

Act 128

Health System Reform Design

Achieving Affordable Universal Health Care in Vermont

Submitted by

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We would also like to thank the numerous Vermonters and Vermont organizations who provided thoughtful comments and insight during the public comment period. Their efforts helped make this report better, clearer and hopefully more useful to the State of Vermont.

The comments pointed out some gaps, lack of clarity and inadequate analysis in our draft report. We are deeply grateful for these comments and have revised our draft report to improve the completeness and clarity of our analysis. The comments painted a clear picture of the diversity of views, of experiences with the health care system, of the deep feelings and beliefs about what a health care system should be, and the desire to do better for Vermonters. The comments also showed a sense of trepidation at the prospect of major systemic change, despite a general agreement over the unacceptability of the status quo.

Health care touches us all, in personal, professional and economic ways. Major change brings uncertainties. We strongly believe, however, that Vermont can achieve its goals and set a model for the nation for an equitable, affordable, high-performing health system.

DISCLAIMER

We would like to thank the many institutions and organizations that allowed us to use their data to conduct analyses vital to this report. Unless otherwise cited from a published report, the analyses and the responsibility for their accuracy and integrity are solely ours. Any conclusions and recommendations in this report are solely those of Dr. Hsiao and are not necessarily those of the institutions and organizations that provided data.

Furthermore, we used the Gruber Microsimulation Model (GMSIM), developed by Jonathan Gruber at MIT and the Regional Economic Model Inc. (REMI), as conducted by Kavet, Rockler and Associates, LLC to analyze and estimate the impacts of potential reforms. However, Jonathan Gruber and Kavet, Rockler and Associates, LLC do not necessarily endorse the recommendations in this report.

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EXECUTIVE SUMMARY

Vermont's health system is broken. Despite 15 years of reforms, more than 7 percent of Vermonters do not have insurance, while another 15 percent are estimated to have inadequate insurance to protect them from the financial risk of an illness or accident. Costs are spiraling out of control, straining the state budget, households and employers' bottom lines. Between 2004 and 2008, health care spending in Vermont grew at an annual rate of 8 percent, 3 percent higher than the national rate.

By passing Act 128 and commissioning this report, the Legislature recognized that Vermont must find systemic solutions to the intertwined problems of cost and access. Act 128 laid out a clear and ambitious set of goals: to achieve universal health insurance coverage; to provide every Vermont resident with an adequate standard benefits package and equal access to health care; to control rapidly escalating costs; to establish a primary care-based integrated health care delivery system that focuses on prevention and wellness.

Act 128 required our team to design three options for health system reform and to determine which best achieved the goals set forth. Option 1 was to be a government-administered, publicly-financed single payer health system. Option 2 was to be a government-administered public option that would compete with private insurers. Option 3 was to be the most "viable and practical" plan designed by our team.

Many constraints confront any potential plan to achieve the goals described in Act 128. They include fiscal, political, legal, and institutional. In short order we had to gain an in-depth understanding of these constraints in order to design ways to overcome or navigate around them. We conducted extensive fiscal, economic and demographic analysis of Vermont, including a historical and stakeholder analysis, for which we interviewed more than 100 individuals. We closely examined federal laws and regulations around Medicaid, Medicare, the Patient Protection and Affordable Care Act (PPACA) and the Employee Retirement Income Security Act (ERISA), as well as Vermont institutions and their operational capacities.

Our analysis of the Vermont situation and the constraints to reform lead us to adopt a set of design principles that ultimately guided our work and our recommended design, Option 3. Firstly, there must be no increase in overall health spending. Any additional spending to cover the uninsured and inadequately insured must come from savings generated by systemic reform. Second, we designed the benefit package to maintain the average benefits that Vermonters enjoy today. Third, we sought to maximize federal revenues from all sources. Fourth, we would not reduce overall net income of Vermont physicians, hospitals, or other providers. Fifth, we must sustain and increase the supply of physicians and other providers, both targeted investments. Finally, we sought to eliminate the perverse incentives inherent in the fee-for-service system through risk-adjusted capitation payment plus performance bonuses to provide incentives for the formation of Accountable Care Organizations (ACOs) and care integration.

OPTION 1

Option 1 is a government-run single payer system that provides Vermonters with a uniform benefit package under a single insurance fund. All payments to providers are channeled through a single pipe of claims administration system. Those with Medicaid and Medicare will not see their benefits change. Likewise, Workers' Compensation benefits and financing would not change. However, the payments of all insurance programs to providers would be channeled through one claims processing system, including Medicaid, Medicare and the medical portion of Workers' Compensation claims.

Single payer systems save administrative costs for two main reasons: consolidation of insurance functions and reduced provider costs. By creating a single pipe with uniform claim processing and claim adjudication rules, providers can measurably reduce their administrative costs. They no longer have to deal with the hassles and complexities created by multiple payers, each with multiple benefit packages and myriad rules for benefit limits, cost-sharing and payment processing and claims adjudication. A single insurance fund creates administrative savings on the payer side, both by eliminating certain functions largely related to marketing and sales, and also consolidating duplicated functions across payers.

Option 1 also creates a uniform payment method and rate, meaning that providers would receive the same payment regardless of payer. This means raising Medicaid and Medicare payments, but also reducing payments paid by previously privately insured populations. These new, uniform rates would be higher than current Medicare payment rates.

Over time, however, Option 1 shifts away from the current fee-for-service (FFS) payments for physician services and DRG payments for hospitals to risk-adjusted capitation payments to ACOs. This reform of the payment system promotes the integration and coordination of care, and also rewards physicians for eliminating waste and overuse. ACOs are an emerging model and Vermont will need to undergo a transition phase when different types and forms of ACOs are tested and evaluated to understand what works best for Vermont, and also resolve any issues that arise.

Option 1 furthermore incorporates a major change in medical malpractice law, moving to a no-fault system like those that operate in New Zealand and Scandinavian countries.

We modeled two different benefit packages for Option 1. Under a single payer system, the benefit package is the primary means of allocating resources. In designing the benefit packages, we drew on three basic principles: reduce financial barriers to provide easy access to high-value health services, emphasize prevention and primary care, and protect Vermonters against the financial risk of high health care expenses.

Option 1A has a comprehensive benefit package, including full dental, vision and long-term care, with minimal cost-sharing.

Option 1B has a standard benefit package, with a richness equal to the average benefit package in Vermont today, which is approaching the "Platinum" standard as defined by the PPACA. This plan has higher cost-sharing than the comprehensive plan, though we recommend exempting those earning less than 200 percent of the Federal Poverty Level (FPL) from cost-sharing. Unlike most of health plans in Vermont today, the standard benefit package has no overall deductible, encouraging greater use of primary care and early diagnosis and treatment. It does, however, impose higher

cost-sharing on some services, such as inpatient admissions to discourage unnecessary hospital admissions. The standard benefit package does not include long-term care and has only limited vision and dental care. These were partly economic decisions, as the standard benefit package was designed to ensure that there was no overall increase in health spending. Long-term care was excluded also because of the inherent differences between pooling medical risk and pooling disability risks. Long-term care involves a continuum of services from health care, nursing home, homecare, custodian care and informal caregivers. International models suggest that long-term care benefits must be carefully designed and may be best implemented as a separate scheme with its own financing.

It is worth noting that both benefit packages shown in report were designed as illustrative example plans, using broad principles and aggregate costs. However, there are many specific benefit decisions that Vermont legislature will have to make moving forward.

The system is financed through a payroll contribution on all Vermont wages, split between employer and employees. In recognition that some Vermonters have much less ability to pay, we recommend that low-wage workers and their employers be exempted from the contribution. Because payroll contributions are deductible as legitimate expenses for employers and not subject to taxation, while the employers' contribution is also not taxable to the employees, this financing mechanism helps preserve the preferential tax treatment of health insurance – a tax expenditure worth some \$500 million in Vermont.

Though the financing is based on wages, there is no connection between employment and eligibility for the insurance benefits. All Vermonters who prove legal residence in the state are covered.

Both Options 1A and 1B require that Vermont secure waivers from Medicaid, Medicare and the Exchange requirements under PPACA. Models assume that the single payer would be implemented in 2015.

OPTION 2

Option 2 is a government-administered public option that will compete against private insurers within PPACA's Health Insurance Exchanges. The benefit package would be determined both by the requirements of the Exchange and by market requirements for effective competition against existing products in the Exchange.

Option 2 does not create a uniform payment level; insurers will still negotiate payment rates separately with providers. However, it does create a single pipe of payment, where all payers (including Medicaid and Medicare) channel their claims through one system or claims clearinghouse with uniform rules. This is similar to the health system design in Germany, where multiple competing health plans use one central claims processing systems to pay providers. This reduces the administrative burden on providers, specifically with regards to the multiple complex payment rules that result in claim denials, and resubmissions and payer-specific claims filing.

However, because there would still be multiple benefit packages –with various rules over benefit coverage and limits, copayments, deductibles and coinsurance – providers will not be able to save as much on administration as they would in a system that has a uniform benefit package. Furthermore, because Option 2 preserves existing insurance companies, there will be no savings

from the consolidation of health insurance into a single fund, or the associated reduced marketing, sales and underwriting costs. The benefits would be financed through traditional premiums.

As in Option 1, we still recommend movement towards a no-fault medical malpractice system to reduce unnecessary spending related to defensive medicine, as well as shifting, over time, to global payments managed by ACOs.

OPTION 3

Option 3 is a public-private single payer system, modeled with the standard benefits package identical to the benefit package described in Option 1B. Again, Medicaid and Medicare benefits would not change, but all payments for these programs, as well as those for Workers' Compensation, would be paid through a uniform claims administration process – the single pipe. This reduces providers' administrative costs and hassles. Like Option 1, this system has a single insurance fund that creates administrative savings on the payer side, too. The standard benefits package is equal to the average richness enjoyed by Vermonters today, which is close to the "Platinum" standard under PPACA. For the reasons discussed above, the standard benefit package excludes long-term care. It provides only limited vision and dental care, as the savings allowed. Vermonters earning less than 200 percent FPL would be exempt from cost-sharing.

Option 3 is financed identically to Option 1, with a payroll contribution shared between employers and employees with exemptions for low-wage workers.

Like Option 1, we recommend moving towards a capitation-based payment method with funds managed by ACOs. During the transition period, providers would be paid under a uniform rate schedule for all populations. These rates would be higher than current Medicare payments. Option 3 also recommends movement to a no-fault medical malpractice system.

Again, Option 3 requires that Vermont obtain waivers for Medicaid, Medicare and from the Exchange requirements in PPACA. Models assume that the single payer would be implemented in 2015.

The major distinguishing feature of Option 3 is its governance and organization. Option 3 is governed by an independent board with representation from the major health care payers – employers, the state, and workers – along with the major beneficiaries and recipients of payment – providers and consumers. Each year, the Board would be responsible for determining updates to both the benefits package and payment rates. These are the major determinations of total health spending. By insulating these decisions from the political process, we expect to see more modest increases in total spending over time. We furthermore recommend that Option 3 preserve a small space for private insurance firms by contracting out, through a competitive bid process, the claims administration and provider relations functions of the single payer. Competition gives incentives to innovate and create more efficient system. As such, the overall administrative costs of Option 3 are slightly lower compared to Option 1.

The Vermont state government would still be responsible for many important functions including overall health policy, determining the eligibility of beneficiaries, collecting the payroll contribution, credentialing and licensing providers, and regulating patient safety throughout the system. Many of these functions are currently undertaken by Vermont state agencies in the context of administering the Medicaid system and other government health programs.

POTENTIAL SAVINGS

All three options will result in significant cost savings - both one time savings and savings that accrue over time to bend the cost curve. These savings fall into four categories: administrative savings for both payers and providers, savings related to reduced fraud and abuse, savings from reduced waste and duplication of services and savings related to reduced defensive medicine under a no-fault system of medical malpractice.

A single-payer system yields administrative savings resulting from two major features: a single insurance fund with standard benefit package and a single pipe of claims administration. Under the current structure in Vermont, competing insurers offer a variety of benefit packages and set complex rules over claim adjudication. Each insurer also has expenses related to sales, marketing and benefit design. The single insurance fund eliminates a significant amount of the marketing and sales-related costs of administering the system from the payer side and also consolidates duplicated functions across multiple payers. For example, some single payer systems around the world operate with administrative costs at close to 2 percent of total health spending, compared to 7.6 percent in Vermont.

There are also administrative savings on the provider side. These come from reduced administrative hassles related to the myriad rules over payment and claims processing and also by reducing the time and effort related to determining and collecting appropriate cost-sharing under multiple benefit packages. For example, our survey of Vermont physicians found that each full time physician employs 0.78 staff equivalents to deal solely with claims and billing issues. In sum, we estimate that under Option 3, which produces the greatest savings in administration, Vermont could save nearly 8 percent in total health spending from moving to a single payer.

Savings will also come from a reduction in fraud and abuse. Although the vast majority of providers and patients are honest, the few who are not cost the system considerable sums of money. A uniform, comprehensive single payer claims database is better able to identify instances of fraud and abuse within the system. For example, during the first year of implementation of the single payer system in Taiwan, there was a 7-8 percent reduction in total health spending owing to heightened detection of fraud and abuse. In the US, estimates of fraud alone range from 3-8 percent of total health spending.

Moving Vermont towards an integrated delivery system under the ACO model will also yield savings in terms of reduced overuse and duplication of service and tests. Vermont has already begun the move towards an integrated delivery system through its Blueprint for Health Patient-Centered Medical Home project. We continue to push Vermont towards integrated care by payment reforms. We suggest that Vermont pilot and ultimately adopt a risk-adjusted capitation based payment model managed under ACOs. Studies suggest that waste and overuse account for 15 to 30 percent of total health spending in the US. Our analysis of Vermont suggests that if all regions had health spending comparable to the most efficient and integrated service area currently in Vermont, the state could drop total private spending by 10 percent.

Lastly, Vermont can reduce health spending through a change to a no-fault system of medical malpractice. The main effect of this change would be to alter provider perceptions of the risk of law suits thereby reducing defensive medicine. While rigorous studies document the existence of defensive medicine, it is difficult to quantify and estimates of defensive medicine range from 2 percent to 9 percent of total health spending.

We estimate that Option 1 will produce savings of 24.3 percent of total health expenditure over the 2015 to 2024 period. Option 2 will produce savings of 16.1 percent of total health expenditure between 2015 and 2024. Finally, Option 3 will produce savings of 25.3 percent of total health expenditure between 2015 and 2024. Option 3 produces additional savings as compared to Option 1 because of the independent board and the competitively awarded claims administration.

These percentages of savings are shown in Graph 1 and they represent the savings that can be achieved in terms of cost of current benefits. The estimated dollar figures of savings are shown in Table A.

Figure A: Comparison of Vermont Health Expenditure per person under different Options in real dollar terms 2010 – 2024.

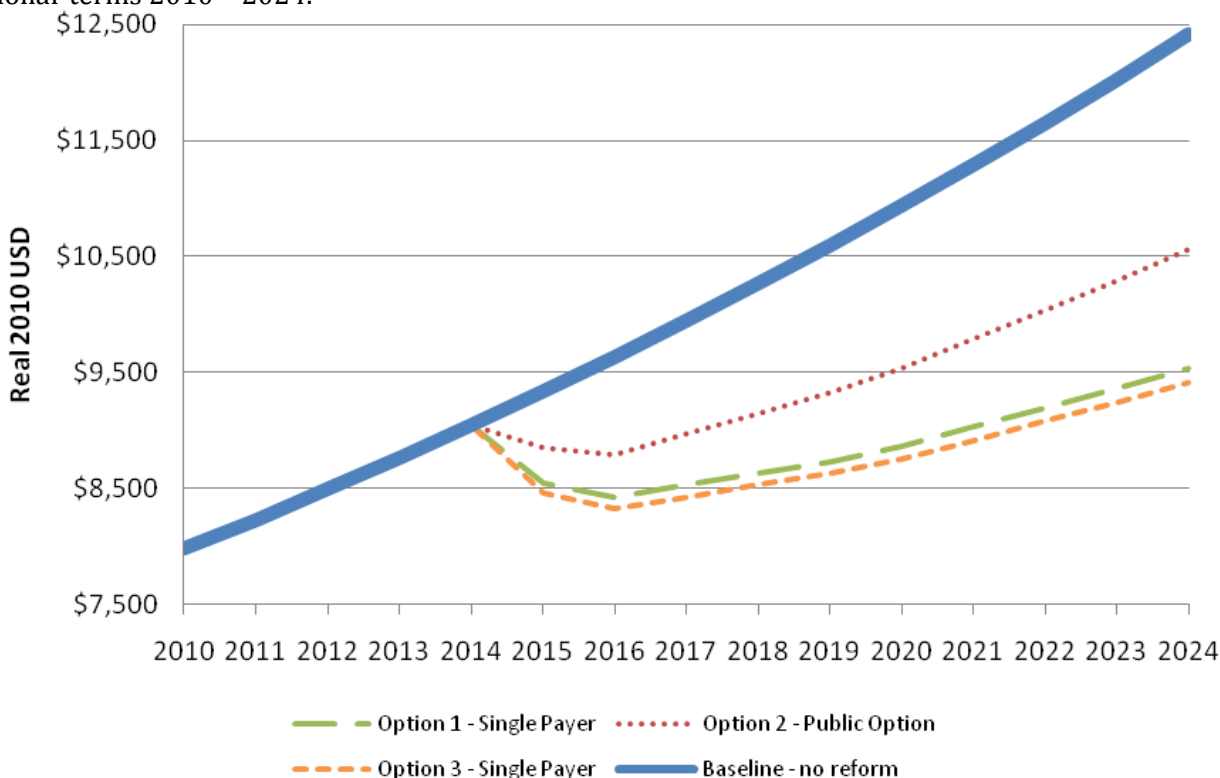


Table A. Comparison of Savings Estimates among the Three Reform Options.

	Percent of Total Health Spending from 2015 to 2024	Absolute Savings in 2010 Dollars ¹			
		2015	2016	2019	2024
Option 1	24.3%	\$530 million	\$720 million	\$1,050 million	\$1,550 million
Option 2	16.1%	\$320 million	\$470 million	\$690 million	\$980 million
Option 3	25.3%	\$580 million	\$770 million	\$1,100 million	\$1,600 million

Note: ¹Excluding savings accrued to Medicare, Veterans' Administration, Workers' Compensation plans, and Medicaid for the over 65 population.

USE OF SAVINGS

One of our design principles was to ensure that all additional spending was funded through the savings generated by our reforms. Therefore, it is important to show how the realized savings will be used. Importantly, we do not recommend that all the savings are used to improve benefits and supplies of services. Some of the savings are used to reduce the health costs of businesses and workers.

The main priority for allocating these savings was to provide insurance for all Vermonters, guaranteeing either a comprehensive or a standard benefit package described above. Furthermore, Options 1 and 3 allocate \$50 million (in 2009 equivalent) of savings towards investments in human resources for primary care and updates to community hospitals to ensure an adequate supply of services to meet increased demand. By 2016, this investment would be about \$64 million, as seen in Table B below.

Table B shows our estimates of the additional spending under the single payer options. In addition to spending for increased benefits and supply-side investments, here we also include the effects of moving to a uniform payment level. Currently, Medicaid and Medicare pay below the cost of services to providers, but private payers pay much higher than costs. Our analysis shows that a new uniform rate that represents the average of these three major payers would be higher than current Medicare payment rates. We assumed that the state would have to cover the full cost of raising Medicare rates. The single payer would in turn save the corresponding reduction in private payments. However, when Vermont raises its Medicaid rates to providers, the Federal government will “match” this increased outlay at approximately 60 percent. So every \$1 dollar Vermont spends on raising Medicaid payment rates brings in an additional \$0.60 in federal funds up to certain limits. All told, moving to a uniform payment rate yields a net savings to Vermont of approximately \$57 million in 2016, representing the additional federal funds flowing to the state.

Option 1 with comprehensive benefit package (Option 1A) has the highest cost because it has minimum cost sharing and includes of full dental, vision, nursing home and homecare. In both 2016 and 2019, the savings generated by reforms are insufficient to cover these costs.

Additional spending under the standard benefit package is estimated to be \$395 million for both Options 1 and 3 in 2016, well below the estimated \$770 million in estimated savings.

Table B. Recommended Use of Savings under the Different Benefits Packages.

Benefits package	2016		2019	
	Standard (Options 1B and 3)	Comprehensive (Option 1 A)	Standard (Options 1B and 3)	Comprehensive (Option 1A)
Coverage of the uninsured	\$227 million	\$260 million	\$250 million	\$285 million
Increased benefits for the underinsured	\$33 million	\$333 million	\$36 million	\$366 million
Investments in primary care and community hospitals	\$64 million	\$64 million	\$70 million	\$70 million
Additional dental and vision benefits	\$128 million	\$377 million	\$140 million	\$415 million
Long-term care benefits	-	\$204 million	-	\$225 million
Savings from uniform payment rate	(\$57 million)	(\$57 million)	(\$63 million)	(\$63 million)
Total	\$395 million	\$1,180 million	\$435 million	\$1,300 million

Note: All dollar figures are expressed in real 2010 dollars.

COMPARISON OF THE OPTIONS

The table below summarizes the impacts of the three different options, as compared to our simulation models of what Vermont would look like under the implementation of PPACA as the baseline. For example, our simulation models predict that 31,000 people would remain uninsured in Vermont after the implementation of PPACA in 2016. Therefore, we take 31,000 people as the baseline level of uninsured for all our reform designs for 2016.

Options 1 and 3 are capable of attaining universal coverage because, by definition, all Vermonters showing proof of residency are covered. However, there are some populations who would not be insured at any given time, including those who have just moved to Vermont and undocumented workers. Option 2, however, does not dramatically increase the number of individuals gaining insurance over what is achieved by PPACA alone.

All Options except 1A (the comprehensive benefit package) result in a reduction in total employer health spending. Both Option 1 and Option 3 are expected to result in a net creation of jobs in Vermont, despite losing jobs related to health insurance administration. New jobs would be created for several reasons. First, Option 3 covers all Vermonters with an overall higher level of benefits. This increases medical spending, creating jobs at in-state health care providers. Second, the decrease in health care costs that results from the savings described above will lead to higher wages, which in turn increases household consumption in Vermont. Part of this increased consumption will occur locally, thus creating jobs in Vermont. Finally, moving the administration of Medicare's claim payment operation into Vermont would also increase jobs.

Table C. Estimated Incremental Impacts of the Three Reform Options.

		Option 1		Option 2	Option 3
Benefits package:		Standard	Comprehensive	Multiple	Standard
Number of remaining uninsured individuals	2016	0	0	28,000	0
	2019	0	0	28,000	0
Total employer spending	2016	-\$80 million	\$410 million	-\$120 million	-\$100 million
	2019	-\$220 million	\$290 million	-\$150 million	-\$240 million
Per employee health spending	2016	-\$200	\$1,000	-\$300	-\$260
	2019	-\$550	\$725	-\$385	-\$600
Number of jobs created	2016	3,800	8,200	-2,300	3,600
	2019	3,200	7,100	-3,100	2,900
Number of individuals migrating into Vermont	2016	1,600	4,000	-1000	1,500
	2019	2,900	8,000	-2,400	2,600
Gross State Domestic Product Change	2016	\$100 million	\$320 million	-\$170 million	\$90 million
	2019	\$50 million	\$250 million	-\$250 million	\$33 million

Note: All dollar figures are expressed in real 2010 dollars.

Table D provides estimates of the payroll contribution rates that would be required to finance the single payer options (1A, 1B and 3) compared to the equivalent employer and employee spending on premiums under both PPACA (No reform) and Option 2. To make the contribution rates as comparable as possible across options, the percentages reflected under No reform and Option 2 represent the total employer spending given the same taxable payroll base assumed under the single payer reforms. However it is important to note that under both “No reform” and Option 2 scenarios, many Vermonters would remain uninsured (see Table C above) and underinsured. Moreover, the benefit packages under these two scenarios do not include any vision or dental care coverage. Finally these two scenarios do not include investments in physician workforce and health care facilities. As such, these percentages do not accurately reflect the additional benefits and investments in Vermont residents and providers.

Table D. Estimated Payroll Contribution Rates as a Percentage of Total Payroll for the Three Reform Options.

		No reform ¹	Option 1B Standard	Option 1A Comprehensive	Option 2	Option 3 Standard
Total²	2016	13.40%	12.80%	18.20%	12.40%	12.50%
	2019	13.70%	11.80%	17.10%	13.60%	11.60%
Employer Contribution	2016	9.30%	9.60%	13.60%	8.50%	9.40%
	2019	9.60%	8.80%	12.80%	8.50%	8.70%
Employee Contribution	2016	4.10%	3.20%	4.60%	3.90%	3.10%
	2019	4.10%	3.00%	4.30%	5.10%	2.90%

Notes: ¹The no-reform scenario consists of PPACA and state-wide implementation of Blueprint for Health Medical Homes.

²To make the contribution rates comparable, the total payroll values for the no-reform and Option 2 scenarios have been adjusted similarly to the single-payer options, by excluding wages of workers below 200% of FPL and wages above the Medicare cap, indexed over time to GDP growth rates.

DISCUSSION AND RECOMMENDATIONS

Vermont will have many choices and compromises to make when implementing any of the proposed reform designs. Our report laid down the direction of reform and the principles that should be followed. However, many specific decisions will require much more detailed analysis, which we did not have the time or resources to accomplish. Nonetheless we have set down operational parameters for reform.

Our estimated impacts on saving and spending have a 15 percent margin of error, reflecting the limited science in accurately predicting the future. There no is perfect prediction for a complex health system based on the behavior of more than 600,000 people, hundreds of organizations, employers and the Federal Government. For this reason, we recommend that Vermont take a step by step approach to benefits and begin with offering the standard benefit package, which covers medical services, mental health and substance abuse, and drugs and then expand to vision, dental or other services as the savings allow.

Option 3 is our recommended design. In addition to yielding the greatest cost savings, Option 3 is the most feasible as it is likely to be accepted by the broadest cross-section of Vermont stakeholders. Option 3 is both economically responsible and politically palatable. Through discussions with more than 100 stakeholders, we gained a critical understanding of what the various competing interests would tolerate, where they disagreed and where common ground could be reached. Option 3 focuses on providing access to care, maximizing cost savings and, where possible, relying on market-based efficiencies within a single payer system.

Political opposition to single payer systems is often rooted in concerns over transparency and accountability. Option 3 is designed to address those issues and to operate with input from a broad base of stakeholders, with no one constituency holding total control. In sum, we believe that Option

3 provides benefits to patients, providers and the system at large in keeping with the goals of Act 128, with an eye towards long-term sustainability.

In addition to benefiting the entire Vermont health care system, Option 3 will provide immediate, direct benefits to the uninsured and the underinsured. Most employers and employees will pay less under Option 3 than they would have given no additional reforms. For example, our models estimate that in 2016 employers who offer insurance would pay more than 12 percent of their payroll in premiums given no additional reforms. Under Option 3 in 2016, all employers would pay 9.4 percent of payroll in contributions.

As in any broad reform effort, some individuals and groups will benefit more than others. While all Vermonters will have access to coverage under Option 3, the single payer system will require private health care organizations to adapt and evolve. It is inevitable that under a single payer system, certain private insurance functions will become obsolete and will leave the market in Vermont. We believe that these changes will have the most significant effect on sales and marketing personnel within the private health insurance industry. Many of the persons performing billing, coding and claims management functions for providers may also be displaced. Furthermore, employers who currently do not currently provide coverage for their workers, or who provide minimal coverage, will face greater costs under Option 3, despite an overall average reduction in employer spending.

Though one may be inclined to focus attention on the current, urgent challenges of health system reform, it is important that we not lose sight of the long term benefits of a single payer system. If Vermont implements Option 3, it will set a policy in place that controls the long range escalation of health care cost, provides every Vermont resident coverage with a standard benefit package, creates jobs by allowing employers to better plan for the costs associated with their workers' coverage, attract new workers to Vermont with better healthcare and higher wages and finally, creates a healthier and more productive citizenry.

Vermont is in a unique position to fix its broken health care system. The Legislature has taken the first, critical steps. Our research and analysis shows that a single payer system can reduce health care costs in Vermont by 8-12 percent in the first one to two years and reduce health care costs by an additional 12-14 percent over time. If Vermont is successful in implementing health care reform based on our recommendations, it will be seen as a leader in resolving one of the most important domestic policy issues of our time. Vermont can show the way forward for other states and the United States as a whole. Our team is grateful for the opportunity to have informed this process.

1. INTRODUCTION

"How we keep our feet on the ground and our heads in the clouds."

Louis Menand, 2010

The visions expressed in Vermont's Act 128 soar in the clouds. Achieving them, however, requires us to keep our feet on the ground to find pragmatic ways to reform the current broken health system. Vermont wants to be the vanguard and create a new system that may serve as a model for the whole nation. America itself faces three major health care problems: an inequitable system in which nearly 50 million Americans have no health insurance; rapid escalation of health costs that places a heavy financial burden on most Americans and the government; and uneven quality of health care and wasteful use of scarce resources. These problems are caused not by a political party or insurance company, but by an overall dysfunction of the health system. President Obama's Patient Protection and Affordable Care Act deals largely with the insurance coverage problem, but does not present a systemic solution. Vermont seeks a fundamental system-wide reform.

A systemic reform requires simultaneous changes to the major structures of a health system. This means that insurance coverage needs to be universal and financing of health care needs to be equitable and decoupled from employment; resources have to be reallocated toward prevention and primary care; payment rates have to shift to give higher value to primary care services; payment methods must promote integrated health care delivery and reward providers for good performance all while enhancing competition; fragmented health care delivery must be coordinated and integrated; health information technology has to be modernized; incentives and information must be given to people to adopt a healthy lifestyle; and regulations have to be simplified and streamlined.

Vermont's aspiration is to take the state on a new path and create an innovative single payer system that can solve the three major problems and provide equal access to good and affordable health care for all Vermonters. This project was commissioned to propose options to reform the health system structures and translate this noble vision into reality—while keeping our feet on the ground.

A. PRINCIPLES AND GOALS OF ACT 128

Vermont has been working to improve its healthcare system for many years. While the approaches have varied over time, the basic goals have not. In his 1939 inaugural address, Governor George Aiken said, "A subject of nation-wide discussion today is that of health insurance and hospital insurance. Hospital insurance began in Vermont, and we the people of this state recognize full well that the health of our neighbors as well as of our own family is of vital importance to us."

His comments were made in the context of a state with significant health problems. As early as 1929, the issues of cost and access to care were being discussed[1]. During World War II, about 30 percent of Vermonters reporting to the Selective Service "were rejected and placed in the 4-F category because of poor health"[2].

Proposals to reform health care in the state were developed sporadically throughout the 1940s, 1950s, and 1960s, but the “first major effort to influence the modern health care structure came in 1973, when Governor Thomas Salmon appointed a nineteen-member commission to explore the need for regulatory authority over the health care delivery system in the state”[3]. The Commission’s findings sound remarkably current:

- There were too many specialists and not enough generalists in Vermont.
- The structure of health insurance was enormously complex, administrative costs of the system were very high, and lots of money flowed out of the state in the form of insurance company profits.
- Widespread variation existed in the utilization patterns of health care resources and costs.
- Malpractice costs were rising and leading to defensive medicine.
- There was a large and growing demand by the public for health care resources, without regard to costs.
- The health care system was fragile in rural areas.
- The state lacked the necessary data to plan and monitor the system.

In 1988, the Vermont legislature created the Vermont Health Insurance Plan “with the goal of ensuring that all Vermonters had health insurance coverage”[3]. This effort was ultimately derailed by state budget issues.

Act 160 (1992)

The next major reform was initiated in 1992 with the enactment of Act 160. This act made the goals and principles of health care reform explicit. The opening statement of Act 160 said: “It is the policy of the state of Vermont to ensure that all residents have access to quality health services at costs which are affordable.” The policy section of Act 160 went on to call for:

- An integrated health care system, under the direction of a single state agency
- Comprehensive planning and budgeting
- Quality improvement
- Cost containment
- Regional and local decision-making
- Rational allocation of resources
- Universal access to preventive and medically necessary care

Act 128 (2010)

“An act relating to health care financing and universal access to health care in Vermont,” Act 128 was passed by the Vermont legislature in May of 2010 and was allowed to become law without the

Governor's signature. Building on the history of reform in the state, Act 128 established broad principles and goals. These principles and goals guided our efforts to design the options presented in this report.

The principles and goals address several broad areas:

- Providing both coverage and access to care for all Vermont residents
- Financing care in an equitable and sustainable way
- Shifting the focus of care from intervention to prevention and wellness
- Shifting the structure of health care delivery from fragmentation to integration
- Maximizing efficiency and transparency throughout the system

But Act 128 goes well beyond setting goals. It recognizes achieving these goals requires broad changes to how healthcare is financed and delivered. Each goal must be linked to action. These changes will address how funds for health care are raised, how providers are paid for delivering care, how systems of care are organized, and how the planning and regulatory processes operate.

B. CURRENT PROBLEMS IN VERMONT'S HEALTH SYSTEM

By many measures, Vermont's health system is one of the best in the United States. Vermonters are consistently ranked as the healthiest in the country by the United Health Foundation [4]. Vermont boasts the fifth highest rank in its percentage of insured residents [5]. Hospital utilization is low - Medicare beneficiaries in Vermont are hospitalized for surgery at the lowest rate in the country [6]. In 2008, Vermont was tied with Utah for the lowest overall hospital discharge rate in the country[7].

All of these accomplishments are the result of decades of reforms and unwavering efforts to provide affordable, accessible medical care to Vermont residents. Vermont's government has championed health reform since the 1930s. Virtually every decade since then the state has renewed its commitment to health care through research and legislation. Now more than ever Vermont should take pride in its wealth of health care data and its wide-ranging reform efforts, such as the Blueprint for Health, Hospital Report Cards, Catamount Health, and Act 128.

In spite of these positive efforts, Vermont's current system is unmanageable and at risk of crisis. Escalating costs threaten the sustainability of the entire system, rising at a higher rate than both GDP and the national average. Despite offering a public option through Catamount Health, seven percent of people remain uninsured, and many others are underinsured, most of whom cite cost as the main obstacle to obtaining good coverage. These people lack adequate protection from the financial risk posed by illness, endangering the stability of Vermont families and businesses. To create a sustainable system that is capable of containing costs and still providing a high level of care to all citizens, Vermont must change its reform strategy. Instead of adding layers of haphazard patches to fix isolated problems, the state must create a comprehensive framework that systematically addresses core issues.

At the heart of Vermont's healthcare reform lies the challenge of controlling rising costs. According to the Centers for Medicare and Medicaid Services (CMS), national per capita health care spending grew an average of 5.5 percent per year from 1991 to 2004. Vermont's per capita spending grew substantially faster, averaging 7.6 percent per year[8]. In 1991, Vermont ranked 42nd in per capita health care spending, but by 2004, the state ranked 9th, spending almost 15 percent more than the national average[9]. Vermont's comprehensive coverage, while admirable, contributes to these comparatively faster rising costs, as health insurance coverage is correlated with higher resource utilization.

Current and rising costs are the main culprit for the uninsured, underinsured, and endangered insurance for individuals, businesses and the state. Despite having one of the lowest rates of uninsured individuals in the country, Vermonters still report concerns about coverage and barriers to care. Of those Vermonters who are uninsured, almost 75 percent report cost as the only, or the major, barrier to obtaining insurance [10]. Over half of the approximately 47,000 uninsured Vermonters qualify for some form of state benefits. Indeed, Vermont ranks only slightly better than the national average when it comes to enrolling adults who are eligible for Medicaid. Reasons for these low enrollment rates include administrative obstacles of enrollment and renewal of benefits, as well as availability and quality of managed care [11].

Many other Vermont households with private insurance are classified as underinsured (15.7 percent in 2008). This means that they dedicate five or more percent of their household annual income to health care expenses, or that their annual deductible exceeds five percent of income. These expenses do not take into account the cost of insurance premiums. Thus, while these individuals and families are insured, they are likely not optimally accessing health care resources available to them because of unaffordable deductibles, co-payments, and coinsurance [12].

Finally, many insured Vermonters do not feel secure in their insurance status. About 12 percent of those with coverage are worried that they will lose it in the next 12 months as a result of job loss or coverage becoming unaffordable. One-third of individuals covered by Catamount Health are concerned about loss of coverage[10].

Insufficient coverage translates into inadequate care. About one in five uninsured adults and almost 1 in thirty insured adults report that in the last year, they did not seek medical care because they could not afford it [13]. These rates are not surprising considering that almost 20 percent of Vermonters live in families that pay \$5,000 or more out of pocket for health care annually, and 25 percent live in families that have had trouble paying a medical bill in the past year. For these families, the cost of health care is a significant and persistent issue [10].

Vermont's businesses also suffer under the burden of high health care costs. Small businesses that offer health benefits protest that they cannot keep up with competitors who do not offer benefits. Many employers have been forced to reduce health benefits. Costs are then shifted back onto workers through higher premiums, deductibles and co-pays. Those employers that are able to maintain generous health coverage despite rising health costs do so at the expense of salary increases or providing other fringe benefits. For example, in a Lake Champlain Chamber of Commerce annual member survey, 78 percent of employers felt that the cost of health care reduced their ability provide other benefits [14].

At the state level, the impact of rising costs is seen most directly in the Catamount Fund. The fund relies primarily on employer assessments - payments from employers whose workers do not have

health insurance - cigarette taxes, and beneficiary premiums. These sources, however, have not kept up with subsidy cost, necessitating several transfers from the General Fund [13]. It is clear that the Catamount Health program is not sustainable under its current cost and revenue structure.

The reasons for increasing costs in Vermont are multiple and complex. Many of them have been repeated throughout the ongoing rhetoric of health reform over the past 50 years. The ever-increasing availability of high-technology care, such as sophisticated imaging devices, is replacing less costly, traditional diagnostic and treatment methods. Patients equate the presence and use of this expensive, high-technology care to the quality of service they receive, even when low-technology, cheaper alternatives may work just as well [15]. Additionally, pharmaceutical companies are financially rewarded for developing new technology, not for creating low-priced or more efficient technology.

The predominant way in which physicians are reimbursed, through fee-for-service (FFS) payments, also contributes to rising costs by rewarding the volume of health services, not the quality of health outcomes. This system promotes over-utilization of resources. According to our analysis of BISHCA's Vermont Health Care Uniform Reporting and Evaluation System (VHCURES), only about three percent of all physician office visits were paid by a capitation method. Conversely, much of hospital care is paid for under some form of prospective payment, such as DRGs. These prospective payment mechanisms provide an incentive to constrain services during a hospital admission. However, they do not encourage physicians to reduce the number of admissions.

Despite Vermont's past efforts, integration of health care delivery remains limited. Vermont's delivery system is characterized by many small professional practices and few organized systems of care. According to one estimate, 70 percent of Vermont physicians are in practices with 3 or fewer doctors [16]. Only about 25 percent of privately employed physicians have any sort of electronic medical record, which is crucial in transmitting information in an integrated system. Complaints about human resource constraints, such as a lack of primary care physicians and psychiatrists, plague the system. Poorly coordinated care results in excess expenditures due to redundant examination and testing, unmanaged chronic conditions that result in expensive acute episodes, and ultimately a lower quality of care for the patient.

The increasing reliance on specialists, rather than primary care physicians, is often blamed as a cost driver both in Vermont and the nation as a whole. According to our analysis of the Vermont Department of Health's provider survey—published biannually—from 1998 to 2008, the number of primary care providers (PCPs) per 1000 people in Vermont increased by 6.9 percent, whereas the number of specialists per 1000 increased by 32.6 percent [17]. Although the actual number of PCPs (80.2/1000) is on target with national recommendations for PCP levels, the comparative growth rate may be a contributing factor to health care cost inflation rates.

Administrative costs have been a concern in Vermont for many years. The pure cost of providing insurance benefits is fairly easy to measure, but teasing out how much of that is going to manage medical care, and how much is from navigating a complicated payer system is more difficult [18]. While some of provider administrative activities are independent of payer structure, it is clear that providers spend a substantial amount of their time and resources in activities other than patient care (See Section 4A).

Meanwhile, the state's most rigorous attempts at cost control, budgeting in hospitals and insurance rate review, may not promote cost-savings. When states try to control budgets, they predict

revenues for a fiscal year and then constrain costs to match the revenues. In contrast, Vermont's hospital budget process and the health insurance rate review first approve costs, and then generate revenue to meet the cost. Budgets submitted to the state highlight the reasons that expenses are rising (salary pressures, utility costs, technology, etc.) instead of examining available revenues. There is neither consideration of trends in income or GDP nor an attempt to adjust yearly expenses according to predicted revenues [19]. In this respect, the state has the opportunity for system regulation but is not using it wisely.

Correspondingly, the insurance rate review process in Vermont focuses on a determination of the accuracy of projected claims costs in the future. Once the anticipated expenditure level is accepted, premiums are set based on those expenditures, without regard to affordability. Insurers assert that they are limited in their ability to control spending [20]. The need to generate a certain amount of revenue, both for hospitals and consequently insurers, drives high prices and higher premiums.

The factors contributing to rising costs reach far beyond this brief list. One characteristic that they all share in common, however, is that they are interdependent and result from a lack of overarching planning and budgetary control. The reform of any single cost driver would not be sufficient to fix the complicated and multitudinous network of rising costs. Indeed, the reason that so many of these cost drivers are still plaguing the system in spite of Vermont's numerous reform efforts is the state's lack of comprehensive systemic controls. For example, while hospitals and private payers do not balance their budgets based on revenues, Medicare and Medicaid aggressively do. One of the results of this uncoordinated cost control is "cost shifting." When public payers reduce the rates they pay providers in order to balance their own budgets, hospitals seek more revenue from private payers to generate more revenues. According to an analysis by BISHCA, in 2007 approximately \$200 million was shifted onto private payers from Medicare, Medicaid, and Bad Debt & Free Care [21]. This form of cost-shifting is nearly unavoidable in a multi-payer environment, especially when various payers have different abilities to set prices. Cost-shifting hampers efforts to contain costs, resulting in an unaffordable system regardless of who pays—employers, workers, or the government.

Similarly, despite budget reporting and the Certificate of Need regulations, Vermont has been unable to rein in hospital budgets. Budgets and capital projects are just two small parts in the many ways hospitals can derive and manipulate revenues

In these examples, one payer or player appears to be saving funds, but the effects of these shifts on aggregate spending are minimal. Unless all aspects of the system can be managed, any regulation that targets one portion of the health care system would result in a strain on another. When considering the aforementioned challenges in Vermont's health system, it becomes evident that Vermont must enact comprehensive measures to create a sustainable system. Sustainability would hinge upon system-wide coordination and control of costs, integration, payment structure, and insurance availability.

In conclusion, despite 70 years of reform, Vermont does not have a coordinated, sustainable system that is capable of comprehensively managing cost inflation. If Vermont is committed to providing accessible, affordable health care to all its residents far into the future, it must adopt a system-wide approach, which comprehensively tackles the health care financing, delivery and payment systems.

2. CONSTRAINTS TO REFORM IN VERMONT

The goals of Act 128 are clear. In order to satisfy these goals, the design of a viable systemic reform must overcome many hurdles and constraints. These constraints include institutional, fiscal, legal, political and operational challenges. Below is a brief summary of these constraints. The following six sections address some of these areas in more detail, including legal constraints related to PPACA, ERISA, Medicaid and Medicare, political constraints as revealed in our stakeholder analysis, physician and facilities capacity constraints as well as operational constraints for implementing reform.

- **Benefit package constraint.** Most Vermonters do not want to see their current health insurance benefit package reduced. Unions particularly emphasize that they won these benefits at the expense of higher wages. Meanwhile, our analysis found that the average Vermonter has a rich benefit package already. For covered medical and drug benefits Vermont insurance plans already pay 87 percent of the cost on average, while the patient pays 13 percent in cost-sharing. This insurance coverage ratio is between the “gold” and “platinum” benefit package as defined by the Patient Protection and Affordable Care Act (PPACA).
- **Fiscal constraint.** Vermont unions, grassroots organizations, employers and state government are not willing to spend any more for health care. The current spending is already stretching their budgets. The most recent estimates show that Vermont has a budget gap of \$150 million [22]. Clearly the state government is not in any position to spend additional funds for health care. Like the state, employers and individuals are also straining under the pressure of increasing health care costs.
- **Four legal hurdles.** Vermont has to comply with four sets of federal laws and regulations relating to Medicaid, Medicare and PPACA, and ERISA. Designs must further maximize federal funding. Act 128, as well stakeholder interviews, made it clear that reforms must capture the greatest amount of potential federal assistance possible.
- **Payment constraint to hospitals.** Our analysis shows that, on average, Vermont’s community hospitals have low profitability. In 2008 the average total margin was -1.4 percent, in 2009 it was just 0.2 percent. Financial health of hospitals overall improved in 2010, but the median total margin for Vermont’s eight small Critical Access Hospitals was 0.0 percent [23]. Any measurable reduction to the total amount paid to hospitals could jeopardize the survival of Vermont hospitals. In addition, our stakeholder analysis shows that hospitals would mobilize all their political strength and support to oppose any reduction in the total amount paid to hospitals.
- **Payment constraint to physicians.** Any measurable reduction to the total spending for physician services could jeopardize the supply of physicians in Vermont, particularly primary care physicians. Furthermore, our stakeholder analysis shows that the organized physicians in Vermont would strongly oppose any reduction in the total amount paid for

physician services. However, some redistribution between specialties and types of practice may be possible.

- Supply of providers and health care capacity. Vermont has a shortage of primary care physicians and nurse practitioners, a shortage that would worsen as demand for health care services increases under universal coverage. Also, some community hospitals need renovations and updating.
- Grassroots concerns. Grassroots organizations and single payer advocacy groups make it clear that they would not compromise on universal coverage, decoupling health insurance from employment, achieving equal access for all Vermonters to reasonably high quality health care, and protection from bankruptcy due to illness.
- Operational hurdles. Government civil servants made it clear that any new health system reform must be practicable and executable by the state government. Otherwise, the bureaucracy would be blamed for problems encountered in implementation.

A. LEGAL CONSTRAINT: ERISA

Many policy experts cite ERISA as a barrier to comprehensive health care reform at the state level. To understand how ERISA might impact or limit our designs, we, with the help of staff from Vermont's Legislative Council, studied case law, published analyses and reports, and consulted leading national experts on this issue. Below we outline our analysis and that of other authorities on ERISA.

In 1974, Congress enacted the Employee Retirement Income Security Act (ERISA), which regulates employer benefit plans including health coverage, and "supersede[s] any and all State laws insofar as they may now or hereafter relate to any employee benefit plan"[24]. This phrase is commonly referred to as ERISA's "preemption clause." The objective of the preemption clause is to encourage employers to sponsor benefit plans for their employees and to allow employer-sponsored benefit plans to operate independent of potentially differing state laws. ERISA also contains provisions saving for the states the general authority to regulate in the areas of insurance, banking, and securities ("savings clause") and clarifying that states cannot simply deem employer benefit plans to be insurance plans for purposes of regulating them ("deemer clause") [24]. ERISA plans include both those that are "self-insured" and those whose benefits are offered through an insurance product. Because states can regulate insurers, they can prescribe benefits and administrative features of insured plans but cannot regulate self-insured ERISA plans.

Because the language of ERISA is confusing and the preemption and savings clauses appear largely contradictory, most of what is known about the limitations imposed by ERISA comes from court decisions. Even looking to the judiciary for guidance on ERISA does not make the law's prospective application clear, however, because opinions from the circuit courts of appeal are not uniform in their interpretation.

The U.S. Supreme Court has interpreted the term "relates to" to mean that ERISA preempts state laws that have "a connection with or reference to" an ERISA plan [25]. This means that state laws cannot specifically mention ERISA plans, but it also means that states must be very careful in assessing the potential impact of proposed legislation on ERISA plans. Any law that seeks to

influence benefits, administration, or structure under an ERISA plan, [26] imposes substantial costs on a plan, or requires employers to provide employees with specific benefits is likely to be preempted [25].

In *New York State Conference of Blue Cross & Blue Shield Plans v. Travelers*, [27] the Supreme Court upheld a New York law imposing a hospital surcharge on all commercial insurers except Blue Cross & Blue Shield. In its ruling, the Court identified a general presumption against preemption in areas of traditional state regulation, such as health care, and held that the indirect influence of the surcharge was not sufficiently connected to ERISA plans so as to “bind plan administrators to any particular choice” and thus trigger ERISA’s preemption clause [27]. But the Court also hinted at the possibility that an “exorbitant” tax could reach a level at which consumers would effectively have no real choice and suggested that such a mandate might violate ERISA [27].

The 4th and 9th Circuits have weighed in on ERISA with respect to “pay or play” laws, which require employers to pay an assessment against which they can credit money spent on employee health care services or coverage. Each circuit has reached a different result. In *Retail Industry Leaders Association v. Fielder*, the Court of Appeals for the 4th Circuit struck down a Maryland law requiring very large employers to spend at least 8 percent of their total payroll on their employees’ health insurance costs or pay to the state the amount their spending fell short [28]. The only affected employer in the state was Wal-Mart, which had an ERISA plan. The court found that because Wal-Mart’s options were either to increase contributions to its own plan or to pay money to the state of Maryland, Wal-Mart effectively had no choice but to restructure its employees’ health benefit plans, and that lack of choice was an ERISA violation. The court held that “the choices given in the [Maryland law] . . . are not meaningful alternatives by which an employer can increase its healthcare spending to comply with the [law] without affecting its ERISA plans” [27].

In contrast, in *Golden Gate Restaurant Association v. City and County of San Francisco*, the Court of Appeals for the 9th Circuit upheld a San Francisco ordinance requiring employers either to make health care expenditures on behalf of their employees or to make payments directly to the city [29]. In relevant part, the court relied on the Supreme Court’s ruling in *Travelers* to hold that while an employer might choose to adopt or change an ERISA plan instead of making the required expenditures under the ordinance, the ordinance’s influence on such a decision is “entirely permissible” [29].

Vermont is in the 2nd Circuit, which means that the decisions in other circuits are not binding on Vermont, but also makes it difficult to ascertain the limits of what may be permitted in this state under ERISA. And given that most of the guidance on ERISA has come from court rulings, it is hard to determine how the courts would treat an untested scenario, such as a single payer health care system.

ERISA is not necessarily a bar to a single payer health care system. While ERISA most likely would preempt a state’s ability to enact a law prohibiting self-insured employer-sponsored benefit plans or requiring these plans to include particular benefits, states may be able to enact legislation that would create a universal state system through broad-based tax financing as an optional alternative to employer-sponsored benefit plan.¹ In addition, ERISA may not preempt a state’s ability to largely

¹ The 9th Circuit’s ruling in *Golden Gate* suggests that *Travelers* may be read to permit laws and regulations to influence employer behavior without running afoul of ERISA.

align other aspects of the health care delivery system, such as claims payment rules, through a “single channel,” which allows the state to replicate some of the beneficial features of a single payer system in an environment with multiple payer and benefit plans.

Patricia Butler, among the leading national experts on ERISA and its implications for state-based health initiatives, provided us with her opinion on the issue of a payroll tax-financed universal health care program.

“As outlined in more detail in a November 2006 monograph, universal publicly administered programs like single payer systems can raise ERISA preemption problems because they create incentives for employers sponsoring health coverage plans to terminate or modify their plans.[26] No courts have considered such state laws so it is not possible to predict precisely how a court would view such a challenge. States could defend this challenge with several credible arguments. For example, both taxation and health care financing are exercises of traditional state authority that a court should not presume Congress intended to preempt [27] (it should be kept in mind that when Congress enacted ERISA in 1974, the need for states to expand health care access seemed remote because serious discussions of a national health care program were under way [30]). Such a state law would not be directed at employer health plan administration – employers would be free to provide coverage to employees even if they also were paying the tax.² A payroll tax is not substantively different from other revenue sources that could be used to fund a single payer system such as income taxes or other assessments on individuals that would involve no employer role other than remitting the tax. Furthermore, the incidence of a payroll tax on employers actually falls on employees so its economic impacts are similar to those of an individual income tax”[31].

We also consulted Phyllis Borzi, Assistant Secretary of Labor for the Employee Benefits Security Administration and formerly an attorney and research professor at the George Washington Medical Center’s School of Public Health and Health Services. She states the viability of tax-financing more forcefully, arguing that ERISA does not preempt broad tax-financed health programs. She confirmed this both in our conversation and in her published writing below:

“Clearly ERISA is not an impediment for states that choose to levy a fee or tax on all employers and to then use the funds to subsidize health care coverage expansions. In such a situation, the regulated entity is the employer, not the employer plan”[32].

We also investigated potential ERISA issues in regard to a “single channel” system of health care administration. In this design, all billing and claims processing would be done through uniform mechanisms, regardless of payer. This would simplify the administration of health benefits for providers to achieve the uniformity in billing practices and claims processing found in a single payer system (see Section 4A), but would not dictate a defined benefits package for employers and insurers, as multiple plans and multiple benefit packages could still exist, as well as multiple payment levels. This can be achieved either by using one entity to process claims or through regulation requiring the use of the same billing and claims processing practices.

² While addressing a different sort of publicly administered health program in San Francisco, the 9th Circuit Court of Appeals upheld the City’s “pay or play” employer assessment against a preemption challenge, noting that the requirement was only that employers pay an assessment and the law did not directly affect ERISA plans. *Golden Gate Restaurant Association v. City and County of San Francisco*, 512 F. 3d 1112 (9th Cir. 2009).

Requiring an ERISA plan to be administered in a specific way or through a single processor would most likely violate ERISA [32]. There have been no preemption cases that explicitly consider state claims adjudication standards; however, to the extent that the state law requires ERISA plans to define certain benefits in a particular way or administer the claims under certain standards, it is likely ERISA would preempt the law [33]. Because of this, any single channel system must allow ERISA plans to administer their own benefits. Very few employers, however, administer ERISA plans themselves. Most ERISA plans contract with an insurer or a third-party administrator for billing and claims processing services.

States have clear authority to regulate insurers under the “savings clause” and this regulatory authority should include the administration of claims and billing practices.”[24] Claims processing standards should be saved from preemption when applied to insurers, health maintenance organizations, and other insuring entities [33].

A state’s ability to regulate the practices of a third-party administrator (TPA) requires a more complex ERISA analysis. Because TPAs are not insurers when they administer claims rather than underwriting insurance risk, the savings clause does not apply to them [24]. Recent opinions of the Second Circuit Court of Appeals provide support that imposing a fee on a TPA does not “relate to” an ERISA plan [34]. The Second Circuit Court of Appeals held that ERISA did not preempt a hospital surcharge imposed on insurers administering self-insured ERISA health plans, even though the surcharge applied to that part of the insurer’s business. The Court of Appeals indicated that under *Travelers* the surcharge did not refer to ERISA plans nor did its economic influence directly impact upon plan activities [34]. In another recent decision, the Court of Appeals held that even when ERISA plans comprise a large percentage of a tax base, this was insufficient to trigger ERISA preemption of a state law taxing pensions [34].

These decisions, however, address fees or surcharges imposed on TPAs and do not address the issue of regulating the administrative practices of these entities. In order to ensure the state does not trigger ERISA preemption, the state’s regulation of billing and claims processing should be designed to set standards for the TPAs. In addition, the law should be tailored so as to not directly impact on benefits offered by ERISA plans. In doing so, the state may defend an ERISA challenge by arguing that the ERISA plan itself is not the entity being regulated and is not significantly impacted by the regulation of the TPA [33]. However, certain claims payment rules, such as determination of medical necessity, do seem to directly determine benefits, which could make those individual rules more difficult to defend. Furthermore, there are claims payment standards established by ERISA, that any intermediary or regulation of claims processing would have to comply with [33].

ERISA, however, is clearly no bar to a state-wide rate setting system. According again to Pat Butler:

“The Supreme Court’s 1995 Travelers Insurance case provides sound precedent to shield state rate-setting programs from ERISA preemption. Travelers upheld New York’s hospital rate-setting program, which required hospitals to collect surcharges of 24 percent from commercial insurers but not Blue Cross or Blue Shield plans. Although the law imposed higher costs on private-sector employer-sponsored (i.e. ERISA) plans choosing to buy coverage from commercial insurers, the Court held that ERISA did not preempt the law because the law was not specifically directed at ERISA plans and its indirect economic influence did not “bind plan administrators” seeking insurance to choose Blue Cross or Blue Shield.”

It is clear, Butler comments, that ERISA would not preempt a state rate-setting program that established rates for all providers – including hospitals, physicians and other providers - as long as it dictates what providers must *charge* rather than what payers must pay. “That this will require ERISA plans (both insured and self-insured) to pay those rates is what the Court approved in *Travelers* – the state law imposes costs on ERISA plans (that may differ across the country), but the Court noted that “cost-uniformity” is not an ERISA objective,” she wrote to us. A fee-for-service payment system would be most closely analogous to the New York hospital rate-setting program at issue in *Travelers*.

Capitation payments have not been the subject of litigation and are somewhat more complex because the payments must inherently define the scope benefits provided by the accepting organization. But if those payments in no way determine the scope of benefits, and leave employers free to design benefits with insurers, they should not be treated any differently in the courts than fee for service rates.

Risk adjustment mechanisms, for any kind of payment, should be easily defended against an ERISA challenge. The surcharge on hospital bills paid by commercial insurers in New York was in fact a risk-adjustment mechanism; Blues plans were insurers of last resort and required at that time to take all applicants. As such, their risk profile was often significantly worse than competing commercial plans and the surcharge was designed to give financial relief and lower premiums to encourage enrollment of a broader risk profile.

B. FEDERAL CONSTRAINT: PPACA

The Patient Protection and Affordable Care Act and the Health Care and Education Reconciliation Act of 2010, together known as the PPACA, were signed into law in March of 2010. PPACA represents the most comprehensive piece of federal health care legislation since the laws creating Medicare and Medicaid in 1965. By 2019, the law is expected to reduce the number of Americans without insurance by 32 million individuals all while reducing the federal deficit by \$143 billion over the 2010 -2019 period [35]. However, the requirements of the PPACA create barriers to the design and implementation of a single payer system at the state level.

PPACA achieves its gains in coverage through three main mechanisms. Firstly the law introduces an individual mandate. By 2014, most Americans and legal residents would be required to have health insurance or face a tax penalty. Certain categories of people are exempt from the mandate, as well as those suffering financial hardship or who cannot find affordable coverage.³ The law also expands Medicaid eligibility to include all individuals earning up to 133 percent of the Federal Poverty Level (FPL). Previously, states were only required to cover certain mandatory populations – for example low-income children, parents and pregnant women. PPACA would expand coverage to low income childless adults, a population that was traditionally excluded from Medicaid. Some states, including Vermont, already provide coverage for this group.

³ Individuals for whom the lowest cost plan option exceeds 8% of their income are exempt from the mandate; individuals whose income falls below the tax filing threshold are also exempt.

The centerpiece of the bill, however is the creation of health insurance Exchanges. These insurance marketplaces would allow individuals and businesses employing up to 100 workers⁴ to compare and purchase qualified health plans. Individuals earning up to 400 percent of FPL would also be able to access refundable tax credits and cost-sharing subsidies through the Exchange to help make insurance more affordable. Employers whose employees access these tax credits would have to pay a fee, though businesses with less than 50 workers are exempted from these penalties. Businesses with 25 or fewer low-income workers are furthermore eligible for tax credits to help offset the cost of providing health insurance to their workers, though employers can receive these credits for a maximum of six years⁵ beginning in 2010 [36].

Participation in the Exchanges is limited to licensed health plans in good standing in the state. The Exchanges would also have federal program plans. The Office of Management and Personnel is required to contract with insurers to offer at least two multi-state plans in every Exchange. The law also provides funding for the Consumer Operated and Oriented Plan (COOP) program, which fosters the creation of non-profit, member-run organizations that would offer qualified health plans in the Exchange in all 50 states.

In addition to prescribing a minimum essential benefit package for all products, the Exchange provisions create four benefit tiers. Bronze plans cover 60 percent of the costs of the plan (with the remaining 40 percent covered by subscriber out of pocket payments or cost-sharing) silver covers 70 percent, gold covers 80 percent and platinum covers 90 percent of the costs. At a minimum, health plans participating in the Exchange must offer at least a silver and gold plan. Plans must also meet basic requirements pertaining to marketing, provider networks, and outreach and enrollment, as well as consumer information standards. Plans must be guaranteed issue, guaranteed renewable and are limited in how they can vary premiums.⁶ In addition, the Department of Health and Human Services will design and administer several risk-adjustment mechanisms, two temporary programs and one permanent, to balance risk across plans both inside and outside the Exchange.

Beyond these basic requirements and federal programs, however, states were granted a great deal of flexibility in designing their Exchanges, and indeed can even opt to have the Federal Government run the Exchange on its behalf. Exchanges can be administered by the state itself or by a non-profit entity. States can chose to combine the individual and small group market, and to restrict eligible businesses to either those with 50 or 100 workers. States also have broad latitude to control which health plans can offer products in the Exchange. At one extreme, Exchanges could take an inclusive approach allowing in all willing plans that meet the basic requirements. At the other extreme, states could chose to create a much more exclusive Exchange, setting very high certification standards. States can even eliminate insurance markets outside the Exchange entirely [37].

⁴ Starting in 2017 states can allow business with more than 100 employees to being purchasing insurance through the exchange.

⁵ The small business tax credit is available in two phases; Phase I runs from 2010-2013; Phase II begins in 2014. Employers can qualify for tax credits for the entirety of Phase I (four years), but can only collect credits for two consecutive years of Phase II, yielding a maximum of six years overall.

⁶ The Exchange only allows rating variations based on age (limited to a 3:1 ratio between highest and lowest premiums), family composition, area and tobacco use. Vermont already has full community rating for the small group and individual markets meaning that there is no variation in premiums based on any factor.

In recognizing the states' historical role as innovators in health care reform, an earlier version of the PPACA allowed states to apply for a waiver out of the Exchange requirements in 2014, the same year in which states would otherwise have been required to establish an Exchange. By demonstrating at least equal coverage and benefits for its residents, a state could be granted a pass through of funds equal to what would have been paid in individual and small business tax credits and cost-sharing subsidies to put towards their own state plan. The language also included a provision to coordinate the Exchange waiver process with other programs administered under the Department of Health and Human Services, which includes both Medicaid and Medicare. However, in the final version of the bill as passed into law, this waiver date was moved back to 2017. This was largely due to worries over the ability to negotiate budget neutral waivers, as there would be no experience upon which to base how much money the Federal Government should transfer to the states. If a state was required to establish an Exchange and let it run for a few years, however, the pass through could be based on actual numbers of enrollees and the associated federal spending.

The PPACA establishes a myriad of other health care programs, pilots and investments related to payment reform in Medicare and Medicaid; provider workforce, education and payment issues; prevention and wellness; medical malpractice; comparative-effectiveness research; and long term care insurance.

CBO estimated that the total cost of the coverage components of the law are expected to be \$938 billion over the 2010 – 2019 period [35]. These costs, in addition to the other program spending and investments, are financed through savings from Medicare and Medicaid and new taxes and fees. According to an April report by the Chief Actuary at CMS, the PPACA would cut some \$575 billion from Medicare. About 25 percent of spending cuts come from reduced payments to Medicare Advantage plans, while the remaining comes from various spending reductions in traditional Medicare. There would also be cuts to Medicaid's Disproportionate Share Payments to hospitals. Additional financing would come from a combination of sources including employer fees, individual tax penalties, changes to the tax code around medical spending accounts, health savings accounts and flexible spending accounts, a tax on very high-value or "Cadillac" health plans and an increase in the Medicare payroll tax for high wage earners and un-earned income.

C. FEDERAL CONSTRAINT: MEDICARE AND MEDICAID

I. MEDICARE

Medicare is a federally-funded, federally-administered health benefit program for individuals age 65 or older and for individuals with disabilities.⁷ See generally 42 USC §1395 et seq. The program is organized in "parts:"

- Part A covers hospital benefits and the premium is paid by a payroll tax;
- Part B covers "supplemental" services, such as physician's services or home health services, and individuals pay a premium for these services;

⁷ Individuals with disabilities must have been disabled for at years 24 months in order to qualify.

- Part C allows insurance companies⁸ to offer Medicare managed care plans, which include the services usually covered by Parts A, B, and D; and
- Part D provides prescription drug coverage through regulated private health insurance⁹ offered by qualified health insurers. There are premiums and cost-sharing for Part D plans which vary across insurers and plans¹⁰.

The benefits provided in Medicare are not comprehensive and individuals frequently purchase supplemental health insurance from private insurers to cover additional benefits and cover some or all of the Medicare cost-sharing. Low income Medicare beneficiaries are also eligible for Medicaid (“dual-eligibles”). For those without supplemental insurance and not eligible for Medicaid, the state can provide partial wrap-around benefits to low-income seniors. For example, Vermont currently offers a prescription drug program, called VPharm, which pays for low-income Medicare beneficiaries Part D premiums and cost-sharing.

Because Medicare is governed by federal law and rules, states have a limited role under traditional Medicare. There may be, however, opportunities to include Medicare in a state-created single payer or single “pipe” system. These opportunities are discussed in more depth below and include:

- Seeking a waiver from the new Center for Innovation at the Centers for Medicare and Medicaid Services (CMS) under 42 USC §1315a;
- Seeking a more traditional Medicare waiver under 42 USC §1395b-1;
- Administering Medicare as allowed under 42 USC §1395kk; or
- Seeking waivers to include Medicare in an accountable care organizations 42 USC §1395jjj.

First, the Patient Protection and Affordable Care Act of 2010 created the Center for Innovation within CMS to provide new opportunities for innovation in Medicare and Medicaid, specifically to test new service delivery and payment reform models. 42 USC §1315a. The goal of the waiver provision is to create innovative ways to reduce program expenditures and improve quality of care. This type of waiver could be used alone, or in combination with other provisions, to align the Medicare payment and delivery requirements with Medicaid and create the basis for the single payer or single “pipe” system. In addition, this waiver does not require budget neutrality for the initial 5 year waiver term, which gives a state more flexibility in the design of the program and allows a period of time to achieve cost savings.

⁸ Medicare Part C managed care plans, also called “Medicare Advantage Plans” must be offered by a risk-bearing entity licensed under state law to provide health insurance or health benefits. CITE. While it is not impossible for the state to create an entity which could be licensed under state law as an insurer, the solvency and other requirements make it impractical. There is a waiver available for provider-sponsored organizations, but that waiver is only available for up to 36 months and may not be renewed. These regulations make it impractical for the state to use this provision to include Medicare in the single payer system.

⁹ Again, there are licensure and other requirements for entities offering Part D plans which make it impractical for the state to offer Part D plans as part of its single payer system.

¹⁰ 42 USC CITE provides for an actuarial value that each plan must meet, but allows for great variation across plans. In addition, there is a federal subsidy available for low-income Medicare enrollees.

Second, under Medicare’s traditional waiver authority at 42 USC §1395b-1, CMS has the authority to allow flexibility in payment mechanisms in order to improve quality or efficiency in Medicare. This provision is more limited in scope and alone would be insufficient to fit Medicare into a new system. This authority, however, allows for some additional models to be considered in the system design and could be used in combination with other provisions.

Third, there is also the authority for a state to administer Medicare benefits as long as certain minimum requirements are met. 42 USC §1395kk. The state must have a demonstrated capability to carry out the functions, it must comply with conflict of interest standards, and have sufficient assets to financially support the functions. If the state or entity is able to fulfill these requirements, the state is able to determine and make payments for Medicare services, provide beneficiary education and assistance, and communicate necessary information to providers.

Fourth, Section 3022 of the PPACA provides explicit authority for Medicare participation in a shared savings program or an Accountable Care Organization (ACO) 42 USC §1395jjj. The purpose of this provision is to encourage the development of a legal entity comprising health care providers, hospitals, and other supplies in order to promote health care provider accountability for a patient population, to coordinate items and services under parts A and B, and to encourage investment in infrastructure and processes for high quality care and efficiency. The provision allows for a mechanism for providers to share in financial savings as long as the care provided meets quality measures. This is meant to give providers a financial incentive to increase efficiency without reducing the quality of care for patients.

The outcome of any waiver negotiation is uncertain. However, there is sufficient flexibility under federal law through administrative flexibility and waivers to achieve alignment in billing and other administrative functions.

II. MEDICAID AND STATE CHILDREN’S HEALTH INSURANCE PROGRAM (SCHIP)

Medicaid is a state-federal program, which provides health benefits for low-income individuals. See generally 42 USC §1396 et seq. Until 2014, Medicaid eligibility is limited to low-income individuals over 65, individuals with a disability, families receiving assistance funded with TANF, and children and pregnant women. After 2014, Medicaid eligibility is expanded to any individual with income under 133 percent of the FPL (\$24,352.30 annually for a family of 3). Vermont currently provides health benefits for individuals under 300 percent of FPL (\$54,930.00 annually for a family of 3) through a variety of programs funded with Medicaid under two Section 1115 waivers.

States administer Medicaid benefits and have federally-defined options for covered services and cost-sharing. Federal law mandates that states provide certain minimal services under their Medicaid program and allows states the ability to provide a broader array of services. Federal law also limits the amount of premiums and cost-sharing charged to certain populations, such as the elderly or individuals with disabilities. Overall, there is a great deal of flexibility in the covered services offered under a state’s Medicaid program and the limits on cost-sharing may be accommodated in an income-sensitized sliding-scale.

The funding for Medicaid is based on a formula of shared federal-state match. In Vermont, for example, the typical match rate is about 60 percent federal funds to 40 percent state funds. Under Medicaid, states must be careful about how federal funds are used and must be able to ensure that federal money is matched with state funds, and not other federal funds.

Similarly, SCHIP provides funding for state-administered health benefits for children and pregnant women. See generally 42 UCS §1397aa et seq. The purpose of SCHIP is to provide coverage for these groups up to higher income levels than usually accommodated in Medicaid. It is also a program that matches federal funds with state funds, although at a higher match rate.

In addition to the inherent state flexibility in Medicaid and SCHIP, both programs have federal provisions allowing CMS to waive federal law in order to allow states to innovate. SCHIP provisions may be waived under section 2107(e)(2)(A) of the Social Security Act to the same extent as Medicaid. Section 1115 of the Social Security Act allows waiver of many provisions around eligibility, and benefits. In addition, while states have flexibility in payment mechanisms, the new waiver provided for in the PPACA discussed above would provide broader flexibility in payment and service delivery.

One challenge in aligning Medicaid payments would be payments to federally qualified health centers (FQHCs). FQHCs would continue to be paid on their current per-encounter method, unless the FQHC agrees to the new payment method and that new payment method reimburses the FQHC the same amount as it would have received under their traditional payment mechanism.

In summary, there is great flexibility in Medicaid and SCHIP through waivers, which would allow the state to align benefits, payment methods, and other administration.

D. CONSTRAINT: STAKEHOLDER ANALYSIS

Vermont has consistently been one of a handful of states that has “taken the lead” in health reform [38]. Since the 1970s, Vermont has made progressive improvements to its health system—increasing coverage, improving coordination, and attempting to control costs. Vermont also made an unsuccessful bid in 1994 for comprehensive health reform that would have created either a single payer or regulated multi-payer health system. Our team studied this history and learned as much as possible from the state’s current health reform stakeholders and about its current institutions. We call this research process a “political landscape analysis,” and its purpose was to inform the design of the three options so that they would be as viable and practical as possible while fulfilling the mandates of Act 128.

The political landscape analysis draws partly from a literature review on Vermont’s health-related history and institutions, and most heavily from 60 interviews with politicians, civil servants, hospitals and health providers, businesses, unions, and a variety of advocates. We begin with a brief overview of our methods and information sources and their important limitations. Next we review the history of health reform in Vermont, drawing lessons applicable to today’s efforts. We then summarize some of the primary perspectives and concerns of eight major categories of stakeholders. Finally, we conclude with some cautious optimism about Vermont’s opportunities.

I. METHODS AND INFORMATION SOURCES

This political landscape analysis is based primarily on semi-structured interviews with a diverse sample of “stakeholders” who have substantial interest in, influence over, or expertise in health

reform in Vermont.¹¹ Analysis of stakeholders' views is important because health reforms are significantly and routinely influenced by these groups' relative positions and resources. Stakeholder analysis methodology has been developed in academic literature, and we adapted the methodology to incorporate our historical review and meet this project's particular needs [39, 40].

We conducted 64 interviews with nearly 120 people representing at least 60 different organizations. Most interviews were conducted in-person by two members of our team between July 15th and September 3rd, 2010, and a few others were conducted by phone, by only one author, or during a few meetings by our team in early December 2010. In addition to these semi-structured interviews, members of our team also participated in other less formal stakeholder engagements and discussions that covered similar material and also contributed to the overall analysis.

Interviewees represented a diverse mix of legislators and elected officials, executive branch officials, hospitals, health providers (physicians, nurses, other types of providers), small and large businesses, unions, and a variety of citizen and institutional advocates. The interviews involved substantive, open-ended conversations and varied in content. They were guided by key themes, however, including: general views on Act 128 and health reform; historical lessons learned; perspectives on health system financing, payment, and organizational options; Vermont's political culture; and various subjects that interviewees' perceived to be constraints or facilitating factors for reform. The interviewees were assured that conversations with our team were confidential (to encourage everyone to speak openly), and that our written report would only summarize general findings across major groups (unless we explicitly seek permission to do otherwise).

Following our interviews, we categorized our findings according to key themes, recorded primary concerns across stakeholder groups, and compared current findings to those from our historical analysis. Throughout this process, the two researchers discussed findings with Professor Hsiao to inform his technical designs.

¹¹ The historical section also draws heavily from a review of literature on past health reforms in Vermont. For more details on our methods, see our team's original proposal at: <http://www.leg.state.vt.us/jfo/Healthcare/Hsiao%20Proposal%20-%20public.pdf>.

Table 1. Summary Figures on Interviews.

Total number of interviews/meetings	64
Total number of individuals interviewed	120
Total number of organizations/groups interviewed	60
Number of individuals associated with: ¹²	
• Vermont's Legislature	15
• Vermont's Executive Branch	6
• Hospitals	31
• Physicians, Nurses, and Other Health Providers	23
• Large Businesses (excluding health-related businesses) ¹³	10
• Small and Medium Businesses	13
• Unions	11
• Health Reform Advocates	10
• Other Advocates (diverse interests)	7
• Health Insurance Companies	2

II. LIMITATIONS

This data collection and analysis effort exceeds our team's original proposal, but it still has important limitations. First, due to limits on time and budget, the stakeholder analysis should not be considered exhaustive. There are undoubtedly more stakeholders and groups with whom we could have met (and indeed were invited to meet), and it was also not possible to conduct a population survey or hold town-hall-style meetings to hear from Vermont citizens directly. Still, we feel that our diverse sample of interviewees is reasonably representative of the spectrum of viewpoints on health reform in Vermont, especially among those most likely to shape legislation.

Second, the methods used in this analysis and the nature of political environments both dictate a cautious and nuanced treatment of the findings. There is a good deal of subjectivity involved in conducting interviews and assessing respondents' views—sometimes, we will get it wrong. The political environment is also constantly changing—a stakeholder may have supported an idea last summer, but oppose it today (or vice versa). In other words, the “viability” of health reform comes in ever-changing shades of grey, not fixed black-and-white positions. Despite that limitation, we

¹² These group figures are not mutually exclusive (several individuals are associated with more than one group) and do not include a few interviewees not associated with any of these groups.

¹³ In addition, we listened to three hours of recorded testimony by 19 business representatives, stating their views on health reform to a joint hearing of Vermont's House and Senate Health Committees (March 23, 2010).

hope to have collected useful guidance from stakeholders that have helped shape our technical designs into effective *and viable* options for Vermont.

III. OVERVIEW OF HISTORICAL ANALYSIS.

Vermont has incrementally reformed its health system over the past four decades. Only once, however, did the state come close to adopting comprehensive health reform legislation that had the potential to convert the patchwork of payers, hospitals, and providers into an organized system that would control costs and achieve universal coverage. In 1992, Act 160 created the Vermont Health Care Authority (VHCA), which was responsible for preparing two universal access plans—one a single payer system, the other a regulated multi-payer system—among other responsibilities [41]. The idea was then for the Vermont General Assembly to develop comprehensive health reform legislation based on those two plans in 1994. The VHCA was also presumed to be the body that would take charge of implementation and oversight after the adoption of a comprehensive reform plan.

The prospects for health reform in 1994 initially looked bright. There were a number of reasons to be optimistic that comprehensive health reform would be passed that legislative session. For one, Governor Howard Dean was a physician and was likely to have the will and the political sway with physicians to make health reform a reality. Second, President Clinton was trying to pass his health reform bill and health care was a highly salient issue garnering national attention. Not unlike the present Act 128, two detailed plans were developed which were meant to be used as the basis for legislation. As there were no previous failed efforts at that time, there was little sense of pessimism or inertia that has subsequently plagued health reform initiatives. Finally, the longest running and very influential Speaker of the House, Ralph Wright, was spearheading health reform in the House.

So why did comprehensive health reform fail and the status quo prevail in 1994? No one cause is sufficient to explain that outcome, but several factors stand out.

1. ***Financing and total cost.*** First, there was ongoing tension over the level and type of financing for the reform. Some were only willing to accept progressive income or payroll tax financing, and others willing only to accept sales tax or absolutely no new taxes. Some legislators objected to a payroll tax that would have been shared 50-50 between employer and employee since this would have reduced the contribution some businesses had been paying toward premiums. In addition, the Governor only supported reform that could be virtually self-financed from savings, requiring no additional public investment; whereas most other proposed plans had high price tags.
2. ***Governor side-stepped VHCA.*** Although the VHCA had been the Governor's idea, Dean ultimately decided that their work had strayed too far from his vision for reform—largely because both plans would have called for tax increases that he opposed as a fiscal conservative. Instead, a Special Committee on Health Reform was created in the Legislature to develop a new proposal and the VHCA's recommendations and analysis were marginalized.
3. ***Too many reform bills introduced.*** Ultimately, three different health reform bills were introduced during the 1994 session without support built behind just one. As a result, the vote within the House was split and there was no stable majority support for a single bill.³

4. ***Lost support of providers.*** Although Governor Dean was a physician, physicians' initial support was lost as they felt excluded from the reform process. Also, while early versions of the various bills included tort reform for medical malpractice, this provision was dropped under pressure from trial lawyers, causing physicians' support to wane further.³
5. ***Public support and the specter of increased taxes.*** Shortly before a vote in the House on the health reform bill, a major Vermont newspaper published an article that misreported the costs of reform. The article outlined potential tax increases from the latest plan without accounting for savings from eliminating premiums, thereby misrepresenting the nature of the reform that would have replaced premiums with a payroll tax [42]. This created widespread fear about the potential for an increased tax burden. In addition, when it became clear that health reform might result in a payroll tax, employer mandate, and/or increased sales taxes, small local business groups spearheaded a newspaper and radio campaign in opposition. This kind of campaign was unusual at the time, and in a fiercely local state it had a profound impact on the perceptions of citizens and Legislators, particularly those representing small, rural districts.

IV. OVERVIEW OF STAKEHOLDER ANALYSIS

We next provide an overview of our interviews with stakeholders. This is intended as an illustrative summary of key perspectives, rather than as a detailed account of all issues discussed.

Hospitals

Hospitals as a group are not opposed to health reform, including payment reforms and even global budgets, and they know that something must be done about rising health care costs. But the devil is in the details for hospitals and they would want several concerns addressed before supporting any reform. Their key concerns are about sustainable funding and risks to sustainability if they lose control of their budgets. Predictability and sustainability of funding are more important than what the sources of funding are, and any changes in payment mechanisms must be implemented cautiously to avoid untenable financial shortfalls (hospitals are more likely to support incremental reforms over rapid changes for this reason). State-level changes must also recognize federal constraints, especially since Medicare and Medicaid (CMS) are hospitals' "real paymasters." Another set of concerns involves cross-border issues, such as out-of-state Medicaid patients seeking care in Vermont, or Vermonters seeking care in New Hampshire. Hospitals' concerns are not primarily political, but they do worry about government's tendency to "over-promise and under-fund"—ideal reform would somehow recognize and control for this. For this reason, hospitals found the idea of an organization administered by a third party to be preferable to a directly government administered organization.

Hospitals share many concerns as a group, but each hospital also has unique concerns depending on its size, geographic location, prior experience with issues such as the provider tax and "disproportionate share" (DSH) payments, and health status of its surrounding population. Hospitals have a very special status in Vermont both economically (as large employers) and culturally (nearly all Vermonters have some intimate and usually positive connection to their local hospital), so addressing both their group and individual concerns will be vital to successful health reform.

Businesses

Overall, both small and large businesses are dissatisfied with the current system. Rising health care costs are putting serious strains on all employers that currently offer health insurance. Many businesses that previously offered more comprehensive health benefits have been forced to shift to high deductible (essentially catastrophic) plans to offset rising costs and have faced hard choices about hiring more staff or offering existing staff health care. Some large businesses reported that they would limit their health care burden next year by capping the percent increase in their premium contributions and shifting costs to employees, either by reducing benefits or increasing employees' contributions.

Although the status quo seems unacceptable, businesses have a number of concerns about what reform would mean for them. Many businesses have developed strategies for coping with increased costs, including wellness programs, and some fear losing control over benefits and discretion in managing costs. Both small and large businesses have serious concerns about allowing government to play a larger role in the provision of health benefits. They feel this would result in increased costs since government would be unable to withstand political pressures to increase benefits and coverage, necessarily funded through increased taxes. For these reasons, businesses are concerned about the prospect of a broad tax-financed health system but are willing to engage the idea if there was a credible commitment that the taxes would not be continually increased due to political pressures. For this reason, businesses large and small found the prospect of an independent or third party organization that would be insulated from politics and removed from direct government control to be preferable to a directly government administered organization. In sum, business is not monolithically opposed to comprehensive health reform and many would welcome the opportunity to level the playing field and shed the burdensome responsibility of insuring employees. Employers are especially open to the idea if they could still offer supplemental insurance plans, if special provisions could be made for small businesses, and if they have a credible commitment that taxes will not be arbitrarily increased from year to year.

Physicians, Nurses, and Other Health Providers

Health providers¹⁴ recognize many economic and quality-of-care flaws in the current health system and are open to reform, but their support is also dependent on how key issues are treated. Among physicians, there is a debate about the trend of physicians moving from independent employment to hospital employment, and also divergent perspectives between relatively well-paid specialists and lesser-paid primary care providers. Both issues could be affected by reform, inevitably concerning some but satisfying others. There is more uniform agreement among physicians about the costs of "defensive medicine" and the consequent need for tort reform. Physicians are also nearly uniformly concerned with under-reimbursement from public funders, especially Medicaid. The clearest message is that if Medicaid payment rates were adopted broadly, many would be forced out of business (the same is true for hospitals). Providers experiences with low Medicaid reimbursement rates cast a negative impression on programs that are directly run through the government and as a result providers felt more comfortable with the idea of an independent or third party organization that would be insulated from politics and removed from direct government control. Finally, several respondents cited burdensome school loan payments as a significant

¹⁴ Our analysis focused most heavily on physicians and nurses, but also included other types of health providers.

problem, as they discourage young students from specializing in primary care and exacerbate a dearth of primary care doctors.

One issue voiced strongly by nurses (and some physicians too) is that administrative, mostly insurance-based hassles often interfere with providing quality care for patients. For that reason, while viewpoints differ on “pure single payer,” there seems to be support across providers for a unified or at least simplified payment system (assuming adequate compensation). Some were hopeful that new funding from PPACA would help build up cadres of nurses and nurse practitioners and help with the primary care doctor shortage as well. Providers other than physicians and nurses were also concerned with perceived under-reimbursements and inclusion of their services in standard benefits packages. A final warning from both nurses and physicians is that, to the extent that reform brings new information technologies, these must be phased-in carefully and with adequate training to avoid creating barriers to access or discontinuities in care (as some have experienced with prior technologies).

Unions

Unions expressed a number of serious concerns about the current system. Although unions tend to have better benefits than non-union employees, they noted the increasing struggle to maintain these benefits and the compromises, such as on salaries, required to do so.¹⁵ Having comprehensive benefit plans can also mean that members of unions are reluctant to switch careers due to fears of losing insurance coverage for themselves and their families. For these reasons, some unions have been vocal supporters of decoupling insurance from employment. While open to such systematic reforms, unions would be concerned that whatever benefit plan their members receive be comparable to current benefits, especially since they have fought hard and made other compromises to attain those. Unions of public sector workers would oppose, however, any plan that would only pool state-funded programs, since this would likely increase costs of premiums and/or reduce benefits without the benefit of decoupling insurance from employment. In sum, while unions vary in their support for comprehensive reform, many would support a plan that truly and completely separates insurance from employment, assuming a reasonable benefit plan that does not dramatically deteriorate their current coverage.

Health Reform and Other Advocacy Groups

“Advocacy groups”¹⁶ is a very broad title, but here we focus on groups that have been active participants in health reform and represent diverse groups such as workers, health consumers, some health providers, senior citizens, and the general public. These groups include the most ardent supporters of systemic reform, and indeed some were instrumental in pushing for Act 128 and the goals and values it establishes. Advocates are most concerned with access to care (involving both lack of insurance and under-insurance), affordability, and fairness in financing (access to care should be according to need, not ability to pay). Some are policy experts and have clear views on financing, payment, or organizational options for Vermont’s health system, while

¹⁵ Beyond their own interests, unionized workers also expressed increasing frustration from seeing their neighbors, friends, and families struggle with limited access to health care.

¹⁶ We should note that some would disagree with the term “advocate” because it connotes a professional activity, whereas some in this group are simply Vermonters voluntarily teaming up with fellow citizens.

others are more open to a variety of policy choices as long as major goals and values are fulfilled. For those that do focus on policy, important issues are progressive financing (preferably through income taxes), minimizing other cost barriers to access such as co-payments, decoupling health insurance from employment to ensure uninterrupted access for all, and reducing the role of the profit motive in health care (usually by increasing government's responsibilities). A debate among advocates is whether reform can or should be incremental or more sweeping, with what seems to be a majority siding for more sweeping changes than Vermont has enacted in the past. Vermont has a rich history of citizen advocacy in health reform, and this "social movement" is likely to continue to be a strong player as reform is debated in the Legislature.

Executive Branch

The incoming executive branch under the leadership of Governor Peter Shumlin is highly supportive of comprehensive health reform. During the primaries and run-up to the gubernatorial election, Shumlin was the only candidate to openly endorse a single payer health system. In support of that position, Governor Shumlin has already taken steps to move the health reform agenda forward, including appointing a number of leaders in health reform to key posts in government and bringing in a special coordinator on health reform who has prior experience in this position from Vermont's 1994 health reform effort.

Vermont's various health agencies are also supportive of reform and DVHA has already hired an expert on payment reform. However, civil servants and the health-related bureaucracy need assurance of the continuity of ongoing health reform efforts and that these efforts would be integrated into any new framework. In addition to existing state-based health reform initiatives like the Blueprint for Health, the health-related bureaucracy is also concerned about how comprehensive reform will be integrated with the national reform legislation under PPACA, both legally and practically. The necessity of maximizing federal dollars by integrating Vermont-based reform with national reform is a key concern of civil servants involved in health policy (the same is true of legislative leaders). The executive branch is very supportive of comprehensive reform, but continued support hinges on working out the practical details of an integrated reform effort that maximizes federal funding.

Legislative Branch

We interviewed several representatives and senators who have been involved in health policy in the past.¹⁷ Legislators represent Vermonters, of course, so many of their views reflect issues described above, but legislative experience also builds certain distinct perspectives. Regarding health reform, legislators have a unique appreciation for the problems with the current health system, as they deal directly with economic sustainability problems from skyrocketing health costs in the state's budget and hear stories of individual hardships from their constituents. Most agree that the status quo is not a viable option, but they also express anxiety about the complexity of health reform and the tendency for public support to splinter as details of reform emerge. Given the complexity, one suggestion was that a major reform package may require work throughout two legislative sessions (2011 and 2012). One clear message from multiple legislators is that, while Vermont has previously focused on health coverage, the emphasis now must be on controlling

¹⁷ Some of our interviewees will depart the Legislature at the end of 2010, and some who will begin new terms.

costs—in line with growing the state’s economy and encouraging young people to stay in the state. Especially with the current state budget deficit, Vermont cannot afford to simply pay more for a better system. Legislators also feel that a reform plan must make clear how it is even possible for Vermont to enact big changes on its own given federal and cross-border issues, while also ensuring that Vermont benefits as much as possible from PPACA. Whatever happens with health reform, legislators know they will be under pressure due to the complexity of policy options, the often contradictory interests of their constituents, and the various budgetary and legal constraints; but most were optimistic that they could build on Vermont’s previous health policy efforts in a more systemic way.

Health Insurance Companies

Our analysis of the three health insurance companies with significant operations in Vermont (Blue Cross Blue Shield of Vermont, MVP, and Cigna) was much more limited than our analysis of other groups, partly because much of Act 128 has fairly clear implications for those companies. It is reasonably safe to assume that health insurance companies would oppose any major health system reform that reduces their autonomy in financing and paying for health care, increases government’s role, and/or introduces new competitors to their market. However, given Vermont’s history with reforms such as guaranteed-issue, community-rating, and the Blueprint program, it must be noted that the remaining health insurers in Vermont (especially those run as non-profits) are likely more accustomed and potentially more open than insurers elsewhere to working with state-led regulations. In addition, a continued market for supplementary insurance would generate ongoing opportunities for private insurance in the state. It is possible that one or more companies may be interested in partnering with the state and substantially reforming their business model in order to continue to operate in Vermont. Of course, the opposite is also possible: that an industry with deep pockets nationally will oppose reforms due to the threats they pose to the Vermont market and other markets that could follow Vermont’s lead.

V. CONCLUSIONS – STAKEHOLDER OPPORTUNITIES AND CONSTRAINTS

Despite groups’ different perspectives, one resounding message from our stakeholder analysis is that no group is satisfied with the status quo and the need for systemic reform is great. Rapidly rising health care costs are already limiting benefits, burdening businesses and local governments, and threatening the access to health care that Vermont has worked for decades to improve. Fortunately, Vermont has created a new opportunity to implement comprehensive health reform. The state has a legislative and executive branch largely supportive of reform; cabinet appointees with extensive health experience; support from a wide array of health providers, businesses, and citizens; and improved knowledge of what works in health reform compared to 1994. These factors create a unique window of opportunity for Vermont to go beyond what national level reform was able to accomplish.

But...it will not be easy. There are a number of hurdles that Vermont must clear to achieve the goals set forth in Act 128. First and foremost, now even more than in 1994 the idea of paying more (or being paid less, in providers’ case) to finance a universal health system is unacceptable to the majority of stakeholders. There is a strong sense that expanding insurance coverage and benefits should come from savings within the system as a whole rather than from new sources. While inevitably costs and benefits may be redistributed within a new system, the total cost of reform should not be more than under the current system. This is a key foundational point of our team’s

design work. Other hurdles include federal, legal, and budgetary constraints; cross-border practicalities; and ideological and political differences both across and within the various groups that care about and are affected by health reform. Although virtually every stakeholder expresses a variety of complaints about the current system, it is unlikely that a single reform plan would fully satisfy everyone, even if the majority is made better off. These internal divisions and uncertainty about a new system make even those who are frustrated with the current system circumspect about reform. Nevertheless, achieving a better, more sustainable health system for all Vermonters is possible with a thoughtfully-constructed reform design, reasonable compromises, and careful implementation. If Vermont fails, it may not have another window of opportunity such as this for many years. If Vermont succeeds, it may very well become a model for the nation.

E. CONSTRAINT: PROVIDER HUMAN RESOURCES AND HEALTH CARE FACILITIES INFRASTRUCTURE

In order to provide universal coverage and transition to a more integrated delivery system, Vermont must ensure sufficient supply side capacity and infrastructure to deal with the increased demand for services and to ensure quality provision of health care services and capable management in an era of changing payment methods and increased provider risk. In particular, this means ensuring capacity of physicians and health care facilities, including health care information technology (HIT).

Most crucially, Vermont will need an adequate number of primary care physicians to deal with the increased demand that would follow after universal coverage is achieved. Primary care physicians (PCPs) play an integral role in affordable, organized care, managing chronic diseases and preventing episodes of costly acute care. As Vermont's population ages and chronic diseases account for the majority of health spending, an adequate supply of PCPs will become even more essential in the near future [21].

Currently, there are not enough primary care physicians in the state to meet residents' needs. Kaiser State Health Facts estimates that in 2008, 16,833 Vermonters lacked recommended access to a primary care doctor [43]. Eight of the fourteen major Vermont hospitals list increasing access to primary care in their 2010 strategic initiatives.

Additionally, while the percent of PCPs accepting new patients has remained stable throughout the 2000s, the percent accepting new Medicare and Medicaid patients has dropped by seven percent [44]. Considering the substantial number of Vermonters who are covered by these programs, this could indicate a significant PCP shortage for these populations.

The present shortage of PCPs will be exacerbated in the near future by the aging physician population. Between 2004 and 2006, while there was a 67 percent increase in the number of Vermont physicians aged 55 and older, there was only a seven percent increase in the number under the age of 55 [44]. Vermont's current efforts to recruit and retain PCPs will have to take these predictions into account.

Importantly, the statewide figure does not account for regional variations. When considering the supply of PCPs in Vermont, taking these variations into account is essential. In more isolated, rural areas there are in fact significant shortages of PCPs. Historically, rural practice has not attracted enough physicians due to relatively low salary compared to specialty medicine and to quality of life (availability of entertainment, quality education, and employment opportunities for a spouse or partner)[45].

The following areas have been designated as Primary Care Health Professional Shortage Areas by the VT Department of Health: Enosburg, Brighton, Waitsfield, Chelsea/Corinth, and Castleton [44]. In contrast, Windsor and Bennington have PCP levels that greatly exceed the ideal rate. These surpluses can serve to mask the regional variability of PCP levels when provided at a state level.

Supply side sufficiency is, however, not just with respect to physicians and other providers. In order to guarantee quality health care, Vermont also needs sufficient health care facilities infrastructure, including health information technology. Vermont's vision for its statewide health information

technology (HIT) system is laudable and comprehensive. Legislation in Act 61 of 2009 mandates comprehensive coordination of Vermont's statewide HIT plans, led by the Department of Vermont Health Access (DVHA). The state seeks to implement an integrated electronic health information infrastructure to coordinate information across various levels of health care professionals, public and private payers, and patients [46].

Funding for Vermont's HIT system comes from the Health IT Fund of 2008, in which a fee of two tenths of one percent imposed on all health insurance claims is paid to the state to support HIT and HIE grants. The Fund will be available through 2015, matching funding from federal resources allocated to health information technology. Vermont will build on its HIT-HIE network with funds from the HITECH Act and other components of the American Recovery & Reinvestment Act (ARRA), as well as the PPACA [46].

An important part of Vermont's HIT network is the Vermont Information Technology Leaders (VITL), a non-profit organization funded by the state that is in charge of a statewide Health Information Exchange (HIE). Representatives from the Governor and the General Assembly sit on VITL's Board. Currently, the Vermont Blueprint for Health IT infrastructure runs on the Vermont HIE Network (VHIEN), operated by VITL. In the future, VHIEN will be expanded to include a more far-reaching exchange of information [46].

On a physician level, the current state of EHR adoption is not widespread; only about 20-25 percent of private physicians have any form of EHR. However, Fletcher Allen recently extended its EPIC system to their primary care and specialty network, and statewide EHR adoption is expected to rise significantly over the next several years. All other hospitals are also upgrading their systems and offering their EHR systems to their physician network [46].

Vermont is on the right track to realize its vision of a meaningful, comprehensive statewide HIT system, which will ultimately lead to a more efficient and less costly health care delivery system. Continued funding and legislative support will allow Vermont to realize its HIT goals [46].

While HIT infrastructure, and meaningful use of said infrastructure, is of utmost importance, the physical healthcare facilities in Vermont must also be capable of providing the high quality, efficient care. In 2006, the system-wide Age of Plant for Vermont hospitals was 10 years, which was slightly younger (more favorable) than nationwide benchmarks for comparable hospitals. Four years later in 2010, the system-wide Age of Plant had dropped by a small margin to 9.8 years. Although apparently similar, these numbers tell a different story when broken down into Age of Building and Age of Equipment [47]. In 2006, the system-wide Age of Building was 9.5 years; in 2010 it was 12.5 years. The Age of Equipment dropped from 10.6 years in 2006 and to 8.0 in 2010 [47]. This indicates that on a statewide level, hospitals have been investing more money into newer technology than in keeping up their physical structures. While this is not necessarily undesirable, both hospitals and state monitoring agencies should be aware of these trends, as they may signal unnecessary and redundant investment in marketable new technologies at the expense of buildings.

While aggregate data is useful, it is also relevant to look at individual hospital Age of Plant trends over time. Some hospitals have consistently had both high Ages of Building and Equipment (Copley, Southwestern VT and Springfield), while others have remained relatively young (North Country, Gifford.) Other hospitals, such as Rutland and Northwestern, have seen their Age of Building dramatically increase while their Age of Equipment decreases. Each hospital is in a unique position;

when considering capital investments on a statewide level, these distinctions should be kept under consideration.

F. CONSTRAINT: ORGANIZATIONAL & ADMINISTRATIVE CAPACITY

Implementing major health system reform will always be constrained by current infrastructure and organizational capabilities. Transitioning to a new health system design will require reorganization, integration and the building up of significant functions and capabilities. Many of these functions largely exist in Vermont. However, international experience suggests that operationalizing a new system can take several years.

The role of a payer in the health care system is complex. Whether a single payer or one of multiple payers, a wide range of administrative activities are required, including:

- Determination of eligibility
- Determination of financial contribution (e.g. premium)
- Collection of revenue
- Determination of benefits
- Provider credentialing
- Provider contracting
- Quality Assurance
- Determination of reimbursement methodologies and amounts
- Paying providers
- Claims adjudication
- Financial / actuarial projections and budgeting
- Risk management (e.g. reinsurance)
- Data acquisition, management, and analysis
- Beneficiary services
- Care management
- Appeals of coverage decisions

Currently these activities are performed by multiple payers in Vermont, from Blue Cross Blue Shield VT to the Department of Vermont Health Access (DVHA), the state Medicaid agency. While private payers typically perform all these activities within one organization, for the Medicaid program the functions are performed by several different state agencies (e.g. DVHA, the Department of Children and Families, the Vermont Department of Labor, the Agency of Human Services). These agencies work with several different contractors, including HP, who administer Medicaid claims; Maximus, who administer the enrollment; and APS, who coordinates care management for public beneficiaries.

One of the advantages of a single payer-type system is a unified source of data. While that will be the case prospectively, we will need to incorporate historical data from disparate payers into a single system. This will be similar to the process of creating VHCURES, but the requirements to support a production system (one that pays providers and collects revenues) differ from those of an analytical system. The ability to integrate data will be especially critical during the “cut-over” period – the time when services were obtained under the old system, but will need to be paid under the new.

Creating an efficient single payer system also requires significant investments into updated information technology architecture itself, allowing 100 percent electronic claims submissions and processing. Systems for the rapid—and secure—exchange of patient information are also integral

to a well functioning health system. For example in Taiwan, the development of Smart Cards, which carry password-protected medical records information, took two years to implement. [48] Efficient electronic communications between all parties in health systems are necessary to maximize savings from a single payer-type system.

3. DESIGN PRINCIPLES & STRATEGIES

The principles behind our designs follow directly from the goals of Act 128 as guided by our analysis of the constraints discussed above.

- First and most importantly, we wanted to design a system that could achieve universal coverage for residents of Vermont, providing everyone with financial risk protection and access to care. This came with one important caveat, however: that the cost of covering the uninsured and underinsured would be paid for entirely with the savings generated by our reforms.
- We examined a multitude of potential overarching designs in order to maximize the savings that could be generated by health system reform in Vermont. We explored potential savings from several avenues: administrative savings, a reduction in fraud and abuse, the move towards an integrated delivery system, and malpractice reform. At the same time, we analyzed various methods of financing that would help maximize these savings, achieve universal coverage, and satisfy legal constraints.
- We designed a Standard Benefit Package with an eye to the average level of benefits currently enjoyed by Vermonters to ensure that they are not losing coverage. Furthermore, the benefit structure was designed to promote not only preventive care and early detection, but also early treatment and wellness services.
- We designed payment methods to promote the integration of care and reduce clinical waste and overuse.
- We aimed to increase the supply of and access to physicians and high quality health care. We achieved this by recommending investments – again, financed solely from savings to the system representing at no additional overall spending – to improve health care facilities and increase the number of physicians. Our reforms further aimed to increase current physicians’ patient care time by reducing unnecessary paperwork and administrative burdens, and ensuring that, on average, overall physician net income does not change.
- Furthermore, our designs attempted to always maximize and protect federal revenues to Vermont. This applies to our designs with respect to Medicaid and Medicare payments for Vermonters and the potential payments from PPACA. This led us to recommend that Vermont Medicaid raise its payment rates to providers to maximize the federal matching funding. As detailed in Section 4B, if implemented today, this could bring in additional \$45 million in 2010 federal funds. This principle also influences the recommended financing method – because payroll contributions are deductible business expenses, this financing mechanism would best preserve the roughly \$500 million worth of forgone federal income taxes owing to the current tax treatment of employer-sponsored health insurance.
- PPACA has the potential to annually bring in more than \$400 million in 2010 dollars of new federal funding into Vermont when it is fully implemented. As such, we believe that Vermont should continue with Exchange planning and implementation. We recommend

that the state should begin the implementation of any systemic reforms in 2015 to lock in these funds and provide the basis for negotiating a reasonable waiver from the Exchange requirements in this year (See Section 2B).

- This timeline is also consistent with our analysis of the time it might take to create and reorganize the current infrastructure to implement a single payer system. Indeed for all our estimates and design elements, we restrained ourselves to evidence-based, achievable figures and realistic timeframes and assumptions.

4. METHODS AND DATA

A. ESTIMATION OF SAVINGS

In developing the designs for the three options, we analyzed the ways in which a single payer system could produce both one-time savings as well as savings that accrue over time and reduce the health care cost inflation rate – or “bend the curve.”

Any single payer system contains two major elements that help reduce costs related to both insurer and provider administrative expenses. First, a single payer system would cover every Vermonter with a standard benefit package, divorcing coverage from employment or an individual’s insurance purchase. Subsequently, the insurance market with multiple insurers would be vastly reduced as they would only exist to offer supplementary benefits to wrap around the standard benefit package. Significant savings could be realized when insurance administrative costs are removed such as sales, marketing, and commissions. Second, the administrative burden imposed on providers by multiple insurers with their varied benefit packages and different claim adjudication and payment procedures would be consolidated into a single pipe payment system. The administrative hassles placed upon providers would be vastly reduced, subsequently reducing their administrative costs. We call the consolidation of all payments to providers into one entity as the “single pipe” or single channel system. When we use the term single payer, it encompasses both elements.

However, the single pipe can exist of its own accord, without a single insurance fund. In our legal analysis, we found that state have the authority to regulate both insurers and potentially third party administrators (TPAs) to establish the single pipe payment system. The savings would be less than under a single payer plan, owing to the continued existence of myriad benefit packages, and multiple insurance operations. Nevertheless, they would still be measurable.

Administrative savings are largely one time savings. Our designs help bend the cost curve over time by reforming the current payment system and creating the incentives for Vermont to move towards an integrated health care delivery system that would reduce duplication of tests and services and cut down waste. It’s important to note that the effectiveness of reforming the payment method to promote integrated health care delivery depends on the existence of the single payer. Without it, providers would strategize to game the different payment methods and rates employed by the various insurance plans, include cost shifting, rather than adopting more efficient ways to deliver health services.

We provide more detailed explanation for the methods and data that we used to assess all of the potential savings. To evaluate these savings, we decompose them into different categories:

- First, there are the administrative savings that accrue by shifting to a single payer system.
- Second, we estimated potential savings from reduced fraud and abuse, owing to the heightened detection ability and authority inherent in the comprehensive, uniform claims database central to any single payer type system. Researchers estimate that fraud and abuse in the US comprise 3-8 percent of total health expenditures.

- Third, we estimated the potential savings will continue to accrue over time and help Vermont bend the cost curve; US and international experience suggests that better payment systems and integrated delivery systems can reduce the high levels of waste and duplication that exist in the current system; some researchers estimate that as much as 30 percent of health spending in the US is waste.
- Lastly, we estimated savings to Vermont should it move to a no-fault medical malpractice system, such as the system in New Zealand. The mechanism through which this system achieves savings is not through the elimination of malpractice insurance premiums, but through its effect on defensive medicine, which researchers estimate contributes 2-9 percent of health expenditures in the US.

We define a single payer system as a health insurance system that provides insurance coverage to every resident with a standard benefit package. Typically, a single payer system unifies both the mechanisms by which services are paid for (the payment pipe) and the actual payment amounts. However, a single pipe is possible even when there are multiple payers and payment rates. For example, in both Germany and Japan, all providers send claims to a centralized processing center despite the existence of multiple insurance funds. In Germany and Japan, there is also a uniform rate schedule, but it is possible to have a single pipe for paying providers with multiple benefit packages and multiple rate schedules negotiated between different payers and provider groups.

We modeled two types of single payers systems in our designs. The first is a single pipe system, similar to that of Germany and Japan, in which different insurance plans channel all of their claim payments through one central organization. This can be seen in our Public Option, Option 2. We also modeled a more traditional single payer system for Options 1 and 3, where there is just one insurance fund, and all payments, including those of Medicare, Medicaid and Worker's Compensation medical claims, are paid using the same rates, payment methods and claim payment adjudication rules.

Administrative costs savings under a single pipe or single payer fall into two categories: reduced costs on the payer side, and reduced costs on the provider side. Insurance plans compete with each other for business and also attempt to select healthier populations to insure. Both processes generate significant sales, marketing, actuarial and underwriting expenses – though underwriting expenses are less relevant in Vermont.¹⁸ For example, insurance plans spend a considerable amount of time designing a variety of benefit packages both as a means of distinguishing themselves from the competition and also selecting healthier subscribers. Insurers furthermore set a multitude of rules delineating what and when health care services qualify for payment, as well as multiple claim adjudication rules. These multiple benefit packages, payment and claim rules create administrative burdens for providers. In addition to the direct billing costs of dealing with this complexity, administrative hassles take important clinical time away from physicians and nurses. For example, as outlined in more detail below in the section on administrative cost savings (see Section 4A), we estimated that on average, physician practices spend 15 percent of their revenues on insurance-related matters. Physicians themselves spend several hours per week of their time on these

¹⁸ Vermont Insurance regulations require "Community Rating" for the individual and small group market, meaning that health insurance premiums are not based on expected health expenditures and not "underwritten." As such, underwriting expenses in Vermont likely to be less than other states.

matters, and nurses spend an even larger part of their day dealing with the demands of multiple insurers.

Single payer and single pipe systems would save different levels in terms of administrative costs. A single pipe payment system will create less cost savings because Vermont residents would continue to be insured under many insurance plans with many different benefit packages. This would maintain a significant amount of the administrative burden for providers as they would still have to verify different co-pays, benefit limits or deductibles. For example, one study of the burden of excessive administrative complexity in physician group practices found that verifying cost-sharing and coverage was found to comprise 16 percent of costs of complexity[49]. Under a single pipe, insurance companies would continue to incur sales and marketing expenses. They would continue to worry about lapse rates and adverse selection and design insurance products to counteract against them.

A single pipe payment, with its maintenance of multiple risk pools, benefit packages, drug formularies and payment levels, may also have implications for the degree to which integration of the delivery system can be achieved. For example, when a population can select among different benefit options, especially around their scope of provider choice, the impact of integration is attenuated. For example, free access to any provider can reduce the value of coordination of care within an ACO.

Finally, international experiences suggest that the governance and management structure of a single payer may also impact the savings rate over time. Option 3 proposes a public-private single payer governed by an independent board with some administrative elements contracted out by a competitive bid process. For example, Taiwan has a board comprised of the major payer of insurance costs and providers and beneficiaries who negotiate updates to payment levels and benefits. In Germany, the Association of Sickness Funds negotiates with the Medical Association over fees. We expect that the independent board in Option 3 will produce more conservative increases in benefit and payment updates compared to the situation in Option 1 where these decisions would be made as part of the political process. Competition in the claims contracting will promote innovations in efficiency, leading to slightly greater administrative savings over time. For example, Medicare currently contracts out under competitive bids the administration of their claims processing.

There are other interdependencies between the designs and potential savings, notably between medical malpractice reform and the reduction in the health care costs inflation rate achieved through payment reforms and moving towards an integrated delivery system. International evidence suggests that the most effective way to promote integration of service delivery and care coordination is payment reform. The current fee-for-service (FFS) promotes over provision of health care services. By increasing the amount of financial risk providers accept for the entire continuum of patient care, these incentives are removed. Organizing the delivery system and accepting more risk for care requires fundamental changes in the way much of medicine in Vermont is currently practiced. Malpractice liability hinders this process. Vermont physicians, despite living in a state with low malpractice premiums and generally low trial awards, forcefully reiterated that fear of suits leads them to over-prescribe tests and other services in order to avoid law suits – a practice called “defensive medicine.” Their views echo a recent study finding that that physicians fears about malpractice suits – and in turn their practice of defensive medicine – are not strongly correlated with the objective risk of a suit. As such, despite Vermont’s low premium, low-

risk medical malpractice landscape, Vermont’s physicians might still practice as if the risk is great. This is in part why we recommend a radical departure from the current system to a “no-fault” system of compensation for injuries resulting from medical care.

Table 2 summarizes the estimated savings as a percent of Vermont’s total health expenditures that could be produced under Options 1, 2 and 3 compared to the current multiple insurance system. The detailed analysis that supports these figures can be found in the following four sections.

Table 2. Accumulated Savings by Source as a Percentage of Total Health Expenditure, 2015-2024.

	Option 1	Option 2	Option 3
Administrative - Insurer & Provider	7.3%	3.6%	7.8% ¹
Reduced Fraud and Abuse	5%	5%	5%
Shift to Integrated Delivery System	10%	5.5%	10%
Medical Malpractice Reform	2%	2%	2%
Public-Private Management Structure	-	-	0.5% ¹
Total Savings	24.3%	16.1%	25.3%

¹Note: Option 3 assumes slightly greater administrative savings through the competitive bid process for claims administration, which provides incentives to innovate and develop more efficient systems. Option 3 furthermore assumes an additional 0.5 percent savings over the 10 year period reflecting the more modest updates to benefits and payments expected under the independent board compared to those decided through a political process.

We estimate that Option 1 will produce cumulative savings of 24.3 percent of total health expenditures between 2015 and 2024. Option 2 will produce cumulative savings of 16.1 percent of total health expenditures between 2015 and 2024. Finally, Option 3 will produce cumulative savings of 25.3 percent of total health expenditures between 2015 and 2024. Again, Option 3 produces greater savings compared to Option 1 because it incorporates a management structure that is able to reduce costs through administrative efficiencies and greater leverage in negotiating payment rates and benefit package levels.

Much of these savings will take time to accrue. Administrative costs can be measurably reduced when Vermont shifts into a single payer system (or a single pipe payment system). However, achieving these savings requires the establishment of a single payer organization, the development of uniform electronic record systems, a uniform claim review and processing system and management of information systems. Relying on US and international experience, we assume creating an operational single payer system in Vermont would take two to three years. We assume that the majority of the administrative savings will accrue in the first two years, while the remainder would be saved over the next five years as the operational system improves and becomes more refined. Likewise, changes to medical malpractice will take time to translate into altered physician behavior with respect to defensive medicine. We assume it will take five years to capture the potential savings. Savings related to a movement towards an integrated delivery system will take the longest time. We assume modest savings will accrue each year over 10 years.

We estimate that in first year of full implementation, 2015, Option 1 will produce a savings of approximately \$530 million in 2010 US Dollar real terms, Option 2 will produce a savings of \$330 million in 2010 US Dollar real terms, and Option 3 will produce a savings of approximately \$590 million in 2010 US Dollar real terms. While we estimate that these savings will accrue in the first year of implementation, we recognize that they may take 2 to 3 years to be fully realized. In these calculations, we do not assume that Vermont will be able to keep the savings created for the Medicare program, even though utilization and administrative costs will go down for the Medicare program, too. Furthermore, we did not include any savings related to reduced utilization for the Veteran's Administration or Workers' Compensation or Medicaid spending on the over 65 population, which is largely on long-term care.

Table 3. Comparison of Savings Estimates among the Three Reform Options.

Percent of Total Health Spending from 2015 to 2024		Absolute Savings in 2010 Dollars ¹			
		2015	2016	2019	2024
Option 1	24.3%	\$530 million	\$720 million	\$1,050 million	\$1,550 million
Option 2	16.1%	\$320 million	\$470 million	\$690 million	\$980 million
Option 3	25.3%	\$580 million	\$770 million	\$1,100 million	\$1,600 million

Note: ¹Excluding savings accrued to Medicare, Veterans' Administration, Workers' Compensation plans, and Medicaid elderly.

All three options will yield significant savings. However, our research and analysis indicate that the single payer options (Option 1 and 3) would have a more dramatic impact on reducing cost than the public option because they incorporate a uniform benefits package and reduce much of the administrative structure needed to compensate multiple payers. We recognize that these savings estimates are inherently uncertain and that the true impact would depend largely on how the proposed system is implemented. Therefore, we have taken a conservative approach to all cost savings estimates derived from extensive research as well as domestic and international experience. Regardless, these numbers should be interpreted as indicative of potential cost savings from implementing each of the three option and not as precise numbers.

Detailed discussions and analyses behind the figures in Table 2 are presented in the following four sections: Administrative Cost Savings; Savings from Reduced Fraud and Abuse; Moving to an Integrated Delivery System; Waste and Duplication Savings; and Savings from Medical Malpractice Reform.

I. ADMINISTRATIVE COST SAVINGS

While there are significant methodological challenges in measuring the full impact of administrative costs, there is a broad consensus that they are higher in the United States than in other countries, and that much of this difference arises from the mechanisms by which providers are reimbursed in the US. The US system features multiple payers, each one of which has its own complex set of rules for claim submission and adjudication. Claims may be delayed or denied for countless reasons. Payment varies enormously for the same service.

For example, in their most recent report from 2003, Woolhandler and Himmelstein estimate that administrative costs comprise 31 percent of health care expenditures in the United States, but just 16.7 percent of health care expenditures in Canada [50]. The authors calculated administrative costs by adding insurance overhead, employers' cost to manage benefits, and administrative costs for hospitals, providers, nursing homes and home health care agencies.

Woolhandler and Himmelstein sum total administrative costs of two national health systems in an effort to attribute the difference to the multiple payer system in the US. Alternatively, one can investigate in greater depth by examining a category of administrative expenses in the US to estimate the potential savings from moving to a single payer or single pipe system. This subcategory, referred to by Kahn et al 2005 as Billing and Insurance Related (BIR), is comprised of those administrative activities and functions whose "primary purpose is to move money from payer to provider in accordance with agreed upon rules"[51]. This categorization does not necessarily provide strict guidance as to how to separate and estimate BIR administrative costs. Therefore, we provide additional insight on BIR activities pertinent to insurers, providers and hospitals below.

To estimate the magnitude of BIR administrative savings by moving to a single pipe and single payer system for commercial insurers, hospitals and physicians, we used data from BISCHA, the annual statements of Blue Cross Blue Shield of Vermont (BCBSVT) as filed to the National Association of Insurance Commissioners (NAIC), our own survey of Vermont physicians, Vermont hospital budgets as reported to BISHCA, and the 2008 Vermont Health Care Expenditure report by BISHCA. In order to develop reasonable ranges of administrative savings if Vermont were to transition to a single payer or single pipe system, we focused on payer-related or BIR administrative costs. We reviewed pertinent literature, as well as administrative costs of other countries, to highlight mechanisms through which administrative costs can be reduced through reform.

We assumed that all current commercial in-state private payments, Worker's Compensation claims and Medicare and Medicaid payments could be consolidated into the single pipe or single payer claims administration system. However, many other payers in Vermont would still exist. As such, Vermont would not be able to reap the full benefits of a whole nation that operates under a single payer or single pipe system. For example, individuals from New York, Massachusetts and New Hampshire come to Vermont for health service. These people are covered by a variety of health insurance plans. Providers would still have to collect payments from non-residents who come to Vermont for health services. In addition, many Vermonters go outside of Vermont for health services. The organization also has to pay these out-of-state providers for the services they have rendered to Vermonters. The continued existence of supplemental insurance would furthermore reduce savings from claims payment rule consolidation. In addition to out of state users and supplemental insurance, Medicare beneficiaries would continue to have their own benefit packages, as would Medicaid. This increases provider administrative expenses around collecting and verifying copayments.

Some of this consolidation is uncertain. The degree to which both Medicaid and Medicare's claims processing rules and standards can be integrated into the full single payer is uncertain, as it depends on federal waivers to allow for sufficient state control (see Section 6F: Financing). If claims adjudication and payment procedures of the federal programs cannot be incorporated into the single payer system the savings would be lower. We modeled the single pipe system in Option 2 as encompassing the entire private market in Vermont, including self-insured plans using third-party

administrators. If these plans were not part of the single channel (see Section 2A on the legal constraints of ERISA) the savings would be lower.

Insurer Administrative Costs and Potential Savings

Private insurers incur large administrative costs related to their insurance, provider relations and claims payment functions that can be reduced or eliminated through the implementation of a single payer or single pipe plan. Insurance functions of private insurers include business development and marketing, sales and underwriting, and risk analysis. Provider relations involve the selection of, negotiation with, contracting with, and maintenance of relationships with providers. Claims payment administrative activities entail establishing claims review systems to identify reasonable costs and recognize fraud and abuse. They also include the authorization and payment of claims, adjudication of claims, check issuing, and financial auditing. Based on the type of reform, savings can be derived from each of the three areas, as well as general overhead related savings, to varying degrees and through different mechanisms. Of course not all insurer administrative expenses fall into BIR activities. Some expenses reflect activities used to lower costs and improve efficiency, quality and outcomes. These can include utilization review, quality management and data collection and analysis [52].

Much of insurers' insurance function expenses can be eliminated through implementation of a single payer system. In addition to these savings, provider relations and claims payment expenses can be reduced through economies of scale and claims simplification. Marketing and advertising expenses would be negligible in a single payer system. Insurers would also be able to dedicate less time to information systems. Furthermore, insurers would spend significantly less time and resources designing benefit packages and developing products due to a standardized benefits package under a single payer system. In a single pipe system, insurance expenses would remain relatively unchanged, and expenses on claims payment and provider relations would be reduced through economies of scale.

A number of studies have examined the costs of administration for insurers both in the United States and internationally. On average, the cost of administration is 7.5 percent of total health expenditure in the United States. This is compared to 1.9 percent in Finland, 2.2 percent in Taiwan and 5.6 percent in Germany [53]. Of 10 OECD countries, excluding the United States, the average share of total national health expenditures dedicated to insurance administration was 4 percent in 2005. These lower administrative costs are attributed to the absence of marketing costs and cost sharing, more standardized benefit design and authorization rules, uniform premium contributions, standardized forms to switch insurers, fewer underwriting costs, lower or no profit margins, and less churning of membership and global budgets [53, 54].

In 2009, Collins et al found that administrative functions comprise 5.8 to 14.1 percent of insurers' expenditures for US private, Medicare and Medicaid health plans [53]. In general, public programs had lower shares of premium revenue dedicated to administrative functions than private insurers. The authors then estimate that the implementation of a national insurance exchange would lower the average private payer administrative costs as a share of claims from approximately 12.7 percent to 9.4 percent across individual and employer plans. The primary savings channels are through reduced marketing and underwriting, decreases in costs of claims administration, less time spent negotiating provider payment rates and fewer or standardized commissions to insurance brokers.

Kahn et al. use data collected by Milliman USA from 1996 to 2001 from 73 insurers for 129 health plans, including commercial, Medicare and Medicaid, in order to estimate BIR specific expenses for private insurers [51]. The authors find that BIR expenses comprised 8.4 percent of premium revenue for commercial insurers, 9.4 percent of premium revenue for Medicaid, and 3.8 percent of premium revenue for Medicare. Of BIR categories, claims, sales and marketing, finance and underwriting, and information systems comprise the largest shares (between 1.1 and 1.6 percent of premium revenue)[51]. A 2007 report by McKinsey and Company found that marketing, sales and underwriting comprised 64 percent of total administrative costs for BCBS plans nationally[55]. This category of expenditures would see vast, if not complete, savings from a movement to a single payer system.

In BISHCA's 2008 analysis they found that administrative costs as a share of premiums for private health insurers in Vermont ranged from 7.1 percent for self-insured plans to 12.3 percent for the entirety of Blue Cross Blue Shield VT business. In real dollar terms, this equaled a range of \$26.62 PMPM to \$42.30. In comparison, Vermont Medicaid administrative functions cost \$22.37 PMPM, nearly half that of BCBSVT comparing equivalent functions [56].

We deconstructed the 12.3 percent of premium dedicated to administrative costs for BCBSVT to estimate potential savings from moving to a single payer system. First, we broke out their expenses into different categories. We then created a range of estimates for each savings category reflecting both reduced functions and economies of scale upon consolidation of all Vermont resident claims payments. For example, we eliminated expenses for commissions, marketing and advertising and sharply reduced expenses for auditing, actuarial and other consulting services, postage and telephone, printing and office supplies, outsourced services including electronic data processing equipment and software as well as and payroll tax expenses. Through these calculations, we found that BCBSVT could save between \$43.4 and \$56 million in administrative costs annually, reducing administrative costs to 4.7 percent to 6.7 percent premiums.

As previously mentioned, savings from moving to a single pipe system would be derived from reductions in claims payment administration and provider relations activities. We estimate 1 percent of health care expenditure would be saved in Vermont, and thus decreasing from 7.6 percent to 6.6 percent of health care expenditures over a period of 6 years. The savings are relatively small due to the necessity to maintain much of the administrative activities of insurers under a single pipe system.

According to global experience and available evidence, a single payer system would significantly reduce the administrative costs caused by multiple health insurance plan arrangements that exist in the United States. Taiwan was able to reduce its insurance related administrative and claims processing costs to just 2.2 percent of total health spending by moving to a single payer system. Vermont can achieve large insurer-related savings from movement to an electronic system of claims recording and the issuance of smart cards for insurance processing purposes to all Vermonters.

In moving to a single payer system, we assume that the administrative burden in Vermont would be significantly reduced, however, not as completely as the Taiwanese experience due to out of state use of Vermont medical facilities, supplemental insurance and other remaining payer complexities. However, as a result of the single benefit package, savings under a single payer system would be much larger than under a single pipe system. Therefore, we assume that 3 percent of health care expenditures in Vermont would be saved by moving to a single payer system, with these savings

spread over 6 years. Payer administrative costs as a share of health care expenditure in Vermont would fall from 7.6 percent to 4.6 percent – higher than the OECD average of 4 percent.

Physician and Other Professional Administrative Costs and Savings

Administration is a necessary component of provider activities. The seemingly excessive administrative duties required as a result of multiple payers and insurance companies create provider discontent, systemic inefficiencies, and detract from time providers could be spending serving patients. Direct provider-related administrative duties include billing and collecting from multiple payers, verifying insurance, dealing with drug formularies, seeking prior authorization, collecting varied cost sharing payments from patients and performing quality and utilization reviews. Indirect or overhead provider related administrative costs include rent, capital depreciation, medical malpractice premiums, additional staffing expenses and salaries, and equipment. The combination of these direct and indirect administrative costs comprises a relatively large portion of provider expenses. By moving to a single payer or single pipe system, much of these provider related administrative costs can be reduced.

As a result of the diversity of administrative functions performed by providers, multiple measures have been used to estimate their costs. These measures range from the percent of provider time spent on administration, to average hours per week spent by physicians on administration, to the share of total revenue providers dedicate to administration. We utilize all of these measures to provide an estimate for the potential savings derived from moving to a single payer or single pipe system.

Casalino et al 2009 estimate that private practices spend approximately \$68,274 per physician per year interacting with health plans. Primary care physicians spend approximately \$64,859 annually per physician, which is approximately 19 percent of the average primary care physician's total revenue¹⁹[57]. To obtain these estimates, the authors administered a national survey stratified by providers, administrators, and providers who also act as administrators in their practice. Through this survey, estimates were obtained on the mean number of hours per week providers directly spend interacting with health plans. These estimates were then converted into dollar values per year for physicians and for each type of staff, using external data on annual compensation, including benefits, and annual time worked. Approximately \$23 billion to \$31 billion was estimated to be spent per year on administrative duties by physicians and their practices in 2006. On average, physicians reported spending 43 minutes per workday (or 3 hours per week) fulfilling administrative duties. Primary care physicians spent significantly more time on administrative duties than specialists (3.5 hours per week versus 2.6 hours per week). Additionally, solo or two-person practices spent significantly more time on administration than practices with 10 or more physicians (3.5 hours per week on average/4.3 hours per week for primary care physicians versus 2.6 hours per week). On average, the combined time of RN/MA/LPNs spent interacting with health plans per practice was 3.8 hours per week. Clerical staff spent 35.9 hours per week on average on administrative duties. Time spent dealing with formularies and obtaining authorizations comprised the largest share of provider time spent on administrative duties. In estimating the average cost of interacting with health plans per practice per physician, costs of interaction-related equipment,

¹⁹ The average primary care physician makes \$180,000 annually. This net income is approximately one-half of total revenue. Therefore, \$64,859 is approximately 19 percent of \$360,000.

supplies, telephone, fax, or office space or for time spent by nurse practitioners (NPs) and physician assistants (PAs) interacting with health plans were not included.

Using the 2000 Medical Group Management Association (MGMA) annual survey data, Kahn et al. estimated that California physicians spend approximately 20 to 27 percent of their total revenue on administration [51]. Decomposing this number they found that 12.4 to 14.5 percent of total revenue is dedicated to BIR expenses, depending on the size the type of medical practice. Business office, provider time, information technology, medical receptionists and administrative supplies and services comprise the largest shares of BIR expenses. Using American Medical Association survey data, the authors find that physicians spend approximately 8 percent of their time on billing and other non-clinical work. Of that, approximately 4.9 percent of physician time is devoted to BIR interactions.

Other studies make similar estimates of administrative related provider costs. In a case study of one large, urban academic teaching hospital's physician organization, Blanchfield et al [58] find that 12 percent of their net practice revenue was dedicated to "excessive administrative complexity." To make this calculation, a hypothetical system was developed, parallel to the current administrative system within the organization, which was stripped of the functions, staffing and associated costs for both the professional billing office and the clinical practice associated with the existence of multiple payers. The authors highlight that their model is not a single payer system, and rather more similar to the single pipe analysis. The primary causes of excessive administrative burden were additional billing staff costs (1.5 percent of net practice revenue), physician practice time costs (8.8 percent of net practice revenue), and lost revenue resulting from wrongly denied claims (1.6 percent of net practice revenue).

Sakowski et al [59] find that approximately 10 percent of practice revenue is dedicated to BIR activities. The authors' conclusions are based on a survey of 500 physicians in three distinct geographic areas in the United States. They found that each physician spent on average 35 minutes per day on insurance related functions and had 0.67 FTE of billing and claims staff per physician in the practice. In translating this time, along with other practice expenses including overhead, supplies and technology, it is estimated that BIR costs are \$85,276 per FTE physician. The authors exclude cost estimates of clinicians' efforts on recording procedure and diagnosis coding needed for billing due to measurement concerns. This could potentially bias downward their estimates.

One study estimates administrative related provider costs, without breaking out costs specific to BIR. Woolhandler and Himmelstein [50] find that approximately 27 percent of physicians' revenue in the United States is dedicated to administrative functions. This includes 13.5 percent of physicians' time dedicated to administrative tasks, 8.3 percent of gross income dedicated to clerical employees, one-third of office rent and expenses dedicated to administrative functions, and one-half of other professional expenses dedicated to office administration.

We conducted a survey of Vermont physicians in 2010 to examine whether the administrative and insurance provider-related cost estimates referenced above are consistent with the Vermont experience. Survey results show that on average, physicians report spending more than 3 hours per week interacting with health plans. Physicians in practices owned or embedded in other organizations reported spending less time interacting with health plans than physicians practicing independently. Vermont practices had 0.78 FTE non-clinical staff dedicated to all aspects of billing, claims review and payment collection for each FTE physician in the practice. These data are consistent with the other studies estimate costs based on survey data.

The Vermont Common Claims Work Group Final Report, though not a formal study, was also suggestive of savings from claims and benefit standardization. For example several Vermont providers surveyed for the report said that just having co-pays, deductibles and other cost-sharing and billing information printed on a subscriber ID card could provide measurable savings in reduced follow-up calls to insurers and reduced billing rework [60]. The report also highlighted the difficulty of achieving claims adjudication standards with multiple payers using customized proprietary payer-specific rules for their business, medical management and policy practices.

In estimating the share of health expenditures dedicated to administrative costs for providers and related potential savings from moving to a single pipe or single payer system, we break the analysis out into two categories – (1) physicians and (2) other providers. The other provider category includes dental services, chiropractic services, physical therapy services, psychological services, podiatrist services, vision products, durable medical equipment, drugs and other supplies.

With regard to physicians, evidence shows that administrative expenses related to BIR range from approximately 10 percent to 19 percent of practice revenue. In order to be conservative, we assume in projecting savings related to implementation of a single payer or single-channel system in Vermont that 15 percent of practice revenue is dedicated to BIR. We utilize the 2008 Vermont Health Care Expenditure Analysis to translate this estimate into the share of total health expenditure dedicated to BIR. In 2008, 15.1 percent of health care expenditure was spent on physician services. This amounts to \$697 million, of which we assume 15 percent was spent on BIR related activities. Therefore, approximately \$104 million was spent on BIR activities, which amounts to 2.3 percent of total health expenditure in Vermont dedicated to BIR activities by physicians.

As mentioned above, potential savings from moving to a single channel or single payer system would be derived from the fact that providers only have to learn and follow the rules of one claim payment system and adjudication procedures, instead of a multitude of claims procedures and adjudication rules. Thus, providers would also employ fewer staff to handle payer related matters and physicians would reduce their own time devoted to dealing with multiple payers. These administrative hassles take time away from physicians and nurses rendering health services.

We estimate that a single payer system would reduce BIR costs by one-half. Inferring from the evidence above, we estimate that a single pipe would save one-third of BIR expenses for physicians. These savings are less than the savings derived from a single payer system, because providers would continue to deal with many benefit packages. From these estimates, BIR expenses would be 1.53 percent of total health expenditure in Vermont under a single pipe system and BIR expenses would be 1.15 percent of total health expenditure in Vermont under a single payer system.

There is relatively little discussion or evidence related specifically to administrative costs of the other provider category. Therefore, the 15 percent of net practice revenue estimate from physicians is used to for other providers as well. To translate this into the share of total health expenditures dedicated to BIR we utilize the 2008 Vermont Health Care Expenditure Analysis. In 2008, 20 percent of health care expenditure was spent on the other provider category.²⁰ This amounts to

²⁰ This includes ½ of dental services (2.3%), chiropractic services (0.4%), physical therapy services (0.9%), psychological services (0.9%), podiatrist services (0.1%), vision products and durable medical equipment (2%), and drugs and other supplies (12.3%).

\$921 million, of which we assume 15 percent was spent on BIR activities. Therefore, approximately \$138 million was spent on BIR activities, which amounts to 3 percent of total health expenditure in Vermont dedicated to BIR activities by other providers.

Similar savings would be derived from moving to a single pipe or single payer system as discussed for physicians. Therefore, we estimate that a single payer would produce a savings of one-half of BIR expenses for other providers and a single channel system would produce a savings of one-third of BIR expenses. From these estimates, BIR expenses for other providers would be 2 percent of total health expenditure in Vermont under a single channel system and 1.5 percent total health expenditures in Vermont and under a single payer system.

Hospital Administrative Costs and Savings

Similar to providers, hospitals incur large administrative costs associated with interacting with multiple payers. These functions include contract negotiation, bill and collection payment, patient insurance coverage and cost-sharing verification, salary payments for administrative staff, and overhead and health information technology related expenses. In moving to a single payer or single channel system, hospitals would be able to streamline much of their operations, greatly reducing administrative costs associated with the current multiple payer system.

The Vermont hospital budget reports show that in 2010 the percent of total costs attributable to administrative and general (AG) activities,²¹ was approximately 22 percent of total hospital budget operating expenses. AG activities are wide-ranging and include many non-BIR expenses, such as social services or pharmacy. Fiscal operations expenses, which is most closely involved with insurance related activities, ranges from 3 to 9 percent of hospital operating expenses. In addition to the hospital budget reports, the Vermont Association of Hospitals and Health Systems (VAHHS) conducted a Hospital Association Billing Survey (HABS) in order to approximate potential savings associated with the elimination of sending bills to CIGNA/MVP and BCBCVT, an analysis they shared with us. The survey estimated a savings of roughly 0.72 percent of AG expenses due to the elimination of sending bills to CIGNA/MVP and BCBSVT in 2010. These data reflect an incredibly narrow focus for potential savings by limiting the analysis to expenses related to direct billing costs for just three private insurers. The cost estimates reported by the Vermont hospitals that responded were just the salary costs of individuals who are dedicated to these three particular payers. This analysis excluded the more systemic changes in cost associated with patient admissions, nurse and physician time costs, medical records maintenance and billing and collection from patients that detailed studies have noted as significant BIR expenses.

Vermont hospitals follow national trends for overall administration expenses as a percent of total costs. In 2003 Woolhandler and Himmelstein [50] used Medicare Cost Reports to estimate that 24.3 percent of U.S. hospital costs were administration-related. The authors classify administration expenses according to Medicare cost account categories, and include administrative and general, nursing administration, central services and supply (excluding the purchase cost of supplies),

²¹ Specific categories within AG include fiscal services, dietary, housekeeping, laundry and linens, maintenance of personnel, operation of plant and maintenance, nursing administration, nursing education, central services and supplies, pharmacy, medical staff education, interns and residents, medical records, medical library, medical care evaluation, social services and research.

medical records and library, utilization review, and the salary costs of the employee benefits department.

Two studies specifically break out payer-related or BIR expenses from general hospital administration expenses. McKay [61] estimates that administrative costs were 22.6 percent of Florida hospital operating budgets in 2003. Of this amount, 21.3 percent were directly tied to payer related expenses, which is 4.8 percent of total hospital operating costs. Payer related administrative costs are a result of administrative requirements associated with payment to insurers. Kahn [51] estimated that administration related expenses comprised 20.9 percent of total California hospital revenue and of this amount, 6.6 to 10.8 percent of total revenue was BIR.

This evidence shows that administrative expenses related to BIR or payer related activities range from approximately 4.8 percent to 10.8 percent of hospital operating expenses. We use 6.5 percent as a conservative estimate from current available evidence for hospital BIR. Similar to the provider cost estimates, we use the 2008 Vermont Health Care Expenditure Analysis to translate these estimates into a share of total health expenditure in Vermont. In 2008, 35.6 percent of health care expenditure was spent on hospital services. This amounts to \$1.6 billion. Therefore, approximately \$82 million was spent on BIR or payer related activities, which amounts to 2.3 percent of total health expenditure in Vermont which is dedicated to BIR activities by hospitals.

Of this 2.3 percent of total health spending in Vermont, significant savings would be derived at the hospital level by moving to a single pipe or single payer system. We use the same rationale that is used at the provider level to assume that under the single pipe system one-third of BIR costs would be saved and under the single payer system one-half of BIR costs would be saved. Therefore, under the single pipe system, hospital BIR expenses would be approximately 1.53 percent of total health expenditure in Vermont. Under the single payer system, BIR would be approximately 1.15 percent of total health expenditure in Vermont.

These are aggregate estimates calculated from the most objective, evidenced- based research available. However, they are gross aggregate estimates. Vermont's average gross administrative and general (AG) expense is very similar to the studies cited here (Vermont's average AG at 22 percent of total compared to 22.6 percent for Florida Hospitals, 20.9 percent in California and 24.3 nation-wide). However, these estimates could not accurately reflect the Vermont situation for BIR. For example, in comments to our team, Fletcher Allen Health Care (FAHC) estimated that their total BIR was around 4 percent of total operating costs, instead of the 6.5 percent used here. As the largest hospital in state, their BIR costs as percent of total expenses may enjoy some economies of scale over other hospitals. Alternatively, their classifications and estimates could differ from that of researchers. In order to create more actionable BIR costs, Vermont may need to pursue detailed activity studies at hospitals and other providers conducted by outside objective independent professional groups.

II. SAVINGS FROM FRAUD AND ABUSE

Fraud and abuse are problems in the U.S. health care system. Fraud refers to intentional deception on the part of health care providers [62]. This includes submitting claims to public and private insurance companies for services that were not actually provided, and also referring patients to an entity with which the referring provider has a financial relationship[63]. Abuse refers to activities

that financially benefit a provider, but that are inconsistent with accepted and sound medical, business or fiscal practices, such as submitting claims for medically unnecessary services.

The costs associated with fraud and abuse are substantial. Recently, the FBI estimated that fraudulent activities accounted for 3-10 percent of total health expenditure in the US in 2007[64]. Similarly, the National Health Care Antifraud Association, a coalition of private health care providers and private agencies, estimated that approximately 3 percent of national health care spending is lost to fraud each year. Estimates of costs associated with abuse are difficult to obtain, given the difficulty in defining 'medically unnecessary services.'

Fraud and abuse have received increased attention in the past decade, and steps have recently been taken at the federal level to address the issue[65]. The Patient Protection and Affordable Care Act (PPACA) of 2010 contains several provisions that aim to reduce fraud and abuse in the US health care system, including payment suspensions for Medicare and Medicaid claims that are alleged to be fraudulent. In addition to the PPACA legislation, Congress pledged a 50 percent funding increase in fiscal year 2010 for activities related to fraud detection in federal health programs, including Medicare and Medicaid[66].

The fragmentation of health care payment systems makes detection of fraud and abuse difficult. Limited communication between payers can make it difficult to identify providers that are engaged in improper behaviors. The effect of fraud and abuse on each payer may be imperceptible, while the additive effect on the system is substantial. Unless very detailed and expensive auditing is done, these small transgressions are not easy to detect. Further, efforts to strengthen detection in federal programs may lead to increased fraud in non-federal programs, as offending providers shift improper behaviors to affect more vulnerable payers. An important first step in developing a system to combat fraud and abuse is to construct a single database with comprehensive accurate and timely information on all provider claims to public and private insurance companies.

All claims database. Several states, including Vermont, have recently attempted to construct state-level all claims databases in an effort to strengthen fraud and abuse detection activities, and also to strengthen data and evidence-based components of health system planning activities[67]. However, many of these states are finding that challenges related to uniform data reporting and stakeholder buy-in undermine the usefulness of these databases. Indeed, the VHCURES system in Vermont, operational since 2008, has substantial gaps in reporting and currently does not include claims for Medicare and Medicaid. Further, VHCURES administrators are struggling to harmonize disparate data sources into a single format for easy comparison [68].

Having a single payer system makes it substantially easier to implement a coherent and comprehensive state-level all claims database for fraud and abuse detection. With a single payer, communication between payers is no longer an issue. The single payer organization can develop a database of all insurance claims and link those claims to individual providers. Provider profiles that track behavior over time can then be used to identify instances of fraud and abuse. When Canada implemented its single payer system in the early 1970s, it was able to identify and investigate the possible fraud and abuse cases quickly and easily.

We want to make clear that most providers do not commit fraud or abuse a health insurance system. However, just a small number of providers can make a large negative financial impact with numerous fraudulent claims and abuses. A comprehensive database from a single payer system can identify culpable parties and leave most providers who practice appropriate medicine without any

interference. In the Implementation section of this report, we recommend a process in which fraud and abuse can be investigated while minimizing the interference with physicians and other practitioners who practice appropriate medicine.

Once identified, there are various steps that should be taken to address fraud and abuse. Fraudulent behaviors are by definition illegal and should be dealt with through the legal system. There are provisions in the PPACA of 2010 to strengthen federal authority to prosecute fraud in the US health care system [69]. These provisions also include funding for collaborative programs between state and federal authorities to recover payments made for fraudulent claims.

Behaviors identified as abusive to the health care system, however, are not usually criminal. Rather, they constitute deviations from accepted norms with regard to the definition of necessary care. There are two common methods for regulating the professional norms of health service delivery. First, insurance companies have frequently used feedback mechanisms to inform providers of their personal deviations from the practice patterns of their local peers. Second, insurance companies may refer cases of abuse to the professional organizations that are most qualified to regulate the norms that define abuse. That is to say, health provider professional organizations, whether local or national, can be given responsibility for self-regulating identified instances of abuse.

Evidence from the U.S. and abroad suggests that developing a provider profiling system to root out fraud and abuse can lead to substantial costs savings. Several randomized controlled trials have found that peer-comparison feedback programs lead to a reduction in service provision [70]. A recent evaluation of 10 physician profiling programs conducted by the US Government Accountability Office found that the programs led to reduced costs [71]. Recent experience in Taiwan—a country that in the mid-1990s implemented a single payer health care system with provider profiling—suggests that profiling can reduce total health spending by as much as 7-8 percent. We estimate that Vermont would be able to reduce its total covered health expenditures by 5 percent from fraud and abuse.

III. SAVINGS THAT BEND THE COST CURVE: PAYMENT REFORM AND MOVING TO AN INTEGRATED DELIVERY SYSTEM

Waste and duplication in the health care system is a persistent issue in the US. In this section we discuss sources and levels of waste in the health care system in the US and Vermont based on available evidence. We identify potential health system reform measures to address this waste, with a particular focus on payment system reform and integrated delivery systems (IDS), providing rationale for savings estimates to be derived for Vermont. Two comprehensive reform plans aimed at addressing waste through greater integration in Vermont are discussed in detail: the Vermont Blueprint for Health and the Accountable Care Organization (ACO) model. These are two different organization models of health care delivery with associated payment reforms that promote service integration and the movement towards a fully integrated delivery system.

The methods used to pay providers have a profound effect on the volume of services providers give to patients, underscoring and promulgating the trends in overuse and waste seen in the US. As in the rest of the nation, the predominant payment method in Vermont is fee-for-service (FFS). Irrefutable evidence from both the US and other countries finds that FFS payments promote health care cost inflation. Because providers are paid for each unit of service they provide, more health care results in higher provider incomes, giving little incentive to constrain unnecessary care. For

example, and as discussed below, Medicare estimates that up to 12 percent of all readmissions to hospitals are preventable. Many of the readmissions were because of too early discharge, but hospitals are paid again for the second admission because there was no financial incentive to avoid this duplication and waste. As part of the PPACA, Medicare will reduce payments to hospitals with high readmission rates as one part of its effort to reform the payment system and reduce waste. Vermont can bend the cost curve even further by more fundamentally changing the payment methods to physicians and hospitals. We have recommended that Vermont shift toward a risk-adjusted capitation payment method with pay-for-performance as a method to bend the cost curve moving forward.

Sources and magnitude of waste. Fragmentation in health service delivery and payment leads to waste, and ultimately to inflated health care costs. There are three primary forms of waste associated with health service delivery fragmentation: (i) administrative, (ii) operational and (iii) clinical [72]. Administrative costs are discussed in earlier sections. In this section, we are primarily concerned with operational and clinical waste. Operational waste most often results from the *misuse* of health care resources, while clinical waste most often results from the *overuse* of health care resources [73]. Misuse occurs when providers have insufficient information to make correct diagnostic and treatment decisions and as a result recommend inappropriate services to patients. Drug events are the most prevalent source of operational waste. Overuse occurs when physicians are faced with a diagnostic or treatment decision for which there is no clear direction, and as a result provide a relatively poor service given its cost. The primary sources of clinical waste include overuse of expensive diagnostic tests, hospital admissions and surgeries.

Aggregate levels of waste across a health care system are difficult to directly measure due to ambiguity in the boundaries of wasteful behavior [74]. For example, clinical decision making that leads to overuse is by definition discretionary and therefore difficult to evaluate. Despite these challenges, attempts have been made to measure overall waste and most conclude that the costs associated with waste are substantial. A recent report found that more than 21 percent of total health spending in the US is due to non-administrative waste [75]. The authors concluded that the majority of this waste (14 percent of total health spending) results from overuse of health services. Eliot Fisher and his colleagues at the Dartmouth Institute have shown that, after adjusting for population demographics and local prices, some regions of the US spend more than twice as much per capita on Medicare services as compared to other regions [76, 77]. Additionally, they found that increased spending was not associated with improved quality of care. Fisher estimates that up to 30 percent of total health spending is due to waste, most of which results from the overuse of discretionary services [77, 78]. A similar conclusion was reached in another recent report, which concluded that 29 percent of health care spending in the US results from operational and clinical waste [79, 80].

The impacts of wasteful behavior resulting from misuse in the US health care system become even more readily apparent at the individual service level. Studies find that as many as 40 percent of elderly persons with insurance coverage under Medicare and Medicaid receive prescriptions each year that are not clinically necessary [81, 82]. Drug events, particularly in the elderly population, constitute a large portion of the waste that results from misuse. Estimates suggest that up to 6.5 percent of hospital patients experience adverse drug events, resulting in an average additional length of stay of 2.2 days and an additional cost of \$3,244 per event [83]. A recent report by the Vermont Department of Health found that patients in the state experienced serious reportable events, of which adverse drug events are a major part, at a rate similar to other states [84].

Likewise, waste derived from misuse of health services often leads to hospital readmissions. Nearly 20 percent of all Medicare hospital admissions result in readmissions due to incomplete treatment or poor care [85]. The Medicare Payment Advisory Committee estimates that Medicare spends some \$12 billion on potentially preventable readmissions [86]. Vermont's Medicare Hospital readmission, in comparison, is 14.4 percent [87, 88]. John Wennberg and colleagues conclude in a recent article that inpatient visits during the last two years of life may account for more than half of regional differences in health care spending, a common proxy for waste [88].

The overuse of diagnostic tests is also well-documented. Studies suggest that 16 percent of hematocrit and 26 percent of complete blood count (CBC) tests are unnecessary [89]. There is a particularly large amount of waste resulting from overuse of expensive imaging tests [90]. As many as 30 percent of imaging tests may be unnecessary [91]. Other diagnostic tests show similar overuse rates [92-97]. There is also evidence of surgical overuse in the U.S. health care system. As much as 40 percent of repeat cesarean section deliveries may be performed unnecessarily [98]. Similarly, 15 percent of appendectomies are performed on patients without clinical indication of appendicitis [99].

On average, analysis of variation and utilization in Vermont suggests that the state performs better than its neighbors in many areas of potentially overused care. The Tri-State Variation in Health Services Utilization and Expenditures in Northern New England found that Vermont had lower rates of emergency department use, inpatient admissions and readmissions and advanced imagery compared to both New Hampshire and Maine [100]. However, large levels of variations exist within the state. For example, while there was a greater than 2-fold variation in rates of CT scans across health services in all three states (from a high in Caribou, ME to a low in Brattleboro, VT) the variation within Vermont was 1.7-fold. Similarly, there was both a 1.6-fold variation both within Vermont and across the entire three states for inpatient admissions. So while Vermont may have lower overall rates of and generally lower levels of variation, the evidence suggests significant levels of waste and overuse.

This is not surprising given the highly fragmented nature of health service delivery in Vermont. Most practices in Vermont are very small, with one or two physicians per practice. Added to this, there is little integration among primary care providers. Similarly, the hospital system in Vermont is comprised primarily of small community hospitals, each covering a distinct geographic area with minimal local competition. Finally, there is little integration across levels of service delivery in the state (i.e. between primary care providers, specialists and hospitals) [101]. Vermonters have long recognized the problems posed by fragmentation [102]. Indeed, health care reform efforts in the state in 1994 and 2006 attempted to address the issue and push Vermont's health system toward more integrated service delivery [41, 103]. However, these efforts were incomplete. Our analysis suggests that if all health services areas had spending patterns identical to the lowest use areas – where services are the most integrated in the state in Burlington – the average per person spending in Vermont for the commercial population would drop 10 percent (see below discussion of Fletcher Allen Health Care as an integrated delivery system).

Integrated delivery systems (IDS) are one potential mechanism to deal with the waste derived from operational and clinical services. An IDS is defined as a health care organization that owns hospitals, physician practices, and perhaps even an insurance plan, which aligns financial incentives across the organization and uses team-based health care [104]. Despite these common characteristics, there is no universal consensus of what exactly constitutes an IDS, even among

managers of IDS organizations themselves [105]. However, organizations such as Kaiser Permanente, Mayo Clinic, Cleveland Clinic, Geisinger Health System, Intermountain Healthcare, and Group Health Care Cooperative are widely recognized as IDS.

The financial benefit of an IDS arises from savings from quality improvements and efficiency made possible by centralized organization [104]. There are many examples in the published literature of savings arising from IDS efficiencies and innovations which support these claims (see for example McCarthy and Mueller 2009)[106, 107]. Baicker and Chandra (2009) cite savings from better prevention, lower readmission rates, greater compliance with medications and incentives to avoid unnecessary procedures resulting from integration of service delivery [106, 107]. However, many innovations tend to focus on specific care innovations rather than comparison of IDS versus non-IDS organizations. It is therefore difficult to separate the savings arising from specific innovations (such as care coordination or disease management of diabetes) from the IDS specific savings. For example, a large observational study of Medicare patients treated by physicians in 22 different health care markets found that physicians working in large multispecialty group practices (including IDS) had 3.6 percent lower costs per patient on average (\$272 per patient). Physicians in large multispecialty group practices also tended to have higher scores on quality of care measures despite lower average costs.

A 2009 analysis of fifteen organized health care delivery systems demonstrated that many IDS have achieved significant savings and quality improvement [106]. The diversity of IDS innovations ranged from disease management programs, to primary care-oriented prevention, to telephone based follow-up, and many others. Despite these innovations, there was some ambiguity in the findings with regard to overall cost across service categories. Compared to the national average, risk-adjusted Medicare spending in the last 2 years of life at the 15 IDS ranged from 0.83 to 1.60 times the national average. Four of the IDS had lower Medicare spending than the national average, while 6 IDS did not have significantly different Medicare spending in the last 2 years of life than the national average. This indicates that while some IDS do achieve significant savings, potential savings from expensive end-of-life care are difficult to derive. Factors specific to individual IDS may explain these different patterns of expenditure; however, published analysis of these factors is not readily available. These findings highlight the potential need for focused attention on these high cost services that do not reap the savings benefits derived from IDS.

In contrast to these findings other authors find that chronically ill patients receiving care in 14 integrated delivery systems used fewer physicians in the last 24 months of life than chronically ill Medicare patients across the US [108, 109]. Furthermore, patients in integrated delivery spent 18 percent fewer days in the hospital and 34 percent fewer days in the ICU in the last 24 months of life as compared to their national counterparts. As a result, physician and hospital spending for patients in IDS were 24 percent and 2 percent less than non-IDS settings. Added to these findings, a 2004 meta analysis found that prepaid group practices, which are generally thought of as integrated delivery systems, had approximately 25 percent lower costs than health plans did not utilize integrated delivery system providers [110].

For example, Genesys Health System in Michigan re-designed its model of care around the Institute for Healthcare Improvement's (IHI) Triple Aim of i) improving population health; ii) enhancing the patient experience of care; and iii) reducing or controlling the cost of care [111]. Genesys pursued the Triple Aim by engaging primary care physicians in a physician-hospital organization to emphasize care coordination, community-based health promotion, integrated patient self-

management support, and lower hospital bed utilization. Between 2004 and 2007, Genesys provided health care at 26 percent lower cost than its competitors, which was attributed to fewer inpatient admissions and re-admissions, and fewer hospital days per inpatient admission [112].

Partners HealthCare System in Massachusetts introduced pay-for-performance rewards for quality of care in its Community Healthcare (PCHI) networks [113]. Quality measures for diabetes care for adults and asthma care for children increased significantly over 2 years, as compared to the average quality improvement across the state and within PCHI which did not implement pay-for-performance. Researchers have posited that the causal chain between IDS and quality of care is due to strong physician leadership, conducive organizational culture, clear and shared aims, good governance, accountability and transparency, selection and workforce planning, and patient-centered teamwork [108].

Health information technology. Health information technology (HIT) is an important facilitating technology that allows IDS to monitor performance and realize savings. For example, Denver Health introduced a computerized physician order entry (CPOE) system and consequently reduced the time required to fill medication orders by 85 percent. The introduction of an online patient portal by Geisinger Health System was associated with 5,000 fewer patient telephone calls per month. HealthPartners introduced generic prescribing processes in its electronic health record (EHR), leading to an increase in generic prescribing from 45 percent in 2002 to 72 percent in 2007. Each percentage increase in generic prescribing was associated with \$1 million in savings. Kaiser Permanente saw its physician visit rate decrease 26 percent after implementation of its EHR, with an offsetting increase in telephone visits and secure messaging with patients [106].

The impressive efficiencies and savings made possible through the implementation and use of HIT must be considered alongside the significant capital and labor costs of implementing and operating HIT. In 2008, the CBO estimated that installing electronic medical records cost, on a per physician basis, between \$25,000 to \$45,000 per physician and \$3 million to \$7.9 million per hospitals, for 250 and 500-bed facilities respectively [114]. These costs are substantial and none the less, vital for effective integration of the delivery system.

However, Vermont has shown itself to be successful in creating a comprehensive plan for HIT and health information exchange in the state, as well as capitalizing on federal and state funding sources to build this capacity. As discussed in Section 2E: Constraint: Provider Human Resources and Health Care Facilities Infrastructure, Funding for Vermont's HIT system comes from the Health IT Fund of 2008, in which a fee of 2/10ths of one percent imposed on all health insurance claims is paid to the state to support HIT and HIE grants. The Fund will be available through 2015, matching funding from federal resources allocated to health information technology. Vermont will build on its HIT-HIE network with funds from the HITECH Act and other components of the American Recovery & Reinvestment Act (ARRA), as well as the PPACA [46]. HITECH provides incentives of up to \$44,000 per physician to implement EHR systems.

An important part of Vermont's HIT network is the Vermont Information Technology Leaders (VITL), a non-profit organization funded by the state that is in charge of a statewide Health Information Exchange (HIE). Representatives from the Governor and the General Assembly sit on VITL's Board. Currently, the Vermont Blueprint for Health IT infrastructure runs on the Vermont HIE Network (VHIEN), operated by VITL. In the future, VHIEN will be expanded to include a more far-reaching exchange of information [46].

On a physician level, the current state of EHR adoption is not widespread; only about 20-25 percent of private physicians have any form of EHR. However, Fletcher Allen Health Care recently extended their EPIC system to their primary care and specialty network, and the statewide adoption rate is expected to rise significantly over the next several years. All other hospitals are also upgrading their systems and offering their EHR systems to their physician network [46].

Fletcher Allen as an IDS. Estimating the potential savings from moving to an integrated delivery system in Vermont is difficult. However, it may be possible to approximate savings based on Vermont data using regional variation in age-adjusted spending largely owing to the dominant presence of Fletcher Allen Health Care (FAHC) in the Burlington health services area (HSA). FAHC satisfies the definition of an IDS proposed by Merlis [104] because it integrates hospitals and physician practices – all the way up to the governance structure on the board – and has aligned financial incentives across the organization, and provides team-based care through its Community Care Team for example [115].

The Tri-State Report cited above suggests that Fletcher Allen Health Care is significantly more efficient than other health care providers in Maine, New Hampshire and Vermont [116]. Across the Tri-State area, Burlington had the lowest rate of hospitalization for ambulatory care sensitive conditions (1.96 per 1,000 members); the lowest rate of outpatient emergency department visits (125 per 1,000 members); the lowest rate of potentially avoidable outpatient ED visits (16.1 per 1,000 members); and among the lowest rates of re-admission (3.38 per 1,000 members) in the state. Burlington HSA had a higher rate of office/clinic visits than most areas in Vermont (4,799 per 1,000 members), but this was associated with a significantly lower rate of avoidable ED use by members, suggesting that office visits helped prevent unnecessary ED care. These facts explain why age-adjusted expenditures for Burlington HSA were the lowest of any Vermont HSA.

Table 4. Age-Adjusted Variations in Health Spending by Vermont Hospital Service Area in 2008.

	Age-Adjusted PMPM (2008)	Age-Adjusted/ Crude	Age-Adjusted PMPM Rank
Barre	\$331.75	99.4%	6
Burlington	\$315.40	105.1%	1
Morrisville	\$323.32	97.3%	3
Randolph	\$348.71	95.5%	8
Newport	\$375.75	95.0%	11
St. Johnsbury	\$345.73	96.2%	7
St. Albans	\$327.84	102.2%	5
Middlebury	\$326.97	99.0%	4
Rutland	\$381.48	96.8%	13
Bennington	\$374.46	97.3%	10

Springfield	\$351.42	95.2%	9
White River Jct	\$381.01	97.0%	12
Brattleboro	\$323.08	95.0%	2
State Average	\$339.04	100.0%	-

Source: Vermont Department of Banking, Insurance, Securities and Health Care Administration (BISHCA); Vermont Healthcare Claims Uniform Reporting and Evaluation System (VHCURES).

Our analysis further suggests that if all health service areas in Vermont were to show similar levels of spending and utilization, the average private spending would drop 10 percent.

These conclusions are also supported by the Dartmouth Atlas project data for Medicare insured patients over 65 years, as referenced above. Medicare expenditures in the Burlington HSA were \$6,712 in 2007 compared with the Vermont state average of \$7,350. The Hospital Care Intensity rating, a composite measuring the amount of time spent in hospital and the intensity of physician services provided in hospital to Medicare members, was in the 23rd percentile for Fletcher Allen compared with hospitals nationally. This was significantly lower than the Burlington Hospital Referral Region (HRR) average of the 32nd percentile of Hospital Care Intensity [117]. These figures for both commercially insured and Medicare patients demonstrate that Fletcher Allen has achieved significant savings through system efficiencies by doing things such as preventing avoidable inpatient admissions and Emergency Department utilization.

Integration in Vermont: from Medical Homes to ACOs. Vermont has already begun a process to integrate service delivery in the state in order to improve quality of health care and lower its cost. In 2006, Vermont passed legislation that moved forward the Blueprint for Health. The Blueprint outlines a model for integration that has three components: (i) a foundation of patient centered medical homes (PCMHs) intended to provide comprehensive, coordinated primary and ambulatory care with a whole-person orientation, (ii) community health teams (CHTs) comprised of multi-disciplinary professionals intended to engage the general population with preventive health practices, and (iii) a statewide HIT infrastructure that includes an electronic medical record system, for improved patient management and policy evaluation [118]. All payers in Vermont have agreed to help share the costs of the both the CHTs and enhanced payments to primary care practices.

PCMHs have received increased attention nationwide, and are seen by many as a way to increase the quality of health care while reducing costs [119]. The Blueprint PCMH model places emphasis on the provision of high quality primary care. Further, the Blueprint identifies the CHT as a mechanism for coordinating care between primary providers, specialists and hospitals. This coordination is meant to minimize duplication of services, as well as increase the quality of care across a continuum of services. CHTs are empowered to promote preventive care in the hopes that this will reduce the need for future service utilization.

An important aspect of the Blueprint for Health is the proposed implementation of a robust information technology infrastructure. There are two primary goals of this infrastructure. First, the infrastructure should support the work of CHTs in coordinating clinical services across levels of the health system. This requires an electronic medical record system with up-to-date patient information accessible by all health care providers in the state. Second, the infrastructure should

ensure appropriate health information is available to support social, economic, public health and other service planning [118]. This requires a centralized registry of aggregate data on various types of measures, including clinical and administrative data.

Today, there are Blueprint pilots in three locations covering 10 percent of the state population. This initiative has met with enthusiastic support from most Vermont stakeholders, though its impact on the quality and efficiency of health service delivery remains to be thoroughly evaluated. The 2010 Blueprint Annual Report presented initial total spending trends from two pilot sites and found a 12 reduction in spending at one site (not including cost of CHTs and enhanced payments to primary care providers), but no change at the other [120].

National evidence over the level of cost-savings that can be achieved with PCHM also varies widely with some studies finding no discernable effect and other showing savings of up to 20 percent. For example, a quasi-experimental PCMH pilot at Group Health Cooperative, an integrated delivery system in Washington State, demonstrated \$10 per member per month (PMPM) savings versus usual care over 21 months, or about 2 percent of total expenditures. However this difference was not statistically significant. The difference was due to decreased ER utilization (\$4 saving PMPM) and inpatient admissions (\$14 saving PMPM). Savings were partially offset by higher primary care costs (\$1.60 PMPM) and specialty care costs (\$5.80 PMPM)[121].

In higher risk and higher spending populations, such as Medicare and Medicaid, however, pilots do find savings, though few have been observed under the more rigorous experimental designs of the Group Health Cooperative study above. For example, Geisinger Health System, another IDS in Pennsylvania, introduced a PCMH pilot among its Medicare beneficiaries in 2006-2007 and demonstrated 4-7 percent savings per-member per-month versus usual care [122]. Geisinger's savings were due to a 20 percent decrease in hospital admissions and 29 percent lower hospital re-admission rates in the PCMH pilot versus usual care for Medicare beneficiaries. A sub-group analysis of diabetic patients demonstrated a \$100 per-member per-month savings from the PCMH versus usual care. However, generalizing these findings to an entire population is difficult.

In another study, forty-nine separate John Hopkins & Kaiser Permanente physician practices participated in a randomized controlled trial of 'Guided Care', a PCMH-like model of primary care using physician-nurse teams. This PCMH trial was conducted among patients with multiple medical conditions aged at least 65 who were expected to be high medical users. This trial achieved average savings of \$113 PMPM, due to 24 percent fewer hospital days, 15 percent fewer ER visits, and 37 percent fewer skilled nursing facility days. However these results were not statistically significant due to the small scale (900 patients) and short duration (8 months) of the trial [123].

A much larger state-wide PCMH project in North Carolina has demonstrated significant PCMH savings. Community Care of North Carolina (CCNC) has implemented a PCMH program covering 760,000 Medicaid patients in North Carolina across 14 networks and 3,000 physicians [124]. Because the CCNC PCMH covers a large majority of Medicaid patients, the savings estimated from the PCMH were calculated against estimated costs of usual care based on historical growth, not against usual care occurring at the same time. As compared to historical trends in the cost of usual care, the CCNC's PCMH achieved savings of \$29 PMPM, saving the state \$230 million in 2005, though again it may be difficult to generalize these findings to a commercial population elsewhere in the US. These savings were due to a significant reduction in inpatient costs (\$20 PMPM), primary care & specialist care (\$5.62), ER costs (\$2.50 PMPM), and outpatient costs (\$3.74)[125].

Recent analysis of these PCMH pilots have identified critical factors for success [126]: (i) dedicated care managers; (ii) expanded access to care; (iii) performance management tools; and (iv) effective incentive payments. Each of the PCMH trials outlined above, as well as others outlined in a recent report incorporates elements of the PCMH, such as nurses within the primary care team, care coordination, health information technology, incentive payments, or some combination of these elements [127]. However the lack of consistency of design or measurement across these PCMH pilots makes it difficult to separate the savings generated by any one of these elements in the PCMH. Notwithstanding the common elements within each PCMH pilot, the different duration of the PCMH pilots, different scale (number of patients or physicians) in each pilot and differences in the measurement of outcomes in each of these PCMH trials make it difficult to draw precise conclusions about savings from the PCMH model at present.

There are also some studies that examine potential quality improvements resulting from PCMHs. Evidence from two recent evaluations of PCMHs operating in states across the US suggests that the adoption of the PCMH model leads to higher quality of care [128, 129]. The Group Health PCMH pilot reported that 4 percent more of its PCMH pilot patients met quality goals after 12 months than usual care patients. Geisinger PCMH patients experienced significantly better preventive care and diabetes care compared to usual care. Diabetes quality measures improved by 15 percent in the Community Care of North Carolina PCMH. Intermountain Healthcare of Utah's PCMH pilot reported an absolute reduction in 2 year mortality of 3.4 percent compared with usual care among patients aged at least 65 years [129]. Many other PCMH trials report improved process and outcome measures of quality. It is difficult to compare which PCMH design elements are critical to improved quality due to the difference in design and measurement of these PCMH pilot studies.

The Medical Home model, however promising, may not be able to achieve savings from the full integration of across the continuum of care. Firstly, the system remains largely based on fee-for-service payments, which reward volume of care, especially outside the primary care practice. Furthermore, there are no financial incentives for other providers – specialists or hospitals - to share information, improve coordination, or become part of the decision making process for patients. The Accountable Care Organization (ACO) is an emerging model for expanding the scope of integration and providing incentives for all providers to integrate service delivery and provide the most efficient and effective care and reduce clinical waste [78]. Like the Medical Home Model, the ACO is an organization form intended to create incentives for integrating service delivery. The ACO model will be further addressed as we detail proposed payments to providers (Section 6E) and Implementation issues (Section 9B).

As discussed, numerous studies have found high degrees of waste of health care expenditure due to misuse and overuse of health services. Estimates of this waste range from 15 percent to 30 percent of total health expenditure in the US. By continuing to move towards an integrated delivery system, Vermont would be able to reduce a large amount of this waste in its health care system. The continued expansion of the Blueprint along with the implementation of ACOs would create an organization that would take responsibility to deliver high quality health care by integrating all levels of health services, from preventative care to convalescing services to rehabilitation. In doing so, the quality of health care would be enhanced through providing continuity of care, avoiding complications from toxicity of multiple drug interactions, and improving the coordination of physicians' services. These actions would reduce the duplication of tests and overuse of certain drugs and services. Additionally, there would be an organization to monitor whether physicians use the most cost-effective health care available to their patients.

In making our estimates, we assume that if ACOs perform these roles effectively there would be an overall savings of 10 percent of total health care expenditure between 2015 and 2024 in Vermont. We use a conservative estimate as a result of potential implementation challenges and outliers in the system.

VI. SAVINGS FROM MEDICAL MALPRACTICE REFORM

Tort reform related to medical malpractice is a controversial element of health reform. However, evidence suggests the current US malpractice system does not efficiently achieve its social goals and that reforming the medical malpractice system could result in small though measurable savings for Vermont, especially if comprehensive reform is undertaken. Perhaps more importantly, changes in the liability landscape may be a necessary precursor for the payment and delivery system changes that require providers to accept more risk for the costs of medical care under an ACO type of delivery. In this section, we provide background on medical malpractice in the US and Vermont, and present recommendations drawn largely from international experiences for reform efforts and the resulting potential savings.

The Current Medical Malpractice System

Under the US system a tort is a civil wrong, of which medical malpractice is one of many. To prove medical malpractice, a claimant must show that the plaintiff experienced an injury because the practitioner's actions were negligent under the law, and that said negligence was the cause of the injury. To prove that care did not meet acceptable standards, and was thus negligent, malpractice cases require extensive discovery and testimony by costly expert witnesses. On average, malpractice claims are settled in five years, from initial claim to award determination [130].

The social goals of any medical malpractice system are two-fold: (i) to provide an incentive to deter unsafe medical practices and; (ii) to compensate persons injured by malpractice. The system should be administratively efficient so that these two primary goals are achieved with minimum expense. In theory, the current malpractice system should provide an efficient means to compensate negligent injuries. Once a patient decides to sue, attorneys act as the system's gatekeepers and must navigate claims through the judicial system [131-133]. Most medical malpractice litigators are compensated on a contingency-fee basis such that they receive about 35 percent of any damages award and nothing if they do not prevail. For this reason, attorneys must weigh the size and likelihood of an award against the lawsuit's potential costs when deciding whether to take a given case. In theory, this produces an efficient system in which attorneys litigate the most egregious claims and courts provide redress for victims of medical negligence, while deterring future instances of sub-standard care with the threat of economic penalties. At the same time, medical malpractice insurance protects providers against the threat of bankruptcy while providing a source of compensation for victims [130]. If a claimant proves negligence, the court can award economic and non-economic damages. Economic damages compensate a claimant for lost wages and medical care costs and other costs that are generally fairly simple to calculate. Non-economic damages compensate plaintiffs for pain, suffering, and other non-financial losses.

However, evidence suggests that the U.S. medical malpractice system does not effectively achieve its social goals. Recently, researchers used a physician review of over 1500 randomly-selected closed malpractice claims to determine the system's ability to compensate negligent injury, while denying claims that caused injury without error [134]. They found that the system differentiates

with reasonable acuity, such that 73 percent of claims producing injury due to error were compensated, while only 28 percent of claims without error were compensated. In addition, compensated claims that did not involve error (as judged by physician review) received awards that were 40 percent less in value than those with error. Although attorneys have strong incentives to only adjudicate worthy claims, their incentives are not completely aligned with the system's social goals. For example, after a 10-year HMPS follow-up, it was found that the most important predictor of claim payment was the plaintiff's degree of disability, not the presence of negligence [135]. Because of attorneys' skewed incentives, asymmetric information, and their imperfect ability to judge medical error, a full 37 percent of paid claims did not involve error and 3 percent of claims did not even involve injury. The system also raises equity concerns since poor and elderly malpractice victims are less likely to sue [136]. As regards to overall cost, 78 percent of administrative expenses were found to cover claims involving errors, meaning that there is some, but not an egregious amount of frivolous litigation clogging the system. Researchers also found that for every dollar spent on compensation, 54 cents were used to pay administrative expenses, leading them to conclude that the "overhead costs of malpractice litigation are exorbitant" [134].

Costs of Medical Malpractice

The Congressional Budget Office (CBO) estimates that in 2009 health providers spent approximately \$35 billion or about 2 percent of total U.S. health expenditure on direct malpractice-related costs, including premiums, settlements, awards, and administrative costs [137]. Another more recent and transparent calculation of the total direct and indirect costs of the medical liability system lead by Michelle Mello at Harvard University concluded that the system cost \$55.6 billion or 2.4 percent of total health care spending in 2008 [138].

Mello and her colleagues estimated that 80 percent, or \$45.6 billion of that total cost is attributable to so-called defensive medicine [138]. Defensive medicine refers to situations where provider actions are influenced by a desire to avoid possible malpractice claims. In such situations, providers may be induced to order marginally useful tests to cover themselves, or may refuse to care for risky patients. The concept of defensive medicine has been discussed in academic, governmental, and popular press since the 1970, but it was a landmark 1994 study from the US Congressional Office of Technology Assessment (OTA) that first truly defined it. The report defined defensive medicine as "the ordering of tests, procedures, and visits, or avoidance of certain procedures or patients, due to concern about malpractice liability risk." [139] Further, the OTA defines any over-utilization of resources in the face of defensive medicine as "positive," and any evasion as "negative" defensive medicine.

The extent and true cost of defensive medicine are notoriously difficult to quantify. Mello and her team noted the poor quality of data available to them to estimate the effects. For example, the American Medical Association, based on a 1996 study of heart surgery by Kessler and McClellan [140], estimates that tort reforms could save 5 to 9 percent of total health by expenditures through a reduction in defensive medicine. Surveys of doctors give additional insight to the prevalence of medical malpractice. For example, a 2009 survey estimated that 91 percent of the 1213 physicians surveyed ordered more tests and procedures than were necessary for their patients to protect themselves from malpractice suits [141]. In 2008, an additional survey of physicians found that between 60 and 78 percent of 4,720 physicians reported ordering additional tests or consultations as a result of malpractice fears, concern over malpractice suits, or an increased reliance on technology because of malpractice fears [142]. In 2008 the Massachusetts

Medical Society conducted an extensive survey of eight subspecialties and monetized their results, finding that defensive medicine represented \$1.4 billion in the state or about 3 percent of total health spending for just these specialties, which represents just 46 percent of doctors in the state [143].

Medical Malpractice in Vermont

Medical malpractice liability insurance premiums are proportionally low in Vermont. In 2004, Vermont's total medical malpractice liability insurance premiums paid were \$25.6 million, representing less than 1 percent of total health expenditures [144]. Malpractice premium rates in Vermont recorded the lowest increase of any state from 1993 to 2001, when rates declined about 30 percent [145]. From 2002-2004 however, approved rate increases totaled 50 percent and 80 percent for the two largest malpractice insurers respectively and overall rates increased between 33 percent and 94 percent depending on specialty and company.²² Even with these increases, Vermont medical malpractice rates remain among the lowest in New England and the nation [144]. Because of recent premium increases, Vermont's legislature created the Vermont Medical Malpractice Study Committee (VMMSC) to investigate medical malpractice issues and their impact on medical care provision. However, the VMMSC found no evidence to substantiate anecdotal claims of provider flight and the number of physicians in Vermont has remained stable. Further, a review of closed medical claims found no discernible trend in claim frequency or severity[144]. Since claim severity and quantity have not been increasing in Vermont, the VMMSC attributes the premium hikes to investment losses and the fact that rates had been set too low in the 1990s because of competition from companies that subsequently withdrew from Vermont or went bankrupt. The VMMSC's actuarial consultant concluded that, because of Vermont's already low malpractice rates, a popular tort reform of capping non-economic damages at \$250,000 would produce a 5.7 percent premium reduction [144], as opposed to a 10 percent national decrease assumed by the CBO [137].

Vermont's low medical malpractice liability status is highlighted by its mean and median malpractice awards of \$137,444 and \$80,000 respectively, ranking the state 48th overall in 2003. These rates are compared with the national mean and median of almost \$300,000 and \$160,000, respectively, nationwide. On average, of the 75 medical malpractice cases filed annually from 1996-2004, 30 received an award, constituting a 40 percent claim acceptance rate (VMMSC report, tables 1.2 and 1.5, 2005).[144] In contrast to the U.S. average of five years, the average time between reporting and settling claims in Vermont is two years [144].

Medical Malpractice Reform

Potential reform options can be split into two categories: conventional tort reform and comprehensive, system-wide reform [134]. The most common components of the former include shortening statutes of limitations, capping non-economic damages, and eliminating joint-and-

²² The Vermont medical malpractice market is very concentrated with two physician-owned companies representing 63% of the market as of 2003, Medical Mutual Insurance Company of Maine and ProSelect, while the top five insurers represented 86%. Specific to Vermont, large market fluctuations have occurred since 2001, when St. Paul Insurance withdrew from Vermont and the Phico Insurance Company went bankrupt. In 1995, these two companies represented 70% of written premiums and 25% in 2001. Tables 3 and 4 show premium changes by insurance company and specialty during the "soft" (1996-2001) and "hard" market periods (2001-2005).

several liability. System-wide reforms include implementing no-fault compensation, using specialized medical courts to adjudicate malpractice claims, creating a fault-based administrative system, or shifting from individual to organizational or enterprise liability.

There is relatively little evidence supporting the assertion that traditional tort reform could produce significant reductions in healthcare spending, despite physicians' frequent claims otherwise [146, 147]. The CBO's most recent estimates of the impact of national tort reform are based on a conventional reform package that includes capping awards for non-economic damages at \$250,000, caps on awards for punitive damages of \$500,000 and limited statutes of limitations [137]. The CBO found that this package of reforms would reduce national medical liability insurance premiums by 10 percent. Given their estimate that the direct costs of medical liability are 2 percent of health expenditures, the CBO estimates this type of tort reform would reduce U.S. health expenditure by 0.2 percent, attributable to lower direct costs for medical liability. As a result of recent research on the impact of positive defensive medicine on medical expenditure, the CBO also reports that an additional decrease of 0.3 percent in national health expenditure attributed to reduced defensive medical care would occur with this tort reform package.²³ Researchers produced similar estimates of the impact of tort reform derived using different data sources and time periods. The estimated range of savings derived from a 10 percent decrease in malpractice premiums is 0.13 percent to 1.2 percent of total healthcare expenditures [145, 148, 149].

Alternatively, Vermont could replace its current civil malpractice tort system with a no-fault compensation system for providers. In discussing a move to a no-fault compensation system, we use the model of New Zealand, with reference to comparable models in Scandinavia, to provide a background on the system and evidence on its potential impact in Vermont.

In New Zealand, the Accident Compensation Corporation (ACC) adjudicates all injury claims and administers the country's no-fault compensation system. In 2008, the ACC's operating costs equaled 12 percent of claims [150, 151]. Claim payments required by the ACC are, on average, less than US \$30,000. Physician indemnity insurance costs less than US\$1,000 per year for all specialties in 2005 [150]. The ACC model provides redress through a fixed award schedule intended to ensure that claimants with similar disabilities receive similar awards [150]. Awards are comprised of four compensation categories: 1) treatment and rehabilitation costs, 2) earnings reimbursement (up to 80 percent of a claimant's lost earnings at the time of injury up until a set maximum), 3) a lump-sum payment of up to \$70,000 for permanent impairment, and 4) support for dependents. The fact that New Zealand already provides free medical care also reduces the cost of awards because, unlike the US, this component of compensation is not at issue. The no-fault system also allows New Zealand to focus on reducing rehabilitation and return-to-work times. Recent reforms have improved public perception of the system, as 60 percent of respondents now view the ACC with confidence, up from 42 percent in December 2005 [151].

As of 2005, New Zealand replaced the term "compensable medical injury" with "treatment injury." A treatment injury includes all personal injuries occurring during medical treatment, irrespective of whether negligence was involved, creating a no-fault medical liability system. To prove treatment

²³ These national estimates are not directly applicable to Vermont because they account for the fact that many states have enacted some of the proposed reforms. In addition, these estimates include federal revenue increases (from lower health costs producing higher taxable wages) as part of the reform package's budget impact.

injury, a causal link between treatment and injury must be shown, while injuries that are a “necessary part” of treatment are not covered. This change was made partially because of research which showed that even with an easy claims process, only about 3.3 percent of potentially compensable events resulted in successful awards. This number cannot be directly compared to the U.S. rate of 3 percent, since this refers to the percentage of adverse, negligent events that result in *claims*; however the New Zealand number refers to the percentage of all potentially compensable *adverse events* that receive payment. Moreover, the same study reviewed hospital records in New Zealand and showed that about 2 percent of admissions were associated with an adverse event potentially compensable by the ACC [152]. Although an appropriate comparison would adjust for differences in case-mix, patient severity, and technology change, this compares favorably to the U.S. adverse-events rate of 3.7 percent mentioned above. Since the 2005 reform, medical claims to the ACC have increased as hoped from an average of 2,000 per year to over 5,000 in 2008. The system has historically compensated about 40 percent of claims²⁴[150]. Assuming pre-reform per claims costs of about US\$30,000 and a 40 percent acceptance rate, claims costs would have jumped to US \$61 million per year in 2008 or about 0.4 percent of New Zealand's total health expenditure[153], comparing favorably to U.S. malpractice costs of about 2 percent of total health spending.²⁵

Another interesting aspect of New Zealand's system is the creation of a separate process for patients seeking non-monetary remedies for injuries they perceive were caused by medical treatment. A government official called the Health and Disability Commissioner (HDC) receives complaints from patients and attempts to resolve them using advocacy, mediation/investigation and disseminates the findings to improve care quality [154].

In addition to New Zealand, all Scandinavian nations also operate some form of no-fault medical-error compensation system. The Scandinavian nations have similarly short waiting times to claims resolution as New Zealand and allow the patient a right to a jury trial after two appeals.

The VMMSC report reviewed the possibility of changing Vermont's malpractice system to no-fault compensation. The VMMSC voted 6 to 1 against creating a fixed-compensation medical malpractice scheme based on pre-set amounts, with only the Vermont Medical Society dissenting. Although this vote is not surprising given that three of the Commission's members were affiliated with the insurance industry, the report identifies five concerns with comprehensive reform- (i) constitutional and moral limitations on the right to a jury trial; (ii) types of coverage offered by the system; (iii) how compensation schedules would be created; (iv) ways to avoid biased relationships between system participants; and (v) how to ensure the system improves patient safety.

The New Zealand and Scandinavian models will be helpful in addressing these questions [155]. Any shift from a negligence-based malpractice system should include a strong patient safety component

²⁴ Data on average claim compensation since the recent reform in New Zealand is not available yet.

²⁵ More recent cost information was not available. ACC funding for treatment of injuries caused by the medical system comes from earnings taxes and general taxation. Previous to 1999, the system operated in a “pay-as-you-go” framework, meaning that enough levies were collected each year to cover annual claim costs. Given that some claims require payments for 30 years or more, this arrangement meant that future levy payers would cover current injury claims. As of 1999, the system is now required to be fully-funded, meaning that enough funds are collected each year to compensate the full lifetime costs of every claim that occurs in that year (ACC website, <http://www.acc.co.nz/about-acc/overview-of-acc/WPC088749>, Accessed 12/3/2010).

to maximize quality improvement. This system should include mandatory data collection by hospitals on inpatient adverse events with annual reviews to identify the specialties and locations where the incidence of adverse events is highest. The Danish system, which compensates individuals if their care does not meet the standard of an experienced specialist, seems to produce the greatest benefits in patient safety [155]. Other lessons are that neutral and experienced medical experts must be employed and an effective separation between compensation investigations and disciplinary authorities must be maintained. In addition, it should be noted that the difficulties inherent in claims adjudication are far from eliminated in a no-fault system. In the current system, juries must rule on whether medical care caused the injury and whether that care was below standard. In a no-fault system, the difficult question of causality must still be addressed, but not the negligence issue.

Potential Savings

Vermont is a relatively low-cost malpractice state and there are no state-specific studies estimating the prevalence and cost of defensive medicine. From literature and national experience, we estimate that conventional reforms such as capping non-economic damages would result in at most an overall decline of 0.6 percent in overall healthcare spending.

For several reasons implementing piecemeal reform does not represent a particularly palatable option for improving Vermont's health system. Incremental reform efforts would not create a large impact due to the persistence of high administrative costs associated with each stage of claims processing. Tort reform also does not alter the current premium setting system which aligns premium rates with investment returns, and not with Vermont's medical malpractice profile. This premium variance alone, apart from premium levels, reduces physician welfare and system effectiveness. Moreover, attorneys are incentivized to accept claims that will produce large awards or have the highest likelihood of receiving payment, instead of cases caused by the highest level of negligence and led to the most severe injuries. Meanwhile, recent evidence using a nationally-representative survey of about 4,700 doctors found that physicians in states with tort-reform report similar levels of concern about malpractice lawsuits and use of defensive medicine as their counterparts in states without reforms [142]. The fact that traditional liability reform does not alter the perceived threat to physicians could put in jeopardy not only savings from defensive medicine but also the practice pattern changes that are a necessary part of the savings from moving to an integrated delivery system.

We recommend that comprehensive reform of Vermont's medical malpractice liability system include a no-fault compensation system that would shift from attempting to prove negligence to a broader determination on whether an injury could have been avoided.²⁶ Dedicated judges and independent medical experts would be used to make compensation determinations. In addition, the system could include a separate, non-compensatory track for individuals interested in non-

²⁶ No-fault medical reimbursement is not completely without precedent in the U.S. Created by the National Childhood Vaccine Injury Act of 1986, the National Vaccine Injury Compensation Program (VICP) was established To ensure adequate vaccine supply and provide timely redress to individuals injured by a given vaccine (<http://www.hrsa.gov/vaccinecompensation/>, Accessed 12/1/2010). Virginia and Florida also implemented no-fault compensation funds for birth injury during the 1980s. These changes led to decreases in malpractice premiums for obstetricians and improved insurance access, but the evidence is weak their overall effect.

pecuniary redress for their injuries. One model could be the Veterans' Affairs Administration's "Sorry Works!" program. The program includes an expression of apology, disclosure and possible fair compensation [144].

Estimates on how comprehensive reform will affect direct and indirect costs of the malpractice system will be necessarily approximate. By shifting to a no-fault insurance system, legal and administrative fees would dramatically decline. We assume that these savings would be channeled into paying the increases in benefits for individuals submitting claims. An additional channel should be created where people are able to appeal the decision of expert administrative body. Furthermore, individuals who experience major losses or damages would be able to sue providers for additional compensation. Under this system, the already relatively low premium rates in Vermont would not decrease. However, these costs would be shifted to additional benefits, rather than to discovery and legal costs, as well as paying for the expert administrative body.

Evidence indicates that moving to a no-fault system would achieve the malpractice system's goals both more effectively and equitably. It would furthermore achieve these goals more quickly and with lower administrative costs, all while eliminating malpractice premium variability. The savings would stem solely from changes to medical practice patterns resulting from reduced defensive medicine. As noted, estimates of defensive medicine vary widely, from 2 percent to 9 percent of total health spending. We use the lower-bound estimate that 2 percent of total health expenditure can be saved through the elimination of defensive medicine practices resulting from a transition to a no-fault insurance system. We use the lower-bound due to uncertainties surrounding implementation and the resulting impact.

B. ESTIMATION OF COSTS

This section gives detailed explanations of the cost estimates we used as the inputs for the economic models used to estimate the impact of reforms.

Premium validation

In order to ensure that current insurance costs are properly reflected in the Gruber Microsimulation Model (See Section 4C: GMSIM), it was necessary to validate the accuracy of the premium levels used by the model. GMSIM uses ESI premiums from the Vermont sample of the 2009 Medical Expenditure Panel Survey, Insurance Component (MEPS-IC). According to the survey, the average premium for single coverage at Vermont establishments that offer health insurance was \$5,001. This value represents the gross premium, which includes not only paid medical and drug costs but also a “loading” amount representing administrative costs and profits, if any. In Vermont, the average loading for employer-based insurance is approximately 12 percent, according to a 2009 BISHCA report on health plan admin costs [56]. However, MEPS is based on a limited sample of Vermont establishments. In an effort to verify this average premium, our team analyzed data from two other sources: the Vermont Healthcare Claims Uniform Reporting and Evaluation System (VHCURES) provided by BISHCA and Blue Cross Blue Shield of Vermont’s (BCBSVT) group business experience.

VHCURES is a database of all the health insurance eligibility and claims incurred by Vermont residents. It includes data collected from all private health insurers, including third party administrators (TPAs), pharmacy benefits managers (PBMs), and any other businesses providing administrative claims services. Most importantly, VHCURES contains exact dollar amounts paid by the insurer (paid charges) and out-of-pocket for each health care episode recorded. The sum of paid charges and out-of-pocket expenses within each claim represents the total cost of the claim (allowed charges). Under a data agreement with BISHCA, we gained access to a comprehensive set of claims for 2009, provided by its contractor, OnPoint Health Data. Since this dataset includes claims from insurers offering only pharmacy benefits, as well as very small insurers, we excluded these claims from the analysis. We focused only on the six largest insurers – those incurring at least \$25 million in paid claims in 2009. The procedure involved summing up all the paid claims for 2009 and dividing by the total number of members incurring claims recorded in VHCURES. The average gross premium estimated using these data amounts to \$4,670 for people between 18 and 64 years of age. This figure compares reasonably well with the MEPS-IC premium. Of course, some differences are expected considering the nature of the data sources.

In addition, Blue Cross Blue Shield of Vermont kindly provided our team with the costs incurred by its group business, broken down by age and sex. This included both paid and allowed charges for medical care and pharmacy benefits for members covered under BCBSVT and The Vermont Health Plan, a wholly owned subsidiary of BCBSVT. According to these data, the yearly gross premium for members aged 18-64 years was estimated at about \$5,368. This premium is also reasonably close to the premium used by GMSIM, giving us confidence that the microsimulation model accurately represents the true costs of employer-sponsored health insurance in Vermont. The successful verification of consistency among the various sources of premium data also allowed us to confidently perform other estimation analyses using these data, as described below.

Estimation of actuarial ratios

A critical parameter in the design of insurance products is the actuarial ratio (AR), often also referred to as the actuarial value (AV). The actuarial ratio is defined as the percentage of total claims costs that is paid for by insurance (as opposed to out-of-pocket), and is calculated according to the formula $AR = \text{Total paid charges} / \text{Total allowed charges}$. In order to design new benefit packages and estimate their costs, our team first calculated the average actuarial ratio of current benefits in Vermont's private health insurance using the VHCURES dataset provided by BISHCA. This was done by summing up all the paid benefits and allowed charges for claims incurred by the largest six health insurers in Vermont, and then taking the ratio of the two values. An actuarial ratio of 88 percent was calculated separately for medical care benefits, while for pharmacy benefits only the actuarial ratio was estimated at 79 percent. A composite actuarial ratio was also calculated, with a value of approximately 87 percent. Moreover, a distribution of actuarial ratios across all enrollees with incurred claims in 2009 was produced by using the same procedure at an individual level, showing a large variation in 2009. Finally, the composite actuarial ratio in VHCURES was compared to the actuarial ratio of 85 percent estimated from the data provided by BCBS VT, with the two values showing very good consistency.

Although our estimation of actuarial ratios made use of the best sources of data on claims experience in Vermont, we did not have access to comprehensive data on other types of health spending, such as those incurred under a Health Savings Accounts (HSAs) for Flexible Spending Accounts (FSAs). These accounts are widespread in Vermont and have shown considerable growth in recent years as a means for employers to provide pre-tax benefits to their employees. Employees can use these accounts to cover their portion of health care premiums as well as their deductibles. Since the money deposited in these accounts by employers can be used by employees to pay for cost-sharing expenses at the time of incurring a medical claim, our calculations underestimate the actuarial ratio that privately-insured Vermonters actually experience because large portions of their out of pocket spending (as recorded in VHCURES or by BCBSVT) are actually paid by the employer. However, we are unable to determine the magnitude of this underestimation given the lack of a suitable data set. The effect of employer spending for HSAs would also mean that our analysis underestimates employer contributions towards employee health care costs, since the MEPS or VHCURES data do not take into account the amount that employers spend on HSAs.

I. ESTIMATION OF TOTAL HEALTH CARE COSTS UNDER A SINGLE PAYER SYSTEM

We used our understanding of the costs and structure of current benefits in Vermont as a basis for estimating the additional cost of our proposed benefits changes. Since the GMSIM works with individual and family premiums, our initial intention was to estimate individual premium rates for the single payer plans. However, due to the lack of appropriate data, we used an approach based on aggregate values.

First, we assumed that Medicare and Medicaid benefits would continue to be covered at the current level, so current costs for the populations currently enrolled in these programs would remain unchanged. However, the funds dedicated to these programs would be absorbed into the single payer insurance fund if the needed waivers are granted by the Federal Government (see discussion of waivers under Section 6I). Second, the current total health expenditure for the non-elderly privately insured and uninsured was estimated using the 2008 Vermont Health Expenditure Analysis Report [56] at about \$1.7 billion in 2009. This value was used as a baseline cost of coverage for this population under the single payer options, for the benefits that are covered by the

current system and the corresponding out of pocket spending. The analysis thus came down to estimating the additional costs to cover the changes in benefits. These additional costs were broken down into several components reflecting the key aspects of benefits design that our team introduced.

Covering the uninsured. In 2009, Vermont had roughly 47,500 uninsured residents, according to the Vermont Household Health Insurance Survey. We estimated the cost to the state of covering these individuals using the adjusted average gross premiums for the largest six payers from VHCURES, as provided by BISCHA, for the two cases with actuarial ratios of 87 percent for the standard benefits package, and 98 percent for the comprehensive benefits package, respectively. The average premiums for medical and drug spending used for each individual were \$3,735 and \$4,296. These premiums were obtained based on the fact that the uninsured are on average younger and healthier than the insured population. The corresponding adjusting factor was calculated using MEPS survey data. The resulting premiums were multiplied by the total number of uninsured to obtain the total cost of coverage under an standard and comprehensive benefits package, respectively.

Achieving uniform actuarial ratio. As mentioned above, although the average actuarial ratio of Vermont's privately insured residents is 87 percent (not accounting for HSAs), there is an uneven distribution across the population. Thus, while some residents enjoy very generous coverage with minimal cost-sharing, others have actuarial ratios of 50 percent and below. This distribution is largely the result of high deductibles, whereby enrollees pay the full costs of their care under a certain threshold. Under a single payer system these residents would be brought up to an actuarial ratio equal to 87 percent for the standard benefits package, and 98 percent for the comprehensive package. This translates to an additional cost to the insurance fund to cover expenses that would otherwise be paid out-of-pocket.

Using VHCURES data, we computed the value of this cost to about \$26 million for the case with AR=87 percent after accounting for those individuals with current actuarial ratios higher than 87 percent. These individuals would most likely be "carved out" under the single payer reforms and they would purchase supplementary insurance to cover benefits that exceed the actuarial ratio of 87 percent.

To achieve 98 percent actuarial ratio for medical and drug expenses for everyone under the comprehensive benefit package, we have to take into account two effects. The first is a shifting of funding source: the cost of shifting current out-of-pocket expenses to the single payer insurance plan. The second effect is a behavioral: when care is paid for by a third party, beneficiaries use more services than they would have otherwise. This phenomenon is known as demand elasticity. The magnitude of this behavioral change is still subject to some debate. The gold standard for estimating the elasticity of demand in health care is the RAND Health Insurance Experiment [156]. As per the results of the experiment, we assumed a point estimate for elasticity of demand of 20 percent. After accounting for both the shifting in funding source and behavioral effects of better coverage, we obtained an estimated additional cost of \$260 million in 2009.

Covering dental and vision care. Most private insurance plans in Vermont currently cover only limited dental and vision care services. As per Act 128 requirements, our team has designed benefits packages with more generous dental and vision care coverage. Specifically, we have assumed a 60 percent actuarial ratio for dental and vision benefits for the standard benefits

package and a 98 percent actuarial ratio for the comprehensive package, which is equivalent to minimal out-of-pocket cost.

However, there is limited data on the costs of dental and vision care in Vermont. Although our team obtained premium costs from a number of dental plans, as well as vision care experience, we concluded that the data was not representative of the whole Vermont population. Thus we decided to use aggregate values from the Expenditure Analysis Report to estimate the cost of these benefits when covered by insurance. Using this data, we estimated that in 2009 dollars, covering dental care with an actuarial ratio of 60 percent would cost \$158 million while the cost would be \$264 million for an actuarial ratio of 98 percent.

Also based on data from the Expenditure Report, we estimated the cost of vision care. Although there was also some cost of vision and DME paid for by insurance, we assumed this cost accounted for the limited current benefits that are included in private plans and we instead used only current costs paid for out-of-pocket. Therefore using an elasticity of demand factor of 20 percent, we estimated an additional cost of approximately \$19 million for $AR=.60$ and \$31 million for $AR=.98$ percent, respectively, in 2009.

While under the comprehensive benefits option we used the total additional cost calculated for these additional benefits of about \$295 million, under the standard benefits options we only allocated \$100 million (in 2009 figures) to dental and vision care coverage. This approach was used in order to respect the principle we had established, that the options for the standard benefit package should not increase the total Vermont health care and that increased coverage and benefits must be financed totally from savings.

Covering long-term care. Act 128 requires the consultant to consider at least one benefit package that includes coverage of long-term care, including services provided by nursing homes and home health care. Therefore, our comprehensive benefits package has been designed to include long-term care. To estimate the cost of this benefit, our team initially obtained premium rates from a Vermont insurance company specializing in long-term care plans. However, we realized that because the company was financing current costs through a level premium arrangement, the actual yearly costs by age and sex were not represented by the premium rates. Thus, we again decided to estimate the cost of providing long-term care coverage using aggregate numbers from the Expenditure Analysis Report. Most long-term care is currently paid for by Medicare and Vermont Medicaid, and we assumed that this care would continue to be provided by these programs, but would be paid for through the single payer system.

Long-term care is a continuum of services from institutional care to home care, to custodial care and informal caregivers. We examined the best practices around the world. Germany, Japan and some Scandinavian countries have designed their long-term care benefits to cover the continuum of service in the most appropriate manner for disabled individuals while also considering the cost-effectiveness of the various services to be covered. We concluded that a sound long-term care plan has to cover more than nursing home and home care services. It has to allow custodial services and informal caregivers as substitutes. Then the estimation of the cost of such a long-term care benefit becomes problematic because we need to know the demand for a comprehensive set of services for long-term care, as well as the cross-elasticity between the different types of services covered by it. The USA has scarce empirical evidence that we could use towards this estimation. Most empirical studies in the USA have relied on the Medicaid program data, which only covers nursing home care. These studies have found low elasticity of demand when the income eligibility thresholds or other

requirements are relaxed by Medicaid. However, the sound design of a long-care plan would go beyond nursing homes. Moreover, most of these empirical studies had to assume that the supply and demand for nursing home care are in equilibrium, while often the reality is that the demand for these services exceeds the supply. Thus any increase in demand from changing eligibility requirements would not result in higher utilization when supply is limited. Consequently, we used international experience and assumed the elasticity of demand for long-term care services is -0.7. The total additional cost for long-term care would be the sum of the amounts paid now out-of-pocket, which would be shifted to the single payer insurance plan, plus the higher utilization as a result of insurance coverage (i.e. elasticity of demand as discussed above). We estimated the total additional cost of covering long-term care at AR=0.98 at about \$160 million in 2009.

Table 5. Additional Cost to Provide Universal Coverage under the Standard and Comprehensive Benefit Package in 2009.

Parameter	Standard Benefits Package	Comprehensive Benefits Package
Actuarial ratio for medical and pharmacy benefits	0.87	0.98
Assumption for cost of covering uninsured as a percentage of average premium	80%	80%
VHCURES average gross premium for medical and pharmacy benefits	\$4,670	\$5,370
Individual premium rate assumed to cover the uninsured	\$3,735	\$4,296
Additional cost to cover medical and pharmacy benefits with new actuarial ratio	\$25,610,000	\$260,000,000
Additional costs for vision and dental care benefits	\$100,000,000	\$295,000,000
Additional cost to cover the uninsured medical and pharmacy benefits	\$177,460,000	\$204,060,000
Additional costs of long-term care benefits	-	\$160,000,000
Total Cost of Improved Coverage	\$303,070,000	\$859,060,000

Sources: Vermont Department of Banking, Insurance, Securities and Health Care Administration (BISHCA); Vermont Healthcare Claims Uniform Reporting and Evaluation System (VHCURES); authors' analysis.

Establishing uniform payment rates. We wanted to estimate the net change in costs that would result from creating a uniform payment level in Vermont – equal to the average payment rates currently used across payers. This is part of the single payer options (Options 1 and Option 3). In any other system, this would be a zero sum game for Vermont, as the amounts paid above the average would be equal to the amounts paid below the average. However, Medicaid, which pays substantially below average in Vermont, is jointly funded by the Vermont and the Federal

Government. By raising Medicaid payment rates, Vermont draws in additional federal funds. The below analysis estimates how much additional federal funding would flow into Vermont for moving to this new, uniform rate.

Payment rates vary widely in Vermont, even for the same services rendered by the same providers as every payer has their own schedule. For example, consider CPT code 99213²⁷, which accounts for nearly half of all primary care visits paid for by private insurers [157]. This code is used for a mid-range office visit by an established patient. The table below shows reimbursement levels for Vermont's 3 major private insurers, Medicare, and Medicaid. Allowed charge is the contractual amount, prior to any patient cost-sharing.

Table 6: Allowable Charges for a Primary Care Visit at Vermont's Major Payers, 2008.

Carrier	Allowed Charge
MVP	\$76.99
BCBS	\$70.43
CIGNA	\$69.31
Medicare	\$58.55
Medicaid	\$51.29

Sources: BISHCA Provider Reimbursement Survey [157]; Medicaid fee schedule from DVHA; Medicare fee schedule from CMS.

We assumed that the state would have to cover all costs of increased Medicare reimbursement. There are also limits to how much Medicaid can pay and still draw federal match, which is called the Upper Payment Limit (UPL). The state would have to cover in full any payment above these limits, which apply only to institutional payments (hospitals) and not professional payments (physicians and other professionals).

- **Professional Services.** The simplest approach to look at repricing is through direct comparison of fee schedules. Using claims data supplied by BISHCA (commercial payers, VHCURES) and Medicaid, it is a fairly straightforward analysis to estimate how much, for example, private payers would have spent if they had used the Medicare fee schedule. Using 2008 data, we estimated that, based on the distribution of services paid for by commercial payers, commercial reimbursement for professional services (for which there are rates in both the Medicare and Medicaid fee schedules) is 16.3 percent higher than Medicare; Medicaid is 20.5 percent lower.

Using these relativities and data from the 2008 BISHCA "Expenditure Analysis" for physicians and "other professionals," we compared spending at "all Medicaid," "all Medicare," and "all commercial" levels. Finally, to make an assumption about adequacy, we

²⁷ CPT codes copyright American Medical Association

created an all-payer estimate that kept total spending at the same level as actual 2008, and used that to compare how much more or less each payer would have spent. Note that the Federal Government would assume liability for about 60 percent of increased Medicaid reimbursement for professional services.

Table 7. Professional Services Relative Pricing, 2008.

	At Selected Reimbursement Rate			At Same Rate Same Total	Change in Spending under Uniform Rates	Federal Share
	Commercial	Medicare	Medicaid			
Commercial	\$421,692	\$362,512	\$288,073	\$379,198	-\$42,494	-
Medicare	\$148,694	\$127,826	\$101,578	\$133,710	\$5,884	-
Medicaid	\$169,420	\$145,644	\$115,737	\$152,348	\$36,610	\$21,966
Total	\$739,805	\$635,981	\$505,388	\$665,255	\$0	\$21,966

Note: All figures in thousands of 2008 dollars; Sources: Vermont Department of Banking, Insurance, Securities and Health Care Administration (BISHCA), Vermont Healthcare Claims Uniform Reporting and Evaluation System (VHCURES), 2008 Health Care Expenditure Analysis and Three Year Forecast; Department of Vermont Health Access (DVHA), Medicaid Claims Files; CMS, Medicare Fee schedule.

- **Hospital Services.** A similar approach to hospital care is not possible, for a number of reasons. These include the variety of reimbursement systems (DRGs for nearly all inpatient care, a similar prospective system for some outpatient care, other reimbursement mechanisms for the balance of outpatient care, and cost-based settlements by some payers to critical access hospitals), a lack of comprehensive utilization data (while the state's inpatient database is complete, it is not clear if anything is excluded from the outpatient database), and complications such as the treatment of bad debt and free care, "other operating revenue" (funds from non-medical operations such as cafeterias and parking), and non-operating revenue (funds from investments).

In order to produce an approximation, we elected to use a very simple, if imperfect, methodology. It is standard practice in hospital accounting to assume that costs are proportional to gross charges. What this means is that even though the actual amount collected is nearly always less than charges, there is a consistent relationship between charges and costs. For example, if charges to Medicare are 45 percent of all charges, we can assume that Medicare patients accounted for 45 percent of the costs of operating the hospital (after other operating and non-operating revenues).

We made an assumption that if net revenues (funds actually collected from payers) were proportional to gross charges, all payers would be reimbursing at the same level. While this may be a fairly good approximation, we recognize that it is just that – an approximation.

Table 8. Hospital Services Relative Pricing, 2008.

	Hospital Gross	Hospital Net	Share of Net = Share of Gross	Change in Spending under Uniform Rates	Federal Share
Medicare	\$1,068,737	\$495,416	\$589,932	\$94,516	
Medicaid	\$403,812	\$140,405	\$222,900	\$82,494	\$49,496
Commercial	\$1,189,579	\$833,647	\$656,636	(\$177,011)	
Total	\$2,662,130	\$1,469,469	\$1,469,469	\$0	

Note: All dollar figures in thousands;

Sources: 2008 Hospital Budget data, as submitted by BISHCA.

As mentioned above, the federal laws that govern the Medicaid program establish “upper payment limits” (UPL) for hospital payments. These limits constrain the amount that Medicaid can pay and still draw federal matching funds. The limit set to what Medicare would pay for the same services (measured on a hospital-by-hospital basis, aggregating all services).

Based on information provided by DVHA, current Medicaid hospital reimbursement is below UPL limits for all hospitals in Vermont (and for Dartmouth-Hitchcock Medical Center). Based on communications with DVHA, we estimated that there was approximately \$38 million in federal matchable additional payments before the state hits the UPL for hospital payments. The remainder would have to be totally state financed as are the additional payments to bring Medicare up to the uniform level.

Moving to a uniform rate schedule would bring in nearly \$45 million in additional Federal funding, based on 2008 and 2009 payment data. This comes from the 60 percent match for the \$36.6 million in increase Medicaid payments to physicians and other professionals and the 60 percent match for the \$38 million in “matchable” payments to institutional providers below the UPL.

C. THE GRUBER MICROSIMULATION MODEL (GMSIM)

The economic analysis used the Gruber Microsimulation Model (GMSIM), which has been used over the past decade by a wide variety of state and federal policy makers to analyze the impacts of health insurance reforms.

This model was first developed in 1999 for use in estimating the impact of tax credits on health insurance coverage, with funding from the Kaiser Family Foundation. Over the subsequent decade, the model's capability has been expanded to consider the full variety of possible health interventions, including public insurance expansions, employer or individual mandates, purchasing pools for insurance, single payer systems, and more. This model is widely used for a variety of health insurance modeling tasks; a partial list of sponsors over the past several years includes: The Kaiser Family Foundation; The Commonwealth Fund; The California Endowment; The California Health Care Foundation; The AFL-CIO; The Blue Cross/Blue Shield Association; the Universal Health Care Foundation of Connecticut; and The Robert Wood Johnson Foundation.

GMSIM has recently been used by a number of states to model state-specific health insurance reforms. In particular, GMSIM modeling for the Commonwealth of Massachusetts was a basis for recent health insurance reform proposals in that state. This model was used first by Governor Romney's administration as they developed their proposals, and then for the legislature as they considered alternative paths to translating this proposal into legislation. Over the past few years, the model has been used in states such as California, Connecticut, Delaware, Kansas, Michigan, Minnesota, Oregon, Wisconsin, and Wyoming to model policy options in those states. GMSIM was also used extensively by both the Obama administration and the US Congress during the 2009-2010 debate over health care reform.

GMSIM takes as its base data three years of pooled Current Population Survey (CPS) data, which is the national standard data set for defining insurance coverage. By pooling the three most recent years, we are able to obtain a sufficiently large sample size for the state of Vermont of 3240 households, with 7075 individuals. These data are matched to information on health insurance premiums and health costs. Data on the premiums for employer insurance, and the distribution of premiums between employers and employees, comes from the Medical Expenditure Panel Survey-Insurance Component (MEPS-IC), the nation's largest data base of employer-provided insurance premiums. The MEPS-IC provides information on employer premiums by state and firm size that can be matched to the Vermont-specific model. For non-group premiums, we use the information on the existing non-group options available in Vermont.

These data are used to develop a micro-simulation model that computes the effects of health insurance policies on the distribution of health care spending and private and public sector health care costs. This model takes as inputs both the data sources described above and the detailed parameterization of reform options. The model first turns these policy rules into a set of insurance price changes; for example, if the policy intervention is a tax credit for non-group insurance, then the model computes the implied percentage change in the price of non-group insurance for each individual in the model. These price changes are then run through a detailed set of behavioral assumptions about how changes in the absolute and relative price of various types of insurance affect individuals, families, and businesses.

The key concept behind this modeling is that the impact of tax reforms on the price of insurance continuously determines behaviors such as insurance take-up by the uninsured and insurance offering by employers. The model assiduously avoids “knife-edge” type behavior, where some critical level is necessary before individuals respond, and beyond which responses are very large. Instead, behavior is modeled as a continuous function of how policy changes (net of tax) insurance prices.

In doing this type of analysis, a number of assumptions must be made about how individuals would respond to tax subsidies, through their effect on the price of insurance. These assumptions have been developed based on the available empirical evidence reviewed above, although there are many holes in this literature that must be filled in order to fully simulate policy effects.

A key aspect of modeling health insurance policy is appropriately reflecting the decisions of firms, since 90 percent of private health insurance is provided by employers. Economists tend to model firm decision-making as reflecting the aggregation of worker preferences within the firm. The exact aggregation function is unclear, as reviewed in Gruber (2002); in this model it is assumed that the mean incentives for the firm (e.g. the average subsidy rate for non-group insurance) is what matters for firm decision-making.

The fundamental problem faced by individual-based micro-simulation models is that data on individuals does not reflect the nature of their co-workers, so that it is impossible to exactly compute concepts such as the average non-group subsidy in a worker’s firm. GMSIM addresses this problem by building “synthetic firms” in the CPS, assigning each CPS worker a set of co-workers selected to represent the likely true set of co-workers in that firm. The core of this computation is data from the Bureau of Labor Statistics that show, for workers of any given earnings level, the earnings distribution of their co-workers, separately by firm size, region of the country, and health insurance offering status. Using these data, 99 individuals are randomly selected in the same firm size/region/health insurance offering cell as a given CPS worker in order to statistically replicate the earnings distribution for that worker’s earnings level. These 99 workers then become the co-workers in a worker’s synthetic firm.

These synthetic firms then face three decisions about insurance: offering (whether to offer if currently not offering or whether to cease if currently offering); the division of costs between employer and employees; and the level of insurance spending. Each of these decisions is modeled as subject to “pressures” from government interventions. In particular, subsidies to outside insurance options (non-group insurance or public insurance) exert pressures on firm’s offering insurance to drop that insurance and to raise employee contributions; subsidies to employer spending on insurance cause firms that don’t now offer insurance to be more likely to offer, cause firms to pick up a larger share of the cost of insurance, and cause a rise in employer spending on insurance; and subsidies to employee spending on insurance also raise the odds that firms offer insurance, and raise employer spending on insurance, but they *lower* employer contributions to insurance.

Finally, a key assumption for this type of modeling is the assumption on the wage incidence of changes in employer-insurance spending. GMSIM make a mixed incidence assumption: any firm-wide reaction, such as dropping insurance or lowering employee contributions, is directly reflected in wages; yet any individual’s decision, such as switching from group to non-group insurance, is not

reflected in that individual's wages; rather, the savings to the firm (or the cost to the firm) is passed along on average to all workers in the firm. Empirical studies on US companies find that payroll taxes imposed on employers were passed back to employees over time in the form of lower wages or lower pensions and other fringe benefits. In other words, the burden of payroll tax on employers was actually borne by employees. There are few good empirical studies to assess whether employers would pass any lowering of payroll tax to employees as higher wages. However, the economic theory of competitive labor markets suggests that employers have to pay a competitive compensation package to attract and retain good workers. The compensation package includes cash wage and costs of fringe benefits. When the costs of fringe benefits increase, employers have to remain competitive in the product market and reduce the cash wages to the workers. In the opposite situation, when the costs of fringe benefits decrease, workers would demand higher cash wages and employers have to respond to maintain their competitive position in the labor market.

Modeling Vermont Policy Options. We considered several different types of policy options for the state of Vermont. The first is modeling the effect of the Patient Protection and Affordable Care Act (ACA). To do so we include the many integrated features of the ACA, including:

- The expansion of Medicaid
- The introduction of tax credits for low income families
- The individual mandate – incorporating both penalties and the affordability exemption
- Tax credits for small businesses
- Penalties for businesses whose employees get federal tax credits
- Reformed insurance markets with modified community ratings and guaranteed issue with no preexisting conditions exclusions
- Regulations on minimum insurance coverage, such as mandated benefits, maximum deductibles for small businesses, and out of pocket maximums
- Regulations on insurers, such as mandates for dependent coverage and coverage of preventive care with no patient cost sharing
- The introduction of a state insurance exchange

The integrated nature of GMSIM allows us to simultaneously model all of these policy changes. We produce as output the impact on population movements across types of insurance, changes in government spending and tax revenues, changes in firm wages and health insurance spending, and changes in household budgets.

Importantly, the magnitude of these effects is subject to uncertainty given the complexity of the legislation, despite the fact that GMSIM applies the most credible evidence available on firm economic behavior to project the reform impacts. GMSIM assumes rational firm behavior based solely on the financial incentives present in the economic environment. However, the experience in Massachusetts, where policies similar to those in PPACA were introduced in 2006, suggests that some firms may display idiosyncratic behaviors. For example, fewer firms dropped employee

coverage than was expected simply based on their financial incentives. However, GMSIM is not able to predict the extent to which this type of behavior would also be observed in Vermont.

The second policy we consider is the addition of a “public option” to ACA for the state of Vermont. The public option is modeled as a competing plan in the exchange. The public option plans offer the same actuarial value and benefit packages as the private plans, but are assumed to be 2 percent less expensive. To model take-up of the public option plan, we compute a probability of take-up for each household. Households are then assigned to the public option plan based on this probability.

The third policy we consider is system reform. Under system reform, we assume that through a variety of measures, Vermont would lower the cost of providing health care. The savings assumptions are described above. We model these savings as reductions in premiums, out-of-pocket costs, and government spending on public insurance programs. This has the result of encouraging ESI offering and improved benefit packages, lower premiums in the exchange, lower out-of-pocket costs, and lower Medicaid costs for both the Federal and State government.

The fourth policy we consider is single payer reforms. Under single payer reform, we assume that the entire private insurance market would be dissolved, and the entire population would be covered under the single payer system. We model two versions of the single payer system, the “high option” and the “low option”. The “high option” has an actuarial value of 98 percent, covering all out-of-pocket costs. The “low option” has an actuarial value of 87 percent, covering 87 percent of out-of-pocket costs. Under the “low option”, individuals are responsible for the remaining 13 percent of out-of-pocket costs. The cost of moving the privately insured and uninsured population to the single payer system was provided by the Hsiao team.

The single payer system is financed by the combination of a Federal grant and a state payroll tax. The Federal grant equals the exchange subsidies and small business tax credits the state would have received under PPACA. It also includes the funding for the enhanced Federal match rate for childless adult Medicaid enrollees, as well as 60 percent of the increase in Medicaid provider reimbursement rates up to the Upper Payment Limit. The remaining cost is financed by a state payroll tax. Individual income up to the Social Security tax cap is subject to the payroll tax, and the incidence of the tax is split between employers and employees. Variations were also modeled where certain low-income groups are exempted from the tax.

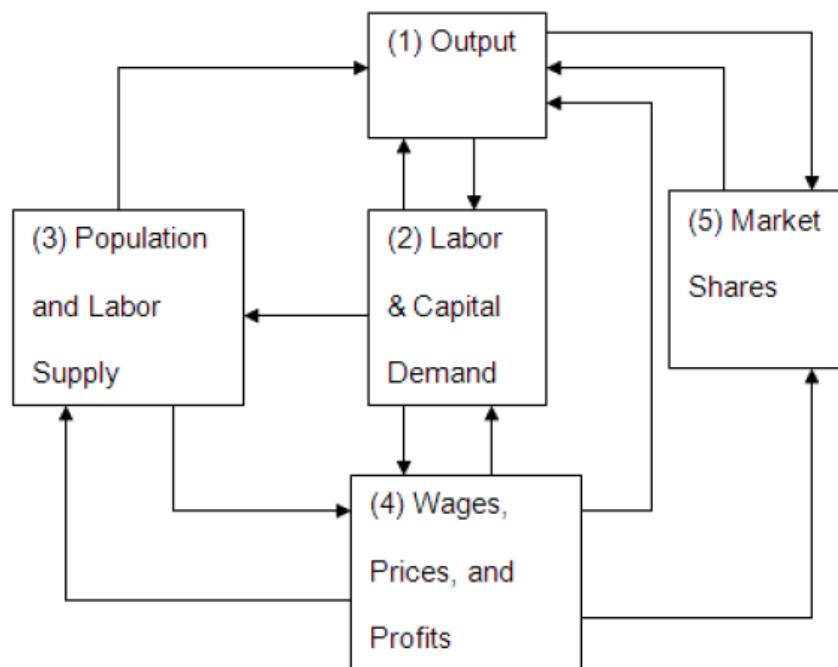
D. THE REGIONAL MACROECONOMIC MODEL (REMI)

Reforming the Vermont health care system would impact the state beyond the health sector. Indeed, changes to the state's health financing scheme and service delivery system would shift public and private spending allocations. This would have important effects on several aspects of Vermont's economy. These effects must be considered when evaluating the appropriateness of proposed reforms. Regional Economic Models, Inc. (REMI), a private company that specializes in macroeconomic impact modeling of health system reforms, developed several models to determine the effects of the proposed reforms on Vermont's economy.

Basic assumptions of the REMI model. The REMI model is an input-output (IO) model. In IO models, the relationship between inputs and outputs is defined by a matrix of empirically derived multipliers. Varying the values of inputs in IO models to reflect expected reform activities produces changes in outputs that correspond to estimates of reform impact. Input-output models are used extensively to assess macroeconomic impacts for proposed projects in many industries.

The REMI model has four primary inputs, including (1) labor and capital demand; (2) populations and labor supply; (3) wages, prices, and profits; and (4) industry-specific market shares (Figure 1). The primary outputs in the REMI model are industry-specific production output, employment rates, and personal incomes.

Figure 1. Components of REMI input-output model to determine the macroeconomic impact of proposed health system reforms.



The REMI model estimates three separate components of the impact of changes in inputs on changes in outputs: direct, indirect, and induced. Direct impacts are those that result from exogenous changes in economic activities. For example, a change in Medicare expenditures in Vermont as a result of reforms would constitute a direct impact. Indirect impacts are those that result from intermediate industry responses to direct impacts. For example, increased demand in hospital services resulting from changes in Medicare expenditure in the state would constitute an indirect impact. Finally, induced impacts are those generated through changes in output linked to personal consumptions. The REMI model derives induced impacts from changes in personal incomes generated from both direct and indirect impacts.

Tailoring the REMI model for health care reform in Vermont. Estimates of the economic impact of health care reforms on Vermont's economy are derived from three direct impacts: (1) changes in public health care spending, (2) changes in employer and employee health care spending, and (3) changes in household health care spending. These direct impacts were inputs into the REMI model. Values for these impacts were determined with GMSIM models, discussed above. Changes in public spending were disaggregated to their industrial components, whether for hospital care, ambulatory care, pharmaceuticals, nursing/home care, and administrative services. It was assumed that changes in employer and employee spending were ultimately addressed through changes in wages. Changes in household spending included purchase of non-group insurance and out-of-pocket expenditures, and were assumed to change the composition of household consumption.

The REMI model used in Vermont assumes that the proposed reforms in the state would result in two important changes in the efficiency of health services delivery. First, increased oversight and greater administrative control of provider behavior would reduce overuse of health care services and thus reduce spending. Second, increased access to health care and improved administrative systems would result in more effective care. Further, by identifying patient illness and disease problems earlier than is presently done, higher cost care, treatment, and application of medical technology would be reduced. These efficiency changes are accounted for as indirect impacts in the REMI model.

REMI models were run for five potential scenarios for Vermont's future health system. The macroeconomic impact of each scenario is compared to a baseline scenario under which the Vermont health system continues to operate as it does today. For each scenario, the REMI model provides output estimates of state employment level, average personal income and gross state product for the years 2014-2024.

- Vermont's health system adheres to the PPACA legislation but pursues no additional state-level reforms.
- Option 1A: Government-run single payer with the comprehensive benefit package
- Option 1B: Government-run single payer with the standard benefit package
- Option 2: PPACA with a public option
- Option 3: Public-private single payer governed by an independent board; standard benefits package.

5. PPACA IMPACTS

The major provisions of the Patient Protection and Affordable Care Act (PPACA) were described in Section 2B. This section outlines the estimated impacts of the implementation of PPACA reforms in Vermont. Section 10: Comparisons and Recommendations, provides an overview of the difference between PPACA and the three options.

Our modeling assumes that the three options would be implemented starting in 2015. However, Vermont's Administration has indicated that it plans to introduce legislation to establish the single payer system in three phases. As such, we are presenting the impacts for all cases for 2016, when the full impacts of the plan would be more likely to be felt. In some cases, we also present impacts for 2019 in order to provide a long-term view of the reform outcomes. All the dollar figures representing reform impacts are presented in 2010 real US dollars, unless otherwise specified.

a. Impact on insurance coverage

PPACA introduces an individual mandate to purchase health insurance coverage and provides federal subsidies to individuals and tax credits to small businesses in order to make insurance more affordable. PPACA is projected to cover an additional 20,000 Vermonters in 2016 and 22,000 in 2019 compared to the no-reform scenario. However, despite these accomplishments, the law is not expected to achieve universal coverage in Vermont. Using the GMSIM model, we found that approximately 31,000 individuals would remain uninsured in 2016, two years after the most important provisions of PPACA would have been implemented. Even by 2019, when the Medicaid expansion and the Health Insurance Exchanges are expected to be fully phased in, Vermont would still have about 31,000 uninsured residents. The main reason for this is that many individuals are expected to choose not to purchase coverage and instead pay the tax penalties provided under PPACA.

b. Impact on total health care costs in Vermont

In the absence of PPACA, health expenditures in Vermont are projected to grow at a rate of approximately 6 percent per year. In 2016, total health expenditures for Vermont residents are projected to reach about \$6.5 billion. In 2019, total health expenditures would reach \$7.3 billion. This is equivalent to \$9,638 per capita in 2016 and \$10,598 per capita in 2019.

PPACA includes many provisions to promote experiments and demonstration projects that try different approaches to moderate health care cost inflation. PPACA also establishes an Independent Payment Advisory Board that would set the rate of increase in Medicare payment rates, unless the US Congress vetoes it. While these provisions are laudable, their effectiveness to contain cost inflation is largely unproven. Our analysis of the law, in line with the projections performed by the Congressional Budget Office and the Office of the Actuary, suggests that it would be premature to assume that PPACA would have a measurable impact in controlling the health care cost inflation rate.

In our proposal, we do expect the combination of PPACA and implementation of the state-wide implementation of the Blueprint for Health medical home program to produce a 1 percent savings by the end of 2015. We assumed that this would be the result of lower utilization of emergency

room and inpatient hospital services. Thus, the PPACA-Blueprint for Health scenario is expected to modestly lower health care costs in Vermont. In 2016, Vermont total health expenditures would be reduced by up to \$60 million.

c. Impact on federal funding for Vermont

The major issue that PPACA addresses is the uninsured. The Federal Government sets an individual mandate and provides funds to improve Medicaid, subsidize the premium of low-income families, and offer tax credits to small employers to provide health insurance to their employees. As a result, the Federal Government would provide more funding to the states to cover the uninsured.

We used the GMSIM model to simulate the additional amount of federal funds that would be given to Vermont under PPACA. We found that the additional federal funding would be about \$340 million in 2016 for the non-elderly population (2010 dollars). Of this amount, \$180 million would come in as additional federal Medicaid dollars. This is a direct result of the fact that under PPACA, the Federal Government increases its share of Medicaid funding for several enrollee groups. The first group is SCHIP (State Children's Health Insurance Program) enrollees, for whom the federal matching rate would increase by 23 percentage points. The next group is childless adults. Under PPACA, Medicaid is expanded to cover all individuals under 133 percent of the Federal poverty line with substantial Federal funding for the new enrollees. Since some states, like Vermont, are already covering these populations, they would gradually receive increases in the Federal match percentage for their childless adult Medicaid enrollees. By 2019, the match rate for these childless adults would equal the match rates for new enrollees in states that previously had less expansive coverage.

Another \$140 million in additional funding would flow into the state in 2016 through sliding-scale subsidies to individuals eligible for purchasing insurance through the newly established Exchanges. Specifically, Exchange enrollees with incomes between 133 percent and 400 percent of the Federal poverty level are entitled to tax credits to subsidize the cost of purchasing health insurance through the Exchanges. The tax credits work by capping the household spending on Exchange premiums at a specified percentage of income. If the household premiums are greater than that percentage of income, the Federal Government pays the excess. The income caps begin at 3 percent for households at 133 percent of the poverty line, and rise to 9.5 percent for households at 300 percent of the poverty line. The caps remain flat at 9.5 percent of income for households between 300 percent and 400 percent of poverty.

Finally, about \$20 million would consist of tax credits to Vermont small businesses who offer health insurance to their employees. These credits are equal to 50 percent of a small business's spending on employee health insurance contributions for firms with 10 or fewer employees and an average wage of less than \$25,000.

In 2019, total additional federal funds for the non-elderly would increase to \$420 million, consisting of \$230 million for Medicaid, \$170 million in subsidies to individuals who purchase insurance through the Exchange, and about \$20 million in small business tax credits.

d. Impact on employer health spending

PPACA reinforces the current system of employer-sponsored insurance by providing subsidies to alleviate the cost burden on businesses. The simulation results from the GMSIM model show that overall, employers' contributions towards their employees' health care premiums would decrease by about \$130 million in 2016 and by \$160 million in 2019 compared to the baseline. This is the net

effect of four major factors that affect employer spending for health insurance. First, the introduction of health insurance exchanges and federal subsidies in 2014 would provide an incentive for firms to either shift more of their health costs to employees or to drop coverage entirely. Second, the Federal Government would provide tax credits to small businesses, which would have the effect of partially subsidizing employer contributions to health premiums, further decreasing total employer spending. PPACA also increases the Medicare payroll tax, resulting in higher costs for employers. The “play-or-pay” or “free-rider” assessments introduced by PPACA – fines to firms with more than 50 employees whose employees receive Exchange tax credits – have the effect of increasing the net health costs for employers.

The GMSIM model projects that in 2016, total ESI premiums (employee and employer share) in Vermont would reach 13.4 percent of their payroll under PPACA. In this calculation, we have adjusted the total payroll value by excluding wages of employees under 200 percent of the Federal Poverty Level, and the wage portions over the current Social Security cap, indexed by GDP growth. We made this adjustment in order to have comparability between employer health spending under PPACA and the single payer reforms (Options 1A, 1B, and 3), where workers with incomes below 200 percent of FPL are exempted from paying the payroll tax and the contributions are capped at the Social Security cap level. As health costs continue to increase, the total premium cost would increase to about 13.7 percent of payroll in 2019. By this time, businesses are expected to shift a larger share of the premium towards their employees and some would drop ESI altogether. Employers’ contributions towards ESI premiums as a share of payroll would represent 9.3 percent in 2016, and 9.6 percent in 2019. However, it is important to note that under PPACA, many Vermonters would still be uninsured and underinsured. Moreover, benefit packages would not provide coverage of dental and vision care. Finally, there would be no investments in Vermont’s physician workforce and health care facilities.

In Vermont, the portion of employers that offer health insurance to their employees varies by firm size. Benefit packages offered also vary by size of firm. Therefore, under PPACA, not all firms would be affected in the same way. Small and medium sized businesses would see the largest impacts under PPACA, since they are most affected by the provisions of the law. The results from the GMSIM model shown in Table 9 reveal that the largest effect would be experienced by smaller firms. Those firms employing between 1 and 10 employees would experience a decrease in health insurance expenses of \$678 per employee in year 2016; firms employing between 11 and 25 employees would also see a decrease in health spending per employee, averaging about \$779 per employee. Firms that do not offer health insurance now would see an increase in average cost of \$30 per employee while the firms offering insurance would see a decrease in average cost of \$585 per employee.

Table 9. Total estimated impact of PPACA reform on employer spending in 2016.

Employer spending by:	Change per employee (USD)
Number of employees in firm	
1-10	-678
11-25	-779
26-100	-552
101-500	-103
501+	-3
Employer-Sponsored Insurance	
Firm not offering	30
Firm offering	-585

Note: all figures in 2010 USD

e. Impact on households

The simulation results produced by the GMSIM model show that PPACA would produce a positive net financial benefit for households (Table 10). This net financial benefit, totaling \$131 million in 2016, or \$474 per household, is the combined result of the impact on household costs and household benefits. While total costs including taxes would increase by \$57 million in 2016, or \$204 per household, the total additional benefits would reach \$188 million, or \$678 per household.

Table 10. Total estimated household benefit of PPACA reform in 2016.

	Change per household (USD)
Total costs	204
Total benefits	678
Net financial benefit¹	474

Note: all figures in 2010 USD;

¹Total additional benefits net of total additional costs.

On the cost side, ESI premium spending is expected to decrease as an effect of PPACA provisions that create incentives for employers to either drop ESI coverage or increase employees' share of premiums. At the same time, the creation of health insurance Exchanges, market regulatory reforms, and federal subsidies and tax credits would lead to lower individual market premiums. This would cause growth in individual market enrollment and thus increase spending in the individual market. Out-of-pocket spending, including deductibles, coinsurance, and copayments for the insured, and care received by the uninsured, would decrease. Finally, there would be an additional cost consisting of taxes that households would pay out. The higher taxes result from changes in wages produced by firm reactions to PPACA and the increase in Medicare Part A taxes under PPACA.

On the benefits side, households would see higher wages as a result of lower employer benefits costs, federal subsidies to purchase insurance, as well as higher public insurance benefits from Medicaid.

The simulation results show that households with incomes between 133 percent and 400 percent of the federal poverty level (FPL) would benefit the most from PPACA (Table 11). The net financial benefit for these households would total \$100 million, or \$849 per household. Wealthier households, with incomes above 400 percent of FPL, would see negative impacts, with net financial losses of \$10 million in total, or \$96 per household.

Table 11. Distribution of estimated financial benefit of PPACA reform by household income, in 2016.

Benefit by:	Net benefit per household (USD)
Household Income	
< 133% FPL ¹	728
133-400% FPL	849
> 400% FPL	-96

Note: all figures in 2010 USD;

¹FPL: federal poverty level.

f. Impact on employment

Using the REMI model, we simulated the impacts of PPACA on the Vermont economy. By 2016, the model predicts that about 2,100 new jobs would be created in the state. By 2019, this effect would increase to a total of approximately 2,300 new jobs created in comparison with the no-reform situation. These impacts are mainly produced by three factors: estimated changes in health care spending, projected changes in net wages, and changes in the composition of household consumption expenditures with respect to health insurance and/or health care services.

Changes in net health care spending account for an estimated 1,100 additional jobs in 2016 and 2019. The REMI model considers three types of new employment associated with changes in increasing spending for health care through more people become insured under PPACA. First, more physician and hospital services translate into higher employment. Second, employment is generated from derived demand when physicians and hospitals purchase goods and services from any other suppliers. And finally, employment is generated from tertiary expenditures, which occur when employment income generated among primary and secondary providers is spent in the state for household consumption.

Changes in net wages account for an estimated 1,000 additional jobs in 2016 and 1,100 jobs in 2019. PPACA reduces the health insurance premium costs of employers and employees and these savings result in higher cash income to the workers, who spend the income to purchase goods and services and stimulate local consumption that creates jobs. These changes reflect the combined effect of all the policies stipulated by PPACA on employer costs as estimated by GMSIM, and are allocated by industry and employer size. However, it should be noted that relative to health spending changes, wage increases have a lower dollar-for-dollar impact on the state economy

because of “geographic leakages” that occur when households purchase goods and services outside of Vermont.

Finally, changes in household consumption composition account for a negligible number of new jobs under PPACA in 2016. This is because the law would have a minimal effect on how households allocate expenditures between health care and other consumption. However, in 2019 this component would lead to a slight loss in employment relative to the no-reform scenario, of about 100 jobs.

g. Impact on gross state product (GSP)

The REMI model projects that total economic product in Vermont PPACA would increase. In total, we estimate a total increase in the GDP due to PPACA implementation of about \$120 million by 2016 and \$180 million by 2019, measured in 2010 dollars. The impacts on gross state product mirror the expected effects of PPACA on employment. The main drivers for these impacts are health care expenditure changes, which account for approximately two thirds of the additional GDP, and changes in net wages, responsible for another third of increased output in 2016.

h. Impact on migration

The REMI model estimates that the creation of new jobs by the implementation of PPACA would lead to a net influx of people to Vermont. The model projects that about 800 individuals would relocate to Vermont in 2016. By 2019, new Vermont residents would reach about 1,400. This effect is caused by new employment opportunities created by PPACA, which would make living in the state more attractive. We expect virtually no in-migration as a result of the changes in the health insurance market implemented under PPACA. This is largely because PPACA would be implemented in all US states, so there is no reason to assume that implementation in Vermont would make the state more attractive.

6. OPTIONS 1A & 1B: SINGLE PAYER

A. OVERVIEW AND MODELING ASSUMPTIONS

Option 1 is a government-run single payer system, with one insurance fund and a uniform benefit package for all non-Medicare and Medicaid beneficiaries. All Vermont residents are covered.

We modeled two benefit packages for this option: a comprehensive option, including medical services, mental health and substance abuse services, and drug benefits (covered under a standard, state-wide formulary) as well as full vision, dental and long-term care coverage, all with very little cost-sharing. This we refer to as Option 1A.

We also modeled a standard benefit package, Option 1B, which covers medical services and mental health and substance abuse services and drugs (again under a standard formulary), but with cost-sharing equal to the current average value out of pocket spending in Vermont (an actuarial ratio of 0.87, see Section 4B: Estimation of Costs). This is between the “Gold” and “Platinum” benefit plans by the standard set forth in the PPACA. The creation of this standard benefit package followed our major design principles: to avoid reducing average benefits, to promote prevention, early detection and treatment, and to finance all expansion of benefits to previously uninsured or underinsured through the savings we generate through system reforms.

The single payer system is financed through continuing state and federal funds (largely for Medicaid and Medicare) as well as payroll contributions from all Vermont wage earners. The contribution is split between employees and employers, with exemptions from the contribution for some low-wage workers. While the system is financed through wage-based contributions, there is no connection to employment and coverage.

All payments, including Medicare and Medicaid payments, would be made through the single payer entity with standard claims processing rules. Furthermore, the rates would be uniform across payer populations and settings, meaning that a check-up earns physicians and hospitals the same amount of money regardless of who the patient is or where they are seen. Our calculations show that this uniform rate would be higher than current Medicare payments. This uniform rate would eliminate the cost-shift.

Administratively, payments for Workers’ Compensation health claims would also be paid through the single payer entity, though the current financing and benefits was left intact.

Option 1 contains the administrative cost savings estimates as described in detail in Section 4A: Estimation of Savings. Like all options, it builds on the Blueprint for Health advanced medical home concept and continues to push Vermont’s health system toward integrated delivery through the development of ACOs, which creates savings from reduced waste and duplication in medical services. It furthermore assumes a reform of the medical malpractice system as well savings from reduced fraud and abuse.

The models assume that Vermont would be able to receive a waiver in 2015 from the Exchange requirements and to receive, as a block transfer, Federal outlays related to the Exchange provisions (small business and premiums tax credits and cost-sharing subsidies) to contribute towards the

single payer system. The waiver also assumes that both employers and individuals in Vermont would not be subject to the tax penalties associated with coverage mandates.

We furthermore assume that Vermont would be able to negotiate a Medicaid waiver similar to the current one that encompasses the expected increased enrollment after implementation of PPACA; increasing the Medicaid payment rate to a uniform level; and a provision allowing the State to keep and reinvest any savings in the health system.

To achieve the savings described in Section 4A, Vermont would also need to secure a Medicare waiver to allow greater flexibility in payment and claims. To keep our estimates conservative, we did not assume that Vermont would be able to keep savings from Medicare expenditures as there is less precedent for this type of provision at the state level. However, the true results would be the result of negotiations. See Section 6I on waivers below for a more thorough discussion on waiver provisions.

B. GOVERNANCE AND ORGANIZATION

The Option 1 (both 1A and 1B) single payer system would be administered by the Vermont State Government, likely as an extension of the current Department of Vermont Health Access (DVHA), the state's Medicaid Agency.

Decisions on covered services, benefit limits, cost-sharing as well as payment policies to providers would be decided through mechanisms largely as they are done now for Medicaid. The state agency would also be responsible for eligibility determination as well as determination for any exemptions to the cost-sharing or payroll contributions.

C. ELIGIBILITY

We propose that the single payer plan covers all Vermont residents. Residents must be either US citizens or documented legal immigrants and show proof of residence in Vermont as defined by Vermont laws. Vermont residents who are eligible for Medicare and/or Medicaid would not see their benefit packages change. Medicare beneficiaries would still receive Medicare benefits. Those who are eligible to be covered under Medicaid shall continue to receive Medicaid benefits.

One of the challenges in establishing eligibility and ensuring adequate financing is border-crossing – those Vermont residents who work out of state (about 21,000 people in 2000) and those residents of other states who work in Vermont (about 16,000 in 2000) [158]. We recommend that Vermont employers be allowed to “buy-in” their non-resident employees. We also recommend allowing out-of-state employers who offer insurance to their Vermont resident employees to buy-in to the Vermont system. Those do not buy-in would have their insurance plan as the primary payer and then coordination of benefits provisions would be adopted. We recommend those Vermont residents who work out-of-state for employers who do not offer coverage should pay the employers payroll tax contribution rates. For this population, we believe further study is needed and the legislature has to give careful consideration as how to treat them.

There is discussion on whether the extension of coverage to all Vermont residents would lead to large inflows into Vermont of individuals who cannot afford health benefits elsewhere and would not make adequate payroll contributions to finance their care. We examined both Vermont specific

data and national experience and we find little evidence that Vermont would become a health benefit “magnet” state for lower-income individuals who would not pay into the system. The system that we propose in Vermont is unique in the US and therefore to adequately address this issue we had to rely on studies related to welfare benefit induced migration. The evidence on welfare “magnet” states shows that the impact of migration on budgets is nil to quite small. Rather, jobs and family are the primary reasons individuals choose to move from state to state [159, 160]. The Vermont single payer program may be more likely to result in an in-flow of working and middle class persons responding to job opportunities. Such a situation could increase beneficiaries of the single payer program, but would also likely result in an expansion of the tax base used to fund it. Furthermore, those individuals who are below a certain income level are already eligible for subsidized or free care under Vermont’s current health benefits programs. In addition to evidence on the national scale, Vermont policymakers should note that Vermont-specific evidence from studies conducted by the Vermont Department of Children and Families (DCF) shows an insignificant proportion of welfare beneficiaries that report moving to the state on account of its generous public assistance benefits [161].

Furthermore, evidence shows that the financial sustainability of recent national efforts to expand state-based health insurance coverage, such as TennCare in Tennessee, has not been threatened due to large inflows of migrants. TennCare expanded Medicaid coverage to several hundred thousand additional Tennessee residents (both uninsured individuals and those who were denied coverage due to pre-existing conditions) through a managed care organization model. The major drivers of costs were associated with prescription drugs, long-term care, and professional services [162]. Each of these potential cost drivers are appropriately managed through effective benefit design, an effective payment system and the implementation of integrated delivery systems as described in detail in the report.

Based on our analysis, we do believe that if Vermont’s single payer plan covers all residents for comprehensive long-term care while neighboring states do not, then economic reasons would logically deduce that a measurable number of low and middle income households that need long-term care might migrate into Vermont because these benefits are worth more than \$75,000 for those who need long-term care.

D. BENEFIT PACKAGE DESIGN

I. BENEFIT PACKAGE DESIGN PRINCIPLES

Act 128 requires the consultant to consider two designs of benefit packages for Option 1. We relied on the following principles in designing the benefit packages. The benefit package described below as 1A and 1B are illustrations of our recommended design in broad terms. The fine details will be left up to the legislature, allowing different providers to argue their cases for inclusion in the benefit package and level of coverage.

Principles in designing the benefit package:

- Benefit package is the major instrument to allocate resources.

- Benefits alter the financial incentive for patients by removing or reducing the financial cost of seeking health care; this impacts not only the patient choices but also provider decisions about when and how much care to provide.
- Provide financial incentive for prevention, early detection and treatment before disease becomes acute
- Provide financial incentives to patients to substitute effective alternative treatments (generic drugs, medical treatment rather surgery, care at lower levels rather than at higher levels). These incentives should complement provider payment incentives.
- Discourage the use of expensive high technology services that are not cost effective.
- Risk protection from impoverishment from health expenses

The benefit package is the primary instrument to allocate resources to different types of health services. Insurance coverage or the lack thereof influences how much health care patients seek and where they seek it. For example, when a type of service such as primary care is covered by insurance, the cost of a visit is reduced for patients and they in turn respond by demanding more of this service. When primary care is not covered, but hospital services are, patients demand more hospital services as a substitute for primary care wherever possible. While services covered by insurance reduce or remove financial barriers to these services, they can also influence patients to demand “unnecessary” services, when such services are free or offered for very low cost. This behavior leads to waste of scarce resources. We often hear physicians complain that patients demand unnecessary services, tests and drugs. This practice poses serious challenges for physicians as they determine how best to diagnose and treat patients. In designing a benefit package, appropriate incentives and risk protection should be provided to patients so as to maximize the positive effects of insurance and diminish the potentially negative consequences of overuse.

The benefit package should promote prevention in order to maximize the long-term health of patients, as well as, the financial sustainability of the health care system. Financial incentives provide an important channel through which preventative care can be promoted. By doing so, a health system can enable early detection and treatment of diseases before they become acute or serious and thus more expensive to treatment. As a result, the utilization of vastly more expensive care can be averted through earlier diagnosis and treatment. Various studies show that prevention and primary care provide the most value per dollar spent in improving the overall health of a population than secondary or tertiary care [163-166]. Therefore, prevention coupled with early diagnosis and treatment can improve the health of an individual, as well as the health of the overall population.

As discussed, the benefit package is directly linked with the overall cost of health care. Therefore, in designing a benefit package, effective alternative treatments should be promoted in place of more expensive treatment options that do not provide added value to patients. Such “alternative treatments” include generic drugs, medical treatment in lieu of surgery, and health care at lower levels, such as primary care. A sound benefit package should ensure that the price charged to individuals for these services is commensurate with the overall health benefits provided to the patients and health system as a whole. Additionally, the price charged to individuals for more expensive treatments and services, such as brand name drugs and unnecessary surgical services

should reflect the fact that these treatments add cost to the overall system without necessarily adding health benefits to the individual.

While technological advances have led to important improvements in health outcomes, the overuse of these services as well as drugs should be disincentivized through sound benefit package design. This will ensure that expensive high technology treatments and services are utilized under necessary circumstances and not as baseline for diagnosis and treatment. Expensive high technology services and treatments comprise an increasingly large share of the growing health care costs in the United States. The Congressional Budget Office found in 2008 that half of the growth in health expenditure in the United States over the past several decades is “associated with changes in medical care made possible by advances in technology” [167]. In Vermont, between 2004 and 2008, the use of MRI and CT scans increased by 7.1 percent and 7.9 percent respectively on an annual basis in community hospitals [168]. In setting the appropriate benefit package, Vermont should carefully weigh the potential benefits of high technology treatments and services with other less costly interventions that could be equally effective.

A sound benefit package can help avert the extreme financial hardship that individuals often face as a result of medical costs. In 2005, approximately half of those declaring bankruptcy in the United States did so on account of health care costs [169]. Of those individuals, three-quarters reported having health insurance. Despite having health insurance, households were not adequately protected from risk and as a result were faced with catastrophic expenditures due to illness. We estimate that 10 percent of patients face extreme health care costs every year, resulting in large part from expensive treatment of chronic illness and other diseases. Insurers are faced with a difficult tradeoff between the promotion of preventative medicine and the provision of financial risk protection for those individuals facing extremely high health care costs. The benefit package design should strike a balance between the use of limited financial resources that will improve health and high cost services that may bankrupt patients if not partially covered.

II. CURRENT BENEFIT PACKAGES IN VERMONT

Most of the current benefit designs in Vermont have modest or large deductibles, but exempt several preventive services from cost-sharing. For example, the Catamount Health program requires no cost sharing for annual physicals, OB-GYN examinations, screening mammograms and colonoscopies, PSA tests, immunizations, and well-child examinations. High or moderate deductibles reduce the demand for some “unnecessary” outpatient services, but create disincentives for early diagnosis and treatment.

As described above (See Section 4B: Estimation of Costs), Vermonters with private insurance pay, on average, 13 percent of their total spending in out-of-pocket with the other 87 percent paid by insurance, which represents their actuarial ratio. In designing the benefit packages, we used the concept of actuarial ratio as our guide and make certain that the standard benefit package covers services at the present actuarial ratio or higher.

III. VERMONT MEDICARE AND MEDICAID RECIPIENTS

Medicare is governed solely by federal law. In addition to the basic benefits, there is a complex system of coverage that “wrap around” Medicare, including private insurance products such as MediGap policies, Medicaid for low-income individuals and insurance coverage as part of

retirement benefits. Because of these complex factors, we recommend that the existing system be preserved, at least initially.

Medicaid is a joint federal-state program that provides coverage for low-income individuals and families and those with serious disabilities. The federal role in Medicaid is two-fold – to establish requirements associated with benefits and eligibility and to provide a significant portion of funding for the program. In Vermont, roughly 60 percent of the cost of the Medicaid program is paid for by the Federal Government. The state’s Global Commitment waiver expands scope of activities for which federal funds are available. In order to meet the goal of maximizing federal funds, we recommend that the Medicaid program be left unchanged, with one exception. For many Medicaid beneficiaries, existing benefits are already more comprehensive than the standard benefit package that we recommend, but for some, this may not be the case. We recommend identifying those programs which do not offer benefits that the standard benefit packages would offer and upgrade their benefits.

We recommend Medicare and Medicaid beneficiaries maintain their benefit packages and therefore would not be fully integrated into the proposed benefit package of the single payer system. However, under Options 1A and 1B we propose that payment, claims and billing for both Medicare and Medicaid should go through the same administrative body as the single payer system. In other words, all insurance programs utilize a single pipe for payment methods, rates and paying claims. As a result, savings can be derived from moving both programs to a more streamlined system. In order to do this, we recommend waivers to ensure that Medicare and Medicaid beneficiaries are part of the overall integrated delivery system and related payment system. Section 6I below provides details on these waivers.

IV. PROPOSED BENEFIT PACKAGE

We are guided by the principles stated above to design the benefit packages to promote prevention and primary care while insuring against catastrophic illnesses. This design is quite different from the current prevailing benefit packages which include a baseline deductible, usually \$500²⁸ or more, and copayment and coinsurance for amount spend over the baseline deductible. Such benefit design deters the use primary care and early detection and treatment of disease. Our approach to benefit design differs substantially from High Deductible Health Plans (which are usually offered in tandem with a Health Savings Accounts or HSA), which are based on large deductibles - between \$1,200 and \$5,950 for an individual policy and \$2,400 to \$11,900 for a family. Employers often contribute significant amounts to HSA. We believe that large deductibles discourage appropriate care and shift cost burdens from healthy individuals to those with health problems.

To ensure low-income individuals have access to affordable and high quality medical care, we recommend that they should be exempt from paying copayments and coinsurance. These limits would have to be set during the legislative process. One such scenario is to exempt individuals who earn up to 180 percent of the FPL, with a tiered-phase out of cost sharing between 180 percent and 220 percent of the FPL. This would align the proposed single payer cost-sharing plan with programs already in place in Vermont, as well as our proposed payroll contribution rate scheme.

²⁸ Certain preventive services such as mammogram are not subject to deductible or copayment.

a. COMPREHENSIVE SINGLE PAYER BENEFIT PACKAGE (OPTION 1A)

For Option 1, Vermont Act 128 requires the consultant to consider a government-run single payer health insurance system that provides a comprehensive benefit package. Such a benefit package would include medical, mental health and substance abuse, drugs, vision care, dental, nursing home and homecare. We consider the various services and designed such a benefit package, Option 1A

In designing the comprehensive benefit package, we aim to achieve approximately actuarial ratio of 97 percent for medical and mental health services, drugs and vision care, and for dental, nursing homes and homecare.

Based upon these guidelines, we have prepared an illustrative example of what such a comprehensive benefits package may cover and its relevant copayments and coinsurance. We stress that this is only an example and is meant for illustration purposes only. The legislative process would decide the actual benefits package under the proposed-single payer system. If implemented, these details would be worked out over time in consultation with all interested parties, both taking into account affordability and sustainability concerns, as well as our recommended principles listed above.

Table 12. Illustrative Comprehensive Benefit Package.

Covered Service	Copayment and Coinsurance	Limits
Overall		Capped at 5% of average Vermont annual wage per family
All Outpatient Services		
Preventive services	\$0	
Primary care physician services (community-based)	\$5	
Specialist care physician services (community-based)	\$8	
Other health professionals (Psychologist, chiropractic care; podiatrist)	\$8	
Urgent Care	\$10	
Outpatient visit: hospital based (non-surgical)	\$10	
Outpatient visit: hospital based (surgical)	\$20	
Emergency Room (non-emergency)	\$25	
Emergency Room (emergency)	\$0	
Family Planning	\$0	
All Inpatient Services		
Hospital Stay	5% coinsurance	
Rehabilitation Services	\$0	
Nursing Home Services	\$20/day	Limit \$200/day; max 3

		years
Homecare	10%	
Dental – Non-orthodontia	\$10	
Dental - Orthodontia	20%	
Prescription Drugs – under a statewide formulary	\$5 generic; \$10 for brand name when no generic is available; 20% coinsurance for brand name when generic is available	
Vision Care	\$8	Limited to \$200 for eye glasses/contact lenses per year
Durable Medical Equipment/Supplies	5%	

b. STANDARD BENEFIT PACKAGE (OPTION 1B)

For the Standard Benefit Package, we started by considering only benefit packages that would provide at least the actuarial ratios for medical and mental health services and drugs that the average Vermont private health insurance provides now. We also ensured that the principles for effective benefit package design were adhered to in designing a standard benefit package. This includes the promotion of preventative services, effective allocation of resources, a focus on care that provides that highest value for the patient and the overall health system, and disincentives for high cost and low value care. We added some illustrative additional coverage of vision and dental care services as permitted by the savings generated by the overall system reforms.

Under the standard benefit package the coverage long-term care is excluded, and vision care and dental services are covered on a limited basis. This exclusion of long-term for the elderly is based both on affordability concerns and the fundamental conflict of effectively pooling risks associated with long-term care and those associated with acute medical care. A more detailed discussion of this issue is presented in Appendix II: International Models of Long-Term Care. As other countries have done, Vermont could use the infrastructure of the single payer system to build a separate long-term care scheme. We recommend further study into this complex issue in order to determine the optimal design of a long-term care program for Vermont. Additionally, the Community Living Assistance Services and Supports (CLASS) Act included in PPACA will provide the opportunity for individuals to enroll in government-sponsored long-term care insurance. Nursing home and home health care that is currently included in most insurance plans in Vermont for short-term rehabilitation and other acute illness-related needs would continue to be covered under the standard benefit package.

Based upon these guidelines, we have prepared an illustrative example of what such a standard benefit package may cover and its relevant copayments and coinsurance. We stress that this is only an example and is meant for illustration purposes only. The legislative process would decide the actual benefits package under the proposed single payer system. If implemented, these details would be worked out over time in consultation with all interested parties, both taking into account affordability and sustainability concerns, as well as our recommended principles listed above.

Table 13. Illustrative Standard Benefit Package

Covered Service	Copayment and Coinsurance	Limits
Overall		Capped at 10-12% of average Vermont annual wage per family
All Outpatient Services		
Preventive services	\$0	
Primary care physician services (community-based)	\$20	
Specialist care physician services (community-based)	\$30	
Other health professionals (Psychologist, chiropractic care; podiatrist)	\$25	
Urgent Care	\$40	
Outpatient visit: hospital based (non-surgical)	\$25	
Outpatient visit: hospital based (surgical)	\$50	
Outpatient surgical procedure	20%	
Emergency Room (non-emergency)	\$75	
Emergency Room (emergency)	\$40	
Family Planning	\$0	
All Inpatient Services		
Hospital Admission	One day hospital deductible	
Hospital Stay	20%	
Rehabilitation Services, Nursing Home and Home Health (for post-acute care only)	\$0	
Primary Dental Care for Children	\$20	Only for children; excludes orthodontia
Prescription Drugs – under a statewide formulary	\$12 generic; \$25 brand name when no generic available; 25% coinsurance for brand name when generic is available	
Vision Care	\$20	One eye exam per year
Durable Medical Equipment/Supplies	10%	

E. BUDGETING PRINCIPLES

One of the imperatives in health care reform is sustainability – achieving a long-term balance between revenues and expenditures. This has proven challenging for many different reasons, including technological advances, provider and patient expectations, and the lack of a comprehensive control mechanism. Health care spending is a product of three components: price, quantity of services (or utilization) and intensity (or mix of services). Historically, efforts to control spending in the US have focused on only one of these. However, single-factor controls are rarely effective. For example, there is substantial evidence that when faced with reductions in price, providers would respond with increases in the number of services they deliver [170]. One mechanism that can control all factors simultaneously is a global budget, such as is used for hospital care in Canada. Under this model, a fixed funding level is established, with minimal or no access to additional funds. Under this budget system, there is no mechanism to gain more revenue than the budget would allow. The global budget, however, has to specify some minimum volume of services that provider has to provide.

Setting the total spending would be governed by the legislative budget process. The legislature would set both revenue, by setting the payroll tax rate, and expenditures, subject to the appropriation process. They would update the two major contributors to total spending - benefit packages and payment rates to providers – to ensure that the expected expenditure would be equal to expected revenues by adjusting

This approach provides rigorous control. If it is an entirely political process there is a risk that one or another of the interested parties will not “buy in” to the limits of the budget process. The importance of participating members supporting a process has been identified as key to the success of the Maryland hospital rate-setting process [171].

F. FINANCING

One of the major challenges in designing a health care financing scheme is the unpredictable nature of health care costs, both at the individual and population level. This uncertainty is often referred to as risk. At the individual level, it is almost impossible to know if one will become ill in the future, how serious that illness will be, what types of treatment will be necessary, and if those treatments will be successful. The same uncertainty translates to a population level, although as a statistical rule, the larger the population, the smaller the uncertainty relative to total spending.

Financing structure involves the methods to raise the funds for health, how the health risks are pooled and how the resources mobilized are allocated. The allocative mechanism is performed by the design of benefit packages. Decisions on how a health system is financed can affect how much funding can be generated, which can then influence the cost, quantity and quality of health care accessible to individuals. In addition to its direct effects on the health system, health financing has a broader impact on the overall economy, labor market and fiscal health of a country or state. Therefore, in developing the guiding principles for the financing of Vermont’s health care system we rely in large part on public finance literature. In order to move to a single payer system that has sufficient and equitable financing, we suggest Vermont move away from direct premium financing. We rejected income tax financing for reasons explained below. Rather we recommend the implementation of a general payroll contribution as part of a general social health insurance model.

The five basic principles listed and described below provide the foundation for this recommendation:

- Equity
- Risk pooling
- Minimize adverse economic effects
- Work within federal tax laws
- Incentivize health promotion and healthy lifestyle choices
- Maximize federal funds

Equity. Under the equity principle, health care should be financed according to ability to pay [172]. This equity principle is translated into practice through progressive health financing strategies, in which wealthier households contribute a relatively larger share of their income or wages as compared with poorer households. The most equitable, or progressive, form of health care financing is household income tax. Income taxes are formed in such a way that richer individuals pay a larger share of their income than poorer individuals, and therefore by using the overall income tax base to finance health care the same dynamics remain. However, if health is financed by an income tax, employers would lose their tax exemption currently in place under federal tax law for their health premium payments (see next section on federal law). We therefore recommend the implementation of a payroll contribution instead. In terms of equity, a payroll contribution is far superior to the current health insurance premiums. In the current employment-based group insurance, premium is paid on each worker. The same premium rate is charged to all individuals, regardless of income level. Payroll contributions based on wages would be more equitable in that individuals with higher wages would pay more into the system than individuals with lower wages.

Risk pooling. An effective health financing system should pool the healthy and less healthy people together into one risk pool so that large and unpredictable individual risks are distributed across all members of the pool [173]. In doing so, individuals are protected from the potentially impoverishing effects of high health care expenditure resulting from serious or prolonged illness. The higher risks of individuals who are more prone to illness or disease are balanced against the lower risks of healthier and often younger individuals. A description of mechanisms to partially offset the subsidy provided by low risk individuals to high risk individuals is provided below. This system of risk pooling ensures the financial well-being of the insurance system and maximizes citizens' overall health and wellbeing. In extending universal health insurance coverage to all Vermonters through a single payer system, all eligible Vermonters would pool their risks together and risk would be distributed across the entire eligible population.

Minimize adverse economic effects. The method used to finance health care can have potentially adverse effects on the overall economy, labor market and household incomes. Therefore, in carefully designing a health financing system, these potentially detrimental effects should be taken into account and minimized. To diminish labor market distortions, we recommend that individuals and their employers should on average not pay a greater share of their wages under the new health financing regime than they already dedicate to insurance premiums. While this would not be possible across the board, we have designed the financing structure so as to minimize potential

negative impacts, including decreased employment and employers in the state, reduced initiative and motivation of workers, and lower wages [174]. The minimization of any potential excess losses associated with a payroll contribution-financed health system is an additional consideration. Additional excess burden or losses exist if the contribution rate is set in such a way that increased revenue is more than offset by losses in the economy or to an individual [175]. Similar to insurance premiums, the burden of payroll contributions tends to be borne by the worker [176, 177]. Therefore, we want the contribution rate to be set in such a way that individuals are not incentivized to work less, make less money and consequently pay less money into the health system.

Work within federal tax laws. Under the tax code in the United State, employers' spending on health premiums is considered a legitimate business expense and exempted from taxation. Meanwhile, employees do not have to include the premium paid by employers as income that subject to income tax. The same treatment is given to the employer's contribution to health savings accounts [178]. These favorable tax treatments are called tax expenditures. It is imperative that in introducing a new health financing structure in Vermont, this tax exemption remains in place for Vermont employers and workers. Nationally, this tax expenditure is worth some \$250 billion [179], or about \$500 million for Vermont. A payroll contribution system enables employers' contributions to remain tax exempt and employees do not have to include employers' contribution as income.

State income taxes are deductible against federal tax but only for individuals who itemize deductions. At the national level in 2004, just 35 percent of taxpayers itemized their deductions in their federal tax returns and these were largely high income tax filers [180]. If Vermont were to finance this system on income tax, the federal tax treatment of health benefits would be lost for the populations who can least afford it. If Vermont establishes an income tax-financed universal health insurance, it would not be wise to increase the corporate income tax to finance it because that would negatively affect business investment and employment in Vermont. The full cost of coverage would then fall on the personal income tax. Workers would largely lose the tax expenditure that they would have gotten under the payroll tax scheme. In short, workers would pay significantly more in taxes. For these considerations of federal tax laws, we recommend a payroll tax financed universal health insurance.

There is a question as to who ultimately pays the employer portion of a health insurance premium or a payroll contribution. If employees decide which employer to work for based on the total compensation package that includes cash wage and the cost of fringe benefits, then employees are accepting lower wages for higher premium (or payroll contribution) paid by employers for insurance and pensions. Empirical research showed that this is true. US employers do shift the cost of payroll contribution back to the employees and reduce their cash or other compensation (except these workers who at the minimum wage.)

For equity reasons, we recommend that low income workers and their employers would be exempted from the payroll contribution. Vermont already has experience with such exemptions (for example, in the current employer assessment for Catamount Health) and found they can be quite complicated to specify in a law. For the simulation of the costs of Option 1 and 3 we exempted from the payroll contribution – both the employer and employee share – wages paid to workers earning less than 200 percent FPL. In designing exemptions like these, however, it is best to avoid the “notch” problem where individuals immediately fall out of full exemption status for very small increases in wages. These notches are also likely to cause labor market distortions. As such, we

recommend that Vermont phase out the exemption. For example, employers and employees would be fully exempt for those earning less than 180 percent FPL and the contribution rate would gradually increase until workers hit 220 percent of FPL, after which they would be subject to the full contribution rate.

The payroll was capped at \$106,800, the same cap as for Social Security payroll contributions, a figure that is indexed with GDP.

G. ADDITIONAL INVESTMENTS

I. PRIMARY CARE RECRUITMENT AND RETENTION AND HEALTH CARE FACILITIES

Historically, neither primary care nor rural practice has attracted enough physicians, due to relatively low salary compared to specialty medicine, and to quality of life. Other disincentives to rural primary care practice include availability of employment for spouses/partners, length of time needed to obtain a license to practice in VT, and administrative burdens of practicing in VT [45]. In order to attract and retain adequate numbers of PCPs, Vermont must provide incentives to doctors to change or minimize the perceived disadvantages of rural primary care practice.

The state of Vermont is already aware of and responsive to its PCP shortage. In October 2010, the state released a preliminary 5-year plan to improve primary care in Vermont. It reports that both the VT Area Health Education Center Program (AHEC) and the VT Department of Health have identified a statewide shortage of general internal physicians[45]. This number, however, does not reflect regional variations.

Vermont has several initiatives in place to encourage primary care practice. Since 1995, Vermont has sponsored primary care loan repayment and forgiveness programs to help physicians and other health care workers pay off large, burdensome debt incurred in medical school. Primary care doctors, nurse practitioners, physician assistants and dentists are all eligible for the loan repayment program, which is administered by AHEC. The loan forgiveness program is administered by the Vermont Student Assistance Corporation (VSAC), and applies only to nurses [181].

There are two types of AHEC repayment funds: recruitment for new doctors and retention for doctors currently practicing in eligible areas. Physicians must practice in one of the following disciplines: Family Practice, General Internal Medicine, Pediatrics, Obstetrics/Gynecology, and Psychiatry. They must work at least 20 hours per week, and must agree to accept Medicare and Medicaid patients, and to treat clients regardless of their ability to pay. AHEC indicates on their website that some employers or local areas may match their funds. Each individual may only receive the funds for six years. Physicians who also have a J-1 visa waiver are not eligible[182]. AHEC reports that 54 percent of all Vermont PCPs have been awarded funds to pay off their debts through this program[45].

Some questions have been raised as to the efficacy of the loan repayment program; the average award granted in 2006 was just over \$4,000. This amount may not be sufficient to entice doctors who are hundreds of thousands of dollars in debt [183].

J-1 Visa waivers are also granted each year to a limited number of non-citizen physicians who agree to work in underserved areas of VT for three years. The visas are awarded to primary care doctors

in different areas (gynecology, family medicine, etc.) that have “community need and shortage” designation in any particular year [184].

Through the AHEC Freeman Physician Placement program, the University of Vermont (UVM) College of Medicine and Fletcher Allen Residency Program encourage their students to gain exposure to rural Vermont areas in Federally Qualified Health Centers (FQHCs) in the hopes that the students would continue on to practice medicine there [185]. Currently, about 35 percent of Vermont’s physician workforce trained at UVM and or Fletcher Allen Health Care [45]. As of 2011, however, private funding for this program would end and only AHEC funding would remain. UVM also sponsors Primary Care Week, which essentially advertises primary care practice in Vermont to doctors and residents, and connects them with job opportunities in the state.

Another initiative currently in place is Vermont’s pilot Blueprint for Health advanced medical home pilot, underway in 3 communities that serve 10 percent of the population. In this pilot project, PCPs receive enhanced payments to compensate them for their administrative duties in creating a better network of care for their patients. This project is especially interesting because its aim is specifically to strengthen PCP practices to enact behavioral changes in their patients, and to coordinate patients’ care across different settings [186].

The Bi-State Primary Care Association, a private, non-profit organization operating in Vermont and New Hampshire, plays an important role in Vermont’s efforts to recruit and retain primary care physicians. Its Vermont Recruitment Center coordinates national outreach to find and recruit PCPs. AHEC runs complementary national outreach programs. The VT Department of Health provides some funding for these national outreach efforts [45].

The Bi-State Primary Care Association works closely with FQHCs. FQHCs provide reasonable priced, easily accessible community-based primary care services to Vermonters who lack a medical home [187].

The Office of Rural Health and Primary Care assists in designating areas and populations as underserved, which aids health care providers in taking advantage of state and federal assistance programs. Once a health center is designated as a FQHC, its doctors are eligible to apply for National Health Service Corps (NHSC) loan repayment awards. Bi-State Primary Care Association encourages residents and primary care doctors to apply for federal loan repayment through the NHSC. PCPs must apply on an annual basis to have a portion of their loans repaid. Physicians must work for two years in these areas before they are qualified to apply. The maximum amount awarded is \$50,000, but the website indicates that if a physician stays longer than 2 years, more support may be available.

Recognizing the importance of primary care physicians, in the PPACA the Federal Government has prioritized increasing the recruitment and retention of PCPs, with an emphasis on underserved communities. From 2011 to 2016, there will be a 10 percent bonus in Medicare payments to PCPs that have at least 60 percent of Medicare billing in the areas of office, nursing home and home care visits. From 2013 to 2014, the PPACA will raise Medicaid payments to Medicare rates for primary care physicians in the areas of evaluation and management services, as well as services related to immunization.

Additionally, the PPACA is set to increase funds to various programs that encourage primary care practice. National Health Service Corps funding is planned to rise from \$320 million per year in

2010 to \$1.15 billion per year in 2015. These funds are those used to help PCPs in high need areas pay back their debt. Title VII funds to family medicine residency programs and academic departments of family medicine have also been reauthorized. And as of January 1, 2011, funding for community health centers (such as the FQHCs mentioned above) will increase by \$11 billion [188].

Unsurprisingly, the most important reason medical residents choose specialty practice over primary care practice is financial. Many new physicians going into primary care may actually face expenses higher than their income, between paying for relocation costs and student loan debts. For new physicians, this fact is a substantial disincentive for pursuing a career in primary care.[189] A solution to this problem, then, would be to make primary care more financially attractive to residents, especially in the beginning of their residencies/careers so that they are locked into that choice. Some possible solutions include:

- Continuing loan repayment programs, making the financial rewards significant
- Incentivizing continued practice of primary care through salary increases after set time increments (1 yr, 3 yrs, etc.)
- Bonus payments before and after residency for choosing primary care residencies[190]
- Providing other non-salary financial incentives to new PCPs, such as free or subsidized housing or extra time off
- Increasing payment to PCPs for basic services and chronic disease management
- Decreased, or payment for, administrative tasks such as referrals

Increased funding may come from federal, state or local sources. Partnerships between private practices and hospitals may even allow the practices themselves to provide better financial incentives for new and continuing doctors.

The literature suggests that the most effective strategy to get physicians to practice medicine in a rural setting is exposure to admit medical students from rural communities and expose all students to rural practice during medical school and residency. Continuing support and expansion for UVM and Fletcher Allen Health Care's pro-rural medicine programs would likely benefit the state. Partnerships with medical schools in upstate New York, New Hampshire, Boston, and the surrounding areas with the aim of exposing medical students to rural medicine in Vermont might also have positive a positive impact [191].

The main incentive to increase the number of primary care physicians will have to be financial. Securing the funding, and then making its availability widely known among new physicians (not only from Vermont but also surrounding states) is paramount. Exposing physicians in training to rural medicine, and assuring that the exposure is a well-organized, positive experience may also alleviate the problem.

Despite the reliance on financial incentives to draw new PCPs into Vermont, family physicians in Vermont themselves have commented that practicing in a rational integrated health system, free from the arbitrary payment methods and barriers to health care delivery imposed by multiple payers, and where there are community resources developed and nurtured to support the work of the physician, would be a draw in and of itself. This could attract not just new doctors focused on

paying off medical debts, but physicians who have been in practice for years and whose dealings with the current US health care enterprise have become intolerable. Other physicians in Vermont have commented that a significant number of specialists in the US would be interested in moving to Vermont for this same reason – the ability to practice medicine free from administrative hassles with more time spent on patient care.

The focus of our recommended investments is to ensure adequate supply of primary care practitioners. However, these same programs could be extended to ensure adequate supply of any specialist or other type of provider with documented shortages.

We recommend an annual budget of \$50 million to be used to provide financial incentives for recruit and retain physicians and other practitioners in short supply. This budget should also be used as a source of investment to update health care facilities. Not only would this allow Vermonters to access high quality care and facilities, it would also assist in recruiting providers to the state.

II. HEALTH PROMOTION ACTIVITIES AND HEALTHY LIFESTYLE CHOICES

Many Vermont employers have already introduced effective work place health prevention and wellness programs such as biometric testing, in-house health coaches, on-site health clubs and fitness facilities, tobacco cessation programs and regular medical monitoring of employees with chronic diseases such as hypertension and diabetes. This type of health promotion both improves the overall health of the population and reduces the financial stress on the insurance system by lowering overall health care costs in Vermont. To encourage employers to develop effective preventive programs, we recommend that Vermont establish financial incentives to reward employers for programs, for example by offering a reduction in the payroll contribution level.

Similar incentives could be structured to encourage healthy lifestyles for individuals. Individual health can be improved by diet and lifestyle. Ideally, financial incentives should be given to those who change their lifestyles and improve their health. These are complex programs to design and administer, but we encourage Vermont to experiment with innovative programs. For example, we recommend that ACOs set aside a portion of their savings to share with individuals who show a commitment to healthy living and make alterations to their lifestyles to improve their overall mental and physical health. This practice can also help to cross-subsidize lower risks individuals in the overall population risk pool. These types of financing incentives can also target diverse workplaces or particularly innovative companies.

III. JOB RETRAINING

Though overall the models predict that these reforms would result in a net increase in employment in Vermont (See Section 8J on impacts below), some jobs in Vermont would be lost, especially for those involved in insurance operations and administrative staff employed by hospitals and clinics for billing and insurance related matters. Our survey of physicians, which largely agreed with national studies, found that for every FTE physician in the state there was approximately 0.78 FTE of administrative staff dedicated solely to billing and claims. The Vermont Department of Health Provider Survey shows that there were 1833 active physicians in 2008. Incorporating those who work less than full time, the DoH found that there are 1316 FTE physicians. This means that at least

1000 jobs in Vermont are those who work on billing and claims in physicians practices, with even more who work in similar roles in hospital settings and in the offices of other providers.

The costs associated with job-retraining and placement was not incorporated into the economic models. Vermont has an effective existing framework for job training and placement for dislocated workers. According to the Annual Report on the Vermont Workforce Investment act, in 2009, the state served 351 dislocated workers at an average cost of \$6691 per worker [192]. To retrain and place an estimated 1500 workers would cost approximately \$10 million. These one-time costs could be financed through \$50 million savings devoted to supply side enhancements, though the Vermont Legislature would ultimately have to decide on the distribution of these funds.

H. PAYMENT TO PROVIDERS

- We recommend a phased approach to payment reform as Vermont transitions from its current payment landscape to a uniform, global payment-based system.
- Currently, payments for physicians and other professionals are largely based on fee-for service (FFS) mechanisms, with highly varied payment methods and levels across public and private payers alike.
- In the first phase, we recommend moving all private payers to a uniform payment methods based on Medicare payment methods (RBRVS, DRG and APC) and a uniform payment rate, though at a higher level than current paid by Medicare. In order to constrain cost growth during this time, we furthermore recommend some form of global hospital budgeting.
- During this initial phase, Vermont should continue to experiment with risk-adjusted capitation payments to willing ACOs, leading Vermont to our recommended final state, where the basis of payments to providers – at least from the single payer system – would be risk-adjusted capitation payments or global payments.
- Capital expenditures should continue to be regulated, both through capital budgeting mechanisms and the Certificate of Need (CON) process.
- We further recommend that ACOs should set aside a portion of their savings to be shared with individuals to promote and reward healthy behaviors.

Besides professional ethics, payment methods and rates are the most effective instruments that we know to influence providers' behavior. Hospitals, health centers, and health professional offices are economic entities must generate revenues to survive and flourish. Payment methods establish the incentive structure that influence providers' behavior to obtain optimal revenue. In short, a payment system has significant effects on the cost of health care, the volume of services, choice of treatments, quality and efficiency of health care.

Under any modern insurance system, insurance plans should be prudent purchasers of health services on behalf of their insured. Even a new term, "value-based insurance" has been coined to highlight this role. Besides selecting and contracting with the qualified providers, the insurance plan has to negotiate with providers and establish payment method and rates.

The design of an appropriate payment system is difficult because of two major reasons. First, patients and health professionals have unequal medical knowledge or asymmetric information. When patients and health professionals have unequal positions, it leads to so-called market failures [193, 194]. Patients experience symptoms of illness and go to physicians and other professional practitioners for diagnosis and treatment because they possess superior medical knowledge. Patients want their providers to use this knowledge to act in their best interest. Meanwhile, the providers have their own economic and self-interest to look after. They are in a superior position and have greater influence over the type and volume of services given to patients. Sometimes, providers' and patients' interests may not coincide. Providers *can induce demand* and influence patients to accept inappropriate treatment or over-treatment. Second, patients lack knowledge to judge clinical quality of services. As result of these unequal positions of patients and providers, the paramount question becomes how we can create the appropriate incentives through a payment system that would induce the providers to deliver good quality and efficient health care to the patients?

The second challenge in designing an optimal payment method involves risk. Medicine is an uncertain science rooted in probabilities. Every patient is different - different genes, metabolism and immune systems. Patients with the same disease may exhibit different symptoms and respond differently to the same drug treatment. Thus diagnosis and treatment are embedded with uncertainty. Uncertainty creates treatment and financial risks for both patients and providers. Some of these risks can be reduced by health professionals, but not all. In designing a payment method, one has to consider what part of the financial risk should be placed with the provider and what part with the patient.

Who assumes this risk and under what circumstances are important design decisions. Many payment reform efforts in the past have focused on shifting risk from third party payers (insurers, public programs) to providers under the theory that providers have a greater capability to actively manage this risk. But without the resources, management and information infrastructure, this may not be so.

HISTORICAL AND CURRENT PAYMENT SYSTEMS

Historically, most providers in the US have been paid on a fee-for-service (FFS) basis and Vermont is no exception. Under FFS, payment is tied directly and solely to the quantity of service provided. Researchers discovered strong evidence that FFS promotes health cost inflation, waste and over-treatment. These findings lead Medicare to reform its payment method in the 1980s for inpatient hospital services from FFS to a prospective payment called the Diagnosis Related Group (DRG). They later moved from FFS to a prospective payment hospital outpatient services, called the Ambulatory Patient Classification (APC) system. These payment methods try to group services for an episode of treatment rather pay for every item of service, test, drug, and supply. Prospective payment systems greatly reduce but do not eliminate the volume incentive.

Capitation is a payment approach that eliminates volume incentives by paying a fixed amount of money, usually on a monthly basis, for each individual for whom the provider assumes responsibility. Capitation can be flat – the same rate regardless of personal characteristics - or risk-adjusted - amount takes into account factors such as patient age and health status. For example, an older patient with diabetes would have a higher expected health spending and so the payment to the provider would be higher, too. Risk-adjusted capitation reduces the incentive for providers to

“cherry pick” the healthiest patients. For example, the Medicare Advantage program pays managed care organization a risk-adjusted capitation to cover the expected costs of enrollees.

Payment systems in Vermont are a mixture of all these mechanisms. Private insurance plans in Vermont have shifted largely to DRGs for inpatient care, but not completely. Some hospitals are paid based on the older discount off charges model. As for physician services, most private insurance plans pay on a negotiated fee schedule or discounted charges. Private insurance plans do pay some provider health organizations (PHOs) on a capitation basis. However, these PHOs often in turn pay their physicians on a FFS basis. In Vermont, the Department of Labor sets a unified fee schedule that is used by all Workers Compensation insurance carriers to pay professional providers. Vermont Medicaid program largely followed the Medicare payment methods but pays at a lower rate.

Each of these reimbursement systems creates a different financial reward and risk for the provider. The table below shows different reimbursement systems, ranked by the level of control and risk from the provider’s perspective.

Table 14. Payment methods and impact on provider control and risk.

Mechanism	Provider Control (in order of reducing control)	Provider Risk (in order of increasing risk)
Fee-for-service, charges	Providers can completely determine their income by setting charges.	Providers are not at any risk if patients require more care than expected
Fee-for-service, fee schedule	Providers can determine their income by varying the volume of services they provide	
Prospective payment system	Providers must balance income and costs	
Capitation	Providers can influence income only by the number of patients for whom they assume responsibility. Costs become more important.	
Budget	Providers have no control over income, so all attention is on costs	Providers are fully at risk for quantity of care required

RECOMMENDED PAYMENT SYSTEM IN VERMONT: TRANSITION TO ACOS

Our recommendations draw on the vast reservoir of knowledge and evidence accumulated through decades of payment system research. We use this research to identify the methods to achieve the following goals:

- Enhance quality of care
- Promote efficiency
- Hold providers accountable for better health outcomes
- Improve supply to assure adequate and equal access
- Promote the integration of health care delivery

Currently, every class of payer in Vermont has their own payment methods and rates. Rates differ among private insurers and often private insurers would maintain multiple fee schedules for different providers. We recommend a two stage approach for Vermont as it moves towards the establishment of ACOs. For a more detailed discussion of issues surrounding the creation of ACOs in Vermont, see Section 9: Implementation.

Ultimately, we suggest a risk-adjusted capitation rate plus P4P in order to provide the incentives to integrate care delivery. In the transition period, Vermont should establish a uniform payment method and uniform rates for all insurance plans, including the Workmen's Compensation program. This uniform payment method during the transition period could be:

- Pay ACOs a risk-adjusted capitation rate with 20 percent of it based on pay for performance (P4P); this would incorporate the existing Blueprint payments to primary care practices as Medical Homes. For non-ACOs, pay hospital inpatient based on Medicare DRGs with 20 percent of the DRG rates paid based on performance (P4P), outpatient on Medicare's Ambulatory Payment Categories (APC).
- Primary care physicians would be paid on a risk-adjusted capitation plus P4P whenever physicians are willing to accept this method of payment. For those who refuse this payment method, these primary care physicians would be paid on Medicare's RBRVS fee schedule. Specialists would be paid on the Medicare's RBRVS-based fee schedule. Again, this would incorporate the Blueprint addition payments to PCPs based on their status and quality reporting as a Medical Home. Ideally, Vermont would modify the RBRVS to reflect the true work values being performed by primary care physicians.
- The payment for the same service would be identical regardless of where the service is provided – at a hospital, a doctor's office or health center.
- Outpatient drugs are paid based true acquisition costs with a dispensing fee.
- Mental Health Providers: there are various organizational formats for mental health delivery including integrated care and carve-outs; the single payer plan should examine the current evidence base regarding the most cost-effective mode of treatment for mental health to determine if the separation of physical and mental health benefits promotes overall cost-savings to total patient spending.

The payment mechanisms above address the price of services and include incentives based on quality of care, but they do not, with the exception of capitation, incorporate a method to address concerns about volume - the number and mix of services provided. Most service-based payment rates are based on the average cost to provide each service, but because some costs are fixed, the true cost declines as more services are produced. This gives a financial incentive to providers to produce more services, as long as the incremental cost is less than the average cost.

In order to address this issue, we are proposing a reimbursement system for hospitals that reduces the incentive to produce more services, but also attenuates the financial losses if the number of services drops. This is done by creating a revenue target that is computed using projected inpatient

and outpatient volume and DRG / APC weights. If the target is exceeded, any subsequent payments would be made using a DRG / APC base that is reduced by 20 percent, until actual revenue exceeds target by 10 percent. At that point, no more payments would be made until the next fiscal year. Similarly, if revenues are below the target and fall between 90-100 percent of the target, 20 percent of this gap would still be paid based on DRG and APC base. If revenues fall more than 10 percent below the target, rates would return to original figures for any volume that falls below the 90 percent.

The important aspect is to set the payment rates *prospectively* and the providers can keep any profit they can make between the payment rate and their actual cost. Then providers would have strong incentive to innovate and manage their operation to produce the services in the most efficient manner. This approach emphasizes cost control, not profit control.

However, we propose to still regulate the capital budgets and investments in Vermont to ensure that competition based on high-technology does not lead to the oversupply of expensive services and ultimately higher costs. We propose to achieve this through influencing the capital funds that hospital can generate. While hospital payment rates would allow for depreciation of capital equipments and buildings and this depreciation charge should be accumulated into a fund, this fund is not likely to be able to purchase the replacement of the existing equipments and buildings because of increasing in construction costs and costs of new technology. The hospitals have to borrow to finance new capital investments. Vermont can regulate this borrowing of capital.

Pay for Performance. Our recommendations stress the use of pay for performance in both the transition period and under full ACO implementation. Ideally, providers should be paid related to the health outcomes they produce and rewarded for delivering high quality care. There is a great deal of evidence and experience emerging as the US and countries around the world experiment with P4P, helping us to understand how to structure these incentive payments to avoid previous mistakes. For while P4P should incentivize higher quality care, these programs can be difficult to administer and easy to game. We propose that, like with ACOs, Vermont experiment with metrics and measures and provide a continuous improvement process for updating the P4P system.

P4P is a relatively new phenomenon. Major P4P pilots began in the US in the early 2000s and continue today, including new initiatives under PPACA. The UK's NHS implemented a grand-scale P4P program in 2004. Australia, Canada, New Zealand and Taiwan, Germany and the Netherlands all forayed into P4P in the late 1990s and early 2000s. These experiences represent P4P at different levels: hospital, practice and individual physician. P4P efforts can be placed within a major shift to patient-focused funding that includes DRGs and major market changes [195]. Overall, P4P has been subject to modestly rigorous evaluation finding some improvements in performance [196-198].

P4P requires the monitoring the performance of physicians and health professionals. Researchers generally find that US physicians dislike external oversight [199]. However, in one survey of suburban general internists, 75 percent of those surveyed supported the concept of financial rewards for quality service [200]. Interestingly, physicians already receiving financial incentives for quality were more likely to favor of such incentives, suggesting that once introduced, such measures might be more palatable than they are *ex ante*[200].

It is not easy to administer P4P and monitoring performance is can be difficult [201]. The fundamental questions revolved around what performance is controllable by the provider, at what

levels to set performance benchmarks all couched by the realities of what can actually be measured reliably.

Measures are often divided into three dimensions of quality: structure, process and outcome. The difficulty is that structure of facilities and qualifications of practitioners do not necessarily produce better health outcomes nor do the processes. Under P4P, we need to isolate those structural elements and those processes that do have significant impact on health outcomes.

There is a vast body of literature already accumulated on P4P that have contributed several important principles. First, the performance should not be measured in absolute terms, but in terms of relative improvement from the baseline [202]. Second, performance should be based on measures that can be controlled or influenced by providers. Third, performance should be based on the health outcomes as much as possible. Fourth, management and monitoring efforts must accompany P4P, otherwise the non-measurable quality and outcomes would be neglected [203]. Lastly, linking money to behaviors can decrease providers' intrinsic motivation to perform well for the patient [201, 204, 205].

I. WAIVER REQUIREMENTS AND ASSUMPTIONS

In order to achieve Option 1 as modeled, the state would need to seek waivers from federal law, including waivers from certain requirements in Medicare, Medicaid, and the new PPACA health insurance exchange. For Option 1 to proceed on the timeline as proposed, Vermont would have to successfully argue to pull back the current PPACA waiver date from 2017 to 2015.

The purpose of the waivers would be to provide the state flexibility to manage the federal funds and to reinvest savings in the health care system, including by insuring the uninsured, improving benefits for the underinsured, and the other suggested initiatives. The principle behind all of the waivers is the same:

- allow the state to obtain the federal funds for the eligible population and reinvest any savings from providing better, more efficient care in the health care system;
- provide the state flexibility in administration in order to align and integrate the federal reporting and claims processing and billing requirements of the three funding sources; and
- to the extent possible under federal law, align benefits with a standard benefit package to ensure an integrated system.

I. MEDICARE WAIVER(S)

The state may need to seek more than one Medicare waiver to create the single payer plan. These opportunities, discussed as well in the Federal Constraints Section, include:

- Seeking a waiver from the new Center for Innovation at the Centers for Medicare and Medicaid Services (CMS) under 42 USC §1315a;
- Seeking a more traditional Medicare waiver under 42 USC §1395b-1; or
- Seeking waivers to include Medicare in accountable care organizations 42 USC §1395jii.

The Center for Innovation has broad authority to implement innovative ideas to reduce program expenditures and improve quality of care through payment reform. The state would achieve the most flexibility around payment by seeking a waiver under 42 USC §1315a through the Center for Innovation, perhaps combined with a waiver to create accountable care organizations (ACO). This type of waiver likely could be used alone to create a new Medicare payment and delivery system in the new single payer system. It is possible that to move to providing payments to an accountable care organization that the state would need to seek additional authority under 42 USC §1395jjj, which explicitly provides for ACOs.

The single payer plan does not address Medicare benefits. The state should seek a waiver, however, to change the way Medicare pays for services – from a fee for service model to a capitated payment to an ACO over time. The state should also seek to align and simplify the administration of Medicare, including claims payment and billing, quality control, and fraud processes through a waiver to ensure that there would be one set of administrative requirements in the single payer system. This does not mean that there would not be a quality control or fraud control process, for example, but that there would be one process used in the state, instead of multiple requirements. More analysis will be required to determine the scope of administrative integration into the single payer. The state would ask to administer (or contract with an entity to administer) Medicare payment and claims as well so that the claims and billing processes would flow through the single payer. Lastly, if the state decided to pursue an all-payer rate process, the state would want to include Medicare, which could be pursued under existing authority as provided to Maryland and other states.

In the Medicare waiver, the state could model the idea on Medicare Advantage plans (“Part C”). Medicare Advantage plans are plans that offer comprehensive benefits to Medicare beneficiaries through a managed care model, which allows the entity paying for services to keep the “savings” produced from providing evidence-based, quality care and reducing duplication of services. If the state was considered a Medicare Advantage plan, it would have additional flexibility in the use of Medicare funds as well.

Vermont is in the process of taking a first step in managing Medicare funds through a new waiver, which allows the payment of Medicare funds for community health teams in the Blueprint for Health. The next step for the state would be to pursue a waiver to manage costs for individuals who are eligible for both Medicare and Medicaid (“dual eligibles”) – which the state is in fact working towards. The concept behind the “dual eligible” project is that because neither Medicare nor Medicaid covers all medical expenses for dual-eligible beneficiaries, each program has a significant incentive to deny some patient care in an effort to get the services covered the other program resulting in lower quality of care and higher administrative expenses. Successful coordination of care for dual-eligible beneficiaries requires integration of the competing financing streams. If the streams are combined such that a single entity is at financial risk for the care furnished to beneficiaries, these competing incentives are removed or greatly reduced.

II. MEDICAID

Section 1115 of the Social Security Act allows states great flexibility in the administration of the Medicaid program, although there are provisions of federal law which may not be waived. In order to include Medicaid in a single payer health care system, the state could use a model similar to the model currently used in the Global Commitment to Health waiver (“Global Commitment”).

Under the Global Commitment waiver, the state is considered a managed care entity and must comply with the Medicaid managed care rules in federal law. This model allows the state to negotiate an actuarially sound per member per month limit to pay for beneficiary benefits. If the state is able to provide benefits and stay under this limit, the state is able to use any additional funds for certain investments in the health care system, including:

- Reducing the rate of uninsured and/or underinsured in Vermont;
- Increasing the access of quality health care to uninsured, underinsured, and Medicaid beneficiaries;
- Providing public health approaches and other innovative programs to improve the health outcomes, health status and quality of life for uninsured, underinsured and Medicaid eligible individuals in Vermont; and
- Encouraging the formation and maintenance of public-private partnerships in health care, including initiatives to support and improve the health care delivery system.

Global Commitment for Health, Special Terms and Conditions, Term 58. This term appears to provide the state with flexibility in payment and participation in payment reform, including participation in an ACO. It is likely that the state may not need a different waiver to have Medicaid participate in a capitated model or an ACO.

The state has great authority to change the administration of the Medicaid program – especially around claims processing and billing. Additional analysis is needed to determine the flexibility in aligning or integrating the quality control and fraud requirements under federal law.

Lastly, Section 1115 allows the state flexibility in providing benefits as long as it meets minimal federal benefit requirements. The issue around aligning benefits in the Medicaid program with other benefits will be that there are certain types of nontraditional health benefits provided to Medicaid beneficiaries because they are traditionally low-income elders, individuals with disabilities, and children. For example, Medicaid provides payment for transportation to ensure adequate access to health services by this population. These benefits would continue to be provided for this population.

III. HEALTH INSURANCE EXCHANGE WAIVER

Section 1332 of the PPACA gives the federal Department of Health and Human Services (HHS) the authority to waive the federal requirements for the qualified health benefits plans, the health insurance exchanges, the cost-sharing in qualified health benefit plans, and the premium subsidies. HHS will require states seeking a waiver to have passed legislation and to have a proposal which:

- Provides benefit coverage as comprehensive as exchange;
- Provides coverage and cost-sharing protections against excessive out-of-pocket spending and covers as many residents as would have been in the exchange. Under this section, the state could obtain the federal premium and cost-sharing subsidies to fund a single payer system. While the parameters of the waiver provision are not entirely clear, because HHS has not yet issued federal regulations for this provision of statute, it seems likely that the state could be able to align

the benefit packages and administration, given the broad nature of the statutory language. Because the Exchange law assumes that coverage is provided by an insurer, it is left to the states (or the insurer) to determine administrative procedures to be used, including the quality control, fraud prevention, claims processing, and billing requirements. This would allow the state flexibility in aligning these requirements in the single payer.

The state will have to furthermore ensure that the PPACA waiver for Vermont saves both employers and individuals from the tax penalties under PPACA for the individual and employer mandates. Large employers in Vermont should be exempt from this IRS penalty as their workers would be covered by the state system; likewise, coverage under the Vermont single payer system should satisfying the individual mandate.

The primary challenge for the state for including this funding stream in the single payer will be that this waiver is not available to states until 2017 and it is an untested area. The Federal Government will likely wish to see the state operate an exchange for a period of time prior to allowing a waiver in order to ensure there is a mechanism for comparing benefit coverage, cost-sharing protections, and the number of Vermonters receiving coverage through the exchange. Given our analysis, we assume that it may be possible to amend this and receive a waiver in 2015, after one year of implementation. However, this is uncertain. In addition, there is overall uncertainty whether the federal administration would be amenable to a single payer approach or would be using the exchange provisions to pursue a market-based approach.

J. IMPACTS

I. OPTION 1A – COMPREHENSIVE BENEFIT PACKAGE

The model assumes single payer implementation starting in 2015. However, Vermont's Administration has indicated that they plan to introduce legislation to establish the single payer system in three phases. As such, we are presenting the impacts for 2016, when the full impacts of the plan would be more likely to be felt. In some cases, we also present impacts for 2019 in order to provide a long-term view of the reform outcomes. All the dollar figures representing reform impacts are presented in 2010 real US dollars, unless otherwise specified.

a. Impact on insurance coverage

Option 1A, the government-run single payer system with comprehensive benefits, would achieve universal insurance. All Vermont residents would be automatically covered under a very generous benefits package regardless of their employment status and would have their claims processed through one pipe. The 31,000 Vermonters left uninsured after the implementation of PPACA would be provided coverage under Option 1A. However, there may be some uninsured individuals at any given time, including those who have just moved in-state and have yet to establish legal residency, as well as undocumented workers. Similar to current Medicaid enrollment procedures, individuals would have to show proof of citizenship and Vermont residency to be granted coverage. The coverage under 1A would translate into a much higher financial protection from medical expenses. In addition to comprehensive medical care, the benefits package would also cover full dental and vision care, as well as long-term care services.

b. Impact on total spending for health in Vermont

By simplifying health care administration and curbing medical fraud, waste, and abuse, Option 1A produces significant savings for Vermont. The explanation behind these savings can be found in Section 4A. Specifically, we project that the cost of health services would be 13 percent lower in 2016 compared to PPACA implementation. Additional savings would be produced in subsequent years, as described in the Savings section above. However, the costs of expanding the benefit package are significant greater than these savings.

To be conservative, we assumed that Vermont would not be able to capture all of the estimated savings produced in the system. We assumed that Vermont would not keep savings that accrue to the Medicare program. Additionally, we did not expect to incur savings for health expenditures related to the utilization of services under Veterans Administration, and Workers' Compensation (though Workers' Compensation does accrue savings related to its administration expenses). Under these savings assumptions, total health care savings in 2015 would be approximately \$530 million in 2015, in the first year after implementation. In 2016 total health expenditures would reach slightly over \$5.7 billion, which is \$720 million less than after implementation of PPACA. On a per capita basis, total expenditures would be about \$1,000 less under a single payer system than under PPACA. The savings would reach over \$1 billion in 2019. By that year, the total per capita expenditures would increase to \$9,000, representing a per capita savings of about \$1,500 compared to the scenario of PPACA implementation only.

Despite these savings, the additional costs associated with the Option 1A benefit package are even greater. Total cost of benefits expansion and investments would total \$1.1 billion in 2015. This additional cost would increase to nearly \$1.2 billion in 2016 and to about \$1.3 billion in 2019. This includes the cost of covering the uninsured, providing more generous coverage to the underinsured, covering dental and vision care expenditures, investing in primary care and community hospitals capacity, as well as achieving uniform payment rates throughout Vermont's health system. Thus, our analysis shows that Vermont would be left with a net additional cost of \$460 million in 2016 after covering the additional benefits and investments included in Option 1A. This extra cost would increase the financial burden on businesses and households, since it would have to be financed through the payroll contribution.

c. Impact on federal funding for Vermont

It is in Vermont's interest to assure that the state receives the maximum amount of federal funding under PPACA. Such assurance depends on the state's ability to negotiate waivers with the Federal Government for a "block grant" of what the Federal Government would have paid under PPACA without a single payer system. The simulation results from the GMSIM model show that under Option 1A, the state would be entitled to receive about \$160 million in 2016 and \$190 million in 2019 as a lump sum "block grant" under a waiver for the individual subsidies and small business tax credits under PPACA.

Another important source of additional federal dollars consists of Medicaid funding, which would also be largely determined by negotiations between the state and the Federal Government for a Medicaid waiver. Implementation of the PPACA results in an additional \$180 million in 2016 and \$230 million in 2019 for Medicaid funding. This comes from additional Vermonters that enroll in Medicaid under PPACA, as well as funds to account for the higher matching rates for already eligible individuals provided under PPACA.

At the same time, Option 1A also proposes uniform payment rates to be paid to providers, including by Medicare and Medicaid. This reform would prevent cost-shifting and maximize federal funding for Vermont. To reach a uniform payment rate for all covered populations in Vermont, the state would need to substantially increase Medicaid rates to providers. This would result in additional federal dollars coming into Vermont because the Federal Government would share or “match” this increased Medicaid expenditure up to certain limits (see Section 4A: Estimating the Costs for more detail). By raising Medicaid rates, we computed that an additional \$57 million in federal funds would flow into Vermont beyond what additional funds come from PPACA in 2016. This additional funding would total about \$63 million in 2019.

d. Impact on employer spending

Option 1A would establish a single payer system that yields measurable one-time savings and also bends the health care cost curve over time. However, more would be spent for increased benefits than is achieved through savings under Option 1A. Therefore, implementing Option 1A would increase overall employer and employee health care costs. Using the GMSIM model, we calculated that a total tax rate of 18.2 percent of payroll would be necessary in 2016 to finance the single payer system. This rate would decrease to 17.0 percent in 2019. The employer contribution would be 13.6 percent in 2016 and 12.8 percent in 2019. The remaining portion would be borne by employees. In dollar terms, the GMSIM microsimulation found that employers’ contributions towards their employees’ health premiums would increase by about \$410 million and \$290 million in year 2016 and 2019, respectively. We relied on the GMSIM model to simulate the potential impacts of Option 1A on employers of various sizes, also comparing those who do and do not currently offer health insurance to their employees. Table 15 shows the simulation results for Option 1A, which covers all Vermont residents with the comprehensive benefit package divorced from employment status, and financed by a payroll contribution split between employers and employees. This impact analysis assumes that Option 1A is implemented after PPACA has gone into effect and Vermont has received waivers for PPACA, Medicare and Medicaid.

Table 15. Estimated impact of Option 1A on employer spending in 2016.

Employee spending by:	Change per employee (USD)
Number of employees in firm	
1-10	2,383
11-25	1,401
26-100	1,475
101-500	702
501+	375
Employer-Sponsored Insurance	
Firm not offering	2,027
Firm offering	350

Note: all figures in 2010 USD.

Table 15 shows that all employers in Vermont would have to pay more on average per employee, regardless of whether or not they offer coverage. However, firms that already offer health insurance

to their employees would see a small increase in costs compared to those firms that don't offer insurance. In total, offering firms would spend \$82 million more in 2016, or \$350 per employee. Non-offering firms would pay \$327 million more in 2016 under Option 1A or \$2,027 more per employee. In terms of firm size impacts, the largest negative impact is borne by firms that employ less than 10 employees, because the majority of these firms are not offering health insurance to their employees today. These small firms would spend approximately \$2,383 per employee in 2016. Larger firms would also experience higher spending than they would have under PPACA. Spending for firms with between 11 and 100 employees would increase by more than \$1,400 per employee, while firms with between 101 and 500 employees would spend approximately \$702 more per employee. The largest firms in Vermont would spend about \$375 more per employee on health care.

e. Impact on households

Option 1A would also increase overall health care costs for households. Although their current payment for health insurance premium would be removed, households would see a decrease in their cash wages and at the same time higher earners would have to pay a higher payroll contribution. Because the benefits of insurance are very generous, households' out-of-pocket payments would be reduced. We used the GMSIM model to simulate the potential impact on households and found that on average Vermont households would see a *negative* net benefit of about \$153 million in total or \$551 per household in 2016, slightly decreasing thereafter (Table 16).

Table 16. Estimated household benefit of Option 1A in 2016.

	Change per household (USD)
Total costs	-931
Total benefits	-1,482
Net financial benefit¹	-551

Note: all figures in 2010 USD;

¹Total additional benefits minus total additional costs.

Total costs, including taxes, would decrease by \$259 million in 2016, or \$931 per household. ESI and individual premiums would be eliminated and replaced with a payroll contribution representing a flat percentage of wages. At the same time, out-of-pocket spending, including deductibles, coinsurance, and copayments for the insured, and care received by the uninsured, would decrease substantially.

Meanwhile, total additional benefits would also decrease by \$413 million, or \$1,482 per household. Households would see lower wages as a result of higher employer benefits costs. This despite the receipt of a block grant representing federal subsidies and business tax credits that would be received under PPACA, as well as the higher Medicaid federal funding that would be used to finance the single payer system and would have the effect of lowering the payroll premium contribution.

The simulation analysis shows that households with incomes lower than 133 percent of the federal poverty level (FPL) would benefit the most from Option 1A per household (Table 17). The net financial benefit for these households would total \$40 million, or \$710 per household. Households

with incomes between 133 percent and 400 percent of FPL would see the highest total benefit, of \$78 million, but the per-household benefit would be about \$653. Wealthier households, with incomes above 400 percent of FPL, would see relatively large negative impacts. Their net financial losses would be \$270 million in total, or \$2,608 per household.

Table 17. Distributions of estimated net household benefit of Option 1A in 2016.

Benefit by:	Net benefit per household (USD)
Household Income	
< 133% FPL ¹	710
133-400% FPL	653
> 400% FPL	-2,608

Note: all figures in 2010 USD;

¹FPL: federal poverty level.

f. Impact on employment

The public single payer option with a comprehensive benefits package, Option 1A, is projected to have a relatively large positive impact on Vermont employment. Specifically, the REMI model estimates that by 2016, Option 1A would produce about 8,000 additional new jobs in comparison to PPACA implementation only. By 2019, the total number of additional jobs created in the state would be approximately 7,000. These effects are driven mainly by three factors: estimated changes in health care spending that produce new jobs, projected changes in net wages that decrease the number of jobs, and changes in the composition of household consumption expenditures towards health insurance or health care services that produce new jobs.

Changes in net health care spending account for an estimated 10,000 additional jobs in 2016 and 8,000 additional jobs in 2019. The model considers three types of new employment associated with changes in health spending. First, direct employment results from physician services, hospital patient care, and nursing home services. Second, employment is derived from secondary expenditures, as would occur when a physician or hospital purchases goods and services from any other suppliers. And finally, employment is derived from tertiary expenditures, which occur when employment income generated among primary and secondary providers is spent in the state for household consumption. Under Option 1A, health spending would increase dramatically because of the high level of benefits, which explains the creation of jobs.

Higher net health care spending is, in large part, funded by a significant increase in payroll contributions. The source of these contributions is the wages of Vermont workers, who would see a reduction in their wage and salary income. This change accounts for a loss of approximately 3,400 jobs in 2016 and 2,000 jobs in 2019 under Option 1A as estimated by the REMI model. These reductions are allocated by industry and employer size and result in lower wage incomes to the workers, reducing disposable income available for purchasing goods and services. This has the net effect of eliminating jobs from the economy. However, relative to health spending changes, wage income changes have a lower dollar-for-dollar impact on the state economy because of “geographic leakages” that occur when households purchase goods and services outside of Vermont. Thus, the

addition of new jobs through higher health spending trumps the loss of jobs due to lower wages, because health spending creates a high proportion of local jobs.

Finally, changes in household consumption composition account have an effect of creating another 1,400 new jobs in the state in 2016 as compared to the PPACA scenario. In 2019, this component would be responsible for creating about 1,000 additional jobs. This is because Option 1A would influence households to allocate a larger share of their incomes towards health care products and services produced inside the state.

g. Impact on gross state product (GSP)

Option 1A would also increase the state domestic product. According to the macroeconomic analysis performed using the REMI model, the implementation of this option would produce a total of about \$320 million in additional economic output by 2016 compared to PPACA. By 2019, this additional GSP would be about \$250 million. The impacts on gross state product mirror the expected effects of Option 1A on employment. The main drivers for these impacts are health care expenditure changes and changes in net wages. Changes in household consumption composition account for a slight increase in GSP.

h. Impact on migration

The Option 1A single payer plan would lead to an influx of people to the state because of newly created jobs. In total, by 2016 the REMI model projects that an estimated additional 4,000 individuals would relocate to Vermont in comparison to after PPACA implementation. By 2019, new Vermont residents would increase by 8,000 compared to implementation of PPACA only. Importantly, this effect would be seen simply because the new employment opportunities would make living in the state more attractive.

We expect some in-migration to Vermont as a result of generous long-term care benefits provided under Option 1A. However, it is difficult to estimate the magnitude of this migration, since a single payer system with an extremely generous benefit package has never been implemented in the United States. We review the experience of other states, such as New York and California, following the introduction of more generous welfare benefits to residents compared to neighboring states, but found little evidence of migration for the purpose of exploiting the richer benefits. See section 6C: Eligibility for a longer discussion on the issue of medical migration.

OPTION 1B – STANDARD BENEFITS PACKAGE

The model assumes single payer implementation starting in 2015. However, Vermont's Administration has indicated that they plan to introduce legislation to establish the single payer system in three phases. As such, we are presenting the impacts for 2016, when the full impacts of the plan would be more likely to be felt. In some cases, we also present impacts for 2019 in order to provide a long-term view of the reform outcomes. All the dollar figures representing reform impacts are presented in 2010 real US dollars, unless otherwise specified.

a. Impact on insurance coverage

Option 1B, the government-run single payer system, would achieve universal insurance. All Vermont residents would be automatically covered with a uniform benefits package regardless of

their employment status and would have their claims processed through one pipe of payment. The benefits package would potentially cover new benefits such as dental and vision care for Vermont residents. All remaining 31,000 uninsured after the implementation of PPACA would gain coverage. However there may be some uninsured individuals at any given time, including those who have just moved to Vermont and have yet to establish legal residency, as well as undocumented workers. Similar to current Medicaid enrollment procedures, individuals would have to show proof of citizenship and Vermont residency to be granted coverage. Impact on total spending for health in Vermont

b. Impact on total spending for health in Vermont

By simplifying health care administration and curbing medical fraud, waste, and abuse, Option 1B would produce significant savings for Vermont, even when after accounting for the costs of additional benefits under the standard benefits package. The explanation of how these savings would be derived is in the section above on savings (see Section 4A). Specifically, we project that the cost of health services would decrease in 2016 by approximately 13 percent of what they would be after PPACA implementation by moving to a single payer system. Additional savings would be produced in subsequent years, largely from payment reform and moving to an integrated delivery system.

To be conservative, we assumed that Vermont would not be able to capture all of the estimated savings produced in the system. We assumed that Vermont would not keep savings that accrue to the Medicare program. Additionally, we did not expect to incur savings for health expenditures related to the utilization of services under Veterans Administration, and Workers' Compensation (though Workers' Compensation does accrue savings related to its administration expenses). Under those savings assumptions, total health care savings in 2015 would be approximately \$530 million in 2015, the first year after implementation. In 2016 total health expenditures would reach approximately \$5.7 billion, which is \$720 million less than after implementation of PPACA. On a per capita basis, total expenditures would be about \$1,000 less under a single payer system than under PPACA. The savings would reach over \$1 billion in 2019. By that year, the total per capita expenditures would increase to \$9,000, representing a per capita savings of about \$1,500 compared with the scenario of PPACA implementation only.

Importantly, Vermont can use the savings to expand the benefits package. Under Option 1B, one of the key design principles was that the new reform would not lead to an increase in health spending, therefore any extension of coverage and expansion of benefit package must be funded through the savings achieved. Our team recommends that Vermont use part of the savings to provide universal coverage and to provide additional benefits. Under Option 1B, the additional cost associated with this improvement in coverage would total \$382 million in 2015, the first year after implementation. The costs would be \$395 million in 2016 and \$435 million in 2019. This includes the cost of covering the uninsured, providing more generous coverage to the "underinsured," covering a portion of dental and vision care expenditures, investing in primary care and community hospitals capacity, as well as achieving uniform payment rates throughout Vermont's health system.

Our computation thus shows that Vermont would be left with a net potential savings of \$148 million in 2015 after covering the costs of additional benefits and investments included in Option 1B, which would reduce the financial burden on businesses and households. In 2016, net savings would reach \$325 million, while in 2019 Vermont can expect to save more than \$615 million compared to PPACA, after accounting for the extra benefits and investments in the health system.

c. Impact on federal funding for Vermont

It is in Vermont's interest to assure that the state receives the maximum amount of federal funding under PPACA. Such assurance depends on the state's ability to negotiate waivers with the Federal Government for a "block grant" of what the Federal Government would have paid under PPACA without a single payer system. The simulation results from the GMSIM model show that the state would be entitled to receive about \$160 million in 2016 and \$190 million in 2019 as lump sum "block grant" under a waiver for the individual subsidies and small business tax credits under PPACA.

Another important source of additional federal dollars consists of Medicaid funding, which would also be determined by negotiations between the state and the Federal Government for a Medicaid waiver. Under this reform option, we assumed that Vermont would be able to negotiate with the Federal Government to receive the full additional Medicaid funding that it is eligible for under PPACA, amounting to about \$180 million in 2016 and \$230 million in 2019. This includes Medicaid funding for Vermonters that enroll under PPACA, as well as funds to account for the higher matching rates for already eligible individuals provided under PPACA.

At the same time, Option 1B also proposes uniform payment rates to be paid to providers, including by Medicare and Medicaid. This reform would prevent cost shifting and to maximize the federal funding for Vermont. To reach a uniform payment rate for all covered populations in Vermont, the state would need to substantially increase Medicaid rates to providers. This would result in additional federal dollars coming into Vermont because the Federal Government would share or "match" this increased Medicaid expenditure up to certain limits (see Section 4B: Estimation of Costs for more detail). By raising Medicaid rates, we computed that an additional \$57 million in federal funds would flow into Vermont beyond what additional funds come from PPACA in 2016. This additional funding would total about \$63 million in 2019.

d. Impact on employer health spending

Option 1B would establish a single payer system that decreases employers' and employees' health care costs by creating savings in administration and health service utilization. Using the GMSIM model, we calculated that a total contribution rate of 12.8 percent of wages would be necessary to finance the single payroll system in 2016. This rate would decrease to about 11.8 percent in 2019. The employer share of this tax would be 9.6 percent in 2016 and 8.8 percent in 2019, and the remaining portion would be borne by employees. In dollar terms, the GMSIM analysis found that employer contributions towards their employees' health premiums would be reduced by about \$80 million and \$220 million in year 2016 and 2019, respectively. These reductions are in addition to the impacts produced by PPACA. We relied on the GMSIM model to simulate the potential impacts of Option 1B on employers of various sizes and by whether or not they offer health insurance to their employees. Table 18 shows the simulation results for Option 1B, which covers all Vermont residents with the proposed standard benefit package divorced from employment status, and financed by a payroll contribution split between employers and employees. This impact analysis assumes that Option 1B is implemented after PPACA has gone into effect and Vermont has received waivers for PPACA, Medicare and Medicaid.

Table 18. Estimated impact of Option 1B on employer spending in 2016.

Employer spending by:	Change per employee (USD)
Number of employees in firm	
1-10	1,310
11-25	233
26-100	224
101-500	-773
501+	-1,376
Employer-Sponsored Insurance	
Firm not offering	1,450
Firm offering	-1,349

Note: all figures in 2010 USD.

Table 18 shows that employers that do not currently offer coverage would have to pay more, while firms that already offer health insurance to their employees would have lower health care costs. In total, offering firms would spend \$314 million less in 2016, or \$1,349 per employee. Non-offering firms would pay \$234 million more in 2016 under Option 1B, or \$1,450 more per employee. The largest impact would be borne by firms employing between 1 and 10 employees. This is because the majority of firms in this size category do not currently offer health insurance to their employees. These smaller firms would spend approximately \$1,310 more per employee in 2016. Larger firms would experience substantially lower spending than they would have under PPACA. Spending for firms with between 101 and 500 employees would be \$773 less per employee, while firms with more than 500 employees would spend approximately \$1,376 less per employee.

e. Impact on households

Option 1B would lower health care costs for households. Their current payment for health insurance premiums would be removed and they are likely to see an increase in their cash wages, but at the same time higher earners would have to pay a higher payroll contribution. Households' out-of-pocket payments would be reduced. We used the GMSIM model to simulate the potential impact on households and found that, on average, Vermont households would see a net benefit of about \$82 million in total or \$294 per household in 2016, increasing thereafter (Table 19).

Table 19. Estimated household benefit of Option 1B in 2016.

	Change per household (USD)
Total costs	-259
Total benefits	35
Net financial benefit¹	294

Note: all figures in 2010 USD;

¹Total additional benefits – total additional costs.

Total costs including taxes would decrease by \$72 million in 2016, or \$259 per household. Specifically, ESI and individual premiums would be eliminated and replaced with a payroll

contribution representing a flat percentage of wages. At the same time, out-of-pocket spending, including deductibles, coinsurance, and copayments for the insured, and care received by the uninsured, would decrease substantially.

Meanwhile, total additional benefits would increase by \$10 million, or \$35 per household. Households would see higher wages as a result of lower employer benefits costs. The block grant representing federal subsidies and business tax credits that would be received under PPACA, as well as the higher Medicaid funding, would be used to finance the single payer system. These subsidies would have the effect of lowering the payroll premium contribution.

The simulation analysis shows that households with incomes between 133 percent and 400 percent of the federal poverty level (FPL) would benefit the most from Option 1B (Table 20). The net financial benefit for these households would total \$125 million, or \$1,056 per household. Wealthier households, with incomes above 400 percent of FPL, would see negative impacts, with net financial losses of \$72 million in total, or \$795 per household.

Table 20. Distributions of estimated net household benefit of Option 1B in 2016.

Benefit by:	Net benefit per household (USD)
Household income	
< 133% FPL ¹	509
133-400% FPL	1,056
> 400% FPL	-695

Note: all figures in 2010 USD;

¹FPL: federal poverty level.

f. Impact on employment

The public single payer option with a standard benefits package, Option 1B, is projected to have a positive impact on Vermont employment. Specifically, the REMI model estimates that by 2016, Option 1B would produce about 3,800 additional new jobs in comparison to PPACA implementation only. By 2019, the total number of additional jobs created in the state would be approximately 3,100. These effects are driven mainly by three factors: estimated changes in health care spending that produce new jobs, projected changes in net wages that also produce new jobs, and changes in the composition of household consumption expenditures towards health insurance or health care services which have a negative effect on jobs.

Changes in net health care spending account for an estimated 3,500 additional jobs in 2016, and 1,900 additional jobs in 2019. The model considers three types of new employment associated with changes in health spending. First, increased usage of physician and hospital patient care would lead to increased demand for workers employed directly in that sector. Second, employment is derived from secondary expenditures, which would occur when a physician or hospital purchases goods and services from suppliers. And finally, employment is derived from tertiary expenditures, which occur when employment income generated among primary and secondary providers is spent in the state for household consumption.

Changes in net wages account for an estimated 400 additional jobs in 2016 and 1,400 jobs in 2019. These changes reflect the combined effect of all Option 1B changes on employer costs as estimated by GMSIM, and are allocated by industry and employer size. Option 1B reduces the health insurance premium costs of employer and employee and these savings result in higher wage income to workers, who spend the income to purchase goods and services and stimulate local consumption that creates jobs. However, relative to health spending changes, wage income changes have a lower dollar-for-dollar impact on the state economy because of “geographic leakages” that occur when households purchase goods and services outside of Vermont.

Finally, changes in household consumption composition account for losses of 100 jobs in the state in 2016 as compared to the PPACA scenario. In 2019, this component would decrease employment by about 200 jobs compared to PPACA. This is because Option 1B would result in households spending a slightly larger share of their incomes on products and services produced outside the state.

g. Impact on gross state product (GSP)

Option 1B would also increase the GSP. According to the macroeconomic analysis performed using the REMI model, the implementation of this option would produce a total of about \$100 million of additional gross state product by 2016 compared to PPACA. By 2019, this additional GSP would be about \$50 million. The impacts on gross state product mirror the expected effects of Option 1B on employment. The main drivers for these impacts are health care expenditure changes and changes in net wages. Changes in household consumption composition account for slight decreases in GSP in 2016 as compared to the PPACA scenario.

h. Impact on migration

The Option 1B single payer plan would lead to an influx of people to the state because of newly created jobs. In total, by 2016 the REMI model projects that an estimated additional 1,600 individuals would relocate to Vermont in comparison to after PPACA implementation only. By 2019, new Vermont residents would increase by 2,900 compared to implementation of PPACA only. Importantly, this effect would be seen simply because the new employment opportunities would make living in the state more attractive.

7. OPTION 2: THE PUBLIC OPTION

A. OVERVIEW AND MODELING ASSUMPTIONS

We modeled the Public Option as a choice for consumers purchasing individual insurance through Vermont's Health Insurance Exchange. The Public Option could also be made available to the small group market. However, we excluded the small group market for the purposes of the modeling owing to the dwindling size of this market in Vermont and the concurrent rise of the Association Plan market.²⁹ Whether to include the Association Plan Market in the small group market in the Exchange would be an explicit policy decision for the state.

We estimated that marketing and underwriting costs contribute 2-4 percent to premiums and could be saved if administered by a public or quasi-public entity. However, there would still likely be some marketing costs to attract enrollment, so we used the lower bound of 2 percent savings compared to existing individual market products. Further savings could be possible Vermont chose to reimburse providers significantly lower than current private levels. However, we did not assume any cost differential based on reduced payments. Such payment differentials, as already exist in Medicare and Medicaid) could ultimately impact enrollees' access to providers in the state (See Section 2E: Provider Human Resources and Health Care Facilities Infrastructure). As for all options, we suggest a movement towards ACOs with risk-adjusted capitation payments.

Under this Option, we further modeled that all claims payment and administration, regardless of payer, would be funneled through a single channel. This would significantly reduce the administrative burden on providers (see Section 4A: Estimation of Savings) though not as dramatically as would a single insurance fund, owing to the continued existence of varied benefit packages. We did not assume a uniform payment rate level for all payers, though this would be another policy option available under Option 2, see further discussions under Budgeting Principles and Payment to Providers below.

B. GOVERNANCE AND ORGANIZATION

The requirements set forth in Act 128 state that the public option shall be a government-administered plan that competes with private insurance in the market place. However, the market place of the future will be shaped largely by the existence and requirements of the PPACA Exchanges. In order for the Public Option to effectively compete with other health plans in the State of Vermont, it must be offered through the Exchange to allow individuals to access the tax credit and cost sharing subsidies. As discussed in Section 2B, participation in the Exchanges is largely limited to state-licensed plans. Barring a waiver, this means that the Public Option must become a state licensed insurance product.

²⁹ BISHCA publishes the Annual Statement Supplement Report (ASSR) Market shares each year; in 2009 there were 19,201 lives in the small employer market and 79,491 in the Association Plan market.

Connecticut, in designing its public Sustinet Plan, has faced similar issues in dealing with the compliance of their plan with the Exchanges. In their January 8th 2011 report, the Sustinet Health Partnership Board of Directors concluded that indeed their plan would need to become a state licensed insurance product and that this should be possible: “Publicly administered health plans at the county level in California have operated with insurance licenses for many years, even though capital requirements for licensure are much higher in that state than here.”

As such the state would need to create some sort of free-standing Public Option Entity. In order to become licensed as an insurer, the new entity must comply with the requirements set out in Title 8 and in BISHCA regulations. Of greatest importance would be obtaining the capital necessary to meet the reserve and solvency requirements necessary for licensure.

C. BENEFIT PACKAGE AND FINANCING

The benefit plan modeled is after the average value and scope of benefits currently available on the individual market. The design of the benefit package, as well as the cost, is the primary mechanism through which this plan would compete with existing private insurers. The current private individual market is largely comprised of high deductible plans and those with medium deductibles - \$250/\$500 or \$500/\$1000 for individual/family. We do not think that this is the optimum design to encourage early detection and treatment of disease. However, individuals in the private market are accustomed to these designs. If the Public Option were to deviate greatly from these basic designs, it might not be able to get the maximum number of enrollees. If, however, the Public Option can be competitive with different benefits packages, we recommend that the benefit package should be designed according to the principles and following the features of the Standard Benefits Package as outlined under Option 1. The Public Option would be financed by direct premium payments to the Public Option Entity.

D. BUDGET AND COST CONTAINMENT PRINCIPLES

The Public Option deviates little from the basic structure of the current private market. As such it is similarly limited in its ability to control overall system cost (See Section 6E: Budgeting Principles). This structure preserves the multi-payer system, so there would still be opportunities to “cost shift” exist when some reimbursement is set unilaterally and other reimbursement is negotiated. For example, in Vermont, the Department of Banking, Insurance, Securities and Health care Administration estimated that during FFY 2009, Medicare shifted \$86.8 million and Medicaid shifted \$91.8 million of their costs onto private payers

Cost shifting occurs when in an effort to offset low reimbursement by one payer, a provider increases charges to another. Note that the ability to shift costs requires the ability to negotiate payments. While reducing reimbursement can save funds for an individual payer, it has minimal impact on total spending, may lead to access problems, and raises equity issues among payers. Reimbursement rates under private coverage are most often established through negotiation (although this is often not the case for individual practitioners or small practices).

The Public Option could be granted the ability to unilaterally set reimbursement in the same way that Medicare and Medicaid do now. But, as noted above, this could create access issues for Public Option enrollees and reduce provider buy-in to the program, who already cite low reimbursements

from public payers as a major issue of concern both currently and with regards to future reforms (See Section 2D: Stakeholder Analysis).

One more comprehensive cost-control solution for the Public Option would be to engage in an all payer rate-setting scheme. For example, Maryland has for many years used a flexible all-payer rate setting program for hospital payments, including Medicaid and Medicare.³⁰ By controlling rates for all-payers they eliminate the ability of providers to cost shift. However, this would require significant additional state spending to increase Medicaid and Medicare rates to the uniform standard (for details see Section 4B: Estimation of Costs). Hence, we did not model uniform rate-setting for the Public Option.

E. PAYMENT TO PROVIDERS

Our recommendations for payment to providers are largely identical for all options – a move towards risk-adjusted capitation payments including pay for performance to be accepted by Accountable Care Organizations. For a full discussion of the reasoning behind the design and further details, please see Section 6G under Option 1.

However, as previously mentioned, Option 2 has not been modeled with a uniform rate schedule. As such, during the transition period, as well as the full ACO implementation period, there would still be individual provider and payer negotiations. As previously mentioned, Vermont could choose to create an all-payer rate setting system to facilitate the a uniform payment system, with the caveat that this would require an additional source of financing to bring up both Medicare and Medicaid to the new, uniform average. Conversely, private payers would see a significant drop in the payment rates and premiums.

F. WAIVER REQUIREMENTS

Assuming the Public Option can become a state licensed insurance product the state would not need to seek a waiver from the PPACA Exchange requirements. However, in order to create the single channel system of payment, the state would still need to seek waivers from federal law regarding both Medicare and Medicaid.

As described earlier, there is great flexibility around payment reform through the new waiver available from the Center of Innovation. The purpose of the waivers would be to provide the state flexibility to manage the federal funds and to reinvest savings in the health care system, including by insuring the uninsured, improving benefits for the underinsured, and the other suggested initiatives. The principle behind all of the waivers is the same:

- allow the state to obtain the federal funds for the eligible population and reinvest any savings from providing better, more efficient care in the health care system;

³⁰ Achievement, Access and Accountability: A Guide to Hospital Rate Regulation in Maryland. Maryland Hospital Association, January 2002.

- provide the state flexibility in administration in order to align and integrate the federal reporting and claims processing and billing requirements of the three funding sources

For a detailed discussion of these waivers, refer to Section 6I under Option 1.

G. IMPACTS

The model assumes system reform implementation starting in 2015. However, Vermont's Administration has indicated that it plans to introduce reform legislation to establish a new system in three phases. As such, we are presenting the impacts of all the reform options for the year 2016, when the full impacts of the any implemented plan would be more likely to be felt. In some cases, we also present impacts for 2019 in order to provide a long-term view of the reform outcomes. All the dollar figures representing reform impacts are presented in 2010 real US dollars, unless otherwise specified.

a. Impact on insurance coverage

Option 2, the public option plan offered on the health insurance exchanges established under PPACA and combined with "single-pipe" payment reforms, would cover an additional 3,000 Vermont residents compared to PPACA implementation. However, this option would not achieve universal insurance. Even in the second year of implementation, in 2016, about 28,000 Vermonters would still lack health insurance.

Our analysis shows that the public option could be slightly more competitive than private insurers offering plans on the Health Insurance Exchanges. However, there is limited evidence to suggest that a public option could achieve significantly lower premiums while maintaining the same level of benefits as private plans. Thus, we assumed that the public plan would offer coverage similar to that of private plans at a 2 percent lower premium rate and that public plan enrollees would be eligible for the same level of federal subsidies as provided under PPACA for enrollment in other Exchange plans. Under this assumption, the microsimulation performed using the GMSIM model shows that approximately 10,000 Vermonters would enroll in the public option in 2016. By 2019, the number of Vermonters who would choose this option over other private plans would reach 12,000.

b. Impact on total spending for health in Vermont

By introducing health system reforms that consolidate all claims processing into a single pipe, Vermont would significantly simplify health care administration and gain the ability to curb medical fraud, waste, and abuse. In this way, Option 2 would produce sizable savings for Vermont. However, these savings are significantly lower than those achievable by the implementation of a single payer system. A more detailed discussion of these savings can be found in Section 4A. Specifically, by introducing a public option and single pipe reform we project that the cost of health services would be 6 percent lower in 2016 than health care costs under PPACA implementation. Additional savings would be produced in subsequent years, as described in the Savings section above.

We assumed that Vermont would not be able keep savings that accrue under the Medicare program. Furthermore our savings assumptions did not apply to health spending under the Veterans Administration program, Workers' Compensation, or spending on long-term care.

We analyzed the potential savings that could accrue to services affected by administrative simplification and the decrease in fraud, waste, and abuse and payment reform. Under those savings assumptions, total health care savings in 2015 would be approximately \$320 million in 2015, the first year after implementation. In 2016 total health expenditures would reach approximately \$6 billion, which is \$470 million less than after implementation of PPACA. On a per capita basis, total expenditures would be about \$700 less under a single payer system than under PPACA. The savings would reach about \$700 million in 2019. By that year, the total per capita expenditures would increase to \$9,500, representing a per capita savings of about \$1,000 compared with the scenario of PPACA implementation only.

The benefits that the public option can offer would be subject to federal Exchange regulations, which specify the minimum level of coverage that a plan must offer in order to be a Qualified Health Plan. Although the state may choose to offer better coverage under the public plan than typical private plan benefits, this choice would carry the danger of attracting disproportionately high-risk individuals and putting the plan on a “death spiral” caused by adverse selection. Thus, the state would most likely have to offer benefits similar to the competing plans on the Exchange, and instead compete on price and quality of service. Therefore under Option 2, we have not built in any extra costs for additional benefits. This model also did not include health care infrastructure investments in Vermont.

c. Impact on federal funding for Vermont

In order to calculate the amount of federal funding that Vermont would receive under Option 2, we assumed that the public option would be treated the same as a private plan for the purpose of allocating individual subsidies and small business tax credits. The simulation results from the GMSIM model show that the state would receive about \$130 million in 2016 in federal non-Medicaid funding. This amount is about \$30 million less than under PPACA. Of this amount, \$110 million would be received in the form of individual subsidies to purchase insurance and \$20 million would be given to small businesses as tax credits to cover their employees. In 2019, total PPACA funding would increase to \$150 million consisting of \$130 million in subsidies and \$20 million in small business credits.

Another important source of additional federal dollars consists of Medicaid funding. The simulation model predicts that there would be an increase in federal funding for Medicaid of about \$180 million in 2016 and \$230 million in 2019. This includes Medicaid funding for Vermonters that enroll in Medicaid under PPACA, as well as funds to account for the higher matching rates for already eligible individuals provided under PPACA.

d. Impact on employer health spending

Option 2 would establish a public option that competes with private plans in the Health Exchange, as well as single-pipe reforms that simplify administration and curb health care waste. Option 2 would decrease employers’ and employees’ health care costs by creating savings in administration and health service utilization. Using the GMSIM model, we calculated that total ESI premiums would amount to about 12.4 percent of payroll in 2016, after adjusting for a hypothetical exemption for workers under 200 percent of FPL and the Medicare cap on high wages. This adjustment was made to make the percentage rates comparable between Option 2 and the single payer options. This rate would increase to about 13.6 percent in 2019. The employer share of this tax would be 8.5 percent in 2016 and would remain at that level in 2019; the remaining portion would be borne by employees. However, it is important to note that under Option 2, many Vermonters would still be

uninsured and underinsured. Moreover, benefit packages would not provide coverage of dental and vision care. Finally, there would be no investments in Vermont’s physician workforce and health care facilities.

In dollar terms, the GMSIM results showed that employer contributions towards their employees’ health premiums would be reduced by about \$120 million and \$150 million in year 2016 and 2019, respectively. These reductions are in addition to the impacts produced by PPACA. We relied on the GMSIM model to simulate the potential impacts of Option 2 on employers of various sizes and by whether or not they offer health insurance to their employees. Table 21 shows the simulation results for Option 2. This impact analysis assumes that Option 2 is implemented after PPACA has gone into effect.

Table 21. Estimated impact of Option 2 on employer spending in 2016.

Employer spending by:	Change per employee (USD)
Number of employees in firm	
1-10	-130
11-25	-132
26-100	-136
101-500	-330
501+	-651
Employer-Sponsored Insurance	
Firm not offering	0
Firm offering	-507

Note: all figures in 2010 USD.

Table 21 shows that employers that do not currently offer coverage would not have to pay more overall, while firms that already offer health insurance to their employees would have lower costs. In total, offering firms would spend \$118 million less in 2016, or \$507 per employee. Firms of all sizes would have their costs decreased by Option 2. The largest positive impact would be seen by firms employing more than 501 employees. These larger firms would spend approximately \$70 million less, or \$651 less per employee, in 2016. Similarly, firms with between 101 and 500 employees would see lower costs by about \$330 per employee. This is because these firms would be incentivized to drop their employee coverage, pay the “pay-or-play” assessments, and have their employees receive coverage on the insurance Exchanges. Smaller firms would also experience lower spending than they would have under PPACA. Spending for firms with between 1 and 100 employees would drop by more than \$130 per employee.

e. Impact on households

Option 2 would lower the health cost for households. Their payments for health insurance premiums, both ESI and individual, would decrease compared to PPACA, and they are likely to see an increase in their cash wages. Higher earners would have to pay slightly higher taxes. Households’ out-of-pocket payments would also be reduced. We used the GMSIM model to simulate the potential impact on households and found that on average Vermont households would see a net benefit of about \$117 million in total or \$414 per household in 2016, increasing thereafter (Table 22).

Table 22. Estimated household benefit of Option 2 in 2016.

	Change per household (USD)
Total costs	-50
Total benefits	364
Net financial benefit¹	414

Note: all figures in 2010 USD;

¹Total additional benefits net of total additional costs.

Total costs including taxes would decrease by \$14 million in 2016, or \$50 per household. Meanwhile, total additional benefits would increase by \$101 million, or \$364 per household. Households would see higher wages as a result of lower employer benefits costs, while the federal subsidies and business tax credits that would be received under Option 2, as well as the higher Medicaid funding, would be very similar in value to those received under PPACA.

The simulation analysis shows that households with incomes higher than 400 percent of the federal poverty level (FPL) would benefit the most from Option 2 (Table 23). The net financial benefit for these households would total \$77 million, or \$739 per household. Less wealthy households, with incomes between 133 and 400 percent of FPL, would see lower impacts, with net financial benefits of \$37 million in total, or \$308 per household.

Table 23. Distributions of estimated net household benefit of Option 2 reform in 2016.

Financial benefit by:	Net benefit per household (USD)
Household income	
< 133% FPL ¹	42
133-400% FPL	308
> 400% FPL	739

Note: all figures in 2010 USD;

¹FPL: federal poverty level.

f. Impact on employment

The public option coupled with system reform, Option 2, is projected to have a negative impact on Vermont employment. Specifically, the REMI model estimates that by 2016, Option 2 would produce about 2,400 *fewer* new jobs in comparison to PPACA implementation only. By 2019, the total number of additional jobs lost in the state would be approximately 3,100. These effects are driven mainly by three factors: estimated changes in health care spending that cause a loss in jobs, projected changes in net wages that produce new jobs, and changes in the composition of household consumption expenditures towards health insurance or health care services which have a negative effect on jobs.

Changes in net health care spending account for an estimated 3,200 fewer jobs in 2016 and 4,200 fewer jobs in 2019. The model considers three types of new employment associated with changes

in health spending. First, direct changes in employment are resulted from physician services and hospital patient care. Second, employment changes are derived from secondary expenditures, as would occur when a physician or hospital purchases goods and services from any other suppliers. And finally, employment changes are derived from tertiary expenditures, which occur when employment income generated among primary and secondary providers is spent in the state for household consumption.

Changes in net wages account for an estimated 700 additional jobs in 2016 and 900 jobs in 2019. These changes reflect the combined effect of all Option 2 changes on employer costs as estimated by GMSIM, and are allocated by industry and employer size. Option 2 reduces the health insurance premium costs to employers and employees and these savings result in higher wage income to the workers, who spend the income to purchase goods and services and stimulate local consumption that creates jobs. However, relative to health spending changes, wage income changes have a lower dollar-for-dollar impact on the state economy because of “geographic leakages” that occur when households purchase goods and services outside of Vermont.

Finally, changes in household consumption composition have an effect of adding 100 new jobs in the state in 2016 as compared to the PPACA scenario. In 2019, this component would increase employment by about 200 jobs compared to PPACA. This is because the law would determine households to allocate a slightly lower share of their incomes towards products and services produced outside the state.

g. Impact on gross state product (GSP)

Option 2 would negatively impact the GSP. According to the macroeconomic analysis performed using the REMI model, the implementation of this option would lower the GSP by about \$170 million by 2016 compared to PPACA. By 2019, this decrease in economic product would be about \$250 million. The impacts on gross state product mirror the expected effects of Option 2 on employment. The main causes for these impacts are health care expenditure changes and changes in net wages. Changes in household consumption composition account have the effect of slightly increasing GSP in 2016 as compared to the PPACA scenario.

h. Impact on migration

The Option 2 single payer plan would lead people leaving the state. In total, by 2016 the REMI model projects that about 1,000 fewer individuals would relocate to Vermont in comparison to after PPACA implementation only. By 2019, there would be about 2,400 fewer new Vermont residents than after the implementation of PPACA only. Importantly, this effect would be seen simply because the adverse employment conditions would make living in the state less attractive. We expect no out-migration as a result of the changes in health insurance implemented by Option 2.

8. OPTION 3: PUBLIC/PRIVATE SINGLE PAYER

A. OVERVIEW AND MODELING ASSUMPTIONS

The public-private single payer we designed for Option 3 shares many of the features of Option 1B, the government-run single payer. Both have the same Standard Benefit Package. In terms of Eligibility, Financing, Additional Investments in physician workforce and health care facilities, Payment to Providers and Waiver requirements, Option 1 and Option 3 are identical. The sections below largely repeat or reference those above.

Like Option 1, Option 3 creates a single insurance fund and a uniform benefit package. The system is financed through employer and employee payroll contributions from all Vermont wage earners, with exemptions from the contribution for low-wage workers. All eligible Vermont residents would be covered.

The main distinguishing feature of this Option is the governance and organization, which is discussed below. Instead of being purely government-administered, under this option, the Single Payer Entity would be governed by an independent board representing all the major payers, including, employers, state government and consumers, as well as the beneficiaries or recipients of benefits and payments, including providers and consumer groups.

We assume that this management structure, as well as the competition for claims processing contracts, would result in slightly greater overall savings: 0.5 percent greater administrative savings through greater efficiency and 0.5 percent greater savings on overall health spending.

B. GOVERNANCE AND ORGANIZATION

Initially, the legislature would legislate the benefit package and payroll contribution required to finance it. After that, an Independent Board with representatives from payers (i.e. state government, employers and workers) would negotiate with representatives of consumers and providers for updates to the benefit packages and payment rates to providers. Benefit coverage decisions and payment rates together largely determine the next year's expenditures, the required payroll contribution rates, and also the revenues of providers. The Board would recommend the change in benefit package, payment rates and payroll contribution rate to the Governor and the legislature. Ultimately, the legislature is the only body that has the authority to levy the payroll contribution.

We believe that this negotiation is an improvement over the budget system in Option 1 because it is largely insulated from the political process and will produce substantially more buy-in by all parties than a budget that is developed in the Legislature. The Board's decisions on benefit and payment updates would be binding, though the Legislature must still appropriate the funds and set the payroll contribution rate. We expect this negotiation would result in more modest increases in spending over time.

Vermont would have to decide and resolve several issues with regard to Board appointments, terms and composition. For example, the board would need to have some expertise on health payments and health economics. This could be achieved either by allocating a certain number of board positions to health economics or public health and payment systems experts, or through an expert advisory panel that supports the work of the board. Vermont would likewise need to determine the appropriate appointment mechanism for board members, if they choose to deviate from a standard mechanism of Governor Appointment with Senate approval. The composition of the board –with providers effectively collectively negotiating their payment rates – may also have anti-trust implications. The Administration is currently investigating these issues.

Option 3 preserves a limited role for private insurance in the area of claims administration and provider relations. The Independent Board would contract out, through a competitive bidding process, the claims administration and provider relations functions for the entire single payer system. We expect competition to serve the claims administration role will provide incentives for the contractor to innovate and increase efficiency. These contractors, however, would have no authority to set benefit or coverage decisions. For example, Vermont Medicaid currently contracts out its claims processing and provider relations to private companies, however coverage decisions are made at the state agency level.

There are certain functions that must remain with the state, including setting health policy, eligibility determination and means testing for subsidies and contribution exemptions. The development and reorganization of these capacities and functions is further discussed in Section 9: Implementation.

C. ELIGIBILITY

We propose that the public-private single payer plan covers all Vermont residents. Residents must be either US citizens or documented legal immigrants and show proof of residence in Vermont as defined by Vermont laws. Vermont residents who are eligible for Medicare and/or Medicaid would not see their benefit packages change. Medicare beneficiaries would still receive Medicare benefits. Those who are eligible to be covered under Medicaid shall continue to receive Medicaid benefits.

One of the challenges in establishing eligibility and ensuring adequate financing is border-crossing – those Vermont residents who work out of state (about 21,000 people in 2000) and those residents of other states who work in Vermont (about 16,000 in 2000) [158]. We recommend that Vermont employers be allowed to “buy-in” their non-resident employees. We also recommend allowing out-of-state employers who offer insurance to their Vermont resident employees to buy-in to the Vermont system. Those who do not buy-in would have their insurance plan as the primary payer and then coordination of benefits provisions would be adopted. We recommend those Vermont residents who work out-of-state for employers who do not offer coverage should pay the employers payroll tax contribution rates. For this population, we believe further study is needed and the legislature has to give careful consideration as how to treat them.

There is discussion on whether the extension of coverage to all Vermont residents would lead to large inflows into Vermont of individuals who cannot afford health benefits elsewhere and would not make adequate payroll contributions to finance their care. We examined both Vermont specific data and national experience and we find little evidence that Vermont would become a health benefit “magnet” state for lower-income individuals who would not pay into the system. The

system that we propose in Vermont is unique in the US and therefore to adequately address this issue we had to rely on studies related to welfare benefit induced migration. The evidence on welfare “magnet” states shows that the impact of migration on budgets is nil to quite small. Rather, jobs and family are the primary reasons individuals choose to move from state to state [159, 160]. The Vermont single payer program may be more likely to result in an in-flow of working and middle class persons responding to job opportunities. Such a situation could increase beneficiaries of the single payer program, but would also likely result in an expansion of the tax base used to fund it. Furthermore, those individuals who are below a certain income level are already eligible for subsidized or free care under Vermont’s current health benefits programs. In addition to evidence on the national scale, Vermont policymakers should note that Vermont-specific evidence from studies conducted by the Vermont Department of Children and Families (DCF) shows an insignificant proportion of welfare beneficiaries that report moving to the state on account of its generous public assistance benefits [161].

Furthermore, evidence shows that the financial sustainability of recent national efforts to expand state-based health insurance coverage, such as TennCare in Tennessee, has not been threatened due to large inflows of migrants. TennCare expanded Medicaid coverage to several hundred thousand additional Tennessee residents (both uninsured individuals and those who were denied coverage due to pre-existing conditions) through a managed care organization model. The major drivers of costs were associated with prescription drugs, long-term care, and professional services [162]. Each of these potential cost drivers are appropriately managed through effective benefit design, an effective payment system and the implementation of integrated delivery systems as described in detail in the report.

D. BENEFIT PACKAGE DESIGN

Act 128 requires the consultant to consider two designs of benefit packages for Option 1. We relied on the following principles in designing the benefit packages. The benefit package described below as 1A and 1B are illustrations of our recommended design in broad terms. The fine details will be left up to the legislature, allowing different providers to argue their cases for inclusion in the benefit package and level of coverage.

Principles in designing the benefit package:

- Benefit package is the major instrument to allocate resources.
- Benefits alter the financial incentive for patients by removing or reducing the financial cost of seeking health care; this impacts not only the patient choices but also provider decisions about when and how much care to provide.
- Provide financial incentive for prevention, early detection and treatment before disease becomes acute
- Provide financial incentives to patients to substitute effective alternative treatments (generic drugs, medical treatment rather surgery, care at lower levels rather than at higher levels). These incentives should complement provider payment incentives.
- Discourage the use of expensive high technology services that are not cost effective.

- Risk protection from impoverishment from health expenses

The benefit package is the primary instrument to allocate resources to different types of health services. Insurance coverage or the lack thereof influences how much health care patients seek and where they seek it. For example, when a type of service such as primary care is covered by insurance, the cost of a visit is reduced for patients and they in turn respond by demanding more of this service. When primary care is not covered, but hospital services are, patients demand more hospital services as a substitute for primary care wherever possible. While services covered by insurance reduce or remove financial barriers to these services, they can also influence patients to demand “unnecessary” services, when such services are free or offered for very low cost. This behavior leads to waste of scarce resources. We often hear physicians complain that patients demand unnecessary services, tests and drugs. This practice poses serious challenges for physicians as they determine how best to diagnose and treat patients. In designing a benefit package, appropriate incentives and risk protection should be provided to patients so as to maximize the positive effects of insurance and diminish the potentially negative consequences of overuse.

The benefit package should promote prevention in order to maximize the long-term health of patients, as well as, the financial sustainability of the health care system. Financial incentives provide an important channel through which preventative care can be promoted. By doing so, a health system can enable early detection and treatment of diseases before they become acute or serious and thus more expensive to treatment. As a result, the utilization of vastly more expensive care can be averted through earlier diagnosis and treatment. Various studies show that prevention and primary care provide the most value per dollar spent in improving the overall health of a population than secondary or tertiary care [163-166]. Therefore, prevention coupled with early diagnosis and treatment can improve the health of an individual, as well as the health of the overall population.

As discussed, the benefit package is directly linked with the overall cost of health care. Therefore, in designing a benefit package, effective alternative treatments should be promoted in place of more expensive treatment options that do not provide added value to patients. Such “alternative treatments” include generic drugs, medical treatment in lieu of surgery, and health care at lower levels, such as primary care. A sound benefit package should ensure that the price charged to individuals for these services is commensurate with the overall health benefits provided to the patients and health system as a whole. Additionally, the price charged to individuals for more expensive treatments and services, such as brand name drugs and unnecessary surgical services should reflect the fact that these treatments add cost to the overall system without necessarily adding health benefits to the individual.

While technological advances have led to important improvements in health outcomes, the overuse of these services as well as drugs should be disincentivized through sound benefit package design. This will ensure that expensive high technology treatments and services are utilized under necessary circumstances and not as baseline for diagnosis and treatment. Expensive high technology services and treatments comprise an increasingly large share of the growing health care costs in the United States. The Congressional Budget Office found in 2008 that half of the growth in health expenditure in the United States over the past several decades is “associated with changes in medical care made possible by advances in technology” [167]. In Vermont, between 2004 and 2008, the use of MRI and CT scans increased by 7.1 percent and 7.9 percent respectively on an

annual basis in community hospitals [168]. In setting the appropriate benefit package, Vermont should carefully weigh the potential benefits of high technology treatments and services with other less costly interventions that could be equally effective.

A sound benefit package can help avert the extreme financial hardship that individuals often face as a result of medical costs. In 2005, approximately half of those declaring bankruptcy in the United States did so on account of health care costs [169]. Of those individuals, three-quarters reported having health insurance. Despite having health insurance, households were not adequately protected from risk and as a result were faced with catastrophic expenditures due to illness. We estimate that 10 percent of patients face extreme health care costs every year, resulting in large part from expensive treatment of chronic illness and other diseases. Insurers are faced with a difficult tradeoff between the promotion of preventative medicine and the provision of financial risk protection for those individuals facing extremely high health care costs. The benefit package design should strike a balance between the use of limited financial resources that will improve health and high cost services that may bankrupt patients if not partially covered.

II. CURRENT BENEFIT PACKAGES IN VERMONT

Most of the current benefit designs in Vermont have modest or large deductibles, but exempt several preventive services from cost-sharing. For example, the Catamount Health program requires no cost sharing for annual physicals, OB-GYN examinations, screening mammograms and colonoscopies, PSA tests, immunizations, and well-child examinations. High or moderate deductibles reduce the demand for some “unnecessary” outpatient services, but create disincentives for early diagnosis and treatment.

As described above (See Section 4B: Estimation of Costs), Vermonters with private insurance pay, on average, 13 percent of their total spending in out-of-pocket with the other 87 percent paid by insurance, which represents their actuarial ratio. In designing the benefit packages, we used the concept of actuarial ratio as our guide and make certain that the standard benefit package covers services at the present actuarial ratio or higher.

III. VERMONT MEDICARE AND MEDICAID RECIPIENTS

Medicare is governed solely by federal law. In addition to the basic benefits, there is a complex system of coverage that “wrap around” Medicare, including private insurance products such as MediGap policies, Medicaid for low-income individuals and insurance coverage as part of retirement benefits. Because of these complex factors, we recommend that the existing system be preserved, at least initially.

Medicaid is a joint federal-state program that provides coverage for low-income individuals and families and those with serious disabilities. The federal role in Medicaid is two-fold – to establish requirements associated with benefits and eligibility and to provide a significant portion of funding for the program. In Vermont, roughly 60 percent of the cost of the Medicaid program is paid for by the Federal Government. The state’s Global Commitment waiver expands scope of activities for which federal funds are available. In order to meet the goal of maximizing federal funds, we recommend that the Medicaid program be left unchanged, with one exception. For many Medicaid beneficiaries, existing benefits are already more comprehensive than the standard benefit package that we recommend, but for some, this may not be the case. We recommend identifying those

programs which do not offer benefits that the standard benefit packages would offer and upgrade their benefits.

We recommend Medicare and Medicaid beneficiaries maintain their benefit packages and therefore would not be fully integrated into the proposed benefit package of the single payer system. However, under Options 1A and 1B we propose that payment, claims and billing for both Medicare and Medicaid should go through the same administrative body as the single payer system. In other words, all insurance programs utilize a single pipe for payment methods, rates and paying claims. As a result, savings can be derived from moving both programs to a more streamlined system. In order to do this, we recommend waivers to ensure that Medicare and Medicaid beneficiaries are part of the overall integrated delivery system and related payment system. Section 6I below provides details on these waivers.

IV. PROPOSED BENEFIT PACKAGE

We are guided by the principles stated above to design the benefit packages to promote prevention and primary care while insuring against catastrophic illnesses. This design is quite different from the current prevailing benefit packages which include a baseline deductible, usually \$500³¹ or more, and copayment and coinsurance for amount spend over the baseline deductible. Such benefit design deters the use primary care and early detection and treatment of disease. Our approach to benefit design differs substantially from High Deductible Health Plans (which are usually offered in tandem with a Health Savings Accounts or HSA), which are based on large deductibles - between \$1,200 and \$5,950 for an individual policy and \$2,400 to \$11,900 for a family. Employers often contribute significant amounts to HSA. We believe that large deductibles discourage appropriate care and shift cost burdens from healthy individuals to those with health problems.

To ensure low-income individuals have access to affordable and high quality medical care, we recommend that they should be exempt from paying copayments and coinsurance. These limits would have to be set during the legislative process. One such scenario is to exempt individuals who earn up to 180 percent of the FPL, with a tiered-phase out of cost sharing between 180 percent and 220 percent of the FPL. This would align the proposed single payer cost-sharing plan with programs already in place in Vermont, as well as our proposed payroll contribution rate scheme.

For the Standard Benefit Package, we started by considering only benefit packages that would provide at least the actuarial ratios for medical and mental health services and drugs that the average Vermont private health insurance provides now. We also ensured that the principles for effective benefit package design were adhered to in designing a standard benefit package. This includes the promotion of preventative services, effective allocation of resources, a focus on care that provides that highest value for the patient and the overall health system, and disincentives for high cost and low value care. We added some illustrative additional coverage of vision and dental care services as permitted by the savings generated by the overall system reforms.

Under the standard benefit package the coverage long-term care is excluded, and vision care and dental services are covered on a limited basis. This exclusion of long-term for the elderly is based both on affordability concerns and the fundamental conflict of effectively pooling risks associated

³¹ Certain preventive services such as mammogram are not subject to deductible or copayment.

with long-term care and those associated with acute medical care. A more detailed discussion of this issue is presented in Appendix II: International Models of Long-Term Care. As other countries have done, Vermont could use the infrastructure of the single payer system to build a separate long-term care scheme. We recommend further study into this complex issue in order to determine the optimal design of a long-term care program for Vermont. Additionally, the Community Living Assistance Services and Supports (CLASS) Act included in PPACA will provide the opportunity for individuals to enroll in government-sponsored long-term care insurance. Nursing home and home health care that is currently included in most insurance plans in Vermont for short-term rehabilitation and other acute illness-related needs would continue to be covered under the standard benefit package.

Based upon these guidelines, we have prepared an illustrative example of what such a standard benefit package may cover and its relevant copayments and coinsurance. We stress that this is only an example and is meant for illustration purposes only. The legislative process would decide the actual benefits package under the proposed single payer system. If implemented, these details would be worked out over time in consultation with all interested parties, both taking into account affordability and sustainability concerns, as well as our recommended principles listed above.

Table 13. Illustrative Standard Benefit Package.

Covered Service	Copayment and Coinsurance	Limits
Overall		Capped at 10-12% of average Vermont annual wage per family
All Outpatient Services		
Preventive services	\$0	
Primary care physician services (community-based)	\$20	
Specialist care physician services (community-based)	\$30	
Other health professionals (Psychologist, chiropractic care; podiatrist)	\$25	
Urgent Care	\$40	
Outpatient visit: hospital based (non-surgical)	\$25	
Outpatient visit: hospital based (surgical)	\$50	
Outpatient surgical procedure	20%	
Emergency Room (non-emergency)	\$75	
Emergency Room (emergency)	\$40	
Family Planning	\$0	
All Inpatient Services		
Hospital Admission	One day hospital deductible	

Hospital Stay	20%	
Rehabilitation Services, Nursing Home and Home Health (for post-acute care only)	\$0	
Primary Dental Care for Children	\$20	Only for children; excludes orthodontia
Prescription Drugs – under a statewide formulary	\$12 generic; \$25 brand name when no generic available; 25% coinsurance for brand name when generic is available	
Vision Care	\$20	One eye exam per year
Durable Medical Equipment/Supplies	10%	

E. BUDGETING PRINCIPLES

One of the imperatives in health care reform is sustainability – achieving a long-term balance between revenues and expenditures. This has proven challenging for many different reasons, including technological advances, provider and patient expectations, and the lack of a comprehensive control mechanism. Health care spending is a product of three components: price, quantity of services (or utilization) and intensity (or mix of services). Historically, efforts to control spending in the US have focused on only one of these. However, single-factor controls are rarely effective. For example, there is substantial evidence that when faced with reductions in price, providers would respond with increases in the number of services they deliver [170]. One mechanism that can control all factors simultaneously is a global budget, such as is used for hospital care in Canada. Under this model, a fixed funding level is established, with minimal or no access to additional funds. Under this budget system, there is no mechanism to gain more revenue than the budget would allow. The global budget, however, has to specify some minimum volume of services that provider has to provide.

Setting the total spending would be governed by the Independent Board process as described above. This approach removes the budgeting decisions from the political process.

F. FINANCING

One of the major challenges in designing a health care financing scheme is the unpredictable nature of health care costs, both at the individual and population level. This uncertainty is often referred to as risk. At the individual level, it is almost impossible to know if one will become ill in the future, how serious that illness will be, what types of treatment will be necessary, and if those treatments will be successful. The same uncertainty translates to a population level, although as a statistical rule, the larger the population, the smaller the uncertainty relative to total spending.

Financing structure involves the methods to raise the funds for health, how the health risks are pooled and how the resources mobilized are allocated. The allocative mechanism is performed by the design of benefit packages. Decisions on how a health system is financed can affect how much funding can be generated, which can then influence the cost, quantity and quality of health care accessible to individuals. In addition to its direct effects on the health system, health financing has a broader impact on the overall economy, labor market and fiscal health of a country or state. Therefore, in developing the guiding principles for the financing of Vermont's health care system we rely in large part on public finance literature. In order to move to a single payer system that has sufficient and equitable financing, we suggest Vermont move away from direct premium financing. We rejected income tax financing for reasons explained below. Rather we recommend the implementation of a general payroll contribution as part of a general social health insurance model. The five basic principles listed and described below provide the foundation for this recommendation:

- Equity
- Risk pooling
- Minimize adverse economic effects
- Work within federal tax laws
- Incentivize health promotion and healthy lifestyle choices
- Maximize federal funds

Equity. Under the equity principle, health care should be financed according to ability to pay [172]. This equity principle is translated into practice through progressive health financing strategies, in which wealthier households contribute a relatively larger share of their income or wages as compared with poorer households. The most equitable, or progressive, form of health care financing is household income tax. Income taxes are formed in such a way that richer individuals pay a larger share of their income than poorer individuals, and therefore by using the overall income tax base to finance health care the same dynamics remain. However, if health is financed by an income tax, employers would lose their tax exemption currently in place under federal tax law for their health premium payments (see next section on federal law). We therefore recommend the implementation of a payroll contribution instead. In terms of equity, a payroll contribution is far superior to the current health insurance premiums. In the current employment-based group insurance, premium is paid on each worker. The same premium rate is charged to all individuals, regardless of income level. Payroll contributions based on wages would be more equitable in that individuals with higher wages would pay more into the system than individuals with lower wages.

Risk pooling. An effective health financing system should pool the healthy and less healthy people together into one risk pool so that large and unpredictable individual risks are distributed across all members of the pool [173]. In doing so, individuals are protected from the potentially impoverishing effects of high health care expenditure resulting from serious or prolonged illness. The higher risks of individuals who are more prone to illness or disease are balanced against the lower risks of healthier and often younger individuals. A description of mechanisms to partially offset the subsidy provided by low risk individuals to high risk individuals is provided below. This system of risk pooling ensures the financial well-being of the insurance system and maximizes

citizens' overall health and wellbeing. In extending universal health insurance coverage to all Vermonters through a single payer system, all eligible Vermonters would pool their risks together and risk would be distributed across the entire eligible population.

Minimize adverse economic effects. The method used to finance health care can have potentially adverse effects on the overall economy, labor market and household incomes. Therefore, in carefully designing a health financing system, these potentially detrimental effects should be taken into account and minimized. To diminish labor market distortions, we recommend that individuals and their employers should on average not pay a greater share of their wages under the new health financing regime than they already dedicate to insurance premiums. While this would not be possible across the board, we have designed the financing structure so as to minimize potential negative impacts, including decreased employment and employers in the state, reduced initiative and motivation of workers, and lower wages [174]. The minimization of any potential excess losses associated with a payroll contribution-financed health system is an additional consideration. Additional excess burden or losses exist if the contribution rate is set in such a way that increased revenue is more than offset by losses in the economy or to an individual [175]. Similar to insurance premiums, the burden of payroll contributions tends to be borne by the worker [176, 177]. Therefore, we want the contribution rate to be set in such a way that individuals are not incentivized to work less, make less money and consequently pay less money into the health system.

Work within federal tax laws. Under the tax code in the United State, employers' spending on health premiums is considered a legitimate business expense and exempted from taxation. Meanwhile, employees do not have to include the premium paid by employers as income that subject to income tax. The same treatment is given to the employer's contribution to health savings accounts [178]. These favorable tax treatments are called tax expenditures. It is imperative that in introducing a new health financing structure in Vermont, this tax exemption remains in place for Vermont employers and workers. Nationally, this tax expenditure is worth some \$250 billion [179], or about \$500 million for Vermont. A payroll contribution system enables employers' contributions to remain tax exempt and employees do not have to include employers' contribution as income.

State income taxes are deductible against federal tax but only for individuals who itemize deductions. At the national level in 2004, just 35 percent of taxpayers itemized their deductions in their federal tax returns and these were largely high income tax filers [180]. If Vermont were to finance this system on income tax, the federal tax treatment of health benefits would be lost for the populations who can least afford it. If Vermont establishes an income tax-financed universal health insurance, it would not be wise to increase the corporate income tax to finance it because that would negatively affect business investment and employment in Vermont. The full cost of coverage would then fall on the personal income tax. Workers would largely lose the tax expenditure that they would have gotten under the payroll tax scheme. In short, workers would pay significantly more in taxes. For these considerations of federal tax laws, we recommend a payroll tax financed universal health insurance.

There is a question who ultimately pays the employer portion of a health insurance premium or a payroll contribution. If employees decide which employer to work for based on the total compensation package that includes cash wage and the cost of fringe benefits, then employees are accepting lower wages for higher premium (or payroll contribution) paid by employers for insurance and pensions. Empirical research showed that this is true. US employers do shift the cost

of payroll contribution back to the employees and reduce their cash or other compensation (except these workers who at the minimum wage.)

For equity reasons, we recommend that low income workers and their employers would be exempted from the payroll contribution. Vermont already has experience with such exemptions (for example, in the current employer assessment for Catamount Health) and found they can be quite complicated to specify in a law. For the simulation of the costs of Option 1 and 3 we exempted from the payroll contribution – both the employer and employee share – wages paid to workers earning less than 200 percent FPL. In designing exemptions like these, however, it is best to avoid the “notch” problem where individuals immediately fall out of full exemption status for very small increases in wages. These notches are also likely to cause labor market distortions. As such, we recommend that Vermont phase out the exemption. For example, employers and employees would be fully exempt for those earning less than 180 percent FPL and the contribution rate would gradually increase until workers hit 220 percent of FPL, after which they would be subject to the full contribution rate.

The payroll was capped at \$106,800, the same cap as for Social Security payroll contributions, a figure that is indexed with GDP.

G. ADDITIONAL INVESTMENTS

I. PRIMARY CARE RECRUITMENT AND RETENTION AND HEALTH CARE FACILITIES

Historically, neither primary care nor rural practice has attracted enough physicians, due to relatively low salary compared to specialty medicine, and to quality of life. Other disincentives to rural primary care practice include availability of employment for spouses/partners, length of time needed to obtain a license to practice in VT, and administrative burdens of practicing in VT [45]. In order to attract and retain adequate numbers of PCPs, Vermont must provide incentives to doctors to change or minimize the perceived disadvantages of rural primary care practice.

The state of Vermont is already aware of and responsive to its PCP shortage. In October 2010, the state released a preliminary 5-year plan to improve primary care in Vermont. It reports that both the VT Area Health Education Center Program (AHEC) and the VT Department of Health have identified a statewide shortage of general internal physicians[45]. This number, however, does not reflect regional variations.

Vermont has several initiatives in place to encourage primary care practice. Since 1995, Vermont has sponsored primary care loan repayment and forgiveness programs to help physicians and other health care workers pay off large, burdensome debt incurred in medical school. Primary care doctors, nurse practitioners, physician assistants and dentists are all eligible for the loan repayment program, which is administered by AHEC. The loan forgiveness program is administered by the Vermont Student Assistance Corporation (VSAC), and applies only to nurses [181].

There are two types of AHEC repayment funds: recruitment for new doctors and retention for doctors currently practicing in eligible areas. Physicians must practice in one of the following disciplines: Family Practice, General Internal Medicine, Pediatrics, Obstetrics/Gynecology, and Psychiatry. They must work at least 20 hours per week, and must agree to accept Medicare and Medicaid patients, and to treat clients regardless of their ability to pay. AHEC indicates on their

website that some employers or local areas may match their funds. Each individual may only receive the funds for six years. Physicians who also have a J-1 visa waiver are not eligible[182]. AHEC reports that 54 percent of all Vermont PCPs have been awarded funds to pay off their debts through this program[45].

Some questions have been raised as to the efficacy of the loan repayment program; the average award granted in 2006 was just over \$4,000. This amount may not be sufficient to entice doctors who are hundreds of thousands of dollars in debt [183].

J-1 Visa waivers are also granted each year to a limited number of non-citizen physicians who agree to work in underserved areas of VT for three years. The visas are awarded to primary care doctors in different areas (gynecology, family medicine, etc.) that have “community need and shortage” designation in any particular year [184].

Through the AHEC Freeman Physician Placement program, the University of Vermont (UVM) College of Medicine and Fletcher Allen Residency Program encourage their students to gain exposure to rural Vermont areas in Federally Qualified Health Centers (FQHCs) in the hopes that the students would continue on to practice medicine there [185]. Currently, about 35 percent of Vermont’s physician workforce trained at UVM and or Fletcher Allen Health Care [45]. As of 2011, however, private funding for this program would end and only AHEC funding would remain. UVM also sponsors Primary Care Week, which essentially advertises primary care practice in Vermont to doctors and residents, and connects them with job opportunities in the state.

Another initiative currently in place is Vermont’s pilot Blueprint for Health advanced medical home pilot, underway in 3 communities that serve 10 percent of the population. In this pilot project, PCPs receive enhanced payments to compensate them for their administrative duties in creating a better network of care for their patients. This project is especially interesting because its aim is specifically to strengthen PCP practices to enact behavioral changes in their patients, and to coordinate patients’ care across different settings [186].

The Bi-State Primary Care Association, a private, non-profit organization operating in Vermont and New Hampshire, plays an important role in Vermont’s efforts to recruit and retain primary care physicians. Its Vermont Recruitment Center coordinates national outreach to find and recruit PCPs. AHEC runs complementary national outreach programs. The VT Department of Health provides some funding for these national outreach efforts [45].

The Bi-State Primary Care Association works closely with FQHCs. FQHCs provide reasonable priced, easily accessible community-based primary care services to Vermonters who lack a medical home [187].

The Office of Rural Health and Primary Care assists in designating areas and populations as underserved, which aids health care providers in taking advantage of state and federal assistance programs. Once a health center is designated as a FQHC, its doctors are eligible to apply for National Health Service Corps (NHSC) loan repayment awards. Bi-State Primary Care Association encourages residents and primary care doctors to apply for federal loan repayment through the NHSC. PCPs must apply on an annual basis to have a portion of their loans repaid. Physicians must work for two years in these areas before they are qualified to apply. The maximum amount awarded is \$50,000, but the website indicates that if a physician stays longer than 2 years, more support may be available.

Recognizing the importance of primary care physicians, in the PPACA the Federal Government has prioritized increasing the recruitment and retention of PCPs, with an emphasis on underserved communities. From 2011 to 2016, there will be a 10 percent bonus in Medicare payments to PCPs that have at least 60 percent of Medicare billing in the areas of office, nursing home and home care visits. From 2013 to 2014, the PPACA will raise Medicaid payments to Medicare rates for primary care physicians in the areas of evaluation and management services, as well as services related to immunization.

Additionally, the PPACA is set to increase funds to various programs that encourage primary care practice. National Health Service Corps funding is planned to rise from \$320 million per year in 2010 to \$1.15 billion per year in 2015. These funds are those used to help PCPs in high need areas pay back their debt. Title VII funds to family medicine residency programs and academic departments of family medicine have also been reauthorized. And as of January 1, 2011, funding for community health centers (such as the FQHCs mentioned above) will increase by \$11 billion [188].

Unsurprisingly, the most important reason medical residents choose specialty practice over primary care practice is financial. Many new physicians going into primary care may actually face expenses higher than their income, between paying for relocation costs and student loan debts. For new physicians, this fact is a substantial disincentive for pursuing a career in primary care.[189] A solution to this problem, then, would be to make primary care more financially attractive to residents, especially in the beginning of their residencies/careers so that they are locked into that choice. Some possible solutions include:

- Continuing loan repayment programs, making the financial rewards significant
- Incentivizing continued practice of primary care through salary increases after set time increments (1 yr, 3 yrs, etc.)
- Bonus payments before and after residency for choosing primary care residencies[190]
- Providing other non-salary financial incentives to new PCPs, such as free or subsidized housing or extra time off
- Increasing payment to PCPs for basic services and chronic disease management
- Decreased, or payment for, administrative tasks such as referrals

Increased funding may come from federal, state or local sources. Partnerships between private practices and hospitals may even allow the practices themselves to provide better financial incentives for new and continuing doctors.

The literature suggests that the most effective strategy to get physicians to practice medicine in a rural setting is exposure to admit medical students from rural communities and expose all students to rural practice during medical school and residency. Continuing support and expansion for UVM and Fletcher Allen Health Care's pro-rural medicine programs would likely benefit the state. Partnerships with medical schools in upstate New York, New Hampshire, Boston, and the surrounding areas with the aim of exposing medical students to rural medicine in Vermont might also have positive a positive impact [191].

The main incentive to increase the number of primary care physicians will have to be financial. Securing the funding, and then making its availability widely known among new physicians (not only from Vermont but also surrounding states) is paramount. Exposing physicians in training to rural medicine, and assuring that the exposure is a well-organized, positive experience may also alleviate the problem.

Despite the reliance on financial incentives to draw new PCPs into Vermont, family physicians in Vermont themselves have commented that practicing in a rational integrated health system, free from the arbitrary payment methods and barriers to health care delivery imposed by multiple payers, and where there are community resources developed and nurtured to support the work of the physician, would be a draw in and of itself. This could attract not just new doctors focused on paying off medical debts, but physicians who have been in practice for years and whose dealings with the current US health care enterprise have become intolerable. Other physicians in Vermont have commented that a significant number of specialists in the US would be interested in moving to Vermont for this same reason – the ability to practice medicine free from administrative hassles with more time spent on patient care.

The focus of our recommended investments is to ensure adequate supply of primary care practitioners. However, these same programs could be extended to ensure adequate supply of any specialist or other type of provider with documented shortages.

We recommend an annual budget of \$50 million to be used to provide financial incentives for recruit and retain physicians and other practitioners in short supply. This budget should also be used as a source of investment to update health care facilities. Not only would this allow Vermonters to access high quality care and facilities, it would also assist in recruiting providers to the state.

II. HEALTH PROMOTION ACTIVITIES AND HEALTHY LIFESTYLE CHOICES

Many Vermont employers have already introduced effective work place health prevention and wellness programs such as biometric testing, in-house health coaches, on-site health clubs and fitness facilities, tobacco cessation programs and regular medical monitoring of employees with chronic diseases such as hypertension and diabetes. This type of health promotion both improves the overall health of the population and reduces the financial stress on the insurance system by lowering overall health care costs in Vermont. To encourage employers to develop effective preventive programs, we recommend that Vermont establish financial incentives to reward employers for programs, for example by offering a reduction in the payroll contribution level.

Similar incentives could be structured to encourage healthy lifestyles for individuals. Individual health can be improved by diet and lifestyle. Ideally, financial incentives should be given to those who change their lifestyles and improve their health. These are complex programs to design and administer, but we encourage Vermont to experiment with innovative programs. For example, we recommend that ACOs set aside a portion of their savings to share with individuals who show a commitment to healthy living and make alterations to their lifestyles to improve their overall mental and physical health. This practice can also help to cross-subsidize lower risks individuals in the overall population risk pool. These types of financing incentives can also target diverse workplaces or particularly innovative companies.

III. JOB RETRAINING

Though overall the models predict that these reforms would result in a net increase in employment in Vermont (See Section 8J on impacts below), some jobs in Vermont would be lost, especially for those involved in insurance operations and administrative staff employed by hospitals and clinics for billing and insurance related matters. Our survey of physicians, which largely agreed with national studies, found that for every FTE physician in the state there was approximately 0.78 FTE of administrative staff dedicated solely to billing and claims. The Vermont Department of Health Provider Survey shows that there were 1833 active physicians in 2008. Incorporating those who work less than full time, the DoH found that there are 1316 FTE physicians. This means that at least 1000 jobs in Vermont are those who work on billing and claims in physicians practices, with even more who work in similar roles in hospital settings and in the offices of other providers.

The costs associated with job-retraining and placement was not incorporated into the economic models. Vermont has an effective existing framework for job training and placement for dislocated workers. According to the Annual Report on the Vermont Workforce Investment act, in 2009, the state served 351 dislocated workers at an average cost of \$6691 per worker [192]. To retrain and place an estimated 1500 workers would cost approximately \$10 million. These one-time costs could be financed through \$50 million savings devoted to supply side enhancements, though the Vermont Legislature would ultimately have to decide on the distribution of these funds.

H. PAYMENT TO PROVIDERS

- We recommend a phased approach to payment reform as Vermont transitions from its current payment landscape to a uniform, global payment-based system.
- Currently, payments for physicians and other professionals are largely based on fee-for service (FFS) mechanisms, with highly varied payment methods and levels across public and private payers alike.
- In the first phase, we recommend moving all private payers to a uniform payment methods based on Medicare payment methods (RBRVS, DRG and APC) and a uniform payment rate, though at a higher level than current paid by Medicare. In order to constrain cost growth during this time, we furthermore recommend some form of global hospital budgeting.
- During this initial phase, Vermont should continue to experiment with risk-adjusted capitation payments to willing ACOs, leading Vermont to our recommended final state, where the basis of payments to providers – at least from the single payer system – would be risk-adjusted capitation payments or global payments.
- Capital expenditures should continue to be regulated, both through capital budgeting mechanisms and the Certificate of Need (CON) process.
- We further recommend that ACOs should set aside a portion of their savings to be shared with individuals to promote and reward healthy behaviors.

Besides professional ethics, payment methods and rates are the most effective instruments that we know to influence providers' behavior. Hospitals, health centers, and health professional offices are

economic entities must generate revenues to survive and flourish. Payment methods establish the incentive structure that influence providers' behavior to obtain optimal revenue. In short, a payment system has significant effects on the cost of health care, the volume of services, choice of treatments, quality and efficiency of health care.

Under any modern insurance system, insurance plans should be prudent purchasers of health services on behalf of their insured. Even a new term, "value-based insurance" has been coined to highlight this role. Besides selecting and contracting with the qualified providers, the insurance plan has to negotiate with providers and establish payment method and rates.

The design of an appropriate payment system is difficult because of two major reasons. First, patients and health professionals have unequal medical knowledge or asymmetric information. When patients and health professionals have unequal positions, it leads to so-called market failures [193, 194]. Patients experience symptoms of illness and go to physicians and other professional practitioners for diagnosis and treatment because they possess superior medical knowledge. Patients want their providers to use this knowledge to act in their best interest. Meanwhile, the providers have their own economic and self-interest to look after. They are in a superior position and have greater influence over the type and volume of services given to patients. Sometimes, providers' and patients' interests may not coincide. Providers *can induce demand* and influence patients to accept inappropriate treatment or over-treatment. Second, patients lack knowledge to judge clinical quality of services. As result of these unequal positions of patients and providers, the paramount question becomes how we can create the appropriate incentives through a payment system that would induce the providers to deliver good quality and efficient health care to the patients?

The second challenge in designing an optimal payment method involves risk. Medicine is an uncertain science rooted in probabilities. Every patient is different - different genes, metabolism and immune systems. Patients with the same disease may exhibit different symptoms and respond differently to the same drug treatment. Thus diagnosis and treatment are embedded with uncertainty. Uncertainty creates treatment and financial risks for both patients and providers. Some of these risks can be reduced by health professionals, but not all. In designing a payment method, one has to consider what part of the financial risk should be placed with the provider and what part with the patient.

Who assumes this risk and under what circumstances are important design decisions. Many payment reform efforts in the past have focused on shifting risk from third party payers (insurers, public programs) to providers under the theory that providers have a greater capability to actively manage this risk. But without the resources, management and information infrastructure, this may not be so.

HISTORICAL AND CURRENT PAYMENT SYSTEMS

Historically, most providers in the US have been paid on a fee-for-service (FFS) basis and Vermont is no exception. Under FFS, payment is tied directly and solely to the quantity of service provided. Researchers discovered strong evidence that FFS promotes health cost inflation, waste and over-treatment. These findings lead Medicare to reform its payment method in the 1980s for inpatient hospital services from FFS to a prospective payment called the Diagnosis Related Group (DRG). They later moved from FFS to a prospective payment hospital outpatient services, called the

Ambulatory Patient Classification (APC) system. These payment methods try to group services for an episode of treatment rather than pay for every item of service, test, drug, and supply. Prospective payment systems greatly reduce but do not eliminate the volume incentive.

Capitation is a payment approach that eliminates volume incentives by paying a fixed amount of money, usually on a monthly basis, for each individual for whom the provider assumes responsibility. Capitation can be flat – the same rate regardless of personal characteristics – or risk-adjusted – amount takes into account factors such as patient age and health status. For example, an older patient with diabetes would have a higher expected health spending and so the payment to the provider would be higher, too. Risk-adjusted capitation reduces the incentive for providers to “cherry pick” the healthiest patients. For example, the Medicare Advantage program pays managed care organizations a risk-adjusted capitation to cover the expected costs of enrollees.

Payment systems in Vermont are a mixture of all these mechanisms. Private insurance plans in Vermont have shifted largely to DRGs for inpatient care, but not completely. Some hospitals are paid based on the older discount off charges model. As for physician services, most private insurance plans pay on a negotiated fee schedule or discounted charges. Private insurance plans do pay some provider health organizations (PHOs) on a capitation basis. However, these PHOs often in turn pay their physicians on a FFS basis. In Vermont, the Department of Labor sets a unified fee schedule that is used by all Workers Compensation insurance carriers to pay professional providers. Vermont Medicaid program largely followed the Medicare payment methods but pays at a lower rate.

Each of these reimbursement systems creates a different financial reward and risk for the provider. The table below shows different reimbursement systems, ranked by the level of control and risk from the provider’s perspective.

Table 25. Payment methods and impact on provider control and risk.

Mechanism	Provider Control (in order of reducing control)	Provider Risk (in order of increasing risk)
Fee-for-service, charges	Providers can completely determine their income by setting charges.	Providers are not at any risk if patients require more care than expected
Fee-for-service, fee schedule	Providers can determine their income by varying the volume of services they provide	
Prospective payment system	Providers must balance income and costs	
Capitation	Providers can influence income only by the number of patients for whom they assume responsibility. Costs become more important.	
Budget	Providers have no control over	Providers are fully at

income, so all attention is on costs	risk for quantity of care required
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RECOMMENDED PAYMENT SYSTEM IN VERMONT: TRANSITION TO ACOS

Our recommendations draw on the vast reservoir of knowledge and evidence accumulated through decades of payment system research. We use this research to identify the methods to achieve the following goals:

- Enhance quality of care
- Promote efficiency
- Hold providers accountable for better health outcomes
- Improve supply to assure adequate and equal access
- Promote the integration of health care delivery

Currently, every class of payer in Vermont has their own payment methods and rates. Rates differ among private insurers and often private insurers would maintain multiple fee schedules for different providers. We recommend a two stage approach for Vermont as it moves towards the establishment of ACOs. For a more detailed discussion of issues surrounding the creation of ACOs in Vermont, see Section 9: Implementation.

Ultimately, we suggest a risk-adjusted capitation rate plus P4P in order to provide the incentives to integrate care delivery. In the transition period, Vermont should establish a uniform payment method and uniform rates for all insurance plans, including the Workmen's Compensation program. This uniform payment method during the transition period could be:

- Pay ACOs a risk-adjusted capitation rate with 20 percent of it based on pay for performance (P4P); this would incorporate the existing Blueprint payments to primary care practices as Medical Homes. For non-ACOs, pay hospital inpatient based on Medicare DRGs with 20 percent of the DRG rates paid based on performance (P4P), outpatient on Medicare's Ambulatory Payment Categories (APC).
- Primary care physicians would be paid on a risk-adjusted capitation plus P4P whenever physicians are willing to accept this method of payment. For those who refuse this payment method, these primary care physicians would be paid on on Medicare's RBRVS fee schedule. Specialists would be paid on the Medicare's RBRVS-based fee schedule. Again, this would incorporate the Blueprint addition payments to PCPs based on their status and quality reporting as a Medical Home. Ideally, Vermont would modify the RBRVS to reflect the true work values being performed by primary care physicians.
- The payment for the same service would be identical regardless of where the service is provided – at a hospital, a doctor's office or health center.
- Outpatient drugs are paid based true acquisition costs with a dispensing fee.
- Mental Health Providers: there are various organizational formats for mental health delivery including integrated care and carve-outs; the single payer plan should examine the current evidence base regarding the most cost-effective mode of treatment for mental health to determine if the separation of physical and mental health benefits promotes overall cost-savings to total patient spending.

The payment mechanisms above address the price of services and include incentives based on quality of care, but they do not, with the exception of capitation, incorporate a method to address concerns about volume - the number and mix of services provided. Most service-based payment rates are based on the average cost to provide each service, but because some costs are fixed, the true cost declines as more services are produced. This gives a financial incentive to providers to produce more services, as long as the incremental cost is less than the average cost.

In order to address this issue, we are proposing a reimbursement system for hospitals that reduces the incentive to produce more services, but also attenuates the financial losses if the number of services drops. This is done by creating a revenue target that is computed using projected inpatient and outpatient volume and DRG / APC weights. If the target is exceeded, any subsequent payments would be made using a DRG / APC base that is reduced by 20 percent, until actual revenue exceeds target by 10 percent. At that point, no more payments would be made until the next fiscal year. Similarly, if revenues are below the target and fall between 90-100 percent of the target, 20 percent of this gap would still be paid based on DRG and APC base. If revenues fall more than 10 percent below the target, rates would return to original figures for any volume that falls below the 90 percent.

The important aspect is to set the payment rates *prospectively* and the providers can keep any profit they can make between the payment rate and their actual cost. Then providers would have strong incentive to innovate and manage their operation to produce the services in the most efficient manner. This approach emphasizes cost control, not profit control.

However, we propose to still regulate the capital budgets and investments in Vermont to ensure that competition based on high-technology does not lead to the oversupply of expensive services and ultimately higher costs. We propose to achieve this through influencing the capital funds that hospital can generate. While hospital payment rates would allow for depreciation of capital equipments and buildings and this depreciation charge should be accumulated into a fund, this fund is not likely to be able to purchase the replacement of the existing equipments and buildings because of increasing in construction costs and costs of new technology. The hospitals have to borrow to finance new capital investments. Vermont can regulate this borrowing of capital.

Pay for Performance. Our recommendations stress the use of pay for performance in both the transition period and under full ACO implementation. Ideally, providers should be paid related to the health outcomes they produce and rewarded for delivering high quality care. There is a great deal of evidence and experience emerging as the US and countries around the world experiment with P4P, helping us to understand how to structure these incentive payments to avoid previous mistakes. For while P4P should incentivize higher quality care, these programs can be difficult to administer and easy to game. We propose that, like with ACOs, Vermont experiment with metrics and measures and provide a continuous improvement process for updating the P4P system.

P4P is a relatively new phenomenon. Major P4P pilots began in the US in the early 2000s and continue today, including new initiatives under PPACA. The UK's NHS implemented a grand-scale P4P program in 2004. Australia, Canada, New Zealand and Taiwan, Germany and the Netherlands all forayed into P4P in the late 1990s and early 2000s. These experiences represent P4P at different levels: hospital, practice and individual physician. P4P efforts can be placed within a major shift to patient-focused funding that includes DRGs and major market changes [195]. Overall, P4P has been subject to modestly rigorous evaluation finding some improvements in performance [196-198].

P4P requires the monitoring the performance of physicians and health professionals. Researchers generally find that US physicians dislike external oversight [199]. However, in one survey of suburban general internists, 75 percent of those surveyed supported the concept of financial rewards for quality service [200]. Interestingly, physicians already receiving financial incentives for quality were more likely to favor of such incentives, suggesting that once introduced, such measures might be more palatable than they are *ex ante*[200].

It is not easy to administer P4P and monitoring performance is can be difficult [201]. The fundamental questions revolved around what performance is controllable by the provider, at what levels to set performance benchmarks all couched by the realities of what can actually be measured reliably.

Measures are often divided into three dimensions of quality: structure, process and outcome. The difficulty is that structure of facilities and qualifications of practitioners do not necessarily produce better health outcomes nor do the processes. Under P4P, we need to isolate those structural elements and those processes that do have significant impact on health outcomes.

There is a vast body of literature already accumulated on P4P that have contributed several important principles. First, the performance should not be measured in absolute terms, but in terms of relative improvement from the baseline [202]. Second, performance should be based on measures that can be controlled or influenced by providers. Third, performance should be based on the health outcomes as much as possible. Fourth, management and monitoring efforts must accompany P4P, otherwise the non-measurable quality and outcomes would be neglected [203]. Lastly, linking money to behaviors can decrease providers' intrinsic motivation to perform well for the patient [201, 204, 205].

I. WAIVER REQUIREMENTS AND ASSUMPTIONS

In order to achieve Option 1 as modeled, the state would need to seek waivers from federal law, including waivers from certain requirements in Medicare, Medicaid, and the new PPACA health insurance exchange. For Option 1 to proceed on the timeline as proposed, Vermont would have to successfully argue to pull back the current PPACA waiver date from 2017 to 2015.

The purpose of the waivers would be to provide the state flexibility to manage the federal funds and to reinvest savings in the health care system, including by insuring the uninsured, improving benefits for the underinsured, and the other suggested initiatives. The principle behind all of the waivers is the same:

- allow the state to obtain the federal funds for the eligible population and reinvest any savings from providing better, more efficient care in the health care system;
- provide the state flexibility in administration in order to align and integrate the federal reporting and claims processing and billing requirements of the three funding sources; and
- to the extent possible under federal law, align benefits with a standard benefits package to ensure an integrated system.

I. MEDICARE WAIVER(S)

The state may need to seek more than one Medicare waiver to create the single payer plan. These opportunities, discussed as well in the Federal Constraints Section, include:

- Seeking a waiver from the new Center for Innovation at the Centers for Medicare and Medicaid Services (CMS) under 42 USC §1315a;
- Seeking a more traditional Medicare waiver under 42 USC §1395b-1; or
- Seeking waivers to include Medicare in accountable care organizations 42 USC §1395jjj.

The Center for Innovation has broad authority to implement innovative ideas to reduce program expenditures and improve quality of care through payment reform. The state would achieve the most flexibility around payment by seeking a waiver under 42 USC §1315a through the Center for Innovation, perhaps combined with a waiver to create accountable care organizations (ACO). This type of waiver likely could be used alone to create a new Medicare payment and delivery system in the new single payer system. It is possible that to move to providing payments to an accountable care organization that the state would need to seek additional authority under 42 USC §1395jjj, which explicitly provides for ACOs.

The single payer plan does not address Medicare benefits. The state should seek a waiver, however, to change the way Medicare pays for services – from a fee for service model to a capitated payment to an ACO over time. The state should also seek to align and simplify the administration of Medicare, including claims payment and billing, quality control, and fraud processes through a waiver to ensure that there would be one set of administrative requirements in the single payer system. This does not mean that there would not be a quality control or fraud control process, for example, but that there would be one process used in the state, instead of multiple requirements. More analysis will be required to determine the scope of administrative integration into the single payer. The state would ask to administer (or contract with an entity to administer) Medicare payment and claims as well so that the claims and billing processes would flow through the single payer. Lastly, if the state decided to pursue an all-payer rate process, the state would want to include Medicare, which could be pursued under existing authority as provided to Maryland and other states.

In the Medicare waiver, the state could model the idea on Medicare Advantage plans (“Part C”). Medicare Advantage plans are plans that offer comprehensive benefits to Medicare beneficiaries through a managed care model, which allows the entity paying for services to keep the “savings” produced from providing evidence-based, quality care and reducing duplication of services. If the state was considered a Medicare Advantage plan, it would have additional flexibility in the use of Medicare funds as well.

Vermont is in the process of taking a first step in managing Medicare funds through a new waiver, which allows the payment of Medicare funds for community health teams in the Blueprint for Health. The next step for the state would be to pursue a waiver to manage costs for individuals who are eligible for both Medicare and Medicaid (“dual eligibles”) – which the state is in fact working towards. The concept behind the “dual eligible” project is that because neither Medicare nor Medicaid covers all medical expenses for dual-eligible beneficiaries, each program has a significant incentive to deny some patient care in an effort to get the services covered the other program

resulting in lower quality of care and higher administrative expenses. Successful coordination of care for dual-eligible beneficiaries requires integration of the competing financing streams. If the streams are combined such that a single entity is at financial risk for the care furnished to beneficiaries, these competing incentives are removed or greatly reduced.

II. MEDICAID

Section 1115 of the Social Security Act allows states great flexibility in the administration of the Medicaid program, although there are provisions of federal law which may not be waived. In order to include Medicaid in a single payer health care system, the state could use a model similar to the model currently used in the Global Commitment to Health waiver (“Global Commitment”).

Under the Global Commitment waiver, the state is considered a managed care entity and must comply with the Medicaid managed care rules in federal law. This model allows the state to negotiate an actuarially sound per member per month limit to pay for beneficiary benefits. If the state is able to provide benefits and stay under this limit, the state is able to use any additional funds for certain investments in the health care system, including:

- Reducing the rate of uninsured and/or underinsured in Vermont;
- Increasing the access of quality health care to uninsured, underinsured, and Medicaid beneficiaries;
- Providing public health approaches and other innovative programs to improve the health outcomes, health status and quality of life for uninsured, underinsured and Medicaid eligible individuals in Vermont; and
- Encouraging the formation and maintenance of public-private partnerships in health care, including initiatives to support and improve the health care delivery system.

Global Commitment for Health, Special Terms and Conditions, Term 58. This term appears to provide the state with flexibility in payment and participation in payment reform, including participation in an ACO. It is likely that the state may not need a different waiver to have Medicaid participate in a capitated model or an ACO.

The state has great authority to change the administration of the Medicaid program – especially around claims processing and billing. Additional analysis is needed to determine the flexibility in aligning or integrating the quality control and fraud requirements under federal law.

Lastly, Section 1115 allows the state flexibility in providing benefits as long as it meets minimal federal benefit requirements. The issue around aligning benefits in the Medicaid program with other benefits would be that there are certain types of nontraditional health benefits provided to Medicaid beneficiaries because they are traditionally low-income elders, individuals with disabilities, and children. For example, Medicaid provides payment for transportation to ensure adequate access to health services by this population. These benefits would continue to be provided for this population.

III. HEALTH INSURANCE EXCHANGE WAIVER

Section 1332 of the PPACA gives the federal Department of Health and Human Services (HHS) the authority to waive the federal requirements for the qualified health benefits plans, the health insurance exchanges, the cost-sharing in qualified health benefit plans, and the premium subsidies. HHS would require states seeking a waiver to have passed legislation and to have a proposal which:

- Provides benefit coverage as comprehensive as exchange;
- Provides coverage and cost-sharing protections against excessive out-of-pocket spending; and covers as many residents as would have been in the exchange.

Under this section, the state could obtain the federal premium and cost-sharing subsidies to fund a single payer system. While the parameters of the waiver provision are not entirely clear, because HHS has not yet issued federal regulations for this provision of statute, it seems likely that the state could be able to align the benefit packages and administration, given the broad nature of the statutory language. Because the Exchange law assumes that coverage is provided by an insurer, it is left to the states (or the insurer) to determine administrative procedures to be used, including the quality control, fraud prevention, claims processing, and billing requirements. This would allow the state flexibility in aligning these requirements in the single payer.

The state would have to furthermore ensure that the PPACA waiver for Vermont saves both employers and individuals from the tax penalties under PPACA for the individual and employer mandates. Large employers in Vermont should be exempt from this IRS penalty as their workers would be covered by the state system; likewise, coverage under the Vermont single payer system should satisfy the individual mandate.

The primary challenge for the state for including this funding stream in the single payer will be that this waiver is not available to states until 2017 and it is an untested area. The Federal Government would likely wish to see the state operate an exchange for a period of time prior to allowing a waiver in order to ensure there is a mechanism for comparing benefit coverage, cost-sharing protections, and the number of Vermonters receiving coverage through the exchange. Given our analysis, we assume that it may be possible to amend this and receive a waiver in 2015, after one year of implementation. However, this is uncertain. In addition, there is overall uncertainty whether the federal administration would be amenable to a single payer approach or would be using the exchange provisions to pursue a market-based approach.

J. IMPACTS

The model assumes single payer implementation starting in 2015. However, Vermont's Administration has indicated that they plan to introduce legislation to establish the single payer system in three phases. As such, we are presenting the impacts for 2016, when the full impacts of the plan would be more likely to be felt. In some cases, we also present impacts for 2019 in order to provide a long-term view of the reform outcomes. All the dollar figures representing reform impacts are presented in 2010 real US dollars, unless otherwise specified.

a. Impact on insurance coverage

Option 3, the public-private single payer system, would achieve universal insurance. All Vermont residents would be automatically covered with a uniform benefits package regardless of their employment status. All the 31,000 Vermonters left uninsured after implementation of PPACA would be provided insurance coverage under Option 3. Furthermore, the benefits package would potentially cover new benefits such as dental and vision care for Vermont residents. There would be some remaining uninsured residents at any given time, however, including Vermonters who had just moved in-state and could not yet prove residency, as well as undocumented workers.

b. Impact on total spending for health in Vermont

By simplifying health care administration and curbing medical fraud, waste, and abuse, Option 3 would produce significant savings for Vermont, even when accounting for the costs of additional benefits under the standard benefits package. A detailed explanation of these savings is found in Section 4A. Specifically, we project that the cost of health services would decrease in 2016 by approximately 14 percent of what they would be after PPACA implementation by moving to a single payer system. Additional savings would be produced in subsequent years.

In our estimates of savings, we assumed that Vermont would not be able to keep the savings that accrue to the Medicare program. Furthermore, we exclude certain categories of spending where savings would largely not apply including health spending in the Veterans Health Administration, utilization in under Workers' Compensation (though there are savings related to Workers' Compensation administration), and health spending related to long-term care.

We analyzed the potential savings that could accrue to services affected by administrative simplification and the decrease in fraud, waste, and abuse as well as payment reform and changes to the medical malpractice system. Under those savings assumptions, total health care savings in 2015 would be approximately \$580 million in 2015, the first year after implementation. In 2016 total health expenditures would reach approximately \$5.7 billion, which is \$770 million less than after implementation of PPACA. On a per capita basis, total expenditures would be about \$1,100 less under a single payer system than under PPACA. The savings would reach about \$1.1 billion in 2019. By that year, the total per capita expenditures would increase to \$8,900, representing a per capita savings of about \$1,600 compared with the scenario of PPACA implementation only.

Importantly, Vermont can use the savings to expand the benefits package, as described above. Under Option 3, one of the key design principles was that the new reform would not lead to an increase in the total health spending, therefore any extension of coverage and expansion of benefits must be funded through the savings achieved. Our team recommends that Vermont use part of the savings to provide universal coverage and to provide additional benefits. Under Option 3, the additional cost associated with this improvement in coverage would total \$382 million in 2015, the first year after implementation. The costs would be \$395 million in 2016 and \$435 million in 2019. This includes the cost of covering the uninsured, providing more generous coverage to the underinsured, covering a portion of dental and vision care expenditures, investing in primary care and community hospitals capacity, as well as achieving uniform payment rates throughout Vermont's health system. Moving to a uniform payment rate results in a net inflow of additional federal dollars totaling about \$57 million in 2016. This is further discussed below under Impact on federal funding for Vermont and also in the Section 4B: Estimation of Costs.

Our computation shows that Vermont would be left with a net potential savings of \$200 million in 2015 after covering the costs of additional benefits and investments included in Option 3. This would reduce the financial burden on businesses and households. In 2016, net savings would reach

\$375 million, while in 2019 Vermont can expect to save more than \$665 million compared to PPACA, after accounting for the extra benefits and investments in the health system.

c. Impact on federal funding for Vermont

It is in Vermont's interest to assure that the state receives the maximum amount of federal funding under PPACA. Such assurance depends on the state's ability to negotiate waivers with the Federal Government for a "block grant" of what the Federal Government would have paid under PPACA without a single payer system. The simulation results from the GMSIM model show that the state would be entitled to receive about \$160 million in 2016 and \$190 million in 2019 as lump sum "block grant" under a waiver for the individual subsidies and small business tax credits under PPACA.

Another important source of additional federal dollars consists of Medicaid funding, which would also be largely determined by negotiations between the state and the Federal Government under a Medicaid waiver. Under this reform option, we assumed that Vermont would be able to negotiate with the Federal Government to receive the full additional Medicaid funding that it is eligible for under PPACA, amounting to about \$180 million in 2016 and \$230 million in 2019. This includes Medicaid funding for Vermonters that enroll in Medicaid under PPACA, as well as funds to account for the higher matching rates for already eligible individuals provided under PPACA.

At the same time, Option 3 also proposes uniform payment rates to be paid to providers, including payments by Medicare and Medicaid. This reform would eliminate cost-shifting and maximize federal funding for Vermont. To reach a uniform payment rate for all covered populations in Vermont, the state would need to substantially increase Medicaid rates to providers. This would result in additional federal dollars coming into Vermont because the Federal Government would share or "match" this increased Medicaid expenditure up to certain limits (see Section 4B: Estimation of Costs for more detail). By raising Medicaid rates, we computed that an additional \$57 million in federal funds would flow into Vermont beyond what the additional funds that come from PPACA in 2016. This additional funding would total about \$63 million in 2019.

d. Impact on employer health spending

Option 3 would establish a single payer system that decreases employer and employee health care costs by creating savings in administration and health service utilization. Using the GMSIM model, we calculated that a total contribution rate of 12.5 percent of wages would be necessary to finance the single payroll system in 2016. This rate would decrease to about 11.6 percent in 2019. The employer share of this tax would be 9.4 percent in 2016 and 8.7 percent in 2019, and the remaining portion would be borne by employees. In dollar terms, the GMSIM analysis found that employer contributions towards their employees' health premiums would be reduced by about \$100 million and \$240 million in year 2016 and 2019, respectively. These reductions are in addition to the impacts produced by PPACA. We relied on the GMSIM model to simulate the potential impacts of Option 3 on employers of various sizes and by whether or not they offer health insurance to their employees. Table 26 shows the simulation results for Option 3, which covers all Vermont residents with the proposed standard benefit package divorced from employment status, and financed by a payroll contribution split between employers and employees. This impact analysis assumes that Option 3 is implemented after PPACA has gone into effect and Vermont has received waivers for PPACA, Medicare and Medicaid.

Table 26. Estimated impact of Option 3 on employer spending in 2016.

Employer spending by:	Change per employee (USD)
Number of employees in firm	
1-10	1,260
11-25	177
26-100	164
101-500	-843
501+	-1,459
Employer-Sponsored Insurance	
Firm not offering	1,422
Firm offering	-1,429

Note: all figures in 2010 USD.

Table 26 shows that employers that do not currently offer coverage would have to pay more, while firms that already offer health insurance to their employees would have lower health care costs. In total, offering firms would spend \$332 million less in 2016, or \$1,429 per employee. Non-offering firms would pay \$229 million more in 2016 under Option 3, or \$1,422 more per employee. The largest impact would be borne by firms employing between 1 and 10 employees. This is because the majority of firms in this size category do not currently offer health insurance to their employees. These smaller firms would spend approximately \$1,260 more per employee in 2016. Larger firms would experience substantially lower spending than they would have under PPACA. Spending for firms with between 101 and 500 employees would be approximately \$843 less per employee, while firms with more than 500 employees would spend approximately \$1,459 less per employee.

e. Impact on households

Option 3 would lower the cost of health care for households. Their current payment for health insurance premium would be removed and they are likely to see an increase in their cash wages, but at the same time higher earners would have to pay a higher payroll contribution. We used the GMSIM model to simulate the potential impact on households and found that on average Vermont households would see a net benefit of about \$105 million in total or \$372 per household in 2016, increasing thereafter (Table 27).

Table 27. Estimated household benefit of Option 3 in 2016.

	Change per household (USD)
Total costs	-263
Total benefits	109
Net financial benefit¹	372

Note: all figures in 2010 USD;

¹Total additional benefits net of total additional costs.

Total costs including taxes would decrease by \$75 million in 2016, or \$263 per household. Specifically, ESI and individual premiums would be eliminated and replaced with a payroll contribution representing a flat percentage of wages. At the same time, out-of-pocket spending, including deductibles, coinsurance, and copayments for the insured, and care received by the uninsured, would decrease.

Meanwhile, total additional benefits would increase by \$30 million, or \$109 per household. Households would see higher wages as a result of lower employer benefits costs. The block grant representing federal subsidies and business tax credits that would be received under PPACA, as well as the higher Medicaid funding, would be used to finance the single payer system. These subsidies would have the effect of lowering the payroll premium contribution.

The simulation analysis shows that households with incomes between 133 percent and 400 percent of the federal poverty level (FPL) would benefit the most from Option 3 (Table 28). The net financial benefit for these households would total \$133 million, or \$1,116 per household. Wealthier households, with incomes above 400 percent of FPL, would see negative impacts, with net financial losses of \$57 million in total, or \$552 per household.

Table 28. Distributions of estimated net household benefit of Option 3 reform in 2016

	Net benefit per household (USD)
Household income	
< 133% FPL ¹	510
133-400% FPL	1,116
> 400% FPL	-552

Note: all figures in 2010 USD;

¹FPL: federal poverty level.

f. Impact on employment

The public-private single payer option with a standard benefits package, Option 3, is projected to have a positive impact on Vermont employment. Specifically, the REMI model estimates that by 2016, Option 3 would produce about 3,600 additional new jobs in comparison to PPACA implementation only. By 2019, the total number of additional jobs created in the state would be approximately 2,800. These effects are driven mainly by three factors: estimated changes in health care spending that produce new jobs, projected changes in net wages that also produce new jobs, and changes in the composition of household consumption expenditures towards health insurance or health care services which have a negative effect on jobs.

Changes in net health care spending account for an estimated 3,100 additional jobs in 2016, and 1,500 additional jobs in 2019. The model considers three types of new employment associated with changes in health spending. First, increased usage of physician and hospital patient care would lead to increased demand for workers employed directly in that sector. Second, employment is derived from secondary expenditures that would occur when a physician or hospital purchases goods and

services from any other suppliers. And finally, employment is derived from tertiary expenditures, which occur when employment income generated among primary and secondary providers is spent in the state for household consumption.

Changes in net wages account for an estimated 600 additional jobs in 2016 and 1,600 jobs in 2019. These changes reflect the combined effect of all Option 3 changes on employer costs as estimated by GMSIM, and are allocated by industry and employer size. Option 3 reduces the health care costs for employers and employees and these savings result in higher wage income to the workers, who spend the income to purchase goods and services and stimulate local consumption that creates jobs. However, relative to health spending changes, wage income changes have a lower dollar-for-dollar impact on the state economy because of “geographic leakages” that occur when households purchase goods and services outside of Vermont.

Finally, changes in household consumption composition account for a loss of 100 jobs in the state in 2016 as compared to the PPACA scenario. In 2019, this component would decrease employment by about 200 jobs compared to PPACA. This is because the law would determine households to allocate a slightly larger share of their incomes towards products and services produced outside the state.

g. Impact on gross state product (GSP)

Option 3 would also increase the gross state product. According to the macroeconomic analysis performed using the REMI model, the implementation of this option would produce a total of about \$90 million of additional GSP by 2016 compared to PPACA. By 2019, this additional product would be about \$30 million. The impacts on GSP mirror the expected effects of Option 3 on employment. The main drivers for these impacts are health care expenditure changes and changes in net wages. Changes in household consumption composition account for slight decreases in GSP in 2016 as compared to the PPACA scenario.

h. Impact on migration

The Option 3 single payer plan would lead to an influx of people to the state because of newly created jobs. In total, by 2016 the REMI model projects that an additional 1,500 individuals would relocate to Vermont in comparison to after PPACA implementation only. By 2019, new Vermont residents would reach about 2,600 more than after the implementation of PPACA only. Importantly, this effect would be seen simply because the new employment opportunities would make living in the state more attractive.

9. IMPLEMENTATION

There are several issues related to the implementation of health system reforms in Vermont that should be considered regardless of which reform option the state decides to pursue. Vermont would need to reorganize existing systems and develop new administrative capacities to manage an integrated, single payer health system. In addition, the state would need to institute a regulatory apparatus to oversee the functioning of the system.

Vermont health system administrators would need to establish capacities for responsibilities related to payment, including determining enrollee eligibility, billing and collection, adjudicating claims appeals, credentialing and contracting, negotiating payment rates, and analyzing provider quality and efficiency. Moving to an integrated system would require the state to establish capacities for responsibilities related to service delivery, including managing health information and addressing customer service concerns and demand for out-of-network care.

In addition to developing administrative capacities, Vermont would need to institute new regulations to govern the future health system in the state. In particular, legislators would need to address issues related to the benefit package, payroll contribution collection processes, ACO eligibility requirements and patient protection.

A rough timeline for implementation follows:

- In the 2011-2012 biennium, the Vermont legislature should draft and pass a health care reform law that institutes a single payer system with integrated service delivery.
- Also during 2011, work should continue on developing an insurance exchange as dictated by PPACA.
- Vermont should continue to execute its current Health Information Technology and Health Information Exchange (HIE) strategy to build ensure the necessary computerization and standardization of health information to facilitate efficient medical and claims information under the single payer.
- 2011 - Vermont should research and develop proposals to build Smart Card technology into its HIT plan.
- 2011 - Vermont should continue expanding the medical homes programs legislated by the Blueprint for Health.
- 2011 – 2015 Vermont should develop and test pilot ACO programs around the state and rigorously evaluate them to determine key success factors and strategies to scale state-wide, if possible.
- In 2012, Vermont must begin developing a state agency to act as the single payer for the health system.

- In 2014, the state should establish an Insurance Fund and prepare the appropriate state health agencies for going online with the single payer system in 2015.

A. IMPLEMENTATION OF A SINGLE PAYER SYSTEM

Health system administrators in Vermont would need to reform current institutions and develop new capacities as the state moves toward a single payer system. At present, several different groups determine health insurance enrollee eligibility in Vermont. Employers determine eligibility for employee programs, government agencies determine eligibility for public programs and premium subsidies, and private insurance companies determine eligibility for non-group programs. This fragmentation contributes to administrative waste. Under a single payer system, all Vermont residents would be eligible for coverage. This greatly simplifies the administrative capacities required for determining eligibility and should lead to administrative savings.

As with eligibility determination, many disparate groups handle billing and collection in Vermont. For employer-based plans, insurance companies send bills to employers who collect part of the cost of coverage from their employees. Each insurance company has its own billing method and each employer has its own manner of cost recovery. For non-group plans, insurance companies bill and collect from enrollees directly. This fragmented billing structure would largely disappear under the single payer system and be replaced by a more efficient uniform structure. However, Vermont administrators need to develop new capacities to run a uniform single payer billing and collection system.

When patients in Vermont seek to appeal insurance company coverage decisions, they most often must first deal with a review committee internal to the company, and then proceed to an external, quasi-judicial review board. This general framework would likely persist under the single payer system. However, under single payer, the payer itself would be at least a quasi-public entity. As such, steps must be taken to ensure that internal and external reviews are independent. That is to say, the single payer organization must develop a first-line review committee to address appeals. Then, the state billing adjudication body that currently operates in the state should be reformed to address appeals that cannot be properly addressed by the single payer organization.

Public capacities for credentialing and contracting with providers would be necessary under the single payer system. Historically, each payer in the state conducted an independent review process with potential providers. In the past several years, the Department of Banking, Insurance, Securities and Health Care Administration (BISHCA) has worked to standardize that process, at least to the level of using common forms. However, providers must still be credentialed by each payer with which they hope to contract. A similar system would be maintained in the future, but establishing credentials for a single payer would sharply reduce the burden on providers. Further, it is likely that a greater proportion of providers would be hired as employees of provider organizations while fewer would work under independent contract relationships. This would reduce the frequency with which credentialing and contracting activities would be required.

Under a government-run single payer system in Vermont, state representatives would need to negotiate payment rates with providers. Under the current, fragmented payment system, negotiations between insurance companies and providers can be contentious and require tremendous resources, particularly when both the payer and the provider organization are in strong positions with control of substantial market share. Moving to a purely public single payer

would place the state in a strong position for all negotiations. However, the state would need to develop leadership capacities to handle these negotiations in an appropriate manner. It is important for state representatives to engage with provider organizations during negotiations in a manner that gives providers an opportunity to buy into the state system. Experiences with payment rate negotiations between public payers and private providers in other states suggest that mutual respect between sides during negotiations contributes to a successful payment system.

Public agencies in Vermont must develop the capacity to analyze health system data related to provider quality and efficiency. Vermont has taken a major step forward with its initial implementation of the VHCURES system, but at present that system only includes claims paid by private entities. Work must continue on incorporating Medicare and Medicaid claims into a common database. As essential as this common database is, it is not sufficient. The state must develop the human resources necessary to conduct sophisticated analyses in support of provider and system performance evaluation, quality improvement, capitation development, and risk-adjustment.

Perhaps the most important new tool Vermont needs to develop for data analysis and management is a “smart card” system similar to the one used in Taiwan’s national health insurance program. A smart card is like a credit card that holds health-related information and can easily be read by electronic readers installed at all health facilities. Smart cards issued to all Vermonters are vital for improving the integration of care, reducing administrative costs, and rooting out waste and abuse.

In addition to developing these capacities, Vermont must institute regulations to govern the single payer system. For example, under the government-run single payer, the state needs to develop a mechanism to design the benefit package and also regulate the tax program used to finance the health system. Vermont should determine a benefit package that meets their stated goals. However, the state must recognize that resources for health care are limited, and only those services that can be afforded should be included in the minimum benefit package. We have presented a package that we believe the state can afford with savings realized by our reforms. However, the resources available for health care in Vermont would likely change over time, and processes need to be in place to adjust the benefit package as appropriate. The number of services included in the benefit package would determine the funding that Vermont’s health system would require to remain solvent. Tax collection processes dedicated to funding the state’s health system should be designed with the flexibility and legislative power to fully cover expenses without deficit spending.

COSTS OF INFRASTRUCTURE CHANGES

The Vermont Legislature has committed to establishing a robust HIT infrastructure as part of the Blueprint for Health [118]. Efforts to construct an operational HIT and Health Information Exchange (HIE) system are ongoing, and should be continued and expanded. If Vermont is going to commit fully to integrated service delivery, all provider organizations in the state must have access to the following HIT capacities: (1) a network of server systems with sufficient storage space to house essential data, (2) a data security apparatus to ensure patient privacy, (3) a uniform electronic medical record (EMR) system, accessible at all locations of service delivery (it may be effective to build EMR and security capacity with smart card technology[206]), (4) a centralized administrative database containing all payment claims, and (5) a report generating apparatus that provides timely, useful information to organization managers and state regulators [207].

State agencies must take the lead in instituting these technologies to ensure the development of unified systems across the state. Federal funding is available to support Vermont in adopting these health information technologies through the HITECH section of the 2009 American Recovery and Reinvestment Act (ARRA). This law provides for \$19 billion in funding for providers to adopt electronic health records, with awards to physicians of up to \$44,000 in incentive payments. Through the staged release of standards, this legislation furthermore provides a pathway towards interoperability of HIT in the US [208]. Through the Vermont HIT-HIE plan, the state is already poised to maximally capture this funding. In 2008 Vermont instituted a fee of two tenths of a percent on all health insurance claims to create annual revenues that then provide grants to support HIT and HIE. This fund is available through 2015. The fund would be a source of matching dollars for new federal resources, enabling Vermont to maximize opportunities coming from HITECH.

Indeed many providers in Vermont already have operating electronic records and information systems. The 2009 Physician Survey of primary care practices found that 20 to 25 percent have EHRs in various stages of implementation. Fletcher Allen Health Center recently implemented their EPIC system across its hospital and owned primary care and specialty practice network, so this percentage would increase significantly in the next several years. According to the most recent Vermont HIT-HIE report from DVHA [46] most of the other hospitals are in the process of upgrading their systems and offering EHR services to their employed practices. The same report estimates that 20 to 25 percent of specialists likely have EHR systems. Fletcher Allen Health Care has the largest concentration of specialists in the state and their implementation is about 50 percent complete. The costs associated with moving Vermont towards a fully electronic and interoperable health system will need to be factored in regardless of overall system reforms.

Vermont can furthermore make use of federal funds to build the single payer central infrastructure. Vermont could build the Exchange as a foundation of a single payer system, especially in regards to updated eligibility and means-testing functions. The Secretary of Health and Human Services (HHS) gave grants of up to \$1 million for each state in order to start planning their Exchanges. While final rules are not available, HHS will be making significantly higher levels of funding available for states to eventually build their Exchanges. Furthermore, Vermont is currently updating its Medicaid Management Information System (MMIS) with a 90 percent match rate from the Federal Government.

Despite the availability of million in federal funding, and the strong progress Vermont has already made in HIT, it is difficult to estimate the additional costs that would be required to support an efficient and fully electronic single payer system. There may be further investments required. In Taiwan, the implementation of Smart Cards, for example, took two years and cost \$108 million in 2001 (and was completed by 2003 by an independent contractor who bid on the project) [48]. This included issuing cards to all 22 million residents and installing card readers at all provider practices in the country. Proportional investment in Vermont would be approximately \$3 million.

HIT is an integral part of both the current Vermont reform efforts and of any efficient single payer system. This is an obvious area for further in-depth cost analysis.

B. IMPLEMENTATION OF AN ACO SERVICE DELIVERY SYSTEM

There is considerable uncertainty over what ACOs would look like, how they would function both as units and within a health care market place. This is a promising, though emerging, model and we

recommend that Vermont proceed with experimentation and rigorous evaluation of pilots within the state, incorporating lessons from other states as evidence emerges.

The transition to the ACO model of integrated service delivery would require that administrators in Vermont reorganize state systems and further develop capacities. In addition to HIT implementation issues discussed above, there are several critical questions that must be answered. First, how will capitations be established? Second, will risk be shared and if so, how? Third, how will the connection between populations and ACOs be created?

The third question presents a number of challenges. Under traditional managed care plans, each person covered by the plan was required to designate a primary care provider. One of the ways that the proposed ACO model differs from traditional managed care is in not requiring this designation. Instead, ACO populations are created using attribution – individuals are assigned to ACOs based on where they get the predominance of their primary care. This approach has been used successfully in the Medicare population for research purposes. However, recent analysis of VHCURES data for the Health Care Reform Commission in Vermont has identified a major issue when this approach is taken with a younger population. That analysis found that approximately 40 percent of covered individuals do not have any contact with a primary care physician in a one-year period. If this finding is accurate, it raises the question of how to attribute those individuals. Further, if those individuals are not attributed and seek care, who will be financially responsible? How should their claims experience (if any) be used in calculation of premiums? These questions will need to be resolved. As an alternative to attribution, it may be appropriate to adopt a system in Vermont where patients choose the ACO to which they would like to be affiliated.

Vermont will need to develop a system to address demand for out-of-network care. All ACOs are responsible for ensuring that patients have access to the full continuum of health services. However, patients may wish to seek health care from a provider unaffiliated with their ACO, even when a particular service is available through ACO channels. Vermont must regulate how ACOs discourage this behavior. For example, the state may need to limit cost-sharing when out-of-network care is obtained. The state may also have a role in overseeing the payment process when a member of one ACO seeks care from a provider not affiliated with that ACO (e.g. prompt payment).

Another over-arching set of questions pertains to the set of federal legal barriers to integration. For example, the Stark Law limits the ability of hospitals to develop new reimbursement models with physician; laws also exist that prohibit hospitals from rewarding physicians for reducing or withholding services to Medicare or Medicaid patients. These federal rules could ultimately be barriers to clinical integration, especially among networks of independent providers not formally integrated under a single financial institution.

CMS is a major force behind the nation-wide push to attain greater integration in the delivery system through the ACO model and will have to take the lead on resolving systemic barriers to their desired goals. Indeed CMS, the Department of Health and Human Service (HHS) and the Federal Trade Commission held a joint session in October on the issue of federal laws as barriers to ACO formation where CMS Administrator Don Berwick stated that CMS, HHS, the FTC and the Department of Justice are collaborating to reduce barriers to the formation of ACOs of all types [209], though there are more recent signs that this collaboration has been strained [210].

The ACO model of health service delivery has been broadly recognized as having the potential for substantial cost savings and increased quality of care. However, the most effective ACO structure

has not yet been determined. Vermont's transition to the ACO model would require a flexible regulatory framework that is adaptable over time. Complicating matters, the period of transition to the ACO model in Vermont will coincide with a transition from a multi- to single payer system. ACO regulations in the state would need to function in both payment environments.

I. FACILITATING THE CREATION OF ACOS IN A MULTI-PAYER ENVIRONMENT

While Vermont remains a multi-payer environment, the primary incentives for health care providers to align themselves as ACOs will come from the new Medicare ACO program, described in Section 3022 of the Patient Protection and Accountable Care Act (PPACA) and initiatives by the new Innovation Center in CMS [69]. Additional incentives may be built around the way that risk is shared. For example, if potential ACOs are initially protected against down-side risk, they may be more willing to take the necessary steps. Vermont can also take steps to prepare providers in the state to engage with these federal programs. Research suggests that the primary care medical home (PCMH) model of health service delivery can spur initial provider integration and prepare organizations for the adoption of ACO responsibilities. Further, the ACO model requires that provider organizations have robust health information technology (HIT) infrastructures, including electronic medical records to track patients across the full continuum of care and a central claims database to inform organizational planning activities [207]. The recent Vermont Blueprint for Health legislation has recognized both the PCMH model and HIT infrastructure as fundamental parts of the state's evolving health system [118]. However, the Blueprint has not yet been fully implemented. During the period of transition to the single payer system, Vermont should focus on strengthening Blueprint systems with an eye toward how that can create the foundation for a future ACO system.

Federal regulations related to the newly legislated Medicare ACO program are not yet available—the Centers for Medicare and Medicaid Services (CMS) will publish draft regulations within the next couple of months and the first programs are scheduled to begin January 1, 2012. Once these regulations are made available, it will be incumbent upon Vermont to begin coordinating local regulations with federal regulations to ensure a well functioning ACO system in the state.

II. MINIMUM REQUIREMENTS FOR ACO STATUS

Payment system incentives are the primary means for spurring ACO formation and integrating health service delivery. As such, when Vermont has completed the transition to a single payer system and assumed full responsibility for payment, the state would also assume responsibility for managing the ACO system. The state should develop clear regulations with regard to which health care delivery organizations are eligible to become ACOs. Recent federal legislation, the Patient Protection and Affordable Care Act (PPACA), outlines minimum requirements for ACO status [69, 211]. ACOs must have the capacity to perform four important responsibilities: (1) provide the full continuum of health services, (2) handle administrative operations, (3) evaluate and report on key indicators, and (4) manage risk and remain solvent. These requirements do not automatically disqualify any single type of provider organization—whether physician groups, community health centers, or community or tertiary hospitals. Rather, each organization should be assessed independently in its application for ACO status. Indeed, a goal of public policy should be to encourage diverse types of organizations to become ACOs.

ACOs must provide patients access to the full continuum of health services. This continuum includes preventive services, primary care, inpatient hospital care, and specialist services. Services can either be supplied by ACO-employed providers or by contracted non-ACO provider organizations. While the ACO is responsible for ensuring access to care for patients, either the ACO or the payer can negotiate service contracts. However, questions remain as to whether a particular minimum set of services should be provided by the ACO itself. For example, it may be appropriate to require that ACOs provide a full range of primary care services in-house to minimize substitution of these services with more expensive specialty services [212].

ACOs must be able to handle a range of administrative operations. The ACO model of health service delivery places a greater administrative burden on provider organizations than do fragmented models. As discussed above, ACOs must have a strong (HIT) infrastructure. This includes electronic medical records to track patient care across the full range of services and a centralized claims database to inform organizational evaluation and planning processes. In the case of Vermont, the state should assume responsibility for developing HIT infrastructure to ensure a uniform system.

In addition to handling internal administrative processes, ACOs must be able to meet reporting responsibilities. Capitation payments and bonuses would be directly determined by ACO performance as measured by a standard set of quality indicators. Therefore, all ACOs must be able to collect data to accurately determine these indicators, and report these data in a timely manner.

Finally, ACOs must be able to manage risk and remain solvent. Capitation payment systems place risk on providers. Capitation rates are based on average risk-adjusted costs. However, in any given capitation period, patient care costs may exceed projected costs, leading to net losses for ACOs. However, larger ACO patient populations have lower risks of net losses, because losses from outlier patients with higher than expected costs in these larger populations would constitute a smaller proportion of the full ACO budget. The PPACA legislation suggests that at a minimum an ACO should be able to accommodate 5,000 Medicare patients [69].

III. ACO MODELS LIKELY TO WORK IN VERMONT

Vermont should work to smooth the transition to the ACO model of health service delivery by building on the organizational structures of providers that currently practice in the state. The current make-up of health service delivery organizations in Vermont suggests that five specific models of ACO design may be most appropriate: (1) independent practice associations (IPAs), (2) community health centers such as Federally Qualified Health Centers (FQHCs), (3) community hospitals, (4) tertiary hospitals, and (5) physician hospital organizations (PHOs). Each of these models of ACO design has strengths and weaknesses, and at present it is not clear which model would work best in Vermont. In addition, different regions of Vermont are at different stages of readiness for becoming ACOs. For example, Fletcher Allen Health Care is actively exploring the possibility of becoming an ACO as it has years of experience managing risk-contracts under its subsidiary, Vermont Managed Care. Ultimately, different models might be appropriate in different areas owing to existing capacities, geography, and market structure [207].

Independent practice associations and community health centers provide a broad range of health services. However, these organizations focus largely on primary care. If these organizations were to assume ACO responsibilities, to the exclusion of community and tertiary hospitals, it would likely move the Vermont health care system toward greater focus on community-based primary care, a

goal of the state's legislature. However, these organizations may lack the capacity to assume the full responsibilities of an ACO, as described above. Alternatively, community and tertiary hospitals are likely to have systems in place to handle the complex administrative duties, service contracting, and data reporting responsibilities required of ACOs. However, the management structures in these higher-level facilities are often comprised of specialist providers who are oriented to using high technology. As such, empowering hospitals as ACOs, to the exclusion of smaller provider organizations, may move the Vermont health care system away from a primary care focus. Vermont has 3 PHOs with multiple years of experience with risk-sharing contracts with commercial insurers (Vermont Managed Care, Central VT PHO, and United Health Alliance in Bennington). These organizations are the most likely starting points for ACO's in Vermont.

Ultimately, Vermont will have to experiment with ACO models to determine what works best in the state. ACO regulations in Vermont should be flexible and allow for innovation [211]. Further, Vermont should look to experiences in other states for guidance. At present, there are numerous ACO pilot projects being conducted throughout the country in an effort to determine "best practices" with regard to ACO operations [213].

IV. PATIENT PROTECTION

Vermont should address issues of patient protection that may result from the ACO model of health system delivery. Of particular concern is the fact that the ACO system of capitation payment may create provider incentives to undersupply health services or provide low quality of care. Under capitation payment systems, providers' incomes are determined by the difference between the capitation rates they receive and the costs of patient care they are responsible to pay. Therefore, providers have clear incentives to reduce the cost of patient care, i.e., undersupply health services, to maximize their incomes. Much of the resistance to the managed care model of health service delivery, popular in the US in the 1990s, resulted from concerns over provider incentives to undersupply services. Similarly, capitation payment does not produce provider incentives to supply good quality health care. Their income is unaffected by service quality. However, proper regulation can remove perverse incentives to undersupply care and also create incentives to provide high quality care. One way to achieve these goals is to conduct periodic reviews of provider supply patterns with subsequent penalties for inappropriate behaviors. Reviews can either be conducted by an external governing body or by empowered provider professional organizations. Alternatively, bonus payments based on indicators of appropriate care can reduce undersupply and increase quality. If providers make more money from bonus payments than they lose in capitation for providing the appropriate, high quality care, they would behave accordingly. Finally, regulations that allow patients to easily transfer enrollment from one ACO to another can create incentives for providers to supply appropriate, high quality services. Providers receive capitation payments in proportion to the number of patients they have enrolled. Transfers directly reduce provider incomes. In order to reduce transfers, providers are likely to provide appropriate, high quality services that meet patients' expectations.

10. COMPARISONS AND RECOMMENDATIONS

Table 29. Comparison of Savings Estimates among the Three Reform Options

Percent of Total Health Spending from 2015 to 2024		Absolute Savings in 2010 Dollars ¹			
		2015	2016	2019	2024
Option 1	24.30%	\$530 million	\$720 million	\$1,050 million	\$1,550 million
Option 2	16.10%	\$320 million	\$470 million	\$690 million	\$980 million
Option 3	25.30%	\$580 million	\$770 million	\$1,100 million	\$1,600 million

Note: ¹Excluding savings accrued to Medicare, Veterans' Administration, Workers' Compensation plans, and Medicaid elderly.

Table 30. Estimated Incremental Impacts of the Three Reform Options

Benefits package:		Option 1		Option 2	Option 3
		Standard	Comprehensive	Multiple	Standard
Number of remaining uninsured individuals	2016	0	0	28,000	0
	2019	0	0	28,000	0
Total employer spending	2016	-\$80 million	\$410 million	-\$120 million	-\$100 million
	2019	-\$220 million	\$290 million	-\$150 million	-\$240 million
Per employee health spending	2016	-\$200	\$1,000	-\$300	-\$260
	2019	-\$550	\$725	-\$385	-\$600
Number of jobs created	2016	3,800	8,200	-2,300	3,600
	2019	3,200	7,100	-3,100	2,900
Number of individuals migrating into Vermont	2016	1,600	4,000	-1,000	1,500
	2019	2,900	8,000	-2,400	2,600
Gross State Domestic Product Change	2016	\$100 million	\$320 million	-\$170 million	\$90 million
	2019	\$50 million	\$250 million	-\$250 million	\$33 million

Note: All dollar figures are expressed in real 2010 dollars.

Table 31. Estimated Payroll Contribution Rates as a Percentage of Total Payroll for the Three Reform Options

		No reform ¹	Option 1B Standard	Option 1A Comprehensive	Option 2	Option 3 Standard
Total²	2016	13.40%	12.80%	18.20%	12.40%	12.50%
	2019	13.70%	11.80%	17.10%	13.60%	11.60%
Employer Contribution	2016	9.30%	9.60%	13.60%	8.50%	9.40%
	2019	9.60%	8.80%	12.80%	8.50%	8.70%
Employee Contribution	2016	4.10%	3.20%	4.60%	3.90%	3.10%
	2019	4.10%	3.00%	4.30%	5.10%	2.90%

Notes: ¹The no-reform scenario consists of PPACA and state-wide implementation of Blueprint for Health Medical Homes; ²To make the contribution rates as comparable as possible, the total payroll values for the no-reform and Option 2 scenarios have been adjusted similarly to the single payer options, by excluding wages of workers below 200 percent of FPL and wages above the Medicare cap, indexed over time to GDP growth rates. However, it is very important to note that these contribution rates are not fully comparable between the single payer options and the other scenarios. Most notably, under no reform and under Option 2, many Vermonters would still be uninsured and underinsured. Moreover, benefit packages would not provide coverage of dental and vision care under these scenarios. Finally, there would be no investments in Vermont's physician workforce and health care facilities. In contrast, under Options 1 and 3 all Vermonters would be covered with uniform benefits package.

Table 32. Recommended Use of Savings under the Different Benefits Packages

Benefits package	2016		2019	
	Standard (Options 1B and 3)	Comprehensive (Option 1 A)	Standard (Options 1B and 3)	Comprehensive (Option 1A)
Coverage of the uninsured	\$227 million	\$260 million	\$250 million	\$285 million
Increased benefits for the underinsured	\$33 million	\$333 million	\$36 million	\$366 million
Investments in primary care and community hospitals	\$64 million	\$64 million	\$70 million	\$70 million
Additional dental and vision benefits	\$128 million	\$377 million	\$140 million	\$415 million
Long-term care benefits	-	\$204 million	-	\$225 million
Savings from uniform payment rate	(\$57 million)	(\$57 million)	(\$63 million)	(\$63 million)
Total	\$395 million	\$1,180 million	\$435 million	\$1,300 million

Note: All dollar figures are expressed in real 2010 dollars.

We designed three options for health system reform in Vermont. The impacts above indicate that Option 3, the Public/Private Single Payer, would provide the greatest cost-savings to the state, savings that stem from the unique governance structure and management of the single payer entity. Unlike Option 2, which maintains the current multi-payer system, and Option 1, which creates a strictly government-administered program, Option 3 proposes a single payer structure overseen by an independent board with representatives from employers, patients, providers and responsible government agencies. Board members would be charged with establishing a budget for the single payer, recommending updates to the payment rates and benefit packages based. Option 3 further proposes that claims administration and provider relations be awarded through competitive bidding process.

Option 3 proposes to cover only the Standard Benefits Package. This benefit package was designed to provide at least as good coverage as the average Vermonter has now and to promote primary and preventive care. Unlike the Comprehensive Benefit package, however, it provides for limited coverage of vision and dental benefits. We recommend that when and if savings are realized in sufficient quantity, Vermont should consider expanding coverage for these benefits. Long-term care, however, is a more difficult issue that would require detailed and comprehensive study in its own right. International experience suggests that successful social models of long-term care insurance are constructed as separate programs from health benefits program, for example those of Germany and Japan, as long term care provision is so fundamentally different from medical services.

But beyond the greater cost-savings, we believe that Option 3 is the most feasible because it is likely to be accepted by the broadest cross-section of stakeholders in Vermont. Through discussions with more than 100 stakeholders we gained a critical understanding of what various competing interests would tolerate, their issues, concerns and hopes, where they disagreed and where they landed on common ground. Political opposition to single payer systems is often rooted in concerns over transparency and accountability. We designed Option 3 to address those issues and to operate with the express input of a broad base of stakeholders. In sum, we believe that Option 3 provides benefits to patients, providers and the system at large, in keeping with both the equity, coverage and sustainability goals of Act 128.

APPENDIX I: GLOSSARY AND ACRONYMS

Term	Definition
Accountable Care Organization	ACO. A network of providers (potentially including both doctors and hospitals and others) that shares responsibility for managing the health care needs and costs of a defined population of patients.
ACO	See Accountable Care Organization
Actuarial Value or Actuarial Ratio	This ratio represents the proportion of total health spending that is paid by the health insurance plan, with the remainder paid through out of pocket costs. For example, in a plan with an 80 percent actuarial value, the plan would pay 80 percent of total costs and the patient would pay 20 percent.
American Recovery and Reinvestment Act of 2009	Economic stimulus package enacted by US Congress in February 2009, intended to create jobs and increase investment and consumer spending to counteract the effects of the recession.
APC – Ambulatory Patient Classification	The basis upon which Medicare reimburses hospitals and other providers for outpatient encounters.
ARRA	See American Recovery and Reinvestment Act.
BCBSVT	Blue Cross Blue Shield of Vermont
Billing and Insurance-Related Costs	Administrative activities and functions whose primary purpose is to move money from payer to provider in accordance with agreed upon rules.
BIR Costs	See Billing and Insurance-Related Costs
BISHCA	See Department for Banking, Insurance, Securities and Health Care Administration
Blueprint for Health	Vermont's public-private partnership leading health reform change in the state; major components include the patient-centered medical home (PCMH) pilots and community health teams (CHTs).
Capitation	A fixed payment to a health care provider paid on a regular basis based on the number of patients treated; capitations can be “flat” – the same for each patient – or risk-adjusted – increased or decreased based on the expected health spending of the patient.
Catamount Health	Subsidized health insurance program for uninsured Vermonters offered by a partnership between the state, BCBSVT and MVP Health Care
Centers for Medicare and Medicaid Services	Federal agency within the Department of Health & Human Services that administers Medicare, Medicaid, SCHIP, and other health insurance matters
Certificate of Need	Permission for new health care projects in VT by BISHCA intended to curb overall health costs
Claims Adjudication	The process by which health care claims are reviewed to determine an insurer's financial responsibility.
CMS	See Centers for Medicare and Medicaid Services
Co-insurance	The percentage paid by an insured individual for services.
Copayment	The payment made by an insured individual each time health services are accessed.
Cost Shift	Occurs when a service or good is not adequately reimbursed, and compensation is sought by increasing rates to other payers.
Cost-sharing	Distributing costs of health care between an insurer and the insured

	individual, through such mechanisms as deductibles, co-insurance, and co-payments.
Critical Access Hospitals	A hospital certified to receive cost-based reimbursement from Medicare based on geographic location, size, and patient demographics.
Deductible	An amount to be paid out-of-pocket by an insured party before an insurer would cover any expenses.
Department of Banking, Insurance, Securities and Health Care Administration	Vermont department that protects consumers against unfair and unlawful business practices and oversees enforcement of regulated industries.
Department of Vermont Health Access	Department responsible for the management of the state's publicly funded health insurance programs; the state Medicaid Agency.
DRG – Diagnosis Related Group	The basis upon which Medicare pays most hospitals for inpatient admissions. Hospitals are paid this rate regardless of their own costs. There are currently 746 different DRGs
Dual Eligibles	Individuals who are entitled to Medicare Part A and/or Part B as well as being eligible for Medicaid benefits; generally low-income seniors.
DVHA	See Department of Vermont Health Access
EHR/EMR	Electronic Health Record or Electronic Medical Record.
Fee-for-service (FFS)	Payment method by which providers are reimbursed for each service administered (test, visit, procedure, etc.)
Federal Poverty Level (FPL)	Federal guidelines for determining for poverty status used for administrative purposes, for example determining eligibility for certain benefits programs.
HIT	Health Information Technology
HITECH	See Health Information Technology for Economic and Clinical Health Act
Health Information Technology for Economic and Clinical Health (HITECH) Act	2009 law promoting the adoption and meaningful use of health information technology
HRA or Health Reimbursement Account.	An account into which individual can deposit before-tax dollars to use on approved medical expenses. This account is owned by the employer.
HSA or Health Savings Account	An account into which individual can deposit before-tax dollars to use on approved medical expenses. This account is owned by the individual.
HSA or Hospital Service Area	A geographical region defined by patterns of local hospital use
Integrated Delivery System. IDS	A health care organization that owns hospitals, physician practices, and perhaps even an insurance plan, which aligns financial incentives across the organization and uses team-based health care.
Insurance Exchanges	A new entity created by the PPACA meant to create an organized, competitive market for health insurance by offering a choice of plans and better information
Medicaid	Health program for low-income or disabled people jointly funded by state and Federal Government
Medical Home	A system intended to provide comprehensive primary care, creating partnerships between patients and providers.
Medical Malpractice	Negligence by a health care provider in which care deviates from accepted

	standards of care, resulting in harm to the patient.
Medicare	Social insurance administered by the Federal Government for people over 65 and those with some permanent disabilities and diseases.
NAIC	National Association of Insurance Commissioners
PMPM or Per Member Per Month.	This is a common measure of spending in health insurance. Owing to the large “churn” or changing between insurance plans, spending is expressed on a monthly, not annual basis.
PPACA or Patient Protection and Affordable Care Act	PPACA. The major federal health reform passed into law in March of 2010
Primary Care Provider	A physician who provides both the first contact for a person with an undiagnosed health concern as well as continuing care of varied medical conditions, not limited by cause, organ system, or diagnosis; the Vermont Department of Health defines Primary Care Practitioners as those in: Family Practice; Internal Medicine (general and geriatric); Gynecology and those working in both Obstetrics and Gynecology; Pediatrics.
Risk-adjustment	The process by which the expected future health of a person or population is calculated; for example a risk-adjusted capitation payment for a person with diabetes would be higher than for a person who is young and healthy because a person with diabetes is expected to have higher health costs.
SCHIP	State Children’s Health Insurance Program
Single Pipe	A system in which all billing and claims processing would be done through uniform mechanisms, whether for multiple payers or a single payer
Single Payer	A health insurance system that provides insurance coverage to every resident with a standard benefit package, unifying both the mechanisms by which services are paid, payment amounts and the insurance fund.
Smart Cards	A card similar to a credit card that holds health-related information, to facilitate in the ease of transfer of patient information.
Third-party Administrator	A contracted organization that processes insurance claims.
TPA	See Third-party administrator
Upper Payment Limit	The limit at which Medicaid can pay on claims and still draw federal match. Any payment above these limits, which apply only to institutional payments (hospitals) and not professional payments (physicians and other professionals), must be covered by the state.
VHCURES	See Vermont Healthcare Claims Uniform Reporting and Evaluation System
Vermont Healthcare Claims Uniform Reporting and Evaluation System	The all-payer claims database representing private claims data for Vermont residents as from health insurers; administered by BISHCA.
Waiver	An agreement between the Federal Government and the state that exempts the state from the provisions of a federal law.

APPENDIX II: INTERNATIONAL MODELS OF LONG-TERM CARE FOR VERMONT TO CONSIDER

According to the *Handbook of Health Economics* (2000), long-term care differs from acute medical care in four fundamental ways (Brown and Finkelstein 2007). First, long-term care is for chronic illness or disability that lasts for the remaining duration of a person's life, as opposed to the treatment of acute illness. Second, the nursing home market, which is the primary domain of long-term care provision, is dominated by private, for-profit institutions, while hospitals are primarily public or non-profit institutions. Third, long-term care is often provided by informal or family caregivers, instead of the paid professionals that provide acute medical care. Fourth, there are relatively few insurance options for long-term care and public coverage is often means tested and targeted at low-income individuals.

In light of these distinctions, challenges are presented when integrating long-term care with broader health insurance systems. The market for long-term care insurance suffers from numerous problems, including adverse selection, moral hazard, Medicaid crowding out, high administrative costs, and non-diversifiable inter-temporal risk (Brown and Finkelstein 2007). The non-diversifiable inter-temporal risk is of particular concern in the potential to integrate long-term care coverage into a financially viable and affordable universal health insurance benefits package. The risk pool for acute medical care depends on cross-sectional heterogeneity in a single year amongst beneficiaries. However, with long-term care there is no diversification of risks amongst the target population. As a result, in order for a benefits package to be feasible insurers would offer indemnity benefits instead of service benefits, which pay a fixed sum and place more risk on consumers. Additionally, insurers would need to guarantee a higher rate or return on long-term care insurance as compared to less-risky investments, which necessitates a higher premium [214].

The complexity of designing successful social long-term care insurance schemes resulted in our recommendation that Vermont engage in further study, and that long-term care benefits be separated from medical benefits. In this context, Germany and Japan present examples of countries that have universal, long-term care insurance programs, outside of the scope of their pre-existing social health insurance systems. Facing rising long-term care costs and aging population, both countries implemented their respective programs in order to pool risk through mandatory payroll contributions, with subsidized premiums for low-income individuals.

THE GERMAN SYSTEM

Germany provides near universal health insurance coverage to its citizens through mandatory enrollment in one of approximately 250 sickness funds. This health insurance system is funded through employee and employer contributions, as well as government subsidization of premiums for those individuals below a certain income threshold. Individuals above a certain income level can opt out of the public plan and instead enroll in private insurance plans. To complement this health insurance scheme, in 1994, Germany put into place a universal coverage, social insurance based system for long-term care. Its goals were to shift the financial burden of long-term care off the states and municipalities, expand home and community-based services, lessen dependence on means-tested welfare, and increase support of informal caregivers [215]. As of 2010, Germany

provided long-term care benefits to 10.5 percent of its population age 65 and older and its per capita spending on long-term care is 26 percent higher than that of the United States [216]. Prior to 1994, long-term care coverage was similar to the United States, in that they were both means-tested and state administered. Acute care was covered by health insurance, and long-term care was covered only for the neediest individuals in society.

The universal and mandatory long-term care insurance program is separate from the social health insurance system. However, it is administered via the same sickness funds. By using already established administrative systems, Germany was able to both create economies of scale in administrative capacities and also ease implementation burdens. The long-term care insurance premium currently is 1.95 percent of gross salary, which is split by employers and employees for all formal sector workers. Retirees pay half of the premium out of pocket and the pension fund pays the other half. The premium was initially 1 percent of gross income and has been gradually increased to keep pace with growing demands on the system. An additional 0.25 percent contribution was implemented in 2005 for childless families, as they are less likely to be able to receive informal care [217]. Self-employed individuals, civil servants, and individuals above a certain income threshold, whose jobs are not subject to social security are obligated to purchase private long-term care insurance. People born before 1940, as well as persons under 23 years old, persons in the military and recipients of unemployment are exempt from paying into the system.

Under the German system, all citizens regardless of age are eligible to receive long term care benefits. To receive those benefits, eligible persons must have a mental or physical condition that results in a need for assistance with a defined list of activities of daily living (ADLs), with an expectation that the need would persist for at least six months. The minimum threshold for obtaining benefits is limitations impacting two ADLs and a need for help in some instrumental activities of daily living (IADLs). In 2007, 30 percent of applications for assistance were rejected [216]. The system has three grades of care needs. They include assistance for personal care, nutrition and mobility; assistance for housekeeping; and time needed. The system then classifies the need for care into three categories; (1) need for considerable care, (2) need for intensive care, and (3) need for highly intensive care [218]. Physicians and nurses assess care levels and needs under specific guidelines, as mandated by the Medical Review Board. According to the German Federal Ministry of Health, the probability of being in need of care is 0.7 percent for persons younger than 60, 4.4 percent for persons between 60 and 80 years, and increases to 28.6 percent for persons older than 80 years [217].

There are various benefit types available for those who are eligible for long-term care support. Individuals can receive cash allowances and benefits in-kind for home care or financial support for institutional care. The system was designed to promote both informal and home-based care. The majority of claimants apply for cash allowances, which enable them to maintain home arrangements with the help of informal caregivers [217]. Those that receive the cash benefit receive approximately half of what they would have in services, however, the use of cash is unrestricted [215]. Four weeks of respite is also provided for qualified informal care givers, who are not direct family members, and pension credit is also given those people providing large amounts of voluntary care. For those individuals who use institutional arrangements, nursing home coverage includes basic care, medical care, and therapeutic social activities. However, room, board and capital costs are not covered. Additionally, residents are responsible for no less than 25 percent of costs of nursing home care and if costs exceed the flat rate established by sickness funds,

residents must pay the remainder. Payments rates do not increase proportional to disability levels or nursing home rates [215].

Various mechanisms have been put into place to control the costs of long term care, which in 2005 accounted for 1.44 percent of GDP [219]. First, revenues and benefits are capped as part of the implementing law. Under this provision, revenues are limited by the fixed contribution rate and the size of the working age population and benefits are limited to the maximum monthly benefit per eligible person that are fixed by disability level and setting. Second, legislation is required to change benefit levels [215]. Despite these cost control measures, there is significant concern about the financial sustainability of the system. This concern is tri-fold. First, with time there will be greater demand for services. Second, there will be fewer people available to provide home-based, informal care and therefore even greater need for more costly, institutional care. Third, the revenue base will decrease as a result of population aging and demographic shift [220]. Various reform efforts have taken place since the system's implementation in 1994; however, since 1999 expenditures have exceeded revenues.

THE JAPANESE SYSTEM

In 2000, Japan mandated universal, long-term care insurance (LTCI) for all individuals age 40 and older. As of 2010, Japan provides long-term care benefits to 13.5 percent of its population age 65 and older and its per capita spending is 9 percent higher than that of the United States [216]. Prior to 2000, Japan had pursued various reform efforts to address issues related to the aging of its population, the reduction in the number of elderly living with family members, and the increasing reliance on hospitals to provide long-term care as a result of universal health insurance coverage. Though somewhat effective in meeting their objectives, early long term care reform efforts did not effectively address the gap between health and social services in Japan. Under this former system, hospitals had become de facto nursing homes for many individuals, while welfare offices tasked with providing increasing numbers of home helpers and adult day care centers, focused largely on the indigent [221]. The initial LTCI legislation was proposed in 1994, introduced in 1997 by virtue of favorable political circumstances and adopted in 2000. The three principles of LTCI in Japan are universality of coverage, financing through social insurance (45 percent are public funds), and freedom of choice and reliance on a service market [222]. These principles represented a fundamental change in Japan's approach to long-term care, that shifted "from care by family to care by society" [223].

Municipalities act as the insurers for LTCI and are responsible for setting budgets as well as premium levels for beneficiaries. Financing for LTCI is independent of the broader municipal budget and deficits in the LTCI system can only be paid for through increases in premiums and not redirection of appropriated funds [221]. Funding for the LTCI program is split 50-50 through premium/copayment revenue from individuals age 40 and above and an allocation derived from both central and local taxes (25 percent national, 12.5 percent sub-national districts of prefectures, and 12.5 percent municipality) [223]. For those individuals between 40 and 64 years old, premiums derive from their overall payment into the national health insurance program. Health insurance premiums constitute roughly 8.5 percent of monthly income and an additional 0.9 percent of monthly income was added to pay for LTCI premiums. For those individuals 65 and older, premium levels are set by municipalities and are paid for out-of-pocket or deducted by the government from pension schemes.

To receive benefits, individuals must be certified. Citizens age 65 and older apply at the municipal LTCI office to receive benefits. Eligibility is determined by the algorithmic analysis of a 79 item form and a local expert committee reviews results. There are seven categories of benefits and support that separate applicants according to their physical condition and the type of long-term care services they are likely to require. Each individual applicant is assigned to one category and benefits are determined on that sliding scale basis. In 2007, only 3 percent of applicants for assistance were rejected [216]. After eligibility and entitlement level have been determined, recipients consult with care managers to develop a care plan based on individual preference and the availability of local services [221]. A 10 percent copayment is required for all services, except care management. When the program was initially put in place, the Government of Japan estimated that 2.7 million people would be eligible to receive benefits. Of that total number, the Government estimated that approximately 0.7 million would choose institutional care and the remaining two million would opt for some form of community care, which includes home care, group homes and other forms of assisted living [221]. Unlike Germany, Japan does not offer cash benefits and instead benefit choices are between institutional care and home-based or community-based care. Though individuals between ages 40 and 64 pay into the system, they are limited in their access to benefits. For members of that age group, the LTCI system only provides benefits in cases of “age related” disability such as Alzheimer’s disease or stroke [224].

The LTCI system has faced challenges in the form of increased costs and a rapid expansion in the number of beneficiaries. When the LTCI program was initially implemented in 2000, long term care costs represented 0.7 percent of GDP. By 2005, those costs had risen to 1.3 percent of GDP and they are estimated to reach 3-4 percent of GDP by 2050 [222]. In the first 6 years of implementation, the number of certified persons increased by 109 percent (180 percent increase in home care users and 56 percent increase in institutional care users) [223]. Revenue to fund the LTCI program, however, rose only 97 percent between 2000 and 2006, leaving a considerable gap and necessitating significant premium increases. A number of factors led to the unexpected high demand on the system. First, means testing was removed from the system and as a result latent demand was uncovered. Second, the system inadvertently provided incentives for institutional care, as the 10 percent copayment for such services (which until 2005 included room and board) was less expensive than the cost of remaining at home or in an assisted living facility. Third, municipalities have had difficulty controlling the quantity of entitled services, as care managers are often contracted employees of providers and not public health employees as originally contemplated under the LTCI program.

However, Japan seems to have anticipated the need for review of the LTCI program, as the adopting legislation included a requirement that the policy and financing mechanism be reviewed every five years and revised as needed. In 2005, Japan instituted reforms to address skyrocketing and unsustainable costs [223]. First, for those individuals above a certain income threshold the copayment for institutional care at special nursing homes rose by 50 percent with coverage of “hotel costs” such as room and board eliminated in an effort to encourage community care, which is inherently less expensive for the municipalities. Second, in 2006 reforms were implemented to place greater emphasis on preventative care for citizens in relatively good health in an effort to reduce premature dependency on the LTCI program. These reform efforts have been successful in promoting home-based care and increasing preventative services dramatically, which in turn have improved the financial viability of the program.

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