

Translating Research

The Costs and Effects of Addressing the Needs of Vulnerable Populations: Results of 10 Years of Research

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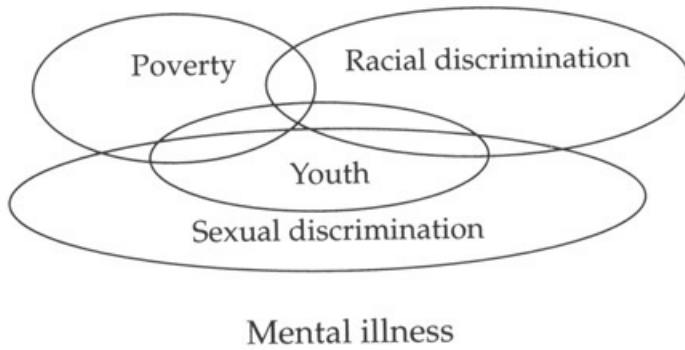
Concepts of Vulnerability

Vulnerability in an individual implies "inequality" in the person's biological characteristics (age, gender, genetic endowment), personal resources (cognitive, emotional, intellectual), and/or environmental supports (social, material, cultural). While biological characteristics cannot be modified, personal resources and environmental supports can, and to considerable economic effect (Browne, Roberts, et al., 1999).

Within an individual, aspects of vulnerability intersect, as shown in Figure 1, and can be synergistic and cumulative, such as "young gay Asian man with HIV/AIDS who is on social assistance."

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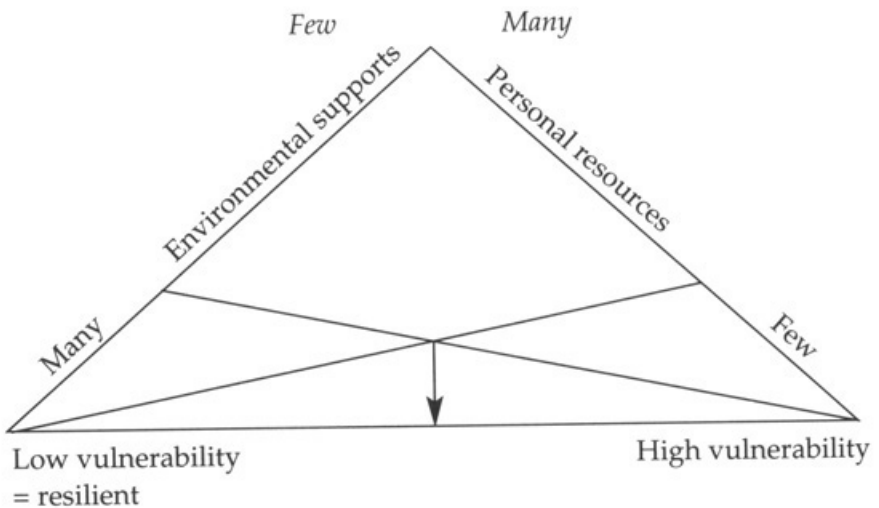
Figure 1 *Intersection of Spaces of Vulnerability*



Source: Delore & Hubert, 2000

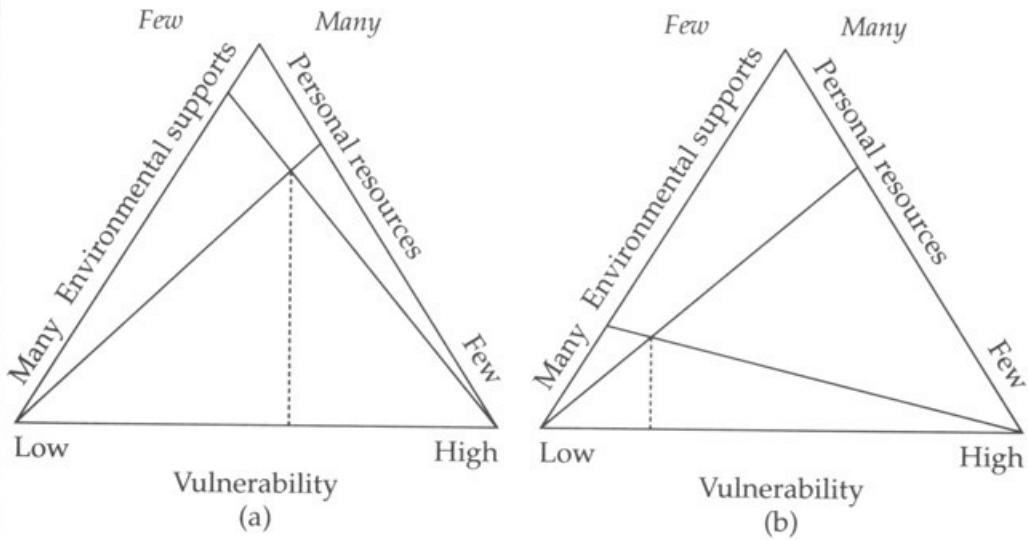
In a vulnerability index (Rogers, 1997), vulnerability is the net result of an interaction between personal resources and environmental supports, both of which, along with genetic endowment, are determinants of health and therefore of expenditures on health services. Figures 2 and 3 show that even if personal resources hold constant, variations in the individual's environmental supports can greatly alter their degree of vulnerability, and thus also their use of services. Furthermore, insured medical services may not meet all of the sources of vulnerability.

Figure 2 *Concept of Vulnerability*



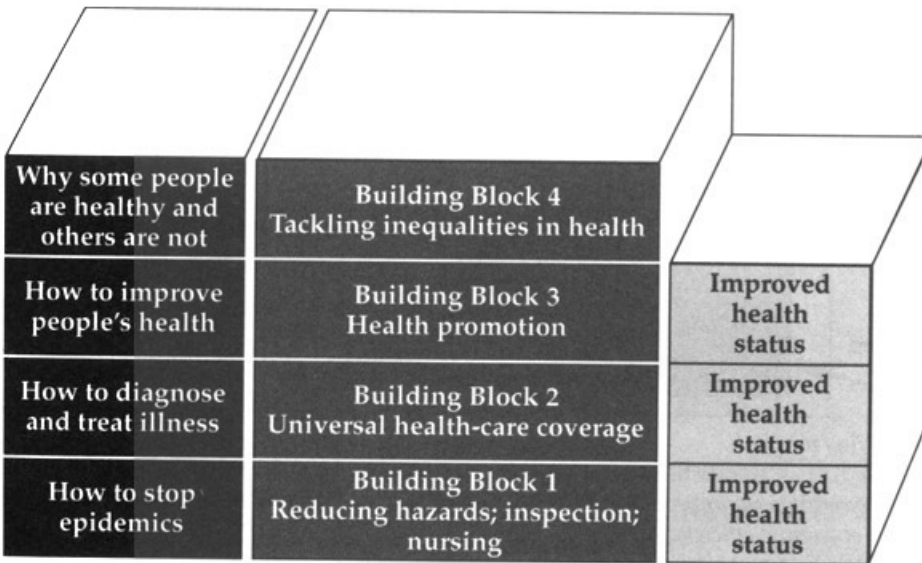
Source: Rogers, 1997

Figure 3 *Degrees of Vulnerability*



The work of the System-Linked Research Unit on Health and Social Service Utilization at McMaster University in Hamilton, Ontario, addresses such health inequalities and documents the reasons why some people with a particular disease or condition are healthier and less costly to the system than others (see Glouberman's [2001] fourth building block of health policy in Figure 4).

Figure 4 *Building Blocks of Health Policy*

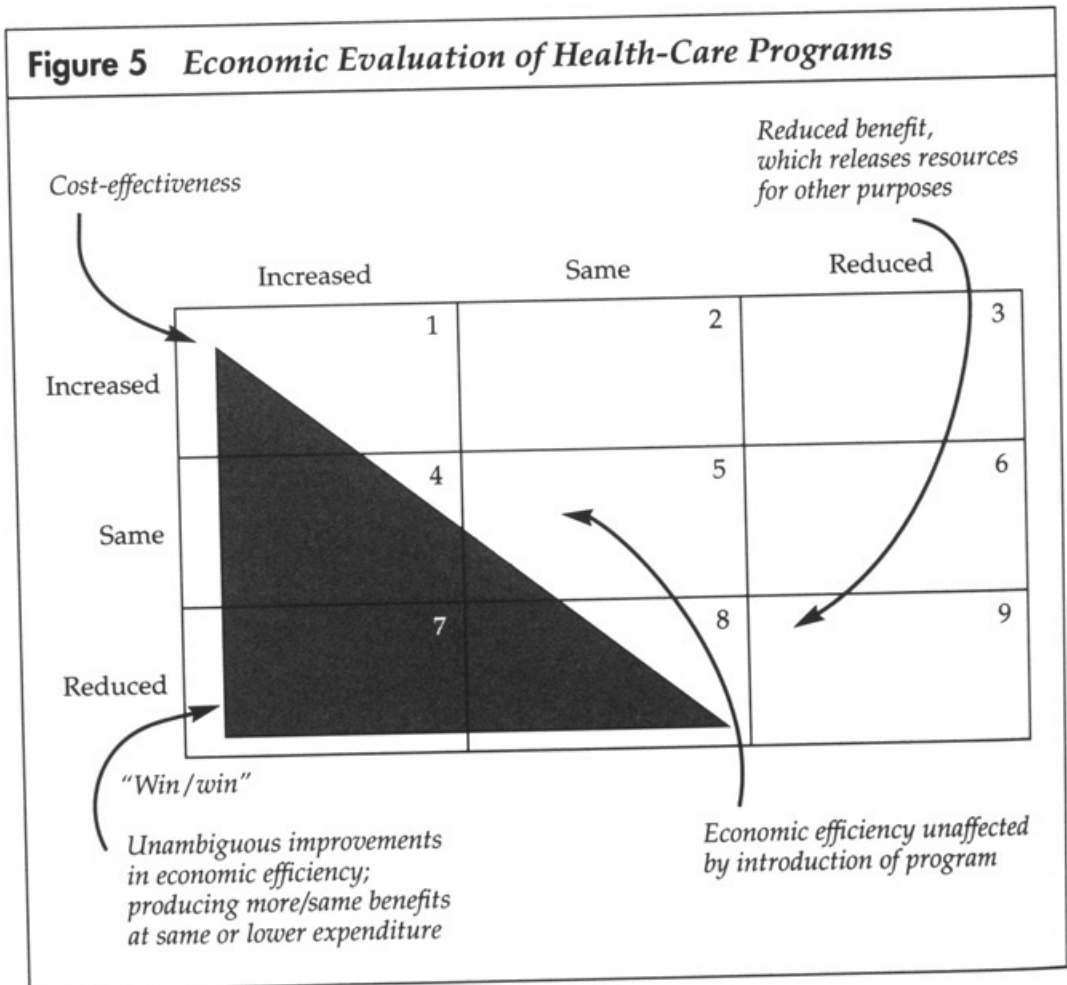


Source: Glouberman, 2001

We will attempt in this article to briefly summarize 10 years of research on the results and costs of efforts to reduce inequalities in a variety of vulnerable populations. We argue that, in a system of national health insurance, measures to reduce inequalities will pay for themselves within a year, and that health-care costs can be reduced by simply helping people to get the services they require. The most expensive services we now provide are those that are *not* tailored to people's needs (vulnerabilities).

Evaluation of Costs and Effects

Although the literature contains many evaluations of programs seeking to achieve improved outcomes for vulnerable populations, few of these outcomes studies include measures of costs. The work of the System-Linked Research Unit and its community partners — service providers for the regions of Halton and Hamilton-Wentworth — can make a significant contribution to our understanding of this issue.



As depicted in Figure 5, the economic evaluation of health-care programs yields nine possible outcomes (the more favourable ones are highlighted by shading) (Birch & Gafni, 1996). In outcome 1, increased health benefits are achieved through increased expenditures on resources. Cost-effectiveness results when increased benefits are achieved through increased expenditures, typically among marginalized populations with low access to services. The outcome is also favourable when increased benefits are achieved through the use of one approach over another at equivalent cost. Outcome 7 represents a "win/win" situation, or unambiguous improvements in economic efficiency, when more benefits are achieved at lower cost, especially in populations who consume many uncoordinated services. Outcome 8 represents a situation of alternative health programs achieving the same effect. However, some approaches are associated with lower expenditures from a societal perspective. Often, studies that find no difference in the effects of two approaches miss the real effect: reduced use of services with one of the approaches. Outcomes 7 and 8 are superior to the more frequently encountered outcome 9, where funding cuts are accompanied by a potential reduction in benefits. In these two outcomes, resources are released for use in other areas (Birch & Gafni).

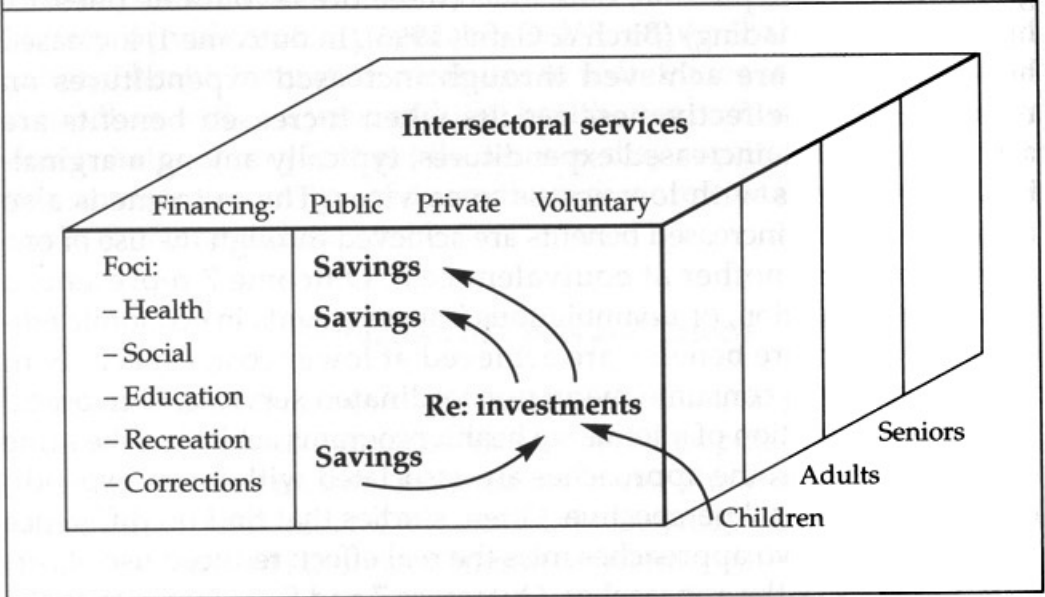
This approach can be used to classify the main effects and costs of comparable community health interventions. It can also be used to classify the recipients of various health interventions according to degree of beneficial results, as well as the expenditures necessary to achieve these results. Within national health insurance systems, people tend to use whatever services are available, even if they are not necessarily appropriate (Browne et al., 1995).

Finally, it has been found that investments in one sector can achieve savings in another — such as recreation provided by the voluntary sector resulting in savings to the publicly funded health, social, and corrections systems (Browne et al., 2000; Browne, Byrne, et al., 1999; Browne, Bryne, Roberts, Gafni, & Whittaker, in press; Browne, Roberts, et al., 1999). (Nonetheless, agencies should be compensated for savings they generate elsewhere [Browne et al., 1995]).

Research Production and Utilization

Over the past 10 years, the System-Linked Research Unit has been studying how improved health and cost containment might be achieved by providing community-based services to people with some health problems and exhibiting many signs of vulnerability (Browne, Roberts, et al., 1999). With the active participation of our community

Figure 6 *Societal Savings Resulting from Strategic Investments*



partners, the Unit's investigators have conducted studies on a variety of samples, settings, sectors, and services in an effort to reduce inequalities. The findings are relevant for the participating agencies and, since they have been involved, dissemination of the findings is easy. At the same time, agencies are more likely to use their own relevant information once it is made understandable.

What we have found is both simple and profound: that helping people to find the means to feel better and function more effectively costs no more, in a system of national health insurance, than doing nothing.

Why? Because people who are hurting will usually try to find a remedy, yet the services they use are not necessarily the ones that will solve their problem. A piecemeal approach to helping them can be expensive and still fail to identify the cause of the problem (Browne et al., 1994). Even a trained professional will have difficulty sorting out the differences among a person's condition (say, severe diabetes), circumstance (recent job loss), challenges (depression), and context (a child in trouble with the law).

Savings can be achieved not because an effective service is cheap, but because making people healthier and better able to cope with their life circumstances results in savings elsewhere. The greatest cost savings in health care tend to accrue among those people who are high users of the health-care system.

What may seem unlikely on the surface — better health outcomes for the same amount of money or less — actually makes perfect sense. Consider someone who has a chronic illness, lives alone, and is having trouble coping. If there is no concerted effort made to help this person with problem-solving and adjustment to his or her particular circumstances, the individual will likely spend a great deal of time seeking assistance from a variety of insured services. We compared two groups of people with chronic illness, poor adjustment, and poor problem-solving ability. One group received counselling and support and the other group were left to their own devices. The group who struggled with poor coping skills on their own were half as well adjusted and cost the health system 10 times as much as the other group (\$40,000 vs. \$4,000/person per year) (Roberts et al., 1995).

We found similar patterns in other areas. Some studies found improved outcomes for higher expenditures, but these were in areas in which the clients were members of an under-served group such as a minority population (Majumdar, Browne, Roberts, MacLean, & Carpio, 1995), family caregivers of individuals losing their mental capacities to a condition such as Alzheimer disease (Milne, Sacco, Centinski, Browne, & Roberts, 1994), or persons with chronic schizophrenia living in municipal lodges (Byrne et al., 1999).

The System-Linked Research Unit received core funding from the Ontario Ministry of Health and raised funds for specific projects from other sources, including the federal government. We approached the comparative costing of services on a much broader scale than usual. We looked at not just the cost of providing the service to achieve a certain outcome, but also the other services the person accessed in trying to cope with their particular condition or problem. We used an inventory to track direct and indirect costs, including the frequency of their visits to the doctor or hospital, the medications they used, and whether they were on social assistance (Browne, Arpin, Corey, Fitch, & Gafni, 1990).

One study looked at a program for screening seniors over 75 years of age and living alone and then treating those who were suffering from loneliness and isolation. The study found that those who received support showed some social/emotional improvement and consumed less than one third the health-care resources of the untreated group (Hay et al., 1998).

Another study found that people who attended a clinic for chronic pain increased their ability to live with their pain and, when compared to an equivalent group who did not attend a pain clinic, generated a

proportionate decrease in costs associated with use of other health services (Weir, Browne, Tunks, Gafni, & Roberts, 1992).

In yet another study, clients treated at a mental health clinic were found to have similar states of mental health as clients who were referred to the clinic but did not use the service, yet clinic users consumed fewer other health-care services by far (Emond & Browne, 1992).

The research also taught us a great deal about the kinds of services that produce improved health at the same or lower cost. Our current health-care system is geared to offering services one provider at a time, one problem at a time, and on demand. The System-Linked Research Unit has found the most successful strategies to be those that are:

- cooperative and cross-sectoral, linking physical health care to social services, mental health services, and other services
- comprehensive and holistic (rather than disease-by-disease), treating the whole person or the whole family in context
- proactive, reaching out to those who are unlikely to find the help they need on their own.

The services that produced improved health outcomes were not necessarily medical services (Browne et al., 1995). Some were delivered in a doctor's office, but others were provided by a nurse in the person's home (Roberts et al., 1999), or by a volunteer at a seniors' centre, or by a therapist at a mental health clinic, or by a children's recreation coach at a neighbourhood park (Browne, Byrne, et al., 1999), or by a psychologist in a school.

Canadians are proud and protective of their health-care system, and so they should be. We would argue, however, that investments in non-medical services that support health and well-being would take pressure off the health-care system and help the medical community do what it does best.

One suggestion would be to invest in more social workers for hospital emergency rooms. Emergency doctors do not have the time to determine what is troubling people who arrive in the middle of the night; their job is to deal with medical crises. Yet someone who is battling cancer may go to the emergency room mainly because they are frightened and alone. A home assessment, arranged by a social worker, for community counselling and support services could make a major difference to that person's recovery. Based on our research, a community service such as this would pay for itself through cost savings elsewhere in the system. However, we have to give the hospitals and com-

munity agencies the funding they need to provide the services that will save money for the system as a whole (Browne et al., 1994).

The cost savings we found were not always in the health-care budget, but they often were. People who had been relying heavily on health services used fewer of them, or fewer expensive ones, when their needs were not met appropriately. Sometimes, the savings were in social services, or in the tax system when people became well enough to return to work (Browne et al., 2000).

Another of our studies looked at a program for very troubled adolescents provided by an alliance of health, social, and educational service providers in a school setting. It compared the cost of the program to the cost of hospital and specialist care for teens who were waiting for admission to the program. Over the same period, the latter group had poorer emotional health and twice the cost (\$10,000/person per year) of the students enrolled in the program (Pallister, Browne, Roberts, Byrne, & Gafni, 1995).

A study of single parents on social assistance found that those who were offered a coordinated package of services — child care and recreation for their children, job training, and visits by a public health nurse — were more likely to leave welfare for work than those offered one piece of the package or those left to fend for themselves (Browne et al., in press). The package cost no more than the piecemeal services consumed by those left to fend for themselves and was associated with a \$300,000 savings in social assistance payments within 1 year for every 100 mothers served. Recreation for the children paid for itself in reduced use of professional and probationary services as well as resulting in mental health benefits for their mothers (Browne et al., 2000). A number of municipalities in the province of Ontario are improving their services to families on social assistance, based on these findings.

The most serious barrier to the delivery of cooperative, holistic, proactive community-based services is separate funding of the various sectors. Ways must be found to reward alliances among the health, social, education, recreation, and corrections sectors.

We are not saying that developing these strategies and alliances will be easy. We are saying that innovative, intersectoral approaches have the potential to save precious public resources, not only in health care but across publicly funded systems, and at the same time to improve the quality of people's lives.

In summary, our work demonstrates that community-based services are more effective and less expensive when they are proactive,

comprehensive, and aimed at reducing the inequalities in coping capacity and social resources that result in ill health.

The System-Linked Research Unit is currently testing, via randomized trials, the value of augmenting homemaking services with a nurse assessment. It is hypothesized that clients who receive the assessment will show less deterioration and use of services (Markle-Reid et al., 2000; Weir et al., 1998). The added cost would be made up by decreased use of other services.

Another trial is underway to test the value of home care versus use of nurse clinicians in a shopping mall. It is hypothesized that clients who attend the mall clinics will demonstrate improved health status and that the cost of this approach will be one quarter that of home care (Van DeVelde-Coke, McGlashan, Browne, Gafni, & Roberts, 2000).

Both of the hypotheses in ongoing studies would be examples of a "win/win" outcome from an economic perspective.

The Happenings section in this issue of the Journal provides further examples of economic evaluations currently underway.

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