Toward An “Economics of Prevention”: Illustrations from Vermont’s Experience

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I. Purpose

It is by now a truism that inherent in the concept of prevention is the notion of
*investment*: by preventing (rather than remediating) problems, capital (human as well as
economic) is freed for productive, creative uses. This paper amplifies upon this theme.

More specifically, two purposes are addressed here. The primary aim is to make the case
that a concerted emphasis on prevention in Vermont in recent years has contributed to
better outcomes for its children. Better outcomes have, in turn, resulted in significant
“cost-offsets”—that is, reductions in public expenditures that otherwise would have been
incurred. The second purpose of this exposition is to organize some of the still-evolving
literature on the relationships between prevention activities and costs, in ways that are
useful to policy makers, at both state and local levels, as they wrestle with complex
decisions involving taxpayers’ dollars.

In arguing for a relationship between a “culture” of prevention and improved outcomes
(and, thereby, reduced costs), the authors are well aware of the difficulties in establishing
convincing cause-and-effect relations where such complex social issues as teen
pregnancy or child abuse are concerned. However, for better or worse, policy makers
rarely wait for incontrovertible evidence before setting a course. More frequently, public
debate is framed by “broad-brush” arguments that rely on a combination of evidence,
faith, and appeal to widely-shared values. While standards of evidence in this
environment are distinctly different from those in academe, nevertheless there are more,
and less, rigorous and convincing arguments to be made, even within this policy arena.
In this paper the authors hope to contribute to the public discourse in an area where,
admittedly, there is still much to learn.

II. The conceptual framework

Inherent in economic analyses of many types is the notion of “choice”—that present
decisions (including “default” decisions) about spending are associated with short- and
long-term consequences (costs and benefits being particular examples). In daily life, we
make numerous cost-benefit calculations (formal, informal, or intuitive). Whether we
call it risk analysis, calculated risk, or cost-benefit, we constantly gauge our environment
and our relationships, in terms of their relative value in our everyday lives. Should we
skip the next gas station on the turnpike, even though our tank is somewhat low? What is
the risk of doing so? What are the odds of running out of gas, and what are the potential
implications for our time-schedule? Or, to take another example: How hard will it be to
cut the grass next week, if I don’t do it today? Will the lawnmower stand up to the higher
grass, and will it rain in the meantime? Every day, we are constantly making such
judgments, large and small.

Virtually every business function is marbled with multiple, ongoing cost-benefit
judgments. Do we put cash in a CD for six or nine months, and how does our view of the
future of the market and interest rates affect that decision? Is a short-term or a longer-term benefit more important to the business at this particular time? People familiar with the business cycle know these kinds of judgments flow constantly through the days, weeks, months, and years.

Framing the issues in terms consistent with a cost-benefit approach has been slowly but surely developing in government, at federal, state, and local levels. The public health field, in particular, has applied “cost of disease” models to estimate the value—either in monetary terms, or in terms of “quality-adjusted life years”—of preventive health measures. As such models proliferate in a number of areas of government, they can enhance decision-making, by offering a rationale that is data-based and objective, as well as intuitively compelling.

Likewise, we have seen in recent years a growing interest in estimating the costs to society of a number of "social problems"—symptoms, essentially, of our failure as a society adequately to address certain human needs, or to respond to the underlying causes of significant challenges to public health and well-being. Low-weight births, teen pregnancy, child abuse, high school dropout, crime—these are examples of the kinds of enduring, systemic problems that have broad impacts (including economic impacts) on society, not to mention the individuals and families most directly affected. Separately, each of these symptoms takes a heavy toll on collective well-being; together, they divert huge amounts of resources (human as well as economic) that could otherwise enrich our lives.

Allied with this interest is the field of prevention research, and its applications in policy (both formal and informal). Although “prevention” is a term which is commonly applied loosely to a wide range of programs and policies, there is some consensus that it involves interventions that aim to reduce risk factors, and promote resiliency or protective factors. Further, prevention efforts typically intervene in the early stages of a developmental trajectory—with the aim of heading off otherwise-likely poor outcomes. At least some of the impetus to adopt prevention-oriented policies and programs draws on the belief than they are more “cost-effective” than the “remedial” or “social control” alternatives.

The field of "social cost analysis" is still poorly developed, and indeed it faces significant obstacles even at a conceptual level. Nevertheless, recent work has attempted to sketch, at least in broad terms, and with appropriate caveats regarding assumptions, imprecisions, and unknowns, the dimensions of the social costs associated with crime, low birthweight, teen pregnancy, high school dropout, and other social pathologies. Their intent is, at least in part, rhetorical—to illustrate or reinforce the significance, the social impact, of the issue at hand—to sound an alarm. Other recent work has applied a “human capital” perspective to social welfare expenditures, treating these in a “portfolio management” framework. A portfolio is a set of investments, considered together. These may include both short- and long-term investments, with varying degrees of financial risk associated with them, and may comprise both tangible assets (e.g., equity in property) and intangible assets (e.g., stocks and bonds).
Others have sought to quantify the favorable “return on investment” of various prevention strategies. For example, according to previously published national estimates:

<table>
<thead>
<tr>
<th>Every dollar spent on . . .</th>
<th>. . . avoids:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smoking cessation programs for pregnant women</td>
<td>$6.60 in neonatal intensive care costs, and costs associated with disability among low birthweight infants⁹</td>
</tr>
<tr>
<td>WIC</td>
<td>$3.50 in Medicaid and other hospital costs¹⁰</td>
</tr>
<tr>
<td>Childhood immunizations</td>
<td>$22 in medical costs¹¹</td>
</tr>
<tr>
<td>High quality preschool education</td>
<td>$8 in a variety of social costs¹²</td>
</tr>
<tr>
<td>Adolescent condom use</td>
<td>$3 in health care costs for pregnancy and STDs¹³</td>
</tr>
<tr>
<td>Comprehensive smoking prevention</td>
<td>$2-3 in health and social costs¹⁴</td>
</tr>
<tr>
<td>Alcohol and other drug treatment</td>
<td>$7 in social costs, including costs associated with crime¹⁵</td>
</tr>
<tr>
<td>Flu vaccine for the elderly</td>
<td>$29 in medical costs¹⁶</td>
</tr>
</tbody>
</table>

So far, there has been little or no attempt to look, across a range of domains, at the potential cumulative (and interconnected) benefits to be derived from improvements in multiple problem-areas. In a sense, this approach would begin to ask, What are the dividends of a “culture of prevention”? A "culture of prevention" would, ideally, be evidenced by a pattern of taking steps to prevent, or reduce, problems early in their genesis; it would supply individuals or families with the resources necessary to withstand threats to well-being, to contain and overcome minor insults before those became major setbacks.

Others have introduced a concept, borrowed from epidemiology, of a “tipping point.”¹⁷ Essentially, this refers to the idea that systemic change often does not result until the accumulated force (depth, reach) of interventions reaches a point sufficient to “tip the balance,” moving the system to a new equilibrium. In Vermont, the state has reached a point where one can identify a "critical mass" of change on several key indicators that are associated with significant costs. While direct evidence for this claim is lacking, taken together, these indicators reflect a synergy of impact related to prevention work that has occurred on a number of fronts. In other words, a reasonable case can be made that there is more than simply coincidence reflected here.

II. The prevention environment in Vermont

The state’s commitment to a prevention philosophy was embodied in legislation as early as 1983. The legislation directed a state primary prevention plan that would coordinate and consolidate the prevention efforts of a number of state agencies and departments.¹⁸ The Vermont Prevention Institute, established in 1989 and comprised of managers from a
number of state agencies, oversees the “Governor’s Prevention Conference,” an annual statewide gathering of practitioners and policymakers who use this opportunity to rededicate their energies and share promising practices. It also administers grants and technical assistance to communities, and assists with the primary prevention plan for the state. These early developments laid the groundwork for the “critical mass” reached in the early 1990s.

While it is difficult to be precise in dating the current prevention “culture,” the last 10-15 years in Vermont have been ones marked by significant new directions in public policy. There are many strands to these developments, but prominent among them are efforts that focus on the well-being of young children and families—and, thus, implicitly at least, reflect a prevention-orientation. In truth, these represent no single program, nor even in all cases a wholly-coordinated set of efforts, but rather reflect underlying commitments to the idea that families and children are a natural place to start to reshape the kinds of communities our state must nurture if we are to preserve our unique quality of life into the 21st century.

Three prominent expressions of this orientation are our “Success By Six” initiative; the still-evolving collaborations among the Agency of Human Services, the Department of Education, and Vermont’s health care systems; and our twelve Regional Partnerships.

“Success By Six,” formally announced by the Governor in 1993, is the name given to a number of community-based projects that seek to better coordinate services and supports, formal as well as informal, for young children and their families. While specific activities may include developmental screenings, playgroups, parenting classes, family resource centers, and recreational activities, the “core” of each region’s “Success By Six” efforts is personalized outreach to families with a new baby. “Welcome Baby” visitors (who range from public health nurses, to community volunteers) extend the offer of a home visit to every family living in their community who has had a recent birth. In the context of the home visit the visitor typically explains the range of resources available in the community for parents and young children, is available to answer specific questions and to “trouble-shoot” problems the family may have encountered, and (perhaps most importantly) establishes a personal connection with the family and invites ongoing communication.

The human services-education-health care collaborations (which operate at multiple levels of scale) are centered around a common commitment to key outcomes of well-being for the children and families that are the “customers” of their respective “systems”—systems which, to a great extent, overlap. At multiple levels (state, regional, community) partnerships are affirming a common interest in seeing all children “ready for school,” in having all children “succeed in school,” and in ensuring that “youth successfully transition to adulthood,” for example. And they are together fashioning appropriate strategies to realize these outcomes. Such strategies include a statewide task force that has adopted a campaign to reduce infant mortality; school-based health centers established in three sites, and in planning stages at several others; a “Covering Kids” initiative, with the goal of enrolling every eligible child in a health insurance plan; and
partnerships with schools to deliver essential health screening, and mental health services, to eligible students.

Another important expression of the Vermont commitment to prevention is the major expansion in recent years of health care insurance for children. Currently, estimates are that over 95 percent of children in our state are covered by health insurance, and the state is poised to raise that to nearly-universal coverage, through expanded child eligibility for Medicaid, and through improved outreach and simplified enrollment procedures. Our Regional Partnerships will provide the energy for this effort.

Twelve Regional Partnerships coordinate the outcomes-focus statewide; other regional and local partnerships focus on specific outcome-areas, and/or on smaller geographic areas. The Regional Partnerships, still evolving, grew out of both state agency encouragement and local initiative. In many cases, they built upon earlier coalitions and collaborations—for instance, Success By Six, our network of Parent-Child Centers, or interagency teams assembled to oversee child protection and family preservation. The Partnerships have been described as

Collaborative groups formed to improve the well-being of children, families, and individuals, and to make their communities healthier places to live. The function of the Regional Partnerships is that of planning and decision making for the development and implementation of local strategies to achieve . . . adopted outcomes. Regional Partnerships are intermediaries, capable of bridging the mission and resources of current governmental structures at both state and local levels with the commitment, assets, and energy of all citizens. Participants on the Regional Partnerships include consumers, citizens, family members, non-profit and state providers of health, education, and human services, economic development representatives, and business leaders, among others.19

A parallel development has been the institution of “Patch” sites in several Vermont communities. “Patch” is a social services delivery model, originating in Britain, that is characterized by neighborhood-friendly offices where many services are co-located. Participating agencies work as a team to deliver flexible, personalized, and respectful services to residents within a small geographic area (usually fewer than 10,000 people).20

Yet another innovative approach has taken hold in a field not normally considered in discussions of prevention: corrections. Vermont has adopted a “restorative justice” model, including thirty “reparative boards,” a program recognized in 1998 for the Ford Foundation’s “Innovations in American Government” award. Restorative justice shifts the focus, historically on the offender and punishment, to the victim and restoration, which includes the community. Certain non-violent offenders are invited to participate in restoring value to their communities, by accepting responsibilities for their actions, making amends to their victims, and contributing positively to their communities. Reparative boards, composed of citizen volunteers, facilitate a meeting between offender
and victim, and assign and monitor the restitution. Vermont communities have acclaimed these programs, which hold out some hope of regaining the original promise of “corrections”—rehabilitation.

Throughout the recent Vermont policy environment, including its emphasis on prevention, has been an increasing reliance on data, particularly on indicators of well-being, but also on costs, to make decisions.

The calculus of spending and outcomes has proved an effective communication tool with state managers, legislators, and the public. For a number of years, the Agency of Human Services has published an annual report, *The Social Well-Being of Vermonters*, which provides extensive data on both outcomes and spending, including Vermont’s rankings relative to other states. One feature of that report is a chart (see Figure 1) that plots Vermont’s spending, on a per-capita basis, in a number of social service and education categories, against a consensus rating of those programs in terms of their prevention emphasis.

Vermont’s per-capita ranking among the states (according to most-recent available data) in a number of spending categories is plotted on the vertical axis of the figure, where “1” represents the highest-spending state, and “50” the lowest. The rankings are taken from a variety of published sources, including the Census Bureau’s annual tabulations of spending by state governments. These spending categories were ranked by members of the Vermont Prevention Institute, with “1” representing spending with the greatest “prevention” emphasis, and “10” representing spending emphasizing “social control/protection”—the opposite pole from “prevention.” Median ratings are plotted along the horizontal axis of the figure. For example, spending on child immunizations received a median “prevention” ranking of “1,” whereas, corrections spending was ranked as “10.” Toward the middle of the scale were ranked spending in categories such as child support, housing, and community mental health.

Figure 1: Vermont’s relative spending on prevention: 1996-97
Ideally, if spending were to reflect priorities favoring “prevention investments,” those categories on which Vermont is a relatively high spender would be those rated as having the greatest prevention value, and (conversely) on those programs having the least prevention value Vermont would be a relatively low spender. In fact, though there is not perfect concordance, the figure shows clearly an association consistent with those priorities. Vermont spends relatively heavily in WIC, child immunizations, child care, and primary and secondary education—investments generally seen to have a “prevention” focus. Vermont spends relatively less on hospital care, police protection, and corrections—generally seen as more remedial in focus.

This depiction has helped to communicate the relationship between spending priorities and prevention activities, and helped to justify our continued investment in the programs believed to be resulting in improved outcomes. And, over time, this sort of exercise can be used to gain some sense of whether or not social spending is truly continuing to reflect a “prevention” commitment.

III. The Vermont evidence

Vermont is beginning to see that dedication to a “front-end loaded” prevention focus bears fruit. These results can be depicted only in broad strokes, but, in composite, they are striking. In other areas, while accrued value cannot be quantified, opportunities for further dividends can be identified.
The methodology. Relying on previously published estimates (which are in most cases national estimates, not specific to conditions in our state)\textsuperscript{22}, calculated here are the accrued "avoided costs" associated with reduced demands on public funds or, in some cases, with all socially-borne costs, private as well as public. In other cases the value of new capital (monetary or "human") that an emphasis on prevention has helped create is estimated. Another term for “avoided costs” as used here is cost-offsets. It should be clear that this analysis describes reductions on only one side of the ledger—i.e., it does not including the costs of prevention programs themselves, as would occur in a cost-benefit analysis. A few other methodological decisions should be clarified.

All estimates of cost-avoidance have been converted to 1998 dollars, based on the year for which the original savings estimate was calculated, and the Consumer Price Index of inflation.\textsuperscript{23} All estimates are single-year savings, sometimes accumulated over several years; they are not lifetime savings over the lives of individuals. Because this analysis concerns already-achieved reductions, no “discounting” (a technique reflecting the assumption that present benefits are valued more than future ones) was required. For the most part, data are shown for the years leading up to the early 1990s (which can be roughly identified as marking the beginning of the current “prevention culture”) and including the most-recent years available as of this writing. Although the intent here is primarily suggestive—even provocative—these estimates are, if anything, conservative. For instance, they do not include intangible costs, such as those associated with pain and suffering, and quality of life.

Some caveats. An analysis of this sort invites a number of possible criticisms. Perhaps the most important of these is that the message conveyed is that prevention is a "bargain." In fact, all we know about effective prevention suggests that it is not cheap. Whether conceived of as providing high-intensity supports and services to specific high-risk groups, or providing lower-intensity supports more broadly, the reality is that creating and sustaining a high-quality (flexible, comprehensive, accessible) system of services and supports is expensive. We sell the idea of prevention short if we imagine it as a way to slim budgets, to get by with less. Let us be clear on this point: prevention may be a "bargain" only in relation to the more-costly alternatives we face if we don't invest preventively. The world of human services is unlikely in the foreseeable future to garner more resources to feed increased demand. If prevention efforts can reduce demand for high-cost, back-end services, then an emphasis on prevention permits more discretion in the use of existing resources. Lowered demand in turn creates opportunities for continuing prevention investments, further lessening long-term demand. (This assumes that “saved” dollars will be re-invested in prevention efforts; of course, other choices are possible.)

A related concern is that these arguments foster the view that prevention is the right thing to do only because it makes economic sense. The real force of the prevention argument has always been a moral one--to prevent (or reduce) human suffering and to provide for the fullest possible expression of our human potential. Any economic argument is, at best, simply a persuasive tool to remind ourselves of our responsibilities to all in the
A few specific areas of cost-offset are examined next.

**Welfare reform.** The common denominator of welfare reform, despite substantial variance among the states in the specific policies they have adopted, is moving people from dependence on public assistance toward economic self-sufficiency. The associated benefits are not only reduced costs for such assistance, but, ultimately, returns to society from families who are contributing value—in addition to the value to the economy of wages and taxes, an increased sense of connection with their communities, and a greater sense of pride and hope that affects not only working adults, but also their children.

In Vermont, policy changes that have enhanced the value of family economic independence over public assistance include a minimum wage higher than the federal standard, as well as a number of provisions granted as waivers from federal welfare regulations, such as more generous income-disregards, enhanced welfare-to-work training (including support for continued education into college), and more-flexible allowances for part-time work for parents with young children, together with expanded support for child care.

Since 1994, when Vermont’s welfare reform effort began, the proportion of the caseload that is working and earning, and average monthly earnings, are both up by 43 percent. Spending for Aid to Needy Families with Children has declined by a cumulative total of $55.9 million (all figures in 1998 dollars). If spending had stayed constant at 1994 levels, it would have totaled more than $331 million; thus the accumulated spending reduction represents a 17-percent reduction in demand.

The nation’s improved economy gets much of the credit for this phenomenon. However, the intent of welfare reform, across almost all of the states, is consistent with the prevention logic.
Of course, it is possible that gains on any one measure of well-being could be achieved at the expense of other, equally critical components of social health. The prime example cited in the current policy context is welfare reform: Are reduced caseloads being achieved at the cost of jeopardizing families’ economic security, or children’s safety? While few believe that welfare reform can at this stage be declared an unqualified success, in Vermont there have not been coincident increases in child abuse and neglect or other domestic violence, or other potentially “leading indicators” of social distress, nor have there been significant numbers of eligible families failing to enroll in benefit programs such as food stamps and Medicaid. On the contrary, coincident with welfare reform the state has witnessed a number of improving outcomes.

Child support. As more families leave welfare and begin earning, child support plays an increasingly important role in family self-sufficiency. In the wake of unprecedented numbers of single-parent families, both nationally and in Vermont, there has been increased attention recently to the importance of establishing legal parentage and enforcing the basic responsibilities that parenthood entails. This is both an economic issue and an issue for positive youth development. Increased collections represent more than simply a transfer of private funds to public coffers. For some families, the receipt of child support payments makes it possible to forego some forms of public assistance, to become economically self-sufficient. In addition, because absent parents who pay child support are more likely than those who do not to be involved with their children, increased child support collections are also a potential proxy for improved family functioning.

In Vermont, between 1991 and 1998 cumulative increases in court-ordered child support collections from a 1990 baseline have totaled $97.2 million—gains of more than 20 percent, per year. For some families this additional income will enable them to leave
welfare; for others, it will help keep them off welfare.

Child Support Collections

Increases From 1990 Level

<table>
<thead>
<tr>
<th>Year</th>
<th>$ in millions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1991</td>
<td>0.0</td>
</tr>
<tr>
<td>1992</td>
<td>5.0</td>
</tr>
<tr>
<td>1993</td>
<td>10.0</td>
</tr>
<tr>
<td>1994</td>
<td>15.0</td>
</tr>
<tr>
<td>1995</td>
<td>20.0</td>
</tr>
<tr>
<td>1996</td>
<td>25.0</td>
</tr>
<tr>
<td>1997</td>
<td>30.0</td>
</tr>
<tr>
<td>1998</td>
<td>35.0</td>
</tr>
</tbody>
</table>

Cumulative total:
$97.2 million

Child support is an income-transfer of considerable proportions. For example, the Earned Income Tax Credit (EITC), the largest cash assistance program for families and children, was recently noted as “most effective safety net program for children in working poor families.” In Vermont, approximately 36,000 families and individuals received EITC for tax year 1996; a family of four, with two children, with one minimum-wage, full-time worker, qualifies for a federal EITC of $3,756, and a Vermont EITC of $939. Thus, the state cost of EITC can be roughly estimated at nearly $34 million ($939 x 36,000). In comparison, more than $40 million in child support is collected annually. Currently, much of this goes to offset the cost of welfare payments, indirectly contributing to lifting children from poverty; potentially (through an increase in the pass-through to families on welfare), it could do even more.

Together, these two strategies (moving families from welfare dependence to work, and increasing child support collections) represent a direct investment in human capital.

While welfare reform, child support, and the EITC can be linked directly to distinct policy directions, other changes, equally dramatic, are less easily ascribed to specific programs; instead, they suggest impacts from the kinds of inter-systemic efforts earlier described (Success by Six, increased access to health care, and regional and community partnerships).

Young teen pregnancy. Since 1990 (1991 through 1997) there have been 429 fewer teen pregnancies (estimated pregnancies to girls ages 15-17) statewide than would have been the case if teen pregnancies had stayed at the 1990-level. (Note: This is not simply an artifact of changes in the base population, because there was an 18-percent increase here over this period.)
Based on previously published national estimates of the annual public costs (including incarceration, welfare and food stamps, foster care, medical care, and loss of tax revenue) associated with births to this age-group, and according to data that show that about half of these pregnancies result in a birth, the annual cost per pregnancy is estimated here at approximately $20,500.28 (Note: These are incremental costs, that is, contrasted with estimates of annual costs associated with such births if they had been delayed until the mother was 20 or 21.)

If the number of young teen pregnancies in Vermont had stayed constant at 1990 levels, these annual costs would have accrued to more than $57 million. Over the seven-year period accumulated avoided costs have totaled $8.8 million (429 x $20,500)—or approximately 15 percent of otherwise-expected costs.

**Child abuse and neglect.** Since 1990, there have been eight consecutive years of
declines in the number of Vermont children found to be substantiated victims of abuse and neglect. The cumulative decrease from the 1990 level (1991 through 1998) represents 2,553 fewer abused children. 29 (Again, such declines cannot be attributed to decreased child population.)

Based on published estimates of the annual public costs (medical care, mental health care, future earnings, and public programs) associated with child abuse and neglect in Vermont, the authors estimate costs per victim at $33,200.30 The cumulative annual avoided costs associated with 2,553 fewer victims is $84.7 million. If the number of child abuse victims had stayed constant at 1990 levels, these annual costs would have accrued to more than $348 million; thus the accumulated avoided costs represent a 24-percent reduction in otherwise-expected costs.
Taken together, these recent-year “prevention dividends” total approximately $247 million (see Table 1). Even if the actual total were only half as great (acknowledging the imprecision of these estimates), the economic impact is still considerable. Vermont is the next-to-smallest state, in terms of population (at 591,000, only Wyoming has fewer people). Suppose Vermont were a state with a median-level population (a Colorado, Kentucky or South Carolina, each with about 4 million people). Assuming that similar benefits could be achieved, proportionate to population, such a state would realize an amount 6.6 times Vermont’s—or, $1.6 billion ($247 million x 6.6). In a larger state—say, Florida (with14.9 million people)—the factor would be greater than 25, and the avoided demand equivalent to costs of more than $6 billion. This is more than window-dressing.

Table 1: Cumulative “prevention dividends,” since 1990, for selected areas in Vermont

<table>
<thead>
<tr>
<th>Indicator</th>
<th>“Dividend”</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decreased welfare spending (“Aid to Needy Families with Children”)</td>
<td>$56*</td>
</tr>
<tr>
<td>Increased child support payments</td>
<td>$97</td>
</tr>
<tr>
<td>Fewer young teen pregnancies</td>
<td>$9</td>
</tr>
<tr>
<td>Fewer victims of child abuse &amp; neglect</td>
<td>$85</td>
</tr>
<tr>
<td>TOTAL</td>
<td>$247</td>
</tr>
</tbody>
</table>

*1998$ in millions
*Since 1994

The foregoing examples illustrate areas where a “cumulative avoided cost” calculation seems most justified. There are other areas where avoided costs have been achieved, but where the demand-dynamics are such that the state cannot count on continued savings, even with continued investment in more cost-effective alternatives.

**Corrections.** The corrections system is not typically considered as an area in which to apply “prevention” perspectives, but in fact there is great potential there for returning value to communities, rather than simply removing human capital. Although Vermont is fortunate in having very low rates of serious crime, relative to national averages, it is not immune from serious pressures on its corrections system. As in the nation generally,
These pressures are a result of tougher laws and sentencing practices, particularly for drug- and alcohol-related offenses, and for domestic violence. Increasingly, however, Vermont is reserving traditional incarceration for those convicted of violent felonies. For a number of others with relatively minor offenses, Vermont is using a range of “intermediate” sanctions, including in some cases “Reparative Probation” boards, composed of lay community members, who meet with offender and victim to mend the injury inflicted on both the victim and the community.

The annual per-offender costs of these non-institutional sanctions are estimated at around $4,000, in contrast to per-inmate costs of around $27,000 for traditional incarceration. Because the steady stream of new entrants (both violent and non-violent felons) to the corrections system is unrelenting, it is more difficult to make the case for any net cost-avoidance here. However, it is illustrative to consider that, by our estimates, since 1995 Vermont has been able to divert 250 offenders from traditional incarceration—with estimated avoided costs totaling $5.8 million (250 x $23,000—the cost-difference associated with non-institutional sanctions).

These alternative programs are still too new to judge definitively whether or not they unduly jeopardize public safety; however, public support for pursuing approaches outside the prison “box” is strong.

**Long-term care.** Long-term care may seem another unlikely candidate for a “prevention” perspective. However, this is an emerging area where all states must look forward to greatly increasing costs, as the huge baby-boom cohort ages, and people in general live longer. Institutional care (such as in a nursing home) is particularly expensive, but is rarely the setting people favor for themselves or for family members, if given a choice. Instead, people overwhelmingly prefer to live in home- or community-based care, where greater independence and familiar social connections are more likely, and costs are generally lower (approximately $10,000 less per bed, per year, than nursing home care).

Through a federal Medicaid waiver, Vermont, between 1991 and 1995, shifted 400 nursing home beds to home- and community-based care, avoiding more than $15 million of these public costs that otherwise would have gone into new nursing home beds. As of 1998, nursing home occupancy has declined to its lowest level ever; the authors estimate that, by 1999, an additional $7.5 million will have been redirected to community-based alternatives.\(^\text{31}\) (As of this writing, federal Medicare policy has put these gains in some jeopardy, as home health services, which are the foundation for home-based care for the elderly, have come under excruciating financial pressures.)

There are many “unknowns” associated with the unprecedented numbers of our citizens who are living longer lives, sometimes in spite of debilitating health conditions. Although most elders prefer home- and community-based care to institutional alternatives, one cannot fairly compare health outcomes in the two types of settings, because institutional settings will continue to be preferred (appropriately, in many cases) for people with health problems requiring specialized care. Another very real limit on
de-institutionalization efforts is posed by the capacity of communities to support caregivers (either formal or informal) in these alternative settings. This is both an economic issue of salaries and reimbursement rates, and a larger social issue reflected in the loss of traditional informal caregivers (primarily women) to the paid workforce.

The dividends offered by de-institutionalization (on either the corrections or the long-term care stage) are limited, because the appropriate diversion from institutional settings for some “clients” is offset not only by other “clients” who require more intensive (and more costly care), but because in both cases (corrections, and long-term care) demographic trends portend steady increases in the numbers of people entering these systems.

These additional savings, in corrections and long-term care, are shown in Table 2. For reasons just noted, they are portrayed, conservatively, as “one-time” cost-offsets. As noted previously, due to inexorable demands on both systems, one can only expect that these costs would rise more steeply in the absence of “upstream,” preventive efforts.

Table 2: One-time “prevention dividends” for selected areas in Vermont

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Cumulative “avoided costs” (1998$, in millions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corrections (1995-98)</td>
<td>$6</td>
</tr>
<tr>
<td>Long-term care (1991-99)</td>
<td>$22</td>
</tr>
<tr>
<td>TOTAL</td>
<td>$28</td>
</tr>
</tbody>
</table>

A third category of cost-estimates includes some areas where existing data are inadequate to calculate benefit on an annual basis. For example, between 1994 and 1998 Vermont saw a 43-percent decrease in the proportion of tested children under 6 years of age showing elevated blood lead levels, while increasing its screening outreach. It has been estimated that for every additional unit of lead detected in a child’s blood, an average of $1,147 in lost lifetime earnings is averted by appropriate follow-up treatment.  

Finally, there are areas where comprehensive estimates of avoided-costs potential have yet to be calculated, but where the impacts are clearly great. Consider, for example, the economic benefits associated with having fathers fully contributing (in unpaid as well as paid labor) to their families, in contrast with the economic straits typically associated with families headed by single mothers. Or, consider the value of additional years of education. For example, average annual earnings in 1997 for those 18 and older without a high school diploma was $14,131; for those with a high school diploma only, $21,680; and for those with a Bachelor’s degree, $40,695. Accumulated over time these differences have huge impacts on lives and regional economies. Of course, the tangible value of education accrues not only to individuals, but to society as well, in the form of increased tax receipts.
IV. Looking forward: what can we aspire to?

The accumulation of evidence presented here begins to suggest the economic dimensions of prevention. Have we reached the point of “diminishing returns,” that point at which further reductions in “bad outcomes” (or further promotion of “good outcomes”) become increasingly difficult? Certainly, most observers believe there will always be need for “deep-end” services for families and individuals, even if the primary emphasis is on prevention. However, many would believe there remain opportunities to expand further the gains already described, as well as those not yet considered.

Annual child support collections in Vermont now surpass our annual welfare costs. Can this become a national trend? What if, as a nation, we were to increase the amount of child support (currently collected in only 24 percent of cases) to the point where (together with provision of supports for education, job training and placement, child care, and transportation) we could reduce our national welfare expenditures by half?

While Vermont leads the nation in having the lowest rate of births to teens (about 27 per thousand population), the U.S. chronically has the highest rate of teen births among its industrialized peers. By way of comparison, Switzerland’s teen birth rate is around 5 per thousand. Selective, intensive home-visiting for high-risk families, access to comprehensive health care, school health curricula emphasizing life-skills and wise decision-making, and solid prospects for success in adulthood will be some of the key components in our achieving this sort of progress.

The toll on our society taken by the failure of schools to meet the needs of all children is enormous. The lifetime costs to our society of each high school dropout, in terms of lost earnings and foregone taxes alone, have been conservatively estimated at $300,000.34 Our nation’s record in reducing high school dropout is not impressive. All children must be ready for school, and schools must be ready for them. Even for those children with serious developmental disabilities (rough estimates are around 5 percent), we must invest in helping youth effectively transition into adulthood, allowing them to be contributors to their communities.

The authors believe no other state has shown the dramatic declines in child abuse and neglect seen in Vermont in recent years; however, every state can improve its record here. There is further heartening news in the fact that in Vermont the steepest declines have been seen among the youngest children, and in the area of sexual abuse. Vermont’s goal is to eliminate sexual abuse of children in our state within the next ten years; with the appropriate commitment, this is an achievable national goal, too. Because childhood sexual abuse is linked to teen pregnancy, mental illness, substance abuse, and crime, the costs (economic as well as human) at stake here are considerable.

Vermont’s incarceration rate is among the lowest in the nation;35 however, it is still on an unsustainable path, and the state is pushing the limits even of our less-intensive sanctions. As a nation, we have reached a crisis stage in our response to criminality; clearly, in spite
of its intuitive appeal to some, the “lock ‘em up and throw away the key” approach is, quite literally, bankrupt. Instead, we can reserve traditional incarceration for those convicted of violent felonies. For the majority of offenders who commit relatively minor crimes, “intermediate” sanctions, including in some cases, the use of “Reparative Probation” boards, offer much greater promise to mend the injury inflicted on both the victim and the community. Already as a nation we have reached the point where we spend more on keeping people in prison than we spend on education. Instead, we must invest more in primary prevention activities—including better education—in addition to expanding “restorative community justice” initiatives. A worthy goal would be to reduce demand on our corrections system by 25 percent.

This begins to lay out a mid-term agenda for prevention investments. Of course, as an approach to realizing the optimal potential of people and communities, prevention is an open-ended opportunity to expand the value of our social capital into the indefinite future.

As government continues to develop its understanding of prevention work in cost-benefit terms (both short- and mid-term), we can better describe the impact these investments have on the lives of the people and communities we serve. The outcomes-and-indicators framework Vermont (along with many other states) now uses as an organizing strategy, readily lends itself to these models (cost-benefit, cost-avoidance, demand-avoidance), because it is data-driven. Being able to develop a narrative that links improving outcomes, as measured by the indicators, to favorable cost-benefit calculations, and that communicates readily to the public and to policy-makers, is key to sustaining this work.

Over the last ten years, we have seen much progress in this way of thinking. This has resulted in a new set of opportunities for better understanding the impacts of investments—both human and monetary—on behalf of our citizens. Such thinking serves as an important bridge to the business world—critical partners in any effort to improve community well-being. It also links back to the implicit cost-benefit calculations each of us makes in our daily lives, and thus helps to bring the business of government down to earth, encouraging broad-based engagement on behalf of the well-being of our people.


Centers for Disease Control and Prevention. Cigarette smoking before and after an excise tax increase and an antismoking campaign--Massachusetts, 1990-1996. *MMWR, 45*, no. 44, November 8, 1996. Based on reduced per capita sales of cigarettes in Massachusetts after institution of the Massachusetts Tobacco Control Program (MTCP), compared with 4 years earlier. Assumes costs for medical care and lost productivity of $2.59 per pack (Congressional Office of Technology Assessment, 1993). Costs for MTCP, 1993-96, were $116M. Population estimates from U.S. Census Bureau. Direct and indirect costs related to smoking have elsewhere been estimated at more than $4 per pack (Centers for Disease Control and Prevention. Medical-care expenditures attributable to cigarette smoking--United States, 1993. *MMWR, 43*, no. 26, July 8, 1994.)


Credit for the idea of this analysis should be given to Bill Apao, formerly Senior Policy Analyst at the Vermont Agency of Human Services.

Clearly, this is a major weakness which reflects the infancy of this type of inquiry.

Alternatives to the Consumer Price Index (CPI) exist (e.g., the state and local government purchases adjustor); however, the CPI is both the best-known and the one most generally used in these sorts of analyses.

We focus on work and earnings, rather than on caseload reductions. Vermont’s policy on welfare reform is characterized by a variety of supports to families as they transition from welfare to work, rather than by simply reducing caseloads.


For the sake of simplicity, we assume the normative family of four with two children, and a single full-time wage-earner.

The Robin Hood Foundation. Op. Cit. Annual costs to U.S. taxpayers are estimated at $6.9 billion (1996$) (includes incremental costs of incarceration, welfare and food stamps, foster care, medical care, and loss of tax revenue). With estimates that 175,000 15-17-yr.-old girls give birth annually in the US, that is $39,429 per birth. We estimate that about half of pregnancies in this age group result in a birth; thus, the annual cost per teen pregnancy is approximately $19,700, or $20,500 in 1998 dollars.

Child abuse and neglect figures refer to victims of substantiated maltreatment. Some children may counted more than once, if they were victimized in multiple years.

Children's Safety Network Economics and Insurance Resource Center. (1994). Landover, MD: National Public Services Research Institute. Costs per case from Miller, T.R., et al. (1994), op. Cit. Estimated annual cost of child abuse and neglect in Vermont (including medical care, mental health care, future earnings, and public programs is $25,562 (1993$, in thousands). However, Miller et al. use a figure of $4,883 (thousands) for "public programs"), or $2,929 per reported victim in 1993 (N=1667); our own Department of Social and Rehabilitation Services estimates are that residential costs alone average $17,000 per year. If we use this latter figure for the estimate of "public programs," then the total annual cost is $49,018 (1993$, in thousands), or $29,405 per victim ($33,169 in 1998$).

<table>
<thead>
<tr>
<th>Annual costs of child abuse &amp; neglect in Vermont ('93$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medical care: $1,545K (estimate from Miller, et al.)</td>
</tr>
<tr>
<td>Mental health care: $13,437K (estimate from Miller, et al.)</td>
</tr>
<tr>
<td>Future earnings $5,697K (estimate from Miller, et al.)</td>
</tr>
<tr>
<td>Public programs $28,339K (estimate from VT Dept. of SRS: 1667*$17,000 per case)</td>
</tr>
</tbody>
</table>

TOTAL $49,018K, or per victim: $49,018K/1667=$29,405.

Some—though not all—of the $15 million was available to support home- and community-based alternatives.

