

# UC Irvine

## UC Irvine Previously Published Works

### Title

Health promotion and community partnering: Translating theory into effective strategy

### Permalink

<https://escholarship.org/uc/item/97q2005f>

### Authors

Stokols, DS

Best, A

Green, LW

et al.

### Publication Date

2003

### Copyright Information

This work is made available under the terms of a Creative Commons Attribution License, available at <https://creativecommons.org/licenses/by/4.0/>

Peer reviewed

*Achieving a New Vision*

# An Integrative Framework for Community Partnering to Translate Theory Into Effective Health Promotion Strategy

Allan Best, PhD; Daniel Stokols, PhD; Lawrence W. Green, DrPH; Scott Leischow, PhD; Bev Holmes, BA; Kaye Buchholz, BA

## Synopsis

**Introduction.** Although there is general agreement about the complex interplay among individual-, family-, organizational-, and community-level factors as they influence health outcomes, there is still a gap between health promotion research and practice. The authors suggest that a disjuncture exists between the multiple theories and models of health promotion and the practitioner's need for a more unified set of guidelines for comprehensive planning of programs. Therefore, we put forward in this paper an idea toward closing the gap between research and practice, a case for developing an overarching framework—with several health promotion models that could integrate existing theories—and applying it to comprehensive health promotion strategy.

**An Integrative Framework.** We outline a theoretical foundation for future health promotion research and practice that integrates four models: the social ecology; the Life Course Health Development; the Predisposing, Reinforcing, and Enabling Constructs in Educational/Environmental Diagnosis and Evaluation–Policy, Regulatory and Organizational Constructs in Educational and Environmental Development; and the community partnering models. The first three models are well developed and complementary. There is little consensus on the latter model, community partnering. However, we suggest that such a model is a vital part of an overall framework, and we present an approach to reconciling theoretical tensions among researchers and practitioners involved in community health promotion.

**Integrating the Models: The Need for Systems Theory and Thinking.** Systems theory has been relatively ignored both by the health promotion field and, more generally, by the health services. We make a case for greater use of systems theory in the development of an overall framework, both to improve integration and to incorporate key concepts from the diverse systems literatures of other disciplines.

**Vision for Healthy Communities.** (1) Researchers and practitioners understand the complex interplay among individual-, family-, organizational-, and community-level factors as they influence population health; (2) health promotion researchers and practitioners collaborate effectively with others in the community to create integrated strategies that work as a system to address a wide array of health-related factors; (3) The Healthy People Objectives for the Nation includes balanced indicators to reflect health promotion realities and research-measures effects on all levels; (4) the gap between community health promotion “best practices” guidelines and the way things work in the everyday world of health promotion practice has been substantially closed.

**Conclusions and Recommendations.** We suggest critical next steps toward closing the gap between health promotion research and practice: investing in networks that promote, support, and sustain ongoing dialogue and sharing of experience; finding common ground in an approach to community partnering; and gaining consensus on the proposed integrating framework. (*Am J Health Promot* 2003;18[2]:168–176.)

**Key Words:** Community Health Promotion, Health Promotion Theory, Social Ecology, PRECEDE-PROCEED, Systems Thinking, Transdisciplinary Research, Transdisciplinary Collaboration

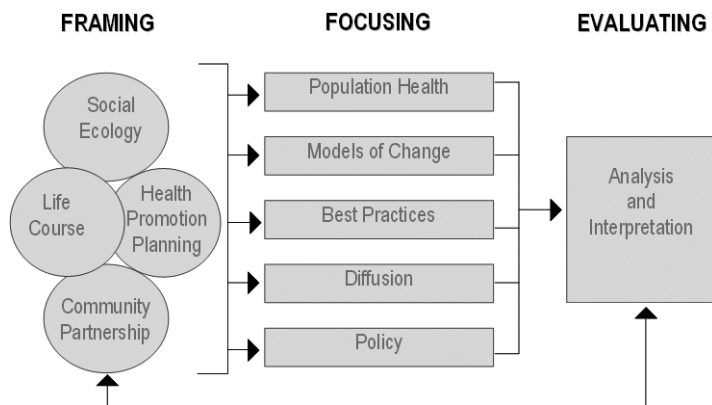
Allan Best, PhD, is a Senior Scientist at the Centre for Clinical Epidemiology and Evaluation, Vancouver Hospital and Health Sciences Centre, and a Clinical Professor in the Department of Health Care and Epidemiology, University of British Columbia, Vancouver, British Columbia, Canada. Daniel Stokols, PhD, is a Professor for the Department of Planning, Policy, and Design, School of Social Ecology, University of California, Irvine, California. Lawrence W. Green, DrPH, is the Director of the Office of Science and Extramural Research, Public Health Practice Program Office, Centers for Disease Control and Prevention, Atlanta, Georgia. Scott Leischow, PhD, is the Chief of the Tobacco Control Research Branch, U.S. National Cancer Institute, Bethesda, Maryland. Bev Holmes, BA, is with the Centre for Clinical Epidemiology and Evaluation, Vancouver Hospital and Health Sciences Centre, Vancouver, British Columbia, Canada. Kaye Buchholz, BA, is with the School of Communication, Simon Fraser University, Burnaby, British Columbia, Canada.

Send reprint requests to Allan Best, PhD, Vancouver Hospital and Health Sciences Centre, Department of Health Care and Epidemiology, University of British Columbia, 828 West 10th Avenue, Room 718, Vancouver, BC, Canada V5Z 1L8.

This manuscript was submitted March 6, 2003; revisions were requested April 30, 2003; the manuscript was accepted for publication August 18, 2003.

Copyright © 2003 by American Journal of Health Promotion, Inc.  
0890-1171/03/\$5.00 + 0

**Figure 1**  
**A Framework for Integrating Theories and Models for**  
**Community Health Promotion**



## INTRODUCTION

Canada's Minister of Health Marc Lalonde's<sup>1</sup> policy document *A New Perspective on the Health of Canadians* (1974) gave early impetus for thinking about a new health promotion paradigm. The report stressed the importance of lifestyle and environment as key determinants of health. Research to provide the evidence base for practice and policy, health services reform, and health promotion strategies at both individual and organizational levels were seen as essential components of such a paradigm.

Lalonde was moved to a new government office before much of his report could be implemented as policy. However, national and international initiatives in health promotion, which in turn culminated in the Ottawa Charter for Health Promotion,<sup>2</sup> all owe some of their impetus to the Lalonde report.

Unfortunately, there is still a large gap between research and practice in community health promotion. Stokols<sup>3,4</sup> suggests that health promotion programs often lack a clearly specified theoretical foundation or are based on narrowly conceived conceptual models that more often than not emphasize individually focused health behavior change strategies while neglecting environmental underpinnings. Sorensen et al.<sup>5</sup> thor-

oughly reviewed community health promotion research and concluded that population health strategies, although shown feasible, have had modest impact.

Why does the gap between research and practice continue? There is a mix of reasons, many of which reflect the way we work. Often it is easier for both researcher and practitioner to work with what is familiar—the specific setting (workplace, school, clinic) in which they work; the clients who come through the door; the strategies they know and that have worked for them in the past, even if on very different populations or problems.<sup>6</sup> Although the idea of more systematic, evidence-based planning and partnering with others in the community is attractive, it means much more work, at least initially—and busy health professionals can ill afford the time. Still, the need for change is obvious. What will it take to build the much-needed bridges between research and practice?

We suggest there is a disjuncture between the multiple theories and models of health promotion and the practitioner's need for a more unified set of guidelines for the comprehensive planning of programs. This paper presents an idea for further exploration: As a first step toward closing the gap between research and practice, we propose the development of an overarching framework

integrating several health promotion models that could be applied to comprehensive, coherent community health promotion strategy. Future research with such an integrative, overarching framework might close the gap between research and practice and between vision and reality by working toward the simpler, comprehensive guidelines needed for successful research application.

Our proposed framework focuses on models that could help frame key health promotion concepts and issues. We have chosen four models that, taken together, illustrate our vision. Two of them—social ecology<sup>3,4,7</sup> and Predisposing, Reinforcing, and Enabling Constructs in Educational/Environmental Diagnosis and Evaluation–Policy, Regulatory and Organizational Constructs in Educational and Environmental Development (PRECEDE-PROCEED)<sup>8,9</sup>—are well known and widely used in health promotion, with social ecology asking “How do we frame the problem in a multilevel, comprehensive fashion?” and PRECEDE-PROCEED asking “How do we best promote change in a powerful, coherent way?” The third model, the Life Course Health Development model,<sup>10</sup> is less well known but is fully developed and empirically grounded and fills an important gap in health promotion planning, addressing how people and their health needs change across their life span. Finally, the community partnership model is new and is presented here as an initial attempt to reconcile important theoretical tensions apparent in the health promotion literature and to ask, very simply, “How do we work together?”

We review the first three models and discuss the new model of community partnership. We also briefly highlight the need for systems thinking as an integrating force in translating theory into effective strategy, although a separate paper further clarifies the role of systems theory in developing an integrative model for health promotion.<sup>11</sup>

Figure 1 shows how these four broad “framing” models relate to more specific “focusing” theories and “evaluating” frameworks. Basically, our thesis is the following:

Thinking about health and health promotion has become too complex to expect any one theory to provide a comprehensive framework for research and programming.<sup>12</sup> Instead, what we need are broad framing models that provide relatively comprehensive perspectives on key dimensions to health promotion, combined with more specific and well-tested theories that help us “populate” these frameworks with effective policy and intervention strategies for a particular context. The four framing models are the focus of this paper. We suggest that they are relatively generic and will apply to most health promotion situations. In contrast, researchers and practitioners will select more specific focusing theories for their particular research and planning context. Examples of widely used theories include the Social Cognitive Theory, the Transtheoretical Model, the Health Belief Model, the Theory of Reasoned Action and the Theory of Planned Behavior, and the Diffusion Theory.<sup>12</sup> Different theories will add value depending upon the context. Figure 1 suggests that we will need expanded and integrated evaluative and analytic models to make sense of the synthesis resulting from this more comprehensive framework for community health promotion.

## **AN INTEGRATIVE FRAMEWORK**

### **The Social Ecology Model**

Social ecology has deep roots in public health and health promotion and is currently experiencing a renaissance as researchers and practitioners apply the concepts to emerging health issues. Social ecological research on health encompasses several disciplines, including medicine, public health, urban planning, environmental design, public policy, and the behavioral and social sciences. The scientific contours of this research are not easily delimited because of the interdisciplinary scope of the field.<sup>7</sup> Social ecology’s unique concerns can be better understood in terms of the overarching conceptual principles that underlie this field rather than by searching for a clearly defined body of research organized

around this topic. Core principles underlying ecological analyses of health are drawn largely from programmatic statements about the “New Public Health” and the conceptual and methodological assumptions of systems theory and social ecology.<sup>13</sup>

The social ecology model of health promotion incorporates several concepts drawn from systems theory (e.g., interdependence, homeostasis, negative feedback, and deviation amplification)<sup>14–19</sup> to understand the interrelations among people and their environments. Systems analyses suggest that the healthfulness of particular settings and the well-being of their participants are jointly influenced by multiple aspects of the physical environment (e.g., geography, architecture, technology) and the social environment (e.g., culture, economics, politics). The health status of individuals and groups also is influenced by personal attributes such as genetic heritage, psychological dispositions, and behavioral patterns. From the vantage point of social ecology, efforts to promote well-being should be based on an understanding of the relationships among diverse environmental and personal factors rather than on analyses that focus exclusively on environmental, biological, or behavioral factors.<sup>20</sup> Multi-level intervention recognizes the reciprocal determinism between behavior and environment and that both are necessary to support each other in a social and behavioral change process.

In summary, the social ecology model provides the proposed integrative framework with a comprehensive overview of different factors that influence health and draws attention to the multiple levels—individual, organizational, and institutional—on which we need to act.

### **The PRECEDE-PROCEED Model**

Planning models based largely on epidemiological analyses served public health well in earlier eras when causation could be traced to single organisms and prevention could be accomplished largely with an environmental intervention to control an etiologic agent or with a single be-

havior that could confer immunity or other protection. With the emergence of chronic diseases and injuries as the leading causes of death and disability, and with the expanded influence of other social sciences on public-health thinking, came an enriched appreciation of the wider range of variables that needed to be addressed besides the awareness, understanding, and attitudes of individuals whose behavioral risk was in question.<sup>21,22</sup> Andersen,<sup>22</sup> in particular, posited a behavioral model that gave as much attention to the enabling factors in families’ use of preventive and other health services as to the health needs and predisposing factors. Green<sup>23</sup> elaborated on this model with the delineation of a third set of determinants emphasizing the reinforcing factors that would account for the more sustained behavioral patterns inherent in chronic disease and other lifestyle issues in public health. This model, which came to be known as PRECEDE, helped guide health education toward what came to be called health promotion and has been the most widely applied system for planning, with some 900 published applications by the year 2003.<sup>24</sup> The model, with its emphasis on participatory approaches to planning, also anticipated other aspects of the Ottawa Charter for Health Promotion.<sup>2</sup>

With the growing emphasis on social environmental determinants enabling and reinforcing health behavior and lifestyle, health promotion planning gave increased attention to policy and organizational changes needed to support people in their efforts to gain greater control over their health. These ecological and systems considerations were incorporated into health promotion planning models<sup>8,25,26</sup> with the addition of PROCEED to the renamed PRECEDE-PROCEED model. The PRECEDE-PROCEED model adds to the proposed integrative framework a step-by-step process for setting priorities for action by assessing the relative importance and changeability of potential targets for intervention among the myriad causes of health outcomes.

## The Life Course Health Development Model

Life-course and life-span models have been discussed in health-related and social-services professions and disciplines for decades. However, to a large extent, health promotion strategy has not incorporated these perspectives sufficiently. Halfon and Hochstein<sup>10</sup> recently offered an integrated framework for Life Course Health Development. The purpose of their framework is to explain how health evolves over a lifetime and how this knowledge can guide new approaches to health research and policy. Weaving together recent research from public health, human development, and prevention sciences such as health promotion, the model spells out four major tenets:

- Like social ecology, the Life Course Health Development model sees health as “the consequence of multiple determinants operating in a nested genetic, biological, behavioral, social, and economic context.”<sup>10(p433)</sup> The model highlights the fact that these contexts *change* as a person develops.
- Health development is seen as an *adaptive process*, conceptualized as interactions between the biobehavioral regulatory systems that define human functions and the genetic, biological, behavioral, social, and economic contexts.
- What happens for each individual—his or her “health trajectory”—is a product of cumulative health risks and protective factors that is “programmed” into biobehavioral systems during *critical and sensitive developmental periods*.
- The *timing and sequence* of these diverse contexts and experiences influence the health of both individuals and populations.

In effect, the Life Course Health Development model adopts the contextual embedding of behavior from the social ecology model’s perspective but adds a temporal dimension that enriches the proposed integrative framework by highlighting the life-span dimension and detailing key concepts in understanding the implications that follow from adopting a

developmental lens. Health development is redefined as a “lifelong adaptive process that builds and maintains optimal functional capacity and disease resistance.”<sup>10(p437)</sup> This definition should not be seen as competing with the traditional definition of health promotion as involving physical, social, psychological, emotional and spiritual dimensions but rather as showcasing those aspects of health that are most influenced by the interplay between experience and biology over a life span.

Halfon and Hochstein<sup>10</sup> discuss several key and distinctive concepts with implications for health promotion:

- *Embedding*: Embedding is the process by which experiences are programmed into the structure and functioning of biological and behavioral systems.<sup>27</sup> A key to understanding the role of development is detailed knowledge about how these systems develop and when the critical and sensitive periods occur. There are highly significant implications for health promotion and policy and program initiatives designed to influence correlated factors such as poverty, physical environment, and limited social capital.
- *Risk and Protective Factors*: Both health and development balance gains and growth against deterioration and loss, influenced by the net effect of risk and protective factors.<sup>28</sup> Although the implications for early childhood development are particularly clear and well supported by research,<sup>29,30</sup> growing evidence shows that gene-environment and stress deregulation in adulthood are linked to different life courses and thus lead to sequelae such as cardiovascular disease, hypertension, cancer, and cognitive decline.<sup>31</sup>
- *Extended Timeframes*: Many of the effects of early experience relate to health outcomes in middle and late life.<sup>30</sup> A solid understanding of basic science issues becomes central, especially around such processes as gene expression, psychoneuroimmunoregulation, setpoints, and feedback loops.<sup>32,33</sup> From a

population-health perspective, the importance of prevention and early childhood intervention are dramatically illuminated.

- *Functional Trajectories*: To see how these influences play out, we need to look at changes in functional status over time in terms of trajectories of development. We do not see the importance by looking at a short timeframe. The life-course perspective starts to make sense of important sociocultural determinants of health and how they produce different populations.<sup>31,34</sup>

The Life Course Health Development model raises explicit questions for researchers and policy makers; such questions are key to a vision for health promotion. These questions are explored in some depth in the Halfon and Hochstein<sup>10</sup> framework paper but are just as pertinent to health promotion:

- How can the health of individuals and populations be better measured to reflect this developmental perspective?
- How should health and its related services be organized and designed?
- How should we pay for health care and invest in health?
- What should be the underlying principles for a national research agenda for medicine and public health?

Some of the most compelling implications include a shift in health measurement from deficits to assets or resilience and to unexpressed health potential; population-health monitoring to chart and analyze long-term health trajectories and their variation in the population; comprehensive early childhood interventions to transform the contexts and relationships that underlie socioenvironmental determinants of health; and the development of Life Course Health Development management and financing systems, in contrast to the short-sighted logic of managed care.

To summarize, the three models reviewed thus far are highly consistent, complementing each other’s

**Table 1**  
**Comparison of Major Models**

	Distinguishing Features	Value Added
Social Ecology	<ul style="list-style-type: none"> <li>● Integrates psychological, organizational, cultural, and regulatory perspectives</li> <li>● Focus on person-environment dynamic interplay</li> <li>● Encourages and supports multi-level analysis and action</li> <li>● Introduces systems theory as set of organizing principles</li> </ul>	<ul style="list-style-type: none"> <li>● Common ground for many disciplines, including those not traditionally included in health</li> <li>● Foundation for the development of complex multi-level research and analysis tools</li> <li>● Blends well with more specific health behavior and promotion theory</li> <li>● Highlights environmental</li> <li>● Introduces concept of leverage points</li> </ul>
Life Course Health Development	<ul style="list-style-type: none"> <li>● Life-span perspective on changing determinants and strategies by developmental stage</li> <li>● Concepts of gene-environment embedding and readiness</li> <li>● Redefines population health monitoring and forecasting for planning</li> </ul>	<ul style="list-style-type: none"> <li>● Links well with multi-level perspective of social ecology</li> <li>● Highlights long lags in developmental impact, importance, and mechanisms of early intervention</li> <li>● Provides powerful logic for policy investment in early intervention</li> </ul>
Health Promotion Planning	<ul style="list-style-type: none"> <li>● Integrates epidemiological, quality-of-life, educational, and environmental perspectives</li> <li>● Provides for specific steps in assessing the relative importance and feasibility of change in each of the determinants in a causal chain, including behavior-environment interplay</li> <li>● Offers both proximal and distal determinants as targets for change, providing for short-term and long-term benefit</li> </ul>	<ul style="list-style-type: none"> <li>● Points to high-impact research and policy implications</li> <li>● Specificity of steps for community participation in planning and for assessment of each determinant in a causal chain, within a contextual and ecological framework</li> <li>● Algorithms and flow charts to assist the practitioner in working through the phases and procedures of planning</li> <li>● Some 900 published applications of the model</li> <li>● Incorporates elements of the Ottawa Charter and systems theory</li> </ul>

major tenets, but each also adding a unique perspective and value. All three models are well developed and aligned with prevailing perspectives on community health promotion. Specific contributions of each model are suggested in Table 1. Taken together, these models inform how broadly we frame health problems, how we plan and promote health improvement, and how health needs change throughout the life span. A model for community partnering is needed to round out the integrated approach we propose in this paper. However, there is less of a basis for consensus on the essentials for effective community partnering, as discussed in the following section.

### **Toward a New Model: Community Partnering**

We recently reviewed the community health promotion literature in search of a well-accepted model on community partnering, which we believe is the critical fourth piece of a comprehensive health promotion framework. The literature identifies a variety of potentially important criti-

cal success factors for community health promotion, including involvement of community members, research with strong process and outcomes evaluation, and theory-based interventions. “Opposing camps” have emerged in the health promotion field along what at first seem to be differing lines—those who emphasize the value of process, those who stress the value of evidence-based interventions and outcomes, and those who value structure. However, we question whether they are fundamentally different or whether it is simply a matter of emphasis. Might we be more effective if we combined the strengths of each approach?

Table 2 suggests an approach in which we reframe the literature to show the three contrasting orientations to community partnering: those that place primacy on empowerment, those that stress risk behavior, and those that emphasize interagency collaboration. For each, we suggest illustrative core values that can define the orientation.

The Empowerment orientation weights *process* heavily, the Behavior

orientation weights *outcome*, and the Organization orientation weights *structure*. But surely these are three legs in the stool of effective community partnering—we need all three or the effort topples. If it is a question of relative emphasis, can we find common ground among the three sets of core values? In principle, we see no reason why the three theoretical and values-based orientations cannot be blended to mutual benefit into one model of community partnering. Perhaps the single most important question in our minds as we write this paper is how we might best work together as a health promotion community of research and practice leaders to refine a shared understanding of comprehensive community health promotion and partnering.

At least three kinds of partnering must occur as a basis for establishing and sustaining the collaborative health promotion community that we envision: (1) collaboration among health researchers representing different disciplines; (2) collaboration between health researchers from multiple disciplines and community

**Table 2**  
**Contrasting Orientations for Community Partnering**

Orientation	Fundamental Values
Empowerment	<ul style="list-style-type: none"> <li>● <i>process</i> important</li> <li>● broad view of health</li> <li>● participation and ownership</li> <li>● capacity development</li> <li>● shared power and control</li> </ul>
Behavior	<ul style="list-style-type: none"> <li>● <i>outcomes</i> important</li> <li>● health more narrowly defined</li> <li>● risk-behavior change</li> <li>● evidence-based intervention strategies</li> <li>● intervention reach and population impact</li> <li>● rigorous evaluation</li> </ul>
Organization	<ul style="list-style-type: none"> <li>● <i>structures</i> and effective governance important</li> <li>● service integration</li> <li>● efficiency and accountability</li> <li>● information management systems</li> </ul>

practitioners representing diverse professional fields; and (3) collaboration among community health organizations across local, state and provincial, national, and international levels. The need for cross-disciplinary collaboration in health science and for the development of interprofessional coalitions in community health promotion has received increasing emphasis in recent years.<sup>35-39</sup> In the areas of tobacco control and physical activity promotion, for example, government agencies and private foundations have allocated substantial resources toward establishing transdisciplinary research centers and evaluating the processes and outcomes (including scientific, policy, and public health outcomes) of such collaboration.<sup>40-42</sup> Already, some of the greatest strides in the prevention of smoking and the promotion of physical activity (and obesity reduction) have occurred through multiple community interventions (e.g., including multi-media information campaigns, state-wide taxation of cigarette sales, environmental-change strategies including the adoption of no-smoking policies in public settings and urban design strategies to enhance the walkability of neighborhoods) that were developed and implemented collaboratively through community partnerships involving health scientists; community practitioners; and a

wide range of public, private, and nonprofit organizations.<sup>43-47</sup>

**INTEGRATING THE MODELS:  
 THE NEED FOR SYSTEMS  
 THEORY AND THINKING**

The earlier sections of this paper refer to the added value of systems thinking.<sup>14,15,48,49</sup> The need to develop shared values, language, and ways of working goes beyond the single model of community partnering: it applies to the integration of all models and theories toward effective health promotion. Greater use of systems thinking would indeed help us work collaboratively with community stakeholders. We argue, too, that an integrated framework for community health promotion—which needs to synthesize perspectives on the key ingredients in a comprehensive approach—would benefit from systems thinking. Clearly, the coordination of multi-sectoral, collaborative health promotion efforts spanning local, state and provincial, national, and global levels, would benefit enormously from a comprehensive systemic understanding of the interdependencies and feedback loops that exist among these different levels of community partnering and intervention.

As discussed by Flood,<sup>50</sup> systems thinking has emerged through a critique of reductionism, which breaks

phenomena down into constituent parts and studies them in terms of cause and effect. Thus, the idea of systems thinking blends well with the well-accepted notion of effective health promotion as needing to encompass many elements on multiple levels.

A systems-thinking perspective suggests that more comprehensive, participatory, and collaborative approaches to health promotion are potentially more effective than narrowly targeted and less collaborative approaches. These aspects of more comprehensive, partnership-based approaches to health promotion encompass an emerging field of community health, which is distinct in several respects from the parent discipline of public health. Whereas the latter is broadly concerned with the independent and joint effects of multiple etiologic factors (e.g., air pollution levels, viruses, atmospheric ozone depletion, and socioeconomic status of individuals and groups) on population health, community health focuses more directly on (1) social, cultural, and environmental contexts that promote or undermine well-being in groups of individuals; and (2) the design, implementation, and evaluation of community-based interventions conducted in field settings to enhance the health of community members. Public-health research relies more heavily on tightly controlled, expert-driven epidemiological studies and clinical trials to assess the relative impacts of various etiologic factors. Community health studies, on the other hand, are more flexibly designed and incorporate the input of diverse community groups throughout all phases of program evaluation—for example, from the initial planning phase through the implementation, evaluation, and reporting phases of the research. Thus, community health research is highly participatory and involves close collaboration between research team members and community.

Best et al.<sup>11</sup> provide a more detailed discussion of how systems theory adds value in two respects: (1) it provides a holistic, integrative perspective; and (2) research from other disciplines identifies important con-

structs for a comprehensive community health promotion framework.

The integrative perspective showcases criteria for a comprehensive strategy. For example, systems thinking calls for clear goals at the *systems* level and to complement desired outcomes at subsystems levels such as the individual or family. Each integrative community health promotion initiative must have specified targets or priority populations within the community for their desired outcomes and measure impacts at this population level. They must have surveillance mechanisms to monitor impacts on the system. They must have feedback mechanisms in order to respond appropriately to changing influences on the system, and they must have leadership and decision-making capacity to institute such responses. Each must also have a mechanism for synthesis and translation of research findings into practice.

The earlier section on social ecology named some of the important constructs for systems thinking about community health promotion, for example, interdependence and homeostasis. The broad literature on systems theory, from disciplines ranging from mathematics and engineering through ecology and management sciences, adds important elements to existing health promotion theory. To illustrate:

- *Theoretical and Methodological Pluralism.* Approaches such as Critical Systems Thinking<sup>50,51</sup> emphasize the importance of using a variety of research methods in a theoretically coherent way that takes their relative strengths and weaknesses into account.
- *Feedback Loops.* Systems include both negative feedback with balancing loops and positive feedback with amplifying loops. Balancing loops operate much like a thermostat, that is, to keep the system in equilibrium. Amplifying loops operate to promote change (positive or negative). Such feedback loops help enable examination of the dynamics of a problem like tobacco control toward defining how systems thinking might guide efforts at improvement. A key concept is

autopoiesis<sup>17</sup>—systems are self-producing and operate to maintain their internal organization in relation to the environment.

- *Stakeholder Collaboration.* There is a need for shared construction and testing of these models if they are to lead to effective solutions. It is necessary to define the boundaries of the problem in ways that create common ground among key stakeholders: The boundaries should be sufficiently broad enough to incorporate important dimensions of the problem but sufficiently contained to enable effective intervention. Ulrich<sup>52</sup> offers a list of 12 critical questions to answer in setting boundaries, including questions about who is the client of the systems design and who makes decisions, what is the purpose and what are the successful conditions for the design, and how success will be judged. We need to better understand the interpersonal and situational circumstances that either facilitate or enhance effective transdisciplinary and community-based collaborations.<sup>41</sup>
- *Systems Thinking as a Precursor for Change.* A corollary of this shared construction is that systems thinking among the key stakeholders must be developed and used consistently before meaningful and enduring change is likely to occur.
- *Learning Organizations.* Peter Senge<sup>53</sup> popularized systems thinking in the management sciences with his classic *The Fifth Dimension*. One of the advantages of Senge's approach is the concept of an organic "learning organization" that provides for the people side of effective change, laying a foundation for necessary institutionalization and sustainability of integrated health promotion strategies.

In summary, we argue that systems theory enhances our capacity for integrated community health promotion strategy and comprehensive research and evaluation. The literature is vast across a wide range of disciplines; this paper illustrates the potential added value and begins a key dialogue for the health promotion

field as we work to refine our theoretical base and its use.

## CONCLUSIONS AND RECOMMENDATIONS

A major question is how we can best move toward development of an overarching framework that integrates existing theory and produces a coherent and practical strategy for community health promotion. One of the challenges we face is that much of the theorizing is done in universities and at national-level workshops and meetings; thus, we lack everyday bridges to the realities of state and local programming and policy making. At the national level, we need to invest in networks that promote, support, and sustain ongoing dialogue and sharing of experience. There seems to be a growing awareness of the need for working together, which with the evolution of such tools as Web-based resources makes such collaboration possible. We now need to work together to realize the potential for meaningful shared thinking across the breadth and depth of heretofore separate and disjointed health promotion programs initiated at community and national levels.

A major challenge to overcome is the resolving of tensions around community partnering. Serious and concerted effort is needed to find the common ground called for in the above section on community partnering. It will not be easy—the task requires good will and a dedicated commitment to and focus on working with diverse stakeholders to clarify differences and build integrated models as a first step in planning community health promotion programs and policy.

There is also a need to gain consensus on the proposed framework. We envision a top-down/bottom-up network of community health promotion initiatives that create a web of shared experience—a "learning organization."<sup>53</sup> Imagine sitting around a virtual table with the four models in Figure 1 in front of everyone. The task is to share experience about how the four framing models work together in practice by discussing mul-



tiple examples of how it might help us focus the theories we typically use in our planning. Through our virtual meeting—the days, weeks, and months of sharing experiences across communities and national, state, and local levels—we start to see how an integrating framework might evolve.

As we collaborate in this virtual learning organization, we increasingly will find ourselves incorporating systems thinking into our daily work. Checkland<sup>54</sup> distinguishes between prescriptive vs. internalized uses of systems thinking. Experience with the use of systems thinking in areas as diverse as anthropological studies of culture to large-scale organization change in private enterprise consistently shows that the learning process at the heart of systems thinking cannot be prescriptive and that, over time, health promotion practitioners and researchers will internalize the key concepts as their skills and facility develop. Good systems thinking is a process that has to be practiced and integrated with day-to-day health promotion operations to realize its value. There are many models of systems thinking, but the particular approach is less important than the process of working within an explicit structure toward the development of a learning culture. The structure allows for the shared values and language to emerge. The process creates opportunities for systems thinking; for good ideas to emerge and gradually become clear as they are elaborated theoretically; and for procedure through the necessary steps of translation into strategy, action, evaluation, and refinement.

We began this paper by commenting on the gap between what researchers and practitioners *know* makes good sense in effective health promotion and how in everyday reality they conduct their work. Although we appreciate there are good reasons for the persistence of this gap, we suggest that the time to start closing it is now. This paper offers some integrating concepts and a framework for the integration of major theoretical perspectives on and approaches to health promotion. These perspectives emphasize the central importance of shared values; a commit-

ment to partnering between and among researchers, practitioners, policy makers, and diverse community stakeholders; and the adoption of a planning and implementation method that is used consistently to guide collaborative efforts.

#### Acknowledgments

*The authors wish to acknowledge the Canadian Institutes of Health Research and the Michael Smith Foundation for Health Research for funding the research programs that inspired this article. The authors also wish to acknowledge the contributions of our research collaborators, Ellen Balka, Ted Bruce, James Frankish, Laura Funk, and Francis Lau.*

#### References

- Lalonde M. *A New Perspective on Health for Canadians*. Ottawa, Ontario, Canada: Minister of Supply and Services; 1974.
- World Health Organization. *Ottawa Charter for Health Promotion*. Ottawa, Ontario, Canada: Canadian Public Health Association; 1986.
- Stokols D. Establishing and maintaining healthy environments: towards a social ecology of health promotion. *Am Psychol*. 1992;47:6–22.
- Stokols D. Translating social ecological theory into guidelines for community health promotion. *Am J Health Promot*. 1996;10:282–298.
- Sorenson G, Emmons K, Hunt MK, Johnston D. Implications of the results of community intervention trials. *Annu Rev Public Health*. 1998;19:379–416.
- Green LW. From research to “best practices” in other settings and populations. *Am J Health Behav*. Research Laureate address. 2001;25:165–178. Available at: <http://www.ajhb.org/2001/number3/25-3-2.htm>. Accessed September 16, 2003.
- Stokols D. Social ecology and behavioral medicine: implications for training, practice, and policy. *Behav Med*. 2000;26:121–130.
- Green LW, Kreuter MW. *Health Promotion Planning: An Educational and Ecological Approach*. Mountain View, Calif: Mayfield; 1999.
- Green LW, Ottoson JM. *Community and Population Health*. 8th ed. Boston, Mass: WCB McGraw-Hill; 1999.
- Halfon N, Hochstein M. Life course health development: an integrated framework for developing health, policy, and research. *Milbank Q*. 2002;80(3):433–479.
- Best A, Moor G, Holmes B, et al. Health promotion dissemination and systems thinking: toward an integrative model. *Am J Health Behav*. In press.
- Glanz K, Rimer BK, Lewis FM. *Health Behavior and Health Education: Theory, Research and Practice*. 3rd ed. San Francisco, Calif: Jossey-Bass; 2002.
- Duhl LJ. An ecohstory of health: the role of ‘Healthy Cities.’ *Am J Health Promot*. 1996;10:258–261.
- Bronfenbrenner U. *The Ecology of Human Development: Experiments by Nature and Design*. Cambridge, Mass: Harvard University Press; 1979.
- Emery FE, Trist EL. *Towards a Social Ecology: Contextual Appreciations of the Future in the Present*. London, United Kingdom: Plenum Press; 1972.
- Hawley AH. *Human Ecology: A Theory of Community Structure*. New York, NY: Ronald Press; 1950.
- Maruyama M. The second cybernetics: deviation-amplifying mutual causal processes. *American Scientist*. 1963;51:164–179.
- Park R, Burgess E, McKenzie RD, eds. *The City*. Chicago, Ill: University of Chicago Press; 1925.
- Barker RG. *Ecological Psychology: Concepts and Methods for Studying the Environment of Human Behavior*. Stanford, Calif: Stanford University Press; 1968.
- Moos RH. Social ecological perspectives on health. In: Stone GC, Cohen F, Adler NE, eds. *Health Psychology: A Handbook*. San Francisco, Calif: Jossey Bass; 1979:523–547.
- Green LW. Should health education abandon attitude-change strategies? Perspectives from recent research. *Health Educ Monogr*. 1970;1(30):25–48.
- Andersen R. *A Behavioral Model of Families’ Use of Health Services*. Chicago, Ill: University of Chicago, Center for Health Administration Studies, University of Chicago Press; 1968. Research Series No. 25.
- Green LW. Toward cost-benefit evaluations of health education: some concepts, methods, and examples. *Health Educ Monogr*. 1974(suppl 1)(2):34–64.
- PRECEDE-PROCEED Model of Health Program Planning and Evaluation. Available at: <http://www.lgreen.net>. Accessed January 29, 2003.
- Simons-Morton DG, Simons-Morton BG, Parcel GS, Bunker JG. Influencing personal and environmental conditions for community health: a multilevel intervention model. *Fam Community Health*. 1988;11:25–35.
- Winett RA, King AC, Altman DG. *Health Psychology and Public Health: An Integrative Approach*. New York, NY: Pergamon Press; 1989.
- Hertzman C. Population health and human experience. In: Keating DP, Hertzman C, eds. *Developmental Health and the Wealth of Nations: Social, Biological and Educational Dynamics*. New York, NY: Guilford Press; 1999:21–40.
- Breslow L. From disease prevention to health promotion. *JAMA*. 1999;281:1030–1033.
- Institute of Medicine. *Health and Behavior: The Interplay of Biological, Behavioral, and Societal Influences*. Washington, DC: National Academy Press; 2001.
- Singer BH, Ryff CD, eds. *New Horizons in Health: An Integrative Approach*. Washington, DC: National Academy Press; 2001.
- Brunner E, Marmot M. Social organization, stress, and health. In: Marmot M, Wilkinson RG, eds. *Social Determinants of Health*. New York, NY: Oxford Press; 1999.
- McEwen BS, Stellar E. Stress and the individual. *Arch Intern Med*. 1993;153:2093–2101.
- Taylor SE, Repetti RL, Seeman TE. Health psychology: what is an unhealthy environment and how does it get under the skin? *Annu Rev Psychol*. 1997;48:411–447.
- Hertzman C, Matthews C, Power C, Manor O. Using an interactive framework of society and lifecourse to explain self-rated health in early adulthood. *Soc Sci Med*. 2001;53:1575–1585.
- Butterfoss FD, Goodman RM, Wandersman A. Community coalitions for prevention and health promotion. *Health Educ Res Theor Pract*. 1993;8(3):315–330.
- Higginbotham N, Albrecht G, Connor L, eds. *Health Social Science: A Transdisciplinary and Complexity Perspective*. Melbourne, Australia: Oxford University Press; 2001.
- Pellmar TC, Eisenberg L, eds. *Bridging Disciplines in the Brain, Behavioral, and Clinical Sciences*. Washington, DC: Institute of Medicine/National Academy Press; 2000.
- Rosenfield PL. The potential of transdisciplinary research for sustaining and extending linkages between the health and social sciences. *Soc Sci Med*. 1992;35:1343–1357.
- Thompson Klein JT. *Crossing Boundaries:*

- Knowledge, Disciplines, and Interdisciplinarity*. Charlottesville, Va: University of Virginia Press; 1996.
40. Robert Wood Johnson Foundation. Building bridges between placemaking and health: the Active Living Network. Available at: <http://www.activeliving.org/>. Accessed July 2, 2003.
  41. Stokols D, Fuqua J, Gress J, et al. Evaluating transdisciplinary science. *Nicotine Tob Res*. In press.
  42. Turkkan JS, Kaufman NJ, Rimer BK. Transdisciplinary tobacco use research centers: a model collaboration between public and private sectors. *Nicotine Tob Res*. 2003;2:9–13.
  43. Altman DG. Sustaining interventions in community systems: on the relationship between researchers and communities. *Health Psychol*. 1995;14:526–536.
  44. Breslow L, Johnson M. California's proposition 99 on tobacco, and its impact. *Annu Rev Public Health*. 1993;14:585–604.
  45. King AC, Stokols D, Talen E, et al. Theoretical approaches to the promotion of physical activity: forging a transdisciplinary paradigm. *Am J Prev Med*. 2002;23(2S):15–25.
  46. Sallis JF, Owen N. *Physical Activity and Behavioral Medicine*. Thousand Oaks, Calif: Sage Publications; 1999.
  47. Siegel M. The effectiveness of state-level tobacco control interventions: a review of program implementation and behavioral outcomes. *Annu Rev Public Health*. 2002;23:45–71.
  48. Katz D, Kahn RL. *The Social Psychology of Organizations*. New York, NY: John Wiley & Sons; 1966.
  49. Miller JG. *Living Systems*. New York, NY: McGraw-Hill; 1978.
  50. Flood RL. The relationship of 'Systems Thinking' to Action Research. In: Reason P, Bradbury H, eds. *Handbook of Action Research: Participative Inquiry and Practice*. Thousand Oaks, Calif: Sage; 2001:133–144.
  51. Midgley G. *Systemic Intervention: Philosophy, Methodology, and Practice*. New York, NY: Kluwer Academic/Plenum; 2000.
  52. Ulrich W. *Critical Heuristics of Social Systems Design*. Hull, United Kingdom: Department of Management Systems and Sciences, University of Hull; 1996. Working Paper 10.
  53. Senge PM. *The Fifth Discipline*. New York, NY: Doubleday; 1990.
  54. Checkland P. *Systems Thinking Systems Practice: A 30-Year Retrospect*. Chichester, United Kingdom: John Wiley & Sons; 1999.