

The Vermont Option: Achieving Affordable Universal Health Care

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Introduction

Vermont has a noble vision to lead the United States in providing affordable universal health care for all of its residents. Act 128 of 2010 lays the groundwork for a giant leap towards this goal. This piece of legislation calls for a qualified consultant to design options for creating a rational and coherent health care system that would deliver comprehensive, efficient and effective care that is affordable to Vermonters, both today and in the future.

The legislation further specifies that the consultant must design and evaluate three different options. Firstly, a single payer option that is financed and publicly run. Second, a public insurance option that will compete side by side with private health plans. Third, a novel option that is to be designed by the consultant in consultation with the Vermont Health Care Reform Commission. The expertise and experience of this team makes it uniquely qualified to address all three options. Dr. Hsiao was an adviser to the Taiwan government when they developed their single payer health system. Dr. Gruber's economic models provided the foundational analysis for both the Obama Administration's public plan, as well as Massachusetts' health reform.

However, most innovative and essential aspect of our proposal lies in Option 3, an option we refer to as the most politically and practically viable single payer system for Vermont. Health system reforms cannot be designed from afar. Their ultimate success depends on a thorough understanding of the realities on the ground – the historical traditions, institutional factors and stakeholders involved. Through extensive stakeholder analysis, we will map out the political and practical factors that will ultimately allow us to develop the most viable option for Vermont.

This proposal explains the principle strategies that we will use to design health systems capable of achieving Vermont's goals. These strategies are based on models, empirical research and experience in the United States and from around the world. The proposal is organized as follows:

- a) A summary of our qualifications and capability to perform this project.
- b) A Background section, which gives a brief assessment of the Vermont's current condition and plausible causes of its problems.
- c) The Work Plan, which describes our approach in detail, beginning with a baseline study to collect comprehensive information on Vermont's health care sector, followed by the policy design and analysis methods for the three options.
- d) Project management and staffing, budget and timetable.

Act 128 requires the consultant to conduct an enormous breadth of analyses. Given the time and resource constraints stipulated by this legislation, we cannot fully explore all areas. We are limiting the scope to focus on what we believe to be the most fundamental technical work, complemented by the existing capabilities already present within Vermont state agencies. We strongly believe that the work outlined in this proposal will provide Vermont with the information, tools and analyses that will allow the state to continue on its journey of health reform and ultimately achieve its goals.

Bidder Qualifications

The RFP (“project”) provides a well-defined set of deliverables. Achievement of the desired project output requires a range of experience and expertise, in combination with a thorough knowledge of Vermont, the Medicare/Medicaid structure and the Patient Protection and Affordable Care Act (PPACA). The team of experts consisting of Dr. William Hsiao, Dr. Jonathan Gruber, Mr. Steven Kappel, Dr. Ashley Fox, Mr. Nathan Blanchet, and Ms. Anna Gosline is well situated to meet these requirements (see management and staffing plan for additional detail).

Successful completion of the project requires experts with background in the planning, design and implementation of universal health insurance programs. Inherent within that skill set must be a thorough understanding of public option policies under the PPACA, construction of single payer and other payment systems, and development of appropriate payment methods and amounts. The experts must also possess a strong knowledge of federal regulation and be capable of modeling the proposed systems to assess the total cost of reforms, and the extent to which those costs will be allocated to the state and federal governments.

We believe that the project requirements call for a unique combination of expertise in actuarial science, health economics, modeling, health policy, political science, financial analysis and the law of administrative regulation. Dr. William Hsiao, the principal investigator of this project, is a qualified actuary and an economist. Dr. Hsiao is a leading expert in the field of health systems reform with decades of experience in design and implementation of universal health insurance. Dr. Hsiao has researched extensively on optimal payment methods for hospitals and physicians. Dr. Hsiao also has expertise regarding the Medicare and Medicaid systems that he gained during his tenure as Chief Actuary for those programs.

Dr. Jonathan Gruber, a top expert in public finance and health economics, is one of the most prominent health policy experts in designing state-based universal health insurance. Dr. Gruber is an expert on the PPACA, has served as an advisor to the Obama Administration and was amongst the primary architects of the Massachusetts Connector plan. Over the course of a decade, Dr. Gruber developed a micro-simulation model with the capacity to simulate the total cost of health care reforms and financing options.

Mr. Steven Kappel is an expert on Vermont health care programs and databases. He has worked in Vermont in various capacities for more than 30 years, and has experience with data management, health program management and health policy analysis.

Dr. Ashley Fox and Mr. Nathan Blanchet are both political scientists with expertise in stakeholder analysis. Dr. Fox and Mr. Blanchet will conduct a comprehensive, Vermont-based stakeholder assessment to determine the practical feasibility of difference health reform alternatives, and which of those alternatives has the greatest likelihood of acceptance.

Ms. Anna Gosline has strong experience in financial analysis as it relates to both hospitals and clinics. She will work under the guidance of Dr. William Hsiao, who has extensive expertise in the areas of financial and actuarial analysis.

I. BACKGROUND

Vermont has long been committed to providing high-quality, affordable health care for all its residents and has been recognized at the national level for its innovative health care policies. Vermont is by many measures one of the healthiest states in the US.ⁱ The proportion of Vermont residents without health insurance is just 7.6%, far below the national estimate of 16.0%. These remarkable achievements are the results of bold initiatives in both health care financing and health services delivery implemented in the state. Take, for example, Catamount Health, the state's public-private partnership that offers affordable health coverage for uninsured Vermonters. Similarly, the Blueprint for Health statewide initiative has made significant strides in improving the quality of health care for chronically ill Vermonters.

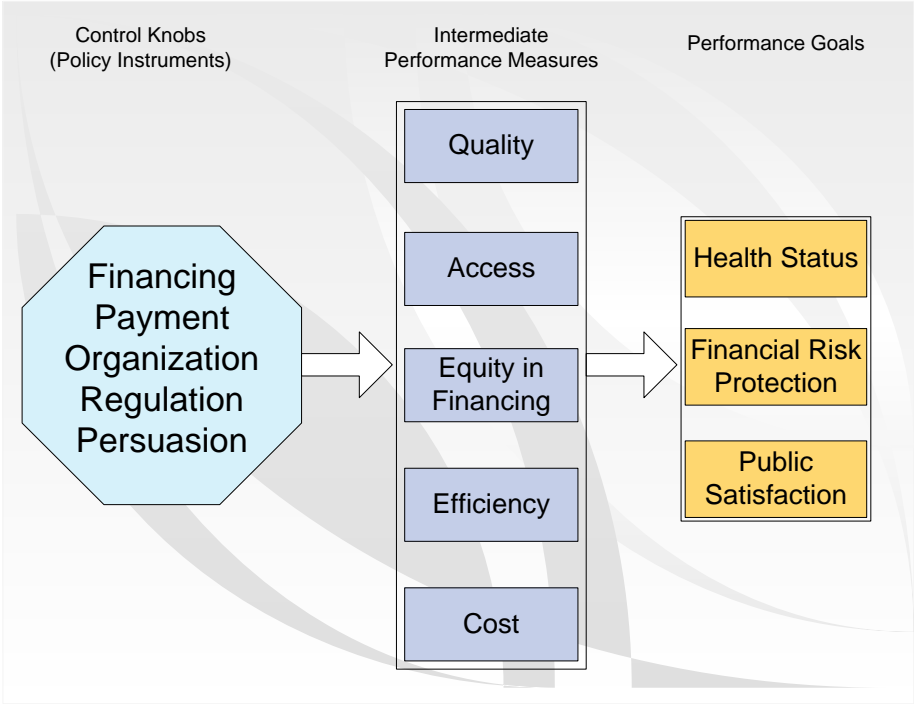
Nevertheless, Vermont's health care sector is also under substantial stress. The past years have been marked by rapidly growing health care costs. According to the latest data, from 1998 to 2004 health spending in Vermont grew at an average annual rate of 9.4%, faster than all other US states.ⁱⁱ From 2005 to 2008, health spending grew at an average annual rate of 8.2 % substantially higher than the national average growth rate of 5.7%.ⁱⁱⁱ And despite state legislators' efforts to cover the uninsured, Vermont has achieved universal coverage, or even the state goal of 96% coverage. Moreover, inequity in the health care coverage is widespread even among insured Vermonters. Many residents are still inadequately protected from the financial risk posed by illness, endangering the stability of Vermont families and businesses.

Without firm and immediate action, these problems are only expected to grow worse. The state's aging population and the inability to control medical costs put Vermont on an unsustainable path. As the national and global economic prospects remain uncertain, high and growing health care costs are threatening Vermont's fiscal solvency. In 2008, Vermont's health spending, as estimated in the state's "Expenditure Analysis" accounted for 18.1% of the Gross State Product, significantly higher than the comparable national average of 15.1%.^{iv} At the same time, expenditures are projected to continue to grow much faster than inflation, at an annual average rate of approximately 6.5%.^v

Vermont's health care problems are the intrinsic consequences of its health care system design. Even a preliminary diagnostic analysis of Vermont's health system reveals deficiencies that underscore many of the trends highlighted above. Using the policy "control knobs" framework developed by Dr. Hsiao and his colleagues at Harvard University^{vi}, our preliminary examination of Vermont's current policy sets the foundation for developing reforms that solve real problems and work towards achieving Vermont's health system goals.

The overarching framework developed by Dr. Hsiao and his colleagues has been refined and applied in the past decades towards the assessment of health systems around the globe. This framework is based on a holistic view of health systems as key instruments for achieving societal goals and on a rational examination of how the major elements of policy affect system outcomes.

Figure 1. Schematic representation of a deterministic health system structure



I.1 Financing

The first essential health system design element or control knob is financing, defined as the mechanisms by which money is mobilized and allocated to fund health sector activities. These mechanisms include various types of insurance, self-pay, and general tax revenue funding. How health systems are financed impacts on the performance of a health system by determining how much money is available, who bears the financial burden, how risks are pooled, and to what extent costs can be controlled.

Like other states, Vermont has a “multi-payer” health sector. Revenues are derived from private insurance premiums, out-of-pocket payments, and state and federal taxes. A 2008 analysis based on payments to providers found that private sources accounted for slightly more than half of all health expenditures (54.2%), which further break down into out-of-pocket payments (12.9%) and private insurance (41.3%).^{vii} Insurance coverage is fragmented and heterogeneous. This results in confusion among Vermonters, inequity in coverage, as well as administrative waste that spur growing costs. Moreover, due to the fragmented nature of revenue generation, there is no system-wide budget within which health care costs can be managed.

There are a several private and public risk-pooling mechanisms in place, but they vary widely in their ability to provide financial risk protection to Vermonters. The private market is comprised of multiple sub-markets and insurance pools, with differing regulations, pooling mechanisms, benefits, and eligibility rules. For example, of private insurance expenditures, 35.2% were derived from self-insured employer plans, 31.5% from large employer insurance, and the rest from the individual, small group, and association markets. In self-insured plans, an employer assumes all or part of the risk for the health expenditures of its employees. Rather than purchasing coverage from an insurance company through premiums, a self-insured

employer directly pays for the covered benefits when claims are incurred. The federal *Employer Retirement Income Security Act* of 1974 (ERISA) exempt self-insured plans from the rigorous benefits standards and regulatory protections imposed by the state of Vermont. There is evidence that ERISA leaves employees covered under self-insured plans vulnerable to plan mismanagement, abuse, and termination.^{viii} Moreover, it creates an uneven playing field between self-insured and commercial health plans by imposing no financial solvency requirements and only minimal information disclosure standards on self-insured plans.^{ix} Employers largely favor self-insurance in order to bypass state regulations regarding minimal benefit coverage, financial solvency, and information disclosure. Unfortunately, not all employers are equally capable to provide adequate risk pooling and management. For example, small employers are more vulnerable to bankruptcy due to unexpected variation in medical costs because they pool risks over a smaller base of employees.

The private employer-based insurance market is confronted with its own problems despite the strict regulations aimed at protecting Vermonters' access to health care. First of all, eligibility for employer-sponsored insurance (ESI) varies widely for working Vermonters and has been declining in recent years. In late 2009 almost a third (31.5%) of working adults did not have access to ESI compared to 27.8% in 2005.^x Cost is another major barrier to obtaining coverage through ESI. The percentage of employees enrolling in their employer's health insurance was 67.8% in 2009, a significant decline from an uptake rate of 72.3% in 2008. Among working uninsured residents with access to ESI, 64.8% indicated they did not enroll in their employer's health plan because it was too expensive.

Of those that do enroll in private insurance, either through their employers or the individual market, cost and benefits packages vary significantly, raising serious concerns regarding the inadequacy of financial protection from medical costs. 2009 data show that almost a third of privately insured Vermonters have policies with annual deductibles exceeding \$2,000. Similarly, about a third of this population segment has out-of-pocket limits of more than \$5,000. And although it can be argued that these residents may choose these insurance products rationally, based on their income and health needs, there is evidence to indicate otherwise. For instance, a breakdown by federal poverty levels of privately insured Vermonters suggests that a considerable number of low-income individuals have unreasonably high deductibles and out-of-pocket limits.^{xi} In 2008, 15.4 percent of Vermonters with private insurance were considered underinsured, meaning that the out-of-pocket health insurance expenses exceeded 5 to 10% of a family's annual income. In 2009, about 12% of privately insured Vermont residents were contacted by a collection agency because of unpaid medical bills.

Recognizing some of these problems, Vermont legislators have taken innovative measures to increase access to private insurance and increase financial protection for low-income families. One such program is Catamount Health, a public-private plan that offers coverage to uninsured individuals that lack access to existing public plans and ESI. Despite offering relatively generous income-based subsidies, in 2009 the program enrolled about 12,000 – considerably below the initial target of 20,000. This result indicates the limited capacity of narrower initiatives like Catamount Health to address the rate of uninsurance in the state.

Problems also hamper public insurance programs. In 2008, government sources financed 45.7% of health spending in Vermont. Medicare and Medicaid comprised the majority of these expenditures. In 2008, Medicaid purchased \$1.066 billion in health services (23.0% of the total) for children and adults in low-income working families, as well as some elderly and disabled individuals. Vermont's federal waivers have allowed the state to provide coverage to many groups under the banner of Green Mountain Care. These programs include Medicaid, the Vermont Health Access Plan for uninsured adults, Catamount Health, Dr. Dynasaur for children as well as a number of pharmacy assistance and premium assistance programs. Despite the success of these programs in providing access to affordable coverage for a large share of the population, they entail complicated income and asset tests, leading to bureaucratic inefficiency and enrollment difficulties for residents. Vermont data shows that more than half of the uninsured were eligible for state insurance programs in 2009, but had not enrolled.

Medicare coverage is segmented into various programs that separately cover inpatient hospital, home health and nursing care (Part A); physician visits, outpatient procedures, and preventive services (Part B); and prescription drugs (Part D). Each program has its own source of financing, which varies from premiums to payroll taxes and general revenues. Additionally, Vermont Medicare beneficiaries (about 107,000 enrollees, or 17.6% of the population) are able to purchase supplemental insurance, which creates inequality between the high- and low-income elderly and contributes to administrative inefficiency. Medicare is particularly notorious for shifting much of the administrative burden to the provider side, increasing the costs of care throughout the system.^{xii}

All of these arrangements pose multifaceted barriers to equitable and efficient insurance coverage for Vermonters, increasing uncertainty and their ability to cope with the risk of illness. Nearly half of Vermont's uninsured residents had been without coverage for a year or less when surveyed 2009, while 23.8% had lacked coverage for five or more years. Moreover, about 12% of Vermont residents were concerned that they may lose their insurance coverage in the following twelve months. Lack of health insurance poses real threats to access to health care services. More than a quarter of uninsured adults reported they could not afford medical care from a doctor in 2009, compared to just 3.9% for the whole population.^{xiii}

The multi-payer environment also plays a part in Vermont's inability to control health expenditure inflation, in large part because there are no mechanisms to limit spending by payer. From 2005 to 2008, private spending grew at an average annual rate of 8%. Medicare grew at an average annual rate of 13.5%, primarily due to the implementation of prescription drug coverage under Medicare Part D. Medicaid grew at 5.1% and other government expenditure grew by 14%.^{xiv}

Multiple payers lead to the duplication of administrative efforts, creating waste in the financing of health care. Data from Vermont payers reports shows that administration accounted for roughly 12% of premiums for private plans and 7% of premiums for self-funded plans.^{xv} Furthermore, providers also spend a considerable amount on administration, as a result of the different payment methods, coverage rules and medical management practices for each payer. One study estimated that physicians spend approximately 12% of their net revenues in excessive administrative costs dealing with the complex rules and demands of multiple payers.^{xvi} Other studies have found that, on average, every practicing physician must hire the

equivalent of 0.67 full time staff to deal with the complex administrative requirements of multiple payers.^{xvii} A 2003 analysis by physician researchers at Harvard Medical School estimated that administrative costs account for approximately 31% of all health expenditures in the US.^{xviii}

I.2 Payment

Payment methods and levels are fundamental driving forces in the quality and efficiency of health services provided. Unfortunately, the vast majority of payments delivered to health care providers in Vermont do not provide adequate incentives to deliver high value care to the state's residents. For example, most physicians in Vermont are paid on a fee-for-service (FFS) basis by both public and private payers. There is widespread agreement among health economists and policy experts that FFS medicine creates incentives to increase the volume of services and tends to promote health expenditure inflation.^{xix} Because providers are paid for their individually delivered units of services, FFS also promotes the continued fragmentation of the health care delivery system. Lastly, FFS often fails to explicitly reward coordination of care and patient management, service quality or health outcomes.

Hospitals in Vermont tend to receive more aggregated payment methods that promote efficient use of resources. For example, both Medicare and Vermont Medicaid pay hospitals a single sum for each inpatient stay based on the diagnosis related group (DRG) system. While the payments promote efficiency, they also create incentives to discharge patients inappropriately early, which may lead to both readmissions and increasing use of post-acute care.^{xx} Also 8 out of the 14 Vermont community hospitals currently have federal "Critical Access Hospitals" status, which exempts them from prospective payments under Medicare. Instead, Medicare pays these hospitals at 101% of allowable costs. This cost-plus payment recognizes the importance of these small hospitals in preserving access to local emergency services while acknowledging their inherent diseconomy of scale. However, all types of cost-based reimbursement, a method that is also used by some private payers in Vermont, give no financial incentives for efficiency.

In addition to the multiple payment methodologies, there is wide variation in payment levels across different providers and payers. For example, the Vermont Department of Banking, Insurance, Securities and Health Care Administration (BISHCA) publishes a list of gross hospital charges for common inpatient admissions across the state's 14 hospitals. The report demonstrates enormous variation in charges: an appendectomy without complications ranged from \$10,977 to \$17,871, while a normal vaginal birth without complications ranges from \$3259 to \$8057.^{xxi} Likewise, there is evidence that payers reimburse providers significantly different amounts for the same service. According a study by BISHCA, the average 2009 payment as a percent of charges ranged from 34.8% for Medicaid, 46.3% for Medicare, and 70.1% for commercial payers. Further analysis of hospital financial data finds that Vermont hospitals consistently lose money on public payers, a cost that offset by higher reimbursement from private payers. This cost shift, which amounted to \$259 million in 2009,^{xxii} contributes to market failures in health care, since it reinforces a situation whereby prices do not reflect true costs. The nature of this cost shift reduces incentives for costs savings, since losses can instead be withstood through higher reimbursements from other payers.

Multiple payers may also hamper the detection of fraudulent billings and inappropriate use of medical services. The Federal Bureau of Investigation estimates that 3 to 10% of all health care expenditures in the US are the result of fraud.^{xxiii} The estimates of inappropriate and unnecessary health care utilization are even larger. Including fraud, administrative inefficiencies and lack of care coordination, studies have estimated that as much as 33% of all health dollars spent in the US are essentially wasted. These issues are harder to address in a multiple payer environment, as each insurer only has a partial profile of what providers and patients have filed. The waste and unnecessary health services can only be reduced measurably when there is a comprehensive patient information system. Electronic patient records do not necessarily establish a uniform format to record patient information unless a single payer along with an integrated health delivery system can be established. Taiwan, which developed and implemented a single payer health system in the 1990s, found that their single payer system with uniform electronic record system could vastly reduce fraudulent billing and inappropriate or unnecessary use.^{xxiv}

I.3 Organization

The organization of health care delivery in Vermont is highly fragmented with little integration of health services across levels of care^{xxv} largely owing to the rural nature of the state and distinct geographic barriers. For example, Vermont has a high proportion of primary care providers in very small practices.^{xxvi} The hospital system is similarly fragmented: the state has 13 small community hospitals, each covering a distinct geographic area with little local competition. However, the vast majority of hospital services are provided at two major academic medical centers, Fletcher Allen Health Care in Burlington and Dartmouth-Hitchcock Medical Center in New Hampshire. Lack of effective communication between primary care providers (PCPs), specialists and hospitals may result in the duplication of services and poorer quality of care for patients.

There is also a discrepancy between the underlying population health needs and workforce capacity, which leads to significant variations in the availability and quality of health services throughout the state. PCPs accepting new patients decreased only slightly statewide between 2002 and 2008. However, the percent of PCPs accepting Medicare patients dropped from 78% to 69% and those accepting new Medicaid patients dropped from 75% to 69%.^{xxvii} This indicates a possible access issues for these populations. Moreover, geographic distribution analyses performed by the Office of Vermont Health Access suggest a shortage of PCP supply in Orleans, Essex, Washington, and Bennington Counties.^{xxviii} Five areas in Vermont were identified as PCP shortage areas using federal standards.

In the past four years, Vermont has adopted several reforms that influence the organization of the delivery system in the state. The largest currently running project is Blueprint for Health Multi-payer Integrated Medical Home Pilot Programs. Today, there are pilots in three locations covering some 10% of the state population. Participating practices are supported by extensive health IT platforms as well as Community Health Teams (CHTs) of social workers, behavioral health specialists and public health professionals.^{xxix} 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 evaluated. Vermont is also evaluating the feasibility of developing Accountable Care Organizations (ACOs). ACOs would accept a negotiated risk-adjusted global budget per enrolled member based patient characteristics and experience. Any

savings created against the target budget would be shared with payers, creating incentives to reduce total costs, avoid unnecessary utilization, increase the use of cost-saving preventive care and improve population health. Potential ACO pilot sites are in different stages of development; the first pilot is expected to be operational in 2011.^{xxx}

I.4 Regulation

In addition to typical provider, facility, and insurer licensure, Vermont's health regulatory environment operates in three broad areas: insurance market regulation, hospital budget regulation, and certificate of need. BISHCA is the main regulator overseeing the insurance and health care sectors. However, its responsibilities are limited by the interaction between complicated state and federal laws.

Vermont was an early pioneer in insurance market reform, introducing several regulations aimed at increasing equity in the insurance market. These include introducing *guaranteed issue*, *guaranteed renewal*, and *community rating* requirements in the individual and small group markets as well as a *prior approval* process for premium rate review. In the individual market, however, insurers are allowed to limit coverage for pre-existing conditions for up to a year from the date of coverage, unless the policyholder can provide evidence of continuous coverage for the previous nine months by a plan with similar benefits. As mentioned above, ERISA significantly impedes BISHCA from imposing uniform standards on health plans in the state, by preempting it from regulating self-funded plans.

BISHCA sets uniform claims administration standards for all private insurers with the purpose of simplifying the process for consumers and providers and thus lowering administrative costs.^{xxx1} These standards, which are updated each year by the Vermont Claims Administration Collaborative, constitute an important foundation towards streamlining the administration of payments in Vermont's health sector.

The state has had a hospital budget regulation system since 1983. The regulatory approach is based on evaluation of detailed financial information (similar to Medicare cost reports) submitted by each of Vermont's private general hospitals, resulting in an approved rate increase for each hospital for the coming fiscal year. However, this process has had a limited impact on hospital expenditure growth rates.

Vermont has maintained its Certificate of Need (CON) process since its creation in 1979. This process provides the state with broad control over capital expenditures, new services, ambulatory surgical centers, and the number of hospital beds in the state.

Regulatory oversight of providers falls to many different agencies, which results in difficulties with developing a cohesive workforce planning process. The Division of Health Care Administration, under BISHCA, administers the Certificate of Need program and the unified health care budget.^{xxxii} Licensing of physicians and hospitals is the responsibility of the Vermont Department of Health (VDH). Regulation of mental health falls to another agency, the Vermont Department of Mental Health (DMH). Long-term care is regulated by the Department of Disabilities, Aging and Independent Living (DAIL). Systemic health reform should strive to streamline Vermont's regulatory framework in order to insure a more consistent and transparent environment for the delivery of health care to Vermonters.

II. GOALS AND STRATEGIES

The overarching goals of Vermont's health reforms are clear. Vermont wants to provide universal health care coverage and access. The state wants a health system that is focused on wellness, not sickness, one that emphasizes prevention, health promotion and health protection. Vermont wants a patient-centered, community-based and coordinated delivery system, capable of containing costs, reducing waste, slowing the growth of health expenditure inflation and providing effective health planning and efficient distribution of resources.

Our primary strategy for achieving these goals is through a single payer system tied to extensive payment reform and a global budget. However, we will also evaluate the potential design and impacts of other health systems for Vermont that may ultimately prove to be more viable. Indeed our fundamental strategy for Vermont is to develop reform proposals supported by high quality empirical research and international and domestic models that ultimately serve the particular situation, needs and goals of Vermonters.

III. WORK PLAN

Act 128 requires the consultant to design and evaluate three potential health system reforms and several benefit packages. This section will detail the design principles, methods and data that will be used to create and analyze the different options.

Act 128 requires the consultants to propose three options, which consist of:

(I) A universal health insurance system not based on employment with government run single payer.

(II) A universal health insurance system with a public option.

(III) An option design by the consultants in consultation with the Commission on Health Care Reform to achieve universal insurance coverage and access, community-based primary care, efficient and effective delivery of health care, reduced administrative wastes, and cost containment and financial sustainability; we refer to this option as the most politically and practically viable single payer system.

Each option must consider at least four different health insurance benefit packages: one that covers essential health services and another that covers a comprehensive set of health services. Each benefit package must furthermore have two cost sharing alternatives, one without any cost sharing and one with. Table A summarizes these combinations.

Table A: Combination of three health system reforms and the four benefit packages.

Options benefit package	Essential, w/o cost sharing	Essential, with cost-sharing.	comprehensive w/o cost-sharing	comprehensive with cost-sharing
I--Public single payer	I-BP (1)	I-BP (2)	I-BP (3)	I-BP(4)
II--Public option	II--BP (2)	II--BP(2)	II--BP(3)	II--BP(4)
III--Most viable single payer system	III-BP (3)	III--BP(2)	III-BP(3)	III--BP(4)

For each of the three options we have to explore these five essential components:

- (i) A payment system, including payment method, the process for determining payment amounts, payment administration, as well as cost reduction and containment mechanisms.
- (ii) Coordinated regional delivery system.
- (iii) Health system planning, regulation and public health.
- (iv) Financing methods and estimated costs, including federal financing.
- (v) A method to address compliance of the proposed option or options with the federal laws.

II.1. Baseline Assessment

Our proposed system design options will be based upon a deep understanding of Vermont's current health care sector, also taking into account the most likely impacts that the national health reform legislation, the Patient Protection and Affordable Care Act (PPACA) of 2010, will produce before a state reform is implemented. To achieve this understanding, our team will employ a careful analysis of Vermont's health system structure and its intricate causal relations to performance indicators.

Our team will apply a set of diagnostic and benchmarking tools to develop a clear picture of the current “control knob” settings, with a particular focus on the problems confronting Vermont’s health system. We have provided a glimpse at this type of analysis in the background section of this proposal. In the first part of our proposed study, we will substantially expand and deepen this analysis, gathering more detailed evidence. For example, we hope to use data on hospital and physician payments in the Vermont Healthcare Claims Uniform Reporting and Evaluation System (VHCURES) to understand the provider incentive structure and how that impacts quality, efficiency, and costs. Analysis of financial statements from insurers will help us determine the operating efficiency of health financing arrangements, including administration, quality management, and cost control.

Resident-level analysis

An important part of our analysis will rely on a detailed examination of how Vermont residents are covered and how they access care. We will gather and analyze data on insurance coverage and eligibility, benefits packages and cost-sharing schemes, health status, as well as resident health expenditures and utilization. The distribution of these elements by age, sex, working status, and income groups will inform us about the current depth of coverage and equity in financing and help us predict how our system design will change the status quo.

Insurer-level analysis

A detailed analysis of insurer financial statements is essential to design the policy options and analyze impacts. First, we need to estimate administrative savings under reform. Second, we will need to predict the impact that system reforms will produce on insurers’ financial situation and operational structure.

Provider-level analysis

We will investigate in much greater detail the current payment methods and levels used in Vermont. This analysis is necessary to design appropriate payment proposals and estimate the impact of payment changes on provider behavior. Furthermore, by analyzing the cost structure of providers, we will be able to estimate possible savings from streamlining administration through health system reform.

Impacts of PPACA on Vermont’s baseline

Implementation of national health system reform will not happen immediately and it will be important to project the effects that the federal reform legislation will have on Vermont’s. We will rely on government agencies in Vermont who must have conducted such analysis, complemented by our own team experts such as Professor Jonathan Gruber, who works as a special adviser to the Obama Administration on health care reform.

For more details on the specific data to be used and our familiarity with it, please see the Data to be Assembled section on page 29 of this proposal.

II.2. Benefit Package Designs

Act 128 specified that the consultants must develop at least four alternative benefit packages to be evaluated as options in the three different health system designs:

1. An essential benefit package of health services to be insured without any cost sharing (i.e. co-payment, deductible, co-insurance and maximum cap.)
2. An essential benefit package of health services to be insured with cost sharing.
3. A comprehensive benefit package of health services (i.e. including dental, vision, nursing home, home visits, etc.) to be insured without any cost sharing.
4. A comprehensive benefit package of health services (i.e. besides the essential services as shown in #1 option above, this package would include dental, vision, nursing home, home visits, etc.) to be insured with cost sharing provisions.

Underscoring the design of any benefit package is the trade-off between universal access to services, affordability, and cost control. For example, a comprehensive service package without cost-sharing would be the most preferable option for universal access, but it may be financially unsustainable. Indeed empirical research has found that insurance with no cost-sharing increases the consumers demand for health care services, often with little discernable improvement in health outcomes, suggesting that free care may lead to over-utilization of services.^{xxxiii} Low or zero cost-sharing may also induce physicians to promote over use of health care in their patients. On the other hand, empirical work has suggested that cost sharing may discourage the use of essential preventative and chronic disease maintenance therapies and services, which may ultimately lead to more costly and potentially avoidable complications or hospital admissions.^{xxxiv} Our cost-sharing provisions will be designed to achieve the most acceptable balance between universal access to health care and reduction of unnecessary services.

Ultimately, there is no clear *scientific criteria* to define what health services are essential and what are less essential. Instead, the common practice in designing benefit packages is to use a negative list approach by including all the services in a category of medical services, such as transplant surgery, and exclude a few transplant surgeries that might be still somewhat “experimental” or very high cost but not that effective such as double heart and lung transplant. We will design the benefit packages using the negative list approach such as exclude cosmetic surgery, experimental surgeries and drugs, and clearly assessed cost-ineffective treatments and drugs.

In addition to the essential services listed in Act 128 that must be covered, we will also evaluate other practical elements in designing the benefit package. For example, we would consider what the “typical” benefit package that Vermonters have now, as well as some measure of minimum benefits already covered in current insurance plans.

We will introduce cost-sharing provisions based on varying price elasticity (i.e. patients’ sensitivity to the price they have to pay at the point of service) of demand on various categories of services, and cost-effectiveness of these services. The methods of cost sharing we would consider include co-payment, coinsurance, deductible, and maximum caps.

In designing the benefit packages, we will consider the role of supplementary insurance that can cover the excluded services in the universal essential benefit package.

Lastly, we will design benefit packages that aim to maximize federal funding and compliance with federal laws and PPACA implementation.

II.3. Option 1

Besides its principles and goals including universal coverage and access, Act 128 stated certain explicit parameters for this first option:

“...a government-administered and publicly financed “single-payer” health benefit system decoupled from employment which prohibits insurance coverage for the health services provided by this system and allows for private insurance coverage only of supplemental health services.”

(a) Eligibility and Enrollment

In 2009, 7.6% of Vermonters remained uninsured. Option I provides the simplest method for attaining universal coverage because the premiums are publically financed. However, in order to determine the accurate number of persons who will ultimately be covered under this insurance scheme, we must also consider eligibility standards and immigration. We will study migration patterns of Vermonters to ascertain the stability of Vermont population. We will also model the potential levels of immigration resulting from persons moving to Vermont solely in the pursuit of health insurance. We will look at data from New York and California, as both states have extensive experience on immigration stemming from their generous welfare programs. The rate of immigration will also be affected by the relative richness of public health insurance programs offered by the adjacent states to Vermont. The proposed residency requirements will therefore reflect a balance between mitigating high levels immigration for insurance purposes and providing reasonable requirements for Vermont residents.

The enrollment process would require the applicants to prove their residence in Vermont, which could be a complex and inefficient process. We will investigate how Vermont Medicaid and other welfare programs establish the requirement for the proof of Vermont residency and investigate potential alternative proof of residency requirements, including the filing of income tax returns in Vermont. While simpler, this method may have disproportionate effects on the lower income residents who do not file tax returns. We will work with appropriate Vermont authorities to address this issue and study the potential alternative agencies that could manage the enrollment process.

(b) Payment

Payment reform is a key instrument for Vermont to achieve many of its goals, including a strong community-based primary care sector, efficient and effective provision of health services and integrated health care delivery. As previously noted, much of the payments delivered to Vermont providers fail to provide sufficient incentives to support these goals. We will analyze at least two potential payment reforms: a capitation payment coupled with pay for performance; and a statewide uniform payment system based on adjusted Medicare payment methodologies.

Vermont has already established several payment reform initiatives, including the Blueprint for Health Medical Home pilot and the development of Accountable Care Organizations (ACO) pilot sites. These pilots are compatible with our first payment reform option – capitation with pay-for-performance (P4P). Based on international and domestic experience, this model seems to hold the most promise as a payment method to attain the goals specified in Act 128. We

would design the characteristics of the pay for performance incentives based on existing literature and our studies of domestic and international experiences.

We will also investigate a single payer system based on Medicare payment policies: which is largely DRGs to hospitals (Part B), FFS to physicians (Part A) and negotiated capitation payments to bidding health plans under Medicare (Part C). This approach might encourage enterprising health organizations to develop integrated health service delivery system when profits can be made from savings in unnecessary health expenditures as the delivery system becomes more integrated.

Using the data from the baseline assessment of provider reimbursements levels and financial profitability and health, we will design payment levels for these two options. Critical to this analysis is ensuring that payment rates are adequate to cover expected costs. Payment rates may vary across the state. For example, we expect the capitation rates to vary by region owing to differences in epidemiological patterns, wages and prices between regions in Vermont. Second, we will need to predict how providers may respond to a payment method change and payment amount change in the volume services they will provide. Several studies have shown that altering reimbursement levels can lead to changes in physician behavior. For example, reductions in fees that Medicare paid to oncologists in 2005 resulted in an increase in the proportion of patients receiving treatment as physicians essentially recouped some lost income in prices by increasing quantity.^{xxxv} These types of responses, which depend on the current reimbursement environment, will ultimately affect the overall cost of the health system reform.

(c) Global Target and Global Budget.

We plan on exploring how Vermont could create and administer a global budget. This is a key feature of a single payer system that allows it to manage cost inflation and maintain its financial sustainability of a health care system. In England and Japan, their governments' cabinets decide what can be afforded to spend for the next year's publically financed health care. This has been attempted in the United States as well, at least for physician fees under Medicare. The Balanced Budget Act of 1997 developed the Sustainable Growth Rate (SGR) for physician fee updates. The law specified that MedPAC shall recommend to Congress reasonable increases in fees. MedPAC then uses a process to establish a de-facto global budget for Medicare by projecting the likely increase in the input costs for health care plus other factors such as aging and improvement in efficiency. Fees are adjusted accordingly each year. Unfortunately, Congress has not implemented the stiff fee cuts that were required each year to keep physicians spending on target.

Taiwan's single payer system uses a more sophisticated approach by projecting reasonable increases in its National Health Insurance (NHI) expenditure for the next year and matches it with the expected increase of its revenues from NHI premium. Then the NHI Administration, with the approval of the Premier, decides on a global budget for NHI. Next, the fee increases for next year are decided with that global budget as the constraint.

In analyzing and proposing a global target and global budget for Vermont, this project will examine the rationales and global experience for a global budget. We will likely recommend that Vermont establishes a global target for health expenditure by a public process. One possibility is for a reconstituted Vermont Commission on Health Care Reform to project the

expected government revenues designated for health care and expected health expenditure for the next year, then recommend a few alternative health expenditure targets. After holding public hearings and consultations with employers, unions, and the organized medical professionals, hospitals, pharmaceutical association and nursing homes, the Commission would recommend a global expenditure target and global budget for the Vermont universal health insurance program. The Vermont state legislature can vote down the recommendation within 30 days and set another global budget, otherwise the Commission's recommendation would become law. Once the global budget is set, it would guide the increases in payment amounts for the subsequent years.

(d) Coordinated regional delivery system

Coordinated regional health systems have the potential to develop a more integrated health delivery system by reducing the barriers between health care institutions and among the various sub-health sectors (hospital care, long-term care, community care etc.). At the same time, they imply a system of institutional devolution accompanied by health resource allocation at the regional level in order to better serve the needs of entire communities. Vermont has already taken significant steps towards this type of coordinated care. The Blueprint Medical Homes pilot represents one such step, since it aims to create organizations capable of coordinating primary care and community-based services through the use of information technology, improved financial incentives, and community health teams. The ACO model represents an even more ambitious project since it aims to coordinate all services that a patient needs, although the project is still in its earlier stages.

We consider that such approaches have significant potential for improving the quality and efficiency of health care delivery in Vermont. However, these initiatives are largely untested in an American context, despite the large amount of enthusiasm that they have generated among both academics and health policy makers. Therefore, our team plans to analyze the available evidence emerging from the evaluation of these projects and propose system reforms that integrate and build upon Vermont's achievements. We will likely supplement this analysis with lessons from other countries that have used coordinated regional health systems in order to better understand the structural and functional arrangements that are most effective in supporting overall system goals.

The foundation of an integrated delivery system depends on adequate supply of providers in a region. Vermont wishes to establish community-based primary care, which implies there has to be adequate supply of primary care providers in a given community. We will examine the distribution of primary care physicians and consider how we can employ payment systems to promote community-based primary care.

Vermont has also undertaken significant efforts towards developing a process for conducting needs assessments at the regional level. These needs assessments already inform health resource allocation plans and thus guide the statewide planning of major capital investments. Our team will review what Vermont has initiated and may recommend how to improve the ongoing efforts in Vermont, including the Blueprint for Health initiative. For example, we may propose strategies for streamlining health needs assessments by using electronic clinical registries such as the Vermont Health Record or the Vermont Diabetes Information Systems.

We will furthermore work with Vermont administrators to develop mechanisms for soliciting public input towards the functioning of Vermont's regional health systems.

(e) Health system planning, regulation and public health

Single payer health systems provide enormous opportunity for the development of efficient and effective health resource allocations and investments in public health.

Health planning and public health programs have enormous influence over the performance of a health system in how they address needs of citizens and invest in their long term health and wellness. Universal coverage and access will likely have significant impacts on the demand for health services in Vermont. Changes in the required numbers of medical professionals, facilities and technologies must be addressed. We propose to work with relevant Vermont agencies and stakeholders to review and make recommendations on how to alter or strengthen current initiatives, including Blueprint for Health, the Certificate of Need process and statewide quality metrics. We will draw from our work with other countries, including the United Kingdom, Taiwan and Germany to help design health system planning infrastructures that best capitalize on the advantages of a single payer system by improving the management and allocation of expensive new technologies and drugs to ensure that Vermonters have access to needed services, while avoiding costly and less effective new technology and drugs.

(f) Impact Analysis, Estimated Cost and Financing

Act 128 requires consultants to estimate the total costs, cost to the Vermont government and the distributional impacts of the various options of single payer universal health insurance plan.

We plan to use the Gruber Microsimulation Model (GMSIM) to estimate the total cost of Option I and its distributional impacts on different socioeconomic groups and firms. This model will also estimate the proportion of the costs that must be covered by Vermont and the federal government. Dr. Gruber has developed GMSIM over the past dozen years to provide objective and evidence-based modeling of the impact of health reforms on insurance coverage and costs. This model has been used widely by state and federal policy-makers, private foundations and academic researchers. GMSIM modeling results were the basis for the adoption of health reform in Massachusetts. The Obama Administration engaged Dr. Gruber to use his model to provide "scores" of alternative federal health reform options. His model closely replicates the score of the PPACA that has been produced by the Congressional Budget Office. Furthermore, he has used this model for evaluating a single payer option for the Universal Health Care Foundation of Connecticut.

The first step in this analysis, however will be to use actuarial methods to determine the premium costs for the different benefit packages that Dr. Hsiao, former chief actuary for the Medicare and Medicaid programs, is uniquely qualified. These actuarial premium rates will be estimated by taking into consideration age, sex and disability status of the population as well as morbidity rates, and current utilization rates of various categories of covered health services by Vermonters.

The final premiums will also incorporate expected changes in spending resulting from the universal single payer system and payment reforms. The changes in spending are expected to come from three major areas. Firstly, we expect to find increased spending on health utilization

stemming from the more comprehensive insurance package offered to Vermonters. This increase in spending will be highest under scenarios where the benefit packages have no sharing and cover a more comprehensive range of additional services, such as dental and long-term care. This increase in spending from fuller insurance will be offset, however, by reduced expenditures resulting from the proposed payment reforms. We will rely on existing empirical findings in health economics to compute how providers would respond to changes in payment methods and amounts in terms of quantity and types of services supplied. Finally, we expect spending on administration to fall under the single payer system. Based on our team's experience with single payer implementation in other countries, we will phase in these expected savings over a reasonable time period, as these savings will not appear instantly. For example, much of the savings from improvements in efficiency and quality require uniform electronic records of all claims and patients. Vermont does not yet have these systems in place. Similarly, Vermont is just making its first steps towards more integrated health care delivery, another key element that underscores potential savings.

These actuarial premiums will then be entered into the GMSIM model. The GMSIM is designed to allow the user to input a set of policy parameters and output the impact of that policy on public sector costs and the distribution of insurance coverage. The modeling approach consists of drawing on the best evidence available in the health economics literature to model how individuals will respond to the changes in the insurance benefit package and payment environment induced by changes in government policy.

The model takes as its base the three most recent Current Population Surveys (CPS). The survey contains information on family demographics, tax rates, and insurance coverage. Dr. Gruber matches to these surveys information on:

- Group insurance costs and the distribution of premiums across employers and employee
- Nongroup insurance costs, adjusted by age, sex, and health status
- Public insurance costs
- Medical spending imputed by age, gender, and self-reported health status from the Medical Expenditure Panel Survey (MEPS)

This base set of data are then used to compute, for every possible policy change, the impact of that policy change on the eligibility for, and price of, various types of insurance. These price and eligibility changes are then run through a detailed and integrated set of behavioral equations that relate them to behavioral responses by individuals, families, and firms. These behavioral responses are modeled using the best available evidence from the health economics literature.

To capture firm responses, Dr. Gruber has created “synthetic” firms in the CPS by drawing for each worker other “co-workers” in the CPS based on that workers wage, industry, firm size, and health insurance offering status. These synthetic co-workers are grouped together to form firms, and Gruber then model firm responses based on the average effects of policies on their workforce.

Dr. Gruber will modify his model to fit the Vermont single payer option analysis. CPS, the data base for the GMSIM is a nationally representative survey of individuals. For state-level analysis Gruber will pool the most recent three years of CPS data to ensure sufficient sample

size. Vermont has state-level data from its household health insurance survey that will allow Dr. Gruber to recalibrate the CPS database of GMSIM to match the Vermont-specific information. In particular, Dr. Gruber would use the Vermont data to calculate the number of individuals in each of the four insurance categories across 10 income cells. This is done separately for children and adults. Then using data from the CPS, we will calculate the number of individuals in each of the four insurance categories across the 10 income cells, again separating children and adults. We then adjust the CPS weights by the ratio of the Vermont survey population to the CPS population in each cell. Gruber has followed this procedure in other states that he has worked with, including Connecticut and California.

The role of GMSIM assess the impact of the system redesign on premiums and medical costs in Vermont, and to aggregate the resulting changes into aggregate state-level changes in health care spending and coverage. The GMSIM is able to incorporate the affects of the staged implementation of PPACA to produce final results on:

- Number of persons gaining coverage
- Impact on individual health insurance/health care spending
- Impact on business health insurance/health care spending
- Changes in wages
- Changes in federal and state public insurance spending
- Changes in federal and state tax collection

The GMSIM will also be used to compute the Vermont payroll tax rate needed to finance a single payer system, using data on worker wages in the state and the total costs that would need to be covered under this alternative. We also propose to analyze alternative sources of tax revenue, such as income tax and sin taxes.

(g) A method to address compliance of the proposed design option with federal law

We propose to study the federal laws and regulations, including ERISA, PPACA, Medicare, Medicaid, and SCHIP, to identify where these laws and regulations impacts the reforms we will consider. We plan to delegate Mr. Kappel to this task, supported by a legal analyst in Cambridge. Mr. Kappel would work closely with the Vermont government agencies such as the BISHCA, Office of Vermont Health Access (OVHA) to assess where the federal laws and regulations affect Vermont. However, we believe the various government agencies of Vermont and the Congressional staff of Vermont Senators and Congressman will have a much greater comprehension and understanding of the details of the federal laws/regulations and practices than the consultants can muster. We plan to rely largely on the Vermont's experts in the government to work with the consultant to develop the alignment and compliance of our proposed reform plans and the waivers we may need for the reform plans.

For instance, to maximize the federal funding, Vermont has to negotiate with the federal government to pay what it would have paid for Medicare, Medicaid, SCHIP and PPACA if Vermont did not adopt a health system reform. Otherwise, a large share of the reduction in health costs generated by the Vermont health care reform would accrue to the federal government. Vermont government experts and Vermont Congressional delegation would have a much greater capacity to understand what information are needed and how to negotiate with the federal government to maximize the federal funding to Vermont.

(h) Implementation.

The implementation of a health insurance system that provides universal coverage and is both affordable and controls cost will require substantial effort and coordination on the part of the Vermont State Legislature and agencies. We will provide a solid analytical foundation upon which to base the implementation phase of the overall health system reform effort. In addition to a full understanding of financing requirements; potential benefits packages; payment systems; and impacts on providers, insurers and Vermont residents; legislators and state agencies will be able to implement a politically and institutionally viable health system reform. In the project phase, we plan to analyze and identify the implementation steps and issues to advise and guidance to the Vermont State Legislature and implementing agencies. However, Vermont's health care administrators are best positioned to develop the detailed implementation plans and lead actual implementation efforts. Of course, the general public should be consulted through public hearings and other communication channels. Below is a summary of some of the major implementation issues to consider.

Overall Health System Governance. In designing a single-payer system, we will highlight and build upon best practices in health systems governance structures in the United States and around the world. It is the expectation that Vermont health care administrators will be able to utilize this knowledge in order to most successfully implement their own reforms. Strong leadership will be required in establishing legal and administrative bodies and rules that will govern the health system. These bodies should include stakeholders from provider, patient, and insurance groups, in order to ensure a transparent and accountable governance system. Measures should be included in the implementation phase to set strict and timely reporting and auditing requirements. Additionally, health care administrators and legislators should be careful to consider inputs from the public and the involvement and use of governance structures that are already in place in order to create a smoother transition to the new system.

Enrollment. Once the overall design and appropriate administrative processes are in place, an important step in implementing a single-payer system in Vermont will be the designation of an agency tasked with enrolling people into the system. In addition to proof of residency, the enrollment body will need to examine each resident's current health insurance program and ensure coordination with other federal and state level programs.

Payment. In establishing a successful single-payer system, the active involvement of the public, insurers and providers will be necessary. A key component of this system will be the support and involvement of provider associations, who will have a direct impact on both provider and patient behavior. We will advise on these effects. Due to the extensive use by Vermonters of out-of-state facilities, implementing agencies will also have to work with non-Vermont actors in putting into place effective and viable payment options.

Compliance with Federal Laws and Regulations. A pivotal component of a successful implementation of a single-payer system in Vermont will be proactive and effective coordination with federal laws and regulations. This will be especially important due to the phasing in of the PPACA between 2011 and 2014. A key output of our proposed work is a financial and regulatory impact analysis of the effects of federal reform legislation on Vermont's health system. This analysis will inform coordination and compliance efforts in achieving the maximum benefit for Vermont. As stated in other parts of the Work Plan, we

expect to rely on Vermont government and Vermont Congressional staff for this analysis and work.

Medicare and Medicaid Waivers. Medicare and Medicaid cover a significant population of Vermonters. Federal law directly or indirectly governs these programs. In order to incorporate these beneficiaries into the proposed Vermont single payer system, a set of waivers will be needed. These waivers are needed to allow for the provision of current Medicare and Medicaid benefits under the state's health system, while also maximizing the federal share of funding covering such benefits and their expansion thereof. It is expected that the OVHA will take the lead in ensuring Medicare and Medicaid benefits are appropriately maximized and take into account in the implementation phase. The OVHA is well-positioned to assume this responsibility due to its extensive experience with Medicaid waivers and its access to legal professionals with ample expertise on these issues.

ERISA Exemption. A key component of successful implementation of a single-payer system will be the achievement of an exemption from ERISA. Due to ERISA's legal authority in regulating employer-based pensions and welfare-benefit plans, which includes health plans, a waiver will be necessary to implement a single insurance pool in the state of Vermont. We expect that this effort will be led by Vermont lawyers and administrators with expertise in the detailed requirements of such a process. Vermont legislators and their council should create team of such experts tasked with achieving this exemption.

VA Incorporation. Through the implementation of a single-payer system, Vermont's veterans will have access to any Vermont provider, along with the access they already have to the states' VA hospital. Therefore, in determining financing and payment for veterans health services the Vermont health administrators will need to work with state and federal bodies to ensure appropriate payment and financing streams are in place.

Federally Qualified Health Centers (FQHC) Incorporation. Due to the use of federal funding mechanisms for community health facilities, designated as FQHC, implementing agencies will need to coordinate payment and financing systems for these facilities accordingly. Similar to VA hospitals, these facilities will be integrated into the single health system designed by the proposed study. Important implementation considerations will be the creation of an integrated delivery system, while also maximizing federal funds.

Reinsurance and "Catch-up" Care. Implementation of a single risk pool within Vermont may not completely eliminate the possibility of substantial short-term variation in the costs paid for by the state. We may urge Vermont health care administrators and legislators to consider purchasing reinsurance by the state, either from private or federal government actors. We will make recommendations about this process in order to inform implementing bodies.

II.4. Option 2: Universal Coverage with a Public Plan Option

S 88 specified that the consultant "shall design a public health benefit option administered by state government, which allows individuals to choose between the public option and private insurance coverage and allows for fair and robust competition among public and private plans."

(a) Enrollment and eligibility.

Unlike the pure single payer option, the public option in itself does not provide universal coverage. A key question therefore remains the method of enforcement, such as an individual mandate potentially tied with an employer mandate. We will explore different enforcement options, as well as subsidy levels for those individuals whose income falls below 300% of the poverty. In this, as in other necessary elements, the public option described here will comply with provisions of PPACA. We furthermore consider how Massachusetts Connector achieved almost universal coverage while aligned with federal laws.

As with Option I, we will explore potential residency-based eligibility requirements, in addition to any other eligibility requirements that may affect the uptake rate or switching rate from employer-sponsored insurance to this public plan. We plan to investigate the potential Vermont agencies capable of managing the eligibility and enrollment process and plan on looking to the experience of the Massachusetts Connector for empirical guidance.

(b) Payment

In addition to a more conventional public plan option, where the public insurance plan has its own payment methods and rates, we plan to explore the potential to design a single-payer type public option, where public and private plans compete but all use the same methods and rates to pay providers. Germany has this type of system where multiple health plans all pay the same fees to providers through a centralized claims processing center. This system forces health plans to compete for enrollees based on the quality of health services. We will consider whether it would be feasible to obtain agreement from all public and private insurance plans to process claims by one single organization with a uniform claim forms. If uniform claim forms are used by all payers and processed by one organization, then some administrative savings can be achieved. More importantly, a single unified claim payment system would allow the payers to monitor the waste, abuses and fraud. In addition, we will also explore the potential feasibility of designing of a public option with all payer rate setting, a method of cost-containment currently used by Maryland and West Virginia.

We would use previously described methods for determining the appropriate payment levels for the public plan option chosen. Generally the scope of payment reform is more limited with multiple insurances plans and without uniform payment methods. However, Vermont has already demonstrated their ability to engage multiple payers in payment reforms through the Blueprint for Health Medical Home Pilots,^{xxxvi} and has been exploring how to design a much more progressive payment reform – ACOs accepting global payments – in the context of multiple participating payers.^{xxxvii} We will consider the potential cost savings from both Blueprint for Health pilot and ACOs, over the appropriate time period.

(c) Global Expenditure Targets.

Global expenditure targets and budgets would be difficult to establish under this option. Depending on the ultimate design of the public option, we will explore the potential for global budgets.

(d) Coordinated Regional Delivery System.

Like payment reform, the scope for affecting coordination of the regional delivery system is more limited. However, as adequately demonstrated by Vermont's current initiatives,

significant changes are possible. We will employ the same methods described under Option I to evaluate and recommend policies and programs to increase delivery system integration.

(e) Health system planning, regulation and public health

See the description under option 1.

(f) Impact Analysis, Estimated Cost and Financing

Using the previously described GMSIM, we will analyze multiple impacts of the public option that is ultimately designed. Dr. Gruber has used his model to estimate the costs and analyze the impacts for the Obama Administration's public option. In particular, Dr. Gruber used the price and characteristics of this new insurance option to model the decision of firms to drop insurance and individuals to switch to this new insurance alternative. The decision to switch depends on a variety of factors including the relative prices of the public option and private insurance, the relative benefit generosity of the public and private options, and the health and income of the enrollee.

The result of this modeling will be a set of estimates of both enrollment and prices in the new public option, and the resulting changes to private insurance markets. This includes new pricing in the public plan and in private insurance markets based on the characteristics of those who stay behind versus those who choose to move to the new public option.

In the end we would produce similar results to those laid out in Option I, including total costs, the portion to be born by Vermont and the federal government, as well as additional results on movement between private options and the public option and the prices in each.

(g) A method to address compliance of the proposed design option with federal law

See the description of methods under Option I.

(h) Implementation issues.

See the description of areas for analysis under Option I.

II.5. Option 3: The Most Politically and Practically Viable Single Payer Option

Act 128 specified that the third option "shall be designed by the consultant, in consultation with the commission, taking into consideration the principles in Sec. 2 of this act, the goals in Sec. 3, and the parameters described in this section."

Our approach to Option 3 is by combining three studies to ascertain what type of universal health insurance, what methods of financing, and what type of single payer system is most likely to be politically and practically viable for Vermont. The first study involves a historical analysis to ascertain what health reforms that Vermont has attempted in the past such as the 1993 Vermont Universal Access Plan. We want to gain a better understanding about why some reforms have succeeded and why some failed. Next, we will examine Vermont's institutions such as laws, regulations, traditions, current governance structure and political process. Then we plan to conduct a stakeholder and interest group analysis and ascertain their positions on universal health insurance, integrated health delivery system, and single payers. With the findings from these three studies and in close consultation with Vermont Health Care Reform Commission, we will develop the third option.

Once the tentative parameters of this third option are developed, we will use similar principles, approaches, methods and models, as described for Options 1 and Option 2, to design and subsequently evaluate Option 3.

(a) Vermont's Health Care Political Context

In recent years, Vermont has taken multiple steps to broaden access to health care. According to a survey from 2002, a two-thirds majority of Vermonters said that all Vermonters should be able to get the health care they need when they need it, regardless of their ability to pay even if this means that they would have to pay higher taxes and higher insurance premiums themselves. With the passage of Act 128, the Vermont state legislature has been given a mandate to design a universal health system that has the potential to increase access while controlling costs.

Vermont is uniquely poised to pass universal health reform. A small state with communitarian values, Vermont also has the advantage of having a completely non-profit hospital system, existing legislation and experience with health reform, and a medical association that historically has been supportive of state intervention in health care.^{xxxviii} Although, these factors make Vermont distinctive, a successful experience with health reform in Vermont could serve as an example for other states moving towards universal health coverage.

The upcoming gubernatorial and local elections in November have opened a window of opportunity for the passage of substantial reform. Despite the empirical necessity of health reform and its popularity, even the most sophisticated technical plan can fail if the interests and positions of affected groups—and the influence these groups have on key decision makers—are not taken into account. Stakeholder analysis is a means of assessing likely obstacles to policy reform and opportunities to address these obstacles by integrating the input of key stakeholders directly into the reform design.

(b) Institutional and Stakeholder Analysis

Our work will begin with an innovative institutional stakeholder analysis that accounts for the concerns of affected groups and ensures a design that is tailored to the needs of Vermonters.

Stakeholder analysis is a type of policy analysis that has become more common with the increasing recognition that health reforms are significantly and routinely influenced by the relative positions and resources of particular stakeholders, and that the costs and burdens of reform are not always shared equally across groups. A stakeholder is an individual, group or organization who has a philosophical and/or economic interest (stake) in a particular policy and the potential to influence that policy. For health reform, these include citizen groups, providers, insurers, and legislators, among others.^{xxxix} Stakeholder analysis methodology has been developed in academic literature and we will adapt the methodology to meet Vermont's needs.^{xl}

This study, informed by our team's experience with health system reforms internationally, will help ensure that our designs are both technically sound *and* attuned to the needs and concerns of Vermont's diverse stakeholders. Specifically, it will guide the design of our third option, which we view as the most pragmatic and socially optimal option since it aims to maximize the

principle goals of reform—including universal coverage, essential and comprehensive benefit coverage, affordable and appropriate health care, and cost containment over time—while ensuring that reform gets passed and successfully implemented. Political and legislative leaders can also use the information generated from this analysis to negotiate changes, ensure involvement of key stakeholders, gain support for final legislation, and avoid conflict during implementation.

Health system reform never occurs in a vacuum: inherently, reforms are conditioned by historical influences and involve a complex redistribution of costs and benefits across society. Successful reforms must account for this reality, build upon history in the technical design of the reform itself, and then leverage the combined contextual understanding and technical expertise to pass and implement the best law possible. Technical plans should incorporate the concerns of affected groups directly into the design of the reform. Toward this end, we will explicitly map Vermont’s relevant history, institutions, and stakeholders—and their interests and concerns—to assess the political and institutional space that exists for a reform.

The stakeholder analysis will proceed in three steps:

1. ***Review of Historical and Current Context for Reform.*** Vermont’s previous efforts at reform and current health system institutions shape the climate for reform. This first step will map the current political space for reform and apply lessons from the past in tailoring the design of the system. This review will generate a list of key stakeholders including members of citizens’ groups active in the reform process.
2. ***Institutional Analysis.*** Because the influence of stakeholders is circumscribed by their access to policy makers, this step will identify the institutional rules including veto power, legislative coalitions, committee structures, laws, regulations, organizations, and traditional practices in Vermont that may serve as barriers to or facilitators of the health reform bill’s passage and implementation.
3. ***Stakeholder Analysis of Reform Impact.*** To ensure that the design of the reform is politically viable, stakeholder analysis will be conducted to determine the likely impact of various reform options on key stakeholders and their preferences over certain design options. Examples of key stakeholders include representatives of citizen groups, providers, insurers, and legislators.

The methods to carry out these three components are detailed below which composed of three parts.

Historical and current context

The first component of the stakeholder study will examine the historical and current context for health system reform in Vermont, focusing on the last two decades. The purpose of this step is threefold: to educate our team about past approaches; to better understand what made past reforms successful or unsuccessful; and to begin identifying the most important institutions, processes, and stakeholders to analyze in the design of Option 3.

We will employ standard historical research methods in this phase. These include literature searches using academic databases (e.g., Academic Search Premier, PubMed) and Vermont newspaper archives (e.g., Burlington Free Press, The Rutland Herald, Brattleboro Reformer);

collection and review of grey literature from internet searches and references from various partners in Vermont (such as the Vermont Health Care Reform Commission); and interviews with Vermont counterparts knowledgeable of past reform attempts.

We will further collect any available public opinion surveys to assess current and past attitudes and concerns about reform among the public. We will use this information to analyze the historical development and current organization of Vermont's health system and to identify elements of the system that may be resistant to change. We would have already collected much of this literature, so review and synthesis of the materials will begin quickly.

We will review the historical documentation and produce a memorandum of findings that recommends next steps. An important task will be a list of institutions and stakeholders that will guide our following investigation.

Part 2: Institutional analysis

The second and third components of the study will be conducted concurrently. The purpose of component two, an institutional analysis, is to explore the institutional constraints and identify what laws, regulations, organizations, and traditional practices in Vermont may serve as barriers to or facilitators of the health reform bill's passage and implementation. Institutional analysis can assist us in assessing the probability that a given reform design will make it through the legislative process to become law with relatively few changes.

Institutions are the formal bodies, rules, and laws that determine whether a proposed bill becomes law. At the highest level these are Vermont's three "veto players" (the three formal bodies with veto power over a given legislative bill): the House of Representatives, Senate, and Governor. But we would disaggregate these and study their relevant sub-components (committees and their jurisdictions, practices such as filibusters, party discipline in voting etc.) as well.

We will begin the institutional analysis with an Internet-based research and document review, followed by interviews with Vermont leaders and experts. The initial search and study will map the legislative processes and rules, and we will validate findings with the Office of Legislative Council. Experts would likely include legislative leaders in the state House and Senate; a representative of the Governor's office; representatives of various state agencies and citizen groups, and academics from Vermont's universities. Most questions for institutional analysis purposes will simply be added to interviews planned for the stakeholder analysis component.

For each combination of design options, a coalitional map will be generated to estimate likely support and opposition from key chambers or individuals whose support is needed to adopt the reform. Based on this analysis, the design option with the highest probability of adoption will be identified.

Part 3: Stakeholder Analysis

The center-piece of our study will be a stakeholder analysis, a type of policy analysis that has become more common with the increasing recognition that health reforms are significantly and routinely influenced by the relative positions and resources of particular stakeholders.

To facilitate the stakeholder analysis and merge this step with the broader historical and institutional analysis, we will utilize PolicyMaker, a computer-assisted stakeholder analysis tool developed by Dr. Michael Reich at Harvard School of Public Health. PolicyMaker uses methods of organizational analysis and rule-based decision systems to systematically map players' positions, influence, and interests, and suggests a set of potential strategies based on historical analysis.^{xli} The software can be applied to any policy problem that involves multiple players with diverging interests and has been applied in diverse settings.^{xlii,xliii}

The first step in our stakeholder analysis will be to identify key stakeholders and conduct semi-structured interviews with them. The identification of key stakeholders is an iterative process that involves a "snowball sampling" technique to identify and interview further stakeholders in order to ensure that important stakeholders are not omitted and to prevent a premature narrowing down of interested parties. This involves asking initial interviewees and other experts to recommend other stakeholders, until such suggestions begin to duplicate stakeholders already identified.

Stakeholder interviews will be mostly open-ended and will follow an interview guide that helps ensure key research goals are met. These include establishing stakeholders' concerns and positions on particular policy options and key design features (e.g., pure single-payer, public insurance option, type of financing, etc), and understanding how stakeholders can help support or modify proposed legislation. The stakeholders will be presented with both benefits and draw-backs of potential design features and asked under what conditions they would switch from support to opposition and vice-versa. An example would be a person or group's willingness to pay for different levels of benefit packages.

We expect to conduct around 40 interviews in the first phase of our work, and follow-up or new interviews are likely in the second phase. Two members of our project team will conduct interviews, and some interviews may instead take the format of a focus group. Once interviews are completed, they will be coded in PolicyMaker (based on notes, paraphrased transcripts, and any recordings) to highlight common themes and organize the various positions and concerns discussed.

The culmination of the stakeholder analysis will be a political mapping exercise using PolicyMaker, which maps the present positions and power of stakeholders, including their veto power over the legislation. This analysis will estimate the likelihood of passage of different reform designs, highlight potential challenges for implementation, and identify opportunities and obstacles to change the positions of stakeholders. The program also assists the team in developing strategies that can improve the policy's feasibility, and alternative strategies are compared according to their likely impacts on the influence and position of major stakeholders.

This finding would be the basis for Option III, which will then be designed and evaluated using the same methods as those detailed for Option I.

II.6. Priorities and Emphasis

The focus of our work plan is in designing alternative health system reform options and evaluating their performance on a wide range of metrics. However, we are limiting our assessment of macroeconomic impacts.

There are other areas where we are limiting the depth of analysis owing to time and resource constraints as well as abilities and expertise of our team compared to the resources and expertise of individuals at relevant Vermont state agencies. We will provide research and comment in areas of health regulation and planning, as well as the review and comment on the required federal waivers and implementation issues. However, we will not be able to go into depth about these issues.

II.7. Data to Be Assembled

Described below are the main datasets that will be assembled for the purposes of the proposed study. Mr. Kappel has extensive experience working with most of these datasets. He will be responsible for assembling the data and providing assistance to the other team members regarding their analysis. We may also find need for additional data as elements of the designs of Options 1, 2, and 3 are developed.

1. Current Population Survey (CPS)

The Current Population Survey is a nationally representative survey of the civilian non-institutional population in the United States. The CPS represents the basis for analyzing the impacts of policy changes using the GMSIM. This data will be assembled by Dr. Gruber and his associate. We may however need some assistance from Vermont staff to identify any useful state subsamples of this survey.

2. VHHIS 2008 and 2009

The Vermont Household Health Insurance Survey will serve to recalibrate the CPS data for the GMSIM. Our team requests BISHCA to share the household-level database for years 2008 and 2009. This is because although we plan on using the most recent data, the 2008 survey had a more comprehensive questionnaire that may prove useful for other parts of the study. We will also require all documentation files and any other resources that can be of help in working with the data. Mr. Kappel will assist Jonathan Gruber with data integration and manipulation for the simulation model.

3. Medical Expenditure Panel Survey (MEPS)

The Medical Expenditure Panel Survey is a survey of families and individuals, their medical providers, and employers in the United States. MEPS is essential for simulating the impacts of policy changes on insurance coverage and individual expenditures. This data will be assembled by Dr. Gruber and associates. We may however need some assistance from Vermont staff to identify any useful state subsamples of this survey.

4. Hospital budgets

Vermont has been collecting detailed revenue, expenditure, utilization, and other statistical data from the state's general hospitals for many years. These data will be

used to explore historical and current hospital finances and to model the impact of different reimbursement mechanisms.

To the extent possible, we will make use of the many reports that BISHCA has made available. However, there may be occasions where we would need to request access to raw data or would need some assistance from BISHCA staff in analysis or interpretation of this data set.

5. *Vermont Health Care Uniform Reporting and Evaluation System (VHCURES)*

a. Published analyses

We will assemble any analyses that have been published so far using the VHCURES data. Our team is also requesting any internal or unpublished reports from BISHCA that might be useful in our analysis.

b. Claims data.

Because it includes submitted charge, allowed charge, insurer payment, and patient liability, this data set will be essential for our analysis regarding payment rates as well as other important analyses to be conducted. If our team is awarded the contract, one of our first activities will be to develop a data request to be submitted to BISHCA. We would request that BISHCA facilitate the process for us to obtain the actual claims database from the designated claims data collection contractor, OnPoint CDM.

6. *Vermont Uniform Hospital Discharge Data Set (VUHDDS)*

Hospital inpatient, outpatient, and emergency department data will be used to explore current patterns of hospital use in the state, including analyses of variation among hospital service areas and of how residents make use of in-state vs. out-of-state and local vs. tertiary hospitals. Utilization data will also be combined with hospital financial data in explorations of alternate reimbursement mechanisms.

When possible, we will make use of published reports. We will also assemble the VUHDDS data from the public use files made available through the BISHCA website. However, the public use files do not contain information on Vermonters' use of hospitals in border states. While it would be possible to obtain public use files from New Hampshire, Massachusetts, and New York, we believe that it would be far more expeditious to request specific tabulations from BISHCA. We are also requesting that BISHCA notify our team in case more recent data becomes available, since we might request that data to be shared with us.

7. *Act 53 data*

Act 53 of 2003 requires BISHCA to collect financial and clinical data from Vermont hospitals. This data will be very important for our project as it will allow us, among other things, to estimate the impact that the proposed changes in payment will have on hospitals and their financial situation. We therefore request that BISHCA make available the full dataset assembled as required by Act 53 and any other supporting information that would facilitate our use of this dataset.

8. *Medicaid data*

In Vermont, Medicaid is the single largest source of health care financing. It is also responsible for a sizeable portion of the cost shift. It is essential to understand the patterns of Medicaid utilization and the role that Medicaid reimbursement plays in how Vermont's health care system operates and to develop the capacity to understand how both utilization and financing would be affected by alternatives to the current system. Ideally, we would obtain access to individual-level data through the OVHA. If direct access is not possible, we would anticipate formulating a series of data requests to be submitted to the Department.

9. *Medicare data*

Because its benefits and reimbursement mechanisms are standardized across the country, Medicare data provide a unique tool for making state-to-state comparisons. Medicare is the second-largest purchaser of health care in Vermont and, like Medicaid, contributes to the cost shift. We anticipate making use of the structured analyses that are available on the Dartmouth Atlas website, including variations in health care utilization and expenditure by hospital service areas.

IV. PROJECT MANAGEMENT AND STAFFING PLAN

III.1 Staff Members and Responsibilities

The project team (the “Team”) brings to this project a unique combination of health policy analysis, stakeholder analysis and health system reform, technical expertise relative to economic modeling, actuarial modeling, and the nuances of Vermont institutions, programs and data. In addition, members of the Team are virtually unrivaled in their understanding of health policy development at the state and federal levels both in the United States and abroad.

The Team will break down the proposed work into multiple components, with each component overseen by a different expert. Please see Figure 2 below for the detailed Organization Chart. Dr. William Hsiao, the principal investigator of this project, is a qualified actuary and an economist. Dr. Hsiao will serve as the overall director of the Team’s work. In doing so, Dr. Hsiao will draw upon his experience as a top expert of both the United States Medicare/Medicaid Programs, as well as the existing single-payer system in Taiwan, Germany and Netherlands. Dr. Hsiao will also serve as the lead technical specialist in the area of actuarial science.

Dr. Jonathan Gruber, a top expert in public finance and health economics, is one of the most prominent health policy experts in designing state-based universal health insurance. Dr. Gruber will serve as the Team’s Expert on Modeling and Technical analysis, bringing to bear his experience as a principal developer of the simulation model to assess health system affordability and impacts, as it relates to both government expenditure and household cost. Dr. Gruber is the foremost expert on several state and federal PPACA health reform.

Mr. Steven Kappel will act as the Team’s primary expert on Vermont health reform, and represent the team in Montpelier as its state liaison. Mr. Kappel will also work directly with Professor Hsiao and Dr. Gruber to provide and analyze Vermont-specific data.

Dr. Ashley Fox and Mr. Nathan Blanchet will complement the Team’s economic and actuarial analysis with a comprehensive, qualitative stakeholder assessment. Their work will allow the Team to better understand the feasibility of various policy alternatives and will inform the Team’s recommendations to the Vermont Legislature and Executive Branch.

As Project Manager, Ms. Anna Gosline will manage the daily operations of the project and perform financial analysis. She has expertise and experience in financial analysis and she will lead our effort to examine the costs and financial conditions of Vermont hospitals, clinics and insurers. Ms. Gosline will have at her disposal substantial, additional resources on account of the project being based at Harvard University. In addition, the Team plans to employ Mr. Nicolae Done as a full-time policy analyst to gather and analyze Vermont information and data.

The Team recognizes that given limited budget, it is critical to provide the Vermont Legislature with a maximized return on investment. To that end, the Team has in place a comprehensive plan to both efficiently manage its research and staff the project in a cost-effective manner. Under the direction of Professor William Hsiao and the experts discussed above, the Team will derive additional research capacity from Harvard University advanced doctoral students from Health Economics, Health Policy and Health Systems Doctoral Programs. The Team plans to

employ at least four doctoral students for this project. These students have direct experience working on issues of health policy reform.

The Team anticipates building a productive working relationship with legislative and agency staff in Vermont. The Team intends to function independently during the course of its research and analysis, however, expects to have consistent and timely dialogue with relevant stakeholders in Montpelier. Despite working independently, the Team as represented by Mr. Steven Kappel, will also expect open lines of communication with relevant staff when additional data and/or input are necessary.

III.2 Staff Biographicals

We provide a short relevant bio for the key staff members of the Team below which explains how each prospective member of the Team is well situated to assist Vermont's health reform analysis. The details CVs of the principals are attached in the Appendix.

Dr. William Hsiao

Principal investigator

Dr. William Hsiao, Ph.D., FSA is the K.T. Li Professor of Economics and director of the Health System Studies Program at Harvard University. Dr. Hsiao received his Ph.D. in Economics from Harvard University and is a fully qualified actuary (i.e. Fellow, Society of Actuaries) with experience in private and social insurance.

Dr. Hsiao has been a leading authority in health care financing for more than three decades and the World Bank regards him as the world's premier authority on national health insurance programs. Dr. Hsiao played a leading role in the development of the United States Medicare and Medicaid Programs and national health insurance during the Nixon and Carter Administrations, and has been actively engaged in designing universal health insurance programs for many countries including Taiwan, China, Colombia, Poland, Cyprus, South African and Uganda among others.

Dr. Hsiao has focused his research on payment methods for hospitals and physicians in the context of national health insurance programs. Examples of his work include development of the resource-based value scale, and leadership of an ongoing social experiment in China, funded by the Gates Foundation with the goal of reforming rural health care in that country. The latter project involves the design and introduction of universal health insurance, integration of the currently fragmented health care delivery system and reform of the payment system to remunerate providers based on capitation and performance.

Before joining the faculty at Harvard, Dr. Hsiao served as the Deputy Chief Actuary for the Social Security Administration, responsible for the actuarial analysis and cost estimates of Medicare and Medicaid program for a period of three years. Prior to entering government service, Dr. Hsiao worked for a large insurance company as an actuary and financial director.

Dr. Hsiao has advised three U.S. Presidents, the U.S. Congress, the World Bank, the International Monetary Fund, the World Health Organization and the International Labor Organization on issues related to health systems reform policy and national health insurance. Dr. Hsiao has been elected to the Institute of Medicine of the National Academy of Social Science, and served as a member of the Board of the National Academy of Social Insurance

and member of Board of Directors, Society of Actuaries. He was named the Man of the Year in Medicine in 1989 for his leadership in developing the resource-based relative value method for paying physician services.

Dr. Hsiao has published more than 170 papers and several books and has received several professional awards. In addition to serving on several editorial boards of professional journals, Dr. Hsiao is the recipient of several honorary professorships from leading Chinese Universities.

Dr. Jonathan Gruber

Technical and modeling expert

Dr. Jonathan Gruber, Ph.D. is a Professor of Economics at the Massachusetts Institute of Technology, where he has taught since 1992. His research focuses on the areas of public finance and health economics. Dr. Gruber received his Ph.D. in Economics from Harvard.

Dr. Gruber will be a key member of the project team. He will assist in the planning of the proposed single payer models in this project and will use the Gruber Microsimulation Model (GMSIM) to model the single payer options and public options in Vermont. He has developed GMSIM over the past dozen years to provide objective and evidence-based modeling of the impact of health reforms on insurance coverage and costs. He was a key architect of Massachusetts' ambitious health reform effort that widely expanded health insurance coverage to its residents. The GMSIM was the basis for the adoption of health reform in Massachusetts and it has also been used widely for state and federal health policy making, academic research, and private foundation analyses. In 2006, he became an inaugural member of the Massachusetts Health Connector Board, the main implementing body for that effort. In addition, Dr. Gruber has worked closely with governments in states such as California, Maryland, Minnesota and Wisconsin to model reform options to expand health insurance coverage in these states. Gruber has expert knowledge about the Obama Administration's Patient Protection and Affordable Care Act (PPACA). He served as a technical consultant to the Obama Administration and worked closely with the Administration and with Congress to provide "scores" of alternative health reform options. His model has closely replicated the score of the PPACA that was produced by the Congressional Budget Office.

During 2008 he was a consultant to the Clinton, Edwards and Obama Presidential campaigns and was called by the Washington Post, "possibly the [Democratic] party's most influential health-care expert." During the 1997-1998 academic year, Dr. Gruber was on leave as Deputy Assistant Secretary for Economic Policy at the Treasury Department.

Gruber has published more than 125 research articles, has edited six research volumes, and is the author of Public Finance and Public Policy, a leading undergraduate text. He is a Research Associate and the Director of the Health Care Program at the National Bureau of Economic Research. He received the Kenneth Arrow Award for the Best Paper in Health Economics in 1994. He was also one of 15 scientists nationwide to receive the Presidential Faculty Fellow Award from the National Science Foundation in 1995. Dr. Gruber was elected to the Institute of Medicine in 2005, and in 2006 he received the American Society of Health Economists Inaugural Medal for the best health economist in the nation aged 40 and under.

Mr. Steven Kappel
liaison

Vermont policy and data expert and local

Mr. Steven Kappel, MPA is the founder of Policy Integrity LLC, which specializes in the development and evaluation of health policy. Mr. Kappel has been involved in the development of health data and health policy in Vermont for nearly 30 years. Since 1993, he has provided analytical support to both the legislature and executive branch on every health care reform initiative within the state. He has worked on the design and implementation of several major state data resources, including the hospital discharge data system, the state “Expenditure Analysis” and the Vermont Household Health Insurance Survey. He has worked extensively with both public and private-sector organizations in Vermont, including insurers, hospitals, the Vermont Program for Quality in Health Care, and several different state agencies. Mr. Kappel is also an adjunct instructor in health policy at the University of Vermont. He holds a Master’s Degree in Public Administration from the University of Vermont and is a graduate of the Vermont Leadership Institute.

Mr. Kappel will act as the team’s primary expert on state level policy, health programs and data. His extensive experience in developing and implementing health policy in Vermont will be a vital component of the team’s analytical framework. Mr. Kappel will also be a critical asset for the team on account of his strong and ongoing working relationships with relevant state staff, including the Department of Banking, Insurance, Securities and Health Care Administration Health Care Reform Commission; the Legislative Council and Joint Fiscal Office;; and the Department of Vermont Health Access (*formerly the Office of Vermont Health Access, change is effective 7/1*).

Dr. Ashley Fox
Expert

Political Scientist and Stakeholder Analysis

Ashley M. Fox, Ph.D. is presently a Postdoctoral Fellow in the Political Economy of Health Policy at Harvard. Dr. Fox’s research focuses on two related questions – what are the political determinants of public policy and how does policy influence health outcomes? Dr. Fox has extensive experience undertaking stakeholder analysis and has trained policy makers and practitioners in the use of the PolicyMaker software to assist in the systematic development of stakeholder engagement strategies. Using the PolicyMaker software, Dr. Fox conducted a stakeholder analysis of a major health system reform in Senegal. With a specialization in survey research methodology, Dr. Fox is also an expert in public opinion research and has studied trends in public opinion on health reform in the U.S. As a key a facet of the team, Dr. Fox will utilize this expertise and background in leading the stakeholder analysis and political modeling of the proposed work. She has worked as a consultant with the Foundation for AIDS Research examining the political response of the non-profit sector to HIV/AIDS and for PATH International examining the political feasibility of the integration of medical product supply chains. Her current research focuses on explaining how some countries have successfully expanded national health insurance coverage where others have failed and differences in health system design across countries. Dr. Fox received her Ph.D. in Public Health and Political Science from Columbia University and holds an MA and BA in Political Science and Public Policy from the University of Connecticut.

Mr. Nathan Blanchet
Expert

Stakeholder Analysis

Nathan J. Blanchet, MA, is a fourth-year doctoral student in the Department of Global Health and Population at the Harvard School of Public Health. His research uses political analysis to explain how and why health system reforms are made in Ghana, and statistical analysis to assess their impact. Mr. Blanchet will co-lead the stakeholder analysis and political modeling of the proposed work. Mr. Blanchet has nearly ten years of experience in health sector design, management, and evaluation. He specializes in using qualitative research methods such as semi-structured interviews to plan and evaluate health reforms. From a technical analysis standpoint, Mr. Blanchet's expertise will complement the team's already strong foundation in actuarial and economic modeling, as well as simulation. While at Harvard, he has consulted for the World Bank, the UK's Department for International Development (DFID), and PATH. Previously, he served as a Presidential Management Fellow at the U.S. Agency for International Development (USAID) from 2003-2007; consulted for the World Bank's Onchocerciasis Control Unit from 2002-2003; and taught English and HIV/AIDS-prevention as a Peace Corps volunteer in Cameroon from 1998-2000. Mr. Blanchet holds an MA in International Relations from Johns Hopkins School of Advanced International Studies (SAIS) and a BA in Political Science and French from Miami University.

Ms. Anna Gosline
Analyst

Project Manager and Financial

Anna Gosline, M.S is an experienced health policy analyst and science journalist. Ms. Gosline recently received an M.S. in health policy and management from the Harvard School of Public Health. During her tenure at Harvard, she analyzed the impact of health care cost containment and planning regulation for the Massachusetts Division of Health Care Finance and Policy; analyzed community mental health center financial stability and the impact of proposed Medicaid cuts for the Endowment for Health, New Hampshire; and supported the financial analysis and strategic design of innovative payment mechanisms for Dana-Farber Cancer Institute. Prior to her returning to graduate school studies, she worked in various journalist positions such as at New Scientist magazine, as well as writing for several other publications, including Scientific American and the Los Angeles Times. She also co-founded and edited an online science magazine. In that capacity she managed financial operations, as well as a network of more than 40 volunteer writers. Ms. Gosline received her B.Sc. with High Distinction in Zoology from the University of Toronto and a graduate certificate in Science Communication from the University of California, Santa Cruz.

Nicolae Done
Analyst

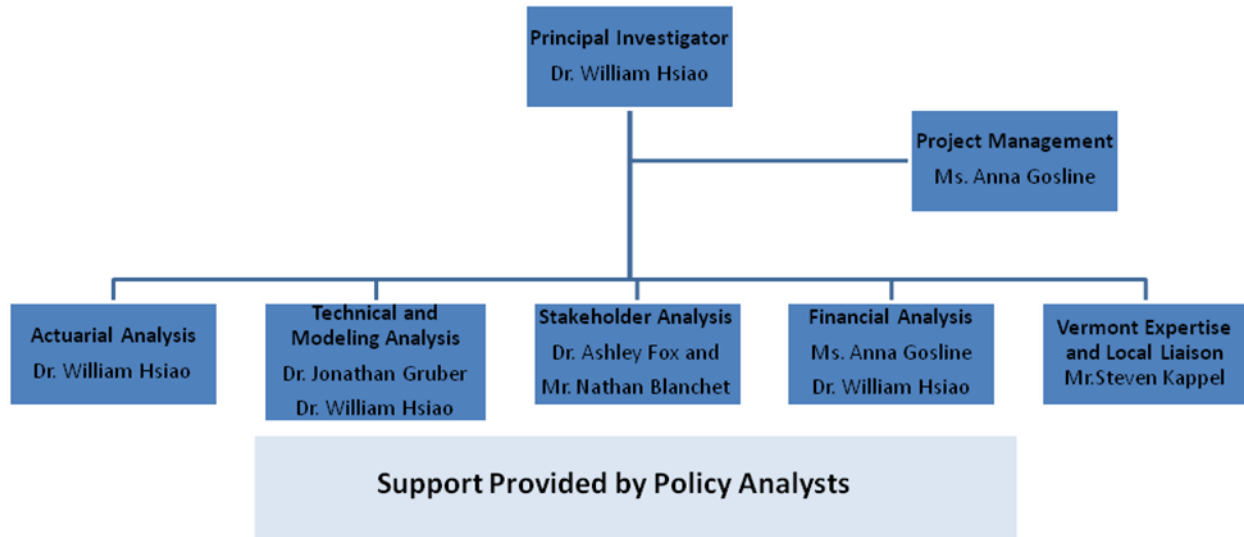
Policy

Nicolae Done, BA graduated from Harvard College in 2009 with a major in Biochemical Sciences and minor in Health Policy. He has been working as a research analyst with Professor Hsiao for the past year. Mr. Done has spent the past several months assembling and analyzing data and information on Vermont. He will serve as the full-time policy analyst on the Team, responsible for data gathering and analysis.

III.3 Organizational Structure

Figure 2 presents the organization chart that shows the organization, roles and responsibilities of the staff.

Figure 2 Organizational chart



III.4 Timeline and Project Milestones

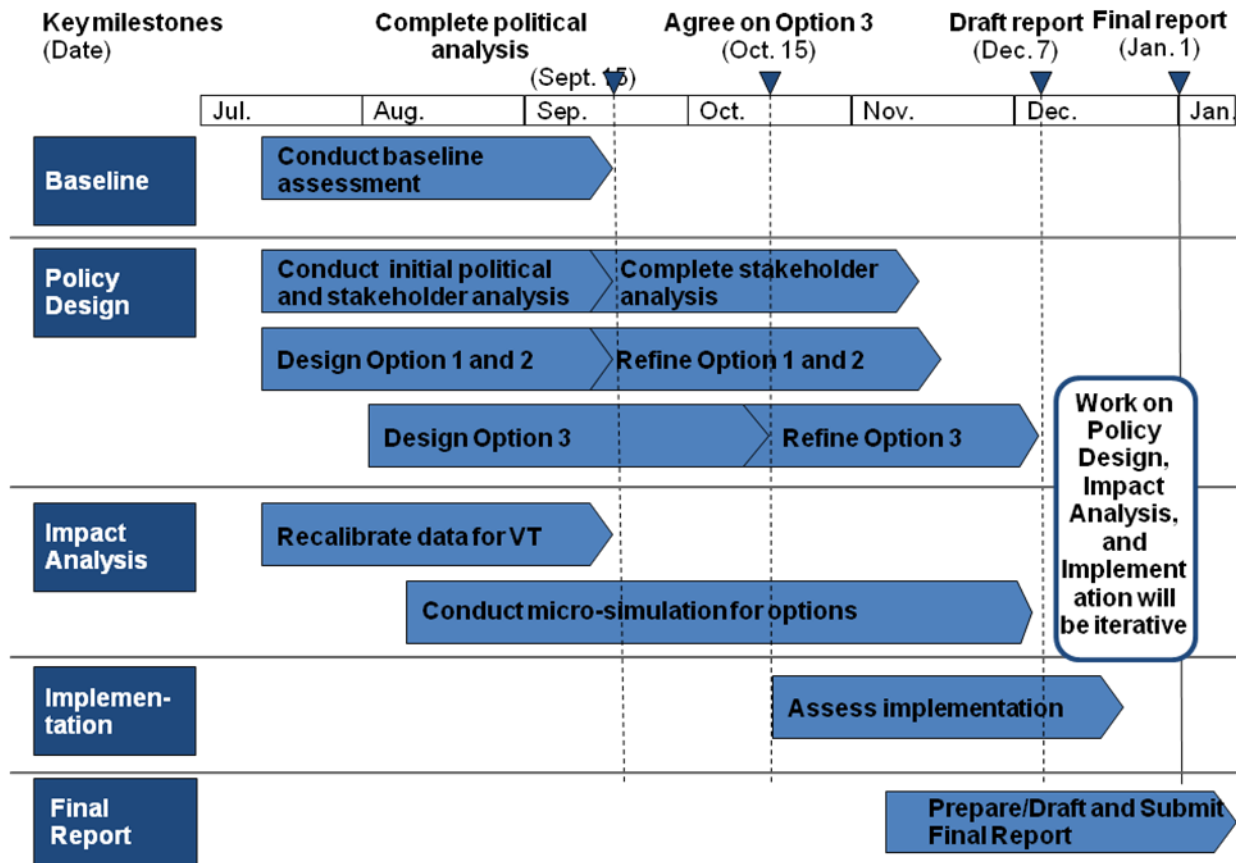
The proposed study takes place over a period of approximately 23 weeks. We propose a monthly meeting between the key members of the project team and the Vermont Health Care Reform Commission.

The key milestone, summarized the Figure 1 below, include:

- Completion of initial stakeholder/political analysis so Option 3 can be designed (September 15)
- Submission of proposed design of Option 3 to Commission (October 1)
- Agreement with Commission on Option 3 (October 15)
- Draft of report (December 7)
- Final report (January 1, 2011)

Figure 3. Milestones and Timeline

Milestones and High-Level Timeline



III.5 Relations with State Staff and Other Stakeholders

Steve Kappel will be the local liaison for this project. He has strong working relationships with state staff, including the Department of Banking, Insurance, Securities and Health Care Administration; the Department of Vermont Health Access, Health Care Reform Commission; the Legislative Council and Joint Fiscal Office.

We anticipate communicating with state staff to brief them on our work and request their assistance when needed. We hope to make use of unique expertise that legislative, BISHCA, and DVHA staff have around their data systems, analytical activities, policy initiatives, and knowledge of state laws and regulations.

V. REFERENCES

References for William Hsiao (I am providing a reference for Taiwan although I have not closely work as a consultant for them during the past 36 months. However Dr. Yaung worked closely with me in designing and implementing Taiwan's reform since 1989):

Daniel H. Kress, PhD

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References for Jonathan Gruber:

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FPadilla@universalhealthct.org

APPENDIX – SUPPORTING INFORMATION

A.1 Curriculum Vitae of Key Experts

WILLIAM C. HSIAO
K.T. Li Professor of Economics

Harvard School of Public Health
Department of Health Policy and Management
124 Mt. Auburn Street, Suite 410-South
Cambridge, MA 02138

EDUCATION

Actuarial Science	Fellow	Society of Actuaries [A professional doctoral degree recognized by many universities.]	1966
Public Administration	M.P.A.	Harvard University	1972
Economics	Ph.D.	Harvard University	1982

ACADEMIC APPOINTMENTS

K.T. Li Professor of Economics	Health Policy & Management	Harvard School of Public Health	1993 - Present
Professor of Health System Economics	Health Policy & Management	Harvard School of Public Health	1985 - 1993
Associate Professor of Economics	Health Policy & Management	Harvard School of Public Health	1974 - 1984
Member of Faculty	Financial Management	Harvard Business School	1974 - 1977

OTHER PROFESSIONAL EMPLOYMENT

Deputy Chief Actuary		U.S. Social Security Administration, DHEW	1968 - 1971
Actuary and Financial Director		Connecticut General Life Insurance Co.	1959 - 1968

AWARDS AND HONORS

Member, U.S. National Academy of Science Institute of Medicine	1992
Founding Member, (Elected) National Academy of Social Insurance, USA	1992
"Man of the Year in Medicine and Health" Selected by the Editorial Board of McGraw-Hill Publications	1989
Honorary Professor, Beijing University	1985
Honorary Professor, Fudan University	1985
Johnson Foundation Fellow	1973
Carnegie Foundation Fellow	1972
Distinguished Service Award, U.S. Dept. of Health, Education & Welfare	1970

MAJOR PROFESSIONAL SERVICES

World Economic Forum	Advisory Committee, Financial Institutions	2007-2009
Clinton Initiative	Advisory Committee	2006
World Bank	Consultant on health system development; Advisor on Health and Social welfare policies. Advise governments of China, Colombia, South Africa, Cyprus, Indonesia, Philippines, Thailand, Sri Lanka and Hong Kong on their national health system reforms.	1995-present 1991-present 1983-present
International Labor Organization	Consultant on social insurance for retirement and disability.	1991 - Present
International Monetary Fund	Advisor on Health and Macroeconomic policy	1996, 2006
World Health Organization	Advisory Committee, World Health Report, 2000	1999-2000

	Member, Working Group III, Commission on Macroeconomics and Health	1999-2001
	Consultant on health care financing and social health insurance.	1989 - Present
Asia Development Bank	Consultant on Health Sector Development	2000
U.S. Senate	Consultant to Committee on Finance on Social Security, Medicare and Medicaid programs.	1974 - 2001
U.S. Senate	Consultant to Committee on Aging on Medicare and regulation of physician fees.	1983 - 1999
Council on Economic Planning and Development, Government of Taiwan	Chief Advisor to lead task force to plan a new national health insurance system. Plan adopted into law in 1995 and implemented.	1989 - 1990
State of New York	Chairman, Commission on hospital rate setting.	1984 - 1986
Secretary, U.S. Department of Health and Human Services	Consultant in the design and financing of national health insurance plan.	1977 - 1980
U.S. Congress (appointed by Joint Resolution of Both Houses)	Chairman, consultant panel on Social Security to study restructuring of Social Security retirement program.	1975 - 1976
U.S. House of Representatives	Consultant to Ways and Means Committee on Social Security programs and taxation	1975 - 1981
Commissioner of Public Health, Commonwealth of Massachusetts	Advisor on health care facility planning	1976 - 1977
Governor, State of Vermont	Advisor on regulation of health care costs and professional malpractice insurance	1974 - 1977

Governor, State of New Hampshire	Advisor on regulation of Blue Cross/Blue Shield rates	1976 - 1979
National Center for Health Services Research	Study section	1974 - 1979
Cambridge Health Economics Group, Inc.	Chairman of the Board	1988 - 1998
Society of Actuaries	Board of Governors (elected) Chairman, Social Insurance Committee	1991 - 1995 1981 - 1986
National Academy of Social Insurance	Board of Directors	1998-present
United Methodist National Board of Pensions	Board member (elected) Member of Executive Committee	1991 - 1994
Commonwealth School,	Member, Board of Trustees and Executive Committee	2000 - 2006 1983 - 1991
Boston Home Savings Bank	Member, Board of Advisors	1981 - 1989
South Cove Community Health Center, Boston	Member, Board of Directors and Chairman, Finance Committee	1983 - 1986
Mount Auburn Hospital, Cambridge	Trustee and member of Executive Committee	1977 - 1982

EDITORIAL BOARD AND REFEREE FOR JOURNALS

Editorial Board: Health Economics, Health Policy, Journal of Health Economics, Policy and Law.

Referee for Journals: The American Economic Review, Health Economics, Rand Journal, Inquiry, Social Science and Medicine, Health Policy, Health Affairs, New England Journal of Medicine, Journal of American Medicine Association and Journal of Human Resources

PROFESSIONAL SOCIETIES

American Economic Association
 American Academy of Actuaries
 American Public Health Association
 Operations Research Society of America

MAJOR RESEARCH INTERESTS

Health system Economics
Financing and organization of health services
Payment for hospital and physician care
Economic behavior of non-profit organizations
Market for physician services
Health insurance market
Social and private insurance for retirement

PUBLICATIONS

Journal Publications and Chapters in Books

- Hsiao WC. "Construction of Continuation Tables and Trends in Utilization Rate." *Transactions*, November 1968;Vol. XX.
- Hsiao WC. "Management of Professionals." *Transactions*, May 1969;Vol. XXI.
- Hsiao WC. "Health Insurance in 1970s." *Transactions*, November 1970;Vol. XII.
- Hsiao WC. "Life Insurance Industry in Taiwan." *China Insurance Quarterly*, June 1971;Vol. II.
- Hsiao WC. "Insurance and Medical Prices." *Transactions*, November 1972;Vol. XXIV.
- Hsiao WC. "National Health Insurance." *Harvard Journal on Legislation*, October 1974.
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Elected to the Institute of Medicine, 2004
2003 Richard Musgrave Prize for best paper in National Tax Journal in 2003
Member of the National Academy of Social Insurance, 1996
1995 American Public Health Association Kenneth Arrow Award for the Outstanding Health Economics Paper of 1994
National Science Foundation Presidential Faculty Fellowship, 1995
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- “Social Security and Retirement: An International Comparison,” *American Economic Review*, 88(2), May 1998, 158-163 (with David Wise).
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- “An International Perspective on Policies for an Aging Society,” in Stuart Altman and David Schactman, eds., *Policies for An Aging Society: Confronting the Economic and Political Challenges*. Baltimore, MD: Johns Hopkins Press, 2002, p. 34-62 (with David Wise).
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- “Covering the Uninsured: Incremental Policy Options for the U.S.,” in Huizhong Zhu, ed., *The Political Economy of Health Care Reforms*. Kalamazoo, MI: Upjohn Institute, 2001, p. 65-86.

- “Risky Behavior Among Youth: An Economic Analysis, Introduction” in Jonathan Gruber, ed., *Risky Behavior Among Youth: An Economic Analysis*. Chicago: University of Chicago Press, 2001, p. 1-28.
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Books and Manuscripts:

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“Review of Chapter 5 of the *Economic Report of the President*,” *Journal of Economic Literature*, 43(3), September 2005, p. 805-809.

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Discussion of Matthew J. Eichner, Mark B. McClellan, and David A. Wise, “Insurance or Self-Insurance? Variation, Persistence, and Individual Health Accounts,” in *Inquiries in the*

Economics of Aging, David A. Wise, ed. Chicago: University of Chicago Press, 1998, 45-49.

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Unpublished Manuscripts:

"Choice Inconsistencies Among the Elderly: Evidence From Plan Choice in the Medicare Part D Program," NBER Working Paper #14759, February 2009 (with Jason Abaluck).

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"A Tax-Based Estimate of the Elasticity of Intertemporal Substitution," NBER Working Paper #11945, January 2005.

"Youth Smoking in the U.S.: Prices and Policies," NBER Working Paper #7506, January

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Summary

A health care policy and analysis professional, with a broad understanding of all aspects of Vermont's health care system, from financing to outcomes research, combined with significant management experience.

Employment

2007 – Current

Founder

Policy Integrity LLC

Policy Integrity LLC is a consulting firm that assists clients with the development, presentation, and evaluation of policy alternatives in health care and related areas.

2000 to 2007

Associate Fiscal Officer

Vermont Joint Fiscal Office

Provided nonpartisan policy and financial analysis to the Vermont legislature on a wide range of health care and health financing issues, with a particular focus on the Medicaid program. Work with legislators, members of the administration, and the public to develop legislation. Evaluate policy implementation.

1998 to 2000

Executive Director

Vermont Program for Quality in Health Care, Inc.

Was responsible for all operational aspects of VPQHC, including finance, personnel, planning, and external affairs, including relationships with legislature and multiple constituencies. Worked with Board to Directors to develop strategies to meet mission. Supervised staff of 6. Managed \$500,000 budget. Represented the organization before a wide range of audiences. Wrote or edited publications. Provided leadership in analytical and data management activities. Participated in quality improvement activities.

1997 to 1998

Director of Analysis and Data Management

**Department of Banking, Insurance, Securities and Health Care
Administration**

Directed a 5-person section with broad responsibilities, including development and implementation of health policy, health insurance regulation, development of a statewide health care data base, and analysis of cost, utilization, and outcomes in Vermont's health care system. Developed policy to improve quality and control costs in Vermont's health care system. Advised Department executives, the Governor, and the Legislature. Originated or participated in multi-disciplinary research, including medical outcome, economic, survey, and insurance market reform.

1992 to 1996 **Data Manager**
Vermont Health Care Authority

Was responsible for financial and utilization analysis in support of health care reform, including development of models for tax and premium-based systems incorporating data from a wide variety of sources including actuarial research and sample data. Worked with a wide range of advocacy groups to develop consensus around economic models. Provided analytical support and testimony to Vermont legislature's Special Committee on Health Care Reform. Worked with health insurers and major employers to develop consensus around a cooperative statewide health care database. Developed a pilot system incorporating claims from Medicare, Medicaid, and two commercial insurers. Designed and implemented a database to manage and analyze Medicare claims information.

1990 to 1992 **Director of Data Management**
BlueCross BlueShield of Vermont

Directed a department of 5 with an annual budget of \$350,000, with responsibilities for database administration, statistical support and computer training. Designed and managed BCBS's end-user information system that provided support for a wide range of clients, from actuarial services to marketing.

1987 to 1989 **Research and Evaluation Analyst**
BlueCross BlueShield of Vermont

Developed and analyzed statistical reports for a wide audience, including Actuarial, Underwriting, and Health Services. Analyzed and presented utilization reports to customers.

1985 to 1987 **Senior Research and Statistics Analyst**
Vermont Department of Health

Supervised a 5 member unit which provided statistical support for a wide variety of public health efforts, including epidemiology, health care utilization studies, and population estimation and projection. Designed and developed the statewide hospital discharge information system.

Education

B.S. Communication, Rensselaer Polytechnic Institute, 1974

M.P.A. University of Vermont, 2003. Winner, Marshall Dimock award for outstanding student. Member, Pi Alpha Alpha

Graduate, Vermont Leadership Institute, 2007

Awards

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Postdoctoral Fellowship, Health Systems Track

Columbia University, Mailman School of Public Health July, 2009
Ph.D. Sociomedical Sciences, *Concentration in Political Science*

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Dissertation Sponsor: Peter Messeri, Ph.D.

Columbia University, Mailman School of Public Health May, 2007
M.Phil. Sociomedical Sciences

University of Connecticut, Department of Public Policy May, 2002
M.A. Political Science, *Concentration in Survey Research Methods*

University of Connecticut, Department of Political Science May, 2001
B.A. Political Science, *summa cum laude, Phi Beta Kappa*

PROFESSIONAL ASSOCIATIONS

- Population Association of America (PAA), member since 2008
- American Public Health Association (APHA), member since 2004
- American Association for Public Opinion Research (AAPOR), member since 2001

HONORS/SCHOLARSHIPS

- 2008 Columbia Population Research Center Fellow
- 2008 American Psychological Association, APA Division 38 in Health Psychology, Graduate Student Research Awards Program, dissertation write-up award
- 2008 Horowitz Foundation for Social Policy, Robert K. Merton Award for Studies in the Relation between Social Theory and Public Policy, dissertation write-up award
- 2007 Public Health Systems Research Student Scholarship, AcademyHealth
- 2005 National Science Foundation (NSF) Integrative Graduate Education and Research Traineeship (IGERT) in International Development and Globalization
- 2002 SPFFA Grant to study French in Quebec

- 2001 Augusta H. Gerberich International Relations Scholarship
- 2001 Fannie Dixon Welch Scholarship
- 2000 Frontiers Summer Research Grant for research in South Africa
- 2000 Phi Beta Kappa Honor Society
- 2000 Golden Key International Honor Society

PUBLICATIONS

- **Fox, A.M.** “The HIV-Poverty Thesis Re-Examined: Poverty or Inequality as an Underlying Cause of HIV in Africa?,” *Social Science and Medicine*, revise and resubmit.
- Meier, B., **Fox, A.M.** (2010). “International obligations through collective rights: Employing international legal claims to strengthen global health governance,” *Health & Human Rights*, in press.
- **Fox, A.M.** (2010). “The social determinants of HIV infection in sub-Saharan Africa: Social status meets sero-status,” *Public Health Reports*, in press.
- Adams, J.L., Hansen, N.B., **Fox, A.M.**, Taylor, B.B., Van Rensburg, M.J., Mohlahlane, R., Crewe, M., Sikkema, K.J. (2010). “Correlates of HIV testing among abused women in South Africa,” *Violence Against Women*, in press.
- Sikkema, K.J., Neufeld, S.A., Hansen, N.B., Mohlahlane, R., Van Rensburg, M.J., Watt, M.H., **Fox, A.M.**, Crewe, M. (2010). "Integrating HIV Prevention into Services for Abused Women in South Africa," *AIDS and Behavior*, 14: 431–439.
- **Fox, A.M.**, Meier, B. (2009). “Health as freedom: Addressing social determinants of global health inequities through the human right to development,” *Bioethics*, 23(2): 112-122.
- Sikkema, K., Nathan, H., Meade, C., Kochman, K., **Fox, A.M.** (2009). "Psychosocial predictors of HIV transmission and risk behavior among HIV-positive adults with a childhood sexual abuse history," *Archives of Sexual Behavior*, 38(1):121-134.
- Meier, B., **Fox, A.M.** (2008). “Transcending the available resources: The intersections of the individual right to health with the collective right to development,” *Human Rights Quarterly*, 30: 259-355.
- **Fox, A.M.** (2007). “Gender transformation requires population approaches to addressing gender-based violence and HIV,” *Sexually Transmitted Infections*, 83(6): 499.
- **Fox, A.M.**, Jackson, S., Hansen, N., Gasa, N., Crewe, M., Sikkema, K. (2007). “In their own voices: A qualitative study of violence against women and HIV in South Africa,” *Violence Against Women*, 13(6): 583-602.
- Sikkema, K., Hansen, N., Kochman, A., Tarakeshwar, N., Neufeld, S., Meade, C., **Fox, A.M.** (2007). “Outcomes from a group intervention for coping with HIV/AIDS

and childhood sexual abuse: Reductions in traumatic stress,” *AIDS and Behavior*, 11(1):49-60.

- Tarakeshwar, T., Kochman, A., Hansen, N., Sikkema, K., **Fox, A.M.** (2006). “Resiliency among individuals with childhood sexual abuse and HIV: Perspectives on addressing sexual trauma,” *Journal of Traumatic Stress*, 19(4): 449-60.
- Tarakeshwar, T., **Fox, A.M.**, Khawaja, S., Ferro, C., Sikkema, K. (2005). “The connections between childhood sexual abuse and HIV infection: Implications for interventions,” *Journal of Community Psychology*, 33(6): 655-672.

WORKS IN PROGRESS

- “Characterizing the sector: The changing role of HIV/AIDS public charities in the US.” Pending completion, will submit to *Health Policy & Planning*. Estimated submission date: February 2010.
- “Biomedicine over public health? Public-private product development partnerships and global health funding.” Pending completion, will submit to *Global Health Governance*. Estimated submission date: March 2010.
- "Survival sex or sugar-daddies? Gender, wealth and HIV infection in 16 African countries." Pending completion, will submit to *Demography*. Estimated submission date: April 2010.
- “Development, disease and distribution: An ecologic analysis of the relationship between HIV and inequality in sixteen African countries.” Pending completion, will submit to *PLoS Medicine*. Estimated submission date: June 2010.
- “HIV prevalence rates are still shockingly high: The downward estimation of population-based HIV data.” Pending completion, will submit to *International Journal of Epidemiology*. Estimated submission date: July 2010.
- “The Political Economy of HIV Prevention in sub-Saharan Africa.” Pending completion, will submit to *Public Administration and Development*. Estimated submission date: August 2010.

WORKING PAPERS

- Meier, B., **Fox, A.M.** (2009). “Climate justice through collective rights: Employing human rights for environmental health,” Working paper prepared for the Advancing Climate Justice Conference, January 29-30 2009, New York, NY.
- **Fox, A.M.** (2009). “The HIV-poverty thesis re-examined: Poverty or inequality as the underlying cause of HIV in SSA,” Working Paper. Columbia Population Research Center.
- **Fox, A.M.** (2009). “AIDS & Accountability: Explaining government responsiveness to HIV/AIDS in sub-Saharan Africa,” Working Paper. Columbia Population Research Center.

INVITED LECTURES

- **Fox, A.M.** (2009). "HIV risk: Economic, gender and other social factors," Lecture delivered to HIV/AIDS in Developing Countries: Epidemiology and National Responses class, November, 2. Harvard School of Public Health, Boston, MA.
- **Fox, A.M.** (2009). "Neoliberalism & the state," Lecture delivered to Contemporary Debates in Sociomedical Sciences, March 10. Columbia University, New York, NY.
- **Fox, A.M.** (2009). "The HIV pandemic: Global epidemiology & resource trends," Lecture delivered to the Priorities in Global Public Health Class, February 19. Columbia University, New York, NY.
- **Fox, A.M.** (2008). "Poverty or inequality as an underlying cause of HIV in Africa: The HIV poverty thesis re-examined," Lecture delivered at the Gender, Sexuality and Health Seminar Series, November 11, 2008. Columbia University, New York.
- **Fox, A.M.** (2008). "Globalization and health: Overview & intersections," Lecture delivered in Introduction to Global Health course, Sept. 4. Columbia University, New York, NY.
- **Fox, A.M.** (2007). "The HIV pandemic: Explaining global patterns in the spread of HIV," Lecture delivered to the Priorities in Global Public Health Class, April 5. Columbia University, New York, NY.

PRESENTATIONS

- Finlay, J.E., **Fox, A.M.**, Cruickshank, P., Sivaramakrishnan, K. (2010). "How reproductive health laws help to explain the gap between contraceptive use and fertility decline: The curious case of Ghana," European Population Conference, September 2010, Vienna, Austria.
- **Fox, A.M.** (2010). Oral Presentation. "Survival sex or sugar-daddies? Gender, wealth and HIV infection in 16 African countries," Population Association of America Conference, Annual Meeting, 2010, Dallas, TX.
- **Fox, A.M.** (2009). Oral Presentation. "Economic inequality as an underlying cause of HIV in Africa: The HIV-poverty thesis re-examined," Population Association of America Conference, Annual Meeting, April 2009, Detroit, MI.
- **Fox, A.M.** (2008). Oral Presentation. "Biology is destiny or social status meets sero-status?: Determinants of HIV infection in Africa," American Society of Tropical Medicine & Hygiene 2008 Annual Meeting, Dec. 10, New Orleans, LA.
- **Fox, A.M.** (2008). Poster Presentation. "Poverty or inequality as the underlying cause of HIV in Africa? The HIV-Poverty thesis re-examined," American Public Health Association Conference, Oct. 27, San Diego, CA.
- **Fox, A.M.** (2008). Oral Presentation. "Economic inequality as an underlying cause of HIV in Africa," Advanced Graduate Workshop, June 18, Brooks World Poverty Institute, Manchester, England.

- **Fox, A.M.** (2008). Poster Presentation. "Housing as a TB intervention? Public health pragmatism/nihilism re-examined," Unite for Sight Annual Conference, April 12, Yale University, New Haven, CT.
- **Fox, A.M.** (2008). Oral Presentation. "Poverty or inequality as the underlying cause of HIV in Africa? The HIV-poverty thesis re-examined," Third Annual IGERT Symposium on International Development and Globalization, April 11, Columbia University, New York, NY.
- **Fox, A.M.** (2007). Poster Presentation. "Mapping HIV in Africa: Wealth, urbanization and HIV infection in Tanzania," Dec. 13, UC Atlas Mapping Global Inequality Conference, University of California, Santa Cruz.
- **Fox, A.M.,** Meier, B. (2007). Oral Presentation. "Globalization, development and health: Realizing the individual right to health through the collective right to development," American Public Health Association Conference, Nov. 6, Washington D.C.
- **Fox, A.M.,** Meier, B. (2007). Poster Presentation. "Easing resource constraints for public health: Progressive realization of the right to health through the right to development," American Public Health Association Conference, Nov. 7, Washington D.C.
- **Fox, A.M.** (2007). Poster Presentation. "Explaining government responsiveness to HIV/AIDS in sub-Saharan Africa," AcademyHealth Annual Research Meeting, June 3, Orlando, FL.
- Meier, B., **Fox, A.M.** (2007). Oral Presentation. "Transcending the available resources: The intersections of the individual right to health with the collective right to development," Unite for Sight Annual Conference, April 14, Stanford University.
- **Fox, A.M.,** Meier, B. (2006). Poster Presentation. "Maximizing the available resources: The intersections of the right to health with the right to development," American Public Health Association Annual Conference, Nov. 7, Boston, MA.
- **Fox, A.M.,** Jackson, S., Hansen, N., Gasa, N., Crewe, M., Sikkema, K. (2004). Oral Presentation, "In their own voices: Violence against women and HIV in the South African context," AIDS Science Day, April 23, Yale University.
- **Fox, A.M.,** Mohahlane, R., Hansen, N., Crewe, M., Sikkema, K. (2004). Poster Presentation, "Predictors of HIV testing among abused women in Johannesburg," XV International AIDS Conference, July 14, Bangkok, Thailand.
- Mohahlane, R., Sikkema, K.J., Crewe, M., Hansen, N., **Fox, A.M.,** Jackson, S. (2004). Poster Presentation. "Process of piloting a prevention intervention for HIV/AIDS trauma among abused women in South Africa," XV International AIDS Conference, July 13, Bangkok, Thailand.
- **Fox, A.M.,** Jackson, S., Hansen, N., Gasa, N., Crewe, M., Sikkema, K. (2003). Poster Presentation, "Violence against women and HIV risk in South Africa," Society of Behavioral Medicine Conference, March 21, Baltimore, MD.

PAST FUNDING

Integrative Graduate Education and Research Traineeship (IGERT) Stiglitz (PI) 09/05-09/08
National Science Foundation

Interdisciplinary research fellowship in International Development and Globalization bringing together Ph.D. students from across the social sciences working on issues related to international development and globalization.

Role: Fellow

R01 DP000110

Messeri (PI) 09/04-09/05

Centers for Disease Control and Prevention

A Mobile Team Approach to Health Promotion in Small Business

Group randomized intervention study to test the impact on employee health seeking behavior of worksite health promotion program designed for small business located in Harlem New York City.

Role: Graduate Research Assistant

RO1-MH62965

Sikkema (PI) 07/02 –

08/04

National Institutes of Mental Health

Intervention for Coping with HIV and Trauma

The goal of this study was to implement and evaluate a coping intervention to reduce traumatic stress and increase protective behaviors among HIV positive survivors of childhood sexual abuse.

Role: Research Associate

TEACHING EXPERIENCE

Semester: Spring 2010, Course: Doctoral Seminar Political Economy and Ethics of Health Reform: Cases of Mexico and Taiwan (GHP 527), Enrollment: 6 students, Role: Co-Instructor.

Semester: Fall 2009, Course: Political Analysis Tutorial (GHP 300), Enrollment: 9 students, Role: Co-Instructor.

Semester: Spring 2009, Course: Contemporary Debates in Sociomedical Sciences (SOSC P8789), Enrollment: 6 students, Role: Teaching Assistant.

Semester: Fall 2008, Course: Theoretical Foundations of Sociomedical Sciences (SOSC P8788), Enrollment: 6 students, Role: Teaching Assistant.

Semester: Fall 2008, Course: Introduction to Global Health (P6810), Enrollment: 40 students, Role: Teaching Assistant.

Semester: Spring 2008, Course: Advanced Topics Global Health (P8820), Enrollment: 13 students, Role: Teaching Assistant.

Semester: Spring 2008, Course: Priorities in Global Public Health (P6811), Enrollment: 28 students, Role: Teaching Assistant.

Semester: Fall 2007, Course: Introduction to Global Health (P6810), Enrollment: 45 students, Role: Teaching Assistant.

Semester: Spring 2007, Course: Advanced Topics Global Health (P8820), Enrollment: 7 students, Role: Teaching Assistant.

Semester: Spring 2007, Course: Priorities in Global Public Health (P6811), Enrollment: 17 students, Role: Teaching Assistant.

Semester: Fall 2006, Course: Introduction to Global Health (P6810), Enrollment: 35 students, Role: Teaching Assistant.

PROFESSIONAL EXPERIENCE

- Present *Consultant.* PATH & WHO, Optimize Program.
Political analysis of key stakeholders and creation of an advocacy plan to integrate Senegal's medical supply chain using PolicyMaker software.
- 2007-2009 *Consultant.* Foundation for AIDS Research (amfAR), New York, NY.
Assistance with an HIV/AIDS Environment Scan to inform amfAR's strategic plan:
- Constructed a database of HIV/AIDS non-profits;
 - Measured comparative and temporal trends in the response to HIV/AIDS from government, private industry, foundations and the non-profit sector;
 - Quantified the historical and present day response of the non-profit sector to HIV/AIDS;
 - Assessed the significance of changing trends in the HIV/AIDS response (domestic and international) and its implications for the strategic planning of amfAR as an HIV/AIDS public charity.
- 2006-2009 *Teaching Assistant,* Global Health Track, Columbia University Mailman School of Public Health
For three separate global health track courses (Introduction to Global Health, Priorities in Global Public Health, Advanced Topics in Global Health)
- Assisted in curriculum design including assignment of readings, topics and speakers;
 - Coordinated speakers and managed course online;
 - Graded papers and served as first line support for student questions;
 - Led discussion sections.
- Summer 2006 *Internship,* Reproductive Health Research Unit (RHRU), Durban, South Africa
- Trained and assisted staff in the coding and analysis of focus group data relating to female condom use among University of Natal students;
 - Spearheaded a systematic review of contraceptive choices to be considered for the WHO Essential Medicines list.
- Fall 2005 *HIV/AIDS in the U.N. Workplace Group Facilitator,* UNAIDS/UNICEF
- Facilitation of HIV awareness and prevention groups among U.N. staff

- Summer 2005 *Internship*, Center for Health/HIV Intervention and Prevention (CHIP),
University of Connecticut
- Transcription of intervention sessions from the Healthy Relationship Project;
 - Preliminary coding of qualitative findings.
- 2004-2005 *Doctoral Graduate Research Assistant*, Center for Applied Public Health,
Columbia University
- Constructed Questionnaires/Facilitator Guides;
 - Developed a Health Risk Appraisal Module.
- 2002-2004 *Research Associate I*, Yale University, Department of Psychiatry and Psychology
Conducting community-based participatory research for The Consultation Center
on two projects:
- Project LIFT (Living in the Face of HIV and Trauma), New York City
- In collaboration with Callen-Lorde Community Health Clinic, development, implementation and evaluation of a secondary prevention and risk reduction intervention for HIV positive individuals who have experienced childhood sexual abuse.
 - Creating and monitoring of an ACCESS database to track participants;
 - Creating and monitoring of a data transfer and management system;
 - Liaising with the Human Investigations Committee to ensure ethical integrity of project;
 - Writing grant progress reports to NIMH;
 - Conducting computer-based interviews with People living with HIV/AIDS (PLWHA);
 - Programming questionnaires into Computer Assisted Personal Interviewing (CAPI) software.
- Project Sibambisene (HIV Prevention Intervention for Abused women in South Africa):
- Working in collaboration with People Opposing Woman Abuse (POWA), a Johannesburg-based NGO, developing, implementing and evaluating a pilot HIV prevention intervention for abused women.
 - Preparing an HIV risk reduction intervention tailored for abused women;
 - Writing/assembly of questionnaires/measures and oversight of data collection;
 - Training interviewers in interview/data collection techniques, data entry and research ethics;
 - Creation of database in SPSS and database management;
 - Field work and oversight of data collection in Pretoria and Johannesburg.
- 2001-2002 *Graduate Assistantship*, Center for Survey Research and Analysis, University of Connecticut

For Department of Education funded study on the scope of African Studies Programs in the U.S.:

- Compiling and summarizing data on the extent of African Studies Program in the U.S.;
- Developing survey instruments and sampling strategy;
- Conducting telephone interviews with respondents.

OTHER RELEVANT TRAINING AND EXPERIENCE

Summer 2008 Advanced Graduate Workshop, Brooks World Poverty Institute and Initiative for Policy

Dialogue, University of Manchester, UK

- Three week intensive interdisciplinary workshop on current debates, strategies and methods for the study and practice of international development and globalization.

Spring 2008 & Multilevel Modeling in HIV/AIDS Research Workshop, HIV Center for Clinical

Behavioral Studies, Columbia University

- Introduction and overview of basic concepts and applications of multi-level modeling for use in HIV research.

Winter 2007 & Global Geographic Information Systems Poverty Mapping Training Workshop, Mapping Inequalities: Beyond Income Inequality Conference, UC Santa Cruz, Santa Cruz, CA.

- Hands-on training in the use of GIS software to map global poverty trends.

Spring 2004 & Core Qualitative Methodology in HIV Workshop, CIRA Methodology and Biostatistics

- Comprehensive training in qualitative research and analysis methodology, including use of NUD*IST (N6)

Summer 2003 Yale International AIDS Summer Institute in Bioethics

- Intensive discussion, debate and training in the field of bioethics particularly; concerning issues relating to IRBs and ethics in the developing world.

Spring 2002 Survey Research Practicum, Center for Survey Research and Analysis, University of Connecticut

For study on Public Opinion and the Legitimizing Effect of the Supreme Court:

- Questionnaire/Facilitator guide development; Research design; Proposal writing; Sample design/development; Data cleaning; Annotating questionnaires; Data analysis; Report writing.

Summer 2001 U.S./China Cultural and Educational Exchange Program

- Teaching English to high school aged children in Huzhou, China

Summer 2000 Field Researcher, Durban, South Africa

- Researching the relationship between the medico-legal response to sexual violence and the spread of HIV/AIDS;
- Volunteer, God's Golden Acre Orphanage, South Africa.

COMPUTER SKILLS

STATA, SPSS, Questionnaire Development Software (QDS), NUD*IST (N6), ARC-GIS, PolicyMaker

LANGUAGES

English (Native) - French (Advanced) - Spanish (Intermediate) - Wolof (Introductory)

A.2 Bibliography

- ⁱ America's Health Rankings™, a comparative report of Americans' health status and health care policies by state, ranked Vermont first in 2009. Vermont ranked fourth in 2008.
- ⁱⁱ Martin A.B., Whittle L., Heffler S., Barron M.C., Sisko A., Washington B. 2007. Health Spending By State Of Residence, 1991-2004. *Health Affairs*, vol. 26, pp w651-w663.
- ⁱⁱⁱ More accurate reporting of historical data required revision to 2006 and 2007 data, including a better estimate of out-of-pocket and self-insured expenditures and changes to Medicaid data.
- ^{iv} 2010 National Health Expenditure Accounts. CMS. This figure represents the share of expenditures for health services and supplies and is the most comparable to Vermont's figure, since it does not include expenditures for health research and capital investments.
- ^v 2008 Vermont Health Care Expenditure Analysis and Three-Year Forecast, published by the Vermont Department of Banking, Insurance, Securities and Health Care Administration.
- ^{vi} Roberts M.J., Hsiao W., Berman P., Reich M.R. (2004). *Getting health reform right: a guide to improving performance and equity*. New York, USA: Oxford University Press.
- ^{vii} 2008 Vermont Health Care Expenditure Analysis and Three-Year Forecast, published by the Vermont Department of Banking, Insurance, Securities and Health Care Administration.
- ^{viii} General Accounting Office (1995). Employer-Based Health Plans: Issues, Trends, and Challenges Posed by ERISA. *GAO/HEHS-95-167*. Washington, DC: GAO.
- ^{ix} Polzer K., Butler P.A. 1997. Employee health plan protections under ERISA. *Health Affairs*, **16(5)**, 93-102.
- ^x The 2009 Vermont Household Health Expenditure Survey, published by the Vermont Department of Banking, Insurance, Securities and Health Care Administration
- ^{xi} The 2009 Vermont Household Health Expenditure Survey; data not shown, published by the Vermont Department of Banking, Insurance, Securities and Health Care Administration.
- ^{xii} Book, R. A. 2009. "Medicare Administrative Costs Are Higher, Not Lower, Than for Private Insurance." The Heritage Foundation.
- ^{xiii} The 2009 Vermont Household Health Expenditure Survey, published by the Vermont Department of Banking, Insurance, Securities and Health Care Administration.
- ^{xiv} 2008 Vermont Health Care Expenditure Analysis and Three-Year Forecast, published by the Vermont Department of Banking, Insurance, Securities and Health Care Administration.
- ^{xv} 2009 Health Plan Administrative Cost Report, published by the Vermont Department of Banking, Insurance, Securities and Health Care Administration.
- ^{xvi} B. B. Blanchfield, J. L. Heffernan, B. Osgood et al., "Saving Billions of Dollars—and Physicians' Time—by Streamlining Billing Practices," *Health Affairs* Web First, April 29, 2010.
- ^{xvii} Casalino, L., Nicholson, S. Gans, D. Hammons, T., Morra, D., Karrison, T., and W. Levinson. What does it cost physicians to interact with health plans? *Health Affairs*, vol 28, pp w533 – w543.
- ^{xviii} Woolhandler, S. Campbell, T., and D. Himmelstein. Cost of Health Care Administration in the US and Canada. *New England Journal of Medicine*, vol 349, pp 768 - 775
- ^{xix} MedPac June 2008 Report to Congress. Chapter 4: A path to bundled payment around hospitalization.
- ^{xx} Newhouse, J.P. 2002. *Pricing the Priceless: A cost conundrum*. MIT University Press.
- ^{xxi} Hospital pricing of Top 2008 Inpatient Admissions, published by the Vermont Department of Banking, Insurance, Securities and Health Care Administration.
- ^{xxii} 2009 Vermont Health Care Cost Shift Analysis, published by the Vermont Department of Banking, Insurance, Securities and Health Care Administration.
- ^{xxiii} Federal Bureau of Investigation, Financial Crimes Report to the Public, Fiscal Year 2007.
- ^{xxiv} Lu, J.-F. and W.C. Hsiao. 2003. Does Universal Health Insurance Make Health Care Unaffordable? Lessons from Taiwan. *Health Affairs*, vol. 22, pp 77-88.
- ^{xxv} Wilson, J. F. 2008. Vermont Health Care Reform Aims for More Coverage, Less Expense and Better Care. *Annals of Internal Medicine*, vol 148, pp 797 - 800.
- ^{xxvi} Vermont Primary Care: Summary Report 2006, published by the Vermont Area Health Education Centers.
- ^{xxvii} 2008 Physician Survey Statistical Report, August 2009, published by the Vermont Department of Health.
- ^{xxviii} 2008 Mapping and Network Analysis, published by the Office of Vermont Health Access (OVHA).
- ^{xxix} Blueprint for Health 2009 Annual Report, published by the Vermont Department of Health.
- ^{xxx} Hester, J., Lewis, J. and A. McKethan. 2010. The Vermont Accountable Care Organization Pilot: A community health system to control total medical costs and improve population health, The Commonwealth Fund..
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- ^{xxxii} Web brochure, Vermont Department of Banking, Insurance, Securities and Health Care Administration. <http://www.bishca.state.vt.us/sites/default/files/BISHCA-web-broch.pdf> (accessed June 6, 2010).
- ^{xxxiii} Newhouse, J.P. 1996. *Free for All? Lessons from the Rand Health Insurance Experiment*, Harvard University Press.
- ^{xxxiv} Chernew, M.E. and J.P. Newhouse. What Does the RAND Health Insurance Experiment Tell Us About the Impact of Patient Cost Sharing on Health Outcomes? *American Journal of Managed Care*, vol. 14, pp 412 – 414
- ^{xxxv} Jacobson, M. Earle, C. Price, M. and J.P. Newhouse. 2010. How Medicare’s Payment Cuts For Cancer Chemotherapy Drugs Changed Patters of Treatment. *Health Affairs*, published online June 17, 2010.
- ^{xxxvi} Blueprint for Health 2009 Annual Report, Vermont Department of Health.
- ^{xxxvii} Hester, J., Lewis, J., and Aaron McKethan. 2010. The Vermont Accountable Care Organization Pilot: A community health system to control total medical costs and improve population health, The Commonwealth Fund.
- ^{xxxviii} Leichter, H.M. (1993). “Health care reform in Vermont: A work in progress,” *Health Affairs*, Summer: 71-81.
- ^{xxxix} Brugha, R. and Z. Varvasovszky. 2000. “Stakeholder analysis: a review.” *Health Policy and Planning*, vol. 15, pp 239-246.
- ^{xl} Reich, M.R. 2004. *Political Mapping of Health Policy: A Guide to Managing the Political Dimension of Health Policy*. Boston, MA: Harvard School of Public Health.
- ^{xli} Reich M.R. and D.M. Cooper. *PolicyMaker: Computer-Assisted Political Analysis*. Software and Manual. Newton Centre, MA: PoliMap; 1996.
- ^{xlii} Glassman, A., Reich, M.R., Laserson, K., Rojas, F. (1999). “Political analysis of health reform in the Dominican Republic,” *Health Policy and Planning*, vol.14, pp 115-126.
- ^{xliiii} Reich, M.R. 1995. The politics of health reform in developing countries: three cases of pharmaceutical policy. *Health Policy*, vol 32, pp 47-77.