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## Community-Based Participatory Research From the Margin to the Mainstream Are Researchers Prepared?

Carol R. Horowitz, MD, MPH; Mimsie Robinson, MA, MPS; Sarena Seifer, MD

**Abstract**—Despite an increasing arsenal of effective treatments, there are mounting challenges in developing strategies that prevent and control cardiovascular diseases, and that can be sustained and scaled to meet the needs of those most vulnerable to their impact. Community-based participatory research (CBPR) is an approach to conducting research by equitably partnering researchers and those directly affected by and knowledgeable of the local circumstances that impact health. To inform research design, implementation and dissemination, this approach challenges academic and community partners to invest in team building, share resources, and mutually exchange ideas and expertise. CBPR has led to a deeper understanding of the myriad factors influencing health and illness, a stream of ideas and innovations, and there are expanding opportunities for funding and academic advancement. To maximize the chance that CBPR will lead to tangible, lasting health benefits for communities, researchers will need to balance rigorous research with routine adoption of its conduct in ways that respectfully, productively and equally involve local partners. If successful, lessons learned should inform policy and inspire structural changes in healthcare systems and in communities. (*Circulation*. 2009;119:2633-2642.)

**Key Words:** community-based participatory research ■ healthcare disparities ■ collaboration

In recent decades, efforts to improve health have concentrated in academic institutions, producing outstanding basic science and clinical investigators and clinicians through well-established training, research, and clinical programs. Without question, the effective therapies developed and tested through research and disseminated through ever-improving quality of care have significantly contributed to the improving life expectancy of Americans of all racial and ethnic backgrounds. Yet, these diagnostic and therapeutic breakthroughs and unprecedented healthcare spending have not eliminated health disparities for the majority of health conditions, even among populations with equal access to care.<sup>1</sup> Nor have they reversed the poorer health of Americans compared with people in other nations who spend far less on health services.<sup>2,3</sup>

Scientists and healthcare providers have begun to recognize that prevention and control of complex conditions, including cardiovascular diseases, necessitate assessing and addressing the array of nonclinical issues not traditionally in their purview. These social determinants of health are the social, economic, political, and environmental conditions to which a great share of health problems are attributed.<sup>4</sup> Researchers, outside experts, also are rejecting the idea that scientific objectivity demands creating a distance between themselves and their research subjects<sup>5</sup> and are partnering

with inside experts, community members who live with the problems being studied. In this way, they are embodying the kind of local voice, participation, and action that can ignite new initiatives and approaches and lead to sustainable long-term results.<sup>6,7</sup>

Community-based participatory research (CBPR) engages the multiple stakeholders, including the public and community providers, who affect and are affected by a problem of concern. This collaborative approach to research equitably involves all partners in the research process and recognizes the unique strengths that each brings.<sup>8</sup> CBPR begins with a research topic of importance to the community and aims to combine knowledge with taking actions, including social change, to improve health.<sup>9</sup>

Let us, for example, examine hypertension. Despite scores of research studies addressing hypertension management, its prevalence is increasing, and two thirds of those diagnosed are not controlled.<sup>10</sup> Blacks have a higher prevalence of hypertension and its adverse outcomes, are more intensely treated for it, and yet are more poorly controlled.<sup>11</sup> Commonly described barriers to control include individual, clinician, and systems problems (ie, medication adherence, physician practice patterns, access to care).<sup>12-15</sup> More recently, investigators have described environmental factors such as living in a neighborhood with poorer safety, walkability,

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social cohesion, and food availability that correlate with a higher prevalence of hypertension.<sup>16</sup> The fact that our increasingly sophisticated understanding of factors contributing to adverse outcomes is accompanied by a failure of current approaches to widely prevent or control hypertension begs new approaches. CBPR may uncover new reasons for poor control, ways to more effectively address factors correlated with poor control, or develop completely novel clinically or community-based initiatives.

Although many academics are concerned about shrinking opportunities and overwhelmingly competitive hurdles to funding and publishing their work, CBPR is a new and expanding frontier, particularly in newer areas of focus such as cardiovascular research. Emerging evidence of CBPR generating new ideas and approaches, a host of CBPR fellowships and training programs, well-established and new journals interested in publishing CBPR, and emerging paths for academic advancement have piqued interest in this approach.<sup>17,18</sup> The National Institutes of Health is helping blaze the trail with its new focus on translational research, an increasing number of funding applications that require participatory research, special CBPR review panels, and a National Institutes of Health-wide Scientific Interest Group (including the National Heart, Lung and Blood Institute) that aims to increase awareness, career development, use, and funding vehicles for CBPR.<sup>19,20</sup> Community members are increasingly serving as reviewers on study sections and for peer-reviewed journals, so their priorities and visions will help form the future of research.

Translational research signifies a progression in research in 2 blocks. T1 translates basic understandings of disease mechanisms into the development of new methods for diagnosis, therapy, and prevention in a preclinical realm. T2 translates results from studies into routine clinical practice and decision making.<sup>21</sup> CBPR may be the ultimate form of translational research, sometimes labeled T3, moving discoveries bidirectionally from bench to bedside to *el barrio* (the community) to organizations and policy makers. CBPR's time has come. For readers who aim to begin new partnered research programs or are already conducting clinical and translational research and want to benefit from this approach, we introduce CBPR, its benefits, and its challenges and provide concrete steps for how to proceed, using hypertension research as an example.

### What Is CBPR?

CBPR is an approach or orientation to conducting research, not a method. As summarized in Table 1, it provides a structure and mechanism for collaborative and rigorous research, using well-established or emerging methods, with a community focus. CBPR challenges researchers to listen to, learn from, solicit and respect the contributions of, and share power, information, and credit for accomplishments with the groups that they are trying learn about and help.<sup>22,23</sup> Mutually respectful relationships, shared responsibilities, and an emphasis on local capacity building can promote environments in which communities increase their ability to uncover local barriers and harness local assets to build healthier neighborhoods.<sup>24</sup> Communities can be armed to advocate for what

**Table 1. Characteristics of CBPR**

Community members and researchers contribute equally and in all phases of research
Trust, collaboration, shared decision making, and shared ownership of the research; findings and knowledge benefit all partners
Researchers and community members recognize each other's expertise in bidirectional, colearning process
Balance rigorous research and tangible community action
Embrace skills, strengths, resources, and assets of local individuals and organizations
Community recognized as a unit of identity
Emphasis on multiple determinants of health
Partners commit to long-term research relationships
Core elements include local capacity building, systems development, empowerment, and sustainability

they need, combining arguments based on evidence and ethics: doing what works and doing what is right. Scholarship and community action are not an either-or; they go hand in hand. Resulting grants and publications are midpoints on a path that encourages researchers to reflect with community partners on how to use the knowledge gained to directly, meaningfully, and sustainably benefit the community being studied.

Community should be interpreted broadly as all who will be affected by the research. It could be geographic (ie, a "hot spot" of poorly controlled hypertension); a group with a common identity, illness, or situation (ie, an ethnic or practitioner group or homeless men with hypertension and depression); or a community group with specific concerns or interests (ie, a coalition of churches concerned about increasing stress and its correlates, including hypertension, among parishioners). Many factors influencing health are beyond the scope of any single intervention but are embedded in specific communities that each have a specific set of resources and characteristics.<sup>25</sup> It is within this community context that participatory research takes place.

### What Is Different About a CBPR Approach?

Nyden<sup>26</sup> compares traditional research with an old-fashioned marriage, one in which the husband (like the university) has more power and control over resources and decisions than the wife (or community). CBPR, in contrast, resembles a more modern, egalitarian marriage in which the 2 partners (akin to researcher and community member) recognize and build on each other's strengths and share resources and responsibilities. Women's rights and their contributions have evolved from being discounted to having an essential and unquestioned value. Similarly, there has been a fundamental shift in academics' views of people in communities from patients and research subjects who are beneficiaries of medical advances and care to invaluable partners and experts who can shed light on the root causes of illness and galvanize their communities to develop effective, novel, sustainable interventions to improve health and eliminate disparities. Just as it is difficult to conceive of improving clinical care without substantive

**Table 2. Traditional Research vs CBPR**

Research Phase	Traditional Approach	CBPR Approach
Formative stage	Researchers plan project and form team, including researchers, staff, clinicians	C&A partners plan project, form team, and develop shared mission and decision-making structure
Study selection/design	Researchers choose topic and design based on scientific theory, academic interest, evidence, data, and methodological feasibility	C&A partners also incorporate community priorities, insights, and assets, emphasizing rigor and community feasibility, acceptability, context, cultural factors, and local knowledge
Funding	Grant written by researchers; funds go to researchers	C&A partners codevelop grant and equitable division of funds based on contributions to project
Implement study, analyze and interpret data	Researchers solely responsible for study conduct and analyses	C&A partners collaborate on all efforts; traditional analysis supplemented with community-driven questions and local relevance of findings
Disseminate Findings	Disseminate to academic audiences	C&A partners are coauthors and copresenters, disseminating to academics, research participants, involved communities, and policy makers
Translate research into practice and policy	Research often ends with publication of results	C&A partners mobilize the community to use findings to advocate for policy change, enhance local resources, and improve local practices
Sustain team, benefits, and resources	When grant ends, researchers often move to new project	Sustainability built into work from inception; partners honor initial commitment to continue partnership and work beyond funding cycle

C&A indicates community and academic.

clinician involvement, participatory researchers consider it difficult to conceive of improving the health of communities without substantive and sustained community involvement.

Great diversity exists within both traditional research and CBPR, but Table 2 outlines some common distinctions between these approaches. Participatory projects incorporate various degrees of partnership in project development, design, implementation, evaluation, and dissemination. However, CBPR should be clearly distinguished from community-placed research, located in but not significantly involving the community, with the result that community representatives are passive participants in studies, react to researchers as part of community advisory boards, or merely assist with recruitment. As partnered research proceeds, lines between researcher and research subject become blurred. Academics become part of the community, and community members become part of the research team.<sup>27</sup>

**Why Is a New Approach Needed?**

**Failure of Current Approaches**

Despite the large body of research documenting racial and ethnic and socioeconomic disparities in life expectancy, health care, and health across a wide variety of different conditions, interventions to improve health have lagged behind.<sup>28,29</sup> The few successful interventions often disappear with the cessation of the funding used to document their effectiveness. CBPR offers a new approach. In the case of hypertension, our ability to diagnose and prescribe effective medications is outpaced by the rapid rise in prevalence of hypertension and the low rates of blood pressure control, even among persons who regularly visit clinicians.

**Need for Insider Perspective**

Many programs to improve health are developed by and are from the viewpoint of persons outside the target communities. Interventions created solely by outsiders may perpetuate the inequalities that researchers aim to address, create an atmosphere that discourages community experts from sharing invaluable perspectives and ideas, and thwart entry of researchers and their work into communities.<sup>30</sup> To improve hypertension outcomes, interventions will likely need to affect clinicians’ practicing styles or patterns; the beliefs, behaviors, or environment of persons with hypertension; or coordination of care.<sup>31</sup> Including these “targets” as partners may facilitate research. Who would know better whether the research methods and tools are sensible and engaging and how to structure recruitment so that participants want to take part than those very targets?

**Opportunity for Novel Partnerships**

Numerous large-scale community development programs and policies are in place that aim to address nonmedical factors such as improving local services, housing, education, or safety. Most do not focus on or measure their impact on health.<sup>32,33</sup> Researchers may not yet recognize the tremendous impact that developers and policy makers have on communities and are therefore missing significant opportunities to work together to address health in novel ways.<sup>34</sup> The public health community has not yet risen to the challenge of bridging healthcare delivery and communities in need.<sup>35</sup> CBPR may allow the use of “hybrid” approaches that empower and mobilize community resources and residents and simultaneously implement systematic and clinically sound approaches to the prevention, promotion, and treatment of hypertension and other common health problems.<sup>36</sup> Recent initiatives include screening for hyperten-

sion in barbershops, designing buildings to foster health, and offering job training and housing services to help control blood pressure in black men.<sup>37–39</sup>

### Chance to Build Trust and Generate Ideas

Community members may have a “healthy paranoia” of researchers and outside organizations, given a history of racism, marginalization of minority communities by health-care systems, and past experiences of having researchers enter communities or health centers, collect data, provide no direct benefits, and leave without giving feedback or taking noticeable actions.<sup>40</sup> Negative perceptions of research and researchers have led some community leaders to decline to work with researchers and public health workers on so-called “helicopter projects,” or “drive-by research.” Researchers are naturally loath to share ideas and strategies with colleagues they do not trust. Similarly, if community members are to share their ideas and strategies with researchers, they will need to have confidence that researchers will use the ideas wisely and in partnership with local individuals. Community participation can help ensure that study goals are relevant to the population; that the means of accomplishing them are sensible; that the program considers the knowledge, attitudes, beliefs, and practices of the target group; and that results are shared, sustained, and used for the good of the community (Table 3).<sup>6–8</sup> Researchers will have hypotheses of what will improve hypertension outcomes. However, it may prove difficult to develop effective, durable interventions targeting clinicians or patients, both of whom may be skeptical of initiatives developed without their input and therefore may be hesitant to provide crucial feedback and use their influence to institutionalize successful programs.

### Is CBPR Effective?

Because the use of CBPR in cardiovascular research is relatively new, studies that address health outcomes are just beginning. To date, research has been primarily focused on prevention and promotion (ie, through lifestyle changes and via lay educators), uncovering barriers to care and self-management, and developing culturally appropriate programs.<sup>41–48</sup> More generally, CBPR succeeds in the following:

- Developing and sustaining trusting community-researcher relationships.<sup>8,49–52</sup>
- Enhancing community input, building community capacity, expanding local resources, and bringing forth a robust social justice agenda.<sup>8,24,32,53</sup>
- Sparking novel ideas and approaches, facilitating intervention development and community buy-in, and recruiting and retaining study participants who have historically been underrepresented in research.<sup>54–56</sup>
- Assessing barriers to and assets for achieving better health.<sup>57–61</sup>
- Disseminating findings and translating research into changes in practice and policy.<sup>62,63</sup>
- Improving health outcomes.<sup>38,45,46,64–67</sup>

Earlier CBPR trials often lacked strong evaluative components,<sup>51</sup> but evidence of the effectiveness of CBPR is growing. As funding and training opportunities expand, participa-

**Table 3. Potential Benefits of CBPR**

Formative stage	Diverse skills, knowledge, and expertise lead to new hypotheses and approaches
	Enhanced trust and sharing ideas between communities and researchers
	Researchers gain entry into communities
	More accountability of researchers to communities they study
Study design	Increased relevance of research questions, data, and programs devised and implemented in concert with those directly affected by the disease
	Greater community interest and support
	Increased likelihood high-priority issues addressed in a manner that recognizes and incorporates key contextual factors and influences outside the clinical setting
Funding, implementation, analysis	Funded research may enhance local capacity, assets, and sustainability
	Improved quantity, quality, validity, and reliability of data
	Novel approaches to recruitment, retention; participants want to be part of studies
	New analytic questions posed by community, more accurate and culturally appropriate interpretation of findings
Dissemination	Enhanced relevance and usefulness of data for all partners
	Fundamental fairness of sharing research findings with subjects and community members
	Community and academic partners gain expertise through collaborative writing and presenting
Translation, sustaining	Research more likely leads to tangible health and community benefits
	Build infrastructure to maximize impact of research and capitalize on benefits beyond specific project
	Improved sustainability, dissemination, replication, and policy impact; benefits outlast research
	Strengthen research and program development capacity of all involved
	Additional funds, research, and employment opportunities

tory approaches to research will be more frequently and rigorously tested.

### Conducting CBPR

Here, we detail steps for conducting CBPR, following the outline in Table 2. Most steps are applicable for researchers at any point along the CBPR continuum, from just beginning to incorporate substantive partnership into their existing work through academic-community partnerships that begin a study as equals. It is rarely too late to incorporate community input. Even when a study is already underway, community input can enhance its relevance, feasibility, impact, and sustainability.<sup>68</sup> At all stages, researchers should reflect on what parts of their research are amenable to adaptation and candidly explain to community partners any constraints they may have. For example, if enrollment in a study is underway and the design cannot be changed, there may be ample room for improvements in recruitment, retention, analysis, and dissemination. And, at any stage, there can be joint ownership of those aspects of the study (if not the entire study) that are the fruits of collaboration.

### **Formative Stage: Team Building**

CBPR emanates from community members who approach academics with a problem or idea, academics who approach community members, or existing partnerships. To form teams, researchers must supplement their scientific skills with humility, patience, curiosity, interpersonal skills, and the abilities to mentor, inspire, share control, and focus on community concerns. Researchers need to rely on community partners to teach them about the community and point out if they inadvertently offend or discount community partners.<sup>8,56,58,59</sup>

### **Building a Partnership**

Researchers can turn to people in their institutions with existing partnerships (academics, educators, or individuals in community outreach units) for guidance and introductions to the community. Extraintitutional resources—local public health units, organizations, agencies, and coalitions with interests that may intersect those of a researcher—also are assets. Partnerships commonly form boards whose size and composition vary and may include a combination of grassroots citizens/front-line clinicians and representatives of organizations.<sup>69</sup>

Generally, partnerships have members that represent the spectrum of age, race, ethnicity, gender, socioeconomic status, and levels of power in a community and have specific interest or expertise relevant to the chosen topic or focus. Boards need members with sophisticated understanding of and influence in the community and who will be doers, not just thinkers. Community partners include the following: (1) bridge builders, who have experience with research and community cultures and can moderate, mediate, interpret, and mentor others; (2) bringers, who help identify new members or resources that can benefit the project; and (3) historians, who understand the neighborhood, its culture, its traditions, and the myths that guide behaviors and thus can shed light on the challenges of improving health. Envision broadly all people who could influence the development or control of hypertension within a given target population, just as one would if conducting a quality improvement initiative. The board for the project would include just such people.

### **Developing a Structure and Rules of Operation and Decision Making**

Key community and academic leaders steer the development of rules and operating procedures to promote coalition effectiveness.<sup>6,69</sup> The group must have regular, transparent communication and agreed-on goals, roles, and rules of engagement.<sup>27</sup> Conflicts and disputes are inevitable and should be seen as necessary elements of growth.<sup>58</sup> Many partnerships form subcommittees to work on specific tasks such as community engagement and evaluation. Partners have equal power for making decisions and planning all activities. Some groups take years of negotiations with a very strong focus on process.<sup>70</sup> Others adapt principles of engagement developed by experienced groups<sup>71,72</sup> and are action oriented from their inception.

In the case of hypertension, researchers could approach clinicians, lay health workers, individuals with hypertension,

or people at risk for hypertension. A relationship may begin when academics volunteer at a local screening or when a leader of a neighborhood coalition approaches a hospital outreach worker with concerns about increasing numbers of adults with cardiovascular disease. A clinician could become curious about the potential for others such as home attendants to improve adherence to medications or medical visits among those with uncontrolled hypertension. These encounters can lead to the sharing of ideas, building of relationships, and the decision to move forward with a research idea or use the new relationship to modify research in development or in progress.

### **Study Selection and Design**

Together, partners determine research questions or modify existing questions based on joint interest and expertise. In a “best of both worlds” scenario, academic expertise ensures that studies are designed and implemented to rigorously test hypotheses and to incorporate state-of-the-art evidence-based practices. Community experts generate new hypotheses and new intervention ideas and guide recruitment and retention strategies that ensure robust participation and take into account social, cultural, economic, and practical realities of potential participants. There will be compromises. If community partners want to offer interventions that, unbeknownst to them, have been proven ineffective,<sup>73</sup> academics can suggest testing new ideas or adapting the intervention to address earlier shortcomings. If academics want to conduct a randomized controlled trial, community members may suggest offering the control group a deferred intervention. Community partners have introduced novel hypertension research designs, including creating a community-generated documentary about problems with hypertension control; creating data maps about prevalence, outcomes, and local factors to be used for research and advocacy; screening children to identify families at increased risk for hypertension; and structuring curriculum for lay health education and multimedia community interventions.<sup>42,74–77</sup>

### **Funding and Ethics Review**

Grant writing should be collaborative. Community members who are involved with the grant from its very inception will accurately state “We got the grant” instead of “They got the grant,” which can lead to a cascade of ideas and active support. CBPR grants contain flexibility for developing and testing ideas that emanate from the partnership. Researchers often expect that to receive funding, every step of a grant must be planned out with great specificity. However, there are opportunities to be funded to conduct CBPR when the process is very clearly outlined, but there is room to take different directions based on earlier work.

In terms of budgeting, community partners should receive financial and other resources that facilitate their participation, just as their academic partners do.<sup>8</sup> When possible, research assistants should be recruited from within the community under investigation. Community members also can suggest suitable stipends for research participants that are appropriate but not coercive. Through funding personnel and programs, researchers are building and enhancing community capacity

**Table 4. Federal Funding Sources for CBPR\***


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Centers for Disease Control
Prevention Research Centers
Racial and Ethnic Approaches to Community Health Programs (REACH)
National Institutes of Health
National Institutes of Health-wide funding announcements explicitly supporting CBPR
Agency-wide scientific interest group on CBPR
National Institutes of Health Roadmap emphasizes CBPR to accelerate clinical and translational research
Clinical and Translational Science Awards require community engagement component
National Center on Minority Health and Health Disparities has Office of CBPR and Outreach and several active CBPR funding mechanisms
Agency for Healthcare Research and Quality
Housing and Urban Development
Environmental Protection Agency

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\*Funding updates for federal, regional and foundation grants available at <http://depts.washington.edu/ccph/fundingopps.html> (CBPR grants listed) and <http://www.grants.gov> (federal funding opportunities).

and assets. Funding agencies are increasingly investing in CBPR (Table 4).

Principles guiding the Institutional Review Board may not cover the scope of ethical considerations that arise in CBPR.<sup>78</sup> It is incumbent on CBPR researchers to initiate a discussion with their Institutional Review Board before submitting a proposal for review and to use the proposal as a tool for educating Institutional Review Board members about CBPR. Researchers also should be aware that community groups are increasingly establishing their own ethics review processes that may need to approve a study. For example, a study may envision having a community board decide the optimal way to recruit patients to a study in which peer educators provide a lifestyle intervention for weight loss. In this case, funding will need to be flexible to allow emergent strategies such as hosting recruitment parties and church breakfasts,<sup>55</sup> and researchers will need to work with the Institutional Review Board to understand and approve the processes as they emerge.

### Research Conduct and Analysis

Different stakeholders often take leads in different phases of research. If a survey about the reasons for adherence to hypertension medicines is planned, community members may list key questions; researchers may suggest appropriate scales or methods of inquiry; the community may choose among possible instruments, test some in their neighborhood, and share feedback, as well as lead recruitment efforts and guide trained surveyors; researchers may clean data and run analyses; and the community may interpret and disseminate the results and make recommendations for next steps. It is important to use designs, methods, and approaches that are sensitive to the sociocultural backgrounds of the “community,” be it a local ethnic group such as Asian Indians with high cardiovascular mortality but whose behaviors are largely unexplored<sup>79</sup> or a group of primary care clinicians. Research-

ers’ confidence in conducting traditional studies should not preclude leaving ample room for community partners to steer the process.<sup>58</sup> Community-based recruiting, for instance, may be far more successful when people within local organizations introduce the research and its potential benefits to people in their own organization, church, or hospital, who already know and trust them, than if researchers try to garner interest at the site.<sup>56</sup>

All partners should agree on goals and tools to evaluate processes and outcomes.<sup>8</sup> Process evaluation may use qualitative methods (ie, interviews, focus groups) and quantitative methods (ie, surveys) of partners, community members, and others affected by the work. In this way, coalitions have documentation of their activities and can carefully and critically reflect on their work.<sup>6</sup>

### Disseminate Findings and Translate Research Into Policy and Practice

CBPR findings are disseminated by and to all partners. Academic and community authors and presenters learn how to communicate effectively with each other’s audiences, expanding their insights, further strengthening relationships, and opening avenues for collaboration and sharing ideas. Such efforts equip all partners to conduct future research. It is important to share results with scientific audiences through presentations and peer-reviewed publications. CBPR challenges partners to expand this traditional dissemination 3 ways.

#### Community Input in Dissemination

Community members should play a key role in the analysis and interpretation of data, presentations, and manuscript preparation and in determining how the results will be distributed.<sup>80</sup> If partners view the process as creating rather than writing, the role of partners with essential insights and contributions but less comfort writing is clear, and their participation can be encouraged through having manuscript preparation meetings, having note takers, or recording and transcribing their words.

#### Local Dissemination

Partners should disseminate findings to the communities where the research was conducted, to other communities, and to the research subjects themselves, who deserve to know what was learned from the study in which they took part. Feedback from these stakeholders can shed light on what did and did not work in the research, leading to better research down the road and strengthening relationships, as researchers prove that local input is critical for current and future work. Through this work, communities can learn the importance of research and perhaps become optimistic that research will benefit them, not just the researchers. Strategies for dissemination include town hall meetings, presentations at local venues, newsletters, brochures, and video summaries.

#### Translating Findings Into Practice and Policy

To inform and influence policy, teams must decide what specifically they want to advocate for, how to frame the issue to make it compelling, and which policy makers are sympa-

thetic, receptive, and influential in that area and plan a strategy to approach them. Unified recommendations from a trio of community advocates, clinicians, and researchers may prove quite persuasive in garnering resources, continuing proven effective programs, and disseminating key problems, solutions, and approaches. The National Heart, Lung, and Blood Institute, for example, is establishing a nationwide network of community-based organizations implementing targeted, culturally sensitive heart health education strategies aimed at changing local physician practices and patient behaviors.<sup>81</sup> Building relationships with funders can help partnerships learn about future opportunities and influence future funding priorities. Tangible community benefits can include employment, new skills, individual and community-level empowerment, and accessible, effective programs that improve health.<sup>82</sup>

### **Sustain Research Partnerships, Benefits, and Resources**

Sustainability of programs and resources is a core element of CBPR. Partners should embed plans to maintain benefits and partnerships as early as grant writing, asking, "If this works, what do we need to build to make sure it continues?" This may include clinical leaders who can institutionalize programs, local leaders to lobby for programs,<sup>83</sup> or data and publications to inform policy, advocate for resources, or influence current practices. Partnerships that have built trust and respect; formed bonds of friendship; shared humor, successes, and failures; and learned from each other may be more likely to outlast disagreements and fluctuations in funding and work intensity.<sup>8</sup> Community champions are critical, but academics must lead by example. For example, if researchers become too busy to attend regular meetings, they cannot ask more of their community partners.

### **Challenges of CBPR and Potential Solutions**

Although CBPR can enhance research, it can be complicated and quite challenging. Here, we describe common issues in conducting partnered research and ways to approach them.

#### **Conducting CBPR on Traditional Research**

##### **Timeframe: Creativity and Compromise**

Most grants leave little time to build relationships, recruit key partners, and codevelop goals and ideas, in addition to conducting high-quality research, all of which CBPR requires. Fortunately, funding is increasingly available for this key formative work. Community members have many competing priorities such as job creation and crime reduction, which make their consistent participation in CBPR projects challenging. It is important to respect the time that partners have to give and to be flexible so that people do not have to give up their existing roles in the community to be partners. Creative research can incorporate community concerns and constraints, ie, by employing local people as study personnel.

##### **Crossing Cultures: Communicating, Resolving Conflicts, and Aligning Objectives**

Understanding and addressing common conflicts in partnerships may, in fact, lead to stronger and more productive collaborations. We review these here.

#### ***Mistrust***

Historically, research has often not directly benefited and sometimes actually harmed the communities involved and excluded them from influence over the research process.<sup>84</sup> Community members can become the conscience of investigations, and researchers must be aware that community members have placed their credibility on the line through the partnership. Partners often harbor stereotypes about each other that can pose obstacles to healthy and efficient teamwork. If groups do not devote adequate time and energy to relationship building, they may find the challenges posed by the process of CBPR to be overwhelming or self-defeating. Through honest discussions and a process marked by transparency, groups can stay on task.<sup>59</sup> A cautionary note: Growing attention to and funding for CBPR can lead to a surge in name-only CBPR. These endeavors have a high risk of damaging partnerships and trust, which could spread through a community and even negatively affect well-functioning partnerships.

#### ***Culture and Social Class***

Traditional research by nature is competitive and can be exclusive; CBPR is collaborative and by definition inclusive.<sup>27</sup> Much CBPR takes place with relatively low-income communities and communities of color, and the majority of researchers receive relatively high incomes and are not persons of color. Typically, researchers have evaluative competency; community members have cultural competency. Thus, CBPR partnerships cross cultures and cross social classes, and issues of power and conflict arise.<sup>5</sup> Researchers should be aware of these issues and view them as opportunities for growth and expanding their perspectives, rather than as reasons that partnered research is too hard to take on.

#### ***Differing Objectives and Perspectives***

Partners may differ in their emphasis on research versus service delivery, policy versus publication, building infrastructure versus developing new scientific knowledge, the importance of processes versus outcomes, and different styles of communication and decision making.<sup>8</sup> These must be discussed openly so that the team can meet individual and group needs, especially as the partnership solidifies and partners genuinely want not only to further their group cause but also to help each other.<sup>5</sup>

#### ***Financial Inequities***

Not surprisingly, funding disputes can prove toxic to partnerships. Community members may have trouble reconciling multimillion dollar research budgets that are enrolling hundreds of patients when they could use that budget for service delivery to thousands. Because academics tend to have significantly higher salaries, community partners can feel relatively underfunded for contributing the same amount of effort. Budget discussions should become part of the CBPR education process: the community learning the cost of research, academics learning the cost of delivering community services, and partners searching for ways to be more cost-effective to sustain programs.<sup>27</sup>



**Sharing Power, Resources, and Decision Making**

Core values of CBPR are mutual respect and a belief that each partner has the potential to contribute something of equal worth to the project at hand. Some researchers may view their involving laypersons in their research as doing the community a favor. This kind of thinking can undermine the integrity of any project. We must be careful not to offer a “token” or marginal involvement but realistic and vital engagement in research. Researchers must genuinely be convinced that community partners have something to offer.

**Conflict Resolution**

Academics need community mentors to avoid taking missteps that damage partnerships and to have a person who is comfortable providing them feedback when they inadvertently make a mistake. Conflict resolution is necessary for growth, and resolution creates a legacy of problem-solving strategies and stronger bonds.<sup>30</sup> Taking time to meet regularly as a team and having clear and written rules for decision making are critical. Through this work, partners can recognize each other’s strengths and overcome academic stereotypes that community partners lack capacity and infrastructure to be full research partners, as well as community cynicism that academics only partner to enhance their careers and their research. At times, partners must simply agree to disagree. CBPR calls for every person involved to be willing to take a long, hard look at his or her fundamental assumptions about people from different walks of life.

**Balancing Scientific Rigor and Community Acceptability**

Traditional research is focused on “R,” and much of CBPR to date had been focused on process, or “CBP.”<sup>51</sup> Partners are now challenged with blending CBP and R while retaining the advantages and benefits of both. Community partners may resent an emphasis on “R,” especially if they feel that the effectiveness of a program is obvious. However, community-based organizations increasingly need to demonstrate their impact, and lack of evaluative expertise and concrete data hampers their efforts to advocate for programs.<sup>85</sup> Partnered research can generate the data and impart the skills in evaluation, dissemination, and grant writing critically needed by organizations. Teams need to find ways to adhere to evidence-based principles, ensuring that all work is evaluated and learning lessons from earlier programs in which resources were poured into communities and community members did not appear to benefit.<sup>73</sup>

Overemphasis on research could make CBPR inflexible. Researchers can feel pressured to take control of the research to adhere to a timetable and traditional standards of first-author publications and principal investigator grant awards necessary for career advancement. Academics should balance community timelines and need for shared control with relevant research, acknowledging constraints and pressures up front so that they become shared goals and do not lead to misgivings. New mechanisms for coprincipal investigators, opportunities for multiple manuscripts with rotating first authors, and incorporations of evaluators and community

members at the table at every phase of research may help researchers merge “CBP” and “R.”

**Future Opportunities**

CBPR is an approach whose time has come. The challenges to CBPR notwithstanding, all signs indicate that CBPR is moving from the margin to the mainstream: a growing evidence base supporting its effectiveness; growing numbers of fellowship programs, minicourses, and workshops; numerous peer-reviewed articles and journal theme issues; and increased funding opportunities, universities with career paths for CBPR faculty, community organizations that recognize the role of CBPR in building capacity and local resources, and national membership organizations that support CBPR practitioners and advance the field. In times of stagnant or shrinking research funding, concerns about finding novel ideas for investigation, and a need to break the impasses thwarting translation of the latest advances in cardiovascular research to benefit populations in need, CBPR is a great new frontier. It may be advantageous for researchers aiming to maximize the relevance, rigor, and results of their work to take a closer look.

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**References**

1. Lurie N, Fremont A. Looking forward: cross-cutting issues in the collection and use of racial/ethnic data. *Health Serv Res.* 2006;41:1519–1533.
2. Banks J, Marmot M, Oldfield Z, Smith J. Disease and disadvantage in the United States and England. *JAMA.* 2006;295:2037–2045.
3. Siddiqui A, Herman C. Towards an epidemiological understanding of the effects of long-term institutional changes on population health: a case study of Canada versus the USA. *Soc Sci Med.* 2007;64:589–603.
4. Nazroo JY, Williams DR. The social determination of ethnic/racial inequalities in health. 2nd ed. In: Marmot MG, Wilkinson RG, eds. *Social Determinants of Health.* New York, NY: Oxford University Press; 2006.
5. Minkler M. Ethical challenges for the “outside” researcher in community based participatory research. *Health Ed Behav.* 2004;31:684–697.
6. Cargo M, Mercer SL. The value and challenges of participatory research: strengthening its practice. *Annu Rev Public Health.* 2008;29:24.1–24.26.
7. Mensah GA. A framework for action eliminating disparities in cardiovascular health: six strategic imperatives and a framework for action. *Circulation.* 2005;111:1332–1336.
8. Israel BA, Schulz AJ, Parker EA, Becker AB. Review of community-based research: assessing partnership approaches to improve public health. *Ann Rev Public Health.* 1998;19:173–202.
9. *WK Kellogg Foundation Evaluation Handbook.* Battle Creek, Mich: WK Kellogg Foundation; 1998:1–110.
10. Hajjar I, Kotchen T. Trends in prevalence, awareness, treatment and control of hypertension in the United States, 1988–2000. *JAMA.* 2003;290:199–206.

11. Safford MM, Halanych JH, Lewis CE, Levine D, Houser S, Howard G. Understanding racial disparities in hypertension control. *Ethn Dis*. 2007; 17:421–426.
12. He J, Muntner P, Chen J, Roccella E, Streiffer RH, Whelton PK. Factors associated with hypertension control in the general population of the United States Arch. *Arch Intern Med*. 2002;162:1051–1058.
13. Heisler M, Hogan MM, Hofer TP, Schmittiel JA, Pladevall M, Kerr EA. When more is not better: treatment intensification among hypertensive patients with poor medication adherence. *Circulation*. 2008;117: 2884–2892.
14. Naik AD, Kallen MA, Walder A, Street RL. Improving hypertension control in diabetes mellitus: the effects of collaborative and proactive health communication. *Circulation*. 2008;117:1361–1368.
15. Wang TJ, Vasan RS. Epidemiology of uncontrolled hypertension in the United States. *Circulation*. 2005;112:1651–1662.
16. Mujahid M, Diez Roux A, Morenoff JD, Raghunathan T, Coper R, Ni H, Shea S. Neighborhood characteristics and hypertension. *Epidemiology*. 2008;19:590–598.
17. Community Health Scholars Program. Available at: <http://www.sph.umich.edu/chsp/>. Accessed February 2008.
18. Robert Wood Johnson Clinical Scholars Program national program office. Available at: <http://rwjccsp.stanford.edu/>. Accessed February 2008.
19. Extramural Scientist Administration Interest Group. Available at: [http://grants.nih.gov/grants/training/esaig/cbpr\\_sig.htm](http://grants.nih.gov/grants/training/esaig/cbpr_sig.htm). Accessed August 2008.
20. Community Engagement Key Function Committee: Community-Based Participatory Research Scientific Interest Group (CBPR-SIG). Available at: [http://www.ctsaweb.org/index.cfm?fuseaction=committee.viewCommittee&com\\_ID=3](http://www.ctsaweb.org/index.cfm?fuseaction=committee.viewCommittee&com_ID=3). Accessed August 2008.
21. Woolf SH. The meaning of translational research and why it matters. *JAMA*. 2008;299:211–213.
22. Minkler M, Wallerstein N. Introduction to community-based participatory research. In: Minkler M, Wallerstein N, eds. *Community-Based Participatory Research for Health*. San Francisco, Calif: Jossey-Bass; 2003.
23. Israel BA, Eng E, Schulz AJ, eds. *Methods in Community Based-Participatory Research for Health*. San Francisco, Calif: Jossey-Bass; 2005.
24. Macaulay AC, Commanda LE, Freeman WL, Gibson N, McCabe ML, Robbins CM, Twohig PL. Participatory research maximizes community and lay involvement. *BMJ*. 1999;319:774–778.
25. Satcher D, Higginbotham EJ. The public health approach to eliminating disparities. *Am J Public Health*. 2008;98:400–403.
26. Nyden P. Academic incentives for faculty participation in community-based participatory research. *J Gen Intern Med*. 2003;18: 576–585.
27. Jones L, Wells K. Strategies for academic and clinician engagement in community-participatory partnered research. *JAMA*. 2007;297:407–410.
28. Smedley BD, Stith A, Nelson AR, eds. *Unequal Treatment: Confronting Racial and Ethnic Disparities in Health Care*. Washington, DC: National Academies Press; 2002.
29. Agency for Healthcare Research and Quality. *2006 National Healthcare Disparities Report*. Washington, DC: US Department of Health and Human Services; 2004. AHRQ publication No. 05–0014.
30. Green L, Mercer S. Can public health researchers and agencies reconcile the push from funding bodies and the pull from communities? *Am J Public Health*. 2001;91:1926–1929.
31. Fahey T, Schroeder K, Ebrahim S. Interventions used to improve control of blood pressure in patients with hypertension. *Cochrane Database Syst Rev*. 2006;CD005182.
32. Chaskin RJ. Perspectives on neighborhood and community: a review of the literature. *Social Service Rev*. 1997;71:521–547.
33. Srinivasan S, O'Fallon LR, Deary A. Creating healthy communities, healthy homes, healthy people: initiating a research agenda on the built environment and public health. *Am J Public Health*. 2003;93:1446–1450.
34. Robinson RG. Community development model for public health applications: overview of a model to eliminate population disparities. *Health Promot Pract*. 2005;6:338–346.
35. Raphael D. Shaping public policy and population health in the United States: why is the public health community missing in action? *Int J Health Services*. 2008;38:63–94.
36. Horowitz CR, Lawlor EF. *Community Approaches to Addressing Health Disparities*. In: Cohen JA. *Challenges and Successes in Reducing Health Disparities*. Washington, DC: National Academy of Sciences and National Academies Press; 2008.
37. Hess PL, Reingold JS, Jones J, Fellman MA, Knowles PR, Kim SE, Clark C, Ogunji O, Knowles P, Leonard D, Haley R, Ferdinand K, Freeman A, Victor RG. Barbershops as hypertension detection, referral, and follow-up centers for black men. *Hypertension*. 2007;49:1040–1046.
38. Krieger JW, Takaro TK, Song L, Weaver M. The Seattle-King County Healthy Homes Project: a randomized, controlled trial of a community health worker intervention to decrease exposure to indoor asthma triggers. *Am J Public Health*. 2005;95:652–659.
39. Dennison CR, Post WS, Kim MT, Bone LR, Cohen D, Blumenthal RS, Rame JE, Roary MC, Levine DM, Hill MN. Underserved urban African American men: hypertension trial outcomes and mortality during 5 years. *Am J Hypertens*. 2007;20:164–171.
40. Trotter RT. *Communication and Community Participation in Program Evaluation Processes*. Washington, DC: US Department of Health and Human Services; 1996:241–266. Cultural Competence Series.
41. Anderson JB. Unraveling health disparities: examining the dimensions of hypertension and diabetes through community engagement. *J Health Care Poor Underserved*. 2005;16:91–117.
42. Ivey SL, Patel S, Kalra P, Greenlund K, Srinivasan S, Grewal D. Cardiovascular health among Asian Indians: a community research project. *J Interprof Care*. 2004;18:391–402.
43. Reis EC, Kip KE, Marroquin OC, Klesau M, Hipps L, Peters RE, Reis SE. Screening children to identify families at increased risk for cardiovascular disease. *Pediatrics*. 2006;118:e1789–e1797.
44. Kim S, Koniak-Griffin D, Flaskerud JH, Guarnero PA. The impact of lay health advisors on cardiovascular health promotion. *J Cardiovasc Nurs*. 2004;19:192–199.
45. Pazoki R, Nabipour I, Seyednezami N, Imami SR. Effects of a community-based healthy heart program on increasing healthy women's physical activity: a randomized controlled trial guided by community-based participatory research. *BMC Public Health*. 2007;23: 216–223.
46. Brownstein JN, Bone LR, Dennison CR, Hill MN, Kim MT, Levine DM. Community health workers as interventionists in the prevention and control of heart disease and stroke. *Am J Prev Med*. 2005;29:128–133.
47. Connell P, Wolfe C, McKeivitt C. Preventing stroke: a narrative review of community interventions for improving hypertension control in black adults. *Health Soc Care Community*. 2008;16:165–187.
48. Kim M, Han H, Kim KB, Lee Y, Lee J, Lee C, Kang E. 15-Month blood pressure outcomes of a behavioral intervention using a CBPR approach in Korean immigrants. *Circulation*. 2007;116:II-387. Abstract.
49. White-Cooper S, Dawkins NU, Kamin SL, Anderson LA. Community-institutional partnerships: understanding trust among partners. *Health Educ Behav*. 2007;36:334–347.
50. Corbie-Smith G, Ammerman AS, Katz ML, Blumenthal C, Washington C, Weathers B, Switzer B. Trust, benefit, satisfaction, and burden: a randomized controlled trial to reduce cancer risk through African-American churches. *J Gen Intern Med*. 2003;18:531–541.
51. Viswanathan M, Ammerman A, Eng E, Garlehner G, Lohr KN, Griffith D, Rhodes S, Samuel-Hodge C, Maty S, Lux L, Webb L, Sutton SF, Swinson T, Jackman A, Whitener L. Community-based participatory research: assessing the evidence. *Evid Rep Technol Assess (Summ)*. 2004; Aug:1–8.
52. Butterfoss FD, Lachance LL, Orians CE. Building allies coalitions: why formation matters. *Health Promotion Practice*. 2006;7:23s–33s.
53. Roussos ST, Fawcett SB. A review of collaborative partnerships as a strategy for improving community health. *Annu Rev Public Health*. 2000; 21:369–402.
54. Noe TD, Manson SM, Cruz C, McGough M, Henderson JA, Buchwald DS. The influence of community-based participatory research principles on the likelihood of participation in health research in American Indian communities. *Ethn Dis*. 2007;17:S6–S14.
55. Corbie-Smith G, Williams IC, Blumenthal C, Dorrance J, Estroff SE, Henderson G. Relationships and communication in minority participation in research: multidimensional and multidirectional. *J Natl Med Assoc*. 2007;99:489–498.
56. Horowitz CR, Brenner BL, Lachapelle SM, Arniella G. Effective recruitment and enrollment in research through community-led strategies. *Am J Prev Med*. In press.
57. O'Fallon LR, Deary A. Community-based participatory research as a tool to advance environmental health sciences. *Environ Health Perspect*. 2002;110:155–159.
58. Horowitz CR, Williams L, Bickell NA. A community-centered approach to diabetes in East Harlem. *J Gen Intern Med*. 2003;18:542–548.

59. Freeman ER, Brugge D, Bennett-Bradley WM, Levy JI, Carrasco ER. Challenges of conducting community-based participatory research in Boston's neighborhoods to reduce disparities in asthma. *J Urban Health*. 2006;83:1013–1021.
60. Wallerstein NB, Duran B. Using community-based participatory research to address health disparities. *Health Promot Pract*. 2006;7:312–323.
61. Horowitz CR, Colson KA, Lancaster K, Hebert PL. Disparities in access to healthy foods for people with diabetes. *Am J Public Health*. 2004;94:1549–1554.
62. Vasquez VB, Lanza D, Hennessey-Lavery S, Facente S, Halpin HA, Minkler M. Addressing food security through public policy action in a community based participatory research partnership. *Health Promot Pract*. 2007;8:342–349.
63. Minkler M, Vasquez VB, Warner JR, Steussey H, Facente S. Sowing the seeds for sustainable change: a community-based participatory research partnership for health promotion in Indiana: USA and its aftermath. *Health Promot Int*. 2006;21:293–300.
64. Parker EA, Israel BA, Robins TG, Mentz G, Xihong L, Brakefield-Caldwell W, Ramirez E, Edgren KK, Salinas M, Lewis TC. Evaluation of Community Action Against Asthma: a community health worker intervention to improve children's asthma-related health by reducing household environmental triggers for asthma. *Health Educ Behav*. 2008;35:375–395.
65. Becker DM, Yanek LR, Johnson WR Jr, Garrett D, Moy TF, Reynolds SS, Blumenthal RS, Vaidya D, Becker LC. Impact of a community-based multiple risk factor intervention on cardiovascular risk in black families with a history of premature coronary disease. *Circulation*. 2005;111:1298–1304.
66. Giachello AL, Arron JO, Davis S, Sayad JV, Ramirez D, Nandi C, Ramos C. Reducing diabetes health disparities through community-based participatory action research: the Chicago Southeast Diabetes Community Action Coalition. *Public Health Rep*. 2003;118:309–323.
67. Goldfinger JZ, Arniella A, Wylie-Rosett J, Horowitz CR. Project HEAL: peer education leads to weight loss in Harlem. *J Health Care Poor Underserved*. 2008;19:180–192.
68. Cashman SB, Adeky S, Allen AJ, Corburn J, Israel BA, Montañó J, Rafelito A, Rhodes SD, Swanston S, Wallerstein N, Eng E. The power and the promise: Working with communities to analyze data, interpret findings, and get to outcomes. *Am J Public Health*. 2008;98:1407–1417.
69. Israel BA, Parker EA, Rowe Z, Salvatore A, Minkler M, Mosley A, Lambert G, Brenner B, Rivera M, Thampson B, Halstead S. Community-based participatory research: lessons learned from the Centers For Children's Environmental Health and Disease Prevention Research. *Environ Health Perspect*. 2005;113:1463–1471.
70. Schultz AJ, Israel BA, Selig SM, Bayer IS. Development and implementation of principles for community-based research in public health. In: MacNair RH, ed. *Research Strategies for Community Practice*. New York, NY: Haworth Press; 1998.
71. Blumenthal, DS. A community coalition board creates a set of values for community-based research. *Prev Chronic Dis*. 2006;3:1–7.
72. Metzler MM, Higgins DL, Becker CG, Freudenberg N, Senturia KD, Virrel EA, Gheisar B, Palermo AG, Softley D. Addressing urban health in Detroit, New York City, and Seattle through community-based research partnerships. *Am J Public Health*. 2003;93:803–811.
73. O'Connor A. Community action, urban reform, and the fight against poverty: the Ford Foundation's Gray Areas Program. *J Urban History*. 1996;22:586–625.
74. Gettleman L, Winkleby MA. Using focus groups to develop a heart disease prevention program for ethnically diverse, low-income women. *J Community Health*. 2000;25:439–453.
75. Buckeridge DL, Mason R, Robertson A, Frank J. Making health data maps: a case study of a community/university research collaboration. *Social Sci Med*. 2002;55:1189–1206.
76. Reis EC, Kip KE, Marroquin OC, Kiesau M, Hipps L, Peters RE, Reis SE. Screening children to identify families at increased risk for cardiovascular disease. *Pediatrics*. 2006;118:1789–1797.
77. Alcalay R, Alvarado M, Balcazar H, Newman E, Huerta E. Salud para su Corazón: a community-based Latino cardiovascular disease prevention and outreach mode. *J Community Health*. 1999;24:359–379.
78. Flicker S, Travers R, Guta A, McDonald S, Meagher A. Ethical dilemmas in community-based participatory research: recommendations for institutional review boards. *J Urban Health*. 2007;84:478–493.
79. Ivey SL, Patel S, Kalra P, Greenlund K, Srinivasan S, Grewal D. Cardiovascular health among Asian Indians (CHAI): a community research project. *J Interprof Care*. 2004;18:391–402.
80. Bordeaux BC, Wiley C, Tandon SD, Horowitz CR, Brown PB, Bass EB. Guidelines for writing manuscripts about community-based participatory research for peer-reviewed journals. *Prog Community Health Partnerships Res Educ Action*. 2007;1:281–288.
81. National Heart Lung and Blood Institute. Available at: [www.nhlbi.nih.gov](http://www.nhlbi.nih.gov). Accessed August 2008.
82. Themba MN, Minkler M. Influencing policy through community-based participatory research. In: Minkler M, Wallerstein N, eds. *Community-Based Participatory Research for Health*. San Francisco, Calif: Jossey-Bass; 2003.
83. Seifer SD. Building and sustaining community-institutional partnerships for prevention research: findings from a national collaborative. *J Urban Health*. 2006;83:989–1003.
84. Thomas SB, Quinn SC. The Tuskegee Syphilis Study, 1932–1972: implications of HIV education and AIDS risk education programs in the black community. *Am J Public Health*. 1991;11:1498–1505.
85. *A Final Report of the National Community Health Advisor Study*. Tucson, Ariz: Annie E. Casey Foundation and the University of Arizona; 1998: 626–794.