



CHAPTER EIGHT



Using Internet Based Tools to Build Capacity for Community Based Participatory Research and Other Efforts to Promote Community Health and Development

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A Vision of Internet-based Supports for the Work

Some years ago, our community established All Our Children, an action group with the mission of improving outcomes for all our children and youth through public education, advocacy, and caring connections among children and adults. The Internet has transformed how we do our work. For example, our group's members used tools available on the Internet to guide social marketing efforts to encourage parents to get their children immunized. Our members stay connected through an Internet based forum in which any one of us can post a question or offer guidance about how to solve a problem or dilemma. To document and analyze our accomplishments, we use an on-line system that provides reports and graphs whenever we need them. We use this information to learn, adjust, and be accountable to those who support our work. Although no substitute for face-to-face contact, using the Internet makes our work easier and more rewarding. How could we achieve our big goals without it?

Note: We deeply appreciate the contributions of our many colleagues in community initiatives, university based organizations, and grantmaking institutions who have taught us about building capacity for community work. These include our colleagues at the KU Work Group, including Renee Boothroyd, Rod Bremby, Jenette Nagy Del Rosario, Paul Evensen, and Rachel Olverius; our technology partners at Athenix, Inc.; and those on the broader Community Tool Box team, especially Tom Wolff, Bill Berkowitz, and Phil Rabinowitz. This ongoing work was funded in part by grants from the Robert Wood Johnson Foundation, the Kansas Health Foundation, the Office of Prevention of the Kansas Department of Social and Rehabilitative Services, the John D. and Catherine T. MacArthur Foundation, and the Ewing Marion Kauffman Foundation.

Why is this vision of integrated, Internet based supports relevant to community based participatory research and action?

Community based participatory research can be used to enhance the process and outcomes of efforts to understand and improve community health and development (Fawcett, Francisco, Hyra, et al., 2000; Green & Kreuter, 1991; Minkler, 1997, 2000; Wallerstein, 1999, 2000). Consider the interrelated tasks in this complex, dynamic, and unfolding work: community members, and those who support them, must understand the context and situation in which an identified problem or goal exists. Together, they must be able to define a common purpose such as assuring clean drinking water or neighborhood safety, eliminating health or education disparities, or promoting child development or independent living for older adults. They must also have the tools or know-how to take action, design, and adapt effective interventions to fit the local context. Using a variety of strategies, they can bring about and document changes in the community or broader system, such as a new public education campaign or a policy to promote access to basic needs and services. The aim is to effect widespread behavior change, such as increases in caring engagements or reduced use of tobacco products, and improvement in population-level outcomes (such as community-level measures of well-being or rates of smoking and associated chronic diseases). Finally, to be successful, they must maintain the effort long enough to affect and engage all those who can benefit and contribute.

Since 1975, our work group at the University of Kansas has been collaborating with community based organizations to try to understand and improve conditions affecting community health and development. Since 1990, we have used a common measurement system (Francisco, Paine, & Fawcett, 1993) in multiple case studies with more than thirty different community and state partnerships (in such areas as substance abuse, adolescent pregnancy, immunization, cardiovascular diseases, systems change for public health improvement, and neighborhood development). This participatory research has focused on two overarching questions (Roussos & Fawcett, 2000): (1) what factors affect a community's capacity to bring about community and systems change? and (2) under what conditions are community and systems changes associated with improvements in population-level outcomes? Emerging answers to these questions helped identify core competencies (for example, formulating a clear vision and mission; action planning; leadership) and broader conditions (such as resources for community organizers or making outcome matter) that appear to contribute to sufficient rates and distributions of community and systems change. Using this information and the work of others, in 1995 we began developing an on-line resource, known as the Community Tool Box (<http://ctb.ku.edu>) (Fawcett, Francisco, Schultz, et al., 2000), for enhancing core competencies and enabling the work of those doing, supporting, and evaluating community based efforts for change and improvement.

Following a brief review of community based participatory research and related traditions, along with their underlying principles and values, we describe Internet resources that can play an important role in supporting such work. We outline a five-component framework for building capacity for this shared work: (1) understanding context and collaborative planning, (2) community action and intervention, (3) community and systems change, (4) widespread behavior change and improvement in population-level outcomes, and (5) sustaining the effort. The focus is on sixteen core competencies related to this work (for example, assessing community needs and resources and evaluating the initiative) and how a variety of Internet based resources can make these activities easier and more rewarding. We illustrate with a variety of Internet based tools, featuring a case example of integrated supports through the Community Tool Box. The concluding discussion outlines challenges and prospects of using Internet based tools to enhance the shared work of understanding and improving community based participatory research for health and development. (All Web addresses were working at the time of publication, though some may have changed since.)

SOME TRADITIONS AND VALUES GUIDING THE WORK

Multiple and interrelated traditions help inform community based inquiry and action. These include methods and values from the fields of community organization and development (for example, Dunham, 1963; Fawcett, 1999; Rothman, 1999; Rothman, Erlich, & Tropman, 1995), action research (Lewin, 1946), applied anthropology (Stull & Schensul, 1987; Tax, 1958), community psychology (Chavis, Stucky, & Wandersman, 1983; Fawcett, 1990; Tolan, Keys, Chertok, & Jason, 1990), behavioral community psychology (Fawcett, 1991), action science (Argyris, Putnam, & Smith, 1985; Schön, 1983), empowerment evaluation (Fetterman, Kaftarian, & Wandersman, 1996), and education for social change (Freire, 1973; Horton & Freire, 1990).

The sister tradition of participatory action research (George, Green, & Daniel, 1996; Green et al., 1995; Israel, Schurman, & Hugentobler, 1992; Whyte, 1991) has several common values and attributes: *participation* of both community members with experiential knowledge of local issues and context and (often) outside researchers and supporters with specialized knowledge of methods of inquiry and intervention; *co-learning* for community members and outside supporters and researchers; *capacity-building* for doing, supporting, and evaluating the work; and *empowerment* or enhanced influence over the research and action among those local people doing the work (Israel et al., 1992; Minkler, 2000).

As noted in earlier chapters, in CBPR, control of the research agenda and intervention methods shift from sole determination by outside experts (the "professional researchers") to shared determination with community members who

have experiential knowledge of the local issues and context. The results of CBPR—new knowledge and methods—are used to inform practice and support the work of understanding and bringing about change in communities and systems. These related approaches emphasize action and learning, self-determination and support, and recognition of the value of both local and outside knowledge. These traditions acknowledge that community members, with their experiential knowledge, can contribute to the definition of the problem or goal, the methods of research and intervention, interpretation of results, and shared learning and adjustments among all those doing and supporting the work. The common objective is enhancing “community capacity” (Goodman et al., 1998): local people and organizations equipped with the knowledge and skills to effectively address the issues that matter most to them.

Community based work often involves a broad collaboration among three parties: local people who work together to address a problem or goal, such as decent jobs or housing; those (often outside) professionals who provide technical assistance and evaluation; and grantmakers who offer financial assistance and other resources (Fawcett, Francisco, Paine-Andrews, et al., 1993). Through the emerging social and technical relationships (Schwab & Syme, 1997), each party is respected for the knowledge and experience he or she brings to this shared work. In a spirit of humility, all recognize the need for additional information and competency and may use enabling or support systems to assist with this complex work (see, for example, Fawcett, Paine-Andrews, Francisco, et al., 1995).

Yet those working on community based efforts to improve health and development often find it difficult to gain access to the support they need, when they need it, at an affordable cost. Support organizations and research teams, who may provide technical assistance and evaluation, are similarly challenged to provide what is needed at a scale that matches the abundance of community work that is being done at local, state, and national levels. Although technical assistance often requires direct personal contact, new communications technologies, such as the Internet, offer additional forms of support for cross-learning among generations of diverse and geographically distributed people doing this work.

Internet technology can help communities become more capable of understanding and effecting community-determined improvements in community health and development (Fawcett, Francisco, Schultz, et al., 2000; Milio, 1996; Schultz, Fawcett, Francisco, & Berkowitz, in press). It can deliver information of enormous breadth and depth, with the potential to provide support for a widespread (and growing) network of people and places. It can provide access to relevant and just-in-time information while reducing barriers of location, eligibility, or cost. Ironically, communication over the Internet can be community-enhancing; instantly connecting those working together on a common issue, either within a community or across communities in a state or nation or globally.

This chapter presents some prospects for achieving the opening vision—community members, and those supporting them, using Internet based resources to inform and amplify their community work.

A FRAMEWORK, CORE COMPETENCIES, AND INTERNET BASED RESOURCES FOR THE WORK

Here we will set out a framework for the process of understanding and improving community based (and community-determined) efforts to improve community health and development. It is based on prior research and experience of our KU work group (see Fawcett, Francisco, Hyra, et al., 2000) and many others (for example, Green & Kreuter, 1991; Wallerstein, 2000). The framework has five basic components: understanding context and collaborative planning, community action and intervention, community and systems change, widespread behavior change and improvement in population-level outcomes, and sustaining the effort. Its components are *interactive* or mutually influencing; for instance, documenting the process of community and systems change may affect (and be affected by) our understanding of the context of the effort. The process is also *iterative* or repeating; consider, for example, how successful and sustained efforts to improve original outcomes may yield to subsequent collaborative planning and action to address other community-determined goals.

Exhibit 8.1 presents sixteen core competencies (and the related framework) for the shared work of understanding and improving efforts to promote community health and development. The core competencies are often related to one or more aspects of the framework (for example, leadership may apply to both taking action and sustaining the effort). The Internet provides access to a vast (and potentially overwhelming) array of resources related to these core competencies. Although particular Web sites may come and go on the Internet, we highlight current resources to illustrate the Internet based supports available for the core competencies. For each aspect of this framework, key questions may help guide the user's exploration of Web sites to find support, resources, and tools for CBPR and other efforts to promote community health and development.

Understanding Context and Collaborative Planning

What do we know about the local people, situation, needs, and assets? How do people define the problem (goal) and see its causes (contributing factors)? What is the community's vision for success, and how do community members plan to get from here to there? An appreciation of people, problems, goals, and places—of past history, current conditions, and future dreams—is the critical basis for community work. For example, a community initiative to reduce the

Exhibit 8.1. A Conceptual Map of the Community WorkStation Aspect of the Community Tool Box.

*Community Tool Box
Framework for Promoting Community Health and Development*

Understanding Context and Collaborative Planning

Community Action and Intervention

Community and Systems Change

Widespread Behavior Change and Improvement in Population-Level Outcomes

Sustaining the Effort

Sixteen Core Competencies Supported by the Community WorkStation
What kind of community work do you want to do today?

1. Create and maintain coalitions and partnerships
2. Assess community needs and resources
3. Analyze problems and goals
4. Develop a framework or model of change
5. Develop a strategic or action plan
6. Build leadership.....
7. Develop an intervention
8. Increase participation and membership
9. Enhance cultural competency
10. Advocate for change
11. Influence policy development
12. Evaluate the initiative
13. Implement a social marketing effort
14. Write a grant application for funding
15. Improve organizational management and development
16. Sustain the work or initiative

CONNECTING WITH SUPPORT
What kinds of support do I need?

Building Capacity

Learning and Adjustments

Documentation and Evaluation

- Help in planning the work
- Solve a common problem
- Quick tips and tools for how to do the work
- See a story or example
- Learn a specific skill
- Training curriculum

- Link to other on-line resources
- Connect with others about this work
- Ask a question of an adviser
- Knowledge base from collective experience
- See how this work fits together

- Document community and systems change
- Enter or see community-level indicators
- Display trends and discontinuities
- Analyze the contribution
- Sense making and adjustments
- Capture success stories
- On-line and print reporting

Source. Courtesy of Community Tool Box.

spread of HIV/AIDS should be grounded in an understanding of the concerns of those most affected, the incidence and prevalence of HIV/AIDS among local people, traditional barriers to healthy behaviors and exposures to risks, and community assets to support improvement. In addition, such efforts are well served by strategic plans that communicate the community's vision for success (for example, "Health for All") and a concrete action plan for getting there.

Core Competencies for the Work. Six core competencies, or fundamental abilities, contribute to the work of understanding context and collaborative planning. First, *creating and maintaining coalitions* and collaborative partnerships is a common strategy for engaging the variety of sectors, such as government agencies or faith communities, in a common purpose (Berkowitz & Wolff, 2000; Brown, 1984; Kaye & Wolff, 1997). Second, *assessing community needs and resources* (Berkowitz, 1982; Kretzmann & McKnight, 1993; McKnight, 1992; Neuber & Associates, 1980), such as the need for more accessible health services or the presence of grassroots advocacy groups, grounds the work in what is locally important and available. Third, working with community partners in *analyzing community-identified problems and goals* helps pinpoint the personal and group factors (such as knowledge and skills or history of care or discrimination) and environmental factors (access and barriers, support and resources, broader policies, and the like) that may affect the current problem and future prospects for goal attainment (Cox, 1995; Quinlivan-Hall & Renner, 1994).

Fourth, *developing a framework or model of change* (Milstein & Wetherhall, 1999; Wong-Reiger & David, 1995) helps define how the community intends to go from the current situation, such as low rates of childhood immunization, to sustained improvements in population-level health outcomes. Fifth, *developing strategic and action plans* sets the blueprint for getting from a community's vision, such as the Healthy Youth program, to improvements in population-level outcomes (for example, changes in estimated pregnancy rates or prevalence of drug and alcohol use) (Berkowitz, 1982; Bryson, 1982). Sixth, *building leadership* helps ensure that the community has a team of people to develop and sustain relationships and transform conditions necessary for community health improvement (Chrislip & Larson, 1994; Gardner, 1990).

Illustrative Internet Based Supports. The Internet, or World Wide Web, can help link people and resources for nearly all aspects of the shared work of understanding and improving community based efforts to promote community health and development. For example, some Web sites offer tips from experienced practitioners on creating and maintaining community partnerships and coalitions such as the national Healthier Communities initiative (<http://www.healthiercommunities.org>) and the National Civic League (<http://www.ncl.org>). From the AHEC/Community Partners Web site

(<http://www.ahecpartners.org>), for instance, a coalition director could download or print a tip sheet titled "Coalition Barriers and How to Overcome Them" to use in a board meeting or in a training session to facilitate discussion of problems the group may be encountering.

Other sites support the work of assessing community needs by offering on-line data on the incidence and prevalence of community outcomes. For example, at the U.S. government's Healthy People 2010 Web site (<http://www.health.gov/healthypeople/state/toolkit/progress.htm>), a community leader could learn how to develop baseline information about a community health issue. Similarly, at the U.S. Health Resources and Services Administration (HRSA) Web site (<http://www.communityhealth.hrsa.gov>), a member of a partnership for maternal and child health could find the infant mortality rate for his or her particular county. Other Web sites supported development and use of community indicators, including the Sustainable Communities Network (<http://www.sustainable.org>), Redefining Progress (<http://www.rprogress.org>), the Aspen Institute Roundtable (<http://www.aspenroundtable.org>), the Public Health Foundation (<http://www.phf.org>), and the Urban Quality Indicators Newsletter (<http://people.mw.mediaone.net/cyoakam/index.html>). A Geographic Information Systems site (http://www.mapcruzin.com/learn_to_map) provides on-line training in creating and using maps to display the distribution of community problems or assets.

For those interested in developing a framework or logic model to guide the work, the U.S. Centers for Disease Control and Prevention's Evaluation Working Group collected an extensive set of resources on creating frameworks or logic models (<http://www.cdc.gov/eval/resources.htm#logic%20model>). On-line forums and chat rooms, an additional form of Internet based support, permit access to peers and experts for advice on common tasks such as building leadership. For example, in the on-line forum of the Leadership Challenge (<http://www.theleadershipchallenge.com/index.html>), contributors commented on and replied to each other about the core functions and challenges of leadership.

Community Action and Intervention

What will we do to address the identified problems or goals? How can we develop the most appropriate and effective interventions? A community's dreams, such as for safe places or social connections for elders, and related population-level outcomes, such as rates of crime or caring engagements, communicate the vision and measures for success. But to move forward, community members must convert a clear and shared vision and framework into community action and intervention. The more specific components of the intervention should reflect an analysis of contributing factors and available assets. To be successful, community efforts must mobilize and engage all those who

can benefit and contribute, including those representing diverse cultures and experiences.

Core Competencies for the Work. Three additional core competencies appear to affect success with community action and intervention. Seventh, *developing an intervention* involves selecting and using intervention components and elements based on an analysis of contributing factors and available resources (Fawcett et al., 1994; Green & Kreuter, 1991; Homan, 1994). For example, a comprehensive intervention to increase childhood immunization might include multiple components such as providing information and enhancing skills (for example, a new computerized tracking and notifying system), modifying access, barriers, and opportunities (expanded outreach programs), and modifying policies (offering immunizations as part of other clinic visits). Eighth, *increasing participation and membership* promotes voice and influence from those with deep experience, such as youth or ethnic minorities, but limited engagement (Fisher & Cole, 1993; Kaye & Wolff, 1997). Ninth, *enhancing cultural competency* helps build cross-cultural relationships and create more inclusive and just organizations and communities (McCoy, 1997; Rivera & Erlich, 1992). An understanding of cultural beliefs and practices, for example, the Hmong belief that illness is largely a spiritual matter (Fadimon, 1997), can aid community based efforts to improve health. In addition, several fundamental abilities identified here have a continuing influence on the intervention (for example, building stronger leadership and developing strategic and action plans).

Illustrative Internet Based Supports. Selected Internet sites, such as those of government agencies and national associations, can help support intervention aspects of the work. Forums and chat rooms provide opportunities to communicate with others about key considerations in designing an intervention. For instance, the Office of the Assistant Secretary of Planning and Evaluation in the U.S. Department of Health and Human Services supports a listserv for exchanges among those working on issues of disability, aging, and long-term care (<http://aspe.hhs.gov/daltcp/group.htm>). There are many useful Web sites that provide tools and supports for taking action in a local community. For example, the U.S. Environmental Protection Agency's site (<http://www.epa.gov/iaq/schools/tools4s2.html>) offers downloadable checklists, coordinators' guides, manuals, and other materials to support a community intervention to improve indoor air quality. Those interested in enhancing cultural competency might consult available Web sites, such as the U.S. Administration on Aging's on-line guide (<http://www.aoa.gov/minorityaccess/guidbook2001/default.htm>), to find recommendations that could be adapted to better engage underserved or underrepresented groups such as African Americans, youth, or people with special needs.

Community and Systems Change

How are we using different strategies to bring about change? How will we know if the initiative is a catalyst for community and systems change? Many CBPR and other community efforts to promote health and development act as catalysts for change: they help launch the changes in the environment, such as new programs or policies, that can contribute to improvement in more distant population-level outcomes (Roussos & Fawcett, 2000). For example, a school-community effort to reduce risks for adolescent pregnancy may help bring about new or modified programs (for example, supervised after-school activities), policies (required sexuality education curricula), and practices (enhanced access to contraceptives through school-linked clinics) (Paine-Andrews et al., 1999). Multiple strategies are often needed to have the intended effect. For instance, as part of a community building and CBPR effort to study and promote a safer community in a low-income area in Contra Costa County, California, residents worked with the housing authority, the police, the mass media, the health department, and other partners to successfully advocate for speed bumps, improved lighting, and youth activities. Some residents became active in affecting city and county policies, serving on a Partners for Health initiative and participating in county planning on transportation and welfare reform (El-Askari et al., 1998; Minkler, 2000).

Core Competencies for the Work. Several additional core abilities are associated with bringing about community and systems change. Tenth, *advocating for change* involves overcoming resistance and barriers to bring about new programs and policies related to the mission of a CBPR or other community effort (Altman, Balcazar, Fawcett, Seekins, & Young, 1994; Bobo, Kendall, & Max, 1991; Wallack, Dorfman, Jernigan, & Themba, 1993; see also Chapter Eighteen). For example, a statewide effort to reduce use of alcohol, tobacco, and other drugs might need to anticipate and counteract different forms of opposition, such as denying there is a problem or discounting the potential effectiveness of prevention efforts. Eleventh, *influencing policy development* requires being able to affect the policy agenda and the array of policy options presented to decision makers for consideration (Dearing & Rogers, 1996; Seekins, Maynard-Moody, & Fawcett, 1987). As described in Chapter Nineteen, for instance, a CBPR effort to promote public policies that support the community reintegration of prisoners with substance abuse problems involved the collection of information on factors contributing to this problem on the individual, family, service provider, neighborhood, and broader policy levels. This included policy-relevant information about treatment resources (for example, at the individual and family levels), correctional policies (releasing inmates in the middle of the night without adequate discharge plans), and employment policies (permitting discrimination against former inmates). Twelfth, *evaluating the initiative* includes being able to document the unfolding

of community and systems changes over time and their potential impact on more distant population-level indicators of success (Fawcett, Sterling, et al., 1995; Milstein & Wetherhall, 1999; Rootman et al., 2001). For example, a participatory evaluation of a community initiative to reduce risk for (and protect against) adolescent substance abuse documented the onset of new programs (such as after-school programs) and policies (police crackdowns on drinking and driving) and analyzed their contribution to more distant population-level outcomes (rates of single nighttime vehicle crashes) (Fawcett et al., 1997).

Illustrative Internet Based Supports. Some Web sites, such as the Network for Good (<http://www.networkforgood.org/npo/advocacy>), offer informational tips about how to advocate for change as well as newsletters or forums for connecting with peers or experts doing this work. Similarly, the American Library Association's on-line advocacy handbook (<http://www.ala.org/pio/advocacy/libraryadvocateshandbook.pdf>) provides tools and worksheets that can be adapted by a community leader interested in advocating for a cause (such as environmental protection or health care access for the uninsured). Some Web sites provide guidance on policy development (one is Service Leader, <http://www.serviceleader.org/manage/lobby.html>) and access to related exchange networks. For example, Citizen Works (<http://www.citizenworks.org>), a social justice site, offers links and tools for organizing and lobbying. Other Internet sites provide help with evaluation of community based initiatives (including the American Evaluation Association's "topical interest groups" in participatory evaluation, <http://www.eval.org>) and chat rooms and electronic discussion lists for dialogue among community evaluators (see the American Evaluation Association's discussion list, available at evaltalk-request@bama.ua.edu or <http://ualvm.ua.edu/cgi-bin/wa?SUBED1=evaltalk&A=1>).

Widespread Behavior Change and Improvement in Population-Level Outcomes

How do we affect the behavior of enough people in enough places to improve overall outcomes? To effect population-level outcomes, such as the incidence of civic engagement, requires changing the behaviors (for example, voting or making proposals for change) of large numbers of people (such as all adults and youth). To affect the behavior of large numbers of people, states and communities may use social marketing efforts that include promotional messages (touting, say, the beneficial consequences of civic engagement) and environmental changes that make the desired behaviors easier (enhanced access to polling places) and more rewarding (actual influence on the policy agenda).

Core Competencies for the Work. An additional core competence, the thirteenth, is *implementing a social marketing effort*—using promotional techniques

to effect widespread behavior change related to socially important goals (Andreasen, 1995; Kotler & Roberto, 1989). For example, our colleague Jim Caccamo and the Kansas City Partnership for Children developed media messages and billboards to promote use of the “Number One Question: Is it good for the children?” in all local decision making. Those who used the Number One Question were honored for their accomplishments in changing programs (for example, immunization tracking) and policies (school revenue bonds) to benefit children (see Community Tool Box, <http://ctb.ku.edu>). Other previously noted abilities, such as building leadership and evaluating the initiative, also have relevance to this aspect of the work.

Illustrative Internet Based Supports. Some Internet sites provide access to social marketing information for specific goals—for instance, preventing drug abuse (National Council on Alcoholism and Drug Dependence, <http://www.ncadd.org>), promoting immunizations (PATH, http://www.path.org/about/program_goals.htm), advocating for children’s issues (Children’s Defense Fund, <http://www.childrensdefense.org>), or promoting community support for children and youth (America’s Promise, <http://www.americaspromise.org>). In addition, on-line forums permit exchanges among individuals doing the work of social marketing (Social Marketing Institute, <http://www.social-marketing.org/sm.html>).

Sustaining the Effort

How well, and in what ways, are valued aspects of the community’s work sustained? How do we tell others of our accomplishments? It usually takes time—perhaps ten years or more—to change the environment and behavior sufficiently to improve population-level outcomes. To be successful, communities will need to sustain both the overall change effort and the particularly effective programs and policies that they launch, as well as promote their organizations.

Core Competencies for the Work. Several of the sixteen core competencies are particularly important to this final aspect. Fourteenth, *writing a grant application for funding* can help gain access to resources needed for the work (Robinson, 1996; see also the *Chronicle of Philanthropy* at <http://www.philanthropy.com>). Virtually all government agencies and private foundations that might support a CBPR project or other community based effort require a clear statement of the community problem or goal, the plan for addressing it, the resources needed, and a plan for evaluation. Fifteenth, *improving organizational management and development* can generate and enhance the needed institutional supports (Herman & Associates, 1994; Unterman & Davis, 1984). For example, having clear lines for decision making and open channels for communication help ensure coordination and collaboration among all aspects of the

effort. Finally, sixteenth, *sustaining the work or initiative* helps ensure that human and financial resources are available long enough to make a difference (Brice, 1987; Lefebvre, 1990; Steckler & Goodman, 1989). For example, a CBPR or other community effort to improve positive outcomes for children and youth might use a variety of strategies for keeping the effort going (Paine-Andrews, Fisher, Campuzano, Fawcett, & Berkley-Patton, 2000), such as sharing positions for child health between agencies (as in schools and public health organizations) or embedding the costs for after-school programs as a line item in an existing budget (as in the police or parks and recreation department).

Illustrative Internet Based Supports. Some Internet sites provide information about possible sources for grants and funding in the United States (Council on Foundations, <http://www.cof.org>). Others offer access to information or guidance about organizational development (<http://www.mapnp.org/library>, a free management library, or the California Management Assistance Partnership's Nonprofit Genie site, <http://www.genie.org>). Some sites provide help in planning for how to sustain the effort (the Philanthropy Journal on-line forum for exchange, <http://gort.ucsd.edu/newjour/p/msg02367.html>).

A CASE EXAMPLE: INTEGRATED SUPPORTS THROUGH THE COMMUNITY TOOL BOX

We now offer a case example to show how a comprehensive set of Internet based resources might be *integrated* in support of community based participatory research for health and development. We describe a feature of the Community Tool Box (<http://ctb.ku.edu>) known as the Community WorkStation. The mission of the Community Tool Box (CTB) is to promote community health and development by connecting people, ideas, and resources. Established in 1995 and undergoing continuous development, the CTB has over six thousand pages of how-to information relevant to the sixteen core competencies. In a related effort, the KU Work Group has developed an Internet based system for documenting and evaluating community initiatives known as the CTB Online Documentation and Support System.

The Community WorkStation Feature of the Community Tool Box

What kind of community work do you want to do today? What kind of support do you need to do it? The aim of the Community WorkStation (CWS) feature of the CTB is to make the work of community health and development—whatever people need to do—easier and more rewarding. It focuses support, such as an

outline for a grant application and real-life examples, on the sixteen core competencies for the work. It enables CBPR partners and other users to connect to different forms of support, such as help planning the work, learning a specific skill, or exchanging information with others doing the work.

Audiences and Attributes of the Community WorkStation

The CTB's Community WorkStation feature was designed to meet the needs and interests of individuals doing and supporting the work of promoting community health and development. The primary audiences (and their related interests) include *leaders and members of community initiatives* (at the local, state, and national level) who are doing this work, *staff of support organizations* who are providing helpful and timely technical assistance and evaluation services, *learners and teachers* from educational institutions who include novices and those with deep experience, and *grantmakers* and funders who are ensuring accountability and brokering connections to other needed resources. Working together in a broad collaborative partnership, these parties all need the ability to build capacity for how to do this work, learn and make adjustments, and document, evaluate, and make sense of the effort's contributions to more distant outcomes.

Consistent with the audiences' needs and interests, the CWS has several attributes. First, the resources are *integrated* in a one-stop "workstation" of multiple supports for what needs to be done to promote community health and development. Second, its content is *comprehensive*, addressing all sixteen core competencies; from creating and maintaining community partnerships to sustaining the initiative. Third, the information is *easily available on demand*, providing a just-in-time response with the tools and links to resources a few clicks away on one Web site. Fourth, the supports are *useful*, providing help in building capacity for doing this work, learning and making adjustments, and evaluating and making sense of the effort's contributions. Fifth, the resources are *appropriate for diverse users and contexts*, including for different types of users (both novices and those with extensive experience), issues (community and public health; child and youth development; community development), and contexts (urban, rural, statewide, global). Sixth, it *promotes equity* by ensuring equal access to guidance for all who have access to the Internet in their organizations or communities. Finally, carrying out the recommended activity results in a *tangible product with benefits* to the community initiative or organization (for example, a functional plan of action or a grant application with prospects for funding).

Technical Features and Capabilities of the Community WorkStation

Use of the Community WorkStation is made possible by advances in Internet technology. This includes development of the Java programming language by Sun Microsystems (<http://www.sun.com>). Development platforms, such as

SilverStream (<http://www.silverstream.com>), help integrate functions offered by Java with preexisting technologies for managing databases such as Microsoft SQL (<http://www.microsoft.com>). These tools permit the development of a reusable programming infrastructure, such as a Work Flow System, that provides for up to 70 percent of the code needed for navigating and performing routine tasks with the various on-line tools. This also provides for consistency in appearance so that end users can navigate through the Web site without getting lost.

In its most comprehensive form, the CTB's Community WorkStation offers three basic capabilities in support of this work: building capacity for the work; learning and adjustments; and documentation, evaluation, and analysis of the initiative's contribution. The first two aspects are available through the free, public version of the Community Tool Box (<http://ctb.ku.edu>). Customized and interactive forms of all three aspects are available for those who purchase tailored on-line capabilities for their own community work or for community, state, and national initiatives.

Building Capacity for Doing the Work. For each core competency (such as developing a strategic plan or writing a grant application), the Community WorkStation offers multiple forms of support. First, it provides *help planning the work*. For example, tools for "evaluating the initiative" include a detailed outline for an evaluation plan with links to how-to sections in the Community Tool Box relevant to each task. For instance, for the task "identify stakeholders," there is a link to a CTB section titled "Understanding Community Leadership, Evaluators, and Funders: What Are Their Interests?" Second, the CWS provides help in *solving commonly occurring problems*. The CTB's Troubleshooting Guide lists common problems and dilemmas in doing this work (for example, "We don't have enough members" or "We haven't brought about enough community and systems change"), questions to help clarify the issue (for example, for bringing about change, one question asks, "Do you have a clear, agreed upon action plan in place?"), and links to appropriate sections in the CTB to provide support (for example, "Developing an Action Plan"). Third, the WorkStation offers access to a growing database of *quick tips and tools for how to do the work*. For example, checklists and exercises are offered to guide different aspects of the work. Fourth, it features *illustrative stories and examples* of success doing this work. For example, the CWS unit on social marketing features a description of the Number One Question campaign, a social marketing effort to promote the well-being of children in the Kansas City metropolitan area. Fifth, the CWS provides access to relevant how-to sections for *learning a specific skill*. For each competency (such as strategic planning), there are links to relevant sections from the CTB ("Developing Vision and Mission Statements," "Creating Objectives"). Finally, access to a *training curriculum* is available to those who pay for this service. The CTB training curriculum includes different modules for

each core competency (for example, “Evaluating the Initiative”), each with related lessons that include experiential learning activities, assessment (“Developing an Evaluation Plan”), and integrated links with how-to sections in the Community Tool Box.

Learning and Adjustments. The Community WorkStation facilitates co-learning and adjustments in community practice. First, it helps in *linking to other on-line resources*. This includes access to information and materials from the vast array of potentially relevant Web resources for the sixteen core competencies (see our earlier discussion of Internet based supports). Second, it aids in *connecting with others* to learn about this work and make adjustments. It uses a forum or chat room (with e-mail and file transfer capabilities) to create a “learning community” among those doing this work. Forum users may post a puzzle or dilemma (for example, how to constructively involve those traditionally opposed to the group’s efforts) or offer guidance to another colleague (“Have you tried . . . ?”). Third, those in particular community efforts for which this is available can gain expert guidance by *asking a question of an adviser*. For example, in a statewide effort to improve child and youth development, experienced community members and national experts might respond on-line to questions from practitioners about particular issues (such as best practices for improving school success). Fourth, the on-line system can offer an evolving *knowledge base from collective experience*. Since the system can code and retrieve emerging knowledge about the work (from the documentation system, success stories, and on-line forums involving peers and outside advisers), we can capture the emerging wisdom across generations of people in distributed communities of research and action. Finally, as illustrated in Exhibit 8.1, the CWS provides a framework showing *how this work fits together*. The sixteen core competencies—what kind of community work to do today—are integrated in a robust framework or road map for organizing this work.

Documentation, Evaluation, and Analysis of the Initiative’s Contribution. This final component, the CTB Online Documentation and Evaluation System is based on a common and widely field-tested measurement system for detecting the unfolding of community and systems change (see, for example, Fawcett, Sterling, et al., 1995; Francisco et al., 1993). Since the documentation system is more labor-intensive, it is available only for sponsored community initiatives. First, it supports the on-line *documentation of community and systems change* and other important events. This includes the capacity to provide narrative information about accomplishments (for example, important events such as a new program or policy facilitated by the initiative) and code the events (as a community or system change, service provided, or resource generated). Second, the system supports *entering or seeing community-level indicators*. For instance, a statewide

initiative for youth health and development might make available on-line data on estimated pregnancy rates or high school graduation rates for participating cities and counties. Third, it can *display trends and discontinuities* in coded events. On-line graphs of the rate of community and systems changes, for instance, allow for a real-time review of trends and for an exploration of critical events that may be associated with increases or decreases in the pace of change such as new grant funding or a change in leadership.

Fourth, the on-line system permits an *analysis of contribution* of how the initiative is aiding population-level improvement. On-line pie charts can show the distribution of community and systems changes by key aspects of contribution (for example, amount by goal area, duration, and concentration by sector or place). Similarly, on-line time-series graphs can display the relationship between levels of community and systems change, such as facilitated by a teen pregnancy prevention effort, and improvements in community-level indicators (for example, estimated pregnancy rates for adolescent girls). Fifth, it supports *sense making and adjustments*. Users can go from a graph that shows a decrease in the rate of change, for example, to on-line guidance (through the CTB Troubleshooting Guide) on how to accelerate the pace of change. Sixth, the system also *captures success stories* about the initiative. Members of a national initiative to ensure access to health care for all, for example, can communicate stories of accomplishments they are particularly proud of, why their project mattered, and its meaning for the people involved in the effort. Finally, the on-line documentation system supports *on-line and print reporting* about the initiative. Lists of accomplishments, graphs, success stories, and analyses of contributions are available on demand for all those doing and supporting the work, and print capabilities help make the work of reporting easier and more rewarding.

This case example of the Community Tool Box's Community WorkStation highlights the potential power of Internet based supports for building capacity for the work; learning and adjustments; and documentation, evaluation, and analysis of the community's contribution. We anticipate further progress toward a comprehensive and integrated system that enables a diverse and distributed community of doers, supporters, and grantmakers to each add value to the common effort.



The Internet offers unprecedented opportunities to build capacity for CBPR and other community efforts to promote community health and development. But to optimize its contribution, a number of issues must be further addressed. First, access to the Internet itself presents the most obvious barrier to use. Some grassroots organizations do not have access to the Internet, which precludes their use

of any Internet based tools. Although studies suggest that Internet use is increasing rapidly (reaching well over half of U.S. households), we must ensure a more equitable distribution of computers and networks to reduce the great disparities between the haves and the have-nots nationally and globally (Hoffman & Novak, 1998). Academic partners in CBPR may have an important role to play in writing into research grants computers or Internet access for their community partners to help address this problem.

Second, a community organization may have access to the Internet but be unaware that a particular resource such as the Community Tool Box or the Healthy Communities Web site exists or be unable to find the most appropriate tools for its particular work. In response to the keyword *community*, for instance, search engines such as Google or Yahoo will typically provide tens of thousands of Web sites. So the community member has to become quite skilled in using advanced search techniques to find to the best material. Outside researchers, having greater familiarity with such tools, may contribute by arranging informal educational sessions designed to help bridge the digital divide. In the spirit of co-learning, such forums might be structured so that community partners help outsiders learn the kinds of informational goals and needs most relevant for their community and with outside partners offering more technical information about how these issues might best be addressed with Internet based resources.

Third, sometimes community members and outside experts may not know what would be helpful in a particular situation. For example, an inexperienced or overwhelmed community leader or outside researcher may not know to plan for sustaining the community effort from its earliest days. When members of CBPR and other community efforts are unsure of what is needed or possible, more advanced Internet based supports, such as expert systems that offer a knowledge base derived from experience, could provide valuable guidance based on the whole group's emerging wisdom. Finally, as we have already suggested, community and outside members of the CBPR team may not have the complete skills necessary for this work, even when useful informational resources are available on-line. More intensive supports, such as training workshops or certification through on-line learning, might aid in developing core competencies to increase individual and community capacity and to further work toward enhanced participation of community members and outside researchers in community-determined efforts.

Future research and development can help ensure that Internet based tools, like any shovel or hoe, amplify the efforts of people to address what matters in communities. First, with input from end users, Internet based systems can help provide more tailored support and guidance. Second, as smart systems learn about users' interests, they can become more responsive to the particular needs of those doing and supporting community work. Third, with advances in

technology and language translation, people doing community work throughout the world can have rapid connections with a diverse and global community of peers and professional experts. Fourth, refinements in on-line graphing, sense making, and adjustments will permit even fuller integration of the work of understanding and improvement.

Finally, the available Internet based resources must ultimately be useful to those doing and supporting the work of CBPR and other efforts to promote community health and development. To have utility for already overburdened community partners, these tools must make the core tasks easier and more rewarding. The vision of integrated, functional, Internet based supports for community work is becoming a reality in some communities. Its promise is enhanced capacity among generations of change agents in thousands of geographically dispersed communities. Together, we doers, learners, and supporters can be joined—both locally and globally—in this meaningful work of creating just, caring, and healthy communities.

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