

## Translating Research Into Practice: The Dissemination and Initial Implementation of an Evidence–Based HIV Prevention Program

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Substantial effort has gone into scientifically developing and evaluating HIV prevention interventions. These programs make only minor contributions to HIV prevention efforts until they are widely put into practice; however, little research has been conducted to study how evidence–based, community–level HIV prevention interventions diffuse from research into practice. This article explores how one such evidence–based intervention for young MSM, the Mpowerment Project (MP), is scaling up in the US. The goals of this article are threefold: (a) to describe our longitudinal study, currently underway, concerning issues regarding translating research to practice; (b) present detailed data from 69 CBOs that are implementing the MP regarding characteristics of their communities, agencies, and target populations; and (c) to present baseline data on how these agencies are attempting to implement the MP, focusing on which intervention components CBOs decided to implement, modify, or delete and the implications of these modifications.

Substantial research and funding have gone into developing and evaluating HIV prevention interventions that are based on current theories of behavior change, utilize rigorous research designs, and focus on groups at high risk for HIV (Auerbach & Coates, 2000; Herbst et al., 2005; National Institutes of Health, 1997; Office of Technology Assessment, 1995). Our research with young gay/bisexual men, a group that remains at high risk for HIV (Solorio, Swendeman, & Rotheram–Borus, 2003; Valleroy et al., 2000; Waldo, McFarland, Katz, MacKellar, & Valleroy, 2000), has contributed to this effort. We developed and established the efficacy of a community–level HIV prevention intervention for young gay/bisexual men through the use of randomized, controlled trials. The intervention is called the Mpowerment Project (MP), and it has been shown to reduce the occurrence of

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unprotected anal sex among young gay/bisexual men (Kegeles, Hays, & Coates, 1996; Kegeles, Hays, Pollack, & Coates, 1999). Additionally, a RAND corporation study mathematically modeled how to optimize current federal prevention spending in order to prevent the most new HIV infections and found that the MP had the potential to prevent the greatest number of new HIV infections, in a cost-effective manner, when compared with other HIV prevention strategies. Other studies have also documented the cost-effectiveness of the MP (Kahn, Kegeles, Hays, & Beltzer, 2001). However, evidence-based programs such as the MP make little contribution to HIV prevention efforts unless they are widely and successfully put into practice (Ruiz et al., 2001).

Little empirical research has been conducted to study how evidence-based interventions diffuse from research into practice in community settings, and very little has been conducted regarding HIV/AIDS. Even less research has been conducted about how to effectively move community-level interventions into practice. This is of particular importance because HIV prevention approaches such as one-on-one counseling and small-group risk reduction interventions are unlikely to reach the large numbers of people who are at risk for contracting HIV. In contrast, community-level HIV prevention interventions, by virtue of their scope, have the potential to be cost-effective and to reach far greater numbers of people who may be missed by other intervention approaches (Kegeles & Hart, 1998; Kelly, 1999; Pinkerton, Holtgrave, DiFranceisco, Stevenson, & Kelly, 1998).

Research conducted in the late 1990s showed that most community-based organizations (CBOs) were not implementing evidence-based interventions, even though a number of such programs had been developed and were reported in the HIV/AIDS and public health literature. Instead, most CBOs were continuing to focus their efforts on HIV prevention interventions that were brief, simple, inexpensive, and easily sustainable, such as AIDS 101 talks, street outreach, and brochure distribution (Somlai et al., 1999). CBOs may often implement programs such as these without thinking through the rationale of doing so, and consequently, these programs often do not fulfill the CBOs' own HIV prevention goals (Kegeles, Rebchook, & Tebbetts, 2005). It has been suggested that "new generation" approaches should be used instead, such as those that target entire communities for change, use community mobilization methods, and that are specialized for hard to reach populations (Kelly, Sogolow, & Neumann, 2000).

To help CBOs adopt more effective HIV prevention strategies, the CDC has embarked on a multipronged approach to encourage CBOs to adopt HIV prevention interventions that have been shown through rigorous research to be efficacious in reducing risk behavior. These approaches are described elsewhere in this issue and include the Research Synthesis Project (Lyles, Crepaz, Herbst, Kay, and the HIV/HIDS Prevention Research Synthesis Team, 2006, this issue), the publication of the *Compendium of HIV Prevention Interventions with Evidence of Effectiveness* (Centers for Disease Control and Prevention HIV/AIDS Prevention Research Synthesis Project, 1999), the Replicating Effective Programs (REP) project (Eke, Neumann, Wilkes, & Jones, 2006, this issue), and the Diffusing Evidence Based Interventions (DEBI) project (Collins, Harshbarger, Sawyer, & Hamdallah, 2006, this issue). Prior to these efforts, there had been no organized approach to disseminate evidence-based interventions to CBOs, other than through presentations at academic conferences and publications in professional journals—neither of which effectively conveys the methods of an intervention (Goldstein, Wrubel, Faigeles, & DeCarlo, 1998). Many of the *Compendium* and DEBI programs fit the criteria that Kelly et al. described as new generation interventions. The MP was evaluated in the Research Synthesis Project as one of a handful of interventions shown to be effective for gay/bisexual men, and it the only program specifically developed for young gay/bisexual men (Johnson et al., 2002). The MP was also one of the programs involved in the REP project, is listed in the

*Compendium* and is a DEBI project. Hence, information regarding the MP has been disseminating for a few years.

The focus of this article is threefold: (a) to describe our longitudinal study, currently underway, concerning issues regarding translating research to practice; (b) to describe the community-based organizations (CBOs) to which the MP has diffused; and (c) to present baseline data on how CBOs are attempting to implement the MP, focusing on which intervention components CBOs decided to implement, modify, or delete and the implications of these modifications.

### **HISTORY OF MPOWERMENT PROJECT DISSEMINATION RESEARCH AND CURRENT STUDY**

Soon after the initial presentations about the MP at scientific meetings and the publication of its results in the scientific literature (Kegeles et al., 1996), CBOs began contacting us for information about how to implement the MP. It became clear that information about a new intervention focusing on young gay/bisexual men was diffusing to CBOs. Some CBOs began attempting to implement the intervention solely on the basis of the brief description that was presented in the initial outcomes paper. Interest in the MP steadily increased over time, and more organizations began to contact us amid new epidemiological findings that highlighted the critical need to focus HIV prevention efforts on young gay/bisexual men. However, we had not developed adequate materials to help CBOs implement the program and had little to offer them other than a written description of how to implement the M-groups, the MP's small-group component (see below), and verbal encouragement. We joined the CDC's REP project in order to develop replication materials to help CBOs implement the MP, and we collaborated with one CBO to evaluate the materials. Additionally, we provided limited technical assistance and training. As the CDC began encouraging CBOs to use evidence-based interventions, increasing numbers of agencies began contacting us for information about the MP, and we offered them informal consultation to assist them with their efforts.

From these experiences, we recognized that our former replication materials, limited technical assistance, and brief trainings were inadequate to help CBOs implement the MP with fidelity to the original model (Kegeles et al., 2000). Additionally, we identified the need to get a better understanding of the barriers and facilitators to effective implementation of the intervention. Therefore, we are currently conducting a longitudinal, technology exchange study, funded by the National Institute for Mental Health. In this project we are collaborating with CBOs that are interested in implementing, or just learning more about the MP, in order to understand more fully the issues involved in translating research into practice, primarily focusing on issues related to the adoption and implementation of an intervention. We have developed the Mpowerment Project Technology Exchange System (MPTES) as a "structural intervention" to help organizations implement the MP with fidelity to the original intervention and are evaluating its utility in achieving this goal; the development and use of the MPTES is described elsewhere (see Kegeles et al., 2006). The MPTES is a stage-based system, so organizations at different stages of considering, adopting, and implementing the MP receive different, stage-appropriate services (e.g., CBOs that are trying to decide if the MP is the right program for their community do not attend a training or receive the replication materials, but instead receive an overview pamphlet or Web-based materials about the intervention; organizations are only invited to attend the full training after they have decided that they are interested in implementing the MP). In addition, we are examining the facilitators and barriers to effective implementation of the intervention. During this time, the CDC's DEBI project has been expanding, and the number of agencies seeking to implement evidence-based interventions, including the MP, continues to increase. In our study we are not attempting to convince CBOs to implement the

MP but instead are studying the issues of translation of research to practice among organizations that are already interested in the intervention. We believe that this approach is preferable to trying to sway CBOs to implement the MP and then studying those organizations, because our anecdotal evidence indicates that different phenomena occur when organizations decide for themselves that they want to implement an intervention rather than being convinced by researchers, or other external stakeholders, to do so.

## THE MPOWERMENT PROJECT INTERVENTION

### OVERVIEW OF THE MPOWERMENT PROJECT

MP relies on peers as agents of change since they exert tremendous influence at this stage of life (Hays, Rebchook, & Kegeles, 2003). It was developed through an intensive formative research process, using social marketing (Manoff, 1985) techniques with both young gay/bisexual men and providers, and following community-based participatory research (Minkler & Wallerstein, 2003) principles. We developed and first tested the MP in three small (pop. 50,000–112,000) West Coast cities. Each community had a large university and was relatively homogenous. Later, we refined and evaluated the intervention in two larger (700,000–1,200,000) southwestern metropolitan areas. These communities were more diverse and complex than the original research sites. The MP was intended to be a program that could be tailored by each community for their community's characteristics and needs. Although not specifically developed for any one ethnic/racial group, we found that it consistently reached white men and a higher proportion of acculturated Latino men than would be expected by community demographics. The intervention was intended to reach the entire community of young gay/bisexual men in a locale by promoting safer sex with all sex partners regardless of serostatus. Although the HIV seroincidence rates in each community were relatively low, the project reached both HIV-negative and HIV-positive men. We have estimated that it costs an agency \$70,000–90,000/year to fully implement the project (described below).

The MP is a community mobilization intervention, which is based on community and individual empowerment theories (for a full description of the theoretical underpinnings of the intervention, see Hays et al., 2003). The project is run by and for young men, because when individuals are actively involved in finding and implementing solutions to their problems, the behavior change is more lasting (Rappaport, Swift, & Hess, 1984). The MP also draws on the theory of diffusion of innovations (Rogers, 2003), which suggests that people are most likely to adopt new behaviors that have already been accepted by others who are similar to them and whom they respect. The project focuses on young gay/bisexual men's social concerns, rather than exclusively on HIV, because our formative research indicated that young men were not actively seeking help for changing their sexual risk behavior and did not find HIV prevention to be very compelling in contrast with other concerns. Social concerns were very compelling, however, and therefore the MP ties HIV risk reduction to the satisfaction of other needs, such as the development of healthy and supportive social networks, enjoyable social interactions, and enhanced self-esteem. HIV is only one issue among many that young gay/bisexual men must contend with in our homophobic society (e.g., antigay violence, battles for marriage equality, and struggles for antidiscrimination protection), and many young gay/bisexual men are simultaneously dealing with issues such as self-esteem, alienation, social identity, and family problems. Hence, the MP also focuses on these issues and on building a supportive, caring, and healthy young gay/bisexual men's community in which safer sex becomes the mutually accepted norm.

As described below, the operating structure and components of the intervention function synergistically. They are interrelated, and if any are missing (with the exception of one component, as described below), it is difficult to carry out the intervention, because many

of the processes of the intervention do not occur. Below we describe the operating structure and the interventions components. As has been recommended (Kelly et al., 2000a; Pentz, 2004), we have identified in all of our replication materials and trainings which components are “core elements,” the essential parts of the intervention needed to replicate the project.

### MP'S CORE ELEMENTS: OPERATING STRUCTURE

*Core Group.* The MP is run by a core group of 10 to 20 young gay/bisexual men from diverse segments of the community; the group is not static, but instead membership changes over time. The core group meets weekly and is responsible for all the project's major decisions, including the types of events it sponsors and the integration of HIV prevention messages into all program activities. Core group members critically analyze the progress of the intervention, the issues that face them as a young gay/bisexual men's community, how the program should address these issues, as well as whom the project does and does not currently reach. They consider how to build a safer, stronger young men's community and seek to enact the solutions to the problems that they identify. They are the starting point of the diffusion of the intervention into diverse segments of the community; they spread the news about the existence of the program and its activities, encourage their friends to get involved in the program and encourage their friends to have safer sex (via “informal outreach,” as discussed below). They recruit other young men into the core group and to volunteer, as well as helping to recruit men to M-groups (discussed below). They enact many of the theoretical underpinnings of the program, including personal and community empowerment, diffusion, peer outreach, and community building. Through these activities, they develop a strong sense of ownership about the intervention and the intervention's messages.

*Coordinators.* The coordinators are the program's paid staff. They are young gay/bisexual men from the community, and are part of the core group. As such, they are the very start of the diffusion and peer outreach activities. The coordinators have a number of goals: (a) to facilitate the empowerment of the young men who constitute the core group and who volunteer to help run the program by helping them to identify the issues they need to grapple with in the program and then carry out their solutions; (b) to recruit diverse young men into the program so that diffusion can occur within diverse social networks and so that community building can occur; (c) to ensure that all parts of the intervention get implemented. They do not “direct” the program, but instead coordinate the various planning and implementation efforts, striving to help the core group and volunteers to continuously analyze the program's activities, including if the program is reaching diverse social networks in the young men's community and bringing new men into the program. To implement the MP and all its components successfully, we recommend that CBOs devote at least 60 hours/week of staff time to the intervention (or 1.5 full-time equivalents).

*Volunteers.* Accomplishing the MP's community mobilization and community building goals takes not only the efforts of the core group and Coordinators, but other young gay/bisexual men from the community must also get involved in the project as well. These volunteers do not typically devote the same amount of time and energy into the project's operations as core group members do, and volunteering is a way that men who do not want to constantly analyze the program and their community can still be a part of the program. Their efforts are essential to helping implement project events because the coordinators cannot conduct the intervention without substantial help from them (and the core group). Furthermore, they also spread the news about the project and through their social networks, engage their friends in conversations about the need for safer sex, and recruit others to the project, thereby helping to build the young men's community.

*Community Advisory Board.* We utilized community-advisory boards (CABs) in our original research, which comprised “community elders” (e.g., health department per-

sonnel, university staff and faculty, leaders of the gay/lesbian community) who would provide advice to the core group as well as to the researchers about the project's functioning in the community. Because we were starting research in communities in which we had not worked before, where we had had little experience and few contacts, we believed that CABs were essential for obtaining community input and buy-in. For some cities, the CAB was very invested and involved, whereas the CAB was much less involved in other cities. Because of their nonprofit statuses, CBOs already are required to have a board of directors, and the role of the CAB is sometimes confused with these boards. In considering how to translate this project into practice at CBOs that already reside in their communities, we have realized that a CAB need not be identified as a core element of the operating structure in the intervention when it is implemented by CBOs, although it can be very helpful.

### MP'S CORE ELEMENTS: PROJECT COMPONENTS

*Project Space.* Ideally, the project has its own physical space where most social events and meetings are held and which serves as a drop-in center where young men can meet and socialize during specified hours. Condoms and lubricant, as well as referrals to other services, including gay-positive HIV testing sites, are available in the space. Men meet and socialize with each other in the space and begin to develop a sense of community. This separate project space is important since there are few venues in most communities where young gay/bisexual men can find each other, other than in bars or public cruising places. Men can relax in the space and engage in supportive communications about safer sex or about other issues of importance (e.g., dealing with family pressures), as well as plan and carry out project activities. The space is decorated and maintained by young men themselves, core group members, and other volunteers, and therefore they have a sense of ownership about the space and the activities that occur there.

*Formal Outreach.* Unlike traditional outreach programs where an outreach worker engages one individual in a conversation about safer sex and HIV risk reduction, the MP's formal outreach program involves teams of young gay/bisexual men who (a) go together to venues popular with their peers to promote safer sex through fun, thematic, interactive, eye-catching, and high-energy performances (called venue-based outreach) and (b) sponsor outreach events that attract young gay/bisexual men by fulfilling their social needs (called social outreach). These social events may include dance parties, video nights, picnics, discussion groups, sporting activities, games, or whatever the core group decides will be most appealing to diverse groups of young men in the community. Both types of formal outreach include the distribution of condoms and appealing, eye-catching safer sex materials designed by the core group. Without the social outreach events, it is very difficult to reach young gay/bisexual men in communities since there are few places where they congregate. Social outreach also provides a mechanism for community building—as men come to the events and meet other young men, the size and number of their social networks increase. Social outreach activities also provide an important alternative to bars, as places to socialize and build a healthier community. Additionally, they provide opportunities to address other issues that may be related to HIV prevention. These issues might include body image, relationship issues, how to deal with unsupportive families, religion and spirituality, and substance use. HIV prevention is woven into all social outreach activities. In addition, the social outreach events are critical because they provide forums where young men can engage in informal outreach with each other, by engaging in supportive communications about safer sex. The names and contact information of all attendees at social outreach events are collected so that they can be recruited to attend M-groups; without this, it would be quite challenging to recruit sufficient men to the small groups. As core group members plan, implement, and evaluate formal outreach activities, they develop a sense of empowerment about the project and their ability to affect change in their community.

*M-groups.* These peer-led, 3-hour meetings of 8 to 10 young gay/bisexual men address factors contributing to unsafe sex among the men (e.g., misconceptions about safer sex, beliefs that safer sex is not enjoyable, poor sexual communication skills). Through skills-building and role-play exercises, the men practice safer sex negotiation and correct condom use. Participants receive free condoms and lubricant and, very important, are trained to conduct informal outreach. M-groups are where young gay/bisexual men receive the most intensive “dose” of HIV prevention in the intervention. The M-groups are promoted as the first step of being involved with the project, before men join the core group or volunteer in other ways.

*Informal Outreach.* In the M-groups, not only do the men gain skills relevant to having safer sex, but they also learn how to conduct informal outreach, that is, how to discuss safer sex with their friends through casual conversations. The project strives to motivate M-group participants to support their friends to practice safer sex and to help build a safer, stronger, and healthier community of young gay/bisexual men. Hence young men in the community hear the safer sex message not only through safer sex materials that are handed out at venues and at social outreach events but, very important, from their own friends. Informal outreach is indeed a critical element of the intervention, because having friends express concern about sexual safety is likely to be far more influential to young men than hearing this message through other means. Hence, having men from diverse groups of the young men’s community attend M-groups is important because informal outreach can then be conducted within diverse social networks, including to men who do not attend M-groups.

*Ongoing Publicity Campaign.* The campaign attracts men to the project by word of mouth and through flyers, other small media, articles and advertisements in gay newspapers, and the Internet. Without sufficient publicity, young gay/bisexual men simply do not know about the existence of the intervention and the formal outreach events. The publicity needs to be varied so that diverse groups of young men hear about the project because not all may use the same channels of communication.

#### **ADAPTATION/REINVENTION OF AN INTERVENTION AND FIDELITY**

There is an ongoing tension in the literature about the importance of implementing interventions with fidelity to the original methods used in the efficacy research versus the need to tailor or adapt an intervention to local communities (Kelly et al., 2000a). Evidence shows that agencies routinely reinvent or tailor interventions (Bauman, Stein, & Ireys, 1991; Kraft, Mezoff, Sogolow, Neumann, & Thomas, 2000; Rogers, 2003). Three types of reinvention have been identified, with different implications regarding fidelity. First, organizations can reinvent a program model by *adding* something new (e.g., a new component) to the model. In such cases, fidelity can easily be maintained. Second, organizations can *change or modify* an existing program component. Such changes can involve a relatively minor tailoring of a component or can be more major adaptations of the intervention. Depending upon what the tailoring/adaptation work entails, this may or may not affect fidelity. Finally, an organization can *delete* a program component altogether or change it so radically that the component no longer resembles the original (Blakely et al., 1987). In this type of reinvention, the program is no longer being implemented with fidelity. Diffusion research has demonstrated that reinvented interventions, by comparison to nonreinvented interventions, are more responsive to preexisting and new problems and community needs, are more likely to be continued over time, and organizations feel more ownership of them (Rogers, 2003). Thus, there are clear benefits of reinventing interventions, but it is important that the reinvented interventions retain sufficient fidelity to the original model to achieve maximum effectiveness. In a comparison of seven nationally disseminated education and criminal justice programs, Blakely et al. (1987) found that

high-fidelity adopters produced more effective implementations than low-fidelity adopters. When too much modification occurs, organizations run the risk of entering what Hall and Loucks called the “zone of drastic mutation beyond which continued dilution compromises program integrity and effectiveness” (as cited both in Bauman et al., 1991, and Blakely et al., 1987). Hence, it seems clear that some reinvention is desirable while also maintaining fidelity with the original methods.

As noted earlier, the MP was designed from the outset to be tailored to the needs of each community, so we expect and desire tailoring to occur and believe that some degree of reinvention is crucial to its success. For example, we would strongly advise against a CBO attempting to duplicate exactly all the formal outreach activities from another community without modification and tailoring them. Not only would implementing a program such as the MP “right out of the box” have a low probability of success, but local input and ownership is crucial to the community empowerment process. Core groups must have sufficient autonomy and power to modify the intervention with the unique needs of their communities in mind. Therefore, the process of reinventing the MP, when done carefully and thoughtfully, helps young men develop a sense of ownership of the program and of the program’s goals. Only through reinvention can the community members “meet their own needs, solve their own problems, and mobilize the resources necessary to feel in control of their own lives” (Kavanagh, 1995), and thus the process of reinvention can help in the development of an empowered community. At the same time, as indicated in the description of the MP above, implementing the core elements is important to achieve synergy among the different components. Deleting some of the core elements means that some of the objectives of the program will not be met. Without publicity, for example, many young men in a community will not hear about the intervention and hence will not join it, resulting in many social networks that are not reached with safer sex messages. Similarly, without the M-groups, men will not learn, or become motivated, to conduct informal outreach with their peers. Therefore, in our replication materials and in trainings we advise that each community should implement the core elements, but tailor them for their community (e.g., putting on events that are appealing for their community rather than only using events that we used in the research, using imagery in publicity materials or safer sex promotional that is eye-catching for their particular community).

## METHODS

Prior to 2002 the only way that the existence of the MP was advertised was through our presentations at professional conferences and publications, although the news media discussed the scientific findings of our studies from 1996 to 2001. Since 2002 a variety of methods have been put into place to disseminate the existence of the MP and our availability to provide information, training, and assistance to organizations interested in the intervention. Organizations that are interested in the MP must contact us for information about it, because no other organization has brochures and replication materials about it or conducts trainings on it. The MP is listed in a variety of national resource directories, such as AIDS Action’s booklet, *What Works in HIV Prevention for Gay Men* (Ehrmann, 2001). In conjunction with CDC efforts to disseminate evidence-based interventions, our contact information is included in the CDC *Compendium*, as well as on CDC’s Web sites, including [www.effectiveinterventions.org](http://www.effectiveinterventions.org) and the Web site for Replicating Effective Interventions. Organizations contacting CDC or their subcontractors (e.g., the Academy for Educational Development, National STD/HIV Prevention Training Centers) for information on the MP are referred to us. Additionally, we have a visible presence through booths and workshops or presentations at all the major HIV-related national conferences, including the U.S. Conference on AIDS, the HIV Prevention Leadership Summit, and the National HIV Prevention Conference, as well as at other regional AIDS conferences and select

other professional meetings (e.g., American Public Health Association). We also have a website ([mpowerment.org](http://mpowerment.org)) that receives thousands of hits each month and is registered with all the major search engines. Word about the MP and our assistance also spreads through informal networking between AIDS service organizations.

Organizations contact us directly through telephone calls, our Web site, or e-mail and indirectly by requesting information about the MP through the CDC's DEBI project. We send all organizations an overview pamphlet about the MP and ask them to call back if they want additional information. When CBOs request more information (e.g., the replication package, a training on how to implement the intervention, technical assistance), we administer a very brief interview to determine the stage of "innovation adoption" their CBO is at currently. The organizations receive the parts of the MPTES that are appropriate for their stage (if they choose to have other parts of the MPTES, they are provided them as well). Whenever CBOs recontact us for additional information, we re-survey them about their stage of intervention adoption.

During recruitment for the current study, we invited all agencies that were getting ready to implement or were implementing the MP to join our longitudinal cohort. Because we are the sole organization that provides materials about the MP or does trainings on it, we were able to try to recruit nearly all CBOs that are implementing the MP into our study. Some of the CBOs implementing the MP had been in contact with us for a substantial amount of time because they first approached us early in their decision making process while they were deciding whether or not to implement the MP. Other organizations contacted us only just before their implementation began or even after they had been implementing it for a longer period. Therefore, although the data presented in this manuscript are from this study's baseline assessment, not all of the CBOs recently began implementing the MP; in fact, some may have been implementing the MP for quite some time.

Once organizations consented to participate, we conducted semistructured telephone interviews with two to four staff members, including the MP coordinators and prevention/education directors (typically supervisors of the coordinators). We also interviewed one to two core group members. We are reinterviewing staff and core group members from each implementing agency at 6-month intervals for at least 18 months to evaluate their use of the MPTES, implementation fidelity, and barriers and facilitators to implementation.

In the baseline interviews, we asked research participants about each core element and if they were implementing it as described in the replication materials, if they modified it, or if they decided to drop it; if they reported modifying the core element, we also asked them to describe the modifications in detail, but we have not yet analyzed those qualitative data. Participants were also asked about the target population they are focusing on with the MP, the CBOs' budgets, their budget for prevention, their budget for the MP (unfortunately, this was not added to the interview protocol two thirds of the CBOs had already been interviewed), their attitudes toward innovation, and their experience with and attitudes towards the MPTES at that point. To address frequent staff turnover, whenever a participant leaves an organization, we contact the agency to determine an appropriate replacement—usually the new person hired into the previous participant's position.

Participants in the baseline semistructured interviews were compensated \$25 for their time. Because the staging interview is so brief, we do not pay respondents of these interviews. Each semistructured interview lasted 1–2 hours, and the interviewer typed detailed, near verbatim, notes of all open-ended responses and entered all close-ended responses directly into a computerized database.

## RESULTS

There has been considerable interest in the MP. As a result of the various dissemination efforts, as well as in response to research describing the MP as a cost-effective and effective

intervention for HIV prevention among young gay/bisexual men, 854 organizations contacted us for information on the MP between 2002 and early 2005. The majority of the organizations were CBOs (55%); other agencies included health departments (13%), universities (6%), other technical assistance providers and consultants (6%), and international agencies (2%).

#### CHARACTERISTICS OF IMPLEMENTING ORGANIZATIONS, PROGRAMS, AND COMMUNITIES

The interviewer made up to thirteen phone calls in order to reach organizations for the baseline interviews. Of the 76 CBOs that were implementing or about to implement the intervention, only 3 organizations declined to participate. Another 4 organizations “passively” refused to participate by failing to return phone calls to conduct the baseline interviews. Hence, 69 CBOs (91%) consented to participate in this project and were implementing (or about to implement) the MP.

Over half of the implementing organizations ( $n = 38$ ) began their projects in 2003 or 2004. Therefore, the majority had been in operation for two years or less as of this writing. Only 12 of the 69 implementing organizations began their programs prior to 2001.

As shown in Table 1, the intervention is being implemented across the United States (including in 45 states), with no one region dominating. Although the MP was originally developed in relatively small communities, nearly 75% of the programs are being implemented in communities larger than 200,000 people. It is noteworthy, however, that one in ten of the programs are being implemented in very small towns or semirural areas, and the same proportion of programs are being implemented in very large cities, with populations of over 2 million people.

Many programs have changed the age range of the MP’s target population; less than one third of the programs have maintained the original 18–29 year-old age range for whom the intervention was developed, and another quarter of the programs made small modifications to reach men only slightly younger or slightly older than in the original studies. However, close to half the programs are focusing on ages that are substantially different from the age range of the original research, including one in five organizations that are focusing the MP on youth rather than young men. Another quarter of the organizations have greatly expanded the age range to include men in their 40s and beyond.

Most of the implementing organizations are targeting young gay/bisexual men of all races/ethnicities, as was the goal in our original studies. However, it is important to note that over one third of all programs are being implemented exclusively for men of color, and most of these are for one specific ethnic/racial group.

Agencies obtained funding for the intervention from a variety of sources. The most common funding sources included CDC money received indirectly through state health departments (64%); other state money (49%); private foundations or corporations (36%); other fund-raising activities (26%); direct CDC funding (14%); and other county, city, or federal money (23%). Most agencies secured funding from multiple sources.

There was a considerable range in the size of the operating budgets for the CBOs as well as the size of the budgets for running the MP. Twelve percent of the CBOs had operating budgets of less than \$500,000 per year, 16% had annual budgets between \$500,000 and \$1,000,000, 19% had annual budgets between \$1 million and \$2 million dollars, and 27% of the agencies had budgets of over \$2 million per year. Another 26% of the organizations were unable to report their annual budget.

With respect to budgets for the MP, we have incomplete information because this question was not originally part of the interview, but was added on for the last third of the baseline interviews. Of the 26 agencies asked about their MP budget, 19% had operating budgets above \$150,000 per year, 19% had annual budgets above \$70,000 but below \$150,000, 15% had annual budgets above \$20,000 but below \$70,000, and 23% spent

TABLE 1. Community Based–Organizations at Implementation: Community and Program Characteristics

Population	Community Size		Geographic Region		Race/Ethnicity		Age Range	
	N (%)	Location	N (%)	Target Population	N (%)	Target Population (lower age limits to upper age limits)	N (%)	
< 100,000	9 (13)	Western	21 (30)	All ethnic/racial groups	44 (64)	Youth (12–16 to 19–24)	14 (20)	
100,000 – 200,000	9 (13)	Northeastern	12 (17)	African American only	9 (13)	Youth & young men (14–16 to 25–30)	6 (9)	
200,001 – 500,000	24 (35)	Southeastern	11 (16)	Latino/Hispanic only	7 (10)	Original age range (18–29)	21 (30)	
500,001 – 1,000,000	12 (17)	Midwestern	11 (16)	Only men of color	5 (7)	Young men, expanded from original range (18 to 30–35)	12 (17)	
1,000,001 – 2,000,000	6 (9)	Southern	7 (10)	Asian/Pacific Islander only	2 (3)	Includes older men (15–25 to 35+)	16 (23)	
> 2,000,000	9 (13)	Southwestern	6 (9)	Native American only	1 (1)			
		Puerto Rican	1 (1)	White only (men of color are served by other groups)	1 (1)			

\$20,000 or less annually on this intervention; 23% of the participants (including prevention directors) did not know their program's operating budget well enough to provide an estimate. The average annual operating budget of the CBOs that reported data was \$98,746 (median annual budget = was \$70,500; range = \$7,000–\$345,920).

### IMPLEMENTATION OF CORE ELEMENTS

To determine if agencies implemented each core element as specified in our program materials and trainings, we combined the data from all respondents within each agency and developed an algorithm to classify if each element was reported to have been implemented as specified in the materials, modified, or dropped. We used a conservative approach to determining fidelity of implementation. If *all* respondents from each agency agreed that the element was being implemented as specified, then we classified that element as "being implemented." If *all* agreed that the element was not being implemented, then we categorized that element as "not implemented." If any one respondent at an agency said the element was being modified, then we classified that element as "modified." Similarly, when there was other disagreement among respondents at an agency concerning a particular element, that element as also classified as "modified."

Figure 1 shows the self-reported fidelity ratings at baseline for each of the MP's core elements. The core elements closer to the left of the graph are those most frequently reported as being implemented as specified in the materials or modified. These include having paid coordinators for the program, having a core group of young gay/bisexual men who run the program, and using social outreach events as a way of attracting young men to the program. However, a significant minority of agencies dropped those elements. M-groups and project volunteers were the elements most commonly eliminated from the program. Dedicated project space, venue-based outreach, and publicity were the elements that agencies modified most frequently.

### DISCUSSION

It is encouraging that evidence-based HIV prevention programs are moving into practice. Results from this paper present an example of a community-level intervention that was originally tested in three West Coast communities, and as of February 2005, the MP was being replicated in at least 69 communities in 45 states around the United States. The number of implementing agencies continues to grow as we receive new requests for information about the MP and/or technology exchange services almost daily. Although some organizations contacted us for information about implementing the intervention before the CDC dissemination projects began, there was a sharp increase in organizations wanting information and desiring to implement after the CDC projects were in force. The continued trend of organizations implementing the MP is important for HIV prevention efforts in the United States, especially considering the cost-effectiveness of this model, the continued urgency of reaching young gay/bisexual and other MSM with HIV prevention efforts, and the MP's potential to prevent a significant number of new HIV infections annually (Cohen, Wu, & Farley, 2005; Pinkerton et al., 1998). An amazing array of CBOs are now implementing the MP—ranging from small, grassroots organizations in rural, conservative communities to well-funded, highly established agencies located in large urban environments.

The results regarding the implementation of the core elements indicate that the dissemination of information about evidence-based interventions, the diffusion of evidence-based interventions, and the push for CBOs to implement evidence-based interventions, including the MP, also has its pitfalls in terms of fidelity in the implementation of the interventions. When CBOs began implementing the MP, they frequently dropped and/or modified core elements. This can have a negative impact on the ability of

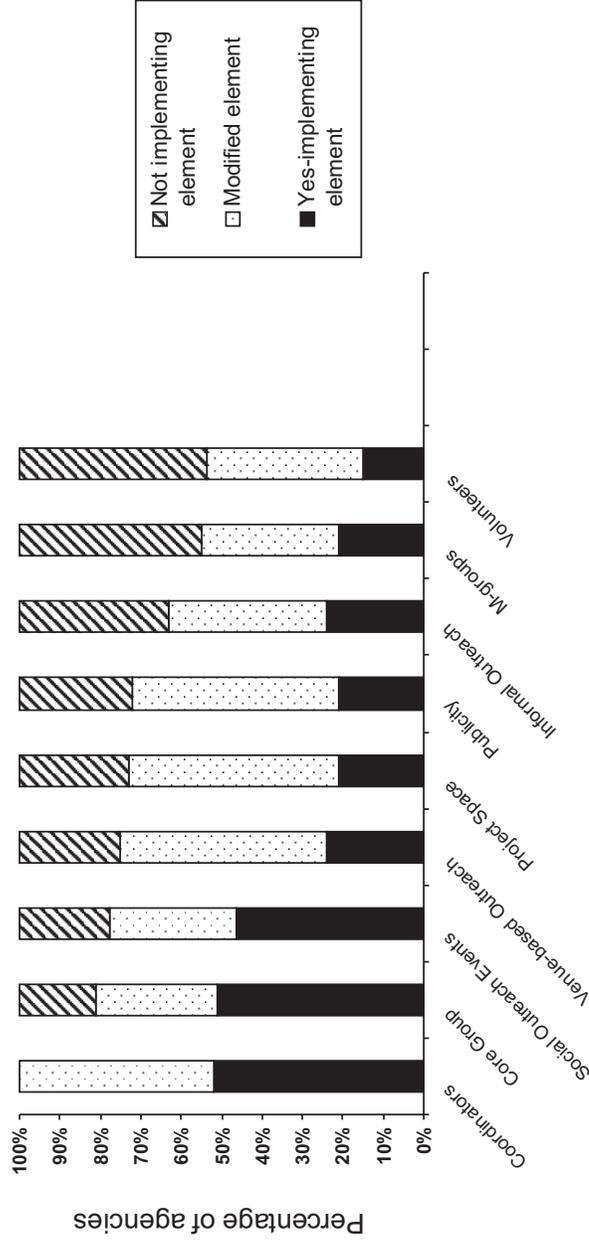


FIGURE 1. Implementation of core elements at baseline (N = 69 community-based organizations)

the program to put into effect processes necessary for risk reduction to occur. For example, although some reinvention of the program is necessary, it is alarming that 27% of CBOs dropped any program publicity. How then will diverse groups of young gay/bisexual men in the community learn about the project? Without young men knowing about the existence of the project, there is little chance that community building among diverse social networks will occur, that all parts of the young men's community will attend outreach events, or that it will be possible to recruit men to M-groups. It is difficult to imagine that diffusion of behavioral norms supporting safer sex will occur in the 37% of programs that dropped the informal outreach core element or the 45% of programs that dropped M-groups, where informal outreach is taught and encouraged. The deletion of publicity, venue-based outreach, and informal outreach are also of concern as they reduce the likelihood that the intervention will spread to all groups of young gay/bisexual men in a community. It is likely that some of these components were dropped because of financial constraints.

As the developers of this multicomponent, community-level intervention, we take very seriously the issue of whether the MP model is overly complex for most CBOs to implement, and have asked ourselves if the intervention could be simplified to make implementing it with fidelity easier. During our original research we followed community-based participatory research principles (Minkler & Wallerstein, 2003) and collaborated with young gay/bisexual men themselves to develop a model that was both theoretically sound and met the community's needs. Our experience led us to the MP model, in which we mobilize communities of young gay/bisexual men to reduce rates of unprotected anal sex, and in which young gay/bisexual men themselves are the decision makers about most aspects of the intervention. We could take a simpler approach of telling communities exactly what activities to do and eliminate the core group core element, but then the end result would not be an empowered community, there would likely be little buy-in to the program, and it is likely that young men would lose their interest in being involved in the program relatively quickly. Or we could pursue the development of a different outreach model that does not require mobilizing young men in the community to speak with and encourage each other. But then the MP might not reach sufficient numbers of young gay/bisexual men to be as cost-effective as it is, it might not have sufficient reach into diverse social networks, and the messages coming from professional outreach workers, for example, might not have the credibility that they do when they come from peers. We are encouraged by the CBOs that are able to implement the MP's core elements with high levels of fidelity, and the baseline data from this study underscore the importance of developing technology-exchange interventions that will facilitate the translation of HIV prevention research into practice.

Because the program depends upon the synergy of the core elements working together, it is very likely that dropping core elements adversely affects the intervention's success. Therefore, it is essential that effective technology exchange systems be developed and implemented to help agencies modify their programs appropriately so that the intervention is implemented with greater fidelity to the original program's methods, and to problem-solve with agencies about how to implement the program with less than optimal resources. These results were obtained at baseline; in the longitudinal study, we will be evaluating if providing the MPTES to organizations implementing the MP is helpful in terms of moving them towards implementation of core elements with greater fidelity to the original research methods.

That many agencies attempt to implement the MP and other evidence-based interventions without sufficient resources is especially concerning. In these instances only partial implementation of an intervention may be achieved as agencies drop or significantly curtail core elements owing to lack of resources. Agencies attempting to achieve a successful implementation of the MP with an annual budget of less than \$20,000 face staggering

challenges because they do not have adequate resources to (a) recruit, hire, train, and maintain skilled staff; (b) secure, furnish, and maintain appropriate project space; (c) coordinate and encourage volunteer efforts; and (d) operate the program with significant presence in the community to continually attract new participants, maintain community enthusiasm and interest, sponsor engaging outreach events, and develop appealing safer sex promotional materials. We recommend that agencies staff their MPs with at least one full-time and one half-time coordinator. Programs operating on less than \$20,000 per year simply do not have the resources to staff programs adequately, and it is difficult to imagine that programs without these resources can facilitate community and personal empowerment and succeed in diffusing norms that support safer sex throughout the community. It is questionable if the \$20,000 is well spent when applied to a project that has virtually no chance of success.

It is likely that all evidence-based interventions undergo substantial reinvention in the field, and it is critical that these adaptations be studied to assess whether or not the reinvented programs maintain sufficient fidelity to the original models to expect positive behavioral outcomes. When reinvented programs differ substantially from the original models, new outcome trials may be necessary to determine if the adapted programs are still efficacious or, at least, process evaluations should be conducted to determine if the target population is still being reached sufficiently. For example, if a CBO decides to eliminate the core group from its program, the core element designed to facilitate the empowerment of young gay/bisexual men and the starting point of diffusion of innovation into the community, there is no way to know if the intervention would still have the same effect detected in the original research trials. However, we are not only in a time of reduced funding for HIV prevention programs but also reduced funding for HIV prevention research. Research funding to examine the efficacy of reinvented programs is difficult to obtain. It would be helpful to have empirical evidence to guide decision making about when a program has been sufficiently modified or when the context of the intervention is so different from the original intervention's context that a new efficacy trial should be conducted.

The pressures on HIV prevention funding and the focus on implementing programs shown through rigorous research to be effective in reducing HIV-related risk behavior compel many CBOs to try to implement evidence-based interventions. Although trying to get HIV prevention research put into practice is a noble aim, evidence-based interventions do not exist for every important target population. For example, we are unaware of any intervention with demonstrated efficacy for gay men who use crystal methamphetamine. Rural/small-town CBOs have few, if any, empirically tested models to reach gay men at risk within their communities. The lack of such programs, amidst the pressures to use evidence-based interventions, almost certainly contributes to the necessity of agencies making substantial changes to other evidence-based models as they try to adapt the intervention to populations or contexts for whom the original interventions were not designed.

Thus the extent to which the intervention is being used for different populations than we had originally developed the intervention for has been quite interesting and important to note. The intervention was developed for 18–29 year olds—that is, young adult gay/bisexual men. Yet a substantial proportion of the CBOs are using the intervention for youth under the age of 18, and another substantial proportion are using the intervention to reach older men. As we inquired about why CBOs were using it for these groups when the research had not been conducted that indicated that it met the needs of younger and older men, we were told that it was being used because “it was all there was” that met the needs and desires of the CBO. Many of the components had intuitive appeal to CBOs, or they had tried other approaches that had failed, and so they wanted to adapt the intervention to fit their needs. Our concern has been that the developmental issues facing older and younger men than our original target population have not necessarily been critically analyzed

by the CBOs. For example, we are uncertain that it is feasible to expect 15–16 year-olds to take charge of publicity, organize social outreach events, and develop effective means of promoting HIV prevention. Likewise, we have been uncertain that men over the age of 40 have the same needs in a program as do 20 year-olds—although often CBO representatives have told us that they wish there was a program like ours that addresses HIV within the context of social and other issues for “older” men. As we study the changes made to the intervention by CBOs, we will be able to see how indeed the program does work for these groups. It should not automatically be assumed that extending the model to other groups is ineffective. This feedback from the real-world experiences of CBOs will be enormously helpful.

Although we developed the intervention to be used with a mixed ethnic/racial target group, one out of three CBOs are implementing it for men of color only, and most frequently, for one particular group. Translation to communities of color and different age ranges requires careful study and implementation. With funding from California’s Universitywide AIDS Research Program, we have been collaborating with African American CBOs in California to deconstruct the MP, and rebuild it from the ground up with the needs of young African American men in mind. However, this is a time-consuming process, and CBOs cannot generally wait the time it takes to develop and test new prevention models. Therefore, it is heartening to see that they are adapting existing models for their communities, and technology exchange systems must help facilitate this process effectively. However, adapting existing interventions alone is not sufficient; new prevention models still need to be developed and disseminated for underserved populations at risk for HIV infection.

One possible limitation to this study is that we used self-reports regarding how CBOs were implementing the MP. The extent to which CBOs accurately recognize if they are implementing the core elements as described in our materials and trainings or if they are overstating this to the evaluator in the interview so as to please us, the developers of the intervention, is unknown at this time. However, we are in the process of developing and conducting methods of rating the fidelity of the implementation based on review of CBOs’ descriptions of their programs and, we will be comparing the two types of fidelity ratings in a subsequent article. It is also important to understand why CBOs make changes to the intervention, and if the ways they tailor or adapt the intervention as they reinvent it are helpful are harmful in terms of affecting the processes of the intervention. We will have the opportunity to examine these issues as we analyze this study’s qualitative data.

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