Rigor, Collaboration, and Care: Two Decades of HIV/AIDS Prevention Research

Health and Human Development Programs

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Introduction

The 1980s were a frustrating time for clinics treating patients with sexually transmitted diseases (STDs). The same patients kept coming back, suffering from repeat infections and continuing to have unprotected sex with multiple partners. Clinic staff, busy providing treatment, had little time or resources for prevention. Frustration was plaguing the research community as well. STDs were rampant in some communities, with those patients at heightened risk for getting and spreading HIV/AIDS. Condoms were known to be effective against the spread of STDs, but many patients did not use them.

Looking for innovative ways to prevent HIV/STDs, the Centers for Disease Control and Prevention (CDC) enlisted the expertise of EDC's division of Health and Human Development (HHD) and its Center for Research on High Risk Behaviors.

From this partnership of almost 20 years emerged innovative, rigorously researched, practical interventions that have shown success in reducing STD infection and improving condom use. Lessons from its success have given momentum to promising new ventures in HIV prevention. The intervention, known as VOICES/VOCES, has evolved into a showcase project for CDC, which has asked HHD to test it further for potential use in clinics, jails, and community settings throughout the country.

This monograph describes HHD's two decades of concentrated work on STD/HIV prevention research, its collegial partnership with CDC, the relationships between HHD researchers and STD clinic and community agency staff, and the many lessons learned that can inform future HIV prevention efforts in the U.S. and around the globe.

"As we continuously expanded on our research, we've learned a great deal about what it takes to develop an empirically-based program that can help people overcome some of the risks that they face every day," says Lydia O'Donnell, principal investigator for the HIV/STD work.

Much of HHD's research and evaluation work in STD/ HIV and other disease and risk prevention measures changes in human behavior and in the ability of systems — schools, universities, workplaces, community agencies, clinics, hospitals — to deliver health promotion and prevention programs.

In our HIV/STD work, we zeroed in on these key research questions:

- How can we best provide prevention education to clients of STD clinics and other health services that serve men and women at risk for both STD and HIV infection?
- Can prevention programs lead to behavior change and better health outcomes?
- What does it cost to provide effective STD/HIV prevention?
- How can we use evidence of effectiveness to help agencies garner the resources for better prevention programs?
- Does the money spent on prevention reduce the human costs and financial burden of disease and its treatment?
- What supports, such as training and technical assistance, can assist STD clinics, family planning clinics, community health centers and other health services to implement and sustain better prevention programs?

To answer these questions, we draw on a variety of qualitative and quantitative methods:

Formative and social marketing research to produce culturally and gender relevant prevention programs that meet the needs of both the patient and the provider.

Randomized clinical trials to assess the effectiveness of interventions in promoting safer behaviors and reducing disease.

Dissemination research to better understand the research to practice continuum, examining the process of technology transfer and the costs of prevention programs.

Replication studies to examine how programs are implemented by community agencies and whether interventions developed and evaluated in the research setting are equally effective when delivered by agency providers.

National dissemination and training and technical assistance to support community agencies as they seek to implement and sustain proven prevention interventions.

In the studies described in this report, HHD scientists looked at self-reports of HIV/STD knowledge and two different indicators of behavior change: condom acquisition and repeat STD infections. Outcomes showed that when compared to adults receiving routine clinic services, clients who participated in the interventions demonstrated the following:

- **Fewer repeat STD infections**
- **Greater likelihood of redeeming coupons to get condoms and intention of using them regularly**
- **Increased motivation to change behaviors that place them at risk**
- **Increased knowledge about HIV and STDs**

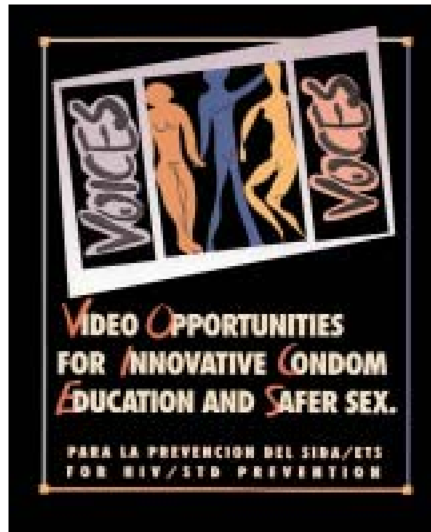
An additional study demonstrated the feasibility and cost-effectiveness of the intervention.

Our work builds upon a solid foundation in the social and behavioral sciences, public health, and innovative education and communications strategies. Our multidisciplinary teams have a commitment to improving both knowledge and practice. We seek to answer not only: What are effective strategies for reducing preventable diseases? But also, How can these strategies be effectively employed in the United States and around the world to reduce STDs and HIV — especially among those populations that comprise a disproportionate share of the cases?

The VOICES/VOCES Intervention at a Glance

In the 1980s, HIV/AIDS emerged as a public health crisis, casting a spotlight on the longstanding problem of sexually transmitted infections. STDs were — and are now — a major preventable cause of morbidity and mortality in the United States. Today, as in the 1980s, adults seeking services from STD clinics often have multiple STDs and engage in unprotected sex that jeopardizes their own and their partners' health. Although most STDs can be treated successfully with antibiotics, infection puts a person at risk of developing subsequent and more serious infections. Repeat STDs have been associated with infertility, ectopic pregnancy, cervical cancer, and HIV transmission.

HIV/STD rates also illuminate the stark health disparities between U.S. population groups. Fifty-four percent of new HIV cases reported in the U.S. occur among African Americans, and 19 percent of new cases occur among Hispanics, who represent only an estimated 13 percent and 12 percent, respectively, of the total U.S. population. Gonorrhea rates are about 30 times higher among African Americans in the U.S. as compared to whites, and 3 times higher among Hispanics. Likewise, rates of syphilis are 21 times higher among African Americans as compared to whites, and 3 times higher among Hispanics. (source: CDC website)



To address the problem of STDs and HIV, we brought together multi-disciplinary teams of scientists and practitioners.

To address the problem of STDs and HIV, we brought together multidisciplinary teams of scientists and practitioners. Collectively, these teams have training and expertise in public health research and practice, the behavioral sciences, education, performance art and communication, and health care practice. A key ingredient of our work is the collaboration between those with research backgrounds and those with experience working on the front lines of STD/HIV prevention. Experienced field staff contribute first-hand knowledge of the operations of health agencies and knowledge of what is important to both patients and providers. The investigators bring their understanding of theories of human and social behavior that underlie informed prevention strategies and their knowledge of research methods and tools.

Our work in STD prevention began with an innovative idea: Can we create an educational video that motivates STD clinic clients to protect their health? Millie Solomon and her colleague William DeJong, drawing on their backgrounds in public health, education, and the dramatic arts, set out to produce the first in what would become a series of dramatic brief videos that could be viewed by patients during their clinic visit. This early 1980s

video, *Let's Do Something Different,* offered at the major STD clinic in Massachusetts, was shown to be effective in motivating STD patients to take the medication prescribed to them by clinic staff and to get and use condoms.

What It Takes

A diverse, committed team of researchers and community organizations can create an intervention that blends the best of scientific rigor, real-world patient experience, and creativity that works in a busy clinic setting.

This research provided a springboard for what has now become the VOICES/VOCES project (Video Opportunities for Innovative Condom Education and Safer Sex) and addresses the combined problems of STD and HIV. With continued funding from the CDC, Lydia O'Donnell has continued this early work and led an expanded team to develop, evaluate, and disseminate brief, video-based prevention interventions. Instrumental to the success of this work has been the long-term involvement of Alexi San Doval, senior project director, and Richard Duran, field supervisor. Both San Doval and Duran came to EDC after years of working with the New York City Department of Health. Their knowledge and contacts within this system have enabled EDC to establish a long-term relationship with city clinics, where programs have been developed and evaluated. EDC specialists have also joined the team, including Melanie Adler, materials developer, and senior methodologist Carl O'Donnell. This team created several new videos in the mid 1990s, including the bilingual and award-winning *Porque Si,* designed for Latino men and women, and the more recently completed *Love Exchange* for African Americans.

Through these multiple efforts, HHD investigators have cultivated intensive involvement of community members in the development process, a key factor in the effectiveness of our approach. In multiple focus groups and clinic observations involving patients and staff, HHD researchers learned what educational messages are most important to convey and how these messages can be delivered with the greatest impact. Community advisory boards have helped guide the development process. Thus, the team includes not only expert researchers and practitioners, but also community experts.

HHD researchers published the promising results of the clinical trials in academic papers (see Publications – inside back cover) and have now turned their attention to assisting other health care providers who are adopting the intervention. In 1997, the CDC selected the VOICES/VOCES program for inclusion in the Replicating Effective Programs project (REP), its flagship initiative to build a bridge between research and practice. Through REP, HHD developed and tested a technical assistance package of materials to aid replication in other clinics and health care settings. HHD found that with brief technical assistance, the intervention could be successfully implemented with similar audiences. With the REP nomination, and additional evidence about the feasibility of replication, VOICES/VOCES became one of the first proven HIV prevention programs to be disseminated through a federally sponsored national training and technical assistance network.

Conducting Research in a Clinical Setting

As HHD researchers began to formulate their work, one fact was clear: any successful approach with STDs among sexually active adults would have to encourage the use of condoms, one of the most effective tools — along with abstinence and monogamous sexual relationships — against a wide variety of STDs. However, condoms are underutilized, especially among individuals who are most at risk, such as adults with multiple sex partners or those who have been previously treated for an STD.

STD clinics provide a strategic context for condom promotion, but STD clinic staff in the 1980s had few proven prevention programs to use. And, perhaps most problematic, they have little extra time in the busy clinic schedule to provide prevention, even if it is available. Even with the advent of AIDS, little prevention was offered during a patient's clinic visit — a lost opportunity that HHD researchers have tried to rectify.

Engaging Results

Culturally sensitive interventions, such as video vignettes, that also provide skill-building opportunities, can engage participants and produce positive behavior change in ways that more didactic approaches do not.

Pioneering a Video-based Approach to STD Education: *Let's Do Something Different*

With funding to target African American male STD clinic patients, HHD investigators Millie Solomon and Bill DeJong began formative research. At the beginning, the research staff wondered whether patients would want to talk to strangers about their sexual practices and health. They did. "They were eager to speak to someone who listened non-judgmentally to their stories," says Solomon. Researchers learned about patients' misconceptions about STDs, such as believing that good hygiene would protect them from STDs.

Solomon, who has a doctorate in education and a master's degree in drama, says, "We wanted to start from formative research about what their attitudes and beliefs were and create an intervention that might motivate them or create incentives for preventive action." From the outset, the HHD team persisted with one key question: Is this a usable product?" says O'Donnell. "Given the settings that we were operating in, we needed a pragmatic approach that would actually be used and would address the structural issues that clinics face about lack of staff, lack of time and training, and how to provide education."

Their qualitative research led HHD investigators to propose a video that depicted dramatic vignettes mirroring the lives and beliefs of clinic patients in their language. "In the mid 1980s we examined the educational materials. They were basically brochures. They were little cartoons that would tell patients what to do. They were dead, pedantic. It had nothing to do with the experiences of the audience," says Solomon. Video vignettes, on the other hand, are a way that people can see themselves on the screen and take in a message. "Videos quickly transmit information and are an engaging way to show or model healthy or safe behaviors," she says, adding, "they are also an excellent ice-breaker with sensitive issues."

But at the time, brief education interventions were not highly regarded. "The prevailing attitude," says Richard Duran, MSW, an HHD senior scientist, "was that a video alone won't work, and everyone knows a 15-minute group won't accomplish anything!" Some people wanted the CDC to put its resources instead into tracking patients' sexual contacts. The team's pragmatism compelled them to persist: Can we create a small scale intervention and still engage participants and make a difference?

The CDC encouraged HHD to try something innovative and test it rigorously. "It was exciting to develop this relationship with the CDC because they were at a critical moment in terms of policy setting and decisions about their resources," says Solomon.

The end result, *Let's Do Something Different,* focused on problems of communication and interpersonal skills. The video was tested with focus groups of patients and clinic staff, who responded enthusiastically.

Randomized Clinical Trials

From 1983 to 1986, Drs. Solomon and DeJong tested this video in a series of clinical trials in urban clinics with a mostly heterosexual African American adult population. This field trial was notable for its two innovations, the use of a video intervention, and the trial's evaluation strategy. At the time of their clinic visit, participants in the study were given coupons to redeem for free condoms as a proximate measure for behavior change. The investigators tracked who redeemed their coupons to determine whether those who saw the video were more likely to get their free condoms than were those who had received only regular clinic services. Indeed, the study showed that those who saw the video were significantly *more* likely to redeem their coupons.

One of the objectives of these initial clinical trials was to facilitate patient adherence to treatment. The team's use of coupons with the videos drew on their previous research on compliance with an unwieldy tetracycline pill-taking regimen. Simple changes in the packaging and video instruction made a striking difference. "We saw an incredible, ten-fold increase if both the packaging and videotape were used," says Solomon. The researchers' hope now was that condom availability would prompt a similar improvement in compliance.

Enhanced Education

Changes in the structure of products or in the environment can be a profound complement to skills-based education.

Expanding the Video-based Approach

With the growing AIDS epidemic, HHD in 1991 was well positioned to obtain new funding from the CDC to build upon the work of Drs. Solomon and DeJong. Dr. O'Donnell and her team began to build on findings from the previous studies, expanding the work in several important ways to be responsive to public health needs.

First, they built their understanding of ways that proven strategies in other fields and reliable theories could be applied to HIV prevention. "We had been focused on STDs, and HIV was in the periphery of our vision," says Solomon. But their seminal 1986 paper, "Recent Sexually Transmitted Disease Prevention Efforts and Their Implications for AIDS Health Education," marked a shift in direction. The paper was one of three that the World Health Organization accepted at its first-ever HIV Prevention Conference. The authors drew parallels between patient *attitudes* about AIDS and other STDs, and some of the key *behaviors*, such as using condoms that are needed in preventing the spread of these disease. The paper argued that the approach of using vignettes and support groups could be extended to HIV prevention. Similarly, they noted, any AIDS prevention tool must acknowledge and address patients' misgivings about using condoms, as the initial videos did.

Second, they built on their ideas by including women as well as men in their target population. Third, they applied the dramatic video approach used for African Americans in *Let's Do Something Different* to include Latinos, who were becoming increasingly at risk. Fourth, with input from the CDC, they expanded the video approach, so that videos could be used not only as stand-alone interventions, but

also as triggers for brief, small-group discussion sessions. These sessions were designed to reinforce the messages that were provided on the videos. Again, the prevention program was designed with the end user in mind, and built to work within clinic realities. "From my clinic experiences, I had an insider's look at whether this intervention would really work," San Doval says. "It's not good enough just to develop an intervention and be able to show effects if nobody is going to adopt it. What if they say, 'it's too complicated and we can't use it in our clinic?' "

To develop new intervention materials, senior project director Alexi San Doval and field supervisor Richard Duran held focus groups with several hundred clinic patients in a large New York City public STD clinic. They also conducted in-depth interviews with clinic staff to better understand how a program could fit their needs and overcome potential barriers they foresaw, and observed clinic flow. In addition, HHD researchers DeJong and O'Donnell conducted a survey of STD clinic managers from across the country, listening carefully to practitioners' advice about customizing materials for optimal use, content, design, and the physical packaging of materials. A community advisory board also contributed to the discussions. "It was an intense, inclusive process," notes Duran. The investigators discovered that patients did not know that many types of condoms exist. They also learned several things contrary to what was expected. Patients liked humor in discussing the sensitive subject of sex, STDs, and HIV — humor helped engage their attention and made them open to suggestions for how to protect their health once they left the clinic. Although practitioners felt that patients would be reluctant to join a group and that one-on-one counseling was all that could be done, men and women reported that they *liked* talking about these issues in a group setting that was safe and protected their confidentiality.

The major finding from this research was clear: to be effective and to get used, an intervention needed to be *brief* and *engaging*.

The formative research also helped the research staff to identify key cultural considerations in targeting Latinos and Latinas with a video discussing sensitive sexual topics. In developing the video, staff worked hard to incorporate the values about gender roles and cultural expectations identified in their discussions with target group members. "If your message is crafted in a respectful way that reflects the group's own values, then people will hear you," says O'Donnell. The new video for Latino audiences was entitled *Porque Si.* Additionally, the intervention was modified to include a group viewing and discussion afterward for a subset of the participants. The intervention could be done in a single, one-hour session, fitting easily into the clinic flow. Patients who participated were not delayed from seeing a doctor, and clinic staff could maintain their system of tracking and treating patients. Structural elements needed to run the intervention included a private room to show the video and hold a group discussion, and a skilled facilitator to guide the discussion.

Essential Research

Extensive formative research, including qualitative research with patients and providers, is critical in assisting investigators to develop a feasible, culturally appropriate, effective intervention.

Learning from Broader Randomized Clinical Trials

The larger, more extensive, randomized clinical trial was conducted at a large STD clinic in New York City. The interventions to be tested included the original *Let's Do Something Different* video for African Americans, along with the new video, *Porque Si*, for Latinos. In addition to testing the video alone, the study also looked at whether videos supplemented by small group discussions would result in even greater improvements in patient knowledge, attitudes, and healthy behaviors, and decreases in subsequent STDs.

Over a 1-year period in 1992, with the assistance of the NYC Department of Health, San Doval and Duran worked closely and patiently with clinic staff and clients to encourage participation in the study. "There is a big difference between going into a clinic and saying, 'I have something I want to try and see if it will work,' versus going in and saying, 'I worked in this field and I've seen what you're up against and I'd like to spend some time watching and working with you,' and doing it in such a way that neutral development of a program addresses everybody's needs, rather than walking in like an outside expert," says Duran. "It was a very roll-up-your-sleeves kind of approach," says San Doval.

Remarkably, they recruited 98% of the patients that they asked to participate, enrolling a total of 3,348 clients at Morrisania STD Clinic into the study. "Without Alexi and Richard's knowledge of the system and how the clinics operate, we could not have collected anywhere near the amount of data that we did," O'Donnell says. "We needed to adhere to a very rigorous study protocol. We had to have people who are committed to doing that and be able both to supervise and to be there. They needed to be able to understand the workings of those systems to be able to see the project through," she adds.

At the Morrisania clinic, one of the largest clinics in the city (serving about 8,000 patients a year), participants were assigned to one of three groups:

- Control group, in which the client experienced a typical clinic visit
- Video group, in which the client viewed a video
- Video-plus group, in which the client viewed a video and participated in a small-group session led by a trained facilitator

The Human Touch

Before coming to HHD, Richard Duran spent years counseling drug addicts and STD patients. He had managed clinics, taken phone calls, and checked patients in. He knew first-hand how overworked clinic staff were. And he knew that the clinic trial must not interfere with getting patients seen and treated as efficiently as possible, and that clinic staff often resent the presence of researchers.

"There were a lot of behind-the-scenes, day-to-day things that you have to work out with the staff. We touched everybody's work in the clinic, from the registration person to the nurses to doctors. We tried to see how we could do our job without interfering with their job," says Duran, recalling that they declined an invitation to occupy one of the nicer offices, opting instead for an out-of-the-way cubicle that wouldn't displace clinic staff.

Working with patients also required sensitivity. Privacy and confidentiality were paramount, and the videos helped people discuss touchy issues as they affected the characters in the vignettes. Duran also ran some of the groups of patients participating in the study. It helped people in an embarrassing situation to open up, Duran says. "Each group was new. It's live. You don't know what the next person is going to say, and what's going to happen in the group. Part of the human condition is that misery does love company. It's nice when you walk into a room and you're feeling really bad about your life now and you say, 'Wow, there are six other people here who feel just like me. I just feel like I have some support here.' "

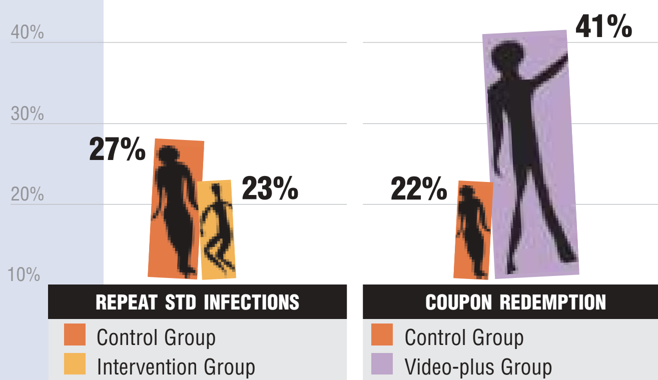
Those assigned to the video-plus group discussed and role-played realistic scenarios involving talking about condom use with partners. They also learned about a variety of condoms and selected three types at no cost.

The intervention was evaluated in several ways. First, researchers examined whether, compared to controls, patients who participated in either of the interventions had greater understanding of the risks of HIV and other STDs, more positive attitudes about discussing and using condom with partners, and greater intentions to do so. Second, all participants were given a coupon to redeem for three more free condoms at a pharmacy several blocks from the clinic. Again, the team monitored whether those who participated in the interventions were more likely to redeem their coupons than those who received only regular clinic services. Third, with the help of staff at the NYC Department of Health surveillance system, they monitored whether those in the interventions were less likely to get a new STD infection subsequent to their clinic visit. Staff tracked new STD infections among clinic clients for an average of 17 months following the initial clinic visit.

Clinical Trial Results

HHD scientists looked at self-reports of HIV/STD knowledge and two different indicators of behavior change: condom acquisition and repeat STD infections. When compared to adults receiving routine clinic services, clients who participated in the video interventions demonstrated the following:

- **Fewer repeat STD infections**, indicating adoption of safer behaviors and reducing their exposure to HIV (new infections in the control group: 27 percent; new infections in the intervention group: 23 percent).



Making a Difference

A simple, one-session intervention *can* make a difference in health behavior and health outcomes and prevent unnecessary human suffering and premature death.

- **Greater likelihood of redeeming coupons to get condoms** and intending to use them regularly. Further, the results were most dramatic for those patients who saw the video and participated in the small group discussion: Forty-one percent of the video-plus group redeemed coupons, compared to 22 percent of the control group. Participants' perceived risk of their chances of acquiring HIV and other STDs was the strongest psychosocial predictor of condom acquisition.
- **Increased motivation to change behaviors** that place them at risk.
- **Increased knowledge about HIV and other STDs** and how they are transmitted; greater understanding of the HIV and STD risks they face.

In addition, feasibility and cost-effectiveness, when targeted to STD clinic clients at high risk of contracting and transmitting infections, indicated that this strategy should be considered for inclusion in HIV prevention programming.

"We were able to demonstrate that this intervention significantly reduced STD re-infection rates, especially among men and women who have a higher incidence of STDs and are more at risk for spreading STDs, and perhaps HIV because they have multiple sex partners and unprotected sex," says Dr. Carl O'Donnell, senior methodologist. "Prior to this finding, the conventional wisdom was that brief interventions didn't work and they especially didn't work among high-risk populations. We found the opposite — this intervention not only worked, but it worked particularly well in high-risk populations."

Spreading the Word: Delivering Research Results to the Field

Even with these positive results, the HHD team knew it would not be enough to simply publish papers on their results. "The staff was absolutely tenacious about moving forward with the funder and the field to ensure that this intervention, along with others, made it to the field," says Adler, the video and materials developer. Too often, she and her team members noted, effective programs sit on a shelf after their initial clinical trial is complete. Team member Duran adds, "If you plug away long enough, you keep on contributing to the body of knowledge. And then you have to keep on saying, 'Look, it's not enough. It's not enough if it doesn't get out there.' "

In 1997, the CDC selected the intervention, now called VOICES/VOCES (Video Opportunities for Innovative Condom Education and Safer Sex) to participate in its rigorous Replicating Effective Programs (REP) project, based on evidence of its effectiveness. One of just a handful of programs selected across the country to participate in this program, VOICES/VOCES was positioned to be disseminated throughout the country.

Making It Work

Technical assistance and training are necessary as others implement a promising program. Academic papers and curricula are important but are insufficient to ensure long-lasting, effective implementation.

Replication Study: Expanding the Intervention to Other Health Settings

HHD knew from its work in diffusion of innovation, technology transfer, and institutional change that STD clinics or health centers would be unlikely to implement the program without some technical assistance that addressed the particular needs of their setting. With CDC support and collaboration, HHD began designing and implementing a technical assistance plan and a package of materials that STD clinics and other health centers could use to replicate this project. The package includes an Administrator's Preview Guide, a bilingual VOICES/VOCES Implementation Manual, and two videos.

As part of this package, the CDC provided funding to develop a new video for African Americans. The original video for this population, *Let's Do Something Different,* was created prior to the HIV epidemic — indeed, there is no mention of HIV. Following the video development process used earlier, staff began working on a new video called *Love Exchange.* Again, extensive input from a community advisory board and a focus group of men and women was used to construct the story lines, content and key messages. When paired with *Porque Si,* this new video provides health agencies with culturally relevant videos for African American and Latino men and women.

Pilot Test of the Replication Package

The VOICES/VOCES replication package of materials and accompanying training and technical assistance was then piloted in five diverse health care settings. These included two STD clinics, a family planning clinic, and two neighborhood health centers. This broad audience was solicited in part because the numbers of men and women seeking treatment for STDs through public STD clinics was declining, with patients seeking services elsewhere. HHD staff also wanted to develop an intervention that could be used broadly in diverse settings.

Agencies received the package, and HHD staff trained agency providers to deliver the program. Research staff also provided technical assistance that included ways to integrate the intervention into the clinic flow and how to recruit participants for intervention sessions. Research staff also monitored program implementation, observing how the intervention was being used and ways it could be adapted and strengthened by local agencies.

Agency staff at each of these pilot replication sites, along with a VOICES/VOCES community advisory board similar to those created during formative work, provided ongoing input into the revision of the replication package. The information obtained through the pilot was used to finalize the VOICES/VOCES replication package.

> **Making Informed Decisions**
>
> Specifics about cost and cost-effectiveness can help agencies, funders, and policy makers make informed choices about adopting specific interventions.

Cost Analysis and Effectiveness Studies

The replication project showed that this intervention could be used in other health care settings. HHD staff and the CDC agreed that another step was needed to inform the prevention field: a study of the costs and cost-effectiveness of the VOICES/VOCES program. Conducting a cost analysis provides agencies and funders with estimates of the monetary resources that are necessary to run a program. Such costs include staff time, equipment, and materials. Obtaining information on costs is also essential for conducting a cost-effectiveness study, which then models whether the costs of implementing an intervention are effective in reducing both the human and financial costs of disease, and its treatment.

"If you assemble enough cost-effectiveness data, then you can allow people to pick and choose and say this would work in our setting or this would not work in our setting. It really starts to target where to put very scarce, valuable resources to be effective," says Carl O'Donnell who, along with consultant Dr. Michael Sweat from Johns Hopkins School of Public Health, served as the methodologists on the cost studies.

To conduct the cost analysis and estimate the cost-effectiveness of this intervention, the team used data on effectiveness from the randomized clinical trial in New York City along with updated data on the costs of intervention from four replication sites. STD incidence and self-reported behavioral data were used to make estimates of reduction in HIV incidence among study participants. In "Cost-effectiveness of a brief video-based HIV intervention for African American and Latino sexually transmitted disease clinic clients" (*AIDS* 2001) HHD researchers reported that:

- The brief VOICES/VOCES intervention is feasible and cost-effective when targeted to STD clinic clients at high risk of contracting and transmitting infections, indicating that this strategy should be considered for inclusion in HIV prevention programming.

Replicating the Effectiveness of VOICES/VOCES in Diverse Settings

With the replication package developed, HHD is currently evaluating whether VOICES/VOCES is also effective when implemented by community-based staff rather than research staff. Again with funding from the CDC, HHD staff have started to forge new partnerships with clinics, including a new clinic in Puerto Rico. The HHD team will provide clinics with VOICES/VOCES materials, training, and technical assistance, while clinic staff will take on the challenge of implementing the program in their busy settings. HHD researchers will then evaluate effectiveness using the same criteria as in the Morrisania trial: Are there demonstrable improvements in patient knowledge, attitudes, and intentions to adopt safer behaviors? Are clients who receive the intervention more likely to redeem coupons for condoms? And, are there fewer new STD infections among those who have been exposed to the intervention?

In addition, as the study progresses, evaluators will monitor and identify factors that lead to success or failure in implementing the intervention and look for ways to improve the process for practitioners to conduct these types of interventions.

National Dissemination Effort

The CDC recently embarked on a multi-million-dollar, multi-site initiative to disseminate effective behavioral intervention programs in STD/HIV prevention. VOICES/VOCES is being disseminated nationally through the CDC's Diffusion of Effective Behavioral Interventions Project (DEBI).

"We are committed to strengthening our program's capacity to develop targeted, sustained, and evidence-based HIV prevention interventions through our technology transfer efforts. HIV prevention technology transfer is a process by which effective interventions are identified, disseminated and implemented in the field," says Robert Janssen, MD, director of the division of HIV/AIDS prevention at the CDC.

To begin this national dissemination campaign, the CDC Technology Transfer Project produced a satellite broadcast highlighting VOICES/VOCES and three other effective behavioral interventions, reaching a national viewing audience of community-based agencies and programs. CDC and other staff across the country will be trained in delivering the VOICES/VOCES curriculum and will receive technical assistance to address implementation issues.

VOICES/VOCES is already being implemented by a variety of community-based programs. In Boston, Action for Boston Community Development has used the program in jails, shelters for battered women, house parties, and hair salons. In Texas, Families Under Urban and Social Attack implemented the program at a school for African American barbers.

Ripple Effects

A well-grounded, scientifically based, effective prevention program can influence high-level policy, such as the CDC's new focus on disseminating effective programs in HIV prevention.

Moving to the Future

Currently, 40 million people around the world have HIV/AIDS. The enormity of the epidemic compels us to make every effort to draw on and use effective prevention strategies in combination with screening and treatment. HHD staff believe that VOICES/VOCES is a model of a promising, brief, cost-effective preventive measure. Further, the approach to developing VOICES/VOCES as an effective clinic and community-based HIV intervention can be used to develop programs for the global epidemic. This approach includes:

1. **A strong foundation in social and behavioral sciences and recognition of the value of multidisciplinary teams of researchers and practitioners**
2. **Innovative educational approaches to promote behavior change**
3. **Commitment to working with communities and community service providers to develop interventions that meet their needs and build upon community strengths**
4. **Commitment to developing interventions that are gender — and culturally — relevant and seek to address pressing health issues that contribute to ongoing health disparities**
5. **Understanding of the importance of developing, testing, and tailoring interventions to real-world settings and overcoming barriers to prevention service delivery**

HHD continues its HIV prevention work in the United States and has extended its expertise globally to work with the World Health Organization and the global teachers' union, Education International, to design prevention strategies for teachers to use in their communities and to educate their students. No matter the setting or health risk, HHD's approach will continue to draw on a team of stellar scientists and practitioners working together over the long-term to design evidence-based interventions that will meet the real-world needs of their clients and settings.

Products

The VOICES/VOCES Replication Package is available from EDC, (877) 332-2871, with accompanying training available through the CDC-funded national dissemination project. The package includes:

- Video Opportunities for Innovative Condom Education and Safer Sex: An Administrator's Preview Guide. Newton, MA: Education Development Center, Inc., 1999.
- Video Opportunities for Innovative Condom Education and Safer Sex: A Bilingual Planning and Implementation Manual for Agency Administrators and Staff. Newton, MA: Education Development Center, Inc., 1999.
- *Love Exchange*, 20-minute video. Newton, MA: Education Development Center, Inc., 1992.
- *Porque Si,* 20-minute video. Newton, MA: Education Development Center, Inc., 1997.

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