reporting Manual Supplement says "A 60% variable factor will be applied for the first 4% change in utilization. A 40% variable factor will be applied for all utilization change beyond 4%."[14]

Capture is the ability of a payer to share in savings that occur when provider costs are reduced. In the example above, the hospital's costs are reduced by 5%, but the connection between that and the amount of revenue that the hospital receives (and thus the financial impact on the payer) will depend on both how costs are reduced and the specific payment mechanism used. Under fee-for-service, the hospital may actually be disadvantaged under the scenario described above unless it renegotiates its fees. This is because the 10% utilization decline translates directly into a 10% income decline for the hospital, but only a 5% reduction in cost. Under a capitation agreement, the payer may not see any savings at all.

The most complicated scenario is when provider cost reductions are not tied to utilization. In the example above, suppose there was no change in utilization, but the hospital was able to negotiate a 30% discount on bandages. Without a linkage between these savings and payment rates, there is no guarantee that payers, and ultimately the public, will share in the savings.

The same issue occurs in the insurance rate setting process. A mechanism must be in place to guarantee that any savings in the amount that the insurer pays providers must be converted into a reduction in premiums.

All players in the health care system will react to changes in their environment. There is a great deal of evidence that providers responded to Medicare's efforts to control prices by increasing volume.

How each player will react is particularly difficult to predict. Consider a change that reduces the amount of time that physicians and other clinicians must spend working with payers to resolve claims issues

[14] http://www.bishca.state.vt.us/sites/default/files/Uniform_Reporting_Manual_Supplement.pdf (page 29)

(estimated at a minimum of several hours each week). What will practices do with the freed-up time? Possibilities include spending more time with existing patients, increasing the number of patients they can see, or increasing their leisure time. Depending on the current level of unmet need, while the first two possibilities will reduce that unmet need, they will also increase spending.

Some ways to achieve savings might be implemented at minimal cost, but others may require substantial initial investment. This is particularly true of information technology- (IT) based solutions. It is essential when estimating savings to offset those savings with the investments necessary to achieve them.

Finally, the difference between saving and shifting must be understood. Many approaches to savings, especially for individual payers in a multi-payer system, will include a large proportion of shift, rather than savings.

To illustrate this, consider the health savings account (HSA) or other high-deductible health plan. These plans have two distinct consequences. The more direct consequence is to shift expenditures from payers to patients. At the same level of utilization, this is the only effect. However, the fact that the patient must pay an increased share of the total bill also has a suppressive effect on utilization, resulting in a reduction in total spending.

The less direct consequence occurs when one payer reduces payment levels in a multi-payer environment. Providers will attempt to reduce their costs but also will, when they have negotiating leverage, attempt to offset the first payer's reductions by raising their prices to other payers, eroding some of the systemic savings (but not those that accrue to the payer that reduced payments).

For each area of possible savings below, two sets of estimates are presented – low and high. Both sets reflect a consensus between BISHCA and JFO, but in recognition of the uncertainties that are inevitable in the estimation process, we wanted to offer a range that reflects those uncertainties.

Areas and Approaches for Savings

The remainder of this report will focus on broad areas where there are opportunities for savings. For each area, the opportunity will be described; where appropriate, estimates of current spending will be provided; savings will be estimated, including timing; and issues in achieving those savings will be discussed.

The lines between these approaches are not always sharp. There are a number of proposals currently being discussed that address more than one of these areas. For example, payment reform typically focuses on changing clinical behavior, but it can also reduce administrative costs by shifting from claims-based reimbursement to capitation.

Multiple sources of savings interact in a complex manner. In some cases, savings from multiple sources should compound (savings from the second source should be applied to a base which reflects the first source of savings). In other cases, savings in one area may produce an **apparent** increase in another. For example, if administrative costs are expressed as a percent of total spending, a reduction in clinical spending with no change in administrative activities will increase the percent of spending attributable to administration.

The number of ways in which savings can be combined led us to decide to take a simple approach – to make each source of savings additive. Compared to a more complex combination that recognizes all possible interactions, this may produce a slight overestimation of savings. This uncertainty is one reason why savings estimates are presented in ranges.

The interaction of base and trend savings also makes it difficult to report on the direct value of trend savings. For example, suppose baseline growth is 10% and baseline spending in year 1 is $1,000. In that case, baseline spending in year 3 would be $1,210. If we just take $100 out of the base, spending in year 3 would be $1,100 (savings of $110). If we just reduce trend by 2%, spending in year 3 would be $1,166 (savings of $44). However, if we make both reductions, spending in year 3 would be $1,058 (savings of $152), so savings would be less than the sum of savings from the two sources. In this report, base savings are reported in full and remaining savings are allocated to trend reduction, so in the example above, base savings would be reported as $110 and trend as $42.

The topic of health information technology (HIT) deserves its own discussion. HIT plays many different roles in the reform process, and each of them can influence savings differently. The three major roles are

- Clinical – directly supporting the care process
- Administrative – functions such as billing and payment, eligibility verification, and appointment-making
- Policy – supporting planning and resource allocation, identifying fraud and inefficient care, and evaluation of policy

Many areas of savings, such as changes in clinical processes, rely heavily on HIT. While we have made what we believe are realistic assumptions about the timing of savings, any delays in implementation of new information systems will slow the rate at which these savings are achieved.

We have identified several broad areas from which savings may be achieved. These include

- Administrative simplification and streamlining
- Benefits
- Changes in the clinical process, including care management, malpractice reform, organizational reform, payment reform, and quality improvement
- Planning and capital investment management
- Prevention and public health

We also include estimates of investments required to achieve the goals of Act 48.

Administrative Simplification and Streamlining

One of the most frequently discussed aspects of health care reform is reduction of administrative costs. This may be due in part to a perception that in contrast with clinical activities, administrative activities provide no benefits to patients. Unfortunately, the line between administrative and clinical activities is not always clear. For example, medical record-keeping supports both administrative activities (billing) and clinical care.

In the current health care system, there are two distinct sets of administrative activities – those performed by providers and those performed by payers. In each of these arenas, administrative activities can be further separated into three categories: those linked with payment, such as claims

submission and processing; those linked with patient care; and those that are typical of any organization, such as personnel and accounts payable.

In order to estimate the savings that could be achieved through administrative simplification and streamlining, we must make several distinct estimates, each one of which can present a challenge.

- What amount of money is currently spent on administration?
- What amount of that is for activities that are likely to be influenced by health care reform?
- By what amount could that subset of spending be reduced?
- In the case of provider administration, how effectively can those savings be captured by the payer?

Methodologies for these estimates differ when looking at providers and payers for several reasons.

Payers

Payer administration includes a wide range of activities, such as claim processing, member services, marketing/public information, provider contracting, financial management, and coordination of benefits. While the cost of each of these will vary among payers, nearly every payer performs these functions in the current system.

Reductions in spending on payer administrative functions in a reformed system can occur in two different ways. The first is the reduction or elimination of an activity. For example, in a true single-payer system, there is no need for coordination of benefits among payers. While there may be a need for public education, there would be a limited need for advertising. Depending on how revenues are raised, underwriting, billing, and collection may also be unnecessary.

The second source of savings is through efficiencies of scale. Currently, each payer must develop and maintain separate systems such as membership and claims processing, and those development costs are included in premiums. Having a single payment system can increase efficiency in system development and maintenance. However, if this unified system must be developed from scratch, there will be substantial start-up costs.

Payer administrative costs are commonly, but incorrectly, estimated as the difference between revenue and spending for care. For example, in 2009 Vermont BlueCross BlueShield (BCBS) reported about $414.3 million in premium revenue and about $380 million in payments for health care services, suggesting that their administrative costs were $34.3 million[15]. However, there are other financial transactions that contribute to the difference between premium revenue and spending on care. The most significant of these is contribution to or withdrawal from reserves (insurer assets). In 2009, VT BCBS spent about $6 million from its reserves and reported administrative costs of about $40.3 million. In years when a contribution to reserves is made, the simple difference between premiums and spending on care will overstate administrative costs while in years where reserves are spent, the difference will understate administrative costs.

Administrative costs for public payers such as Medicare and Medicaid are not affected by this problem. However, there is a different challenge in looking at public sector administrative costs. This is the problem of how to attribute costs actually incurred by related organizations. For example, the

[15] 2009 Expenditure Analysis, BISHCA

Department of Vermont Health Access (DHVA) identifies administrative costs as part of its budget submission. These costs include items such as DHVA personnel, contracts with other organizations such as HP, the contractor responsible for processing Medicaid claims, and direct operating expenses. However, costs for other parts of state government that are involved in the operation of the Medicaid program are not directly available. For example, there is no direct way to know the share of the cost to the Department for Children and Families (DCF) of maintaining Medicaid enrollment in the state's Human Services eligibility system or to the Department of Finance and Management of its budgetary oversight of Medicaid. These costs must be estimated – part of the process of the claiming federal match.

Actual 2009 administrative costs, based on DHVA's 2012 budget submission, were about 3.9%. BISHCA has estimated Medicaid administrative costs at between 6.0% (nontraditional programs) and 8.7% (traditional programs) for an overall rate of 6.9%.[16] The 2009 Expenditure Analysis reports an administrative cost of 7.3% for Medicaid and 5.1% for Medicare.

In total, the 2009 Expenditure Analysis reported $398.4 million in total payer administrative costs, 8.4% of all health care spending on behalf of Vermont residents.

The most straightforward way to estimate potential administrative savings is to identify a target administrative rate and compare current systemwide administrative spending to what that spending would be if the entire system operated at that target level.

The table below calculates administrative costs as a percent of total claims paid by insurers and public programs. Out-of-pocket (OOP) spending is excluded because there is no associated payer administrative cost.

2009 Vermont Resident	**$Millions**	
Total Health Care Spending	$4,713.5	
Less Administration and Change in Surplus	$4,346.5	<Cost of Care
Less Out-of-Pocket	$3,652.5	<No payer administration on OOP spending
Total Administrative Costs	$398.43	
As percent of total spending	8.5%	
As percent of non-OOP claims	10.9%	

[16] http://www.bishca.state.vt.us/sites/default/files/Health-Plan-Administrative-Cost-Reportpdf.pdf (page 21)

The second table calculates theoretical administrative costs and savings from the current system (2009 spending) at selected percentages, some of which are those of current payers. This table is intended to relate different administrative percentages to dollar savings. It can also provide a "reality check" about what rates are achievable.

		Savings		If the whole system had the administrative costs of...
Payer administration at selected percents of non-OOP claims	$354.3	($44.1)	9.7%	BCBS
	$292.2	($106.2)	8.0%	
	$266.6	($131.8)	7.3%	Medicaid
	$255.7	($142.7)	7.0%	
	$219.2	($179.3)	6.0%	
	$197.2	($201.2)	5.4%	Medicare
	$182.6	($215.8)	5.0%	

Consensus Savings Estimates Attributable to Changes in Payer Administration ($millions)

Change in	2015	2016	2017	2018	2019	2020
Base (low)	($8)	($9)	($31)	($59)	($90)	
Base (high)	($13)	($15)	($52)	($99)	($149)	

How were these savings estimated?

For the high estimate, we assumed that systemwide payer administration would be reduced from 10.9% to 8%, over a period of five years due to the reduction in the number of payers and narrowing of payer activities. Savings would begin in 2015, resulting from efficiencies attributable to the Exchange. They would grow more rapidly starting in 2017. For the low range estimates, we assumed savings of 60% of the high range.

Provider

Estimation of provider administrative costs and potential savings is far more complex than estimation of payer administrative costs. It can require several distinct estimates

- Total provider administrative costs
- Proportion of those costs which are dependent on the payer system
- Proportion of those costs which could be impacted by reform
- Potential reduction in payer-dependent costs
- Effectiveness of capture mechanisms

The definition of provider administrative costs is difficult. While there are some activities that are obviously administrative, such as accounting, there are others that can serve both administrative and clinical needs, such as medical records.

Only a subset of administrative activities is influenced by how providers collect their revenues. While accounts receivable may change substantially, accounts payable is unlikely to change at all.

Those activities which are influenced may be reduced, but will not be eliminated. While Vermont providers may deal with a greatly simplified payment system for their Vermont patients, requirements

will not change for out-of-state payers such as New York Medicaid or BlueCross BlueShield of Massachusetts.

The reduction or elimination of a function does not ensure that all costs associated with that function will disappear. When a hospital reports on the cost of a specific activity, that cost may include both direct costs (paper, pencils, telephone lines) and allocated costs (heat, electricity). The direct costs will be reduced or eliminated in proportion to the activity itself, but the allocated costs will simply move elsewhere. Further, in the case of reduction of an activity, some costs, such as computers, may be fixed. If a physician practice has one computer that it uses for billing, that cost will remain unless ALL billing activities are eliminated.

The last challenge in estimating provider administrative savings is "capture." Ultimately, we want savings to accrue to tax and premium payers. Reduction in provider costs may be passed on to payers, but unless there is a mechanism to capture them, there is no guarantee that they will be. When a provider's costs in one area are reduced, the provider may elect to pass the savings on, take those savings as additional profit, or spend the savings elsewhere, such as investments in practices or increased staff salaries.

We focused savings that could be achieved for two types of providers – physicians and hospitals. Each of these presents different challenges. Vermont has very rich financial data on its hospitals, but no financial information on its independent physician practices. Because of this, we developed hospital savings estimates based on Vermont data and discussions with hospital employees.

For physician data, we were obliged to rely on national studies.

Consensus Savings Estimates Attributable to Changes in Provider Administration ($millions)

Change in	2015	2016	2017	2018	2019	2020
Base (low)	($27)	($31)	($27)	($30)	($45)	
Base (high)	($54)	($62)	($53)	($60)	($90)	

How were these savings estimated?

These were among the most challenging estimates to produce because administrative costs are much more difficult to identify and quantify in provider organizations than they are in payer organizations. In computing these savings, we looked only at hospitals, physician practices, and other professional practices. We took two different approaches to estimating hospital administrative savings, one based on Vermont hospital budget data and the other based on studies in other states. We relied on published literature for our estimates for physician and other professional practices.

In estimating savings based on hospital budget data, we first identified cost centers which could be affected by reform. We classified these cost centers into high impact (General Administration, Fiscal Services, and Medical Records) and low impact (Dietary, Housekeeping, Laundry, Central Supplies, and Pharmacy). To create our low scenario, we assumed that after reform, salaries and benefits in high-impact areas would be reduced by 10% and all other costs by 4% (to recognize that many of these costs are fixed). In low-impact areas, salary and fringe were reduced by 5% and all other costs by 2%. We assumed that savings would be phased in over five years, resulting in savings of $45 million by 2020.

Studies in other states have estimated the costs of billing and insurance related (BIR) activities as a percentage of total hospital costs. In addition to those studies, we considered information supplied by Fletcher Allen Health Care, which reported that BIR represented 4% of its total costs. We created two scenarios. The low scenario assumed that BIR was 3% of hospital budgets and could be reduced by one-half. This scenario produced savings nearly identical to our budget-based analysis. The high scenario assumed that BIR was 6% of costs, and could be reduced by one-half. This produced savings in 2020 of $111 million.

For physician and other professional offices, we assumed that based, on published literature, BIR was 12% of costs. Similar to our second approach to estimating hospital savings, we assumed that this figure could be cut by as much as one-half by 2020, producing savings of between $50 and $100 million.

Fraud

Efforts to fight fraud in health care have a long history. The Office of the Inspector General in the federal Department of Health and Human Services was created in 1976. The FBI has a large unit dedicated to health care fraud.

How much fraud is there in health financing, and more to the point, how much is there in Vermont? Nationally, the FBI estimates that health care fraud costs the country between 3% and 10% of all health care spending.[17] If those figures hold for Vermont, fraud would cost the state between $150 million and $500 million each year.

It is challenging to find state-level estimates of fraud. One of the few published sources is a report on Medicaid fraud issued by the federal Department of Health and Human Services' Office of the Inspector General.[18] Using this report to calculate Medicaid recoveries as a percent of total Medicaid payments, Vermont is in the middle of the pack, ranking 29th. However, this statistic may be a function of enforcement spending as well as prevalence of fraud.

In developing this estimate, we consulted with Ron Clark, Director of the Program Integrity unit at the Vermont Department of Health Access. Program Integrity is charged with identifying erroneous or potentially fraudulent claims and either resolving them or referring them to the Attorney General for further investigation. In SFY 2011, this unit recovered about $2.6 million, including $660,000 in settlements, $1.47 million in recoveries, and $466,000 in avoided costs.

These numbers reflect only cases not referred to the Medicaid Fraud and Residential Abuse Unit (MFRAU) in the Attorney General's office for investigation and possible prosecution. According to statistics from the Office of the Inspector General, Department of Health and Human Services, the Vermont MFRAU recovered an additional $3.9 million in FFY 2010.[19]

Ron Clark identified the lack of access to other data sources as a major limitation in his unit's efforts. Two specific examples that he mentioned were the Vermont Prescription Monitoring System (VPMS) and employment data from the state Department of Labor. In the first instance, access to VPMS would

[17] http://www.fbi.gov/stats-services/publications/fcs_report2007/fcr_2007#health

[18] http://oig.hhs.gov/fraud/medicaid-fraud-control-units-mfcu/expenditures_statistics/fy2010-statistical-chart.xlsx

[19] Ibid

allow the unit to identify purchasers of controlled substances who are using multiple payment sources. In the second, the unit could identify professionals who are working both independently and as contractors, and when combined, working an unreasonable number of hours. He felt that additional resources would allow DHVA to make more recoveries.

Consensus Savings Estimates Attributable to Reduction in Fraud ($millions)

Change in	2014	2015	2016	2017	2018
Base (low)	($12)	($13)	($15)	($17)	($20)
Base (high)	($32)	($37)	($43)	($48)	($55)

How were these savings estimated?
For the high scenario, we assumed that 5% of payments in Vermont are fraudulent at the lower end of the FBI's estimated range, and that 50% of those payments were recoverable (2.5% of total payments). We assumed that savings would begin in 2014, because initial analyses can be done using VHCURES, the state's multi-payer claims database and other existing data sources. We assumed that it would take five years to achieve the maximum level of savings.

For the low scenario, we assumed a fraud rate of 3% and a recovery rate of 30%, with the same timing as the high scenario.

Malpractice Reform

Malpractice reform is another potential area of savings that has received a great deal of attention. Changes in this area will affect health care spending in two distinct areas. The first is through a change in provider costs. As with any other expense, providers must recover the cost of their premiums and settlements through the payments that they receive. If premiums are reduced, providers would require less revenue to maintain their status quo. This type of savings is straightforward to measure. The Congressional Budget Office (CBO) estimated that in 2009, about 2% of United States health care spending was for these direct malpractice costs.

The second area of possible savings is through a reduction of what is called "defensive medicine." Defensive medicine can be defined as "clinicians' intentional overuse of health services to reduce their liability risks."[20] While it is clear that defensive medicine occurs frequently, its financial impact is much harder to estimate. In a recent study published in Health Affairs,[21] the total costs of the medical liability system were estimated at 2.4% of total health spending. Of that, about 1.9% was attributed to defensive medicine and 0.5% to direct costs (premium and settlement costs).

Act 48 requires the administration to submit a proposal to the legislature to address malpractice costs, but does not specify any actions, so estimates in this area have not been included in this report.

Planning and Investment Controls

The control of investment and capital spending has been in the cost-containment toolbox since the Carter administration. This approach is based on the idea that capacity is a driver of utilization.[22]

---

[20] Mello MM, Chandra A, Gawande AA, Studdert DM; "National Costs of the Medical Liability System", Health Affairs; September, 2010.
[21] Ibid.
[22] http://www.dartmouthatlas.org/downloads/reports/Capacity_Report_2009.pdf

The primary approach to regulating capital spending is called Certificate of Need (CON). Under CON, providers must demonstrate a need for a new facility or service before spending would be permitted. Currently, there is a wide range in CON across the states, with a small number having no CON at all and a small number, including Vermont, having fairly comprehensive regulations.

While research has shown a correlation between the supply of care resources, such as hospital beds, and utilization, there is less evidence on the effectiveness of regulatory controls in controlling spending growth.

Vermont currently has a robust planning and capital investment regulation system. Although there may be opportunities to improve the effectiveness of this system, we were uncertain if additional savings were possible, so we chose not to make any estimate.

Clinical Reforms

The next four areas, payment reform, benefit design, changes in the care process, and improvements in the public's health, operate differently from the previous savings areas. In those areas, savings were to the base, so while they produced substantial savings, there was no change in the rate of spending growth. Changes in the following areas can directly affect the rate of growth. Further, changes in the following areas can operate more directly. For example, a change in how providers are paid for their services is likely to have a much more direct impact on spending levels than a change in provider administrative costs.

These four areas are also more closely related than the previous areas, so it is more challenging to allocate savings among them. Consider a change in reimbursement from fee-for-service to capitation (periodic payments to a provider that are independent of the volume of care provided). The most direct effect is that the payer has much more control over spending, but equally importantly, the provider has incentives to practice more efficiently and to keep the population that it serves as healthy as possible.

We believe that combined initiatives in these areas have the potential to reduce the rate of growth in health care spending by up to 3%. Because of the challenges discussed above, we estimated an aggregate effect, rather than modeling each component separately.

Payment Reform

Many experts believe that payment reform – changing how health care providers are paid for their work – is perhaps the most fertile area in which to seek savings. In a 2009 study conducted for the Massachusetts Division of Health Care Finance and Policy, researchers at RAND evaluated a wide range of cost containment tools.[23] In that study, they identified 11 approaches that they felt had the highest potential to reduce the rate of growth in health care spending. Of these, the top four were forms of payment reform. When combined, RAND researchers estimated that health care spending in Massachusetts between 2010 and 2020 could be reduced by between 1.4% and 14.3%.

Using all 11 tools was estimated to save the Massachusetts a total of between 0.2% and 21.0% of total spending between 2010 and 2020. In comparison, we estimate total cumulative savings of between 1.4% and 6.8% during the period 2014 through 2020[24].

Benefit Design and Value-Based Care

Benefits establish the rules of coverage - who, what, when, and where - under both government and private insurance coverage. Benefits address areas such as

- When coverage is or is not available (e.g., care must be medically-necessary)
- What types of service are or are not covered
- Any limits on the quantity of services (such as an annual maximum number of visits to a physical therapist)
- What portion of the cost of care must be paid by the beneficiary
- The types of providers from whom care is available
- Specific providers from whom care is available (the network)

[23] http://www.rand.org/content/dam/rand/pubs/technical_reports/2009/RAND_TR733.pdf
[24] Our annual estimates start at less than 1% in 2014 and rise to 18.3% in 2020.

Benefits can be used as a tool to control spending growth in two ways. The first is as a tool to encourage healthy behaviors in an insured population. For example, Safeway, a large supermarket chain, varies the share that employees pay toward their insurance coverage.[25] Employees are measured in four areas: tobacco usage, weight, blood pressure, and cholesterol. If all four measures are in recommended ranges, premiums for individual coverage are reduced by $780 per year and premiums for family coverage are reduced by $1,560. Employees whose measures are not all satisfactory are also rewarded for making progress.

Safeway reports that its health care costs remained flat for four years, while nationally, employer costs increased by 36%.

The second way that benefits can be used to influence costs is to use cost-sharing and provider networks to influence patient behaviors. While the most obvious effect of cost-sharing is a shift, from payer to patient, cost-sharing has also been shown to reduce overall utilization.[26] One of the risks of increasing cost-sharing is that the utilization reduction affects all care, not just unnecessary or inappropriate care. Reduction in preventive and primary care utilization can save money in the short run, but actually increase costs in the long run. In recognition of this issue, many plans with otherwise high cost-sharing exempt preventive care from any cost-sharing at all.

Restricting provider networks can often allow a payer to negotiate lower payment rates in exchange for increased volume. Networks can also be a tool for selecting high-quality providers, although identification of those providers can be a challenge.

The area of benefit design that has received less attention but may have the highest potential for cost savings is the use of “medical necessity” as a payment standard. While the concept of medical necessity is fundamental to both public and private coverage, there is no clear definition of the term. Medicare defines medical necessity as items and services that are "reasonable and necessary for the diagnosis or treatment of illness or injury or to improve the functioning of a malformed body member." Other definitions are based on concepts such as generally accepted practice.

However, none of these definitions addresses the value of the care – how the potential benefit compares to the cost. Should there be coverage for any treatment that may benefit the patient, even if those benefits are far outweighed by the treatment cost? Should there be coverage for treatments whose risks outweigh their benefits?

Related to the first way that benefits can produce savings, in addition to linking premiums to personal choices, should cost-sharing be linked to other aspects of benefits, such as type of service or type of provider? Steps in this direction have already been taken. Many insurance plans have different cost-sharing for in-network and out-of-network providers. More importantly, insurance plans are beginning to waive cost-sharing for preventive services. The state’s Catamount Health program goes one step further and waives cost-sharing for care related to the management of certain chronic diseases.

[25] http://online.wsj.com/article/SB124476804026308603.html
[26] http://www.rwjf.org/pr/product.jsp?id=71583

In early October, the Institute of Medicine (IOM) issued a report[27] on the process by which essential benefits should be defined under federal health care reform. One important conclusion in the report is that beyond clinical standards, the cost of the benefit package should also be reviewed. The IOM recommended that, as part of the benefit development process, the price of the package be compared to current health insurance products in order to test the affordability of the proposed package,

Changes in the Care Process

While much of the discussion around health care reform focuses on financing and administrative costs, there are probably much more significant opportunities for savings in reforming the care process itself. While there are notable exceptions, only a small portion of health care takes place within an organized system. Primary care physicians are independent from specialists (both operationally and financially) and both are independent from hospitals. Providers of other services, such as respiratory and physical therapy, are also independent entities.

This fragmentation often results in a number of issues, including poor coordination among providers, inefficient care, contradictory financial incentives, and redundant services.

The health care quality literature provides us with a useful way to think about the issues to be addressed in this area. In one of the seminal articles on health care quality, Dr. Mark Chassin[28] identifies three types of quality issues – misuse, overuse, and underuse.

Misuse is the easiest to define. According to Chassin, "Misuse occurs when an appropriate service has been selected but a preventable complication occurs and the patient does not receive the full potential benefit of the service."

Overuse can be defined two different ways, medically and economically. Medically, overuse occurs when an intervention either has no benefit for the patient or when the risks of the intervention outweigh the benefits. There is little controversy around efforts to reduce this type of overuse. Economically, overuse occurs when the costs of the intervention outweigh the benefits. This is a much more controversial area because the results of the economic calculation may not be known until after the fact. There is also an ethical question – how should this economic analysis be balanced with the possibility, even if remote, of saving a life?

Underuse is "the failure to provide a health service when it would have produced a favorable outcome for a patient."[29] Examples of underuse are not performing screening tests or other preventive care. The economic consequences of underuse are paradoxical – reducing underuse can increase spending in the short run, but decrease it in the long run.

There are a variety of efforts under way across the country to reform the clinical process, and one of the most notable is Vermont's Blueprint for Health. The Blueprint focuses on improving the quality and effectiveness of primary care. Components of the Blueprint include reengineering primary care practices, increasing the availability of electronic health records, and development of community health teams that provide a wide range of support services.

---

[27] http://www.iom.edu/Reports/2011/Essential-Health-Benefits-Balancing-Coverage-and-Cost.aspx
[28] Chassin MR, Galvin RW; "The Urgent Need to Improve Health Care Quality" JAMA, 1998 280/11.
[29] Ibid.

While the Blueprint focuses on primary care, Vermont is among several states that are looking at bundled payments, accountable care organizations (ACOs), and other delivery system and payment reforms. ACOs take a broad view of the reform process by attempting to amalgamate providers in a geographic area into one organization that is capable of either providing or arranging for the provision of the full spectrum of care. What distinguishes ACOs from other reform ideas is that the full financial risk for care may ultimately be transferred from insurers to providers. Vermont is looking at a variety of options for integrating health care.

Prevention and Public Health

Some researchers have identified the prevalence of disease, especially chronic disease, as the primary driver of health care spending growth. For example, Dr. Kenneth Thorpe estimates that disease prevalence, rather than spending per case, was the most important factor in private insurance spending growth between 1987 and 2002.[30]

Reducing the prevalence of diseases has benefits that go well beyond reducing the rate of growth in health care spending.

Consensus Savings Estimates Attributable to Clinical Reforms ($millions)

Change in	2015	2016	2017	2018	2019	2020
Low	($1)	($35)	($58)	($150)	($316)	($553)
High	($49)	($208)	($430)	($764)	($1,240)	($1,834)

How were these savings estimated?

Based on a review of the literature and preliminary estimates of the impact of the Blueprint for Health, we estimated that an ongoing reduction of 3% in trend was achievable. We assumed that it would take six years to achieve this level of reduction. We used a low estimate of 0.75%[31].

A Note on Investments and Other Offsetting Costs

Clearly, the changes that are essential to the reform process are not simple, nor are they free. In this section, we estimate the costs associated with reform, such as IT investment. These investments are different from those proposed in the Hsiao report. In that report, the investments were uses of the savings. In this report, the investments are necessary to achieve the savings. We do not propose any uses for savings.

The vast majority of investment in health care is related to information technology. While some of this investment will be a direct consequence of Act 48, much of it is already in progress, in part attributable to previous legislative actions. Additionally, some of the investment will be required as a consequence of federal reform and thus will be included in our baseline estimate, rather than in the costs and savings attributable to Act 48. Finally, a large proportion of the cost of HIT investment will be borne by the federal government.

---

[30] Thorpe KE, Florence CS, Howard DH, Joski P; The Rising Prevalence Of Treated Disease: Effects On Private Health Insurance Spending; Health Affairs, 2005.

[31] The dollar savings figures do not reflect this relationship because they are taken on different underlying spending amounts reflecting other savings areas

Note that in calculations of our overall high and low estimates, the low investment figures are used in the high scenario and vice versa. This is consistent with the high scenario as an effort to approximate the "best case" and the low scenario as an approximation of the "worst case."

Consensus Investment Estimates ($millions)

Change in	2014	2015	2016	2017	2018	2019
Base (low)	$5	$10	$20	$10	$5	
Base (high)	$15	$30	$60	$30	$15	

Estimated Spending Net of Savings and Investments

The table and figure below show three sets of spending projections – baseline, net of savings using all low estimates, and net of savings using all high estimates.

$Millions	2014	2015	2016	2017	2018	2019	2020
Projected Baseline	**$6,471**	**$6,939**	**$7,469**	**$8,015**	**$8,601**	**$9,278**	**$10,029**
Trend		7.2%	7.6%	7.3%	7.3%	7.9%	8.1%
Low							
Payer Administration	$0	($8)	($9)	($31)	($59)	($90)	$0
Provider Administration	$0	($27)	($31)	($27)	($30)	($45)	$0
Fraud Reduction	($12)	($13)	($15)	($17)	($20)	$0	$0
Clinical Reforms	($0)	($1)	($35)	($58)	($150)	($316)	($553)
Investments	$15	$30	$60	$30	$15	$0	$0
Total Savings	$3	($19)	($30)	($103)	($244)	($451)	($553)
Percent Savings	0.0%	-0.3%	-0.4%	-1.3%	-2.8%	-4.9%	-5.5%
Projected Spending	**$6,474**	**$6,920**	**$7,439**	**$7,912**	**$8,356**	**$8,828**	**$9,476**
Trend		6.9%	7.5%	6.4%	5.6%	5.6%	7.3%
High							
Payer Administration	$0	($13)	($15)	($52)	($99)	($149)	$0
Provider Administration	$0	($54)	($62)	($53)	($60)	($90)	$0
Fraud Reduction	($32)	($37)	($43)	($48)	($55)	$0	$0
Clinical Reforms	($0)	($49)	($208)	($430)	($764)	($1,240)	($1,834)
Investments	$5	$10	$20	$10	$5	$0	$0
Total Savings	($27)	($143)	($307)	($573)	($973)	($1,480)	($1,834)
Percent Savings	0.0%	-2.1%	-4.1%	-7.2%	-11.3%	-16.0%	-18.3%
Projected Spending	**$6,443**	**$6,797**	**$7,162**	**$7,442**	**$7,628**	**$7,798**	**$8,195**
Trend		5.5%	5.4%	3.9%	2.5%	2.2%	5.1%

Note: figures may not sum to totals due to rounding

Appendix 1 – Spending and Savings Model

The model used for estimates in this report has two main components. The first is an estimation of baseline spending – what would health care cost in the absence of policy changes by the state? By design, the baseline includes the effects of federal reform.

To create the baseline, the model starts with 2009 Vermont resident spending, the most current state estimates prepared by the Department of Banking, Insurance, Securities and Health Care Administration (BISHCA). Future spending growth trends are estimated by adjusting the most recent federal estimates, which include the impacts of federal health care reform efforts. Adjustment of CMS trends is based on the historical relationship between national and Vermont spending growth. Historically (1993-2009), Vermont's average annual increase in health care spending has been 1.4% higher than the national average increase, so the model incorporates the assumption that this relationship will continue into the future (in the absence of action by Vermont).

We further adjusted a single year – 2014. This is the year that many of the federal reforms go into effect, including Medicaid expansions and the insurance coverage mandate. Because Vermont's Medicaid eligibility is already broader than the new federal level and our current uninsured rate is substantially lower than that of the United States, based on information provided to us by CMS, we reduced the projected national increase in that year by 1.2%.

The second component is a series of estimates of savings. The model is structured to allow savings to be expressed in two ways – as a change in baseline (expressed as a dollar amount) or a change in trend (expressed as a percentage). Calculation of growth in year N+1 is done by applying the modified trend for that year (baseline trend plus or minus savings adjustment) and then adding the change in baseline (negative for savings, positive for investments or other new spending).

Savings in base are added together for each year, while changes in trend are multiplied. For example, separate trend reductions of 5% and 6% would combine to be a 10.3% reduction (1-(0.95*0.94)), rather than an 11% reduction. Unless individual changes are substantial, the difference between adding and multiplying is minimal.

Appendix 2 – U.S. Spending Growth

Estimates of future spending growth in Vermont are derived from national estimates prepared by a team of actuaries and economists at the federal Centers for Medicare and Medicaid Services (CMS). In addition to looking at historical patterns of inflation, the model incorporates several additional factors, including demographic changes (aging of the population), changes in the broader economy (historically, a rising or falling economy has had a strong influence on health care spending), and federal reforms.

CMS projects spending in three categories: Personal Health Care (PHC), Health Consumption, and National Health Expenditures (NHE). Personal Health Care is the narrowest, including only direct payments to providers. Consumption adds payer administrative costs and public health spending to PHC. It is the most comparable to Vermont's Expenditure Analysis, and is used throughout this report. NHE is the most comprehensive measure, adding health-related construction and research to Consumption.

The table below shows projected United States growth in health consumption spending from 2010 through 2020. Note the one-time jump in 2014. This is the result of the implementation of many provisions in the federal Affordable Care Act (ACA).

2010	*4.0%*
2011	*4.8%*
2012	*4.2%*
2013	*5.5%*
2014	***8.4%***
2015	*5.8%*
2016	*6.2%*
2017	*5.9%*
2018	*5.9%*
2019	*6.5%*
2020	*6.7%*

In adapting federal growth projections to Vermont, we were skeptical that the 2014 spike in the national growth rate would be as large in Vermont. Vermont's Medicaid eligibility is already broader than the expansion called for in ACA, and we have a much lower rate of uninsured than the United States (in 2009, 16.1% of Americans were uninsured,[32] while in Vermont, the equivalent figure is 7.6%).[33]

CMS provided us with a breakdown of the components of their projections. In 2014, growth without the impacts of ACA was estimated at 5.8%, nonexpansion ACA impacts were estimated at 0.2%, and the effects of ACA expansion were estimated at 2.2%. In making our Vermont estimates, we reduced this final figure to 1%.

Full documentation on CMS projections is available at:
http://www.cms.gov/NationalHealthExpendData/03_NationalHealthAccountsProjected.asp#TopOfPage

[32] http://www.census.gov/hhes/www/hlthins/data/incpovhlth/2010/table10.pdf
[33] http://www.bishca.state.vt.us/sites/default/files/VHHIS-2009.pdf